

Property Tax Regressivity and Property Tax Relief Programs  
Across Provinces in Canada\*

– by David Murrell\*\* and Yan Chu\*\*

\* Paper to be given at the Atlantic Canada Economics Association meetings,  
October, 2009, University of New Brunswick at Saint John, Saint John, NB.

\*\* Professor, Department of Economics, University of New Brunswick at  
Fredericton [dmurrell@unb.ca](mailto:dmurrell@unb.ca)

\*\* graduate student, Department of Economics, University of New Brunswick at  
Fredericton

## **Abstract**

This paper focuses on property tax relief programs undertaken by various provincial governments in Canada. We first investigate the degree of property-tax regressivity, across provinces, using a Statistics Canada survey of individual family homeowners. We find that the degree of regressivity is higher among the urbanized provinces: Quebec, Ontario Alberta and British Columbia. We then review property tax-relief programs. We find that they vary across provinces. Some programs cover all homeowners (or nearly all homeowners), others cover lower-income families, and others cover families headed by seniors, or lower-income families headed by seniors.

We then show that, for vertical equity reasons, property tax relief programs should be directed to lower-income families: those headed by non-seniors and seniors alike. This is because families headed by seniors – although they face higher property-tax rates per-se – actually pay a lower percentage towards property taxes and mortgages. Given life-cycle considerations, seniors have largely paid off their mortgages, whereas families headed by non-seniors have not. Therefore, families headed by non-seniors – especially lower-income families – face more serious difficulties paying property taxes.

## **I. Introduction**

Property taxes are a major source of revenue for municipal governments in Canada. Most economists consider property taxes to be regressive, although considerable debate remains (see our discussion below). There are two general sources of regressivity. First, housing is in general an income-inelastic good (as income rises, proportionately less is spent on housing)<sup>1</sup>. Given this, since jurisdictions assess housing uniformly across income groups, and assess a uniform mill rate on assessed housing, average property tax rates<sup>2</sup> fall as income rises. Second, since seniors' incomes fall upon retirement, effective property tax rates rise for seniors, relative to non-seniors (as we will show below). Because of both tax-regressivity sources, provinces have designed property tax relief programs to assist homeowners of differing income and age classes. The problem is that Canada's provinces implement many differing types of property relief programs, targeted to different groups. The question we address is: which programs are better: property tax programs for seniors, or programs for low-income people?

In this paper, we use two approaches to measure tax regressivity. First, we use the approach by Palementa and Macredie (2005). They calculate, for each income quartile, property tax-to-income ratios, and then compute the median of the lowest to highest quartile. Second, we use the approach by Baer (2007), who separates homeowners by age and takes the median ratio of property tax to income for each age group, in order to measure property tax regressivity. Our first measure of regressivity is based on income (the usual case). While the second is based on age and implicitly assumes seniors have lower income. To construct both regressivity measures, we use micro-data from the 2006 Survey of Household Spending (SHS). Both measures show that property taxes for homeowners are regressive.

We then briefly discuss the various property tax relief measures by province. In general – when looking at tax regressivity per se – we judge that the various relief measures are vertically equitable. But we also consider a horizontal equity issue. Horizontal equity says households of similar income should pay the same tax. But such a rule glosses over one fact. If one considers cash obligations to maintain a house – mortgage plus tax payments – we find that seniors have lower cash obligations than non-seniors. In other words attention to current income ignores differences in wealth. Seniors, taken as a group, do not face the same hardship, in maintaining a house, as do non-seniors. Consequently we conclude that provincial property tax relief programs should target low-income persons only.

The organization of this paper is as follows. Section 2 reviews some literature, discussing property tax regressivity or progressivity, and different property relief programs in the United States and Canada. In Chapter 3, we use two different methods to assess property tax regressivity, by province, age class and income class. Section 4 briefly reviews the various property-tax relief programs undertaken by provincial governments in Canada. We then compare property tax relief programs to various property tax burdens, by age status and income status. Section 5 discusses two concepts: equity (fairness) and cash payments to support a home. We compare property taxes and mortgage payments, by age status. Section 5 concludes.

## **2. Brief Literature Review**

Property taxes are the crucial source of revenue for local jurisdictions [Rosen et. al. (2003), 457]. Local governments, as small-unit jurisdictions, have vested legal powers to tax land (with property on it), since levels of

government see it that land (with property on it) cannot escape the tax. However, most research suggests that property taxes are regressive. Since this may be the case, governments have undertaken property tax relief programs with the intention of helping the poor. Here we look at some literature discussing (a) the issue of property tax regressivity and (b) property tax relief programs.

### *2.1 Property Tax Regressivity/Progressivity*

In discussing tax regressivity and progressivity, we first want to define the terms. For the purposes of this paper, if the change in tax paid, divided by the change in income is greater than one ( $\Delta TX \text{ paid} / \Delta \text{income} > 1$ ), the tax is progressive. If the reverse is true, the tax is regressive.

The majority of literature suggests that property taxes are regressive. If one starts by using partial-equilibrium analysis looking at the housing market only, i.e., reflecting the “old view”, the income-inelastic nature of house implies regressive property taxation. As yearly income increases across families, the amount spent on tax assessable property increases, but at a decreasing rate with respect to income. Since the property tax rate, as levied on tax-assessable property, is constant, the property tax in this sense is regressive [Rosen et. al. (2003), 462]. Note that all this analysis assumes the tax is paid by home buyers and not home suppliers. This is reasonable if we assume the long-run supply curve for housing is horizontal. Housing consumption in this case is assessed using long-run analysis, and not yearly variations [Rosen et. al. (2003), 463].

Vermaeten et. al. (1995, 333) found that, looking at aggregate data for Canada, that property taxes were somewhat regressive. They provided graphs, showing effective taxes rates for various income deciles. The effective property tax rate fell as income increased, except for the 91-100% group (the authors do not explain this big jump). Edelstein (1979) estimates income elasticities of the property tax, using samples of individual households for five SMSAs in the United States. He assumes full forwards shifting, whereby the supply of housing is fully elastic. His results suggest that property taxes are modestly regressive – but are so because housing tends to be over-appraised for lower-value housing (and vice versa for higher-value homes). Plummer (2003) uses an income elasticity model similar to Edelstein, and uses a large sample of homeowners to find that county and school taxes are proportional to income, but that city taxes are moderately regressive. She finds that the reason for the regressivity stems from that poorer cities and towns levy higher mill rates, than was the case for richer localities.

Other literature suggests that the property tax can be progressive (“the new view”). If housing is a long-run decision that depends on long-run income [Goodman (2005)], and given some evidence that the long-run income elasticity for housing is close to one, then the property tax is neither regressive nor progressive. Davies (1984, 635) uses a life-cycle simulation model, across Canada, and calculates lifetime tax incidences, and shows that, within lifetime income, the property tax as a share of consumption tends to be progressive. Looking at taxation from a general equilibrium perspective, if the property tax is seen as a capital tax, the property tax can be progressive in long-run analysis [Goodman (2005) and Musgrave (2004, 222)]. To obtain this result, returns to labour and capital in the housing sector are assumed to be higher than the non-housing sector. A property tax reduces the amount of housing supplied, and thus improves income distribution. Kitchen (2003) references general-equilibrium research by John Whalley also suggesting that the property tax is a progressive tax.

For the purposes of this essay, we assume that the supply curve of housing is fully elastic. This assumption seems sensible, given the policy question that we address. We consider that Canadian provinces are small, open

economies, whereby both capital and labour flow freely into and out of provinces. We quote at length from Rosen et. al. (2008):

*If, for example, we want to find the consequences of eliminating all property taxes and replacing them with a national sales tax, the “new view” is appropriate because a change that affects all commodities requires a general equilibrium framework. On the other hand, if a given community is considering lowering its property tax rate and making up the revenue loss from a local sales tax, the “traditional view” offers the most insight. This is because a single community is so small relative to the economy that its supply of capital is essentially horizontal...” (p. 439).*

## 2.2 Property tax Relief Programs

In response to steadily rising tax burdens, most states in the United States have devised a variety of property tax relief programs. Baer (2003) catalogues such relief programs, for each state for which each program applies. The major relief programs are homestead exemptions and credits, circuit-breaker programs and tax freezes (or caps) and deferral programs. Homestead exemptions and credits allow property owners to forgo paying the property tax, for homes valued under some designated limit. (For example, New Brunswick has a longstanding homestead exemption. Circuit-breaker programs allow for tax credits to be applied to homeowner groups of a certain income or a certain age. Assessment credit caps are applied, to limit property tax increases from one year to the next. Bowman (2006) mentions that states instituting property tax relief programs could do so for political or ideological motives (helping targeted sub-groups, through circuit-breakers), or because of external economic circumstances (assessment caps given rapidly rising housing prices). He noted that the selection of one tax relief program over another has income distribution implications (as we show in this paper).

The only review of property tax relief programs, for homeowners, in Canada, was done by Kitchen (2003). He mentions that property tax credits are used in Quebec, Ontario, Manitoba, Alberta and British Columbia. With these credits, the value of the tax credit falls as taxable income rises, and in this sense they are progressive. Grants are also used (and these are like the homestead grants described above). Such relief programs are used in New Brunswick, Alberta, Manitoba, Ontario, and British Columbia. Kitchen mentions that Nova Scotia has an exemption program, where certain taxpayer groups are exempted from the property tax.

## III. 2006 Provincial Property Tax Burdens and Regressivity

### 3.1 Description of the Primary Data Source

To measure property tax regressivity, we use Statistics Canada’s Survey of Household Spending (SHS). This is a micro-data base, spanning the time period from 1997 to 2006. The SHS data includes information about household spending by commodity class<sup>3</sup>, during the reference year, and is available by Canada total, the ten provinces and the three territories. In this paper, we ignore the three territories. There are two other surveys: the Family Expenditure Survey (FES) and the Household Facilities and Expenditure Survey (HFES). The SHS survey is preferred to the two latter surveys because most of the content from the HES and HFES was integrated into the SHS. From 1997 to 2005, the SHS covered the three territories. The 2006 survey does not.

For this paper, we focus on property tax revenues for the provinces of Canada. Therefore, for the reference

year 2006, we choose the property-tax variable, plus other key variables, from the 269 available series. The variables collected for our paper include: province, household income before taxes, property taxes paid, personal income taxes paid, mortgage paid, and age group of the reference person.

### 3.2 Calculating Aggregate Regressivity Indexes

In this section, we use an approach by Palmenta and Macredie (2005). They use the 2006 SHS data base, to quantify the regressivity of owner-occupied property taxes in by city in Canada. To measure property tax regressivity, we use the following formula:

$$IN = \frac{M/Y1}{M/Y4} \quad (1)$$

where:

IN = the regressivity index

M = median of property taxes paid

1 = the first quartile of household income

4 = the fourth quartile of household income

Y = income of reference household before tax

The construction of the above index is as follows. We separate all owner-occupied households by quartile, based on household income. We then calculate two median property tax burdens, and express these as a ratio: the median percentage of adjusted household income spent on property tax first quartile (the lowest-income quartile) divided by the median percentage of adjusted household income spent on property tax for the fourth quartile (the highest-income quartile). The resulting IN is an index of the relative tax burden. If  $IN > 1$ , the tax is regressive (and progressive if  $IN < 1$ ).

Table 1 shows some key property-tax regressivity results, by province, for owner-occupied houses for 2006. Column (3) in shows that property tax rates (i.e. property taxes paid divided by household income) is highest in Ontario and Quebec, followed by Manitoba, Saskatchewan and British Columbia. Atlantic Canada and Alberta show relatively lower property tax rates. It is difficult to speculate as to reasons for each difference across provinces. Central Canada and British Columbia are urbanized, relative to other provinces, and have higher assessed property values, relative to Canada as a whole (and the reverse is true for Atlantic Canada). There may be different propensities to levy higher (or lower) tax rates among jurisdictions across provinces. Explaining such differences goes beyond the scope of this paper.

Column (6) shows that property-tax regressivity (as measured by  $RTB.1^4$ ) is higher in central Canada and Alberta, and lower in Atlantic Canada and Manitoba, relative to Canada as a whole. We suggest, using a simple correlation result<sup>5</sup>, that there is little relationship between property tax regressivity [column (6)] and average property tax rates [column (3)]. We will be discussing provincial differences in regressivity, in our property-tax

relief program section below.

For comparison purposes, we also calculated analogous income-tax progressivity indexes by province for 2006 – and these are shown in column (6) in Table 2. As can be seen, the personal income tax system is very progressive<sup>6</sup>. For Canada as a whole, the regressivity index is .15, as compared to 2.39 for property taxes. Discussing cross-province differences for this tax regime goes beyond the scope of this paper. But the income-tax index is somewhat less progressive for higher-income provinces such as Ontario, Alberta and British Columbia, and more progressive in poorer provinces such as New Brunswick, Nova Scotia and Newfoundland and Labrador.

We also investigate property-tax regressivity by homeowner age group, in particular, owner-occupied households headed by seniors, versus those headed by non-seniors. We estimate the median local property-tax burdens for three groups: all homeowners, homeowners aged 64 years and under, and homeowners aged 65-plus. We then take the ratios of median property tax rates, homeowners aged 65 year and above to those aged less than 64 years. These results are shown in Table 3. Column (1) – showing the median property-tax burden – is comparable to column (3) in Table 1. Column (4) in Table 3 shows the ratio of median property tax burdens, homeowners aged 65 years-plus to homeowners aged 64 years and under. The results show that seniors have a higher property tax burden than non-seniors. Ontario has the highest property-tax burden, with a seniors-to-non-seniors ratio of 1.93. Newfoundland and Labrador has the lowest property tax burden, with a corresponding ratio of 1.66. For all provinces and Canada, except for the province of Prince Edward Island, this ratio is over 1.5. To summarize, Table 3 shows that the property tax burden for homeowners aged 65 and over is higher than that for younger homeowners. Taking this information at face value, one might think that property tax relief programs should be directed mostly at seniors.

To summarize, this section provides evidence that – looking at homeowner statistics only – the property tax is considerably regressive. And the extent of this regressivity varies by province and by senior/non-senior-headed households.

#### **IV. Property Tax Relief Programs in Canada**

As we have shown above, property tax burdens can be high for low-income homeowners and households headed by seniors (Tables 1 and 3). Similar to property tax relief programs in the United States, Canada's provinces have also implemented analogous relief measures geared to targeted groups. However, the eligibility requirements vary across provinces. Such programs can be directed, for homeowners, to include all families, poor families, seniors, or poor seniors. Some programs include people with disabilities. But property tax relief programs are mainly geared to reduce tax burdens for lower-income families and seniors. In this section, we describe the various programs for the ten provinces, discussing the programs from east to west (see Table 4 and 5).

As can be seen by Table 5, all provinces in Canada, except Newfoundland and Labrador, have property-tax relief programs. Newfoundland and Labrador does, however, operate other tax relief programs for sales taxes and investment credits. Prince Edward Island operates two property tax relief programs: the Owner-Occupied Residential Tax credit Program and the Senior Citizen Real Property Tax Deferral Program. The purpose of the first program is to limit the annual property tax paid, for all homeowners, by keeping the increase in residential property taxes less than the annual CPI increase. The second program assists all eligible, home-owning seniors, who have

lived six months in the province, with an annual income of \$30-thousand or less. With the latter program, annual property taxes can be deferred without accumulating interest.

The Government of Nova Scotia operates two property tax relief programs: the CAP Assessment program and the Property Tax Rebate program. The CAP Assessment program limits the amount of annual increase in the taxable assessment value of eligible residential and resource property. It protects all Nova Scotia property owners from possible increasing market value assessment. The Property Tax Rebate Program provides a rebate up to \$400 for low income seniors. Eligible households who live in their home and receive either the Guaranteed Income Supplement (GIS) could get a 50 percent rebate on the previous year of municipal property taxes paid, up to a maximum of \$400 a year. In New Brunswick, lower-income people are eligible to receive a residential property tax credit, up to \$200 a year on the portion of assessed value, through the province's Property Assessment Service-Property tax Allowance. "Lower income" for this province is defined as where taxable income of any household and their spouse, or cohabitation of two persons as husband and wife, did not exceed \$20,000 a year. And as mentioned above, New Brunswick waives that portion of property taxes paid to the province (but not to municipalities), for all households, on property assessed as less than \$1-million.

The province of Quebec operates one property tax relief program: the Property Tax Refund. Any household, who was resident in Quebec on December 31 of the taxation year and earned less than \$18,467 a year, is eligible to receive the property tax refund. Here property taxes include school taxes and municipal taxes. Ontario also grants a property tax credit. Its purpose is to help low-to-moderate income families, who rent or own a principal house. People under 65 years of age can receive a tax credit of \$250 and people aged 65 or older can receive a tax credit from \$500 to \$625. This program, thus, is somewhat biased towards low-income seniors.

Manitoba operates the Education Property tax credit<sup>7</sup>, a program that provides assistance for seniors (aged 65 or older) who have income less than \$27,500 and young people who have income less than \$15,000. If a person is young (aged 16 to 64 years) and poor, that person could receive between \$525 and \$675. If a person is senior and poor, that person could get up to \$800 credit back. Saskatchewan also operates an Education Property tax credit. However, unlike Manitoba, Saskatchewan's property tax credit targets all homeowners, not just low-income people. All businesses can receive back 10 percent of property taxes paid, plus an additional two percent, from the existing program. The maximum cap for credit is \$2,500. In 2008, the education property tax credit has been increased by \$48.7-million to \$156.6-million.

Alberta operates what is called the Education Tax Assistance for Seniors program. This program is aimed to reduce the education property tax portion of seniors' property taxes. Essentially this program caps property tax payments, for seniors, at 2004 levels (the base year). The base year is moved up from 2004, for individuals who turned 65 after 2004, and for people who have moved after 2004. British Columbia operates a Home Owner Grant program, comprised of two parts: a basic grant for most homeowners and an additional grant for seniors and veterans. The basic grant can reach a maximum of \$570, but homeowners must pay a minimum of \$350 in property tax. The basic grant is incrementally reduced for homes assessed over \$1,050,000. For a senior and veteran, he or she can receive additional grants, by \$275, up to \$845. These grants are also incrementally reduced for homes assessed at \$1,219,000 or more.

To summarize, Prince Edward Island, Nova Scotia, New Brunswick, Saskatchewan and British Columbia have property tax relief programs available to all households. Prince Edward Island, Nova Scotia and Alberta have



relief programs targeting seniors only. Quebec, Ontario and Manitoba operate property tax relief programs targeting low-income families only.

## **V. Age-Based Equity Considerations and Property Tax credits for Seniors**

### *5.1 Equity and taxation*

Before whether or not to consider whether a specific property tax relief program is equitable, we have to set norms from which we can base our decisions. Accordingly, we first define horizontal equity and vertical equity.

Horizontal equity says that people in roughly the same economic situations (income, number of children, value of house, etc.) should pay the same tax. Most economists suggest that the personal income tax system, with certain exceptions as to tax exemptions, is horizontally equitable. But property taxes present us with difficult questions. If we take the value of a house as the key tax base, the property tax is horizontally equitable. If two families each own a \$400,000 house in a given locality, horizontal equity says that both should pay the same property tax. However, if a property tax relief program targets seniors only (for a given income group), and neglects non-seniors (for the same group), we can then say that province's tax relief program is horizontally inequitable.

Vertical equity says that households with lower incomes should pay proportionately less tax, relative to those with higher incomes. As was discussed in Section 3 above, households headed by seniors pay proportionately higher property taxes than do households headed by non-seniors. The effective tax rates are calculated using measured incomes and not income that includes imputed housing-service income (seniors have lower measured incomes). So at first glance, property tax relief programs targeting seniors would seem to be vertically equitable. But they are not. Some seniors have higher incomes and some non-seniors. If seniors have access to property tax relief programs simply because of their age, such programs are vertically inequitable.

### *5.2 Cash Payments to Support a House*

In this section, we want to introduce a concept not as yet considered in this paper. As suggested by life-cycle consumer theory, as homeowners age, they pay off their mortgages. As a consequence, their cash obligations to maintain their home – i.e. property taxes plus mortgages<sup>8</sup> – may not be that high. Indeed, such cash obligations may be proportionately less than families with heads aged less than 64 years. In Section 3 above, we showed that homeowners aged 65-plus have higher property tax burdens than homeowners under 65 years of age. Here we want to consider both mortgage payments and property tax payments, in consideration of true costs to operate a home.

Table 6 shows average mortgage payments, by homeowner age group, by province and Canada for 2006. The result shows what one would expect: the average mortgage payments of homeowners aged 65 years and over is much less than the average mortgage payments for homeowners aged less than 65 years. Column (4) in Table 10 shows the ratio of average mortgage payments, seniors to non-seniors. Quebec, Ontario, New Brunswick and Prince Edward Island show relatively higher ratios than the other provinces.

Table 7 shows the ratios of property cost (mortgage payments plus property tax payments) to income, in 2006, by province and Canada, by homeowner age. I.e., we take the data from Table 6, add property taxes paid, and

divide the result by the respective homeowner incomes. As can be seen by the table, the ratio of property costs to income is considerably less than homeowners aged 64 and under. For example, for Canada, the property cost ratio for homeowners aged 65 years and above (5.92 percent) is considerably less than the corresponding ratio (10.15 percent) for homeowners aged less than 65 years. Looking at these ratios for the ten provinces [scanning column (4) in Table 7], we see that the property-cost-to-income ratios – seniors to non-seniors – are relatively higher in the five central provinces (New Brunswick, Quebec, Ontario, Manitoba, and Saskatchewan).

These results suggest that homeowners headed up by seniors, in comparison to non-seniors, do not have a household cash-maintenance problem. We suggest that a large portion of seniors have paid off their mortgages, and consume (and earn) higher amounts of imputed housing income, in contrast to households headed by non-seniors. As a result, property costs for seniors, as a percentage of income, are lower.

### *5.3 Comparing median Property Tax Burdens and Property Tax Relief Programs*

In this section, we compare provincial property tax relief programs, for those programs devoted exclusively for seniors versus those addressing lower income households. We look at the mean property tax burdens (MPTB's), and ask which provinces (having differing programs) have the higher MPTB's. We want to see which groups (seniors or lower income households) need more financial help.

From Table 5, we see that Nova Scotia, Prince Edward Island and Alberta run property tax relief programs that target seniors only. For other provinces – New Brunswick, Quebec, Ontario and Manitoba – have tax relief programs that target lower income homeowners only. Three other provinces, New Brunswick, Saskatchewan and British Columbia, have property tax relief programs that target all households.

To determine which target group should be helped, we use median property tax burdens from Table 3 above and from Chu (2009)<sup>9</sup>. For those provinces operating tax reduction programs for seniors (Nova Scotia, Prince Edward Island, Alberta), we add and average MPTB's from Table 4:  $(3.0+2.80+3.63)/2 = 3.13$ . Analogously, for those provinces operating tax relief programs for lower-income homeowners (New Brunswick, Quebec, Ontario and Manitoba), we add and average MPTB's from the lowest 25 percentile group:  $(2.52+5.71+5.05+4.30)/4 = 4.40$ . We see that the average MPTB's for the latter group are higher. This is to say, the tax relief programs that target lower-income homeowners are helping homeowners with relatively higher property tax burdens, than is the case with senior homeowners. Since poor families have a higher tax burden than seniors, relief programs should target on A and C families (poor people), and not B and D families (richer people),

But what about property tax relief programs in New Brunswick, Saskatchewan and British Columbia, which target all homeowners? We suggest, without reference to MPTB data, that the MPTB's for these provinces are lower than comparative MPTB's for lower-income and senior groups. This is so since the property tax everywhere are regressive. For these provinces, we suggest that for equity reasons property tax relief programs should focus on lower-income families.

## **VI. Conclusions**

In this paper, we have made the case that, when we examine property tax incidence for owner-occupied

housing only, property taxes are regressive. As such, provinces may want to design property tax relief programs to assist targeted groups. (Looking at another tax regime, for example, the GST tax is regressive, and the federal government who instituted the tax brought in a GST relief program for lower income taxpayers). In this essay. We have argued that, analogously, property tax relief programs be designed to help lower-income households. We show that, looking at “property costs” – the amount paid for mortgages plus property taxes – seniors pay proportionately less, as a proportion of incomes, than do non-seniors. We also show that lower-income households have a higher median tax burden than do seniors taken as a homogeneous group. Consequently, designing tax relief programs geared exclusively to seniors is vertically inequitable.

For example, Alberta’s property tax relief program is particularly skewed. Its program is geared to all seniors, rich and poor. The province has no program to assist lower-income non-seniors. Yet we show that the property tax regressivity index for this province, at 3.32, is the highest of all provinces. Similarly, Prince Edward Island has a property tax relief program for all seniors (the Senior Citizen Real property Tax Deferral Program), in addition to a program for all homeowners (the Residential Tax credit). We suggest that this province’s seniors’ program could be expanded to include lower-income non-seniors as well.

Note that Prince Edward Island, New Brunswick and British Columbia operate tax relief programs for all owner-occupied households. But should such programs include richer households? According to principles of vertical equity, they should not. If provincial governments think that household property taxes are too high, in the aggregate, they should think about capping rising tax rates, and increasing grants to localities. For these two provinces, tax relief programs should be scaled back to benefit lower-income households only. Finally, we commend the remaining provinces – New Brunswick, Quebec, Ontario and Manitoba – that operate property tax relief programs geared to lower-income homeowners. It is these programs that are vertically equitable.

We mention, however, that this paper ignores households who rent living accommodations. These groups, as is well known, have lower incomes than is the case of homeowners. And if we use the same horizontal-supply curve model as is assumed in this paper, we can deduce that the property tax incidence would be borne by lower-income renters as well. This is to say, landlords would be able to pass property taxes fully to renters. We suggest, therefore, that property tax relief programs should be expanded to include renters. This is currently done in Ontario and Quebec.

## VII: References

[1] Baer, David, (2003), “State Programs and Practices for Reducing Residential Property Taxes” *Research Report*, Washington, DC: AARP, pp. 45-49.

[2] \_\_\_\_\_ (2007), “State and Local Property Tax Burdens in 2003”, Research Report, Washington, DC. AARP.

[3] Bowman, John H. (2006), “Property Tax Policy Responses to Rapidly Rising Home Values: District of Columbia, Maryland, and Virginia”, *National Tax Journal*, Vol. 59, Issue 3, pp. 717-733.

- [4] Davies, J. et. al. (1984), “Some Calculations of Lifetime Tax Incidence”, *American Economic Review*, vol. 74, no 4, pp. 633-49).
- [5] Edelstein, Robert (1979), “An Appraisal of Residential Property Tax Regressivity”, *Journal of Financial & Quantitative Analysis*, Vol. 14, No. 4, pp. 733-768.
- [6] Goodman , Jack (2005), “Houses, Apartments, and Property Tax Incidence” *Fannie Mae Foundation* , W05-2. A revision of a paper presented at the Annual Meetings of the American Real Estate and Urban Economics Association.
- [7] Hansen, Julia, John Fornby and W. James Smith (1998), “Estimating the Income Elasticity of Demand for Housing: A Comparison of traditional and Lorenz-Concentration curve Methodologies”, *Journal of Housing Economics*, Vol. 7, Issue 4, pp. 328-342.
- [8] Hyman, D. and J. Strick (2001), *Public Finance in Canada*, Harcourt, (2nd Cdn edition).
- [9] Kitchen, Harry (2003), CEPR II Project, AUCC “Property Taxation: Issues in Implementation”.
- [10] Musgrave, Richard, (1974), “Is a Property Tax on Housing Regressive?” *The American Economic Review*, Vol. 64, No. 2, Papers and Proceedings of the Eighty-sixth Annual Meeting of the American Economic Association, pp. 222-229.
- [11] Palameta, Boris and Ian Macredie (2005), “Property Taxes Relative to Income” *Perspectives on Labour and Income*, Ottawa; Summer 2005, Vol., 17, Issue 2, p. 17. Statistics Canada — Catalogue no. 75-001-XIE, March 2005.
- [12] Plummer, Elizabeth (2003), “Evidence on the Incidence of Residential Property Taxes Across Households” *National Tax Journal*, Vol. LVI, No. 4.
- [13] Rosen, H. et. al. (2003), *Public Finance in Canada* (2<sup>nd</sup> Cdn ed.) McGraw-Hill Ryerson.
- [14] Vermaeten, Frank et. al. (1995), “Who Paid the Taxes in Canada, 1951-1988”, *Canadian Public Policy*, Vol. 21, No.3.

**SHS 2006-table 1. (Property tax- all owner occupied households)**

	(1)	(2)	(3)	(4)	(5)	(6)
PROVINCP	HINC.H.ave	G010.H.ave	Percentage	MD1	MD4	RTB.1
Newfoundland	60460	894.8	1.48	2.47	1.12	2.21
Prince Edward Island	62465.2	1453.3	2.33	3.81	1.64	2.32
Nova Scotia	64285.8	1372.3	2.13	3.70	1.50	2.47
New Brunswick	60200.5	1139.5	1.89	3	1.29	2.32
Quebec	75677.7	2352.6	3.11	6.17	2.02	3.05
Ontario	93738.3	2978.1	3.18	7.07	2.15	3.28
Manitoba	71878.9	2079.1	2.89	5.16	2.17	2.37
Saskatchewan	71512.1	1910.2	2.67	5.33	2	2.67
Alberta	95933.7	1883.5	1.96	4.25	1.28	3.32
British Columbia	81080.2	2129.5	2.63	5	1.74	2.87
Canada	75176.9	1895.0	2.52	4.34	1.82	2.39

Notes:

- a. For all tables, HINC.ave: The average of total household income from earning, investment, government transfer payments and other sources before taxes (all householders) or before taxes for owned principal residences (only owner-occupied householders).
- b. G010.H.ave: The average property taxes paid, by homeowners.
- c. All variables have been explained on the appendix I.

Source: Statistics Canada, Income Statistics Division, 2006 Survey of Household Spending

**SHS 2006-table 2. Income tax- all owner occupied households**

	(1)	(2)	(3)	(4)	(5)	(6)
PROVINCP	HINC.H.ave	O201.H.ave	Percentage	MD1	MD4	RTB.1
Newfoundland	60460	11316.2	18.72	0	22.73	0
Prince Edward Island	62465.2	9314..5	14.91	3.57	17.48	0.204
Nova Scotia	64285.8	11735.2	18.25	1.92	20.45	0.094
New Brunswick	60200.5	10733.6	17.83	0.37	20.976	0.018
Quebec	75677.7	16154.0	21.35	5.33	25.33	0.210
Ontario	93738.3	20089.2	21.43	6.29	24	0.262
Manitoba	71878.9	16016.3	22.28	4.29	23.52	0.182
Saskatchewan	71512.1	14771.9	20.66	3.43	22.41	0.153
Alberta	95933.7	21800.1	22.72	7.29	24.64	0.296
British Columbia	81080.2	16397.0	20.22	5.69	22.18	0.257
Canada	75176.9	15359.3	20.43	3.39	22.8	0.148

Notes:

- d. For all tables, HINC.ave: The average of total household income from earning, investment, government transfer payments and other sources before taxes (all householders) or before taxes for owned principal residences (only owner-occupied householders).
- e. O201.ave: The average personal income taxes paid, by homeowners.
- f. All variables have been explained on the appendix I.

Source: Statistics Canada, Income Statistics Division, 2006 Survey of Household Spending

**Table 3. Ranking MRTB.1 , by age group, by province, 2006**

	(1)	(2)	(3)	(4)
<b>Canada</b>	<b>All Homeowners</b>	<b>Homeowners Under Age 65</b>	<b>Homeowners Age 65-Plus</b>	<b>MRTB.1</b>
Ontario	2.96	2.72	5.24	1.93
Quebec	2.89	2.73	4.77	1.75
Manitoba	2.6	2.43	4.14	1.70
Saskatchewan	2.51	2.35	3.77	1.61
British Columbia	2.42	2.26	3.81	1.68
Prince Edward Island	2.15	2.05	3	1.47
Alberta	1.89	1.81	3.62	2.00
Nova Scotia	1.88	1.7	2.80	1.65
New Brunswick	1.64	1.51	2.75	1.82
Newfoundland	1.27	1.17	1.94	1.67
Canada	2.25	2.08	3.59	1.72











Notes:

a. MRTB.1: Median relative tax burden

b. Rank follows with all homeowners of median relative tax burden

Source: Statistics Canada, Income Statistics Division, 2006 Survey of Household Spending

<b>Table 4. Labelling owner-occupied property-taxpayers: by age and income status</b>		
<i>Age \ Situation</i>	<b>Poor</b>	<b>Non-poor</b>
<b>Senior</b>	A	B
<b>Non-senior</b>	C	D

<b>Province</b>	<b>Program Title</b>	<b>Property Tax Relief Prgms</b>	<b>Maximum Household Income</b>
 <a href="#"><u>Newfoundland and Labrador</u></a>	N/A	N/A	N/A
 <a href="#"><u>Prince Edward Island</u></a>	O-O Residential Tax Credit Senior Citizen R-P-T Deferral Program	A, B, C& D A&B	N/A \$30,000/year or less
 <a href="#"><u>Nova Scotia</u></a>	Property Tax Rebate Program the CAP Assessment program	A A, B, C & D	(1) N/A
 <a href="#"><u>New Brunswick</u></a>	Property Tax Allowance Program	A & C	\$20,000/ year or less
 <a href="#"><u>Quebec</u></a>	Property Tax Refund	A & C	\$18,467/year
 <a href="#"><u>Ontario</u></a>	Property Tax Credit	A & C	(2)
 <a href="#"><u>Manitoba</u></a>	Education Property Tax Credit	A & C	\$15,000 for individual; \$27,500 for seniors
 <a href="#"><u>Saskatchewan</u></a>	Education Property Tax Credit	N/A	N/A
 <a href="#"><u>Alberta</u></a>	Education Property Tax Assistance for Seniors	A&B	N/A
 <a href="#"><u>British Columbia</u></a>	Basic and additional Home owner Grant	A, B, C & D	N/A

*Source: Various provincial government websites ; N/A = No relief program exists*

Notes:

- ◆ In each province of Canada, real properties have to be assessed under the Assessment Act and assessment of property is based on market value or actual value of real estates.
- ◆ In Canada, most of provinces have different property tax relief (rebates) except [Newfoundland and Labrador](#) and [Saskatchewan](#). eg tax rebate for PEI; residential property tax credit for NB; senior's property tax rebate for NS; transitional rebate for Quebec; tax relief for seniors program for Ontario; education property tax credit for Manitoba and Alberta; New tax relief for BC.
- ◆ PTR: Property tax relief
- ◆ (1): Seniors who receive GIS or GIA; (2): Complicated system, poor got full credit and low middle class got less.



**Table 6. Average Mortgage payments for homeowners age 65-plus, homeowners under age 65 and all homeowners in 2006 in Canada**

	(1)	(2)	(3)	(4)
	Homeowners Age 65-plus	Homeowners under Age 65	All Homeowners	Ratios
PROVINCE	Ave.Mort.H	Ave.Mort.H	Ave.Mort.H	(1)/(2)
Newfoundland	540.51	4202.74	3394.58	0.13
Prince Edward Island	815.91	5352.61	4414.36	0.15
Nova Scotia	627.22	5317.73	4145.10	0.12
New Brunswick	812.56	4413.44	3568.74	0.18
Quebec	1137.42	5670.04	4793.04	0.20
Ontario	1425.31	9626.85	7836.25	0.15
Manitoba	734.15	5588.75	4418.84	0.13
Saskatchewan	553.46	4794.47	3735.28	0.12
Alberta	1001.14	8519.53	7235.31	0.12
British Columbia	1075.30	10336.28	7908.31	0.10
Canada	888.99	6597.65	5307.88	0.13

Notes:

Ave.Mort.H: Average Mortgage payments for homeowners

Source : Statistics Canada, Income Statistics Division, 2006 Survey of Household Spending

**Table 7. Average Mortgage payments plus Average Property Tax Paid over household income for homeowners age 65-plus, homeowners under age 65 and all homeowners in 2006 in Canada**

	(1)	(2)	(3)	(4)
	Homeowners Age 65-plus	Homeowners under Age 65	All Homeowners	Ratios
PROVINCP	Ave.(Mort.PT)/Inc.H	Ave.(Mort.PT)/Inc.H	Ave.(Mort.PT)/Inc.H	(1)/(2)
Newfoundland	3.89	7.60	7.12	0.51
Prince Edward Island	5.03	10.09	9.39	0.50
Nova Scotia	4.65	9.35	8.58	0.50
New Brunswick	5.33	8.22	7.82	0.65
Quebec	7.27	9.73	9.44	0.75
Ontario	7.86	12.07	11.54	0.65
Manitoba	6.07	9.57	9.08	0.63
Saskatchewan	5.29	8.35	7.87	0.63
Alberta	5.43	9.90	9.51	0.55
British Columbia	5.98	13.58	12.39	0.44
Canada	5.92	10.15	9.59	0.58

Notes:

Ave.(Mort.PT)/Inc.H: Average Mortgage payments plus Average Property Tax Paid over household income for homeowners

Source : Statistics Canada, Income Statistics Division, 2006 Survey of Household Spending

---

<sup>1</sup> See, for example, Lee (2005, p. 4); Glasser, Kahn and Rappaport (2000); Geld (2008, p. 21), and Hansen, Formby and Smith (1998).

<sup>2</sup> For the purposes of this entire paper, we refer to “property tax rates” as “property tax rates paid by households divided by household income”. This is done for simplicity. But technically speaking, a property tax rate should be defined as being equal to a “mill rate”: property tax paid divided by value of assessed property. There are no mill rate or assessed property statistics used in this paper.

<sup>3</sup> The SHS includes the following spending components: shelter expenses, furnishings and equipment, communications, food, medicine and health care, education, taxes, insurance payments, and pension contributions. Each major component can be further broken down. Household equipment, for example, includes: washing machines, air conditioners, telephones, internet use from home, vehicles, and video cassette recorders. The SHS data also includes the characteristics of household by reference person (e.g., the type and age of individuals) and dwelling characteristics. Dwelling characteristics include: type of dwelling, tenure, repairs needed, principal cooking fuel, number of rooms and bathrooms, and so forth.

<sup>4</sup> RTB.1: the relative tax burden,  $RTB = MD!/MD4$ .

<sup>5</sup> The correlation coefficient is equal to .46.

<sup>6</sup> Note that Table 2 looks at income-tax progressivity for homeowners only (all tables in this paper show data for homeowners only). But all literature emphasizes the progressivity of the income tax in Canada, for all families.

<sup>7</sup> Manitoba terms its property tax credit the “Education Property Tax”, for spurious reasons, implying that the property tax revenues are dedicated to education expenditures. But this not true, since property tax revenues go into general revenues. In a similar way, New Brunswick’s old pre-HST sales tax was called the “Health and Social Transfer Tax”.

<sup>8</sup> We mention that, for simplicity’s sake, we exclude other costs of maintaining a house, such as insurance, electricity, heat, cleaning supplies, etc. We assume that these latter payments vary directly with the value of the house (and property taxes). We isolate mortgage payments, apart from these other costs, since mortgage payments decline with homeowners’ age.

<sup>9</sup> See Table 5 in Chu (2009, 28).

---

## Appendix I Table of Mnemonics

- a. HINC.H.ave: average household incomes before taxes for owned principal residences (only owner-occupied householders).
- b. PT.H.ave: average property tax expenditures for owned principal residences (only owner-occupied householders).
- c. MD1: The median of percentage of the first quartile of adjusted household income spent on adjusted tax.
- d. MD4: The median of percentage of the fourth quartile of adjusted household income spent on adjusted tax.
- e. RTB.1: The relative tax burden.  $(MD1/MD4)$ .
- f. PIT.H.ave: Average personal tax paid for owned principal residences (only owner-occupied householders).