

Cash and COVID-19: What happened in 2021

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Acknowledgements

We thank Maureen Carroll, Jean-Frédéric Demers, Ted Garanzotis, Chris Henry, Angelika Welte and seminar participants at the Bank of Canada for helpful comments and discussion. For their advice and collaboration, we thank our survey partners at Ipsos: Feyi Adedotun, Maryam Akbar, Shelley Edwards, Lisa Canini, and Mario Caceres; our Statistics Canada colleagues: Jean-François Beaumont, Catherine Deshaies-Moreault, Vincent Hardy, Joseph Duggan Paul Kelly, Dave Lawrence, Nicole Minnema and Marie-Noëlle Parent. We also thank Alison Arnot and Nicole van de Wolfshaar for excellent editorial assistance. We would like to dedicate this paper to the essential workers at the Bank of Canada, including colleagues who work in the Bank Note Distribution System, the Agency Operations Centres in Montréal and Toronto and in the regional offices. Their work has helped ensure that bank notes remain accessible to Canadians.

Abstract

We provide an update on the impact the COVID-19 pandemic on the demand for cash and the use of methods of payment based on data from the Bank Note Distribution System and from consumer surveys conducted in April and August 2021.

Our key findings are as follows:

- Cash in circulation remained high throughout 2021, driven mainly by demand for large-denomination notes.
- Canadians' holdings of cash on hand in April (median \$70) and August (median \$80) were comparable to results seen in 2020. Other cash holdings reported by Canadians remained elevated, with a median value of \$260 in August.
- In August 2021, 62% of Canadians used cash for payments, and indicators of merchant acceptance of cash improved in both the April and August surveys.
- A large majority of Canadians (around 80%) in 2021 continued reporting that they have no plans to go cashless in the next five years.

Topics: Bank notes, Central bank research, Coronavirus disease (COVID-19), Digital currencies and fintech, Econometric and statistical methods

JEL codes: C, C1, C12, C9, E, E4, O, O5, O54

Introduction

Bank of Canada researchers have analyzed the effects of the COVID-19 pandemic on the demand for cash and the use of methods of payment both early in the pandemic and through the rest of 2020 (Chen et al. 2020, 2021a and 2021b). We provide a brief update on these findings using data from the Bank Note Distribution System (BNDS) from 2021 and from surveys of Canadians conducted in April and August 2021.

Insights from the Bank Note Distribution System

Through the BNDS, the Bank of Canada supplies financial institutions with the bank notes they need to meet public demand. More specifically, the Bank distributes bank notes to distribution centres located in regional distribution points (RDPs) across Canada. The RDPs roughly correspond to the country's provinces. So, for example, the Toronto RDP can be considered the main supply centre of bank notes for Ontario. Financial institutions can withdraw notes from the BNDS to meet the demand for cash, or they can deposit surplus notes. They use same distribution system to return bank notes considered unfit for further circulation.¹

Chart 1 shows the value of notes in circulation (NIC) from 2018 to 2021. We see that the value of NIC increased significantly in the early months of the pandemic, and this growth slowed materially only in July 2020. To gauge the pandemic's impact on NIC, we construct simple projections (or counterfactuals) of 2020 and 2021 NIC based on what could have been expected if the COVID-19 shock had not occurred. In other words, we calculate what the path of NIC would have been after early March 2020 if the NIC value had increased at the average of weekly growth rates from 2017 to 2019. The dashed lines in **Chart 1** present the results of these counterfactuals. Our findings suggest that the pandemic doubled the increase in the value of NIC in 2020 that could have been expected over this period in a typical year (that is, without the COVID-19 shock). This chart also shows that the level of NIC remained high throughout 2021.

The change in the value of NIC equals the value of net note withdrawals from the Bank (withdrawals of bank notes less deposits made to the Bank). We can group these net note withdrawals by denomination. Small-denomination bank notes include \$5, \$10 and \$20, and large-denomination notes include \$50 and \$100. The small denominations are typically best suited for transactions. The large denominations typically are seen as satisfying precautionary or store-of-value motives, although demand for the \$50 notes might be increasingly considered to have a transactions motive.² **Chart 2, panel a** and **panel b** show the contributions to demand of small- and large-denomination bank notes in 2020 and 2021. To gauge the effect of the pandemic, we construct counterfactuals of weekly net note withdrawals showing what could have been expected if the pandemic had not happened (dashed lines in the charts).

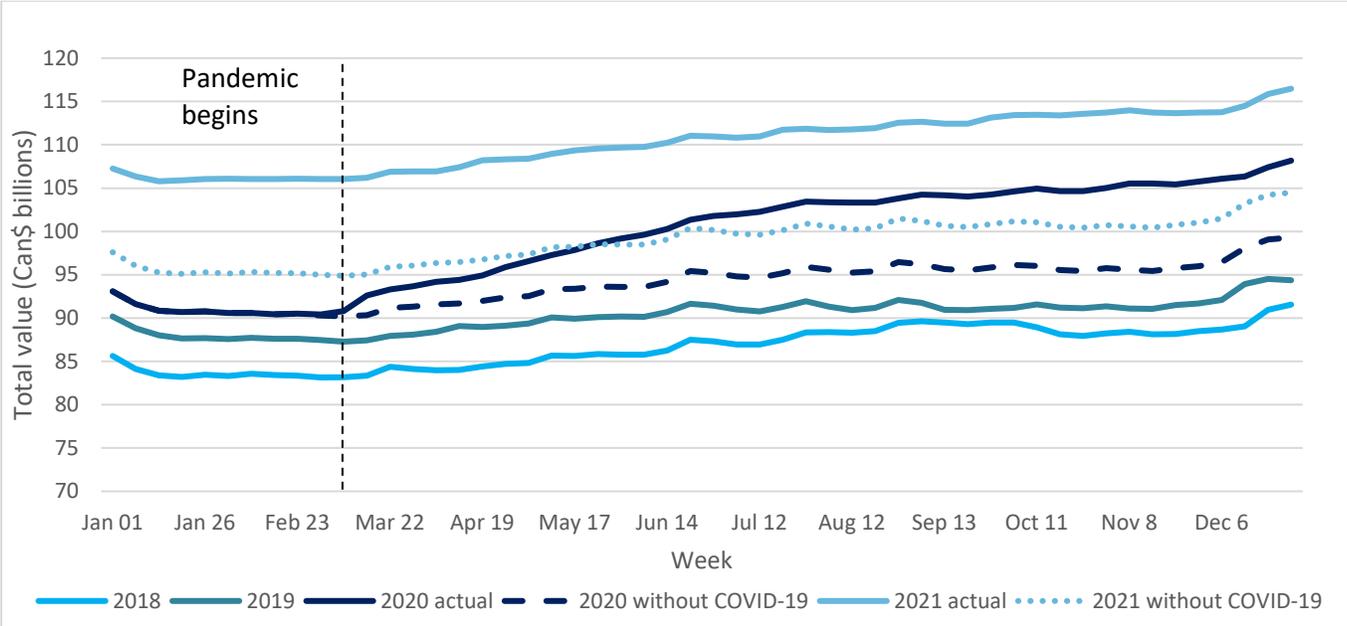
As Chen et al. (2020, 2021a and 2021b) discuss, the extraordinary demand for bank notes since March 2020 has been driven mainly by demand for large-denomination notes. This trend continued through 2021, as illustrated by the excess of actual total withdrawals of large-denomination notes (solid line in **Chart 2, panel b**) over the counterfactual amounts (dashed line in **Chart 2, panel b**). This contrasts with the net withdrawals of small-denomination notes, which

¹ See Bilkes (1997) for more details on the BNDS.

² The growing availability of \$50 notes in automated bank machines supports this finding. For a discussion of the evolution of cash demand for transactions and as a store of value, see Engert, Fung and Segendorf (2019).

have been persistently below the counterfactuals (Chart 2, panel a). This suggests that precautionary motives have been important drivers of the extraordinary cash demand seen in 2020 and 2021.

Chart 1: The effect of the pandemic on bank notes in circulation
Notes in circulation by year, 2018 to 2021

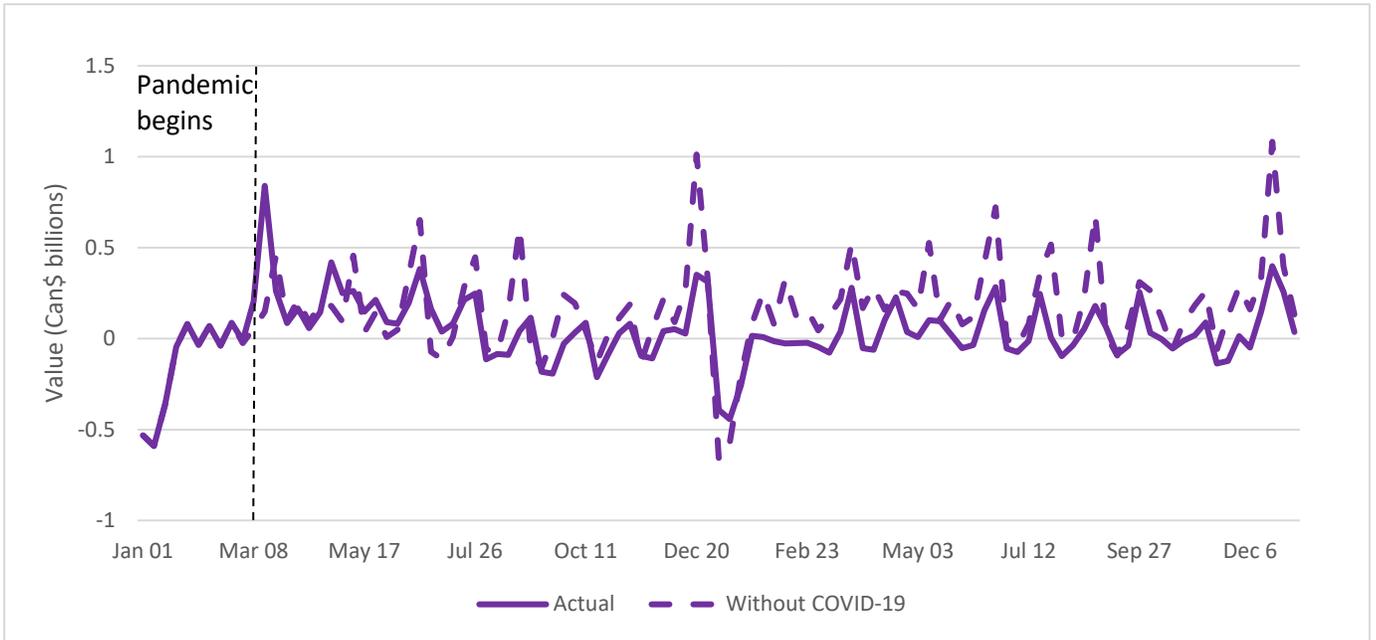


Note: Authors' calculations of "2020 without COVID-19" and "2021 without COVID-19" refer to counterfactual scenarios for 2020 and 2021, constructed using the average weekly growth rates of notes in circulation (NIC) in 2017, 2018 and 2019. Chen et al. (2021b) note a small discrepancy between NIC data drawn from the Bank Note Distribution System and NIC reported on the Bank of Canada's website. The NIC data in these charts have been adjusted to be consistent with the data published on the Bank's website. Timing indicated by the first vertical dashed line ("Pandemic begins") is from Cavalli et al. (2020)

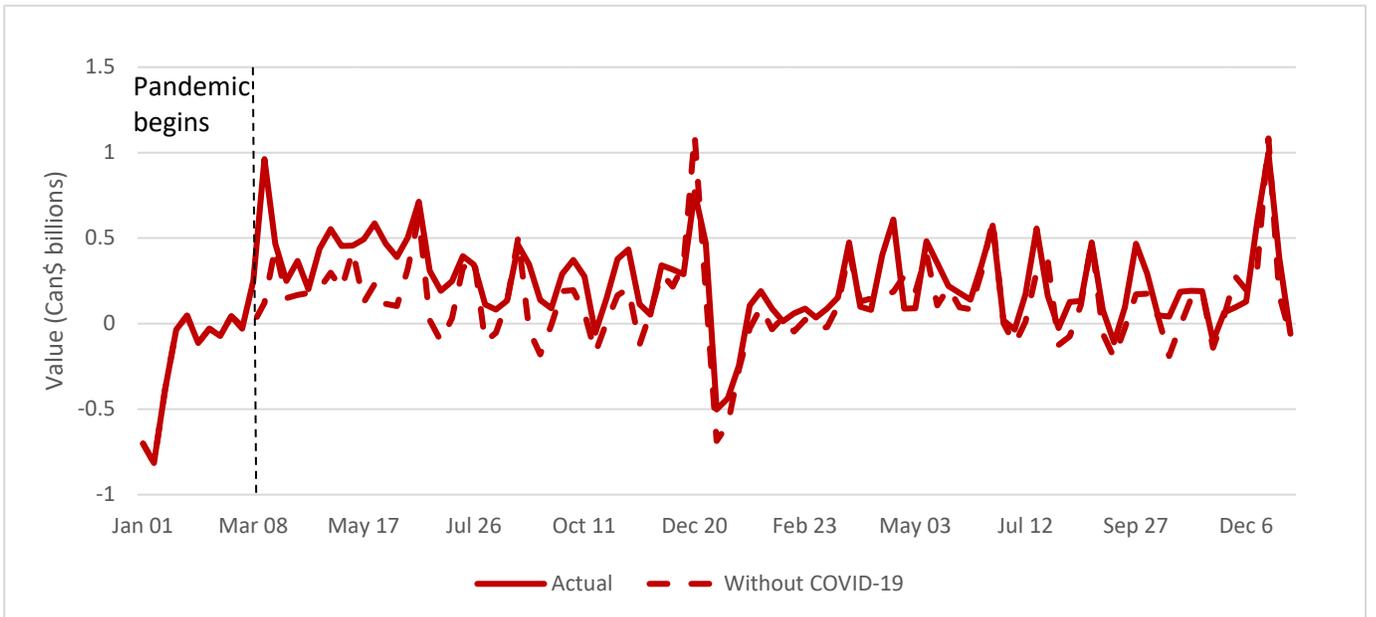
Sources: Bank of Canada and Bank of Canada calculations

Chart 2: Net bank note withdrawals from the Bank of Canada in 2020 and 2021

a. Small-denomination notes



b. Large-denomination notes



Note: "Without COVID-19" refers to a counterfactual scenario where net withdrawals for 2020 and 2021 are based on the average weekly change in notes outstanding from 2017 to 2019.

Sources: Bank of Canada and Bank of Canada calculations

Updates from the April and August 2021 cash alternative surveys

Survey instruments and methodology

As part of the Bank's ongoing monitoring and analysis of the effects of the pandemic, we conducted a series of surveys through 2020 and 2021. Our general survey design and methodology has undergone extensive testing and analysis. Throughout the design of our survey questionnaires and sampling strategy, we collaborated with our survey provider, Ipsos, and with Statistics Canada.

We conducted the April 2021 Cash Alternative Survey (CAS) between April 19 and May 11, 2021, with 2,565 respondents aged 18 or higher. We conducted the August 2021 CAS between August 11 and September 2, 2021, with 3,500 respondents. To match the Canadian population with respect to age, gender and province, we selected respondents using a non-probability quota sampling.

To minimize bias caused by differences in behaviour between our sample and the Canadian population, we compute weights to ensure that the sample corresponds with certain demographic characteristics of the Canadian population. The weighting methodology used in both surveys has undergone extensive testing and analysis. We computed the survey weights for the April CAS on June 14, 2021, and the weights for the August CAS on September 10, 2021. We validate our weighted estimates by comparing them with results from probability-sampled surveys by Statistics Canada. For additional information regarding survey design and quality control, see Chen et al. 2020, 2021a and 2021b.

Key points

Table 1, **Table 2**, **Table 3** and **Table 4** provide highlights of the results of our April and August 2021 surveys as well as those from earlier surveys in this series (reported in Chen et al. 2020, 2021a and 2021b). The main insights are the following:

- Canadians who hold cash reported a median value of cash on hand (held in a wallet or purse) of \$70 in April and \$80 in August 2021, similar to results seen in 2020 (**Table 1, panel a**).
- Other cash holdings reported by Canadians remained elevated, with a median value of \$260 in August 2021 (**Table 1, panel b**).
- According to our most recent surveys, a significant proportion of Canadians used cash for payments, reaching 62% in August 2021 (**Table 2**). This was the same as the proportion who used debit, but less than the proportion who used credit, which was 76% in August. So, a large percentage of Canadians used cash for payments even though electronic methods continued to dominate methods of payment.
- Indicators of merchant acceptance of cash (**Table 3**) continued to improve in our April and August 2021 surveys. In the August survey, only 2% of Canadians reported hearing news reports about merchants not accepting cash for payments, and only 4% reported that they were unable to use cash at a point of sale.
- Finally, a large majority of Canadians, around 80%, continue to report that they have no plans to go cashless (**Table 4**). The share of Canadians stating that they are already cashless was 13% in both our April and August surveys. However, the share of Canadians who stated that they are already cashless and actually held no cash is 6%. This is shown in parentheses in the first row of **Table 4**. This kind of outcome is evident across all of the

surveys and suggests that some respondents might overestimate the extent to which they are already cashless.³

Next steps

The Bank will continue monitoring how the pandemic and its aftermath affect cash demand and the use of various methods of payment (Lane 2021), with additional surveys and analysis in 2022:

- Bank staff will conduct a comprehensive consumer survey of methods of payments. This will complement results reported in Henry, Huynh and Welte (2018) and in Chen et al. (2021a).
- Bank staff also plan to conduct a survey of merchants to gauge their acceptance of cash and other methods of payment. See Huynh, Nicholls and Nicholson (2019) for the results of our 2018 merchant acceptance survey.
- Finally, Bank staff are planning additional surveys of Canadians' ownership and use of cryptocurrencies. Earlier results can be found in Henry, Huynh and Nicholls (2019), Huynh, Nicholls and Nicholson (2020), Balutel et al. (2021) and in Balutel et al. (*forthcoming*).

³ For greater clarity, the relevant survey question is, "Do you currently have any plans to stop using cash in the future?" Being cashless in this context corresponds to the response: "Yes, I have already stopped using cash." This answer could be a respondent's statement of behaviour, a preference or intention about not using cash for transactions, or not using cash for precautionary reasons (e.g., not holding cash just in case).

Table 1a: Canadians' (non-zero) cash on hand

	Aug 2019	Apr 2020	July 2020	Nov 2020	Apr 2021	Aug 2021
Median (\$)	\$70	\$85	\$70	\$80	\$70	\$80
Mean (\$)	136	158	134	154	171	151
Proportion of Canadians with zero cash on hand						
Share (%)	20%	28%	20%	22%	25%	26%

Note: "Cash on hand" is cash held on person, for example, in a wallet or purse. The mean estimates are winsorized at the 99th percentile.

Table 1b: Canadians' (non-zero) other cash holdings

	Aug 2019	Apr 2020	July 2020	Nov 2020	Apr 2021	Aug 2021
Median (\$)	\$185	\$225	\$170	\$270	\$200	\$260
Mean (\$)	460	523	396	702	500	668
Proportion of Canadians with zero other cash holdings						
Share (%)	71%	82%	77%	76%	80%	83%

Note: "Other cash holdings" is the amount of cash the respondent's household keeps in locations other than a purse, wallet or pocket, such as at home or in a vehicle. The mean estimates are winsorized at the 99th percentile.

Table 2: Methods of payment used in the previous week (percentage of Canadians)

	Apr 2020	July 2020	Nov 2020	Apr 2021	Aug 2021
Cash	36%	54%	59%	52%	62%
Debit	52	62	62	61	62
– Tap and go	38	46	49	48	50
– Chip and PIN	38	48	45	42	43
Credit	62	67	71	79	76
– Tap and go	48	56	58	57	57
– Chip and PIN	38	45	46	39	42
Interac e-Transfer	38	38	39	40	42
Mobile	8	12	11	17	17
Prepaid card	11	12	12	15	10

Note: This table reports use of all payment methods, irrespective of location, including in-store and online payments. Respondents could select multiple answers, so the shares do not sum to 100. The overall measures of debit and credit use include Canadians who made at least one transaction with tap and go or chip and personal identification number (PIN) or both in the week before they responded to the survey.

Table 3: Consumer reports of merchant acceptance of cash (percentage of Canadians)

	Apr 2020	July 2020	Nov 2020	Apr 2021	Aug 2021
I did <u>not</u> hear, see or experience a merchant refusing to accept cash.	43	58	57	68	79
I saw a sign that stated cash was accepted but other payment methods were preferred.	14	15	17	13	9
I saw a sign that stated a merchant was not accepting cash.	22	16	17	10	5
I heard news reports that merchants stated cash was not accepted.	16	6	5	4	2
I was <u>not</u> able to use cash at a merchant's point of sale.	12	9	9	7	4

Note: Respondents could select multiple responses, so the shares do not sum to 100.

Table 4: Canadians' planned future cash use (percentage of Canadians)

	Aug 2019	Apr 2020	July 2020	Nov 2020	Apr 2021	Aug 2021
Already cashless	10 (4)	19 (10)	14 (6)	12 (6)	13 (6)	13 (6)
Within 5 years	6	6	7	7	7	5
More than 5 years	2 ^E	1 ^E				
No plans to go cashless	82	74	78	80	78	81

Note: Respondents could select only one option, so the estimates sum to 100 (excluding the estimates in parentheses). The estimate in parentheses is the share of Canadians who stated that they are already cashless and reported zero cash on hand, so stated and actual behaviours are aligned. "E" indicates "use with caution" per Statistics Canada's guidelines on data reliability (see Statistics Canada 2016, Section 7).

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