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Canadians' access to cash in 2023

Heng Chen
Currency Department
Bank of Canada
hchen@bankofcanada.ca

Hong Yu Xiao
Currency Department
Bank of Canada
HXiao@bankofcanada.ca

Daneal O'Habib
Currency Department
Bank of Canada
DO'Habib@bankofcanada.ca

Stephen Wild
Currency Department
Bank of Canada
SWild@bankofcanada.ca

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Abstract

This study evaluates Canadians' access to cash in 2023, updating previous metrics on travel distances to automated banking machines (ABMs) and financial institution (FI) branches with improved quality checks on ABM locations. Despite a small decrease in the number of ABMs and branches since 2019, overall access to cash has remained unchanged, with Canadians needing to travel an average distance of 2.0 kilometers from their home locations to reach the nearest ABM and 4.6 kilometers to reach the nearest FI branch. Rural Canadians continue to travel farther to access to cash, with an average travel distance of 3.9 km to the nearest ABM and 9.7 km to the nearest branch, highlighting the need for continued monitoring in rural areas.

Topics: Financial services; Regional economic developments; Bank notes
JEL codes: O1, J15, R51

Résumé

Cette étude fournit une évaluation de l'accès de la population canadienne à l'argent comptant en 2023. Elle vient actualiser les mesures précédentes de la distance qui sépare les gens des guichets automatiques et des succursales d'institutions financières grâce à des contrôles de qualité améliorés aux guichets automatiques. Malgré une légère diminution du nombre de guichets automatiques et de succursales depuis 2019, l'accès global à l'argent comptant demeure inchangé, les gens devant parcourir en moyenne une distance de 2,0 km à partir de leur domicile pour se rendre au guichet automatique le plus proche et de 4,6 km pour se rendre à la succursale la plus proche. En région rurale, cependant, la distance à parcourir pour obtenir de l'argent comptant a continué d'augmenter, s'élevant en moyenne à 3,9 km pour le guichet automatique le plus proche et à 9,7 km pour la succursale la plus proche. Ce constat renforce la nécessité de continuer de surveiller la situation dans les régions rurales.

Sujets : Services financiers; Évolution économique régionale; Billets de banque
Codes JEL : O1, J15, R51

Introduction

Cash remains a vital payment option for Canadians, even as digital payments gain in popularity (Henry, Shimoda and Rusu 2024). Chen and Felt (2022) study Canadians' access to cash during the COVID-19 pandemic using a density-based metric by measuring the number of automated banking machines (ABMs) in a geographic area. Then Chen, O'Habib and Xiao (2023) further develop a travel-based measure of cash access, quantifying how far Canadians need to travel to their nearest ABM or financial institution (FI) branch. This note builds on these previous findings to update cash accessibility metrics for Canada in 2023.

To update ABM and branch counts and locations for 2023, we use the same data sources and employ the same mapping and routing tools described in Chen, O'Habib and Xiao (2023). However, we improve our data cleaning methodology to address potential data quality issues encountered in the ABM data provided by Mastercard, such as duplicate records, missing ABMs and issues with ABM coordinates.[1] Details are provided in the **Appendix**.

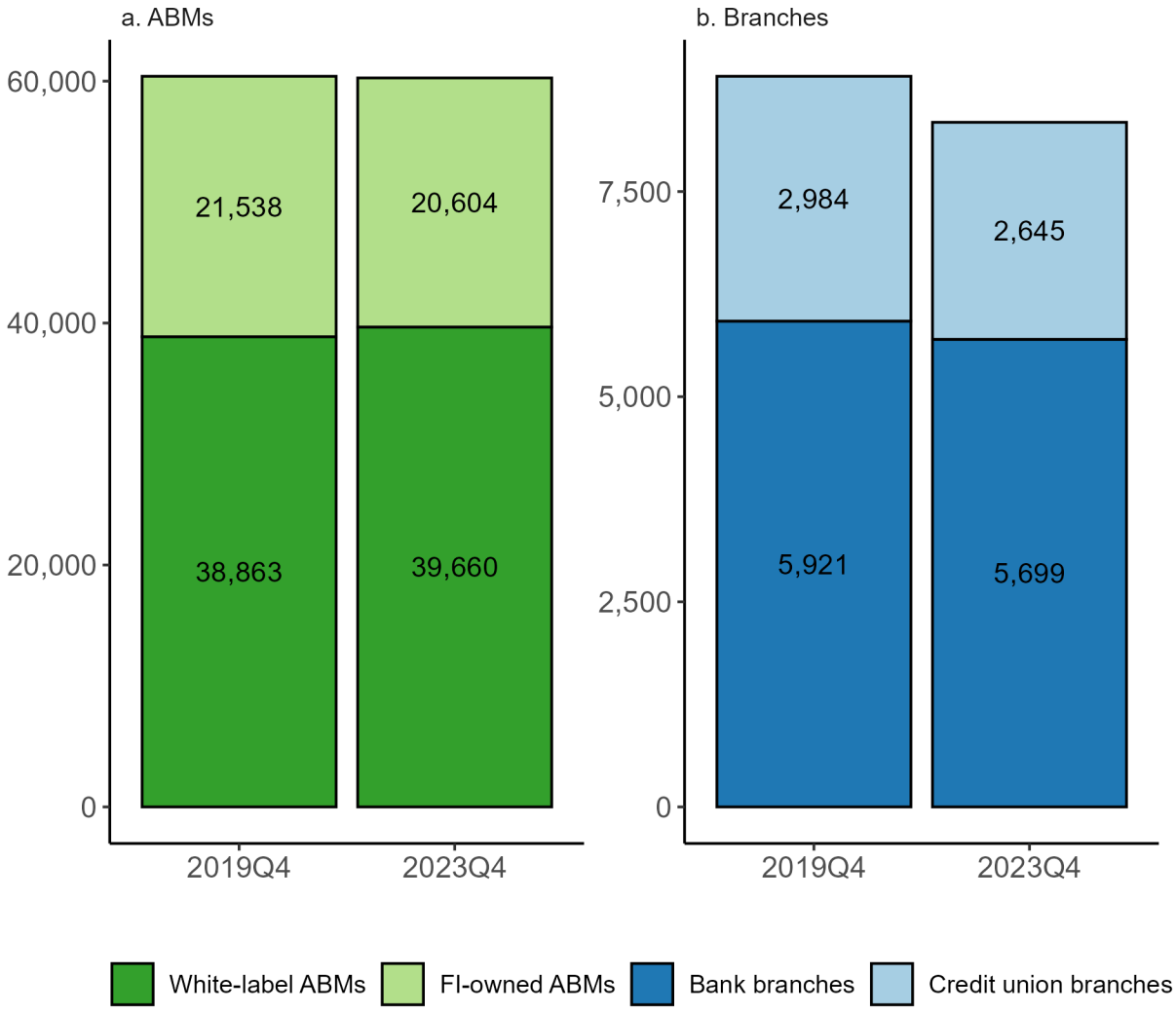
Density metrics

Chart 1 shows the total number of ABMs (panel a) and FI branches (panel b) in Canada in the fourth quarters of both 2019 and 2023. The number of ABMs remained broadly stable, decreasing slightly from 60,401 in 2019 to 60,264 in 2023, with a decline in FI-owned ABMs largely offset by an increase in white-label ABMs.[2] In contrast, the number of FI branches fell from 8,905 to 8,344 over the same period, reflecting an ongoing trend of branch closures across Canada for both banks and credit unions.

[1] Mastercard compiles information on ABM terminals self-reported by owners to comply with the Mastercard ABM data collection and completeness program. All owners and sponsors (including processors) that acquire ABMs or conduct transactions on the Mastercard network are required to report their ABM location data to Mastercard on a quarterly basis.

[2] White-label ABMs are ABMs not affiliated with any FI brand.

Chart 1: Number of automated banking machines and financial institution branches in Canada, by type



Note: ABM means automated banking machine; white-label ABMs are not owned by any financial institution (FI) brand, while FI-owned ABMs belong to specific FIs. See Chen, O'Habib and Xiao (2023) for a description and source of the branch location data.
Sources: Mastercard, Bank of Canada and Bank of Canada calculations.

The four panels in **Chart 2** show the availability of ABMs for Canadians living in large, medium-sized, small and rural census subdivisions (CSDs).[3] We further categorize CSDs by whether they contain at least one FI-owned ABMs, only white-label ABMs or no ABMs.

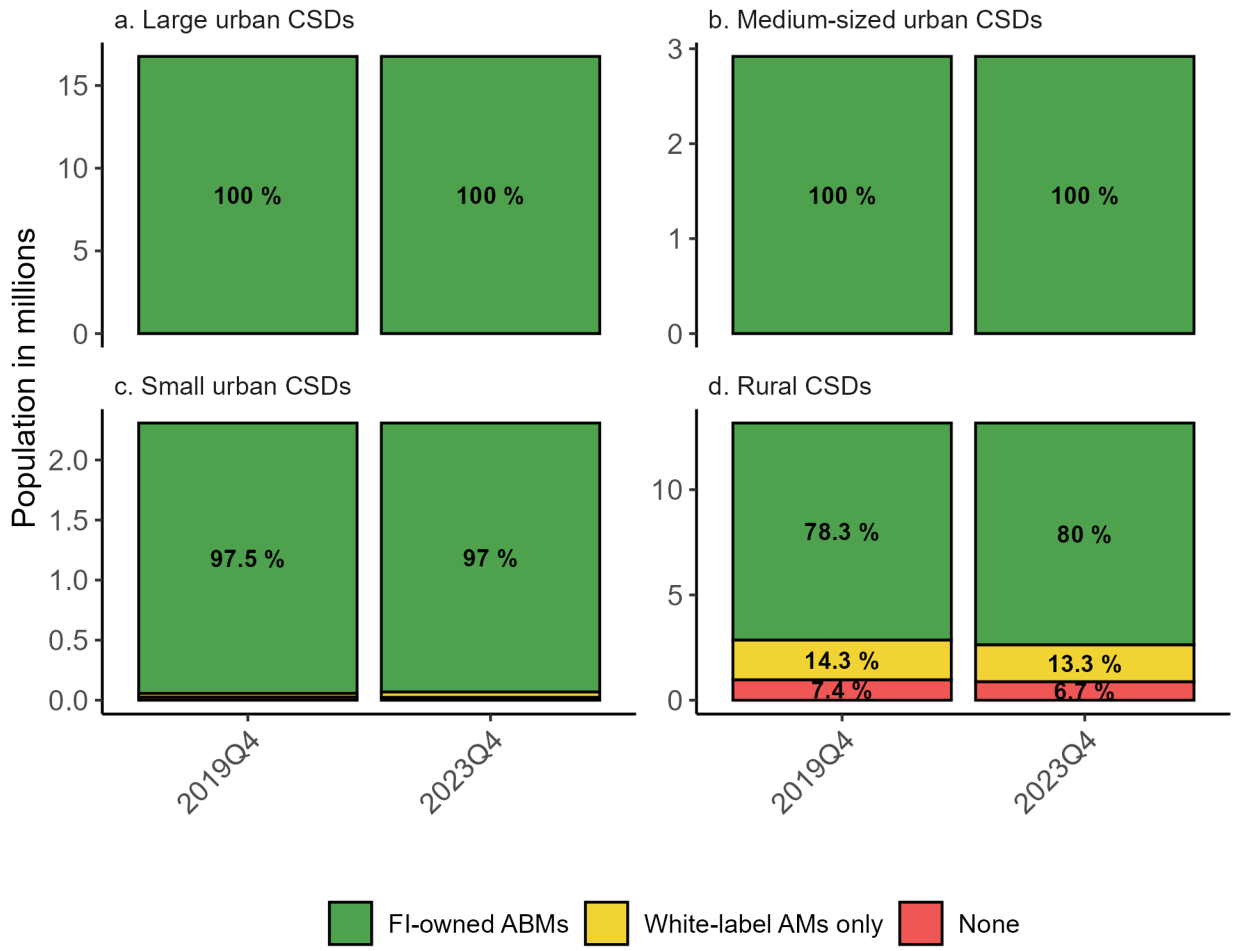
The data show that ABM access remained stable across different CSD types from 2019 to 2023:

- In large and medium-sized urban CSDs (**Chart 2**, panels a and b, respectively) during this time frame, 100% of the population lived in CSDs with at least one FI-owned ABM.
- Among small urban CSDs (**Chart 2**, panel c), 97% of the population lived in a CSD with at least one FI-owned ABM in 2023, down from 97.5% in 2019.
- In rural CSDs (**Chart 2**, panel d) in 2023, 80% of the population lived in a CSD with at least one FI-owned ABM, and a further 13.3% lived in one with a white-label ABM only, compared with 78.3% and 14.3% in 2019, respectively.

As nearly 16.8 million people live in large CSDs, 2.9 million in medium-sized, 2.3 million in small and 13.2 million people in rural CSDs, these figures indicate that most of the population in Canada continues to live in CSDs with FI-owned ABMs.

[3] CSDs are municipalities or equivalent-level administrative divisions across Canada. We classify CSDs in a manner similar to how Statistics Canada defines *population centres*. CSDs are urban if they have a total population of 1,000 residents or more and a population density of 400 people or more per square kilometre. All other CSCs are classified as rural. Urban CSDs are classified as *large*, *medium-sized* or *small* if they have populations of 100,000 or more, between 30,000 and 99,999, and 29,999 or fewer, respectively. Note that the boundaries for population centres, as defined by Statistics Canada, do not neatly align with the boundaries of CSDs. See "Dictionary, Census of Population, 2021—Population centre (POPCTR)" and "Dictionary, Census of Population, 2021—Rural area (RA)" for further details.

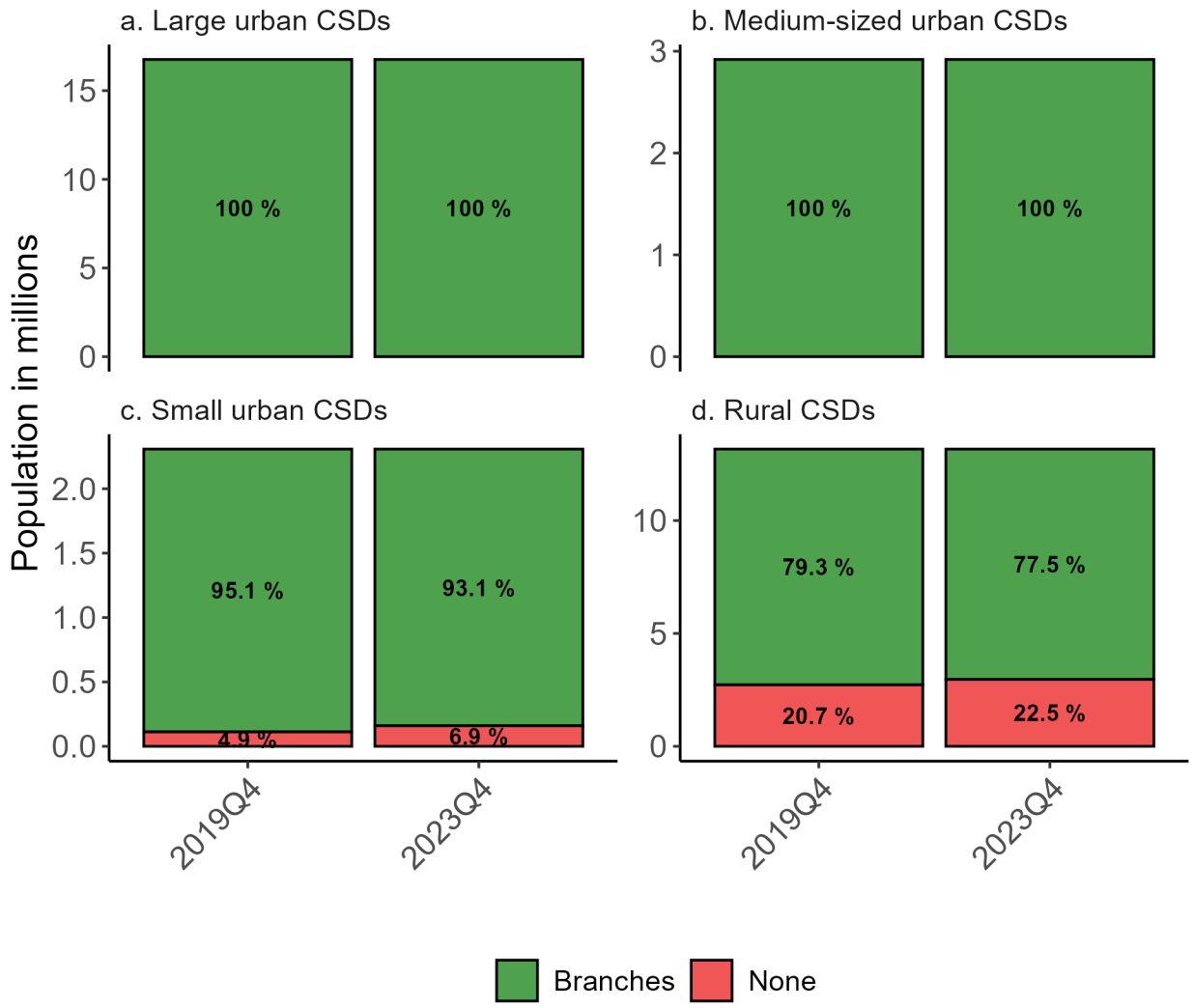
Chart 2: Proportion of the population who live in census subdivisions with or without automated banking machines, by subdivision type



Note: CSDs are census subdivisions. FI-owned ABMs are automated banking machines owned by financial institutions, while white-label ABMs are not owned by any financial institution. In the panel c columns, the “None” segment is 1.1% in the fourth quarter of 2019Q4 and 1.0% in the fourth quarter of 2023Q4, while the "White-label ABMs only" segment is 1.4% and 2.0%, respectively, in each of the same quarters. These labels were removed in the panel due to their small size.
Sources: Mastercard, Bank of Canada and Bank of Canada calculations.

Chart 3 shows the availability of FI branches in large urban (panel a), medium-sized urban (panel b), small urban (panel c) and rural (panel d) CSDs from 2019 to 2023. The percentage of the population who live in small urban CSDs without any branches rose from 4.9% in 2019 to 6.9% in 2023. The trend is similar in rural CSDs, where the proportion of the population living in areas with zero branches increased from 20.7% in 2019 to 22.5% in 2023. These numbers might point to an ongoing shift in banking services away from less densely populated areas, such as small urban and rural CSDs.

Chart 3: Proportion of the population who live in census subdivisions with at least one financial institution branch, by type of census subdivision



Note: CSDs are census subdivisions. See Chen, O'Habib and Xiao (2023) for a description and source of the branch location data.
Sources: Mastercard, Bank of Canada and Bank of Canada calculations.

Travel metrics

Table 1 summarizes the mean and median travel distances from Canadians' home locations to the nearest ABM and FI branch, comparing distances in 2019 and 2023. The data show that the average travel distance to the nearest ABM remained stable at 2.0 kilometers, with a median distance of 0.7 kilometers across

these two years. In contrast, the average travel distance to the nearest branch increased, reaching 4.6 kilometers in 2023, up from 4.3 kilometers in 2019.

Table 1: Mean and median travel distances in kilometres from home to the nearest automated banking machine and financial institution branch

	ABM		Branch	
	Mean	Median	Mean	Median
2019	2.0	0.7	4.3	1.4
2023	2.0	0.7	4.6	1.5

Note: ABM means "automated banking machine." See Chen, O'Habib and Xiao (2023) for the description and source of the branch location data.
Sources: Innovation, Science and Economic Development Canada; Mastercard; Bank of Canada and Bank of Canada calculations

Table 2 shows the share of the Canadian population living within a specified distance from an ABM or FI branch. Numbers in 2023 were similar to those in 2019, with 91% of Canadians living within 5 kilometres of an ABM, and 83% living within 5 kilometres of a branch. This can be compared with standards established between the Government of Canada and Canada Post, which require that 98% of Canadians have a postal outlet within 15 kilometres of their homes, 88% within 5 kilometres and 78% within 2.5 kilometres (Canada Post Corporation 2023).

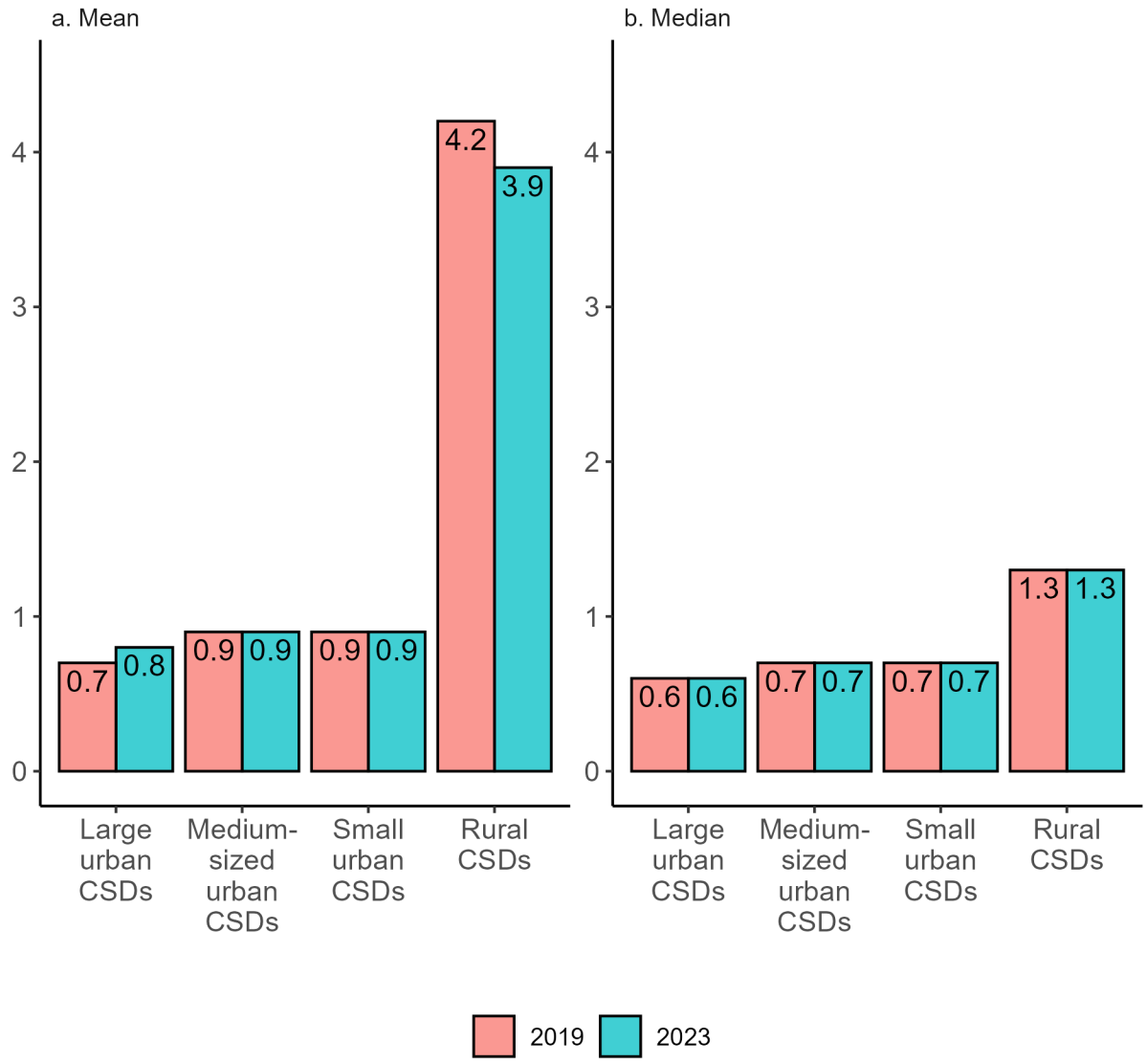
Table 2: Proportion of the population living within selected distances to the nearest automated banking machine or financial institution branch

	ABM		Branch	
	2019	**2023**	**2019**	**2023**
1 km	0.64	0.63	0.34	0.33
1.57 km (transit / walk threshold)	0.78	0.78	0.55	0.53
2.5 km	0.85	0.85	0.71	0.70
5 km	0.91	0.91	0.84	0.83
10 km	0.96	0.96	0.91	0.91
15 km	0.98	0.98	0.95	0.94
20 km	0.99	0.99	0.97	0.96
more than 20 km	1	1	1	1

Note: ABM means "automated banking machine." The "transit / walk threshold" is set out in Chen, Strathearn and Voia (2021), who find strong threshold effects at 1.57km for distance on cash withdrawal behaviours through different transportation modes. People who live beyond the threshold may be more likely to drive than those living below the threshold, who may take public transport or walk to their affiliated financial institution. See Chen, O'Habib and Xiao (2023) for the description and source of the branch location data.
Sources: Innovation, Science and Economic Development Canada; Mastercard; Bank of Canada and Bank of Canada calculations

Chart 4 breaks down the travel distances from a person's home to their nearest ABM by CSD type, comparing urban and rural areas. In both 2019 and 2023, the average travel distance to an ABM for urban residents was less than 1 kilometre, while for rural residents, it was approximately 4 kilometres (panel a). Median travel distances to the nearest ABM (panel b) remained stable over this time period, unaffected by the minor changes in ABM numbers shown in **Chart 1**.

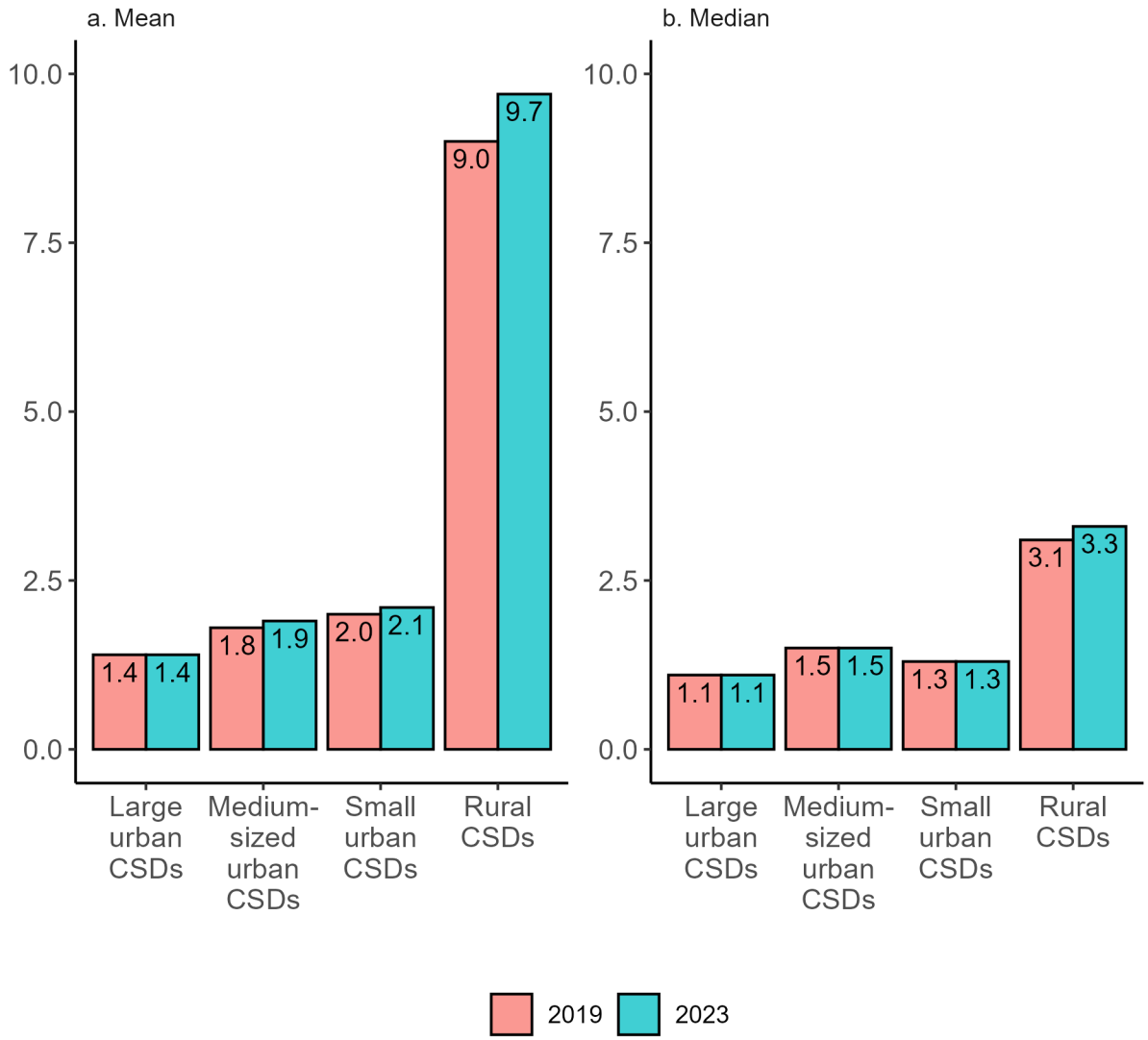
Chart 4: Mean and median driving distances in kilometres from home to the nearest automated banking machine, by type of census subdivision



Note: CSDs are census subdivisions.
Sources: Innovation, Science and Economic Development Canada; Mastercard and Bank of Canada calculations.

Chart 5 shows the driving distances from a person's home to their nearest FI branch. In 2019 and 2023, urban residents typically travelled about 2 kilometres or less to reach a branch, while rural residents faced an average distance of approximately 9.7 kilometres in 2023, up from 9.0 kilometers in 2019 (panel a). The steady closure of branches, particularly in rural areas, has resulted in longer travel distances for rural residents.

Chart 5: Mean and median driving distances in kilometres from home to the nearest financial institution branch, by type of census subdivision



Note: CSDs are census subdivisions. See Chen, O'Habib and Xiao (2023) for the description and source of the branch location data.
Sources: Innovation, Science and Economic Development Canada; Mastercard and Bank of Canada calculations.

Conclusion

Our 2023 update to 2019 data on access to cash shows overall stability in Canadians' access to cash, with travel distances remaining relatively unchanged between the two years. These aggregate findings are

consistent with Canadians' subjective perceptions of cash accessibility, reported in Chen, O'Habib and Xiao (2024), where most Canadians reported having easy access to sources of cash. However, the continued closure of FI branches, particularly in rural areas, led to an increase in 2023 in travel distances for rural residents. These developments highlight the need for ongoing monitoring and research on access to cash infrastructure (e.g., Huynh, Shcherbakov and Stenzel, forthcoming, who consider the impact of worsening cash infrastructure).

Appendix: Data quality and construction of automated banking machine data provided by Mastercard

This appendix details the process of identifying and addressing data quality issues in the dataset of automated banking machine (ABM) locations used for this study. The dataset, provided by Mastercard, contains several such data quality issues, including duplicate records, missing ABMs and issues with ABM coordinates. These issues are identified, quantified and corrected to ensure the accuracy and reliability of the analysis. We first identify and drop duplicate records (a process called deduplication), and then we address the remaining missing ABMs and issues with ABM coordinates, using the methodology described in Appendix B of Chen, O'Habib and Xiao (2023).

We focus solely on identifying duplicate records and their deduplications. To preserve confidentiality for this analysis, names of sponsors and owners are anonymized.[4] References to specific institutions in the text are replaced with generic identifiers (e.g., Institution A, Institution B).

Identifying duplicate records

The key variable in identifying duplicate records is the terminal identification number (ID), an identifier assigned to each ABM that should be unique to each sponsor and province or territory. In other words, potential duplicate records are identified as having the same terminal ID and province or territory and could be within the same sponsor (identified in the next section and Table A-1 as "within-sponsor") or appear across multiple sponsors (identified as "cross-sponsor").

Data deduplication and cleaning

Once we identify potential duplicates, we apply specific rules to clean the dataset based on address, province or territory, and institutional knowledge (i.e., mergers and acquisitions of owners or changes in sponsors). The process involves resolving duplicate ABMs sharing a single sponsor first, followed by duplicates across sponsors.

1. Within-sponsor deduplication

[4] In the ABM industry, sponsors provide access to ABM networks, while owners are responsible for operating the machines.

- **Different addresses:**
    - If ABMs share the same terminal ID but differ in address, we check whether both addresses are in the same province or territory. If they are, we retain the record with a physical address instead of a post office box. For example, see Case 1 in **Table A-1**.
- **Ownership:**
    - If ABMs share the same terminal ID and province or territory but differ in ownership, we retain the record associated with the latest primary owner (e.g., if Institution A acquired Institution B, records linked to Institution A are prioritized). See Case 2 in Table A-1.
- **Formatting variations:**
    - If two records differ only in the address formatting (e.g., "Main St" versus "Main Street"), we retain one standardized address record. See Case 3 in Table A-1.

2. Cross-sponsor deduplication

- **Shared terminal IDs:**
    - If a terminal ID appears under multiple sponsors, we check whether these records are reported at the same address under the same owner. In many cases, duplicate terminal IDs result from changes in sponsors, where records from the old sponsor continue to be reported. These duplicates are resolved by retaining the record under the new sponsor. See Case 4 in Table A-1 for an example.

Table A-1: Deduplication examples from within-sponsor and cross-sponsor

CASE	Terminal ID	Address	City	Sponsor name	Owner name	Duplication and deduplication	Action taken
1	T12345	123 Main St	Cityville	Institution A	Institution A	Within-sponsor	Retain (physical address)
1	T12345	PO box 567	Cityville	Institution A	Institution A	Within-sponsor	Drop (PO box)
2	RCA98765	12900 29th Ave	Smalltown	Institution D	Institution E	Within-sponsor	Retain (Institution E acquiring Institution F)
2	RCA98765	12900 29th Ave	Smalltown	Institution D	Institution F	Within-sponsor	Drop (Institution F acquired by Institution E)
3	T67890	456 Elm St, Apt 2B	Townsville	Institution B	Institution B	Within-sponsor	Retain (standardized address)

3	T67890	456 Elm Street, Apt 2B	Townsville	Institution B	Institution B	Within-sponsor	Drop (non-standardized address)
4	T54321	321 Pine Road	Smalltown	Institution C	Institution G	Cross-sponsor	Retain (Institution C is new sponsor for Institution G)
4	T54321	321 Pine Road	Smalltown	Institution D	Institution G	Cross-sponsor	Drop (Institution D is no longer sponsor for Institution G)

Note: ID is an abbreviation for identification, and PO is an abbreviation for post office. Potential duplicate records that could be within the same sponsor are identified as “within-sponsor,” and those that appear across multiple sponsors are identified as “cross-sponsor.”

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