

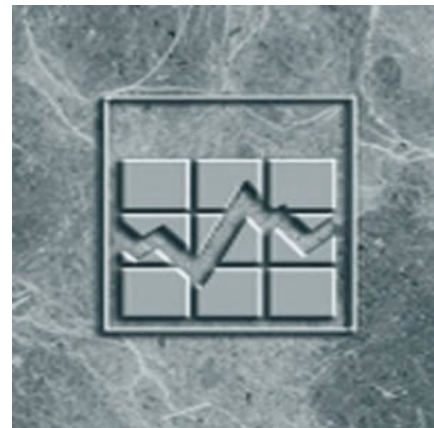
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Market Basket Measure research paper: Market Basket Measure thresholds for remote regions

by Sarah McDermott and Madeleine Steinmetz-Wood

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On August 21, 2018, the Government of Canada released [Opportunity for All – Canada’s First Poverty Reduction Strategy](#), which outlined long-term commitments to guide current and future government actions and investments to reduce poverty. The [Poverty Reduction Act](#) legislates key commitments made in the strategy, as well as mandating that Statistics Canada review the content of Canada’s official measure of poverty, the market basket measure (MBM), on a regular basis.

During consultations for the second comprehensive review¹ of the MBM, one of the research topics² identified for further study was to investigate if adjustments could be made to the MBM methodology to account for differential costs³ associated with living in remote regions. The purpose of this paper is to report on the progress of this research item.

This paper builds on an earlier paper outlining an approach for delineating remote MBM regions by describing a potential methodology for creating remote-region MBM thresholds across Canada’s provinces. The paper also outlines the potential impacts these thresholds would have on provincial poverty estimates. It also provides an opportunity for the public and stakeholders to provide feedback and comments on the methodology.

Introduction

The MBM establishes poverty thresholds based on the cost of a “basket” of food, clothing, shelter, transportation and other items for a family of four, that reflects a modest, basic standard of living. A family with a disposable income that is below the appropriate MBM threshold for family size and region is considered to be living in poverty.⁴

The current MBM methodology assigns the same MBM threshold to all communities denominated “rural” within the same province, meaning that relatively accessible rural areas have the same thresholds as communities in more isolated areas. In the first discussion paper on remote regions, a methodology for delineating remote regions for the MBM was proposed (See Text Box: Discussion paper on delineating remote regions for the MBM). This second discussion paper builds upon that research by developing a potential methodology for calculating thresholds for the previously identified remote MBM regions.

The thresholds for remote MBM regions are intended to capture the spirit of the existing provincial MBM (i.e., to represent a modest, basic standard of living), while leveraging the Northern Market Basket Measure (MBM-N)⁵ methodology to better reflect life in remote regions. Thresholds for remote MBM regions were calculated, and then the potential impacts on provincial poverty rates were estimated. Readers are encouraged to provide feedback and comments.

1. For more information on the second comprehensive review, please see [An update on the Market Basket Measure comprehensive review](#).
2. For a list of forward-looking agenda items, see Appendix A, Table A.1.
3. For example, the higher costs of groceries and shipping.
4. For more information on the MBM methodology, please see [Report on the second comprehensive review of the Market Basket Measure](#).
5. For more information, see [Construction of a Northern Market Basket Measure of poverty for Yukon and the Northwest Territories.](#)

Summary of a potential methodology for costing a remote MBM region basket and calculating disposable income

The methodology for establishing poverty thresholds in remote MBM regions would be based on the existing MBM methodology (i.e., the same five components for a family of four that reflect a modest, basic standard of living). However, there are several challenges associated with deriving poverty thresholds for remote regions. Many remote communities are isolated and have limited infrastructure, which limits the availability of price collection for specific MBM basket items. Given the data limitations encountered during the process of deriving the cost of remote MBM baskets,⁶ it is not possible to provide a component level of detail for baskets across remote regions.

Costing of remote MBM basket components

Given certain similarities in living standards among provincial remote communities and communities residing in Canada's territories, a basket of goods and services for remote regions would borrow features from the provincial MBM and MBM-N methodologies, and include adjustments to better reflect life and conditions in remote areas. Additional details on a possible methodology for remote MBM baskets are provided in Appendix B: Methodology for the remote MBM regions, components and disposable income. A comparison of the MBM (2018-base), MBM-N for Yukon and Northwest Territories, and MBM for remote regions is provided in Appendix C: A methodological comparison.

Remote regions

The MBM remote regions proposed in the first remoteness discussion paper (i.e., based on the Index of Remoteness) were used. Remote regions were delineated for the provinces that remote regions could be created for: Newfoundland and Labrador, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. A map showing the location of these designated remote regions, which appeared in the first remoteness discussion paper, is provided in Appendix D: Map of MBM regions by population size and remoteness designation.

Discussion paper on delineating remote regions for the MBM

This is the second discussion paper released as part of the development of a potential methodology for estimating remote-region poverty thresholds for Canada's provinces. "[Delineating Remote Regions for the Market Basket Measure](#)" is the first discussion paper in the series. It proposed a methodology for delineating remote regions for the MBM using Statistics Canada's Index of Remoteness.

Shelter component

The shelter component would be based on the rental of a three-bedroom, non-subsidized dwelling, in line with the National Occupancy Standard set out by the Canada Mortgage and Housing Corporation (CMHC). The rental price for a three-bedroom dwelling would be derived from the 2016 Census and adjusted to the 2018 base year.

Clothing and footwear component

The clothing and footwear component would be based on the Social Planning Council of Winnipeg and Winnipeg Harvest Acceptable Living Level 2012 clothing basket for a family of four.

Food component

The food component would be based on Health Canada's 2019 National Nutritious Food Basket (NNFB). Spatial indexes would be created using Statistic Canada's Living Cost Differential data to adjust food prices for the higher costs experienced in remote communities.

6. Data limitations for each component have been described in their respective sections of Appendix B and are outlined later in the paper.

Transportation component

The transportation component for remote communities would only account for private modes of transportation. The remote-region methodology would be based on costs for owning, operating and maintaining either a car or a sport utility vehicle (SUV), depending on the road infrastructure (e.g., dirt roads, ice roads). The methodology for the fly-in communities would be based on the costs associated with owning, operating and maintaining both an all-terrain vehicle (ATV) and a snowmobile. This approach mirrors the one used for the transportation component in the MBM-N methodology.

Other necessities component

The other necessities component costs would apply a multiplier to the cost of the food and clothing components, as is done for the other MBM methodologies. An amount would also be added to the other necessities component to account for the need for cellular telephone services, as is currently done with the 2018-base MBM.

Calculating MBM disposable income for remote regions

Defining disposable income

The remote MBM methodology would define its disposable income in the same way as the other MBMs. It would be based on total income (including government transfers) after deducting not only income tax, but also several non-discretionary expenses (e.g., contributions to the Canada Pension Plan and Employment Insurance Plan, union dues, child-care expenses, support payments paid).

Tenure Type Adjustment (TTA)

When possible, the remote basket would also account for tenure types (e.g., homeownership with or without a mortgage and subsidized rental dwellings) other than non-subsidized rental dwellings. This would help to put families from all tenure types on more equal footing when determining their poverty status.

Working with Indigenous Peoples

Some First Nations reserves could be classified as remote. Given limitations related to price data collection and survey sampling, among others, MBM thresholds and poverty rates cannot be calculated for on-reserve communities (for more information, see Text Box: The commitment to co-develop with Indigenous peoples).

The commitment to co-develop with Indigenous Peoples

The Government of Canada is committed to reconciliation with Indigenous Peoples and to a renewed relationship based on the recognition of rights, respect, cooperation and partnership. Accordingly, Chapter 7 of Opportunity for All makes a commitment to take actions to help better understand poverty among First Nations people, Inuit and Métis—regardless of where they live in Canada.

During the consultations for Opportunity for All, the Government of Canada heard that it should take a strengths-based approach to poverty reduction that focuses on well-being and supporting resilience. Indigenous women also indicated that poverty is about more than a lack of income; it is also about social disconnection, and they explained that cultural activities promote social and economic well-being by improving self-confidence and building identity.

As part of the Opportunity for All distinctions-based approach, and based on the principles of reconciliation, the government is undertaking work with national Indigenous organizations and others to identify and co-develop indicators of poverty and well-being, including non-income-based measures of poverty, that reflect the multiple dimensions of poverty and well-being experienced by First Nations people, Inuit and Métis.

Thresholds for remote MBM regions and poverty rates

Table 1 below shows the official 2018 MBM provincial thresholds for the four-person reference family (two adults and two children) (i.e., without remote region delineation), as well as the thresholds for remote MBM regions, using the methodology for delineating remote MBM areas.⁷

Table 1

Market basket measure thresholds for regions designated as rural, with less than 30,000 people, with and without remote-region delineation, four-person family, 2018

Geography	2018 threshold without remote-region delineation	2018 threshold with remote-region delineation
	current dollars	
Newfoundland and Labrador		
Remote	...	48,083
Rural	42,539	42,726
Less than 30,000 people	42,926	42,926
New Brunswick		
Remote	...	47,986
Rural	40,766	40,766
Less than 30,000 people	42,284	42,284
Quebec		
Remote	...	50,674
Rural	37,804	37,804
Less than 30,000 people	37,397	37,397
Ontario		
Remote	...	51,254
Rural	40,576	40,787
Less than 30,000 people	41,250	41,261
Manitoba		
Remote	...	47,778
Rural	38,954	39,005
Less than 30,000 people	40,780	40,793
Saskatchewan		
Remote	...	50,773
Rural	40,280	40,306
Less than 30,000 people	42,003	42,003
Alberta		
Remote	...	52,367
Rural	45,047	45,047
Less than 30,000 people	46,158	46,158
British Columbia		
Remote	...	47,949
Rural	41,463	42,331
Less than 30,000 people	42,608	42,608

... not applicable

Note: Remote-region thresholds are unofficial.

Source: Statistics Canada. Custom tabulation.

Incorporating remote regions in the MBM would reclassify some rural communities and some smaller ones with a population of fewer than 30,000 people (i.e., small urban communities). Therefore, incorporating remote regions into the MBM would not only affect the rural thresholds but also small urban thresholds. Under the methodology outlined in this paper, many of the rural and small urban provincial thresholds would increase if remote regions were incorporated into the MBM.⁸

For all provinces where remote regions could be delineated, remote-region thresholds were higher than rural thresholds. In 2018, remote communities in Quebec had the highest costs, compared with rural communities—the estimated threshold was 34.0% higher in remote regions (Table 2). Remote regions in British Columbia (13.3%) and Newfoundland and Labrador (12.5%) had the lowest cost differentials, compared with their respective rural communities.

7. The thresholds estimated for remote MBM regions are not official.

8. For example, rural Newfoundland and Labrador, rural Ontario, under 30,000 people Ontario, rural Manitoba, under 30,000 persons Manitoba, rural Saskatchewan, and rural British Columbia.

Table 2
Percent difference between rural and remote thresholds with remote-region delineation, four-person family, 2018

Province	2018		
	Rural threshold	Remote threshold	Percent difference
	current dollars		percent
Newfoundland and Labrador	42,726	48,083	12.5
New Brunswick	40,766	47,986	17.7
Quebec	37,804	50,674	34.0
Ontario	40,787	51,254	25.7
Manitoba	39,005	47,778	22.5
Saskatchewan	40,306	50,773	26.0
Alberta	45,047	52,367	16.2
British Columbia	42,331	47,949	13.3

Note: Thresholds above are unofficial.

Source: Statistics Canada. Custom tabulation.

The higher thresholds in remote regions were mainly driven by higher costs in the food, clothing and transportation components. Higher costs associated with the food and clothing components subsequently increased the cost of the other necessities component because it is derived using a multiplier applied to the total cost of these components.⁹ Conversely, shelter costs were typically lower in remote communities, compared with their rural equivalents.

The remote-region thresholds would be some of the highest provincial thresholds across Canada, and many remote thresholds would also be higher than those for specific communities within their respective province. For example, in 2018, the four-person reference family threshold for Toronto, Ontario was \$48,142, while the remote Ontario threshold would be \$51,254.

Table 3 shows the potential impact of introducing remote regions into the MBM methodology on poverty rate estimates. With the addition of remote regions, the overall provincial poverty rate would increase by one percentage point in Newfoundland and Labrador. While there would also be marginal increases in Quebec, Ontario, Manitoba and Saskatchewan, these were not statistically significant.¹⁰ In addition, the overall poverty rate estimate for Canada would remain unchanged.

Table 3
Estimates and confidence intervals for percentage of people living in poverty, by province and in Canada, 2016 Census

	Without remote regions			With remote regions		
	Estimate	95% Confidence interval		Estimate	95% Confidence interval	
		lower	upper		lower	upper
	percent					
Canada	14.5	14.5	14.5	14.5	14.5	14.6
Newfoundland and Labrador	13.1	12.9	13.4	14.1*	13.9	14.2
New Brunswick	15.6	15.4	15.8	15.6	15.5	15.7
Quebec	12.3	12.3	12.4	12.4	12.4	12.4
Ontario	15.5	15.5	15.6	15.6	15.5	15.6
Manitoba	14.3	14.1	14.5	14.4	14.3	14.5
Saskatchewan	12.7	12.6	12.9	12.9	12.8	13.1
Alberta	11.4	11.3	11.5	11.4	11.4	11.5
British Columbia	17.6	17.5	17.6	17.6	17.6	17.7

* denotes changes that are statistically significant at the 95% confidence level.

Note: Estimates are based on unofficial thresholds. Poverty rates have been rounded to one decimal place. This could mask slight differences between the bounds and the estimate.

Prince Edward Island and Nova Scotia were omitted, as there are no remote regions in these provinces and no changes were observed. Estimates use the 2018-base methodology. Upper and lower bounds are based on a 95% level of confidence.

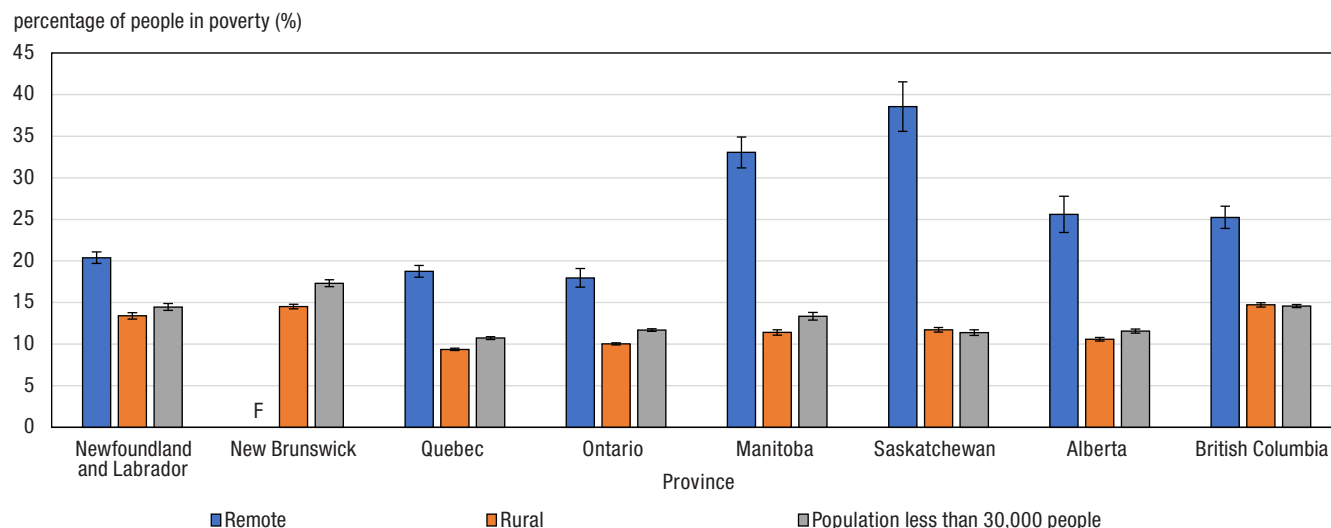
Source: 2016 Census. Statistics Canada. Custom tabulation.

9. For more information on the other necessities component methodology, please see [Market Basket Measure Technical Paper: The other necessities component](#).

10. Based on a 95% level of confidence.

According to the 2016 Census, 172,163¹¹ people were living in remote regions. The number of those living in remote regions in each province is included in Appendix E. Chart 1 provides the estimates and confidence intervals for the percentage of people in poverty for remote, rural and small urban MBM regions, using the 2016 Census. The remote-region poverty rates were higher than their provincial rural and small urban area counterparts. These differences were statistically significant. The highest remote-region poverty rate would be in Saskatchewan (38.6%), while the lowest would be in Ontario (18.0%).

Chart 1
Estimates and confidence intervals for the percentage of people living in poverty, for market basket measure regions designated as remote, rural and with less than 30,000 people, 2016 Census



F too unreliable to be published

Note: Upper and lower bounds are based on a 95% level of confidence.

Source: 2016 Census. Statistics Canada. Custom tabulation.

Finally, Table 4 shows that the poverty rate for seniors¹² living in remote regions was highest in Newfoundland and Labrador, Quebec and Alberta. On the other hand, child¹³ poverty rates in remote regions were highest in Saskatchewan, Manitoba and British Columbia. Furthermore, poverty rates were consistently higher for unattached individuals,¹⁴ compared with families.¹⁵ Saskatchewan, Manitoba and Alberta had the highest poverty rates for families living in remote MBM regions.

11. The number of people in remote regions reported here differs from the numbers reported in the previous discussion paper, "Delineating remote regions for the Market Basket Measure"—those included all people living within MBM remote regions, whereas these numbers exclude certain populations for which MBM calculations do not apply, such as people living in a farm operator dwelling or people living in band housing.

12. People aged 65 years and older.

13. People aged younger than 18 years.

14. People not in an economic family.

15. People in an economic family. An economic family refers to a group of two or more people who live in the same dwelling and are related to each other by blood, marriage, common law union, adoption or a foster relationship. For more information, see [Economic family - Dictionary, Census of Population, 2016](#).

Table 4**Estimates and confidence intervals for the percentage of people living in poverty, by selected age groups and economic family status for market basket measure remote regions, 2016 Census**

	Age group									Economic family status					
	Younger than 18 years			18 to 64 years			65 years and older			In an economic family			Not in an economic family		
	95% Confidence interval			95% Confidence interval			95% Confidence interval			95% Confidence interval			95% Confidence interval		
	Estimate	lower	upper	Estimate	lower	upper	Estimate	lower	upper	Estimate	lower	upper	Estimate	lower	upper
percent															
Newfoundland and Labrador	21.4	19.4	23.4	14.3	13.5	15.1	37.1	35.5	38.7	17.0	16.3	17.8	50.5	48.1	52.8
New Brunswick	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Quebec	19.1	17.7	20.5	14.9	14.0	15.7	32.8	30.7	34.9	15.0	14.2	15.8	46.2	44.0	48.5
Ontario	24.0	21.1	26.9	15.6	14.5	16.7	19.1	17.3	20.9	14.8	13.5	16.0	36.4	33.9	38.9
Manitoba	45.6	41.6	49.6	29.4	27.5	31.2	23.7	19.1	28.4	31.8	29.6	33.9	42.6	37.9	47.3
Saskatchewan	52.4	47.6	57.1	32.1	29.4	34.8	30.7	25.6	35.9	37.1	34.0	40.2	51.1	45.2	57.0
Alberta	32.1	28.7	35.5	20.1	18.2	22.0	32.3	26.3	38.4	25.5	23.2	27.8	26.8	22.4	31.2
British Columbia	32.4	28.4	36.3	24.4	22.9	25.9	21.9	19.4	24.5	22.0	20.3	23.6	37.8	34.8	40.7

F too unreliable to be published.

Note: Estimates are unofficial. Upper and lower bounds are based on a 95% level of confidence.

Source: 2016 Census, Statistics Canada. Custom tabulation.

Small populations – data sources and survey error

The poverty rates estimated for remote regions should be interpreted with caution, given the smaller sample size for these populations. At this time, remote-region poverty rates can only be estimated using census data, given its large sample size, compared with other household surveys. This means that estimates for remote regions cannot be produced with the Canadian Income Survey, the official source of annual poverty statistics for the MBM.

It should be noted that census-based estimates are also subject to survey error (for more information, see Text Box: Survey error). To view a table containing the estimates for the percentage of the population living in poverty across remote MBM regions and their corresponding 95% confidence intervals, see Appendix F.

Survey error

These estimates are derived from a survey and are subject to survey error, composed of non-sampling errors like non-response and sampling error, which causes variability. Variability is the extent to which the estimate produced will differ from other estimates, if the sample size and design were kept the same and no non-sampling error occurred, but a different sample was chosen.

One way to describe sampling error is to provide the margin of error for an estimate, based on a certain level of confidence. The most common way to do this is to provide an estimate along with its confidence interval. A confidence interval provides the upper and lower bounds for an estimate, based on a predefined level of confidence. For example, the upper and lower bounds for the estimates in Chart 1 are set at a 95% level of confidence. In other words, 19 times out of 20 (or 95% of the time), the true value will be found within the confidence interval, if it was calculated using the entire population. Therefore, 95% of the time, the estimates provided in Chart 1 could be any value within their respective confidence intervals.

Summary of methodological challenges

In developing a potential methodology for creating MBM thresholds for people living in remote regions, several challenges were encountered when the individual basket components were constructed. These challenges include:

- It was not possible to calculate a separate food component for each province with a remote region because little or no LCD data were available for some provinces.
- Because of the very small sample size of people living in remote New Brunswick, it was not possible to calculate a shelter cost, so shelter costs from remote regions in Newfoundland and Labrador were used as a proxy.
- For the clothing and footwear component, there was insufficient information on the proportion of residents from remote communities who shop online versus those who take a shopping trip to buy clothes.
- For the transportation component, there was insufficient information on the proportion of SUVs and compact cars in remote ice-road communities.

Additional context relevant to these challenges is available in Appendix B.

Conclusion

This discussion paper is the second of two discussion papers aimed at examining the feasibility of creating remote-region poverty thresholds for Canada's provinces. To this end, the paper described the possible MBM methodology for remote regions in the provinces, as well as the potential impacts on provincial-level poverty rates, using census data.

However, the data limitations outlined above make it difficult to incorporate remote regions into the current MBM methodology, and these methods are not currently recommended for official use. The issues discussed in this paper should be considered when assessing the feasibility of constructing remote-region MBM thresholds in the future, as the data necessary to address methodological limitations become available.

The fundamental purpose of this research paper series was to engage with the public and with stakeholders. We encourage users to ask questions, provide feedback and make suggestions for future work. Those interested in contacting us are encouraged to send an email to:

statcan.market.basket.measure-mesure.du.panier.de.consommation.statcan@canada.ca.

Appendix A: Forward-looking research agenda items

Table A.1

A list of forward-looking research agenda items

Research topic	Short description
Child-care expenses	Child-care expenses are represented in the MBM as a direct deduction from disposable income. This way, a family's needs are compared with an income measure that reflects their available resources. Experts have asked Statistics Canada if this is the best way to deal with child-care expenses in the MBM. Could child-care costs be treated as a separate basket item instead?
Remoteness	Statistics Canada will research whether adjustments should be made to the MBM to account for higher costs faced by families living in remote regions and communities to derive, for example, better estimates for the northern parts of provinces.
Different family types	Statistics Canada estimates MBM thresholds for a family of four, then uses the square root equivalization scale to derive thresholds for families of different sizes. Does this method lead to the best possible thresholds for smaller families and unattached individuals? Additional studies could also be conducted on whether it might be appropriate to construct separate basket values for families of the same size, but with different compositions (e.g., lone-parent family with three children versus a couple with two children) or other characteristics (e.g., age of family members).
Equivalization analysis	
Communications technology	Statistics Canada will look at how a separate communications component could best be added to the MBM. Presently, this need for communications goods and services is reflected in the other component.
The other component	The other necessities component is meant to represent the costs of goods and services other than food, shelter, transportation and clothing. The list of items that could potentially be included in the other component is large and could vary, depending on the structure, age, location or other circumstances of a family. Ongoing research on the methodology that underpins the other component could verify whether the current method for setting the value of the other component is adequate, or if it needs to be improved.
Poverty index	Anchoring the MBM to specific base years, yet updating it regularly to reflect changes in the standards of living to ensure it remains relevant is an underlying strength of the MBM. However, periodically rebasing the MBM leads to the creation of various poverty lines, which can make it difficult to track poverty trends over longer periods. To improve transparency and to help track poverty trends over longer periods, the implementation of a poverty reduction index will be considered.
Shelter and transportation costs	Often, people in areas where shelter costs are relatively higher have transportation costs that are relatively lower, and vice versa. For instance, people in rural areas typically pay lower rents and mortgages, but must spend more on fuel and seldom access public transportation. It is proposed to explore whether the MBM could be improved by taking these differences in costs into account more precisely.
Using the MBM with administrative data	Currently, the MBM poverty rates can only be accurately calculated using a combination of survey and administrative data. It is proposed to explore the feasibility of applying MBM thresholds to only administrative data.
Additional MBM income inequality indicators	Since the majority of the current MBM-based analytical products do not describe the full income distribution because they typically compare the MBM threshold with disposable income, they do not fully describe income inequality. Proposed additional inequality indicators will be presented, which will better identify income disparities among Canadians.

Appendix B: Methodology for the remote market basket measure (MBM) regions, components and disposable income

MBM remote regions

MBM remote regions were identified in a previous discussion paper based on the Index of Remoteness.¹⁶ This index was created by Statistics Canada to provide a better understanding of community access to goods, services and economic opportunities. The Index of Remoteness is a continuous measure that provides a relative indication of remoteness on a scale varying from 0 to 1, with 0 being the most accessible and 1 the least accessible. Kriging¹⁷, a spatial interpolation method, was used to provide remoteness estimates at the dissemination area (DA) level. Geospatial techniques and expert judgment was used to determine that a threshold of greater than or equal to 0.53 would delineate “remote areas” for the purposes of the MBM.

The outlined methodology did not identify any remote areas in Nova Scotia or Prince Edward Island. Therefore, poverty thresholds for remote regions were only created for the following provinces: Newfoundland and Labrador, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Methodology for the MBM remote-region basket

The MBM remote-region basket would have the same five components as the regular MBM: clothing and footwear, food, shelter, transportation, and other necessities. Because of data limitations, only total remote-region thresholds for each province are provided in this discussion paper.

Clothing and footwear component

The remote basket’s clothing and footwear component would be based on the 2012 Social Planning Council of Winnipeg and Winnipeg Harvest Acceptable Living Level Basket. The basket contains goods specifically for a reference family of two adults and two children, and provides clothing and footwear for the most common work, school and social occasions. No adaptations to the clothing items, quantities or replacement schedule were made.

Prices were collected annually from outlets in one representative city in each province, and the average of the three lowest price observations in each city was calculated for each item in the component. In addition, a three-year price average was measured to ensure that item price volatility was minimized. These prices, combined with specified quantities and a replacement schedule, resulted in the cost of the clothing component.

It is also proposed to incorporate the costs associated with a shopping trip and the costs of shipping to remote areas. This would involve taking a weighted average of the costs associated with travel to the nearest census agglomeration (CA), and the costs of ordering online. Because of a lack of information and data on the proportion of residents who order online versus those who take a shopping trip from remote communities, an equal-weighted average of the costs associated with a shopping trip as well as those for online shopping was used. Costs associated with travelling to the nearest CA could include gasoline, hotel, and a plane ticket. Costs associated with ordering online would be an annual cost with the assumption of a monthly bulk order. The component would be updated annually using the annual Consumer Price Index (CPI)’s provincial clothing and footwear index.

Food component

It is proposed that the remote region basket would use the 2019 National Nutritious Food Basket (NNFB) developed by Health Canada to obtain the cost of the food component. Food items in the NNFB are consistent with the new Canada’s Food Guide and are commonly consumed nutritious foods that Canadians reported consuming in the 2015 Canadian Community Health Survey – Nutrition.

The 2019 NNFB includes fresh, frozen and canned food formats to balance considerations of cost, access and availability. Additionally, 5% is added to the total cost of the basket for miscellaneous foods and beverages, like coffee, tea, herbs, spices and condiments. No adjustments are proposed to the food items in the NNFB to reflect

16. For more information on the Index of Remoteness, please consult [Measuring remoteness and accessibility: A set of indices for Canadian communities](#).

17. Kriging is a geostatistical interpolation method that uses a sample of points at known locations to create a continuous prediction surface.

life in remote regions. It should be noted that the MBM methodology does not prescribe individual food items for families. Rather, it is meant to provide an estimate of the cost of a nutritious diet for the reference family.

To estimate the cost of the food component in remote communities, it is proposed that spatial indexes would be created using Statistic Canada's Living Cost Differential (LCD) data to adjust food costs, reflecting the assumption that food costs are higher in remote communities. The indexes were applied to the base city's costs for the four food groups contained in the NNFB (i.e., vegetables and fruit, protein foods, whole-grain foods, and unsaturated fats) and then aggregated to obtain a food component cost per remote community. Finally, the 2016 Census population weights were used to estimate a weighted average of food costs per MBM remote region.

It was not possible to calculate a separate food component for each province with a remote region because of data limitations. For example, some provinces had zero or only one remote community for which LCD data was available. To circumvent this limitation, the provinces with remote regions were grouped into four groups to estimate the food component: 1) Newfoundland and Labrador, and New Brunswick; 2) Ontario and Quebec; 3) Manitoba, Saskatchewan and Alberta; and 4) British Columbia. The component would be updated annually using the CPI's provincial food purchased from stores index.

Shelter component

It is proposed that the shelter component would use the 2016 Census to calculate shelter costs for rental units. The census is chosen to provide rental values because its large sample size allows for a more precise estimation of rental costs and covers all types of rental units. Shelter costs would include both rent and utilities (e.g., heating, water costs and electricity). The shelter component would use the National Occupancy Standard for the reference family of an adult couple with two children (a girl aged 9 and a boy aged 13). This means that it would be based on the cost of a three-bedroom rental unit that is not in need of major repairs. Collective dwellings, rent-free units and dwellings within reserves would not be included in these calculations.

To obtain the cost for the average three-bedroom rental unit with utilities, a quantile regression model was used to estimate shelter costs across all MBM regions for households in the second income decile, as was done for the 2018-base MBM for the provinces. This methodology is currently under review. An amount for tenants' insurance and appliances would also be added to shelter costs. Because of the very small sample size in remote New Brunswick, it was not possible to calculate a shelter cost using the quantile regression, so shelter costs from remote regions in Newfoundland and Labrador were used as a proxy. The shelter component would be calculated for the base year and then indexed using the provincial CPI all-items index.

Transportation component

In contrast with some of the more accessible MBM regions, it is proposed that the transportation component would only include costs for private modes of transportation. The methodology applied for remote communities would depend on whether the community had road access. Analogous to rural regions, for most remote communities, meaning those with regular road access, the proposed transportation cost would be based on the cost to operate a vehicle based on a basket of cars using the five top-selling cars according to registration data for their respective province.

For remote communities with ice-road access, it is proposed that the component would be based on the cost of a weighted basket of vehicles that would include both a small SUV and the basket of compact cars used in other areas of the province. Equal weighting would be used between an SUV and a compact car because of data limitations.¹⁸ For remote communities with regular road or ice-road access, an additional amount would be added to account for higher maintenance costs and kilometres driven in these regions, compared with the more accessible MBM regions. For fly-in communities, the transportation component would be based on the cost of purchasing, maintaining and operating a mid-quality range all-terrain vehicle and snowmobile, and the cost of shipping these vehicles to the fly-in community. The component would be calculated for the 2018 base year, then indexed using the CPI's provincial private transportation index.

18. In the provinces, for the 2018-base MBM, sales volumes were used for weighting.

Other necessities component

The proposed methodology for the other necessities component would use the same methodology as in other MBM methodologies. The 2018-base MBM multiplier would be applied to the food and clothing component costs for each of the MBM remote regions.¹⁹ It is also proposed that an amount for cellular telephone services be priced separately and added to the other necessities component.

The component would be calculated for the 2018 reference year and updated using the CPI's provincial annual all-items index.

Methodology for disposable income in MBM remote regions

Disposable income for the MBM is defined as total income (including government transfers) after deducting income tax and non-discretionary expenses. These expenses include Canada Pension Plan and Quebec Pension Plan contributions, Employment Insurance and Registered Pension Plan contributions, union dues, child-care expenses, support payments, and direct medical expenses, including private insurance premiums. When deriving disposable income, capital gains taxes are removed from the income taxes deducted from total income to prevent families from appearing to be in poverty because of capital gains taxes.

The MBM also makes adjustments for housing tenure types, including homeownership (with or without a mortgage) and subsidized dwellings, to place families living in different dwelling types on more equal footing with those living in rental units when determining poverty status.²⁰

The estimation of the TTA for each MBM remote region and tenure type would be computed by subtracting the typical shelter cost of the specific tenure type from the shelter cost for renters. These costs are calculated for a three-bedroom unit, the National Occupancy Standard set out by CMHC for a family of four with an income in the second decile. TTAs are calculated for a family of four in the second income decile, then values for other family sizes are calculated using the square root equivalence method.²¹ These TTAs are then added to disposable income when evaluating poverty status.

For homeowners without a mortgage, the shelter costs considered for the MBM consist of property taxes, utility costs, condominium fees and basic home insurance costs. For homeowners with a mortgage, the costs considered are the same, with the addition of mortgage interest payments estimated using data from the Survey of Financial Security. For subsidized renters, shelter costs consist of the rent paid plus utility costs and relevant insurance costs.

19. For more information on the other necessities component, please see [Market Basket Measure Technical Paper: The other necessities component](#).

20. For more information on the MBM disposable income or the tenure-type adjustment, please see [Report on the second comprehensive review of the Market Basket Measure](#).

21. To calculate the thresholds for different family sizes, the MBM methodology uses a square root equivalence scale, which is a commonly used method to adjust incomes for family size.

Appendix C: A methodological comparison

Table C.1

A methodological comparison between the market basket measure (MBM) (2018-base), Northern Market Basket Measure (MBM-N) for Yukon and Northwest Territories and a potential MBM methodology for remote regions

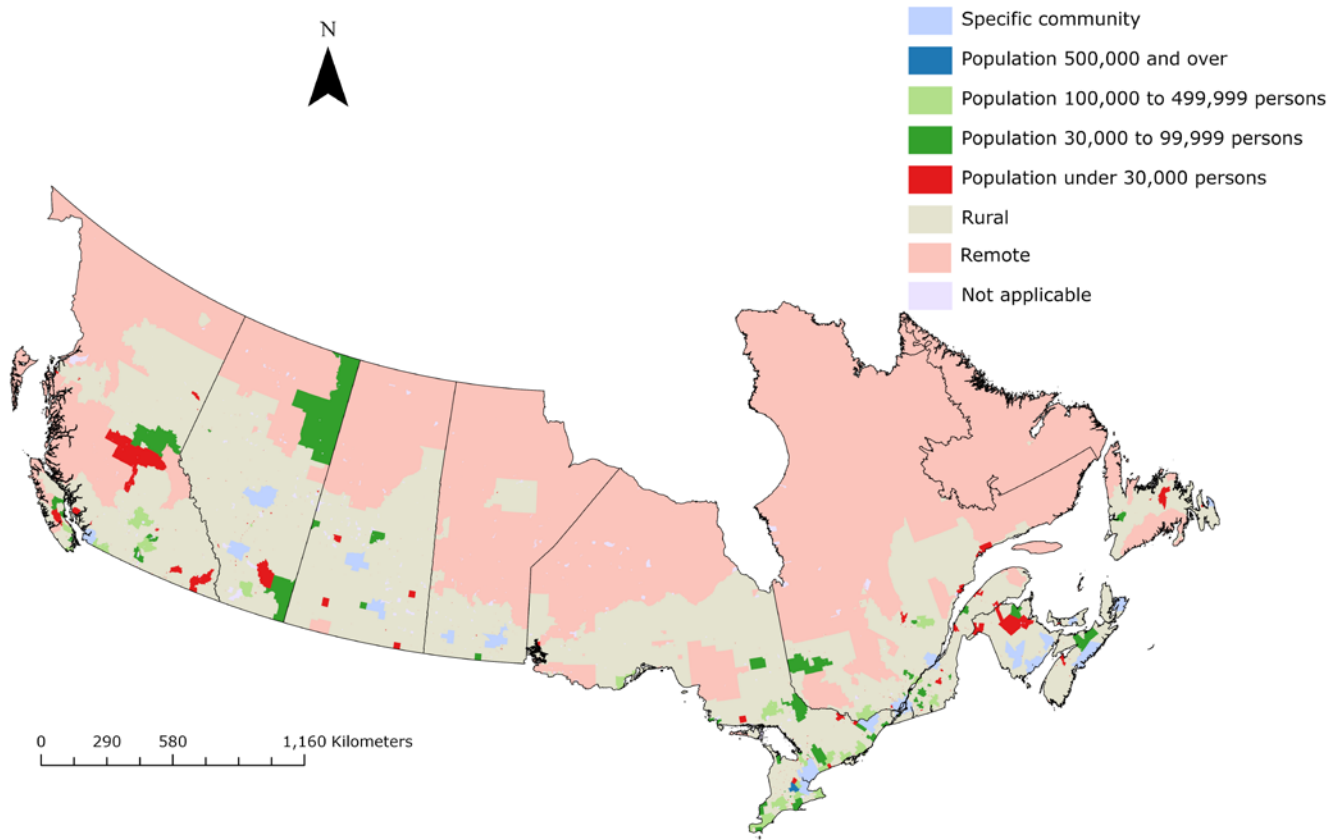
Component	MBM	MBM-N for Yukon and Northwest Territories	MBM for remote regions
Shelter	<ul style="list-style-type: none"> • Canadian Mortgage and Housing Corporation’s National Occupancy Standards for reference family • Uses 2016 Census • Median rent for 3-bedroom rental unit • Non-subsidized rental units • Supplement for appliance costs • Amount for tenant’s insurance included • Not applicable 	<ul style="list-style-type: none"> • Canadian Mortgage and Housing Corporation’s National Occupancy Standards for reference family • Uses 2016 Census • Median rent for 3-bedroom rental unit • Non-subsidized rental units • No supplement for appliance costs • Amount for tenant’s insurance included • Not applicable 	<ul style="list-style-type: none"> • Canadian Mortgage and Housing Corporation’s National Occupancy Standards for reference family • Uses 2016 Census • Median rent for 3-bedroom rental unit • Non-subsidized rental units • Supplement for appliance costs • Amount for tenant’s insurance included • Because of data limitations related to the very small sample size of people living in remote New Brunswick, it was not possible to calculate a shelter cost for the province. Shelter costs from remote regions in Newfoundland and Labrador were used as a proxy • Annual adjustments use the provincial all-items indexes
Transportation	<ul style="list-style-type: none"> • Uses a weighted average of the cost of public transit and private transportation (population centres with fewer than 30,000 people only have private transportation costs) • Weighted basket of five used compact cars and associated costs • Eight-year-old vehicles, amortized over five years with a 36-month financing term • 1,200 litres of gas per year • Cost of monthly public transit passes for two adults and one child and an additional amount sufficient for 12 round-trip taxi rides • Not applicable (no difference for fly-in communities) • Not applicable (no difference for ice-road communities) • Annual adjustments use the provincial private transportation indexes 	<ul style="list-style-type: none"> • Uses only private transportation costs • Weighted basket of one used compact car and one used sport utility vehicle • Eight-year-old vehicles, amortized over five years with a 36-month financing term • 1,200 litres of gas per year in the capitals, a little more outside the capitals • Not applicable (no public transportation costs) • For the fly-in communities of the Northwest Territories, costs are associated with purchase of a new mid-quality range all-terrain vehicle and snowmobile, amortized over eight years with a 36-month financing term • Not applicable (no difference for ice-road communities) • Annual adjustments use the territorial private transportation indexes 	<ul style="list-style-type: none"> • Uses only private transportation costs • Weighted basket of five used compact cars and associated costs for communities with regular road access • Eight-year-old vehicles, amortized over five years with a 36-month financing term • 1,200 litres of gas per year - An additional amount would also be added to account for higher maintenance costs and kilometers driven in these regions, compared with the more accessible MBM regions • Not applicable (no public transportation costs) • For the fly-in communities, costs are associated with purchase of a new mid-quality range all-terrain vehicle and snowmobile, amortized over eight years with a 36-month financing term • For ice-road communities, costs will be based on a weighted basket of five used compact cars and one sport utility vehicle • Annual adjustments use the provincial private transportation indexes
Food	<ul style="list-style-type: none"> • Health Canada’s 2019 National Nutritious Food Basket • 5% is added to the total cost of the 2019 basket for miscellaneous foods and beverages • Prices collected in 38 cities across the provinces • Annual adjustments use the provincial food purchased from stores indexes 	<ul style="list-style-type: none"> • Health Canada’s 2019 National Nutritious Food Basket • 5% is added to the total cost of the 2019 basket for miscellaneous foods and beverages • Prices collected in the territorial capitals, adjusted using spatial indexes for outside the capitals • Annual adjustments use the territorial food purchased from stores indexes 	<ul style="list-style-type: none"> • Health Canada’s 2019 National Nutritious Food Basket • 5% is added to the total cost of the 2019 basket for miscellaneous foods and beverages • Prices collected in provincial base cities and then adjusted using spatial indexes for remote areas • Annual adjustments use the provincial food purchased from stores indexes

Table C.1
A methodological comparison between the market basket measure (MBM) (2018-base), Northern Market Basket Measure (MBM-N) for Yukon and Northwest Territories and a potential MBM methodology for remote regions

Component	MBM	MBM-N for Yukon and Northwest Territories	MBM for remote regions
Clothing and footwear	<ul style="list-style-type: none"> • 2012 Social Planning Council of Winnipeg and Winnipeg Harvest Acceptable Living Level (ALL) Basket • Prices collected in 11 cities across the provinces • Not applicable (no adjustments are made to the ALL basket) • Annual adjustments use the provincial clothing and footwear indexes 	<ul style="list-style-type: none"> • 2012 Social Planning Council of Winnipeg and Winnipeg Harvest Acceptable Living Level (ALL) Basket • Prices collected in the territorial capitals. For outside the capitals, a weighted average of the costs associated with one trip to the closest territorial capital and the cost of ordering online • Adjustments were made to the ALL replacement schedule and clothing list because of the colder climate • Annual adjustments use the territorial clothing and footwear indexes 	<ul style="list-style-type: none"> • 2012 Social Planning Council of Winnipeg and Winnipeg Harvest Acceptable Living Level (ALL) Basket • Prices collected in 11 cities across the provinces. A weighted average of the costs associated with one trip to the closest census agglomeration and the cost of ordering online was also included • Not applicable (no adjustments are made to the ALL basket) • Annual adjustments use the provincial clothing and footwear indexes
Other necessities	<ul style="list-style-type: none"> • Fixed multiplier (75.4%) using Survey of Household Spending data of the total cost of the food and clothing components for each MBM region • Additional provincial amount for cell-phone services • Annual adjustments use the provincial all-items indexes 	<ul style="list-style-type: none"> • Fixed multiplier (75.4%) using Survey of Household Spending data of the total cost of the food and clothing components for each MBM-N region • Additional territorial amount for cell-phone services • Annual adjustments use the territorial all-items indexes 	<ul style="list-style-type: none"> • Fixed multiplier (75.4%) using Survey of Household Spending data of the total cost of the food and clothing components for each MBM region • Additional provincial amount for cell-phone services • Annual adjustments use the provincial all-items indexes
Disposable Income	<ul style="list-style-type: none"> • Total income (including government transfers), less income tax and several non-discretionary expenses • Three Tenure Type Adjustments • Medical expenses imputation uses provincial data 	<ul style="list-style-type: none"> • Total income (including government transfers), less income tax and several non-discretionary expenses • Three Tenure Type Adjustments • Medical expenses imputation uses territorial data 	<ul style="list-style-type: none"> • Total income (including government transfers), less income tax and several non-discretionary expenses • Three Tenure Type Adjustments • Medical expenses imputation uses provincial data

Appendix D: Map of MBM regions by population size and remoteness designation

Figure D.1
MBM regions using 2016 Census, after the addition of the remote region category



Note: The not applicable category corresponds to First Nations Reserves. First Nations Reserves are not currently included in MBM poverty threshold calculations.
Source: Author's computations.

Appendix E: Number of people living in remote regions

Table E.1
Number of people living in remote regions in each province and in Canada, 2016 Census

Province	Number of people
Newfoundland and Labrador	47,334
Prince Edward Island	0
Nova Scotia	0
New Brunswick	123
Quebec	39,851
Ontario	31,394
Manitoba	11,666
Saskatchewan	8,124
Alberta	16,090
British Columbia	17,581
Canada	172,163

Note: The number of people in remote regions reported here differs from the numbers reported in the previous discussion paper, "Delineating remote regions for the Market Basket Measure," as those included all people living within market basket measure (MBM) remote regions, while these numbers exclude certain populations for which MBM calculations do not apply, such as people living in a farm operator dwelling or people living in band housing.

Source: 2016 Census. Statistics Canada. Custom tabulation.

Appendix F: Poverty rate estimates for remote regions

Table F.1

Estimates and confidence intervals¹ for the percentage of people living in poverty in market basket measure regions designated as remote, rural and with less than 30,000 people, 2016 Census

Geography	Without remote regions			With remote regions		
	Estimate	95% Confidence interval		Estimate	95% Confidence interval	
		lower	upper		lower	upper
	percent					
Newfoundland and Labrador	...	...	...	20.4	19.7	21.1
Remote	12.6	12.3	12.9	13.4	13.0	13.8
Rural	14.3	13.9	14.7	14.5	14.1	14.9
Population less than 30,000 people						
New Brunswick	...	...	...	F	F	F
Remote	14.5	14.2	14.8	14.5	14.2	14.8
Rural	17.3	16.9	17.7	17.3	16.9	17.7
Population less than 30,000 people						
Quebec	...	...	...	18.8	18.1	19.5
Remote	9.3	9.2	9.4	9.4	9.2	9.5
Rural	10.7	10.5	10.8	10.7	10.6	10.9
Population less than 30,000 people						
Ontario	...	...	...	18.0	16.8	19.1
Remote	9.9	9.8	10.1	10.0	9.9	10.2
Rural	11.7	11.5	11.9	11.7	11.5	11.8
Population less than 30,000 people						
Manitoba	...	...	...	33.1	31.2	34.9
Remote	11.9	11.6	12.2	11.4	11.1	11.7
Rural	13.4	12.9	13.8	13.3	12.9	13.8
Population less than 30,000 people						
Saskatchewan	...	...	...	38.6	35.6	41.5
Remote	12.2	11.9	12.4	11.7	11.4	12.0
Rural	11.4	11.1	11.8	11.4	11.0	11.7
Population less than 30,000 people						
Alberta	...	...	...	25.6	23.4	27.8
Remote	10.8	10.6	11.0	10.6	10.4	10.8
Rural	11.6	11.3	11.8	11.6	11.3	11.8
Population less than 30,000 people						
British Columbia	...	...	...	25.2	23.9	26.6
Remote	14.7	14.4	14.9	14.7	14.5	15.0
Rural						
Population less than 30,000 people	14.2	14.0	14.4	14.2	14.0	14.4

... not applicable

F too unreliable to be published

1. Upper and lower bounds are based on a 95% level of confidence

Source: 2016 Census. Statistics Canada. Custom tabulation.

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