

# **Existing Measures**

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Working Papers provide a succinct discussion of specific issues that arise throughout the analytical process of poverty measurement. The Metcalf Foundation has funded the overall project.

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# Existing Measures

## 1 Objectives

The purpose of this paper is to bring the current measurements of poverty within Canada into discussion. There is no official definition of poverty for Canada, but there has been literature on the subject based on low-income measures produced by the national statistics agency, Statistics Canada, and Human Resources and Social Development Canada (HRSDC).

## 2 Concepts used when describing poverty

This section will define, in words, some major concepts used in the description of poverty. They include income poverty (discussed in “The Meaning of Poverty: Working Paper 1”), social exclusion, adequacy, depth and persistence.

One needs to keep in mind that there are other indicators of impoverishment: unemployment, food bank use and homelessness.

### 2.1 Income poverty

As discussed in “The Meaning of Poverty: Working Paper 1”, income poverty is described as the lack of resources (income) such that one is not able to fully participate in society without shame, or to participate at a level that is deemed to be “decent”.

For measurement or to define one as being “poor” in Canada, income (resources are discussed in Working Paper 9) is used for this determination. Thus, adequacy becomes an important part of the discussion when using income as the sole means for determination of poverty.

Another aspect of poverty associated with, but not identical to, income is one’s ability to participate in society. This includes the ability to access health and education services and the labour market. Social exclusion can be the result of limitations on the choices one makes due to financial constraints. Social exclusion is an interesting concept because one’s income affects one’s place in society, but one’s community and social network also affects opportunity.

### 2.2 Social exclusion

Sen’s 2000 essay regarding Social Exclusion suggests the inability of appearing in public without shame leads to other deprivations. Exclusions from interactions with other people lead to deprivations such as lack of access to credit or employment. The perspective

added to the poverty discussion is that social exclusion strengthens the notion that poverty is “capability deprivation”.<sup>1</sup>

Is there a connection between income poverty and social exclusion? Yes. Sen argues that social exclusion contributes to “capability poverty”, as inferred by him summarizing Adam Smith’s concept that the notion of appearing in public without shame leads to a limitation of opportunity.<sup>2</sup>

Social exclusion has been identified within Canada, both Quebec and Newfoundland and Labrador have initiatives for combating this issue. Quebec has passed laws regarding poverty and social exclusion and has not specifically defined social exclusion, but includes the concept when describing poverty.<sup>3</sup> Newfoundland and Labrador’s speech from the throne in 2005 states social exclusion is the lack of “access to adequate housing, essential goods and services, health and well-being and participating in one’s community”.<sup>4</sup> Further discussion of Quebec and Newfoundland and Labrador measures are in “Connecting measurement and policy: Working Paper 10”.

The United Kingdom has a definition of social exclusion. For their purposes, it is defined as:

*Social exclusion is a complex and multi-dimensional process. It involves the lack or denial of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole.*<sup>5</sup>

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<sup>1</sup> Sen, A. (2000): “Social Exclusion: Concept, application, and scrutiny” Social Development Papers No. 1, Office of Environment and Social Development, Asian Development Bank, June 2000, 5.  
<[http://www.adb.org/documents/books/social\\_exclusion/Social\\_exclusion.pdf](http://www.adb.org/documents/books/social_exclusion/Social_exclusion.pdf)> Accessed 14 Nov 2008.

<sup>2</sup> Ibid.

<sup>3</sup> See Quebec’s legislation and description of poverty including social exclusion. Government of Quebec, L-7: “An Act to combat poverty and social exclusion”.  
<[http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/L\\_7/L7\\_A.html](http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/L_7/L7_A.html)> Accessed 18 Nov 2008.

<sup>4</sup> See Newfoundland and Labrador’s 2005 Speech from the Throne: *Reducing Poverty in Newfoundland and Labrador: Working towards a solution – background report and workbook*.  
<<http://www.hrle.gov.nl.ca/hrle/publications/povertydiscussion/default.htm#factors>> Accessed 18 Nov 2008.

<sup>5</sup> Levitas et al. (2006): Cabinet Office: Social Exclusion Task Force, London (England).  
<[http://www.cabinetoffice.gov.uk/social\\_exclusion\\_task\\_force/faqs.aspx](http://www.cabinetoffice.gov.uk/social_exclusion_task_force/faqs.aspx)> Accessed 18 Nov 2008.



### **2.3 Adequacy**

When discussing poverty and poverty measures, the amount of income required before one can be deemed “non-poor” needs definition. The minimum amount of money in order for one to be “decent” in one’s society is a contentious issue. In Canada, there are numerous measures and methodologies for the measurement of who in fact are “poor”, but no consensus regarding any methodology or measure.

At issue is the concept of relative and absolute poverty measures, and there are also budget- or needs-based measures developed and utilized within Canada. In any event, the amount of money one requires to function in Canadian society changes over time. The issue is how one’s spending mix changes and if a measure should be rebased or adjusted for price changes.

It is also possible to eliminate poverty, or the condition of those living with income below what is deemed “indecent” by either: setting a line so low that it becomes irrelevant over time; or using a relative measure based on income distribution (say the Low Income Measure) and ensuring all persons are living above that level, without affecting the incomes in the middle and at the upper end. This was, in effect, achieved for Canadian Seniors with the development of the OAS and GIS programs.

### **2.4 Depth of poverty**

Incidence of poverty is the major focus of this report, but one should keep in mind that other measures exist as well. The “Depth of Poverty”, is the distance measured in dollars between a family’s income and “their” poverty line.

An example of the measurement of the depth of poverty is to take a distribution of those living below their respective poverty line and compare their income with the line, or some other measure such as the median income, adjusted by the appropriate household measures.

### **2.5 Persistence of poverty**

Persistence of poverty is often described as the duration of time one is living in poverty. Persistence is measured by comparing the incidence of poverty of the same households over several time periods. If the same household is in poverty in more than one period, it experiences persistent poverty.

An aspect regarding poverty measures and household income flows is brought forward with Professor Osberg’s time and poverty discussion:

*Any measure of a flow – like income or consumption – has to specify a time period for measurement, so poverty measurement necessarily has a*

*time dimension, but the literature on poverty measurement still largely ignores the frequency and duration of deprivation.*<sup>6</sup>

An argument stemming from the above statement is that there is no assumption regarding a person's poverty status within a year. It is assumed a person has a continuous flow of resources within the period of measure (for Canada, it is one year). Professor Osberg also states and explains "The timing of income receipt and the duration and recurrence of deprivation... should, however, matter..."<sup>7</sup> At issue with persistence is that the long-term poor are worse off than short-term poor, income-based poverty measures exclude access to resources such as credit, assets, friends/family and the role of social exclusion and community regarding the duration of poverty.<sup>8</sup>

Persistence of low-income is measured using micro data and is included with HRSDC's Market Basket Measure (MBM) publications.

### **3 Quantification of income poverty**

This section looks at how income poverty is quantified. Adequacy and its role in the determination of income poverty is initially discussed, followed by relative and absolute measures and finally, before- and after-tax income concepts.

#### **3.1 Adequacy and Canadian Approaches**

The Canadian approaches assessing adequacy for poverty are all set using an income threshold. Thus, adequacy is set at the income level on the edge of poverty.

The various existing low-income measures are summarized as follows:

Low-Income Cut-Offs (LICO) – these are incomes set where families are spending a substantial share of their incomes on necessities, for example 20% higher than the Canadian norm.

Low Income Measures (LIM) – this cut-off is, for example, 50% of median income adjusted for family size.

Market Basket Measures (MBM) – this cut-off is based on the cost of a basket of goods and services sufficient for a standard of living "between the poles of subsistence and social inclusion" (Giles, 15).

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<sup>6</sup> Osberg, L. (2007): "The Evolution of Poverty Measurement - with special reference to Canada" February 2007, 22.

<<http://myweb.dal.ca/osberg/classification/research/working%20papers/The%20Evolution%20of%20Poverty%20Measurement/PaperFebruary9The%20Evolution%20of%20Poverty.pdf>> Accessed 19 Nov 2008.

<sup>7</sup> Ibid, 24.

<sup>8</sup> Ibid.



Basic Needs Measures (BNM) – this cut-off is based on the cost of a basket of goods needed to meet the basic physical needs for long-term survival.

Once the income threshold for adequacy, or requirements, is set, one must address a number of methodological issues, such as how that standard should vary to account for the differences in resources needed between families to meet the same standard of adequacy. Adjustments are often made to account for (as is illustrated in the chart below):

- Family size and composition;
- Location (i.e., urban/rural categories or city); and,
- Changes over time; reflecting improved living standards or changes in price levels only.

Family equivalence scales are used in some form to vary poverty lines by family size and family composition. There are two or three methods available that are widely used.<sup>9</sup> There is very little difference between the thresholds based on different equivalence scales; the choice of equivalence scale has only a limited effect on the published poverty cut-offs or poverty rates.

As well, since the cost of living, particularly the cost of shelter and transportation, varies markedly by region within Canada, some low-income measures vary by location. The LICO values are set for each urban and rural category by Statistics Canada based on population; including urban 500,000+; 100,000-500,000; 30,000-100,000; 5,000-30,000 and rural. These calculations are a rough adjustment for differences in income requirements but are not precise as the urban category of 500,000+ includes not only Vancouver, Ottawa and Toronto, but also Montreal, Quebec and Halifax, which have very different shelter costs. Thus, if the purpose of the location adjustment is to account for cost of living it does not do it well for the major cities in Quebec or Atlantic Canada.

The LIM adjusts only for family size and otherwise does not vary by location within Canada.

The MBM and the Basic Needs Measure (BNM) of the Fraser Institute are calculated by geographic region, either metropolitan area or size of community by province. The MBM's shelter costs are based on each reported jurisdiction's average median rent for 2 and 3 bedroom apartments (assuming sample size is large enough), as collected in the Labour Force Survey, Census and Survey of Household Spending. This estimate includes

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<sup>9</sup> The measures include; square root of family size;  $1 + 0.4 + 0.3 + \dots$  and others based not just on family size but also composition. For a more detailed explanation see Statistics Canada publication "Low Income Cut-offs for 2007 and Low Income Measures for 2006" Income Research Paper Series, Catalogue no. 75F0002M-004, June 2008, 12.

<[www.statcan.ca/english/research/75F0002MIE/75F0002MIE2008004.pdf](http://www.statcan.ca/english/research/75F0002MIE/75F0002MIE2008004.pdf)> Accessed 19 Nov 2008.

amenities such as appliances and utilities. Subsidized rents are included in the MBM's shelter expense measure.<sup>10</sup>

The BNM determines shelter costs as:

*weighted average rents by type of apartment and by urban centre using average rent (1997, CMHC) of privately initiated apartments in structures of three units and over for all urban centres of population of 10,000 or more.*<sup>11</sup>

The MBM is re-priced each year of its publication, while keeping the consumption basket consistent over time, whereas the BNM adjusts prices by inflating the initial basket by all-items CPI. It appears that all updates to the BNM have been based on CPI since the 2001 release of Professor Sarlo's "Measuring Poverty in Canada".

### **3.1.1 Adequacy and growth**

A society's notion of a living standard that is minimally acceptable and decent will be influenced by social norms. As such, measures that are not adjusted for real growth will eventually be seen as irrelevant because the condition described will become unacceptable over time.

Two historical perspectives illustrate the importance of the adjustment for real growth. We'll discuss first the experience in the United States with their poverty measure and then in Canada with the LICO.

The official poverty line for the United States was developed in the early 1960s and set at 3 times the cost of a minimally adequate diet. It has been indexed to prices only for almost 50 years and is not used much in its original form because it has lost relevance. Some administrators use 2 times and 3 times the official poverty line for program qualification.<sup>12</sup>

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<sup>10</sup> Hatfield, M. (2002): "Constructing the Revised Market Basket Measure" Applied Research Branch, Strategic Policy, Human Resources Development Canada, File T-01-1E, April 2002, 5. <<http://www.hrsdc.gc.ca/en/cs/sp/sdc/pkrf/publications/research/2002-002379/it-01-1e.pdf>> Accessed 19 Nov 2008.

<sup>11</sup> Sarlo, C. (2001): "Measuring Poverty in Canada" 2001 Fraser Institute Critical Issues Bulletin, July 2001, Appendix 1, 59. <[http://www.fraserinstitute.org/Commerce.Web/product\\_files/MeasuringPoverty2001Part3.pdf](http://www.fraserinstitute.org/Commerce.Web/product_files/MeasuringPoverty2001Part3.pdf)> Accessed 19 Nov 2008.

<sup>12</sup> For an example, see: [http://www.workworld.org/wwwwebhelp/food\\_stamp\\_income\\_tests.htm](http://www.workworld.org/wwwwebhelp/food_stamp_income_tests.htm) (accessed 14 Nov 2008), where the description of some benefits such as the Individual Development Account (IDA) and food stamp programs use more than 100 per cent of the poverty threshold to determine eligibility (based on the same income measure used to determine one's poverty status).



The lack of relevance of the absolute US poverty measure led to a review by the US National Research Council Panel on Poverty and Family Assistance in the 1990s.<sup>13</sup> That review recommended that a new poverty measure be implemented based on the share of expenditures on necessities, with annual updating. This would be much like the LICO with annual updating. Their recommendation of moving from a market basket measure to a LICO-type measure requires a political decision and has not been implemented.

Of course, over the short term the importance of “real growth” is modest, although during the decades of the 1950s, 1960s and 1970s real growth was significant. Its importance during the 1980s, 1990s, and 2000s has been less important.

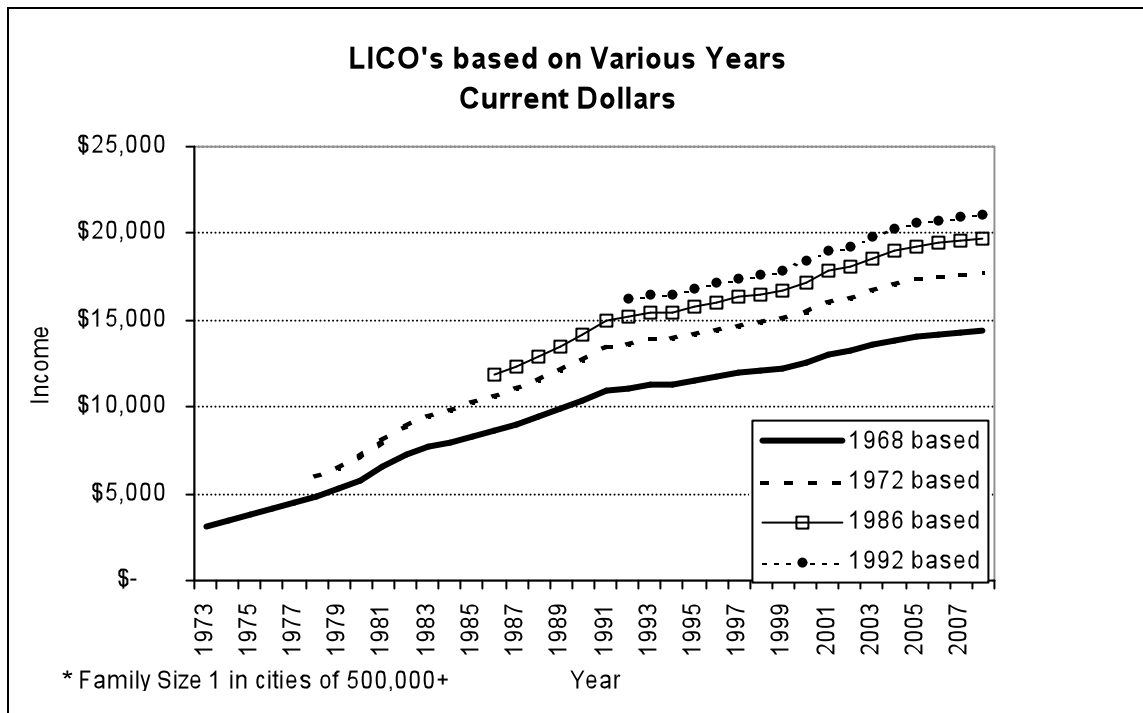
The LIM, half of median incomes, is explicitly relative as it is mathematically tied to the median. The LICO was traditionally classified as a relative poverty measure because it was recalculated, rebased, every few years and would normally increase slightly reflecting real growth and a drop in the average of expenditures on necessities (as a per cent of income).

The adjustment for real income increases is important over the long term. Consider the example of the LICO. The original 1968-based LICO for a single person in a large city would be about \$14,500 today. The 1992-based line is about \$21,000 (about 40% higher). So the occasional rebasing of the LICO has added significantly to what is considered, by this standard, as minimally acceptable.

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<sup>13</sup> Citro, C.F. and Robert T. Michael, eds. (1995): “Measuring Poverty: a new approach” Panel on Poverty and Family Assistance, National Research Council, Washington DC (June 1995).  
<<http://www.census.gov/hhes/www/povmeas/toc.html>> Accessed 14 Nov 2008.





Source: Special tabulations using LICO data from Statistics Canada Catalogue 75F0002M – 004, and Statistics Canada’s All Items CPI.

Interestingly the Statistics Canada LICO was traditionally called a relative measure, but has not been rebased by Statistics Canada since 1992 and so has become de facto an “absolute” measure with regard to changes in real income.

A review of the changes in incomes and our concept of poverty between 1960 and 2005 further illustrate the importance of changes in real incomes. In 1960<sup>14</sup>, median incomes for unattached individuals and families were \$ 1,572 and \$4,866 (after adjusting for inflation these values are now roughly \$ 13,000 and \$ 35,000).<sup>15</sup>

In the 2005 incomes (collected in the Census) median values of income for unattached individuals and families were \$24,808 and \$ 66,343.<sup>16</sup> After adjusting for inflation average incomes have almost doubled during the 45 years between 1960 and 2005.

One should note that the published incidence of low income (poverty rate) for the Census Year 1960 was 25.3% for families and 43.5% for unattached individuals, not far from contemporary poverty rates based on the LICO.<sup>17</sup>

<sup>14</sup> “1960” refers to the Census Year of 1 June 1960 – 31 May 1961.

<sup>15</sup> Podoluk, J.R. (1968): *Incomes of Canadians. 1961 Census Monograph Programme*. Dominion Bureau of Statistics (Ottawa, 1968), 247.

<sup>16</sup> Statistics Canada: *2006 Census of Population* Statistics Canada catalogue no. 97-563-XCB2006030.

After adjusting for inflation, before-tax LICOs for 2008 are close to the median incomes of families in 1960. Put another way, about half of families and 60% of single people were poor in 1960 by today's standards. This is not a flaw, but rather reflects the fact that standards change.

To summarize, all poverty lines reflect the norms in place when they are set and are in that sense "relative". Some normative poverty lines, like the LIM, are adjusted automatically to changing real incomes and are relative in the sense that they change in relation to societal norms.

### **3.1.2 Indicators of adequacy**

There are some explicit financial indicators that one might use to assess adequacy, although they would present problems and would need to be used with a great deal of caution. Possible contenders include:

- OAS/GIS guarantee levels. These are set to provide a tolerable income to a population, seniors, which are not subject to prejudice and who are not expected to work.
- Welfare Rates: Provide an income level, but it is suppressed and below most people's concept of decency or adequacy. For employable individuals on welfare the suppression is because of a work expectation. For those on welfare because of a disability, there is no work expectation but support levels regardless are very low.
- Minimum wage rate or liveable wage.

If one lives in extreme poverty, where one cannot even purchase the basics needed for survival then one is poor because one lives below a standard that is acceptable. One cannot make choices to participate in society if one cannot provide basic necessities. This is true even if extreme poverty is the norm – as it is in many developing countries. This illustrates the distinction between poverty and inequality.

To escape poverty, we require two conditions. First, you must have enough so that physical existence is sustainable. Most commentators argue that more is needed for one's life to be decent and acceptable by social norms. That is, one needs resources to participate in society. This draws a second set of needs that depend very much on social norms.

One might think of the basic needs approach as absolute, but that has not been the case. Even the threshold for this extreme poverty changes over time.

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<sup>17</sup> Podoluk, 187; 194.



### 3.2 Relative and Absolute Notions of Poverty

Succinctly the operational meanings of the terms *absolute* and *relative* used today are:

Absolute: it is indexed to prices only.

Relative: the measure is influenced by contemporary living standards and is adjusted in some way to maintain this relationship.

The debate between whether poverty, properly defined, is absolute or relative has a long history and the confusion is becoming greater. Absolute measures that, arguably, remain static can be used at any time in any place. Basic physical need might be thought of as absolute but:

*Confusion regarding the definition of poverty has been further exacerbated by a largely unproductive debate regarding the relative merits of each approach. Opponents of the “absolute approach,” for example, have characterized it as the pursuit of an a historical standard ensuring only bare physical existence, a standard that would be as relevant in the Middle Ages as in modern-day Canada. Opponents of the “relative approach” have suggested that poverty in this view is more about social envy than real deprivation – that is, more about home theatre systems than access to healthy diets and warm clothing. These caricatures have served to polarize the poverty debate rather than to create a common ground around the definition and measurement of poverty.<sup>18</sup>*

What may be described as absolute measures are influenced by social conditions when developed; (examples include the MBM, Fraser Institute Line, the U.S. poverty line) but their claim of “absoluteness” is because they will be indexed to prices only, and will not be influenced by increases in general living standards.

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<sup>18</sup> Scott, K. and B. Haggart (2008): “Poverty and Low Income in Canada: Definitions and Measures” Canadian Council on Social Development, July 2008, 10. (Prepublication manuscript).



How to change the poverty line over time?

Choices:

1. Do nothing to adjust what was included within the measure, or change its methodology;
2. Use the above and multiply by the CPI, or re-cost the items (budget-based measure);
3. Use a proxy that included CPI and average wages or prices;
4. CPI plus average real GDP per employee;
5. Wages as a function of average poverty line and average wages.

But in fact at the time of creation all poverty lines are relative. This is clear if one accepts that the consensus about what is decent and acceptable evolves over time.

The term “absolute” sometimes refers to measures unaffected by contemporary living standards – but this is never true.

The use of these terms by Sen illustrates the confusion. Sen concentrates on capacity as the important aspect that should be captured in a poverty measure:

*poverty as the failure of some basic capabilities to function—a person lacking the opportunity to achieve some minimally acceptable levels of these functionings... The function(ings) relevant to this analysis can vary from such elementary physical ones as being well nourished, being adequately clothed and sheltered, avoiding preventable morbidity, and so forth, to more complex social achievements such as taking part in the life of the community...<sup>19</sup>*

Sen describes the capacity as an absolute notion of poverty; in every society and at every time; poverty is being without the resources that give one the capacity to participate. Obviously, this absolute notion of capacity leads to relative notions of what resources (income will usually be important) are needed in a particular society to participate.

Both Mendelson and Professor Sarlo state that a basic-needs measure is not an absolute notion of poverty because the measure is based on contemporary living standards.<sup>20</sup>

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<sup>19</sup> Sen, A. (1995): "The political economy of targeting". *Public Spending and the Poor: theory and practice* Edited by D. van de Walle and K. Nead (Baltimore: The Johns Hopkins University Press, 1995; 11-24), 15.

<sup>20</sup> Mendelson, M. (2005): “Measuring child benefits: measuring child poverty” The Caledon Institute of Social Policy, February 2005, 34; and Chris Sarlo’s “What is Poverty? Providing clarity for Canada” Fraser Institute, May 2008, 4.

### 3.2.1 *Absolute measure and the United States*

The United States Bureau of the Budget approved an official poverty statistic in August 1969 developed by Mollie Orshansky of the Social Security Administration in 1963-1964.<sup>21</sup> “Orshansky took the dollar costs of the U.S. Department of Agriculture’s economy food plan for families of three or more persons and multiplied the costs by a factor of three”.<sup>22</sup> This measure was calculated once, and has been updated annually by the CPI. The measure was adjusted for smaller family sizes, due to Orshansky’s observation of economies of scale.

Income used in the measure is before tax, excluding capital gains or losses, and measured at the economic family level (non-relatives are not included, even if sharing a dwelling):

- *Money income, which includes:*
  - *Earnings, unemployment compensation, workers’ compensation, Social Security, Supplemental Security Income, public assistance, veterans’ payments, survivor benefits, pension or retirement income, interest, dividends, rents, royalties, income from estates, trusts, educational assistance, alimony, child support, assistance from outside the household, and other miscellaneous sources.*
- *Noncash benefits (such as food stamps and housing subsidies) do not count.*<sup>23</sup>

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<sup>21</sup> United States Department of Health and Human Services: Frequently asked questions, <<http://aspe.hhs.gov/poverty/faq.shtml#developed>> Accessed 13 Nov 2008.

<sup>22</sup> Ibid.

<sup>23</sup> U.S. Census Bureau: “How the Census Bureau Measures Poverty (Official Measure)” <<http://www.census.gov/hhes/www/poverty/povdef.html#1>> Accessed 13 Nov 2008



The 2007 Thresholds are:

**Poverty Thresholds for 2007 by Size of Family and Number of Related Children Under 18 Years**

Size of Family Unit	Weighted Average Thresholds	Related children under 18 years								
		None	One	Two	Three	Four	Five	Six	Seven	8 or more
One person (unrelated individual)	10,590									
Under 65 years	10,787	10,787								
65 years and over	9,944	9,944								
Two people	13,540									
Householder under 65 years	13,954	13,884	14,291							
Householder 65 years and over	12,550	12,533	14,237							
Three people	16,530	16,218	16,689	16,705						
Four people	21,203	21,386	21,736	21,027	21,100					
Five people	25,080	25,791	26,166	25,364	24,744	24,366				
Six people	28,323	29,664	29,782	29,168	28,579	27,705	27,187			
Seven people	32,233	34,132	34,345	33,610	33,098	32,144	31,031	29,810		
Eight people	35,816	38,174	38,511	37,818	37,210	36,348	35,255	34,116	33,827	
Nine people or more	42,739	45,921	46,143	45,529	45,014	44,168	43,004	41,952	41,691	40,085

Source: U.S. Census Bureau

Source: <http://www.census.gov/hhes/www/poverty/threshld/thresh07.xls>, Accessed 13 Nov 2008

Of interest, this absolute measure of \$10,590 for unattached individuals in the USA for 2007 is similar in magnitude of the applied absolute measure of the LIM of 1961 of \$10,111, in today’s 2006 dollars.

Critiques of the US measure as applied today include the type of income used to measure against the threshold, as well as the fact that spending habits have changed since the development of the index (the 1/3<sup>rd</sup> item was based on the US Agriculture Department’s 1955 Household Food Consumption Survey) in 1963-1964.<sup>24</sup> There is also no accommodation for real increases in living standards or income with an absolute measure.

Other critiques of the US measure include the over-statement of the incidence of poverty because social benefits are not included in the income test used to measure against the threshold. The income used to determine eligibility for social programs is the same as used for the poverty threshold. In other words, the income used to determine poverty status excludes the income of the social program, if applied. This income definition allows for consistency when determining poverty status and eligibility for social programs. Of note, income tests applied for qualification of social programs are often a multiplicative factor greater than one’s applicable threshold.<sup>25</sup>

### 3.3 Before- and after-tax concepts for measures of poverty

Measures for LICO and LIM are reported in both before- and after-tax concepts. This is not required for the MBM because it is based on its own disposable income concept

<sup>24</sup> United States Department of Health and Human Services: Frequently asked questions, <<http://aspe.hhs.gov/poverty/faq.shtml#developed>> Accessed 13 Nov 2008.

<sup>25</sup> For an example, see: [http://www.workworld.org/wwwwebhelp/food\\_stamp\\_income\\_tests.htm](http://www.workworld.org/wwwwebhelp/food_stamp_income_tests.htm), where the description of some benefits such as the Individual Development Account (IDA) and food stamp programs use more than 100 per cent of the poverty threshold to determine eligibility (based on the same income measure used to determine one’s poverty status).

(discussed in section 4.3 *Market Basket Measure*). With respect to the Basic Needs measure, it is an expenditure-based measure. The income concept used to determine the incidence of poverty is discussed in section 4.4 *Basic Needs Measure*. In any event, neither the MBM nor the BNM are affected by before- and after-tax income concepts.

Statistics Canada began reporting both before- and after-tax concepts for the LIM in 1991 for international comparisons.<sup>26</sup> The LICOs are reported in after-tax dollars, but are also calculated as before-tax measures. Statistics Canada cites their preference for after-tax measures due to the change in income distribution from Canada's progressive tax system and because people make purchases in after-tax dollars.<sup>27</sup>

## 4 Canadian applications

There are four measures used to assist researchers in the identification of those with low income (note the term "poverty" is not used here since there is no official measure in Canada). They include the Low-Income Cut-Off (LICO), the Low-Income Measure (LIM), the Market Basket Measure (MBM) and the Basic Needs Measure (BNM).

### 4.1 The Low-Income Cut-Off (LICO)

The Low-Income Cut-Off was developed by Statistics Canada in the 1960s as a measure that identifies families who are spending a much higher proportion of their income on necessities than most families and are likely to be poor.

Statistics Canada has cautioned that the LICOs are not a poverty measure. Nevertheless, they have been used as a poverty measure repeatedly by academic researchers, NGOs, other government departments, and the government of Canada, as the statement below attests:

*While Canada has no official measure of poverty, the Government of Canada typically uses Statistic[s] Canada's after-tax low-income cut-offs (LICOs) as a proxy.*<sup>28</sup>

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<sup>26</sup> Statistics Canada (2008): "Low Income Cut-offs for 2007 and Low Income Measures for 2006" Income Research Paper Series, Catalogue no. 75F0002M-004, June 2008, 6.  
<[www.statcan.ca/english/research/75F0002MIE/75F0002MIE2008004.pdf](http://www.statcan.ca/english/research/75F0002MIE/75F0002MIE2008004.pdf)> Accessed 19 Nov 2008.

<sup>27</sup> Ibid, 10.

<sup>28</sup> Government of Canada (2005): "Implementation of the International Covenant on Economic, Social and Cultural Rights: Fifth periodic reports submitted by States parties under articles 16 and 17 of the Covenant". United Nations Economic and Social Council, Substantive sessions 2006. 17 Aug 2005, para 121, p.29.  
<[http://www.unhchr.ch/tbs/doc.nsf/898586b1dc7b4043c1256a450044f331/4f07de4ea236e858c125711500574ff8/\\$FILE/G0543784.pdf](http://www.unhchr.ch/tbs/doc.nsf/898586b1dc7b4043c1256a450044f331/4f07de4ea236e858c125711500574ff8/$FILE/G0543784.pdf)> Accessed 19 Nov 2008.





Twenty-five years ago there was a consensus about poverty measurement. Virtually everyone relied on the Low-Income Cut-Offs (LICOs). There was a consensus that this was a useful measure although Statistics Canada withdrew its “stamp of approval”. However, it is the only measure used consistently over time.

Technically the LICO is set at an income where relative expenditures on food, shelter and clothing are 20 percentage points greater than for the average equivalent household. Statistics Canada calculates 35 different LICOs, covering five different community sizes (to account for rural and urban differences), and seven different family sizes.

Statistics Canada recently started to publish LICOs calculated on after-tax income and are now featuring this version. Statistics Canada uses the same 20% differential to distinguish the relative spending on necessities of poor families as compared to average families. The After-Tax LICO generates a lower income threshold than before-tax LICOs, it's after-tax; but it will generate a lower incidence of low-income because of the same 20% differential<sup>29</sup>.

The LICOs are revised annually to take account of inflation. The current base year – the last year in which overall household spending on food, shelter and clothing was estimated – is 1992.<sup>30</sup>

The LICOs have the advantage of familiarity and there is a long historical record of values. On the other hand the methodology is very difficult to explain and few understand the nuances. As well, the LICO cannot be used for international comparisons.

The after-tax LICOs for a single person range from \$11,264 to \$17,214 respectively for rural and urban areas. For a family of four the values range from \$21,296 to \$32,556.

The method of setting the LICO involves three steps:

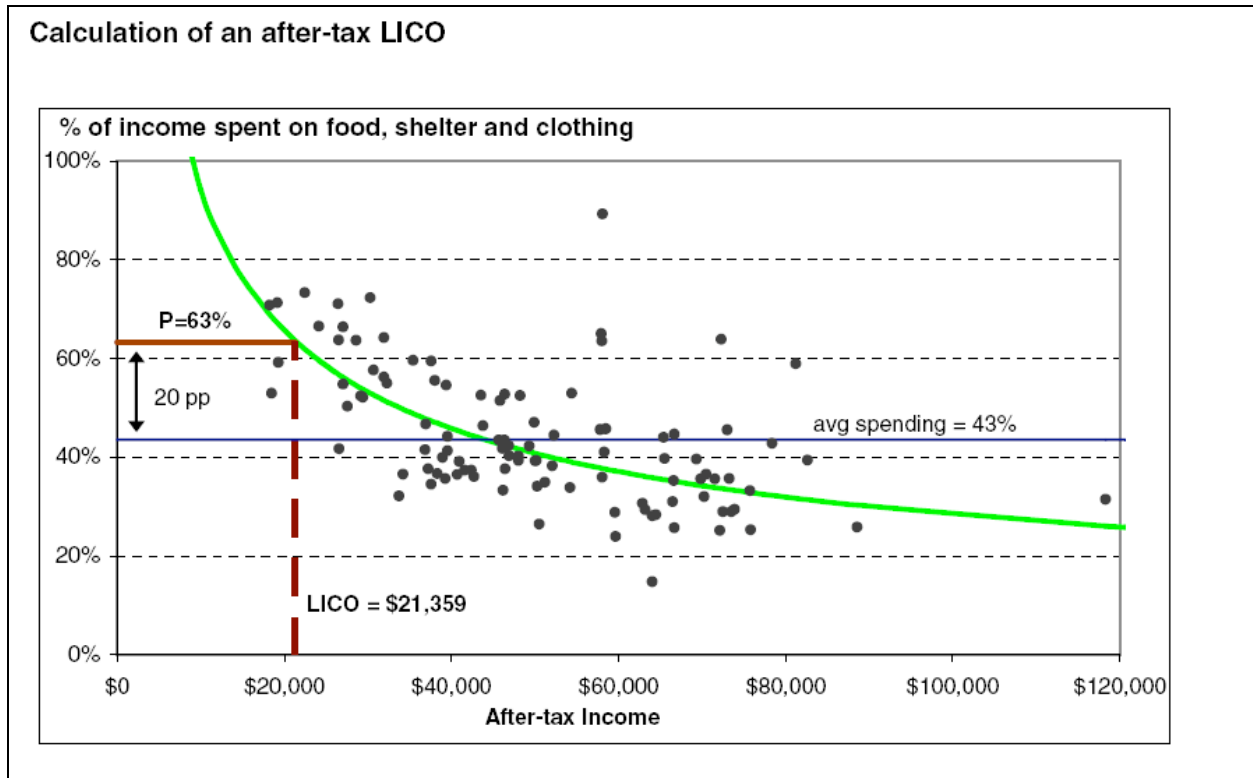
1. Finding the average expenditures on necessities as a per cent of income.
2. Adding 20% to this figure as the relative spending on necessities that will indicate straitened circumstances.
3. Finding the income at which, on average, families have reduced spending room, relative to income, at this new higher value for necessities.

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<sup>29</sup> The reasons for this are technical and based on the relationship between expenditures and before-tax income as compared to after-tax income.

<sup>30</sup> In that year, it was determined that the average family, regardless of size, spent 43% of its after-tax income on food, shelter and clothing. Families spending more than 63% of household income on these essentials, 20 percentage points higher than average, are deemed low income.

This estimated income where spending on necessities is taking a higher proportion of income is the LICO. This process is repeated for various urban/rural categories in Canada and by family size.



Source: Figure 1, Statistics Canada: “Low Income Cut-offs for 2007 and Low Income Measures for 2006: 2006/2007” Catalogue no. 75F0002M no. 004; June 2008

#### 4.2 The Low-Income Measure (LIM)

The Low-Income Measure (LIM) is set at an income value 50 per cent of the median income of families. There is an adjustment so that family size is taken into consideration before the median is calculated (this uses family equivalence scales). The LIM is measured using both before-tax and after-tax incomes.

From Table 1 in Statistics Canada’s “Low Income Cut-offs for 2007 and Low Income Measures for 2006: 2006/2007”, the family equivalence scales in use for the LIM and other measures are shown:

**Table 1 Adjusted family sizes for three different equivalence scales**

	OECD	LIM	Square root
One adult	1.0	1.0	1.00
One adult, one child	1.3	1.4	1.4
Two adults	1.5	1.4	1.41
One adult, two children	1.6	1.7	1.73
Two adults, one child	1.8	1.7	1.73
Three adults	2.0	1.8	1.73
One adult, three children	1.9	2.0	2.00
Two adults, two children	2.1	2.0	2.00
Three adults, one child	2.3	2.1	2.00
Four adults	2.5	2.2	2.00
One adult, four children	2.2	2.3	2.24
Two adults, three children	2.4	2.3	2.24
Three adults, two children	2.6	2.4	2.24
Four adults, one child	2.8	2.5	2.24
One adult, five children	2.5	2.6	2.45
Two adults, four children	2.7	2.6	2.45
Three adults, three children	2.9	2.7	2.45
Four adults, two children	3.1	2.8	2.45

Note: The definition of an adult differs for each equivalence scale: 16 and over low income measure (LIM), 15 and over Organisation for Economic Co-operation and Development (OECD). For the LIM scale, the second oldest person is treated as an adult, regardless of age.

Source: Table 1, Statistics Canada: "Low Income Cut-offs for 2007 and Low Income Measures for 2006: 2006/2007" Catalogue no. 75F0002M no. 004; June 2008

The LIMs make no adjustment for region, or urban/rural category. This can mean the incidence of low-income, as measured, vary much more by province than the other values that make such an adjustment.

There is no technical reason that one could not supplement the national LIMs with LIMs based on provincial median incomes, and/or the median incomes of major cities. These

three measures would capture the inequality of family income, at the national level, within provinces, and within cities and regions.

This methodology has the advantage that it is easy to explain and understand. LIM methodology allows for international comparisons and is used by the European Union and the United Nations.<sup>31</sup>

The after-tax LIM for a single person in 2006 is \$15,179. For a family of four (2 adults and 2 children) it is \$25,804.

**Low Income Measures (LIM), after tax**

2006 Dollars	Number of Children					
	0	1	2	3	4	5
1 adult	\$15,179	\$21,251	\$25,804	\$30,358	\$34,912	\$39,465
2 adults	\$21,251	\$25,804	\$30,358	\$34,912	\$39,465	\$44,019
3 adults	\$27,322	\$31,876	\$36,430	\$40,983	\$45,537	\$50,091
4 adults	\$33,394	\$37,948	\$42,501	\$47,055	\$51,609	\$56,162

Source: Table 4; "Low Income Cutoffs for 2007 and Low income measures for 2006: 2006/2007". June 2008.

Statistics Canada, catalogue no. 75F0002M: <http://www.statcan.ca/english/research/75F0002MIE/75F0002MIE2008004.pdf>

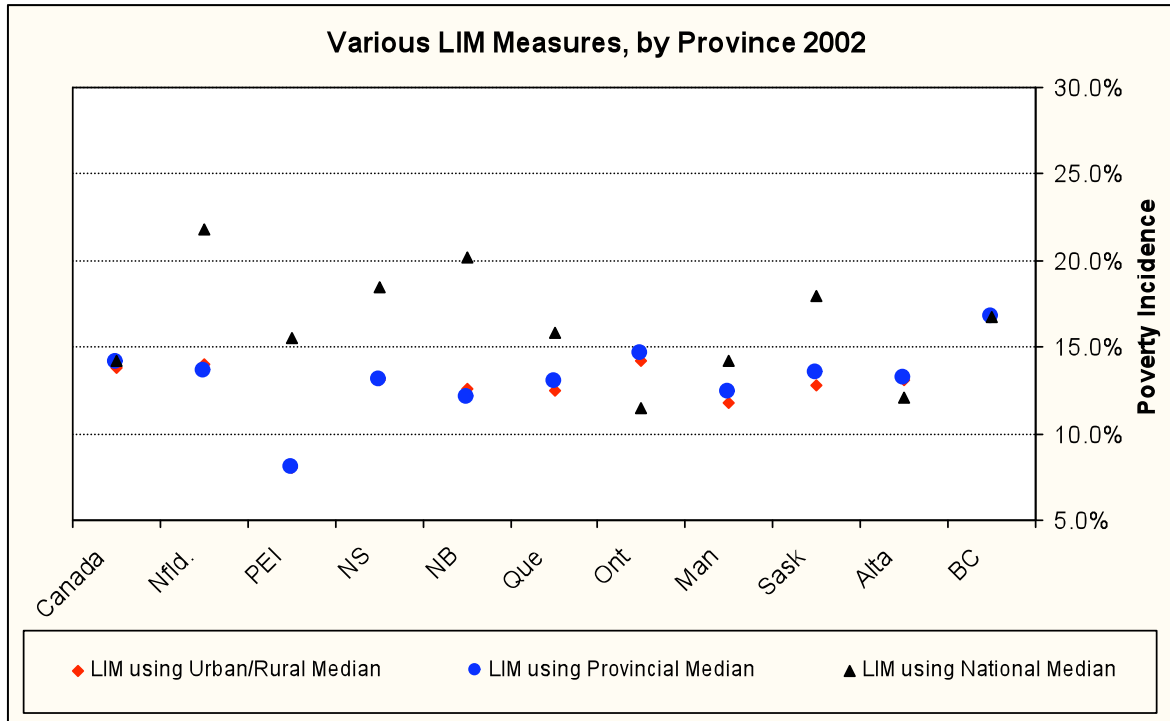
Statistics Canada publishes a LIM based on a national median income. It is possible to calculate a LIM using the median income of each province. The impact of this approach changes the relative incidence of low-income. There is much less variation in income within provinces than between provinces. The LIM currently does not publish variations by province or city, but rather presents a single income cut-off for Canada that varies only by family size.

The following chart illustrates the impact of calculating a LIM using provincial median incomes or, alternatively, using the median income of families within a province in the same urban/rural category (for example, Saskatchewan 5,000-30,000 or Ontario 500,000+). Using a provincial median income means the LIM is measuring income inequality within a province. This paints a quite different picture from the LIM based on the national median.

When using a LIM based on national median income, high incidences of low-income are observed in the Atlantic Provinces and low incidences are seen in Ontario and Alberta. But looking at income inequality within provinces, adjusted for family size, P.E.I., at 8.1%, has a very low rate of low income and B.C., at 15.8% has the highest rate and there is very little variation between the provincial LIMs of other provinces; they range from 12.1% to 13.5%.

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<sup>31</sup> There are variations sometimes in the proportion. That is, some use 60% instead of 50%.



Source: Special Tabulations based on 2002 SLID data

### 4.3 Market Basket Measure (MBM)

The Market Basket Measure (MBM) was developed by Human Resources and Social Development Canada (HRSDC) at the behest of the Federal/Provincial and Territorial Ministers of Social Services who were frustrated that the LICO was seen as a “moving target” (since it was occasionally rebased to reflect changes in spending). They were looking for a measure, based on a market-basket approach, as part of the evaluation framework for the new national child benefit. HRSDC was directed to construct a basket that was more generous than the subsistence levels calculated by the Fraser Institute, but which fell short of the LICO, which reflected social inclusion.

The MBM uses its own income concept. Income used to determine incidence of low-income is:

*MBM disposable family income is the sum remaining after deducting from total family income the following: total income taxes paid; the personal portion of payroll taxes; other mandatory payroll deductions such as contributions to employer-sponsored pension plans, supplementary health plans and union dues; child support and alimony payments made to another family; out-of-pocket spending on child care; and non-insured but medically-prescribed health-related*

*expenses such as dental and vision care, prescription drugs and aids for persons with disabilities.*<sup>32</sup>

The MBM was officially released in 2003. It yields an incidence of low-income only slightly higher than the after-tax LICO.<sup>33</sup> For a reference family of two adults and two children under age 16 the MBM for Toronto in 2004 was \$30,121. For an unattached individual it was \$15,060.<sup>34</sup>

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<sup>32</sup> Human Resources and Social Development Canada (2007): “Low Income in Canada: 2000-2004: Using the Market Basket Measure” Catalogue No. HS28-49/2004E-PDF, 2007, 5.  
<[www.hrsdc.gc.ca/en/publications\\_resources/research/categories/inclusion/2007/sp\\_682\\_10\\_07\\_e/page05.shtml](http://www.hrsdc.gc.ca/en/publications_resources/research/categories/inclusion/2007/sp_682_10_07_e/page05.shtml)> Accessed 19 Nov 2008.

<sup>33</sup> The before-tax LICOs are more commonly used in public discussion, but Statistics Canada urges the use of after-tax LICOs so that low-income statistics also take into account the impact of the tax system on redistributing income. The incidence of low-income comparing MBMs to pre-tax LICOs reduces the low-income threshold from 14.7 per cent (pre-tax LICO) to 13.1 per cent (MBM).

<sup>34</sup> The MBM figures cannot be compared directly to low-income lines such as the LICO as the MBM is based on income minus payroll taxes and mandatory contributions, child support and alimony payments, child care costs and out-of-pocket spending on health care recommended by a health professional. The equivalency scale used for a single person is one-half of a reference family of two adults and two children. Values are from HRSDC’s “Low Income in Canada: 2000-2004: Using the Market Basket Measure”.  
<[www.hrsdc.gc.ca/en/publications\\_resources/research/categories/inclusion/2007/sp\\_682\\_10\\_07\\_e/page00.shtml](http://www.hrsdc.gc.ca/en/publications_resources/research/categories/inclusion/2007/sp_682_10_07_e/page00.shtml)> Accessed 19 Nov 2008.

The MBM is a low-income measure based on a market basket. The components of the basket for food, shelter, clothing, transportation and other, for the reference family of 4 in 2004 are as follows:

Food	Costing a food basket.	\$ 6,025 - \$ 7,651
Shelter	Average of the median rent (including utilities) for 2 and 3 bedroom apartments in community.	\$ 5,559 - \$ 12,871
Clothing & Footwear	Costing a basket taken from Canadian Poverty Measures A.L.L.	\$ 2,126 - \$ 2,294
Transportation	Cost of a car in rural areas; rapid transit in urban areas (two adult passes plus one \$16 taxi ride per month).	\$ 1,330-\$2,589 in urban areas.  \$ 3,497 to \$ 4,291 in urban areas without public transit, or rural areas.
Other	Roughly 2/3rds of the median spending on other items of the second decile.	\$ 5,468 - \$ 6,561
Total		\$ 22,514- \$ 30,121

Source: HRSDC: "Low Income in Canada: 2000-2004 Using the Market Basket Measure", 78.  
[http://www.hrsdc.gc.ca/en/publications\\_resources/research/categories/inclusion/2007/sp\\_682\\_10\\_07\\_e/pa ge00.shtml](http://www.hrsdc.gc.ca/en/publications_resources/research/categories/inclusion/2007/sp_682_10_07_e/pa ge00.shtml), Accessed 19 Nov 2008.

The MBM sets an income cut-off based on the estimated cost of this basket for various communities in Canada. The income definition used to compare to these cut-offs are quite complex. The income considered available to a family is the money remaining after income taxes, payroll taxes and mandatory contributions to an employer pension plan, or employer health insurance. As well, two components of consumption were removed from a family's income before comparing it to the income cut-off. First, spending on child-care was removed and then an estimate of the cost of non-insured health care was removed

(this estimate was based on the actual or imputed value of the Medical Expense Tax Deduction). Child care, alimony and child support payments are also deducted.<sup>35</sup>

The adjustments to income, removing the spending on health insurance and pension contributions has the effect that many families will appear poor because their pension contribution reduces the income used by the MBM to assess low income. A comparable RRSP contribution would not have this effect. Similarly, spending large amounts for medical expenses (they would need to exceed 3% of the individual net income of a family member) would reduce the family's computed income.

#### **4.4 Basic Needs Measure (BNM)**

The Fraser Institute's Basic Needs Measure (BNM), like the MBM is based on a market basket. The development of this line is based on research conducted by Professor Sarlo. This basket is designed to reflect the minimum income needed for physical sustainability. The price of the basket of goods used for this measure was last updated in the 2001 publication. The price of goods used for this low-income line for subsequent years are updated by using Statistics Canada's all-items CPI for the applicable year of publication.

In the 2001 update, for which the 2008 values shown below were compared against to determine incidence, Sarlo states:

*Pre-tax income has been used as the primary indicator in this study. It has been pointed out earlier that, in all cases, households at or below the basic needs poverty level do not pay income taxes.*<sup>36</sup>

The BNM is a consumption-based measure, and the income definition in its determination is only applied when the incidence of poverty as determined by location is calculated.

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<sup>35</sup> Alimony (Child and Spousal Support) received may or may not be included in the MBM Disposable Income measure, dependent on family circumstance.

<sup>36</sup> Sarlo (2001), 41.



The 2001 publication reports the following family of 4 costs, in \$1997:<sup>37</sup>

Food	Costing a food basket. Family of 4; \$ 5,306 (1997 \$'s)	\$5,306
Shelter	10% less than the average rent for apartments (with roughly the same number of bedrooms).	\$8,051
Clothing & Footwear	Market Basket based on the Montreal Diet Dispensary	\$2,012
Transportation	Not clear how this is derived except that it is public transportation only	\$ 648
Other	Derived from various basket measures.	\$2,839
Total	2000 Value family of 4; \$15,196 - \$23,291*  2000 Single Individual \$6,859 - \$10,513**	\$ 18,856

\* Shawinigan was deemed to have the lowest Poverty line, \$15,196 for a family of 4, and \$6,859 for a single individual (p. 31).

\*\* Vancouver was deemed to have the highest Poverty line, \$23,291 for a family of 4, and \$10,513 for a single individual (p. 32).

The above measures were updated in a 2008 report, however only the aggregate thresholds were reported. They are shown below.



<sup>37</sup> Sarlo, 2001, 20.

**Table 1: Poverty Lines by Household Size, Canada, 2007**

Size of Household	Basic Needs Poverty Line
1	10,520
2	16,508
3	20,064
4	23307
5	26,323
6	29,163

Source: Calculations by author.

Source: Table 1: Poverty Lines by Household Size, Canada, 2007. Sarlo, C.: "What is Poverty? Providing Clarification for Canada." Fraser Institute Digital Publication. May 2008, 8.  
[http://www.fraserinstitute.org/commerce.web/product\\_files/What\\_is\\_Poverty.pdf](http://www.fraserinstitute.org/commerce.web/product_files/What_is_Poverty.pdf), Accessed 19 Nov 2008.

Clearly, many Canadians are living lives that the general population would consider to be at a level below that deemed to be "decent". These Canadians may be socially excluded and not social participants (to use Sen's concepts). According to Professor Sarlo's construct, people are not poor so long as their basic physical needs are met.

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