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Poverty in Canada and the USA: Measurement, Trends and Implications

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**Luxembourg Income Study
Working Paper No. 236**

**Poverty in Canada and the USA:
Measurement, Trends and Implications**

Lars Osberg

July 2000

Poverty in Canada and the USA:
Measurement, Trends and Implications

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Abstract

This paper begins by asking how poverty in affluent countries should be measured, before examining recent evidence on poverty intensity and its social significance. Section 1 advocates use of the Sen-Shorrocks-Thon index of poverty intensity and introduces the “Poverty Box” as a summary graphical representation. Recently, poverty intensity has increased in Canada while falling in the US. Although on a national basis Canadian poverty intensity remained below that in the US, by 1997 many US states were indistinguishable from Canadian provinces. Fixed effects regressions across states and provinces using Generalized Least Squares and bootstrap standard errors indicate that changes in the unemployment rate, unemployment insurance and social assistance are significant determinants of changes in poverty intensity. Since changes in trade exposure were not statistically significant, the general moral is that trade liberalization does not preclude the macro economic and social policy choices which can improve poverty outcomes. The paper concludes with a discussion of the social significance of income poverty, and its relationship to social exclusion and fundamental human rights.

Although Canada and the United States are two of the richest countries in the world, many Canadians and Americans perceive themselves, and are perceived by others, to be poor - which raises the issue of how best to measure poverty. Within Canada, there are widespread worries that the self image of Canada as a place with relatively little poverty (somewhat “kinder and gentler” than the US), may be a bit outdated¹. International comparisons indicate that poverty in North America is relatively high, compared to many (but not all) European countries. Furthermore, poverty in Canada has been rising, while in the US it has been falling in recent years - which raises the issues of why that has been happening and what it will mean, in the longer term, for Canada and the US as a whole.

The paper therefore addresses measurement issues, recent developments in North American and European poverty and the social significance of income poverty. Section 1 stresses the importance of an appropriate index for poverty measurement. Section 2 presents recent data on poverty in Europe and North America and notes that between 1994 and 1997 Canadian provinces became quite similar to many US states in poverty intensity. Section 3 examines some hypotheses which might explain these trends while Section 4 addresses their social significance. Underlying the paper as a whole is the question: “Why do some places have more poverty than others?”

1.1 What is “Poverty” ?

In common language usage, poverty is about deprivation of necessities - the primary dictionary definition of "poverty" is "want of the necessities of life" Oxford (1998:1135). But what are the "necessities of life"? In my view, Adam Smith had the answer more than 200 years ago:

Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people.” (Vol. 2, Bk. V, Ch. II, Pt II, Art IV - 1961:400)

Although Smith was writing at a time when real living standards were a fraction of today's, he was in no doubt that prevailing social norms are crucial to the definition of "necessities" - and that social norms change over time, and differ across countries. More recently, Sen has put it fairly elegantly:

Relative deprivation in the space of incomes can yield absolute deprivation in the space of capabilities. In a country that is generally rich, more income may be needed to buy enough commodities to achieve the same social functioning, such as "appearing in public without shame". The same applies to the capability of "taking part the life of the community". (1992:115)

The practical problem, nonetheless, is how to define "want of necessities". In the literature, some have emphasized specific named commodities or total consumption, but most authors have focussed on the income sufficient to purchase necessities. Given the dimensionality of measurement, there is the twin problem of how to draw the poverty line initially, and how to revise it over time. A separable issue is *where* to draw the poverty line. A lot of discussion has revolved around whether the poverty line should be seen as "absolute" or as "relative".

The essential difference between these approaches is transparency. The "relative" approach to poverty measurement ties the poverty line explicitly to some aspect of the distribution of income while "absolute" poverty lines are based on a market basket of goods which, both initially and when revised, is *implicitly* linked to the prevailing income distribution - but not in a clear way.

A "relative" poverty line which is drawn as half the median income, or 40% of the average, is quite obvious about its link to current social data². The Low Income Cut-Off (LICO) methodology of Statistics Canada is equally clear about its link to the percentage of income spent on necessities by average Canadian households³. If drawn by individual researchers, the "market basket method" may be generous or stingy, depending on the propensity of the researcher, but in practice the researcher always has an idea of socially acceptable living standards. Minimum standards of housing, diet and

clothing are inevitably influenced by the society in which the analyst lives. As Saunders comments, in setting Australian budget standards: “Normative patterns must to some extent reflect the actual behavioural patterns of the population if their relevance is not to be severely circumscribed. In the area of food, for example, a diet consisting of lentils and brown rice may meet the dietary guidelines, but be of little relevance to the actual eating habits of the vast majority of Australians” (1998:7).

However, since market baskets are constructed by a variety of agencies, their problem is that the link to “normal living” is implicit, occasional and idiosyncratic, rather than explicit, continuously updated and standardized. The “absolute” approach derives much of its political appeal from its supposed objectivity - i.e. lack of transparency - but in 1992 available market basket estimates for a poverty line for a family of four in Toronto ranged from \$18,342 to \$30,402⁴. Furthermore, once the poverty line is drawn, the next issue is how to revise it over time as prices, commodity availability and the incomes of society change. Again, transparency is the crucial difference. As Fisher (1995:3) has documented: “When one turns to the context of actual history, there is an impressive body of empirical evidence from the United States, Britain, Canada and Australia that successive poverty lines developed as absolute poverty lines (emphasis in original) show a pattern of getting higher in real terms as the real income of the general population rises”.

Part of the reason why the “established rules of decency” evolve over time is the availability of new commodities (such as the telephone or television) which rapidly become part of everyday expectations and social life. As average incomes rise, legal standards and market structure change, making some cheap old goods and services unavailable (such as houses with outdoor plumbing, or stores that one can walk to). In addition, consumption norms (e.g. children sharing the same bed) change over time. Direct evidence on the evolution of social norms comes from the repetition, since 1946, of the Gallup poll question: “What is the smallest amount of money that a family of four needs

each week to get along in this community?”. Osberg (1984:70) noted that the average answer tracks median male earnings rather well.⁵

For all these reasons, this paper will use the commonly accepted international standard that the poverty line is one half median equivalent individual income and that the number of equivalent adults in each household can be calculated as the square root of household size. The equivalent income of each household member is calculated as household money income (including the value of near-cash benefits, like Food Stamps) after taxes and transfers, divided by the number of equivalent adults⁶.

The use of this concept of poverty implies a considerably lower poverty rate than use of the LICO, and 50% of the median can be criticized as too low⁷. [At \$20,766 (US) for a four person family in the US in 1997, it is well below Bernstein et al’s estimate (2000a:3,51) of a basic market basket in Baltimore of \$30,976 (after tax), or the \$28,182 average (after tax) of eighteen separate basic market basket calculations across the US.] However, it does enable a clear basis for international comparisons. Furthermore, although the calculated level of poverty changes, *rankings* of provinces and states are not much affected by choice of poverty line. As Osberg and Cyrus (2000) demonstrate, whichever poverty line is selected the correlation of poverty across Canadian provinces and US states is extremely high ($R^2 = .95$ or greater).

Although most poverty research (including this paper) ends up submitting to the constraints of the data and assuming that all individuals within households share equally in household resources, and have no claim on the resources of other households, these are strong assumptions about the social context of income flows. Since people typically live in households, and share consumption to some degree, the effective resources available to each person depend on the degree of inequality in the intra-household distribution of consumption. Phipps and Burton (1995:194) have demonstrated the potential importance of inequality within the family - the same Canadian family income data is consistent with

a child poverty rate (for two parent families) of as little as 5.9% if resources are equally shared or as much as 52.1% if resource sharing is minimal. However, this paper does not address these issues.

1.2 Summary Measures of Poverty

In the popular press, the poverty rate (the percentage of the population whose incomes lie below the poverty line) is the most commonly encountered poverty measure, supplemented occasionally by reference to the average poverty gap ratio (the average percentage shortfall of poor individuals' incomes below the poverty line). However, Sen (1976) noted that the former measure is insensitive to the depth of poverty and the latter ignores the number of poor individuals (and neither statistic is transfer sensitive). Since then the academic literature has gone in two directions. One strand (e.g. Davidson and Duclos, 2000; Xu and Osberg, 1998) has urged the use of dominance criteria and examination of the distribution of deprivation as a whole, while others (e.g. Blackorby and Donaldson (1980), Foster, Greer and Thorbecke (1984)) have attempted to establish a single index which is an ethically defensible aggregate measure of poverty.

Any single index number of poverty will embody a specific weighting of the deprivation of different poor people, and will therefore correspond to a specific social welfare function. However, one can avoid specifying a particular social welfare function, or a particular poverty line, by comparing the distribution of deprivation of poor people. A major problem with the deprivation dominance literature is, however, its inaccessibility. Although it can be argued that poverty measurement is pointless if the measures are never used in any policy debate, relatively few people (in academia or outside) fully understand what "stochastic dominance" means in practical terms. Furthermore, the establishment of a dominance relation is, by itself, not very informative since people often want to

know the size of policy impacts, as well as the sign. As a consequence, deprivation dominance criteria are little used outside academia.

Hagenaars (1986,1991) and Zheng (1997) have summarized the properties that an ethically defensible index of poverty should possess⁸. A particularly important consideration is that an acceptable measure of poverty should always register an increase in poverty whenever a pure transfer of income is made from someone below the poverty line to someone who has more income. This property is not possessed by the poverty rate, the poverty gap or, as originally formulated, the Sen index. To address this issue, Shorrocks (1995) proposed a modified Sen index - but since it is identical to the limit of Thon's (1979) index, this paper refers henceforth to the Sen-Shorrocks-Thon (SST) index of poverty intensity.

The SST index of poverty intensity combines the poverty rate, average poverty gap ratio and inequality in poverty gaps. Osberg and Xu (2000) show that it can be decomposed as⁹:

$$(1) \quad SST = (RATE) (GAP) (1+G(X)).$$

It is often useful to transform Equation (1) into:

$$(2) \quad \ln(SST) = \ln(RATE) + \ln(GAP) + \ln(1+G(X)),$$

where the term $\ln(1+G(X))$ is an approximate of $G(X)$ based on the first-order Taylor series expansion.

When comparing poverty over time or across jurisdictions, the percentage difference in poverty intensity can therefore be expressed as the sum of the percentage differences in the poverty rate, average poverty gap ratio (among the poor), and Gini index of inequality in the poverty gap ratios (among all people).

$$(3) \quad \Delta \ln(SST) = \Delta \ln(RATE) + \Delta \ln(GAP) + \Delta \ln(1+G(X)),$$

where $\Delta \ln(1 + G(X))$ is an approximation of $\Delta G(X)$.

In practice, changes over time (or differences between countries or Canadian provinces) in the inequality of poverty gaps $[1+G(X)]$ are empirically very small, especially when compared to differences in the poverty rate and average poverty gap¹⁰. Hence, the percentage change in poverty intensity can be approximated as the sum of the percentage changes of the poverty rate and the average poverty gap ratio.

One of the problems of the poverty literature is a disconnect between academia and the popular debate. Although theoretical advances in poverty measurement have been made in the academic community, “Standard academic practice and public policy debates, however, have been scarcely touched by these developments.”¹¹ (Myles and Picot, 2000:1). Overwhelmingly, the poverty *rate* remains the statistic of choice, for all its flaws.

However, equations (1) and (3) provide a straightforward decomposition of a more defensible index of poverty intensity which can be readily interpreted by policy makers, social science researchers and the general public. Equation 3 can be easily expressed verbally - for small changes, the percentage change in poverty intensity is the sum of the percentage change in the poverty rate and the percentage change in the poverty gap. Equation 1 has a simple graphical interpretation. Poverty intensity, like the volume of a box, is the product of three factors - RATE, GAP and $(1+G(X))$. Indeed, since the final term (representing inequality in poverty gaps among all persons) is virtually constant in empirical work, the Poverty Box can be represented in two dimensions as the product of RATE and GAP - i.e. the area of a rectangle, whose height is the average poverty gap ratio and whose width is the poverty rate.

Figure 1 presents Poverty Box comparisons of Finland, Canada and the US. The relative level and convergent trend of poverty intensity in Canada and the USA from 1994 to 1997 show up clearly. Since humans are better at extracting relative size information from graphs than from arrays of numbers, the Poverty Box offers an efficient way of presenting aggregate information, as well as enabling readers to disentangle the influence of changes in the rate, or the gap, on total poverty intensity.

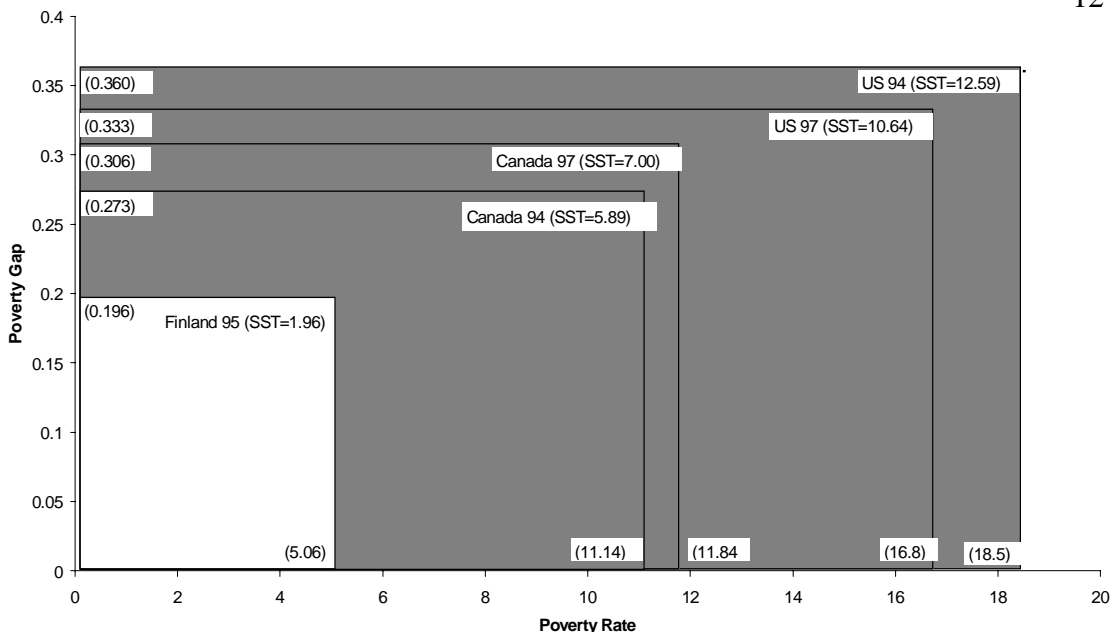
Myles and Picot (2000:4)¹² have commented: “A typical frustration of policy-makers is that incremental efforts to raise the incomes of the most indigent often have little impact on the poverty rate. The temptation in this situation is to move the goal posts to a lower poverty standard in the (usually misguided) hope that a lower cut-off will register the change. Changes that affect the most indigent are always reflected in measures of poverty *intensity*”. The use of a better measure of outcomes may obviate the tendency to “move the goalposts” and it may also have substantive policy implications. As Focus (1998:4) has pointed out : “According to conventional wisdom, U.S. antipoverty programs have not ‘worked.’” - a perception that is driven by trends in the poverty *rate*. However, policy makers are under pressure both to “show results” and to provide aid to the most indigent. If they follow Rawls (1971) and focus effort on the least well off, their successes will often be statistically invisible, since the poverty rate does not reflect the improvement in well being that comes with a reduction in the poverty gap. A better measure of poverty - like poverty intensity - may therefore be important in avoiding “false negatives” in policy analysis.

2. Recent Developments in Poverty Intensity

Figure 2 uses Luxembourg Income Study data to present the point estimate, and 95% confidence interval, of the SST index of poverty intensity between 1994 and 1997 in a cross section of countries. Table 1 presents the exact numbers, and a breakdown of poverty in Canada and the USA among those over and under 65. The change in poverty intensity in the United States (down) and Canada (up) from 1994 to 1997 is noteworthy, but it is also clear that in the same time period North European countries (such as Germany or Norway or Finland) continue to have significantly less poverty than either Canada or the US. The range of variation within Europe is quite substantial. Finland's poverty intensity (1.96) in 1995 was some seven points below the level in Italy (9.03).

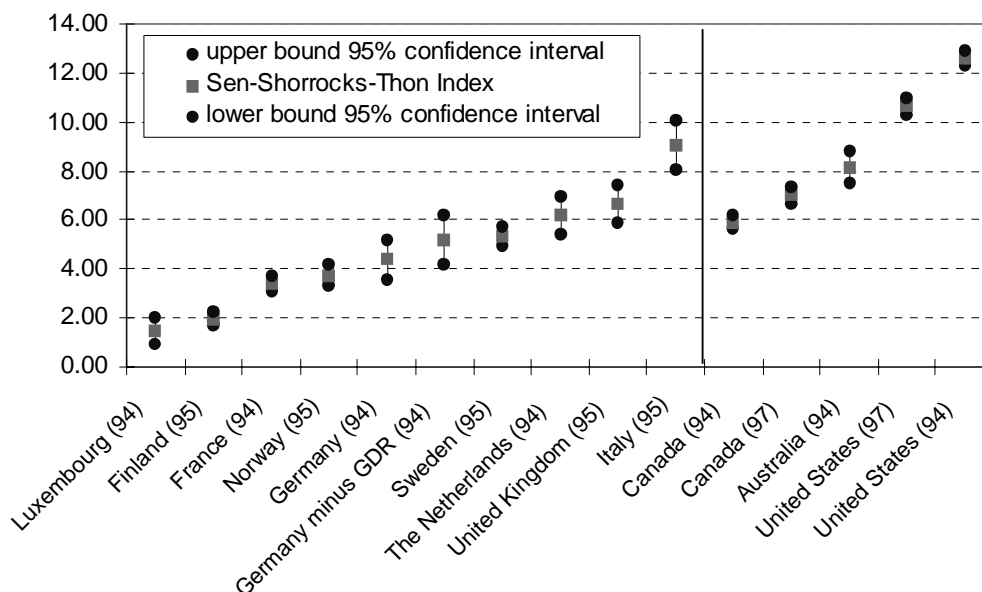
Although, on a national basis, Canada has less poverty than the US, differences in national poverty intensity between the two countries only emerged within the last thirty years. Poverty intensity in Canada was statistically indistinguishable from the US in the early 1970s (see Osberg and Xu, 2000), and likely higher in the 1960s. Over the period 1971 to 1994, Canadian social policy diverged from that in the US [see Card and Freeman (1993)], and Canadian and American poverty intensity moved in different directions. By the mid 1980s Canadian poverty intensity was clearly less than in the US at the national level. However, there is substantial variation within each country - in 1997, poverty intensity in Alberta (5.5) was well below Newfoundland (9.9), while Indiana (6.2) and Maryland (5.9) were eight points below Texas (14.2) and New York (13.9). Furthermore, since Ontario is almost 40% of Canada's population; while California, Texas, New York and Florida account for 31% of the US., the decisions of a relatively small number of state and provincial governments have a strong impact on national aggregates.

Figure 1
The Poverty Box
Poverty Intensity in Canada, USA and Finland
Poverty Line = 1/2 Median After-Tax Equivalent Income



Note: The SST Index of Poverty Intensity = (Rate)*(Gap)*(1+G(X)) where G(X)=Gini coefficient among all persons of poverty gap ratios. Because 1+ G(X) is nearly constant, it is not shown explicitly.
 Source: calculations by author using Luxembourg Income Study and Survey of Consumer Finance (households) data.

Figure 2
Poverty Intensity from 1994 to 1997



Sources: Author's calculations using the Luxembourg Income Study and the Survey of Consumer Finances-Households (Can Poverty line = 1/2 median equivalent after tax, after transfer income; equivalence scale is the square root of the number of p note: [95% confidence interval = mean +/- 2 standard deviations] of 300 bootstraps

Table 1 Poverty Intensity, Poverty Rate, Average Poverty Gap Ratio, and Gini Coefficient Among all Persons of Poverty Gap Ratios (bootstrap standard errors in parentheses)				
	SST	Rate (%)	Ave. Poverty Gap	(1+G(x))
Luxembourg (94)	1.456 (0.280)	3.893 (0.538)	0.1888 (0.026)	1.981
Finland (95)	1.962 (0.123)	5.061 (0.273)	0.196 (0.008)	1.972
France (94)	3.390 (0.155)	7.944 (0.290)	0.218 (0.007)	1.956
Norway (95)	3.745 (0.219)	6.869 (0.303)	0.277 (0.012)	1.965
Germany (94)	4.372 (0.391)	7.498 (0.543)	0.298 (0.020)	1.959
Germany minus GDR (94)	5.183 (0.506)	8.548 (0.677)	0.310 (0.021)	1.953
Sweden (95)	5.361 (0.197)	6.446 (0.199)	0.424 (0.010)	1.960
The Netherlands (94)	6.178 (0.390)	7.873 (0.429)	0.401 (0.020)	1.956
United Kingdom (95)	6.649 (0.376)	13.247 (0.550)	0.259 (0.011)	1.935
Italy (95)	9.034 (0.492)	13.844 (0.620)	0.340 (0.012)	1.917
Australia (94)	8.153 (0.344)	14.401 (0.487)	0.294 (0.009)	1.926
Canada				
1994 - All	5.891 (0.132)	11.136 (0.196)	0.273 (0.004)	1.935
- Elderly(≥ 65)	1.338 (0.119)	4.903 (0.278)	0.138 (0.009)	1.978
- Non-elderly(< 65)	6.465 (0.146)	11.943 (0.223)	0.281 (0.004)	1.929
1997 - All	7.004 (0.180)	11.843 (0.234)	0.306 (0.005)	1.932
- Elderly(≥ 65)	1.570 (0.133)	5.283 (0.289)	0.150 (0.010)	1.975
- Non-elderly(< 65)	7.718 (0.201)	12.730 (0.255)	0.315 (0.006)	1.925
United States				
1994 - All	12.594 (0.150)	18.526 (0.195)	0.360 (0.003)	1.888
- Elderly(≥ 65)	10.232 (0.290)	19.143 (0.397)	0.283 (0.005)	1.890
- Non-elderly(< 65)	12.892 (0.166)	18.447 (0.190)	0.370 (0.003)	1.887
1997 - All	10.637 (0.168)	16.813 (0.206)	0.333 (0.004)	1.901
- Elderly(≥ 65)	10.783 (0.286)	20.694 (0.447)	0.277 (0.005)	1.878
- Non-elderly(< 65)	10.614 (0.171)	16.282 (0.218)	0.343 (0.004)	1.903

Source: Author's calculations using the Luxembourg Income Study and Survey of Consumer Finance(Canada).

Furthermore, one of the general lessons from the international literature is the precariousness of the economic position of the poor. As Osberg and Xu (2000:72) note, there is no general international trend to greater poverty. In Luxembourg Income Study data, the number of statistically significant increases in poverty intensity almost exactly matches the number of declines. However, there are frequent examples of large changes in poverty intensity, within fairly short time frames. It is not difficult to understand why. Since the poor have little to start with, rather small percentage shifts in the distribution of national income can have large impacts on the well being of the poor¹³. As well, since many poor people depend heavily on transfer income, their economic well being is particularly exposed to shifts in the political winds - both local and national.

However, poverty among seniors has followed a different path than among those under 65. Following the introduction of Canada Pension Plan and the Guaranteed Income Supplement in 1967, poverty among Canadians over 65 fell dramatically - one of the major achievements of Canadian social policy. Social Security in the US has a much longer history, but in neither case has there been much change in recent years. These programmes imply that the probability of poverty among seniors is driven by a very different (and relatively unchanged) process than poverty among the non elderly. Furthermore, because seniors typically have no earnings, many of them have much the same income because it is derived from the same source and calculated by the same benefit formula, producing a distinct “spike” in the distribution of income of the elderly which is quite close to plausible definitions of the poverty line. Since measurement of poverty among seniors is therefore especially sensitive to small variations in income, poverty line or equivalence scale, this paper will henceforth focus primarily on trends in poverty among those under 65.

2.1 Recent Developments

As Figure 1 indicates, between 1994 and 1997 poverty rose in Canada, and fell in the US¹⁴. Overall, the changing poverty gap and poverty rate among the non-elderly dominated. In Canada, two

thirds of the increase in poverty was due to a larger poverty gap among the poor, but in the US most of the improvement came from a fall in the poverty rate. On a national basis, poverty in Canada remained significantly less than that in the US, but national averages hide a wide variation of outcomes across provinces and states. What trends do we observe at the state and provincial level?

Figures 3 and 4 compare poverty intensity in Canadian provinces and US states in 1994 and 1997.

In both figures provinces and states are ranked in order of poverty intensity as calculated when one draws the poverty line at half the median equivalent income of individuals in each country. Using a purchasing power parity exchange rate (0.79), one could also draw the poverty line at the real value of the US official poverty line or at the Canadian Low Income Cutoff (LICO). In all cases, the qualitative result is much the same. In 1994, Canadian provinces are almost all clustered at the bottom end of the distribution of poverty intensity, but by 1997 Canadian provinces are spread through the distribution. This result is strongest for the highest poverty line (the LICO) and least for the lowest (the US official poverty line) - Figures 3 and 4 highlight the intermediate case. It therefore appears that Canada's "distinctiveness" in social outcomes is rapidly eroding. What can explain this ?

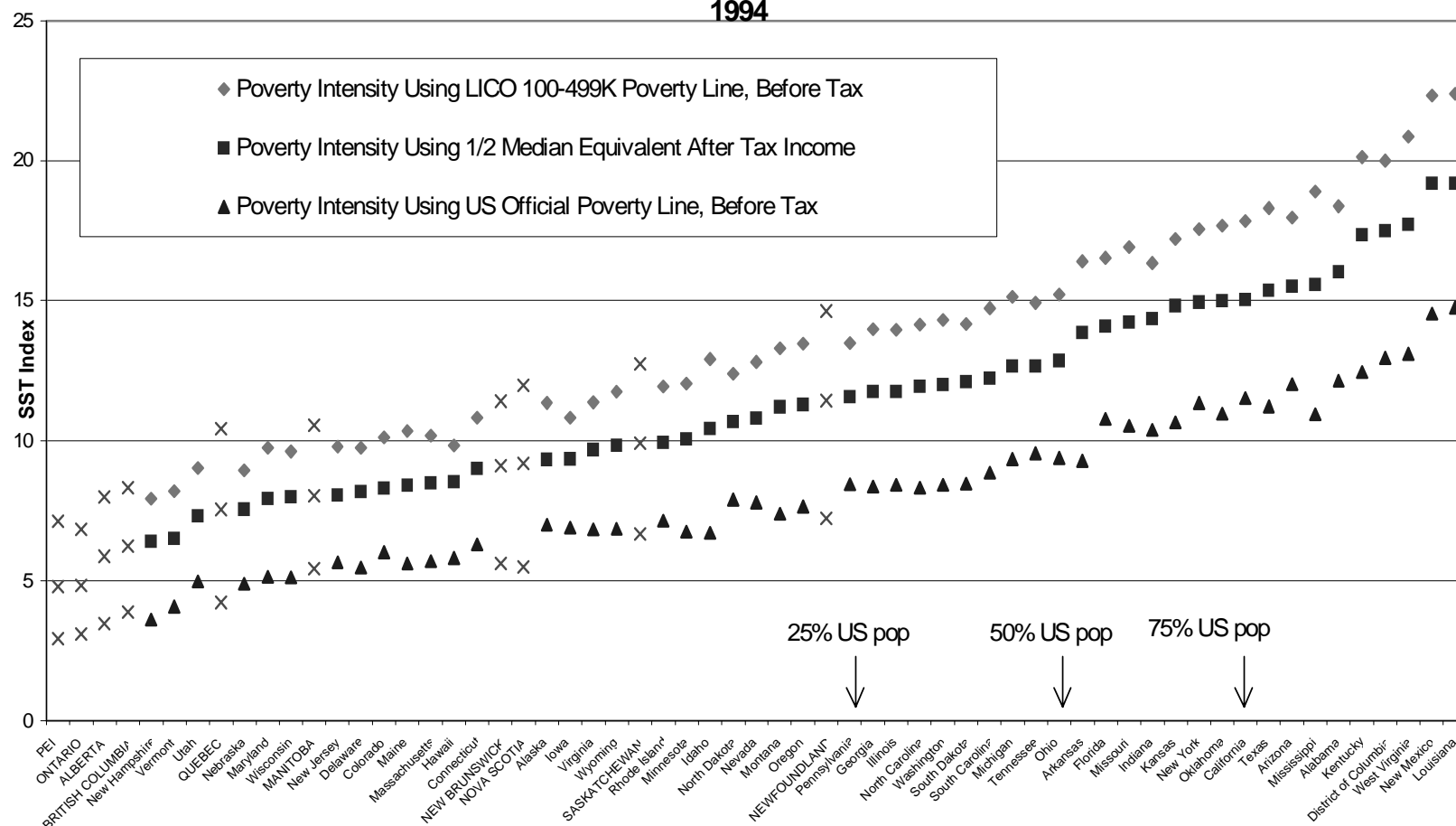
3. Explanations

This section tries to explain the 1994 to 1997 changes in North American poverty intensity, using a fixed effects model. Table 2 presents the results. Columns 1 and 2 use as dependent variable the change in poverty intensity of states/provinces when the poverty line is drawn relatively, as one half median equivalent individual after tax income. Since the US experienced significant growth in median real after tax income over this period, while Canadian incomes stagnated, a relative poverty line moves up in the US in real terms, but not in Canada. To check the robustness of results, columns 3 and 4 report the results obtained when poverty intensity is measured with respect to a constant real dollar poverty line - (the Statistics Canada's Low Income Cut Off :1992 base, city size of 100,000 to 499,999).

The fixed effects methodology implies that the *change* in poverty intensity is being compared to the *change* in possible explanatory variables. As a result, any systematic measurement error (as in choice of the “wrong” poverty line, or Canada/US or state/provincial differences in reporting of income (e.g. from the underground economy or household production) which might produce differences across provinces/states in *levels* will tend to “difference out”. During the 1990s, there have been significant changes in both Canada and the USA in macro economic conditions, social policy and international trade exposure, so primary attention is focussed on these issues.

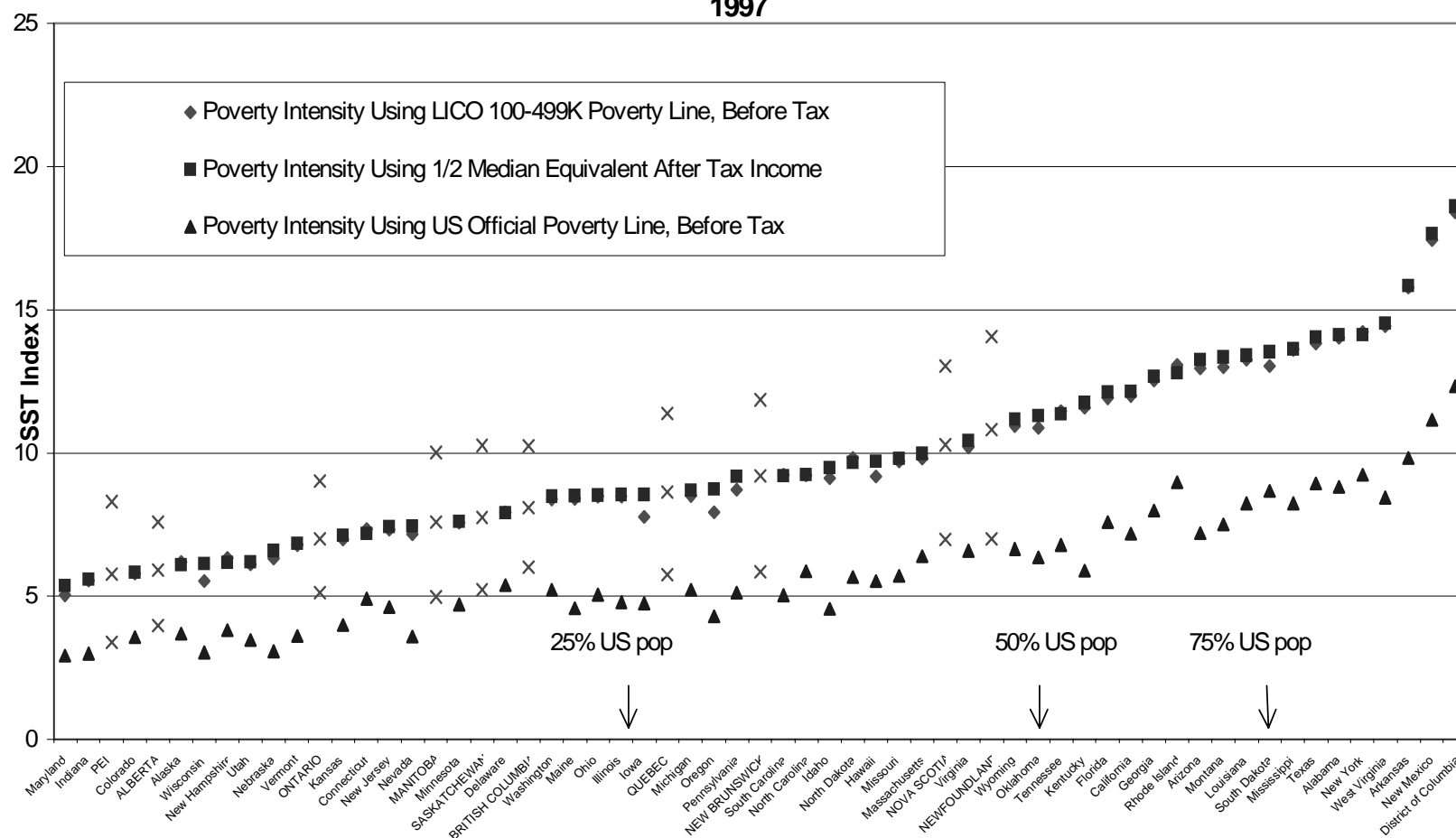
Poverty intensity depends partly on the difficulty of escaping poverty, and a key issue for the non elderly is the general availability of jobs. In explaining the decline in US poverty, Rebecca Blank puts primary stress on the strong US macro-economy. As she notes: “In times of high unemployment, it is disproportionately the less skilled who are unemployed, underemployed, working part time or out of the labour market, and it is these workers who benefit the most from an economic expansion (2000:7)”. However, during the 1990s, US and Canadian unemployment experience has diverged substantially. In explaining this, Fortin (1996) and Riddell (1999) have laid primary emphasis on the divergent monetary policies of the US Federal Reserve and the Bank of Canada. The adoption of an explicit target range of 1% to 3% for inflation in Canada has not been emulated by the USA and the Federal Reserve continues to emphasize the costs to output and employment of such a one dimensional perspective on monetary policy¹⁵. Blank emphasizes the importance for poverty outcomes of the US Federal Reserve “managing monetary policy so that it does not choke off the expansion”(2000:13), but the Bank of Canada has followed a different course. For present purposes, this divergence in policy choices is important, because it may be that the economic insecurities which are popularly associated with technology and greater trade liberalization would be better focussed on monetary policy choices.

Figure 3
Poverty Intensity in Canada and the United States
For Those < 65 Years of Age
1994



Sources: Authors' calculations using the Luxembourg Income Study (US) and the Survey of Consumer Finances-Households (Canada)
 Dollar values converted using purchasing power parities (.79 US \$ per Can. \$). States and provinces ordered by the
 SST index using 1/2 the median equivalent after-tax income poverty measure.

Figure 4
Poverty Intensity in Canada and the United States
For Those < 65 Years of Age
1997



Sources: Authors' calculations using the Luxembourg Income Study (US) and the Survey of Consumer Finances-Households (Canada). Dollar values converted using purchasing power parities (.79 US \$ per Can. \$). States and provinces ordered by the SST index using 1/2 the median equivalent after-tax income poverty measure.

Table 2 Determinants of the Change in Poverty Intensity¹ in Canada and the United States from 1994 to 1997 - for those less than 65 years of age Estimation Method GLS²				
	poverty line=1/2 median equivalent after tax income ³		poverty line=Canada's before tax LICO ⁴ for residence size 100,000- 499,999 @ ppp	
Intercept	-0.617 (0.495)	-0.681 (0.501)	-3.084* (0.595)	-3.159* (0.602)
Change in Male 25-54 Unemployment:				
Rate	--	0.797** (0.362)	--	0.746*** (0.434)
ln (Rate)	3.611** (1.455)	--	3.445*** (1.731)	--
Change in Unemployment Insurance:				
average weekly benefits (1997 Can \$)	-0.039* (0.013)	-0.041* (0.014)	-0.045* (0.015)	-0.048* (0.016)
beneficiaries/unemployed	-5.819*** (3.066)	-7.178** (2.958)	-10.805* (3.683)	-12.146* (3.549)
Change in Social Assistance Generosity				
weekly benefit amount - one parent, one child (Can \$) ⁵	-0.029*** (0.016)	-0.035** (0.016)	-0.051* (0.019)	-0.057* (0.019)
Change in Trade:				
Import Exposure	46.821 (48.535)	56.497 (52.035)	28.481 (59.793)	36.377 (63.851)
Export Exposure	-73.115 (49.474)	-83.467 (51.034)	-30.486 (61.091)	-39.889 (62.865)
Adjusted R ²	0.355	0.340	0.490	0.480
n	60	60	60	60
* significant with 99% confidence **significant with 95% confidence ***significant with 90% confidence 1.Sen-Shorrocks-Thon Index (SST) where SST=(Poverty Rate %)*(Relative Poverty Gap)*(1+(G(X)) where G(X)=Gini coefficient among all persons of poverty gap ratios; 2. Generalized Least Squares estimates using bootstrap standard errors. 3. LIS equivalence scale [=N ⁻⁵]. 4. See footnote 5 in text; converted to US dollars using ppps (0.79). 5. In the US includes Aid for Families with Dependent Children/Temporary Assistance for Needy Families and food stamps. Note: excludes the District of Columbia				

To account for the influence of macroeconomic conditions, this paper uses the male unemployment rate (ages 25 to 54) for each province/state for 1994 and 1997. However, the impact of aggregate labour demand on poverty is unlikely to be linear. When unemployment rates are high, a one percentage point shift may largely produce changes in the employment probability of middle class workers, but as the labour market tightens up, employers have to start to consider more seriously the job applications of the disadvantaged. Hence, the preferred specification is the natural logarithm [$\ln(\text{unemployment})$], since that gives greatest weight (in reducing poverty) to changes in unemployment which occur at low levels of unemployment.

Although variations in unemployment will cause changes in earned income, jobless individuals may escape poverty if they can claim unemployment benefits and if those benefits adequately replace lost earnings. There is an enormous literature on unemployment insurance and its impacts. Atkinson and Micklewright (1991), Myatt (1996) and Osberg (1996) have, for example, surveyed the evidence on the connection between unemployment compensation and unemployment and have stressed the complexity of UI systems and the inadequacy of a simple story of UI disincentives. Sargent (1995) has noted that a variety of indices of UI have been used in the Canadian literature, often imposing arbitrary assumptions, such as the time horizon over which labour/leisure choices are made.

Researchers face difficult choices in attempting to summarize a complex system such as UI in a small number of variables¹⁶. That difficulty is magnified when the system changes structurally (as in 1996 in Canada) and when the point at issue is a comparison with the “generosity” of an amalgam of 50 heterogeneous state systems, which differ somewhat from each other and have had a quite different structure from Canadian UI. As a consequence, direct comparisons of US and Canadian UI are surprisingly rare¹⁷ - Moorthy (1990) is one of the few to attempt a pooled state/province regression. This paper thinks of UI as involving two key issues - the probability of getting benefits (modelled as

unemployment insurance beneficiaries as a percentage of the number of unemployed) and the value of benefits if received (average benefits per beneficiary)¹⁸.

Although social assistance systems also have many complex provisions, a plausible index of overall generosity is the maximum amount a single parent with one child would receive for one week. The National Council of Welfare calculates an annual amount for each Canadian province, including all provincial benefits and federal tax credits, which is prorated to a weekly basis. For the states, the food stamp amount and the AFDC/TANF monthly amounts are added together and prorated. All payments are calculated in 1997 Canadian dollars using purchasing power parities and the relevant inflation rate.

In Canada, the supposedly homogenizing effect of free trade was a prominent part of the “Great Debate” over FTA and NAFTA - is the recent convergence in poverty due to trade liberalization? However, despite having had internal free trade for over 200 years, income inequality and poverty outcomes vary a lot within the USA.¹⁹ A wide range of social welfare payments are made by states. One reason why different policy regimes can continue to exist at the state and provincial level is the fact that choice in antipoverty policy comes relatively cheap.

In 1997, average social assistance benefits per recipient (AFDC/TANF plus food stamps) in Vermont were \$287.10 (US), almost the same as in Minnesota (\$289.50) but much above Texas (\$132.50) and Mississippi (\$107.20). At such low income levels, these differences in benefits make a huge difference to the personal well being of recipients, but it is unlikely that US taxpayers notice much impact. Across US states, in 1997 total AFDC/TANF expenditures plus food stamps averaged 2.51% of state revenues²⁰. At this level, differences in state expenditures are unlikely to motivate any appreciable movement of capital or labour. It is clear that antipoverty policy is not about what local government can “afford” to do, and not about what competitive markets and trade liberalization “make” them do - it is about choices. The heterogeneity in outcomes and policies should induce some

scepticism about the homogenizing effects of trade - but what is the independent impact of trade exposure?

The exposure of a state or province to international trade can be modeled as the product of the industrial composition of the labour force and the trade exposure of industries. Although popular discussion often focuses on job loss and the negative impact of imports on employment, regions in which exports grow rapidly are also part of the trade dependency story. Because the hypothesis that import and export exposure has different impacts nests the hypothesis that their impacts are similar, and because provinces and states differ considerably in relative exposure to imports/exports, this paper constructs measures of both import and export exposure. The variable consists of the product of the proportion of the state's or province's labour force by industry²¹ and the trade exposure of each industry - exports (imports) by industry as a proportion of the output of that industry at the national level.

This paper asks whether the change in poverty intensity in provinces and states observed between 1994 and 1997 can be explained by changes in trade exposure, aggregate unemployment, social assistance or unemployment insurance. The sample size used to construct estimates of poverty (particularly for the smaller US states) is sufficiently small that some state rankings are not statistically meaningful²². However, the data do provide an unbiased estimate of each state's characteristics, albeit with a standard error of estimate due to sampling variability. This paper therefore uses a bootstrap procedure to compute the standard deviation of the SST index of poverty intensity,²³ and generalized least squares to assign to each observation a weight inversely proportional to its bootstrap standard error of estimate.

Columns 1 and 2 of Table 2 present the GLS estimates obtained when poverty intensity is calculated with reference to a relative poverty line while columns 3 and 4 report the results obtained when the SST index is measured with respect to a fixed real dollar poverty line. The primary difference

in results is that the unemployment insurance and social assistance coefficients are larger when poverty is measured in absolute terms than when it is measured relatively. Comparing columns 1 and 2 with columns 3 and 4, the change in impact of the probability of receiving any UI benefits is particularly notable. In Canada, the change in poverty criterion has the effect of counting more of the working poor - for whom marginal changes in benefit replacement have much less impact than total denial of benefits. As Osberg and Phipps (1995:51) noted, in Canada in 1994 “Households with unemployment who do not receive UI experience extremely high rates of poverty”. In general, in either specification, estimated coefficients have the expected sign and are significant and of plausible magnitude.

Over all, between 1994 and 1997 poverty intensity for the non elderly fell by 2.28 points in the US and rose by 1.26 points in Canada. In the two largest jurisdictions the swing was even larger - a fall of 2.9 points in California, compared to a rise of 2.2 points in Ontario. Both the logarithmic specification in Columns 1 and 3 and the linear specification in columns 2 and 4 imply that a decline in unemployment similar to that which occurred in California (from 8.7% to 6.2%) would produce a decline of between 1.3 and 1.9 points in poverty intensity. Ontario also had a fall in unemployment in this period, which the results of Table 2 indicate would have cut poverty by 0.9 to 1.6 points.

However, Ontario also experienced an increase in trade exposure and cuts to (Un)employment insurance and social assistance. The impact of changing trade exposure is the net effect of exports and imports. In Table 2 the coefficient on the change in trade exposure is always insignificant²⁴. Overall, in Ontario’s case the net impacts of UI cuts and trade exposure approximately balance the positive impact of declining unemployment. The regression results of Table 2 imply that Ontario’s 21% cut to social assistance payments in 1996 largely accounts for the rise in poverty intensity observed there.

In the longer term, poverty trends will be influenced by the success or failure of the educational system in equipping entering cohorts of workers for the labour market. However, the stock of educational qualifications changes at the margin, to the extent that the characteristics of entering

cohorts differ from those of retirees, so change is necessarily a rather slow process. Hence, the education system cannot be expected to have much influence on poverty intensity in a three year time span. Similarly, variables like the unionization rate or the degree of labour market discrimination do not change much in three years. The advantage of looking at the *changes* in poverty intensity by jurisdiction is the fact that first differencing reduces the possible influence of measurement errors and unobserved variables - the disadvantage is that variables that change on longer time scales also “difference out”.

As well, cross sectional regression results are bedeviled by a surfeit of possible explanatory variables (relative to the degrees of freedom available) and by the necessity of constructing summary statistics to encapsulate the influence of complex systems, such as UI. Micro data on individuals offers researchers far more degrees of freedom in a statistical sense, but at the cost of fundamental uncertainty as to whether the researcher is estimating the relative advantage that personal characteristics provide or the absolute impact of characteristics on income. A correlation between low individual education and poverty can, for example, be interpreted either as reflecting the *relatively* low position in the job queue of the less credentialed or as indicative of *absolutely* lower labour productivity. The social returns to education implied by the two hypotheses are very different - if more education just means that the recipient moves up a queue, some one else loses relative position and there is no net decline in poverty.

Over all, the results of Table 2 are consistent with the hypothesis that changes in macro economic conditions, unemployment insurance and social assistance are important determinants of the changes observed in North American poverty in the 1990s. The lack of significance of trade exposure is consistent with the continued heterogeneity of policies and outcomes among US states, despite many years of free trade. The fixed effects results are in general also consistent with the cross sectional levels results reported in Osberg and Cyrus (2000).

The general moral of this section can therefore be summarized as “choices to make”. Policy choices matter. Despite the greater exposure of all jurisdictions to international trade, it is clear that some jurisdictions continue to make macro economic and social policy choices which imply less poverty at the local level. What is the significance of this?

4. Social Significance - Does Low Annual Income Matter?

With only a few exceptions,²⁵ the poverty literature uses an annual accounting period. In general, poverty indices are unaffected by when income is received during the accounting period or by what happens to individuals before or after. However, for poverty measurement a year is both “too short” and “too long” a period of time. If the issue is income adequacy, a year can be too long a period - indeed those who have no money, no credit and no groceries can get very hungry in much less than a week. As a consequence, social agencies have always had to recognize the existence of *immediate* needs for assistance. On the other hand, if the issue is the social and psychological impacts of poverty, then long term poverty will be the focus. As well, the long-term poor are clearly worse off than the short-term poor, other things equal. Analysts who share the concern of Rawls (1971) for the “most disadvantaged” will therefore be most concerned with the long term poor and with shifts in the distribution of poverty spell durations which increase the prevalence of long durations.

An annual time frame is thus an awkward compromise. Pendakur (1998) and others have also argued that well being depends on consumption, not income, and hence consumption should be the focus of measurement. Income-based measures of poverty are imperfect indicators of consumption deprivation, since some individuals with low income can sometimes get access to credit, run down their stock of consumer durables, beg from friends and family, etc. However, although credit markets for consumption smoothing are easily available to the affluent, the same is usually not true for the poor²⁶. Furthermore, the longer and the more frequent spells of low income are, the higher is the probability

that buffers to current consumption will be exhausted, and the greater will be the actual material deprivation that corresponds to poverty in current measured income.

The duration and frequency of low income spells, in combination with credit constraints, is therefore crucial to the real extent of economic deprivation. As well, much social concern with poverty is based on the adverse psychological and sociological implications of poverty - especially for children, but also for adults. For any given set of social norms, these impacts may be relatively small for short-term deprivation (e.g. a middle class divorcee who remarries quickly) but will increase with the duration of an individual's poverty experience. Moreover, social norms and the social stereotypes associated with low income status probably depend heavily on the distribution of poverty durations. A given rate (or depth) of poverty may be produced by either a high turnover/short duration process or a low turnover/long duration process. The degree of stigma that low income implies depends partly on whether a poor person lives in a society where quite a few of today's non-poor have in the past experienced a short duration poverty spell, or whether the poor live in a community in which a preponderance of long duration spells, among a small minority of the population, has created a pervasive set of social stereotypes.

As a practical matter, poverty measurement has historically been constrained by the limited number of high quality longitudinal data sets that are available, and the small sample size of those (such as the PSID) that do exist. Measures of poverty that incorporate a duration dimension have also not been common (but see Osberg and Xu ,1999b). Poverty researchers have also focussed on annual income for the practical reason that most low income households consume almost all their income, and income is arguably somewhat more reliably measured than consumption²⁷. However, new data sets (such as Statistics Canada's Survey of Labour and Income Dynamics) are becoming available, which will enable researchers to track individuals as they move through a sequence of households, which each vary in duration and frequency of low income spells. The duration dimension of low incomes, and the

actual degree of credit availability and consumption inadequacy for low income households, is also crucially important for evaluation of social insurance programmes.

However, although duration issues are likely to be important areas on the future research agenda, in the end it would be odd if economists were to conclude that annual income is unimportant for those who have the least of it. Although there is a literature on subjective well being that finds “surprisingly small correlations” between income and self reported happiness (see Diener and Suh, 1997:201), economics as a discipline relies heavily on the idea that annual money income does matter - and any degree of diminishing returns implies that it matters most for those who have least.

A more profound critique questions the relationship between income poverty and “capabilities”. Sen (1999:87) has argued that “poverty must be seen as the deprivation of basic capabilities rather than merely as lowness of income.” The use of the term “merely” is partly due to context. Since Sen is writing about international development issues, he is concerned about such restrictions on human capability as the purdah imposed on Afghan women by the Taliban regime, or the importance of basic literacy to life choices. These extreme forms of non monetary deprivation are not present in the North American context, but the general issue that Sen is raising is the substantive freedom of the poor.

Sen has argued (1999:90) that “What the capability perspective does in poverty analysis is to enhance the understanding of the nature and causes of poverty by shifting the primary attention away from *means* (...viz., income) to *ends* that people have reason to pursue, and, correspondingly, to the *freedoms* to be able to satisfy these ends.” Since he also argues (1999:74) that one should evaluate social outcomes in terms of the “substantive freedoms - the capabilities - to choose a life one has reason to value” which individuals actually possess, the capability perspective broadens the discussion of poverty beyond budgetary limitations on the purchase of market goods.

Sen's work reminds us that the "social wage" of public services in health care, education and the urban environment (e.g. mass transit) is even more important to the poor than to the affluent, since the poor do not have the money with which to purchase market substitutes. If individuals are to have substantive freedoms, they need access to economic resources. In many countries, the public sector has historically been an important provider of such access. At any point in time, as Smeeding et al (1993:229) note when comparing countries, "noncash income reinforces the redistributive impact of conventional (cash) tax-transfer mechanisms".²⁸ However, over time changes in the "social wage" clearly have a major impact on the degree of real deprivation that corresponds to a given deficiency in money income.

In drawing the link between poverty, capabilities and freedom, Sen is echoing a long tradition in the human rights literature. For example, United Nations General Assembly Resolution 32/130 of 1977 stated that "All human rights and fundamental freedoms are indivisible and inter-dependent. ... The full realization of civil and political rights, without the enjoyment of economic, cultural and social rights is impossible".²⁹ In 1948, The Universal Declaration of Human Rights specified a fairly comprehensive list of economic rights - declaring, for example, in Article 25 that:

"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other loss of livelihood in circumstances beyond his control."³⁰

The actual exercise of human rights typically requires a basic level of economic resources. For example, Article 12 of the UN Universal Declaration of Human Rights asserts a right to privacy, but it is entirely unclear what "right to privacy" the homeless have in actual fact. Privacy requires control over a definable personal space, which, in a market economy, generally requires the ownership of property or the income with which to rent property. The lack of such income (or an equivalent in-kind transfer) can therefore be seen as a human rights issue. Atkinson has commented that "A minimum

rights approach to the measurement of poverty may lead us to adopt the simple head-count”(1998:49), since deprivation of basic human rights can be seen as an either/or condition.³¹

Furthermore, underlying such rights as freedom of conscience and religion (Article 18), opinion and expression (Article 19) or assembly and association (Article 20) is the conception that individuals have the right to participate freely and responsibly in the life of their communities. The connection between poverty and “social exclusion” (generally thought of as the inability to participate in the normal activities of society) is therefore of great importance. In recent years, the term has become prominent in the European literature. From Adam Smith to Amartya Sen, exclusion has always been a large part of the concept of poverty and the concerns which surround it. However, social exclusion is clearly something more than poverty, since unemployment, disability and discrimination can all be powerful barriers to social participation, even if income flows are adequate.

As Saunders (1998:39) has commented: “central to any realistic definition of poverty (is) that poverty involves involuntary restrictions on choice and that it is socially specific, grounded in a particular society or culture”. Hence, delineating the conceptual and empirical links between income poverty, capabilities, basic human rights and social exclusion, *in the North American context*, is an important set of research issues. Money income deficiency is far from the full story. However, in the measurement and analysis of poverty, annual money income is also a commonly measured variable with a clear, common sense rationale. Although it is an imperfect indicator of “want of the necessities of life”, future research on poverty will undoubtedly focus on tracing out the combinations of social wage, household assets and money income flows that can prevent deprivation of capabilities and social exclusion.

4.2 Why might Poverty matter?

Clearly, income poverty affects many people directly right now, because they are currently poor. Moreover, in a turbulent labour market with shrinking social welfare programmes, the probability and depth of potential poverty affects the sense of economic insecurity with which many non poor contemplate the future³². However, although poverty has been discussed for centuries, very little of the discourse on poverty was actually written by the poor or near poor. So why have the non poor cared about poverty? In 1683, Sir Matthew Hale, Lord Chief Justice of Kings Bench, gave three reasons:

“A due care for the relief of the poor is an act,
 1, ..of great Piety towards Almighty God, who requires it of us;.....
 2 ...of greatest Humanity among men. Mercy and Benignity is due to the very Beasts that serve us, much more to those that are partakers of the same common nature with us.
 3... of great Civil Prudence and Political Wisdom: for Poverty in it self is apt to Emasculate the minds of men, or at least it makes men tumultuous and unquiet. Where there are many very poor, the Rich cannot long or safely continue such.”

Among the securely affluent, concern with poverty has always been motivated by a mixture of ethics, humanitarian empathy and enlightened self interest - an uncertain mix which may explain some of the conflicting emphases one observes in the analysis of poverty.

Moralism may not necessarily produce a positive concern for the poor³³. One way for the affluent to justify rejection of concern about poverty is to assert that the poor are morally deficient and the authors of their own misfortune. The distinction between “deserving” and “undeserving” poor has thus long been a staple of the poverty debate. Adam Smith captured both the relative nature of poverty and the shame (and social exclusion) produced by a prevailing moralistic evaluation of the causes of poverty when he wrote:

“A linen shirt, for example, is, strictly speaking, not a necessary of life. The Greeks and the Romans lived, I suppose, very comfortably, though they had no linen. But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful state of poverty, which, it is presumed, no body can fall into without extreme bad conduct.”³⁴”

The moralistic element in the poverty debate is surely part of the reason why one strand of the current literature narrows the focus of discussion to the poverty of children, whose clear lack of power presumptively identifies them as “deserving”. However, part of the concern of the affluent with child poverty also undoubtedly stems from an “enlightened self interest” motivation. Although today one would likely say that poverty causes sub-optimal investment in human capital, rather than use the more colourful phrasing of 1683 that poverty “is apt to Emasculate the minds of men”, the underlying idea has much in common - and the endogenous growth literature would now add that the long run economic growth rate will be higher when the children of the poor can acquire human capital³⁵.

Concern with child poverty as a denial of “equality of opportunity” may also have blended motivations. For some people, such concern is ethically motivated. Many economists have emphasized Rawls’ argument that “Justice as fairness” entails maximizing the well being of the least advantaged. However, this ethical perspective would surely motivate a concern with the long term poverty of all persons, not just children. An equally important criterion for Rawls is that any inequalities in offices and positions are “open to all under conditions of fair equality of opportunity”(1982:162), which does mandate special consideration for the life chances of poor children. “Equality of opportunity” may also appeal to the enlightened self interest of the affluent, based on the political judgement that a perception of fairness is essential for long term political legitimacy. In a secular age, the capitalist system cannot depend on the sort of “divine will” rationales for inequality that feudalism could rely on, so maintaining belief in “equality of opportunity” is important for political legitimacy. And since children live in families, it is not really possible to address child poverty, independent of the poverty of their parents.

There is good reason for a concern for child poverty, based on these considerations and on the longer term social costs of poverty (e.g. in crime rates). However, there is also good reason for keeping the economic deprivation of childless adults on the agenda. From a research standpoint, the recent

outpouring of work on “social capital” and “social exclusion” represents both a broadening of the poverty debate and a blending of the humanitarian empathy and enlightened self interest motivations for concern with poverty. Knack and Keefer (1997) have, for example, argued that cohesive communities with higher levels of trust have higher rates of economic growth. Both the broader concept of social exclusion and the narrower idea of income poverty have been linked to some very expensive social problems. For example, a large literature has established beyond reasonable doubt the impact of poverty, and economic inequality more generally, on individual health³⁶ and health care costs. For many years, the link between poverty and crime has been a staple of the criminology diet. Enlightened self interest would motivate recognition that adult poverty has many externalities - in health care costs, crime and the urban environment - which may be very costly to other citizens³⁷. And a concern with adult poverty can also be justified by humanitarian empathy, which presumably does not vanish on the eighteenth birthday.

5. Implications - Choices to Make

Currently one observes a wide range of poverty and social policy outcomes, within both Europe and North America. During the 1990s in Canada and the United States there have been common trends - rapid growth in trade, rapid technological change and a common theme of devolution to states (provinces) of responsibility for social policy - but there continues to be a wide range in the poverty observed at the province/state level. The basic message of this paper is therefore the importance of the decisions that are being made at those levels.

On a national basis, it is clear that Canada’s distinctiveness in poverty outcomes has eroded dramatically in the late 1990s - but in a longer term perspective, it may be more important to explain the differences in local culture within both Canada and the US that continue to produce different policy choices.

This paper contains no evidence that greater levels of trade exposure can be blamed for poverty. Instead, this paper argues that public policy decisions on macroeconomic priorities, social assistance support and unemployment insurance are the choices that mattered for recent changes in poverty intensity. The decisions made by Canadian provinces and American states will therefore be of great importance in determining the types of society that Canadians and Americans will inhabit in the future.

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Canada - *The Survey of Consumer Finance, Household Income* - income years 1994, 1997

Low Income Cutoffs (LICOs)

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Canada - CANSIM Matrix 5704 - series D730480 - D730489

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Final Consumption. US dollars per Canadian dollar, SNA Classification

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Lead footnote:

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1. For Canadian self conceptions, see Graves et al (1999). In a November, 1999 Angus Reid poll, 60% of respondents thought that poverty in Canada is worse than it was five years ago and 68% thought governments were not doing enough to address the issue. Angus Reid (1999).
2. Poverty and inequality are different issues, whether the poverty line is drawn using a relative or absolute methodology, since inequality statistics are inevitably dominated by the non-poor, who remain a large majority of the population however the poverty line is drawn. Even if the poverty line is drawn in a purely relative way, poverty can be eliminated at the same time as inequality is rising. For example, a society which started with a distribution of income like [4,7,10,15,25] would have a poverty rate of 20% if the poverty line was set at half the median. A series of transfers which produced the distribution [6,7,10,11,27] would both eliminate relative poverty and increase economic inequality (as measured by the co-efficient of variation). In cross-country comparisons, there is a far from perfect correlation (0.79)

- between poverty intensity and the Gini Index of inequality (see Osberg and Xu, 2000: 68-69).
3. The LICO is based on the idea of “very little disposable income” - i.e. controlling for city and family size, the expected expenditure share of food, clothing and shelter is more than 20% greater than the Canadian average. It is updated from year to year using the CPI, in the same manner as an “absolute” poverty line, but is rebased periodically (most recently in 1992) with reference to changes in average consumption proportions, as a “relative” poverty line would be - hence it is a unique Canadian compromise of methodologies (see Wolfson and Evans (1989) and Cotton et al (1999)). Short et al (1999) discuss the sensitivity of the US official poverty lines to measurement choices. Initially set in 1963 at three times the level of a “subsistence” food budget, it has been adjusted only for price increases. see Focus (Spring,1998)
 4. In US dollars at purchasing power parity, \$14,490 to \$24, 017. In Vancouver in 1996, the range of market basket poverty lines for a four person family was not quite as large - from \$20,354 to \$27,266 (Cdn \$, = US \$16,221 to \$21,540 at ppp) - see National Council of Welfare (1999:23).

The poverty lines used in this paper take, for a four person family, the values:

4 Person Poverty Line - \$US (1997)	U.S. Official Before-Tax Income	LICO Before-Tax Income	½ median equivalent income (after tax)	
			U.S.	Canada
1994	16083	22037	18061	18494
1997	16400	22197	20766	18588

5. Fisher (1995:8) summarizes the debate on the exact size of the income elasticity of the poverty line - see also Short et al (1999:14). As a practical matter, the distinction between updating the poverty line to reflect price increases or increases in median real income will be

- unimportant during periods when there is little change in median real incomes. Osberg (1999:13,20) notes that from 1980 to 1994 average incomes in North America rose, because above median incomes increased, but the bottom half of the income distribution had a real income decline in the US and only a small gain in Canada. However, the updating method made a big difference in the 1960s and early 1970s. Prior to 1980, growth of median real incomes meant that updating the official US poverty line only for price increases produced a decline from its initial level of 49% of median income to about 35% (for a four person family) - see Ruggles (1990:30-61); Osberg (1984:61-72).
6. Disposable income consists of the sum of gross wages and salaries, farm self-employment income, non-farm self-employment income, cash property income, sick pay, disability pay, social retirement benefits, child or family allowances, unemployment compensation, maternity pay, military/veteran/war benefits, other social insurance, means-tested cash benefits, near cash benefits, private pensions, public sector pensions, alimony or child support, other regular private income, and other cash benefits; minus mandatory contributions for self employed, mandatory employee contribution, and income tax.
 7. The Australian tradition in budget standards was, historically, closely linked to their “wages awards” system of industrial relations and is probably the world’s most highly developed. Focus groups, polling and expenditure data are used to gauge explicitly social norms. The “low cost standard” aims at allowing “social and economic participation consistent with community standards”. However, the resulting estimates are in practice more like 70% to 75% of the median living standard than 50% - see Saunders (1998:14-16).
 8. Generally summarized as focus, monotonicity, symmetry, replication invariance, transfer sensitivity and replication invariance - see Zheng (1997).
 9. “RATE” is the percentage of the population with incomes below the poverty line (sometimes

- called the head count ratio), “GAP” is the average percentage gap between the incomes of the poor and the poverty line and $G(X)$ is the Gini index of inequality of the poverty gap among all people, where the poverty gap of the nonpoor is set to zero. Xu and Osberg (2000) discuss the Social Welfare Function implicit in the SST index.
10. Across LIS countries the coefficient of variation of poverty rates is .493, and for average poverty gap ratios it is .185. However, the coefficient of variation of $(1+G(x))$ is only .014 (Osberg and Xu, 2000:72). For Canadian provinces and US states in 1997 the CV is 0.341 for the SST index, 0.384 for the poverty rate, 0.141 for the poverty gap ratio and 0.011 for $(1+G(X))$ - see also Osberg and Xu (1999a). The “common sense” explanation for the unimportance of inequality among the poor in an aggregate measure of poverty intensity is that the differences in income among the poor are small when compared to income differences among the non-poor. The upper bound on the incomes of poor people is the poverty line. The lower bound, (leaving aside measurement error), is subsistence. The dollar value of the difference is not large, particularly when compared to the dollar differences among the non-poor population. See Osberg and Xu (2000:57) and Xu and Osberg (2000) for geometric proof .
 11. Rodgers and Rodgers (1991) represent one of the few uses of the Foster-Greer-Thorbecke index.
 12. Because the SST index is defined in terms of poverty gaps it is robust under data contamination in the sense of Cowell and Victoria-Feser (1996), and especially so when the poverty line is set with reference to median income.
 13. Osberg (1999) notes that if only 10% of the income gains between 1979 and 1995 of the top decile of the UK and the USA had been transferred to the bottom decile, poverty in both countries in 1994/95 would have been substantially lower than in 1979, instead of substantially higher.

14. Using the official US poverty line, the poverty rate in the US fell from 13.0 % to 9.4 %, while Canada's rose from 6.9% to 8.1 %.
15. See Federal Reserve Bank of New York (1998). In practice, the Bank of Canada has achieved inflation rates that are generally in the 0 to 2% range (at the cost of a national unemployment rate that has been about 4 percentage points above US rates, through much of the decade).
16. The 1996 reforms to Unemployment Insurance in Canada included a change of name - to "Employment Insurance" - but this paper will simply refer to UI in both Canada and the US. Canadian UI (now called EI) is a federal programme, but its provisions vary with local unemployment, which differentiates its impact by province. US UI systems are arguably even more complex than Canada's. A summary of the systems of the 50 states and DC can be obtained at US Department of Labour *Significant Provisions of State Unemployment Insurance Laws*.
http://www.itsc.state.md.us/ui_manage/SIGPRO/adobe_intro.htm xxx.
17. Osberg and Phipps (1995) used a micro simulation methodology to compare Canadian UI with the New York and Texas systems, and also examined international comparisons, concluding that in 1994 UI played an important anti-poverty role in Canada, partly because of the relatively large size of UI in the social transfer system, compared to other countries. The 1996 reforms to UI paid no noticeable attention. In Canada, the percentage of the unemployed who get UI/EI has since declined precipitously (to about 25% in 1997 - HRDC, Table 4.1, page 56:1998).
18. Similar results are obtained if one uses the same variable as Moorthy - total UI benefits as a fraction of total earnings - see <http://is.dal.ca/~osberg/home.html>
19. Bernstein et al (2000b, Table 10) note that in 1996-98, the ratio of the before tax incomes of the top quintile of families to that of the bottom quintile varied from 7.3:1 in Indiana to 14.1:1 in New York.
20. The state of Texas spent 3.31% of state revenues on these programmes, while Mississippi spent 4.04%, Vermont spent 3.23% and Minnesota spent 1.05%.

21. Export and import data are obtained for 2-digit categories, using the 1980 industrial classification system for Canada and the major groupings industrial classification system for the U.S. The trade data include agriculture, mining, and manufacturing industries, but do not include services. The industry-level labour force data uses the same industrial classifications. For Canada, the Monthly Labour Force Survey is used, with an average being taken for the twelve months of 1994 and 1997. For the U.S., non-farm employment rather than the total labour force is used. For each state or province, the proportion of the labour force in each industry as a percentage of all employment is calculated. Finally, the proportions of the labour force in each industry are multiplied by the share of exports (or imports) in output, and then summed for each province or state.
22. US data come from a sample of 66,014 households in 1994 and 50,320 in 1997, while Canada used 37,475 households in 1994 and 33,843 in 1997. Because the US sample is spread over 50 states, smaller states have relatively large sampling error (see Data Appendix Tables 1 and 2). Although the point estimate of poverty intensity is unbiased, this sampling error implies that the ordering of states in poverty intensity is possibly sensitive to sample selection - hence this paper places no emphasis on the ranking of particular states.
23. To compute the bootstrap standard deviation of the modified SST index estimator, we resample randomly both equivalent incomes and corresponding sampling weights. The new sample is used to compute a new SST index estimate. Repeating this process T times (e.g. $T=300$) gives T SST index estimates. The bootstrap variance is computed as the sample variance of the T SST index estimates from the resampling.[see Osberg and Xu (1997) and the references therein].
24. Osberg and Cyrus (2000) note that the *level* of trade exposure is not related to the level of poverty intensity. If Moorthy's specification is used for UI, greater export exposure may be associated with lower poverty, hence the general insignificance of trade is not robust to

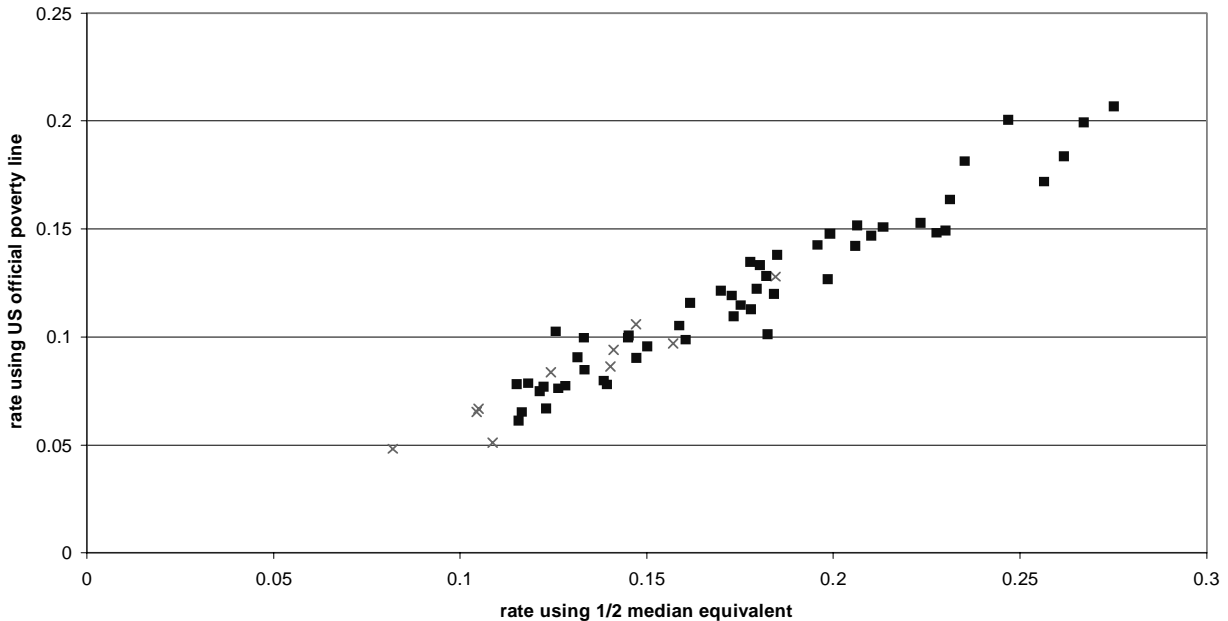
- specification - but there is no evidence that greater import exposure is driving poverty trends.
25. Ruggles (1990), Bane and Ellwood (1986) Jarvis and Jenkins (1996) and Tienda (1990), for example
 26. Black and Morgan (1999) note that a third of US households do not have a credit card, while Wolff (1998:36, Table 1) finds that 28.7% of US households have zero or negative financial wealth. Indeed, a substantial fraction of US households are quite cut off from the formal financial system -- Carney and Gale (1998:14) note that "45% of black families and 49% of those on public assistance do not have basic transactions accounts".
 27. Although there is also a normative argument that one should not count misers as poor just because they prefer deprivation to using available income for consumption, in fact surveys of consumer finance indicate such people are very rare.
 28. MEDICAID in the US is available to a smaller fraction of the US poor than Canadian medicare. As well, although some states (like all provinces) equalize somewhat educational expenditures, the greater prevalence of local school board funding in the US builds in a greater tendency to intergenerational inheritance of human capital. Both would affect levels estimates, but not the changes in poverty intensity which are the focus of Table 2.
 29. [Unlike the US, Canada voted in favour.]
 30. In referring to "his" family, the prose of 1948 sounds odd today, but Article 2 made it clear that all rights were to be guaranteed equally to male and female persons. As well, Articles 23 and 24 specified employment and collective bargaining rights, and Articles 26 and 27 dealt with rights to education and cultural expression. Full text available at <http://www.unhchr.ch/>
 31. See also Bourguignon and Fields (1997). However, if the *degree* of deprivation of rights is an acceptable consideration, one is back to the same issues as for the poverty gap.
 32. The poverty rates reported in Table 1 imply over 3.6 million Canadians and 45 million Americans were poor in 1997, on an annual income basis. Finnie (2000) estimated that 26.4% (about 7.9 Million) Canadians had at least one year of poverty between 1992 and 1996. Drolet and Morissette

- (2000) report that the percentage of Canadians who experience one low income year in a four year span is about twice the poverty rate in any given year. Ruggles (1990:99) found that roughly four times as many Americans had poverty spells of a month or more as were poor on an annual income basis.
33. Attitudes to poverty differ significantly across countries. Using the World Values Survey, Phipps (1999:36-37) found that 34% of Canadian men (29% of women) thought “laziness” was the reason some people lived in need - fractions that are significantly less than that in the US (40%, 38%), but more than in the UK (28%, 25%) and much more than in Norway (15%, 7%) or the Netherlands (18%, 12%).
 34. Smith (Vol. 2, Bk. V, Ch II, PtII, Art IV - 1961:399)
 35. See Banerjee and Newman (1994), Osberg (1995), Benabou (1996)
 36. Wilkinson (1996, 1999). A web site devoted to the issue, with multiple links is:
<http://depts.washington.edu/eqlhth/>
 37. See Osberg (1990) for a much longer discussion. The National Council of Welfare (2000) emphasizes that the poverty/crime link may initially be one of policing bias, but has real feedback effects on later life chances.

Appendix A

The issue this paper addresses is the cross sectional differences in changes in poverty outcomes across provinces and states. As Figure 1 indicates, there is in fact an extremely high correlation between measures of the poverty rate of Canadian provinces and US states, whichever poverty line is selected.¹

Figure 1
Correlation of Poverty Rates
Using Official U.S. and 1/2 Median Poverty Line
1994



Sources: Authors' calculations using LIS (US) and SCF- Households (Canada) . Dollar values converted using purchasing power parities (.79 US per Can \$).

Income poverty in affluent countries is an issue which cannot be sensibly understood or measured without reference to its social context. Although most poverty research (including this paper) ends up submitting to the constraints of the data and assuming that all individuals within households

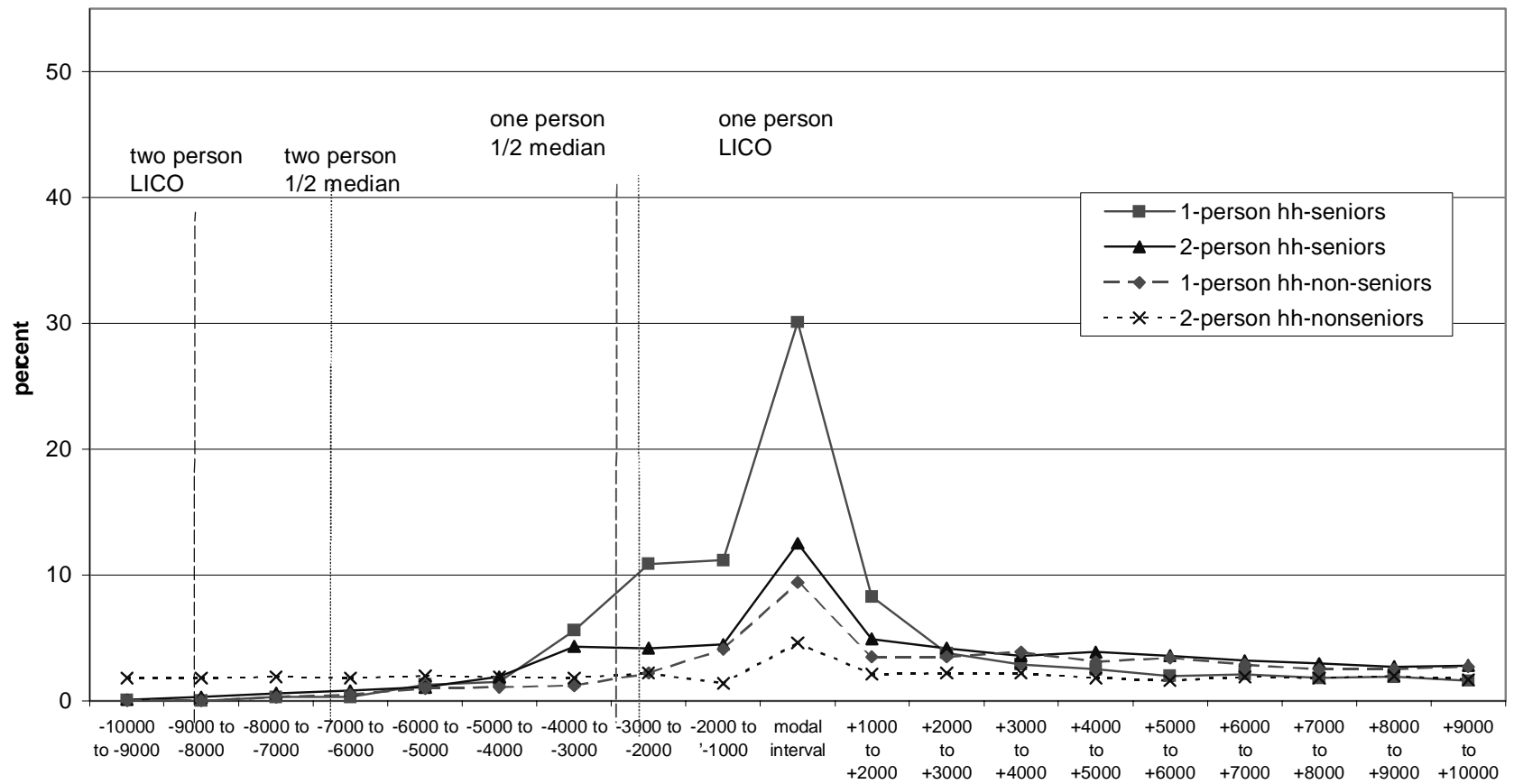
¹See Osberg and Cyrus (2000) for more detailed comparisons - note that because the percentage of the population aged over 65 lies in the range 10% to 14%, with the exception of Florida (18.4%) and Alaska (4.6%), poverty rankings across jurisdictions at a point in time are not much affected by the “spike” in income distribution among the elderly (see below).

share equally in household resources, and have no claim on the resources of other households, it is clear that these are strong assumptions about the social context of income flows. Since people typically live in households, and share consumption to some degree, the effective resources available to each person depend on the degree of inequality in the intra-household distribution of consumption. Phipps and Burton (1995:194) have demonstrated the potential importance of inequality within the family - the same Canadian family income data is consistent with a child poverty rate (for two parent families) of as little as 5.9% if resources are equally shared or as much as 52.1% if resource sharing is minimal.

Assumptions about social context can affect the perceived level of poverty, its distribution across demographic groups and its trend over time. A particularly important example is the incomes of the elderly. Burkhauser *et al.* (1996) have noted that the equivalence scale in use can alter the perceived incidence of poverty by demographic group. The elderly typically live in one or two-person households, while children are always found in households of two or more persons - so the relative size of household economies of scale assumed for two, three and four person households can shift the perceived demographic incidence of poverty². As well, the elderly have incomes that are generated by a very different set of processes than the non elderly.

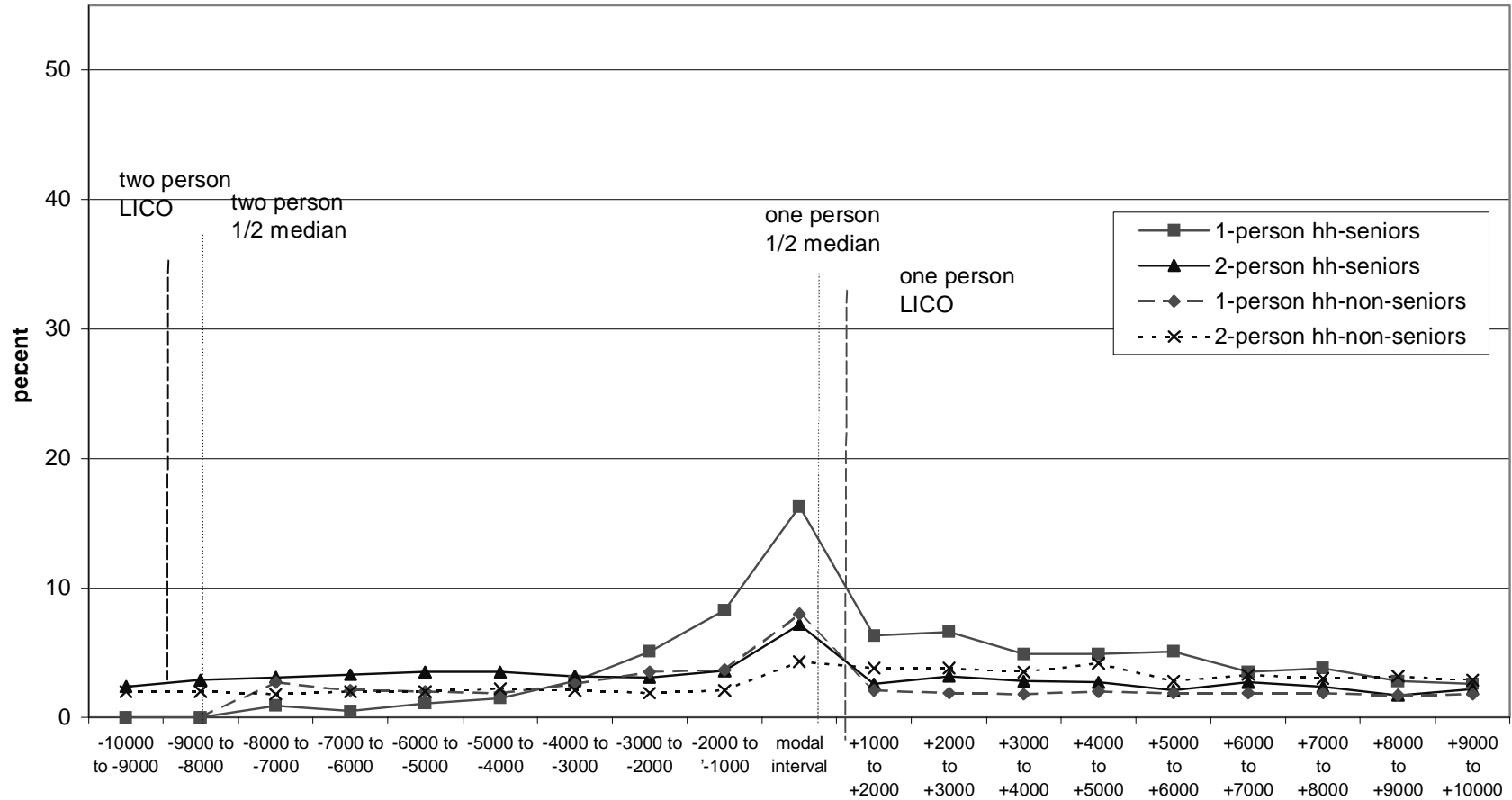
²Phipps and Garner (1994) have concluded that equivalence scales for Canada and the US are essentially the same. See also Figini (1998)

Figure 2
After Tax Income Distribution - \$1000 Intervals
One and Two Person Households
Canada 1994



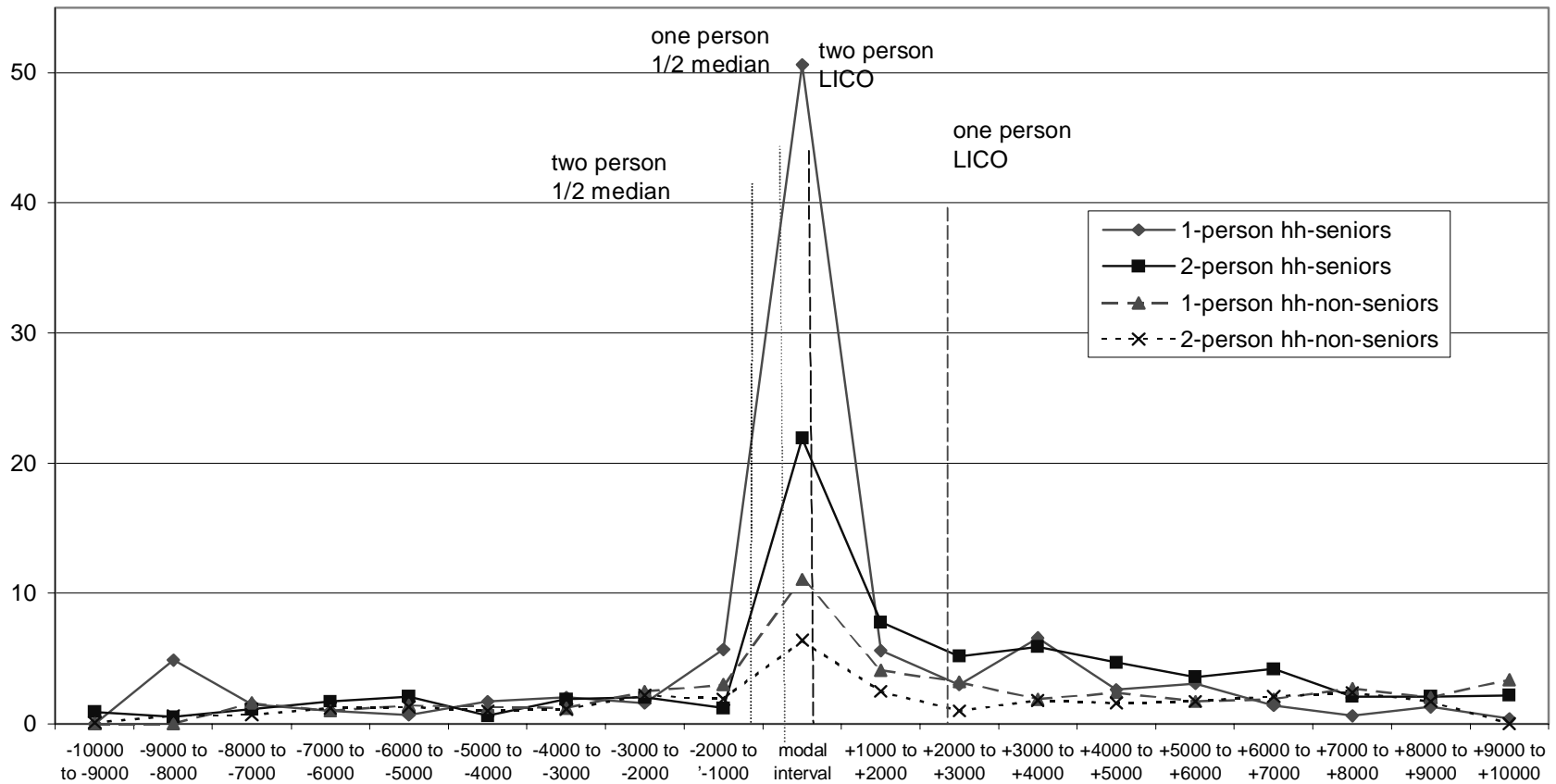
note: The modal interval is the mode +/- \$1000. The remaining intervals are the +/- from the mode.

Figure 3
After Tax Income Distribution - \$1000 Intervals
One and Two Person Households
United States 1994



note: The modal interval is the mode +- \$1000. The remaining intervals are the +- from the mode.
 The LICOs are converted to US dollars using purchasing power parities (.79).

Figure 4
After Tax Income Distribution - \$1000 Intervals
One and Two Person Households
Australia 1994



note: The modal interval is the mode +/- \$1000. The remaining intervals are the +/- from the mode.
 The LICOs are converted to Australian dollars using purchasing power parities (1.044).

Because they have retired from the labour force, often without private pensions or appreciable savings, in all the advanced countries many of the elderly depend entirely on social transfers³. Their income determination process is therefore totally unlike that of the non-elderly, who mix transfers and earned income and have wages and hours of work which vary with different jobs and fluctuate over the course of a year. By contrast, because the elderly typically have no earnings, many of them have much the same income because it is derived from the same source and calculated by the same benefit formula.

Figures 2, 3 and 4 use Luxembourg Income Study data to graph the income distribution of one and two-person elderly and non-elderly households in Canada, Australia and the United States in 1994. In each graph, the frequency distribution of incomes in the modal interval is presented, as well as the frequency of observations of incomes lying above and below the mode. Australia has a very significant “spike” in the income distribution of elderly persons, with 50.6% of one-person households in the modal interval. In Canada, 30.1% of one-person elderly households are in the modal interval, while in the United States the “spike” is much less pronounced, with only 16.3% in the modal interval⁴.

These national differences are easily explained by the structure of the Old Age Security system in the three countries. Australia has historically had a flat rate, means tested pension - the “spike” in the income distribution is simply the maximum pension benefit. The Canadian system combines a flat rate federal Old Age Security payment with income supplementation through the Guaranteed Income

³Luxembourg Income Study data indicate that in 1994, among households composed of seniors the percentage whose only income was government transfers was 21.6% in Canada, 16.3% in USA, 22.0% in Australia, 50.1% in Germany, 52.9% in Luxembourg, 18.2% in France, 14.0% in the Netherlands.

⁴For persons under 65, the percentage in the comparably defined modal interval of the income distribution was in 1994 - Canada 9.4%; USA 8.0%; Australia 11.3%.

Supplement, but the general availability of Canada Pension Plan benefits tied to earlier earnings builds in some differentiation among those persons with an earnings history. In the US, there is no universal component, and pension entitlement under Social Security replicates in old age more of the dispersion in incomes that occurred during the working years.

Figures 2, 3 and 4 illustrate, therefore, how much the income distribution of the elderly depends on the details of design of public pensions for the elderly. Analysing the policy process by which these details are determined is a research issue for which political scientists may be better prepared than economists. The outcome is, however, a spike in the income distribution of the elderly which is, in all three countries, rather close to commonly used definitions of the poverty line. As a consequence, the elderly are a group for whom small changes in money income or equivalence scale or the poverty line are particularly important. Because many of the elderly have incomes that are quite close to reasonable specifications of the poverty line, small changes in the definition or measurement of that poverty line can appear to have large poverty consequences.

The general point to make is the importance of the actual social context in which measurement choices are made. The spike in the income distribution of the elderly is an important issue in Australia, but not nearly as much in the US. Canada (like most other countries) is an intermediate case. Hence, comparisons over time or across countries are affected by this “spike” to differing degrees in different countries. Although it is undoubtedly true that: “Statistical implementation of poverty measures demonstrates that matters of definition may significantly affect the conclusions drawn.” (Atkinson, 1998:11), some of the pessimism about international poverty comparisons may also be overdone. Since the income distribution of the non elderly does not have the same “spike” problem, my conjecture is that ambiguities of international poverty rankings are often driven by the excess sensitivity of elderly

poverty to measurement choices. Whether or not that particular conjecture is confirmed, the broader agenda for future research on poverty measures is to move beyond testing *whether* poverty rankings are ambiguous to the more interesting issue of *why* that is occasionally so.

Following the introduction of Canada Pension Plan and the Guaranteed Income Supplement in 1967, poverty among elderly Canadians fell dramatically - one of the major achievements of Canadian social policy. Social Security in the US has a much longer history, but in neither case has there been much change in recent years. Since these programmes imply that the probability of poverty among the elderly is driven by a very different (and relatively unchanged) process than poverty among the non-elderly, and since measurement of poverty among the elderly is especially sensitive to choice of the poverty line, this paper focusses on trends in poverty among the non-elderly.

Table A1 Determinants of the Change in Poverty Intensity ¹ (Specification of UI/EI as in Moorthy (1990)) in Canada and the United States from 1994 to 1997 - for those less than 65 years of age Estimation Method GLS ²				
	poverty line=1/2 median equivalent after tax income ³		poverty line=Canada's before tax LICO ⁴ for residence size 100,000- 499,999	
Intercept	-0.675 (0.511)	-0.796 (0.518)	-3.140* (0.602)	-3.267* (0.609)
Change in Male 25-54 Unemployment:				
Rate	--	0.648*** (0.348)	--	0.674 (0.409)
ln (Rate)	3.181** (1.390)	--	3.306** (1.621)	--
Change in Unemployment Insurance:				
benefits/earnings	-151.9* (46.22)	-171.2* (46.70)	-248.8* (55.41)	-269.2* (55.87)
Change in Social Assistance Generosity				
weekly benefit amount - one parent, one child (Can \$) ⁵	-0.029*** (0.016)	-0.034** (0.016)	-0.049** (0.019)	-0.055* (0.019)
Change in Trade:				
Import Exposure	60.895 (51.554)	66.072 (55.648)	55.325 (62.053)	60.291 (66.68)
Export Exposure	-129.4** (57.563)	-139.1** (60.599)	-118.21*** (69.74)	-128.34*** (73.173)
Adjusted R ²	0.309	0.287	0.477	0.464
n	60	60	60	60
<p>* significant with 99% confidence **significant with 95% confidence ***significant with 90% confidence</p> <p>1. Sen-Shorrocks-Thon Index (SST) where $SST = (\text{Poverty Rate } \%) * (\text{Relative Poverty Gap}) * (1 + G(X))$ where $G(X)$ = Gini coefficient among all persons of poverty gap ratios; 2. Generalized Least Squares estimates using bootstrap standard errors. 3. LIS equivalence scale [=N^{-0.5}]. 4. See footnote 5 in text; converted to US dollars using ppps (0.79). 5. In the US includes Aid for Families with Dependent Children/Temporary Assistance for Needy Families and food stamps. Note: excludes the District of Columbia</p>				

Table A2								
Poverty Lines								
1997 Canadian dollars								
		persons in household						
		1	2	3	4	5	6	
1994	US Official Poverty Line (before tax) ¹	10,148	12,990	15,895	20,359	24,069	27,208	
	Statistics Canada LICO (before tax) ²	14,823	18,529	23,044	27,895	31,182	34,469	
	½ median equivalent (after tax) ³	US	11,773	16,649	20,391	23,546	26,325	28,837
		Canada	11,705	16,553	20,273	23,410	26,173	28,671
1997	US Official Poverty Line (before tax) ¹	10,358	13,257	16,205	20,759	24,532	27,704	
	Statistics Canada LICO (before tax) ²	14,931	18,664	23,213	28,098	31,409	34,720	
	½ median equivalent (after tax) ³	US	13,143	18,587	22,764	26,286	29,389	32,194
		Canada	11,765	16,638	20,377	23,530	26,307	28,818

¹ weighted average - actual values vary with the number of household members who are under 18.
see: <http://www.census.gov/hhes/poverty/threshld.html>

² low income cut-off for cities 100,000 - 499,999 used throughout
see: Statistics Canada, *Income Distributions by Size in Canada, 1994, 1997*. Catalogue number 13-207-XPB

³ equivalent scale used is N^{-5} where N= the number of people in the household.
authors' calculation using the Luxembourg Income Study (US) and the Survey of Consumer Finance (Canada)

Table A3								
Poverty Lines								
1997 US Dollars								
		persons in household						
		1	2	3	4	5	6	
1994	US Official Poverty Line (before tax) ¹	8,017	10,262	12,557	16,083	19,014	21,495	
	Statistics Canada LICO (before tax) ²	11,711	14,638	18,205	22,037	24,634	27,231	
	½ median equivalent (after tax) ³	US	9,300	13,153	16,109	18,601	20,797	22,781
		Canada	9,247	13,077	16,016	18,494	20,677	22,650
1997	US Official Poverty Line (before tax) ¹	8,183	10,473	12,802	16,400	19,380	21,886	
	Statistics Canada LICO (before tax) ²	11,795	14,745	18,338	22,197	24,813	27,429	
	½ median equivalent (after tax) ³	US	10,383	14,684	17,984	20,766	23,217	25,433
		Canada	9,294	13,144	16,098	18,588	20,782	22,766

¹ weighted average - actual values vary with the number of household members who are under 18.
see: <http://www.census.gov/hhes/poverty/threshld.html>

² low income cut-off for cities 100,000 - 499,999 used throughout
see: Statistics Canada, *Income Distributions by Size in Canada, 1994, 1997*. Catalogue number 13-207-XPB

³ equivalent scale used is N^5 where N= the number of people in the household.
authors' calculation using the Luxembourg Income Study (US) and the Survey of Consumer Finance (Canada)

Data used in all regressions											
Table A4											
1994											
	SST 1/2 median	SST LICO	male 25-54 urate	benefits/ earnings	average weekly benefits (Can \$)	Beneficiaries / unemployed	import exposure	export exposure	std. error for 1/2 median SST	std. error for LICO SST	social assistance (Can \$)
NEWFOUNDLAND	11.432	14.627	18.8	0.13922	233.897	1.04409	0.11632	0.19391	0.81864	0.96284	249.87
PEI	4.78	7.124	16.7	0.14229	236.353	1.04192	0.12645	0.20067	0.71367	0.88235	242.04
NOVA SCOTIA	9.205	11.978	12	0.07048	233.136	0.83078	0.14748	0.20197	0.57235	0.62286	236.02
NEW BRUNSWICK	9.113	11.417	12.1	0.09869	247.193	1.21135	0.12628	0.17895	0.61937	0.66563	202.27
QUEBEC	7.541	10.436	11.9	0.05275	248.442	0.6872	0.26146	0.24139	0.30599	0.35615	251.87
ONTARIO	4.82	6.843	8.7	0.02344	265.037	0.42544	0.2953	0.27572	0.26111	0.27783	323.73
MANITOBA	8.02	10.556	7.5	0.02675	237.879	0.48193	0.18544	0.21025	0.65572	0.63327	218
SASKATCHEWAN	9.91	12.75	5.9	0.02733	236.479	0.56386	0.15307	0.22772	0.64376	0.77597	232.58
ALBERTA	5.874	7.99	7.5	0.02635	261.675	0.48809	0.17914	0.31505	0.42166	0.45843	207.9
BRITISH COLUMBIA	6.235	8.31	8.4	0.0308	262.966	0.55764	0.11826	0.17284	0.43723	0.50788	260.79
ALABAMA	16.028	18.365	3.31	0.0056	165.823	0.25415	0.13298	0.073	1.8844	2.0873	108.54
ALASKA	9.313	11.353	8.65	0.02062	215.19	0.56475	0.0462	0.0174	1.4212	1.4465	345.57
ARIZONA	15.502	17.977	4.1	0.0049	187.342	0.21758	0.0724	0.0502	1.4865	1.673	152.22
ARKANSAS	13.856	16.402	3.85	0.0088	203.798	0.38382	0.13459	0.0821	1.3798	1.5833	116.46
CALIFORNIA	15.035	17.847	7.3	0.01123	194.937	0.36533	0.0893	0.0563	0.5763	0.639	220.25
COLORADO	8.296	10.114	3.26	0.005	246.835	0.27804	0.0601	0.0416	1.0828	1.1269	154.11
CONNECTICUT	9.018	10.819	4.61	0.01185	281.013	0.49804	0.10037	0.0755	1.5302	1.6462	214.87
DELAWARE	8.175	9.736	3.45	0.0076	231.646	0.34358	0.0591	0.0483	1.316	1.3998	150.63
FLORIDA	14.082	16.534	4.62	0.0062	212.658	0.22205	0.0475	0.0301	0.8805	0.9212	141.46
GEORGIA	11.749	13.99	3.58	0.0038	193.671	0.21612	0.0963	0.0563	1.2502	1.4654	139.56
HAWAII	8.518	9.814	6.07	0.01668	336.709	0.42214	0.0172	0.009	1.3449	1.4811	287.34
IDAHO	10.434	12.923	4.26	0.01	211.392	0.40127	0.0728	0.057	1.3099	1.4484	144.62
ILLINOIS	11.75	13.973	4.83	0.0083	251.899	0.35113	0.084	0.0613	0.7857	0.8142	153.16
INDIANA	14.362	16.342	3.08	0.0041	200	0.19862	0.14355	0.0982	1.8131	1.9016	137.66
IOWA	9.344	10.836	3	0.0065	231.646	0.32064	0.0968	0.0727	1.5505	1.6924	179.43
KANSAS	14.829	17.202	4.96	0.0062	243.038	0.26547	0.0993	0.0717	1.5263	1.5312	176.58
KENTUCKY	17.355	20.137	4.23	0.0078	201.266	0.32292	0.1226	0.0756	1.4696	1.731	127.22
LOUISIANA	19.195	22.378	6.02	0.0049	149.367	0.18859	0.0744	0.0386	1.6549	1.9274	108.86
MAINE	8.397	10.352	6	0.01184	203.798	0.34364	0.13672	0.0644	1.3382	1.37	163.92
MARYLAND	7.913	9.734	4.24	0.0077	227.848	0.3341	0.0448	0.0313	1.2263	1.2808	157.59
MASSACHUSETTS	8.492	10.182	5.41	0.01119	300	0.41915	0.0831	0.0549	0.6055	0.6765	218.99
MICHIGAN	12.669	15.133	4.77	0.0086	269.62	0.3286	0.12254	0.0888	0.7386	0.8566	182.59
MINNESOTA	10.06	12.033	4	0.0073	274.684	0.36006	0.0781	0.0602	1.3299	1.2479	203.48
MISSISSIPPI	15.581	18.906	4.15	0.0055	163.291	0.23034	0.16608	0.0884	1.6593	1.7249	95.57
MISSOURI	14.231	16.918	3.94	0.0066	189.873	0.36261	0.099	0.0615	1.7554	1.8646	139.24
MONTANA	11.197	13.291	4.26	0.0093	197.468	0.44159	0.0399	0.0223	1.2585	1.3929	170.25
NEBRASKA	7.549	8.939	1.32	0.0032	177.215	0.28716	0.0646	0.0497	1.0862	1.1886	157.91
NEVADA	10.811	12.808	4.6	0.008	234.177	0.3329	0.0298	0.0176	1.4626	1.5874	156.33
NEW HAMPSHIRE	6.399	7.932	3.94	0.004	184.81	0.23583	0.10762	0.076	1.0033	1.1498	217.41
NEW JERSEY	8.05	9.78	5.49	0.01312	311.392	0.39278	0.0644	0.0434	0.5943	0.6538	167.09
NEW MEXICO	19.189	22.319	5.31	0.0061	177.215	0.23994	0.0629	0.0307	1.6484	1.5103	161.39
NEW YORK	14.952	17.557	6.09	0.01056	256.962	0.38378	0.0711	0.0411	0.6872	0.7741	213.29

NORTH CAROLINA	11.943	14.141	2.65	0.0042	221.519	0.28021	0.13081	0.0793	0.8984	0.8622	139.87
NORTH DAKOTA	10.68	12.399	3.36	0.0071	202.532	0.30208	0.0478	0.0318	1.3835	1.46	170.57
OHIO	12.851	15.22	4.51	0.0067	241.772	0.28442	0.1091	0.0795	0.8592	0.8808	153.48
OKLAHOMA	14.988	17.688	5.12	0.0049	212.658	0.1859	0.0963	0.0544	1.375	1.5388	144.62
OREGON	11.287	13.452	4.24	0.01281	226.582	0.51038	0.0802	0.0562	1.2754	1.5814	190.19
PENNSYLVANIA	11.559	13.483	5.65	0.01423	268.354	0.46916	0.0915	0.0576	0.7902	0.7729	165.19
RHODE ISLAND	9.933	11.943	6.08	0.02214	278.481	0.52431	0.13382	0.0648	1.7813	1.8131	207.28
SOUTH CAROLINA	12.231	14.739	3.99	0.0062	194.937	0.25467	0.12862	0.082	1.5983	1.8053	115.51
SOUTH DAKOTA	12.1	14.168	2.23	0.0027	174.684	0.1785	0.0856	0.0604	1.2748	1.3203	185.44
TENNESSEE	12.675	14.932	3.54	0.0053	179.747	0.32581	0.13853	0.077	1.5897	1.5948	110.13
TEXAS	15.357	18.32	4.83	0.0061	234.177	0.21308	0.0831	0.048	0.7185	0.7708	116.77
UTAH	7.315	9.038	2.45	0.0043	236.709	0.23236	0.0872	0.0551	1.1866	1.1743	173.42
VERMONT	6.491	8.193	4.52	0.0115	207.595	0.5122	0.0987	0.0639	1.0231	1.203	227.85
VIRGINIA	9.673	11.366	3.08	0.0037	213.924	0.18554	0.0762	0.0493	1.0628	1.1533	138.29
WASHINGTON	12.001	14.311	5.11	0.01811	260.76	0.54253	0.0871	0.0612	1.2758	1.4012	204.43
WEST VIRGINIA	17.725	20.864	8.67	0.01137	211.392	0.26031	0.0748	0.0528	1.6622	1.7932	128.8
WISCONSIN	7.978	9.615	3.96	0.0081	237.975	0.37732	0.11896	0.0857	1.0613	1.1418	204.43
WYOMING	9.82	11.754	2.96	0.0076	218.987	0.28115	0.0554	0.0273	1.2854	1.4964	166.46
Dist. of Columbia*	17.486	19.998	7.96	0.0078	278.481	0.34385	0.002	0.002	1.9282	2.0766	171.52
* Not included in regressions.											

Data used in Regressions

Table A5

1997

	SST 1/2 median	SST LICO	male 25-54 urate	benefits/ earnings	average weekly benefits (Can \$)	Beneficiaries / unemployed	import exposure	export exposure	std. error for 1/2 median SST	std. error for LICO SST	social assistance (Can \$)
NEWFOUNDLAND	10.82	14.05	19	0.1131	249.31	0.77243	0.1468	0.23839	0.82222	0.88973	251.67
PEI	5.78	8.305	16	0.1135	239.829	0.84288	0.13505	0.22469	0.71759	0.93215	224.65
NOVA SCOTIA	10.28	13.03	11.5	0.046	228.049	0.58516	0.15825	0.21939	0.72161	0.84556	236.02
NEW BRUNSWICK	9.202	11.87	12.1	0.07	242.135	0.8043	0.12635	0.19485	0.67835	0.75473	221.77
QUEBEC	8.64	11.38	10.8	0.036	241.895	0.50651	0.27612	0.26018	0.39616	0.47814	243.65
ONTARIO	6.993	9.03	6.7	0.015	264.197	0.30096	0.31636	0.28474	0.37877	0.39848	263.4
MANITOBA	7.6	10.02	5.1	0.017	239.688	0.3894	0.19445	0.22058	0.53777	0.64327	217.9
SASKATCHEWAN	7.745	10.26	5.3	0.016	245.716	0.35993	0.17034	0.26434	0.52598	0.63748	232.52
ALBERTA	5.927	7.589	4.5	0.012	257.007	0.3287	0.21858	0.34378	0.46945	0.57289	209.02
BRITISH COLUMBIA	8.098	10.24	7.5	0.021	266.396	0.3952	0.12618	0.18843	0.63991	0.73714	262.5
ALABAMA	14.12	14.02	3.02	0.01	183.544	0.27399	0.13742	0.0827	1.6148	1.8386	114.24
ALASKA	6.111	6.207	7.87	0.02	222.785	0.48384	0.0481	0.0205	1.1507	1.2064	349.37
ARIZONA	13.27	12.95	3.06	0	186.076	0.20567	0.0745	0.0542	1.3257	1.4124	157.91
ARKANSAS	15.85	15.77	4.15	0.01	250.633	0.44069	0.13833	0.0909	1.6617	1.7104	122.15
CALIFORNIA	12.15	12	4.95	0.01	192.405	0.38499	0.10486	0.0666	0.5681	0.7696	215.19
COLORADO	5.835	5.802	1.96	0	269.62	0.27027	0.0649	0.0459	0.9046	0.9168	159.49
CONNECTICUT	7.184	7.34	4.4	0.01	267.089	0.38565	0.10496	0.0818	1.2779	1.3035	233.23
DELAWARE	7.924	7.936	3.25	0.01	245.57	0.40793	0.0622	0.0514	1.8851	1.8645	156.33
FLORIDA	12.13	11.93	3.71	0	243.038	0.23442	0.0487	0.0321	0.948	0.9644	147.15
GEORGIA	12.67	12.53	2.77	0	205.063	0.20894	0.0988	0.0635	1.5739	1.4568	145.25
HAWAII	9.716	9.177	6.12	0.015	340.506	0.35345	0.0199	0.009	1.4708	1.5058	293.04
IDAHO	9.483	9.132	3.9	0.01	236.709	0.37335	0.0825	0.0644	1.0029	1.1483	150.32
ILLINOIS	8.546	8.495	3.75	0.01	274.684	0.39667	0.0923	0.0705	0.7454	0.7518	158.86
INDIANA	5.601	5.546	2.97	0	235.443	0.29063	0.15367	0.1117	0.9904	1.0189	143.35
IOWA	8.561	7.769	2.44	0.01	259.494	0.37255	0.10444	0.0819	1.1947	1.3357	185.13
KANSAS	7.122	6.98	2.24	0	258.228	0.27042	0.1148	0.0851	1.185	1.1629	182.28
KENTUCKY	11.75	11.59	3.04	0.01	222.785	0.26229	0.13645	0.087	1.3306	1.2933	142.09
LOUISIANA	13.4	13.27	3.73	0	168.354	0.1925	0.0854	0.0435	1.4946	1.5659	114.56
MAINE	8.513	8.416	4.59	0.01	192.405	0.35675	0.13606	0.0721	1.3441	1.4619	169.62
MARYLAND	5.374	5.036	3.67	0.01	248.101	0.26809	0.0468	0.0333	1.7122	1.5159	164.24
MASSACHUSETTS	9.979	9.822	3.61	0.01	206.329	0.48449	0.0868	0.0613	1.0882	1.1386	220.89
MICHIGAN	8.686	8.52	3.02	0.01	281.013	0.42795	0.13811	0.10217	0.8691	0.9121	197.78
MINNESOTA	7.619	7.568	2.53	0.01	306.329	0.39531	0.0863	0.0686	1.2035	1.1769	209.18
MISSISSIPPI	13.64	13.61	3.12	0.01	179.747	0.27688	0.1625	0.0927	1.6277	1.7892	101.27
MISSOURI	9.807	9.709	3.57	0	194.937	0.3319	0.10678	0.0718	1.6775	1.5968	144.94
MONTANA	13.36	13	4.95	0.01	210.127	0.36163	0.05	0.027	1.5005	1.7006	181.33
NEBRASKA	6.582	6.317	1.56	0	206.329	0.29796	0.0718	0.0577	0.9687	0.9923	163.61
NEVADA	7.441	7.17	3.62	0.01	258.228	0.4845	0.0344	0.0204	1.1745	1.2424	162.34
NEW HAMPSHIRE	6.179	6.344	1.93	0	208.861	0.2413	0.12418	0.0882	1.5025	1.4438	223.1
NEW JERSEY	7.435	7.333	4.06	0.01	327.848	0.44497	0.07	0.0469	0.7986	0.872	172.78
NEW MEXICO	17.65	17.42	4.81	0.01	200	0.2329	0.0641	0.0347	1.4943	1.6373	168.99
NEW YORK	14.13	14.23	4.92	0.01	258.228	0.33343	0.0767	0.045	0.7362	0.8065	253.16

NORTH CAROLINA	9.253	9.219	2.33	0	250.633	0.34366	0.1361	0.0869	1.1402	1.2355	145.57
NORTH DAKOTA	9.668	9.834	2.05	0.01	222.785	0.46711	0.0587	0.0407	1.4727	1.3936	176.27
OHIO	8.524	8.486	3.62	0.01	263.291	0.28901	0.1194	0.0903	0.8594	0.8983	159.18
OKLAHOMA	11.31	10.88	2.82	0	224.051	0.18858	0.10664	0.0632	1.2873	1.2783	146.2
OREGON	8.737	7.945	4.7	0.011	250.633	0.40753	0.0909	0.0653	1.1837	1.2567	195.89
PENNSYLVANIA	9.188	8.709	4.19	0.012	288.608	0.47093	0.0988	0.0659	0.7517	0.7837	175.32
RHODE ISLAND	12.8	13.08	3.95	0.017	283.544	0.58333	0.13872	0.07	2.3638	2.5433	212.97
SOUTH CAROLINA	9.212	9.242	2	0	213.924	0.28793	0.13652	0.0921	1.4573	1.4364	121.2
SOUTH DAKOTA	13.53	13.05	2.22	0	197.468	0.20033	0.10376	0.0741	1.9967	2.0606	191.14
TENNESSEE	11.37	11.46	4.24	0.01	206.329	0.29463	0.13903	0.0854	1.7033	1.7542	115.82
TEXAS	14.04	13.82	3.56	0	248.101	0.21654	0.0899	0.0546	0.805	0.8933	122.47
UTAH	6.198	6.123	2.07	0	244.304	0.26581	0.0867	0.0578	1.0536	1.1222	179.11
VERMONT	6.837	6.804	3.19	0.01	220.253	0.51062	0.10907	0.0726	1.1723	1.3228	241.46
VIRGINIA	10.42	10.21	2.82	0	226.582	0.18255	0.0812	0.0544	1.2263	1.3884	163.92
WASHINGTON	8.492	8.396	4.02	0.012	303.798	0.51275	0.10411	0.0769	1.32	1.311	210.13
WEST VIRGINIA	14.53	14.42	6.36	0.011	227.848	0.30635	0.0768	0.0585	1.5518	1.8264	134.49
WISCONSIN	6.135	5.524	2.96	0.01	237.975	0.48804	0.13234	0.0984	0.9748	0.9707	210.13
WYOMING	11.19	10.95	3.27	0.01	230.38	0.26269	0.0625	0.0315	1.3318	1.4213	172.15
Dist. of Columbia*	18.62	18.41	5.94	0.00578	294.9367	0.408	0.00286	0.002	2.2192	2.0458	169.62
* Not used in regressions.											

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