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Constructing the Revised Market Basket Measure

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by

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Abstract

This document specifies the procedures Statistics Canada has been asked to implement for calculating the thresholds for four components of the Market Basket Measure (MBM) for a reference family of two parents and two children. These components are food, shelter, clothing and footwear, and transportation. The instructions include the assumptions to be made when precise data are not available. The document also explains how the cost of other goods and services in the basket are to be calculated.

The Applied Research Branch of Human Resources Development Canada has contracted with Statistics Canada to price the four main components of the MBM of low income. This measurement instrument was developed by the Working Group on Social Policy Research and Information, which consists of federal-provincial-territorial officials who report to the Ministers responsible for social services in their respective jurisdictions. The MBM was developed at the request of these Ministers to complement existing measures of low income in the evaluation of the effectiveness of the National Child Benefit initiative in reducing the incidence and depth of child poverty in Canada. Notwithstanding the disclaimer on the title page of this document, the content of the measure described in this paper represents not only the views of the author but also those of the entire Working Group, representing their various governments.

Table of Contents

1. Defining the Reference Family	1
2. The Components of the Basket.....	3
2.1 Food	3
2.2 Clothing and Footwear.....	3
2.3 Shelter	5
2.4 Transportation.....	6
2.4.1 Urban Centres Served by Public Transit	
2.4.2 All Other Areas	
2.5 Other Goods and Services	7
2.6 Special Categories of Expenditure	7
3. The Income To Be Compared to the Thresholds	8
4. The Formula for Deriving the MBM Thresholds	9
5. Calculating MBM Statistics	11

1. Defining the Reference Family

It would not be feasible to collect data on the cost of the Market Basket underlying the Market Basket Measure (MBM) for every conceivable household type in a representative number of communities across Canada. Therefore a reference household type had to be selected. Once the cost of the basket for this reference family was calculated, its cost for other household configurations could be approximated using an equivalence scale. An equivalence scale determines how much more income larger households need than smaller households to obtain the same standard of living.

The cost of the goods and services in the MBM is calculated for a reference family of one male and one female adult aged 25-49 and two children—a girl aged 9 and a boy aged 13. The rationale for this choice is that, despite recent trends showing an increasing share of persons living in alternative household configurations such as lone-parent families, childless couples and unattached individuals, the two-parent, two-child household is still the household type that describes the largest share of the Canadian population.¹

The MBM for all other household configurations is then calculated by using the Low Income Measure (LIM) equivalence scale. Under this scale the first adult in a household has a value of one. Each additional adult and the first child under age 16 in a lone-parent family have a value of 0.4. All other children under the age of 16 have a value of 0.3. These values represent the estimates of the scale's creators of the relative additional living costs added by each additional household member after the first adult.

Under this scale, the reference family's threshold has a value of $2(1.0+0.4+0.3+0.3)$. The threshold for an unattached individual has a value of 1, or 50% of the threshold for the reference family. The threshold for a lone parent with two children under age 16 would have a value of $1.7(1.0+0.4+0.3)$, or 85% of the threshold for the reference family. Thus the cost of the goods and services in the Market Basket for an unattached individual is estimated to be one-half what it is for the reference family. The cost for a lone-parent, two-child family is estimated to be 85% of the cost for the reference family.

¹ The United States National Research Council panel made this same choice, using similar logic, in their recent study of poverty in that country. See Constance F. Citro and Robert Michael (editors), *Measuring Poverty: A New Approach* (Washington, D.C. 1995), National Academy Press, p. 45.

For household sizes up to four, the Low Income Measure (LIM) equivalence scale is almost identical to the relative measure of poverty used by the United Nations and the Luxembourg Income Survey (LIS) when these organisations do international poverty comparisons. The LIS scale is simply the square root of household size. The British poverty analyst Anthony Atkinson, after an extensive study of the many equivalence scales used in developed countries, has concluded that the scales tend to converge around the value of the square root of household size. The choice of the LIM equivalence scale is thus consistent with international standards while reflecting judgements made the Canadian context.

2. The Components of the Basket

2.1 Food

The content of the food component of the Market Basket is as described in the Health Canada publication, *National Nutritious Food Basket 1998*, written by Judith Lawn.² The basket represents community standards of food expenditure in Canada as derived from Statistics Canada's *Survey of Family Food Expenditure in Canada 1996* adjusted to be consistent with Health Canada's *Nutrition Recommendations* and current guidelines for fat and saturated fat intake for adults.

It is neither "an ideal diet" nor the cheapest diet that meets nutritional requirements. Instead it represents a nutritional diet which is consistent with the food purchases of ordinary Canadian households. The basket contains healthy foods that "people like to eat." It is designed to be "socially acceptable and contain sufficient variety to be nutritionally adequate and palatable over the long term." It does not exclude more costly "basic processed foods such as yogurt or bread... since a family would not normally prepare these foods from raw ingredients."

The publication lists the amount of each type of food that would be purchased each week and the suggested purchase unit (e.g., the equivalent of sixteen litres of dairy products) for the reference family. From these tables the annual cost of the food basket for the reference family can be determined in the forty urban centres where Statistics Canada collects food-price data.

It is assumed that the cost of the basket in rural areas of each province is the same as in the smallest urban centre(s) surveyed. Currently the Pricing Division of Statistics Canada does not collect data on rural food costs. This assumption is being tested for rural and urban centres in five provinces (British Columbia, Ontario, Quebec, New Brunswick, and Newfoundland and Labrador).

2.2 Clothing and Footwear

In 1997, Winnipeg Harvest and the Winnipeg Social Planning Council developed a budget guide for families in the Winnipeg Census Metropolitan Area which they named the Acceptable Level of Living

² See Judith Lawn, *National Nutritious Food Basket 1998*, Health Canada (Ottawa, 1998). The document was prepared under contract with the Nutrition and Healthy Eating Unit of the Health Promotion and Programs Branch of Health Canada.

(A.L.L.) basket. The Federal-Provincial-Territorial Working Group on Social Development Research and Information had chosen the clothing and footwear component of the A.L.L. for the MBM in 1999 because it:

- was the most recently determined clothing and footwear “basket” developed in Canada;
- reflected an effort to provide clothing and footwear for most common work, school and social occasions—a standard of living similar to that aimed for by the MBM; and
- had significant input from low-income persons.

In 2000, 2001 and 2002, the A.L.L. served as an interim specification for the MBM. The base amount for this specification was the cost of the clothing and footwear component of the A.L.L. basket in Winnipeg for the reference family as determined by Winnipeg Harvest and the Winnipeg Social Planning Council. To determine the cost of this component of the basket in other urban centres, the Prices Division of Statistics Canada used the relative spatial indices for clothing and footwear in October 1999 published in Table 12 of Statistics Canada catalogue 62-001. More recent equivalent data were used if available. These indices generated a cost for the clothing and footwear component of the basket in ten urban centres across the country in addition to Winnipeg. The assumption was that the cost of clothing and footwear in the urban centres in each province and territory for which relative spatial price indices were produced approximated the cost in other community sizes within those jurisdictions.

Unfortunately, the cost of the clothing and footwear component of the A.L.L. basket in Winnipeg represents expenditures on clothing and footwear by the *seventh* decile of reference families. This is above the standard of consumption aimed at by the MBM.

It also proved difficult to match the descriptions of many of the clothing and footwear items in the A.L.L. with those for which Statistics Canada collects price data.

In light of these problems, for 2003 a new clothing and footwear component for the overall basket must be created.

For 2003 the Working Group will attempt to provide to Statistics Canada specifications for the clothing and footwear component of the MBM more in keeping with actual expenditures on these items by the *second* quintile of the reference family.

2.3 Shelter

The shelter component of the MBM reflects the average cost of the median rent for two-bedroom and three-bedroom rental units for each community size in each province and territory where sample size permits such a calculation. Where insufficient sample size does not permit such a calculation, the communities sized closest together in population will be amalgamated. The rent is assumed to include utilities (water, heat and electricity) as well as the following amenities: a stove, a refrigerator and use of a washer and dryer.

Statistics Canada will use data from the shelter questions asked on the Labour Force Survey, the Census and the Survey of Household Spending to derive the MBM estimates.

An alternative data source—the annual October survey of rents conducted by the Canada Mortgage and Housing Corporation (CMHC)—was used in the preliminary paper on the MBM. However, it does not indicate whether the rent includes utilities or the amenities listed above. Nor does the CMHC survey rents in rural areas or in buildings containing three or fewer rental units. Moreover, it surveys recently rented units rather than the entire stock of rental units within a municipality. For these reasons, the MBM uses the data sources listed in the preceding paragraph to provide more precise estimates of comparable rental shelter costs for the reference family.

The choice of the average of the median rents for two types of rental units reflects the fact that approximately half of two adult, two-child households live in two-bedroom apartments and half in three-bedroom apartments.

In those situations where the rent does not include the utilities and amenities described above, amounts are imputed for these costs. The imputed costs are based on representative utility expenditures in the jurisdiction and the cost of purchasing the appliances, amortised over the life of the appliances. The cost of the appliances is derived from expenditure patterns in the second decile of the reference family.

Rental units with zero rents and those in need of major repairs are excluded as well as cases where the unit is used for business, since these clearly represent exceptional situations whose rent levels would bias the calculation of median rents. However, subsidised rental units are included.

2.4 Transportation

The transportation component of the basket largely follows the recommendations of the National Council of Welfare in its publication, *A New Poverty Line: Yes, No or Maybe?*³

2.4.1 Urban Centres Served by Public Transit

The transportation component of the basket in urban centres consists of the annual cost of two monthly adult transit passes plus one round trip taxi ride of \$16 each month. The sixteen-dollar amount is adjusted annually to reflect changes in the Consumer Price Index for taxi rides in each centre.

2.4.2 All Other Areas

The transportation component of the basket in all other areas is the cost of paying for and operating a five-year-old Chevy Cavalier. The main operating cost is the purchase of 1500 litres of regular gasoline (calculated using the simple average of self-service and full-service stations). Other operating costs include legally-required vehicle insurance and license fees, a tune up and two oil changes. (The recommendation of the National Council of Welfare did not include monthly payments on such a vehicle.) The payments are calculated assuming the purchaser takes out a loan with a term of 36 months.

Access to public transit is not universal in some parts of Census Metropolitan Areas (CMA) and Census Agglomerations (CA) centred on a city. Therefore the cost of the transportation component of the basket will be weighted for each CMA and CA in which public transit is available. The proportion of the population served by the public transit system is multiplied by the public transit cost and the proportion of the population not served by the public transit system is multiplied by the “All Other Areas” cost. The sum of these two products is the transportation cost for that CMA or CA.

³ See National Council of Welfare, *A New Poverty Line: Yes, No or Maybe?* (Ottawa: Winter 1998-99), p. 24.

2.5 Other Goods and Services

There are a host of other goods and services that are encompassed by the MBM standard of consumption. The category “other goods and services” includes personal care; household needs; furniture; basic telephone service; reading, recreation, entertainment; and school supplies. The category also includes envelopes, postage stamps, and religious and charitable donations. (The furniture category excludes the stove, fridge, washer and dryer included in the shelter component of the basket.) The reading, recreation and entertainment component includes a newspaper subscription, video rentals, YM/YWCA memberships, magazines, books, and tickets for movies and sports events.

The cost of these other goods and services is calculated using a multiplier representing their share as a proportion of spending on food and clothing and footwear by the second decile reference family. This multiplier for “other goods and services.” will be calculated for each year using the detailed micro data from the Survey of Household Spending.

The second decile was chosen because since 1980, the low-income rate for the reference family (4 persons) using Statistics Canada’s pre-income-tax Low Income Cut-offs, has never exceeded 15%. The 15th percentile is the mid-point of the second decile.

The cost of the shelter component has been separated from the “other goods and services” calculation because shelter costs vary widely from community to community; this variance should not be allowed to bias the estimate of the cost of the other goods and services. Similarly, urban costs for transportation will probably be lower than for non-urban areas while shelter costs will be higher.

2.6 Special Categories of Expenditures

Out-of-pocket spending varies widely from household to household for child care and non-insured but medically-prescribed health-related expenses such as dental and vision care, prescription drugs, private health insurance and aids for persons with disabilities such as hearing aids, wheelchairs and guide dogs. This variation makes it difficult to compile a representative sub-basket for such items.

However, households that must spend significant sums of money on such items obviously experience a lower living standard than do those with the same income who do not have to bear such costs. Statistics Canada’s estimates of spending on these items will be subtracted from gross income before that income is compared to the MBM thresholds.

3. The Income To Be Compared to the Thresholds

The basic idea underlying the MBM is that those households are poor which do not have the income available to purchase the goods and services that make up the basket. This definition requires that the income to be compared to the thresholds is not gross income but a measure of the income available to purchase those goods and services.

Thus, in addition to out-of-pocket expenses on child care and medically-prescribed non-insured health, other deductions which must be made from gross income before comparing it to the thresholds include the following non-discretionary expenses:

- Personal income taxes and the personal portion of all payroll taxes such as the Canada/Quebec Pension Plan and Employment Insurance contributions
- Alimony and child support payments made to another household
- All *mandatory* payroll deductions for employer-sponsored pension plans, union dues and employer-sponsored supplementary health plans

4. The Formula for Deriving the MBM Thresholds

A separate threshold for the reference household is calculated in each of the eleven urban centres where the Prices Division of Statistics Canada collects food-price data, urban-transit fare data and a relative spatial-price index for clothing and footwear.⁴

This calculation is done as follows:

Threshold for Reference Family = Cost of food component + Cost of clothing and footwear component + Cost of shelter component + Cost of transportation component + (Cost of food and clothing and footwear components times the multiplier for all other goods and services in the basket).

Thresholds for all other household configurations are then calculated using the Low Income Measure Equivalence Scale.

Outside the eleven urban centres where food- and public transit-price data are collected and relative spatial price indices for clothing and footwear are calculated, a threshold is calculated for each community size where this is feasible (See section 2.3 for the procedure to be followed in other cases.) The community size categories are those currently used for the Low Income Cut-offs (urban 500,000 and over, urban 100,000-499,999, urban 30,000-99,999, urban under 30,000 and rural).

It is assumed that the cost of each component of the basket, except for shelter, is equal to that collected for the community size within the jurisdiction closest to the size of the community in question. For example, the food cost in rural areas is that of the smallest urban area in that jurisdiction for which data are collected. In the case of transportation, a single cost is calculated in each jurisdiction for all areas not served by public transit systems. Shelter costs are population-weighted by community size outside the largest urban centres in each jurisdiction to ensure adequate sample sizes. In addition, where necessary, communities may be amalgamated within jurisdictions to generate reliable shelter cost estimates. For

⁴ It will be assumed that clothing and footwear prices in communities where spatial indices are not calculated are the same as in the urban centre in their jurisdiction where they are calculated.

example, the shelter-costs in all urban communities within a jurisdiction with populations under 30,000 are added together and population-weighted to produce the shelter cost to be attributed to all communities within that category in that jurisdiction. Similarly, if the number of rural rental units is too small to make a reliable estimate within a jurisdiction, their costs may be amalgamated with those of urban centres with a population under 30,000 within that jurisdiction to produce a shelter-cost estimate. This will be used to produce a threshold to be applied to all communities—rural and urban—with a population of less than 30,000.

These thresholds are used for the actual calculation of MBM statistics of each population unit. Summary thresholds, based on population-weighting, will also be published for the eleven urban centres for which relative clothing and footwear-spatial price indices are calculated as well as for Whitehorse and Yellowknife. For information purposes the population-weighted average threshold for all communities other than these centres in each province and territory will also be published.

5. Calculating MBM Statistics

The incomes to be compared to these thresholds will be as described in the paragraphs under that heading in this paper. This process will enable the generation of statistics on the incidence, depth and eventually the duration of low income using the MBM thresholds. The depth of low income is to be calculated using one minus the income-to-needs ratio, or the ratio of income available to purchase the goods and services in the basket to the MBM threshold.