

— MARCH 2025

CENTRAL BANK

DIGITAL

CURRENCY?

*What it is and how
it could impact your
privacy, security,
and autonomy*

CONTRIBUTOR:

*Sharon Polsky, MAPP — President of AMINAcorp.ca
and President of the Privacy & Access Council of Canada*



Justice Centre
for Constitutional Freedoms

We Defend
Freedom
In Canada

Abstract

The increased popularity of cryptocurrencies and other digital payment systems has prompted central banks around the world, including the Bank of Canada (BoC), to explore Central Bank Digital Currencies (CBDCs). However, a CBDC could threaten Canadians' privacy, security, autonomy, financial independence, and their access to economic participation. It could usher in a cashless economy, thereby removing access to the intangible but important benefits cash provides. A CBDC provides surveillance capabilities that can be used to monitor every financial transaction, and can program money with targeted restrictions that could differ from person to person, thereby increasing government control and reducing freedom. In addition to concerns about privacy and authoritarian uses of this new technology, CBDCs also raise significant concerns about transparency and accountability, as they grant governments greater control of money. And finally, while Canadians distrust and oppose CBDC, as revealed by a recent BoC survey, there is concern that the current financial struggles of Canadians could be used to usher in a CBDC sooner than some may think. Ultimately, cash remains essential to protect the rights and freedoms of Canadians, including their privacy, security, and autonomy.

Copyright and Reprinting

Copyright © 2025 Justice Centre for Constitutional Freedoms.

Licensed under the Creative Commons [CC BY-NC-ND](https://creativecommons.org/licenses/by-nc-nd/4.0/). This license enables reusers to copy and distribute the material in any medium or format in unadapted form only, for noncommercial purposes only, and only so long as attribution is given to the creator.



Acknowledgements

We thank the thousands of Canadians who have supported the Justice Centre. Your generosity empowers the Justice Centre to defend freedom in Canada and shape public policy that respects *Charter* rights and freedoms.

Updates to this report

This is Version 1.0 of this report, which may be updated periodically.

About the authors

This report was produced by Justice Centre staff and researchers, with Benjamin Klassen, Education Programs Coordinator, as lead author. With a background in political science, Benjamin seeks to use his expertise to educate Canadians on important issues affecting their rights and freedoms.

We also thank Sharon Polsky, MAPP, for her significant contributions to the report. Sharon is President of [AMINAcorp.ca](https://aminacorp.ca), President of the [Privacy & Access Council of Canada](https://www.privacyandaccess.ca), and a [Privacy by Design Ambassador](https://www.privacyandaccess.ca) with more than 30 years' experience advising [corporations and governments](#), as well as [Parliamentary](#), [Senate](#) and legislative committees about privacy and access matters, and about the unintended consequences of emerging laws, technologies and global trends.

Contents

- Executive Summary.....3**

- Introduction.....6**
 - What is a central bank digital currency (CBDC)? 7
 - The state of CBDC across the globe today 8
 - Do CBDCs really provide benefits?..... 9
 - Is a CBDC coming to Canada? 11

- What are the concerns about a CBDC? 12**
 - CBDC and a cashless economy 12
 - Government benefits of CBDCs 14
 - Privacy and anonymity 15
 - Would a CBDC respect privacy?* 16
 - Digital authoritarianism and autonomy concerns..... 19
 - Equality and access concerns 21
 - Safety and security concerns..... 21
 - Increased government control of money 24
 - Canadians oppose CBDCS. But could they arrive soon anyway?..... 26

- What can be done to address these concerns? 29**
 - Use cash and get active..... 29
 - Policy recommendations..... 30
 - Protect cash in legislation*..... 30
 - Additional recommendations (if a CBDC is implemented)* 31

- Conclusion 32**

- Appendix A: Privacy in CBDCs - the technical side 33**
 - Single-tier System* 33
 - Two-tier System* 35

- Bibliography..... 38**



Executive Summary

In Canada, as around the world, consumers are increasingly relying on digital payment methods. In just a few short decades, Canadians have gone from relying on cash to relying on credit cards, e-transfers, and e-wallets (e.g. Apply Pay). In 2009, 54 percent of transactions at the point of sale were conducted in cash¹ but, by 2019, this number had dropped to 20 percent.² The shift, coupled with the rising popularity of cryptocurrencies such as Bitcoin — which are not controlled by banks or the government — has prompted central banks worldwide, including the Bank of Canada (BoC), to explore the possibility of introducing their own government-controlled digital currency.

According to the governments and bankers promoting Central Bank Digital Currencies, CBDCs offer several potential benefits, including “greater competition and innovation by allowing for equal access to a more efficient, consumer-friendly, convenient and safe payment option” for consumers in well-established economies.³

However, CBDCs also generate significant concerns. In addition to significant digital risks even if it operated in tandem with physical currencies, the possibility exists that CBDCs might replace — not merely complement — physical currencies. In a cashless economy, all transactions are digital, and therefore traceable and subject to inescapable financial surveillance and government interference.

These risks became startlingly evident during the 2022 Freedom Convoy in Ottawa, when the Canadian government froze the bank accounts of hundreds of peaceful protestors and donors to the Freedom Convoy. A crucial lesson emerged: Canadians should always have access to cash.

The extent to which a CBDC threatens privacy, security, or autonomy largely depends on its design and implementation. While anonymous CBDCs are possible, most central banks, including the BoC, are exploring non-anonymous CBDCs to comply with Know Your Customer (KYC) protocols and anti-money laundering/counter-terrorism financing (AML/CTF) policies.^{4,5} These non-anonymous approaches would record all transactions but could theoretically still protect user privacy by keeping data from governments and central banks.

A crucial design question is whether the digital currency would be distributed and managed directly by the BoC, or indirectly through traditional banks (i.e. *retail banks*, used by individuals and many small businesses, and *commercial banks* used by businesses, institutions, and government entities).

¹ Bank of Canada, “Contingency planning for a central bank digital currency,” February 25, 2020, <https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>

² Ibid.

³ OECD, “Central Bank Digital Currencies (CBDCs) and democratic values,” OECD Business and Finance Policy Papers, 5 July 2023, [https://www.oecd.org/en/publications/central-bank-digital-currencies-cbdc-and-democratic-values_f3e70f1f-en.html#:text=This paper explores how the design and implementation of privacy, and citizens' trust in central banks](https://www.oecd.org/en/publications/central-bank-digital-currencies-cbdc-and-democratic-values_f3e70f1f-en.html#:text=This%20paper%20explores%20how%20the%20design%20and%20implementation%20of%20privacy%20and%20citizens%27%20trust%20in%20central%20banks)⁴ Bank of Canada, “Privacy in CBDC technology,” June 2020, <https://www.bankofcanada.ca/2020/06/staff-analytical-note-2020-9/>

⁴ Bank of Canada, “Privacy in CBDC technology,” June 2020, <https://www.bankofcanada.ca/2020/06/staff-analytical-note-2020-9/>

⁵ Nadia Pocher, Andreas Veneris, “Privacy and Transparency in CBDCs:

A Regulation-by-Design AML/CFT Scheme,” 2021, <https://www.eecg.utoronto.ca/~veneris/21icbc2.pdf>

With a centralized CBDC, the BoC would handle the distribution and control of the CBDC and all customer services (including onboarding customers, managing accounts, and conducting KYC and AML/CTF protocols), granting it immediate control of and access to all user account and transaction data.⁶ This would allow governments to use the information to reward or penalize individuals by restricting access to or freezing accounts, based on their financial activity.

In a decentralized two-tier system, traditional banks would handle all customer services and transactions, as they currently do and, depending on the specific model used, customer data could be protected from the BoC.⁷ However, this would not preclude governments from pressuring traditional banks to monitor, restrict, or even freeze accounts.

CBDCs can also be programmed with capabilities such as automatic taxation, or restricting when, where, and what people are allowed to buy,⁸ leading to a level of control resembling China's notorious social credit system.

CBDCs also threaten access to and equality of economic participation. This is true particularly for individuals who depend on cash, such as the homeless, elderly, disabled, those with limited technological literacy, those in rural populations, and lower-income individuals.⁹

Moreover, CBDCs amplify growing cybersecurity concerns related to online banking vulnerabilities. Data breaches result in lost funds and privacy, and risk identity theft and other forms of fraud. A CBDC, being fully digital and more complex, would be an attractive target for malign actors, thus elevating risks to banking customers.

CBDCs would also expand governments' control of money, enabling them to bypass traditional banks and conduct transactions directly at the BoC. This would allow transactions to remain concealed, raising significant concerns about transparency and accountability. With this, combined with the added capability of creating money "out of thin air," governments could finance large-scale partisan agendas without public awareness.

Lastly, while a great majority of Canadians oppose CBDCs,¹⁰ they could soon be introduced anyway. Several recent examples show how governments and central banks use crises to bring about structural change in the financial system. Canadians' current financial struggles have

⁶ Jonathan Chiu, Cyril Monnet, "Public and Private Money Creation for Distributed Ledgers: Stablecoins, Tokenized Deposits, or Central Bank Digital Currencies?," Bank of Canada, October 2024, <https://www.bankofcanada.ca/2024/10/staff-working-paper-2024-35/>

⁷ like Hybrid or Intermediated models

⁸ Ian De Bode, Matt Higginson, and Marc Niederkorn. "Central bank digital currency and stablecoin: Early coexistence on an uncertain road," McKinsey & Company, October 11, 2021, <https://www.mckinsey.com/industries/financial-services/our-insights/cbdc-and-stablecoins-early-coexistence-on-an-uncertain-road>

⁹ OECD, "Central Bank Digital Currencies (CBDCs) and democratic values...,"

¹⁰ Bank of Canada, "Digital Canadian Dollar Public Consultation Report," November 2023, <https://www.bankofcanada.ca/wp-content/uploads/2023/11/Forum-Research-Digital-Canadian-Dollar-Consultation-Report.pdf>



prompted the BoC to call it a “crisis”¹¹ and an “emergency,”¹² and addressing these issues could include adopting a CBDC to issue government subsidies.

At their core, CBDCs could threaten Canadians’ rights and freedoms. This report reveals how CBDCs could harm Canadians’ privacy, security, autonomy, and access to economic participation, and could reduce government accountability. While the BoC has paused (not ended) its research into a CBDC, the increasing global trend towards CBDCs should motivate Canadians to prepare for a time when the project is revived. Canadians should be well-informed about the benefits and harms of this technology to effectively participate in discussions and challenge unwanted changes.

¹¹ CBC News, “Bank of Canada cuts interest rate to 2.75% as country faces ‘new crisis’ from tariffs,” March 12, 2025, <https://www.cbc.ca/news/business/bank-of-canada-march-12-2025-1.7481284>

¹² Global News, “Weak productivity is an economic ‘emergency,’ Bank of Canada warns,” March 26, 2024, <https://globalnews.ca/news/10384078/bank-of-canada-productivity-emergency/>

Introduction

In less than half a century, Canadians have gone from relying on cash and cheques to credit cards and debit cards and, more recently, to various digital payment methods. Now the possibility exists that cash will be replaced entirely by digital currency controlled by the Bank of Canada.



In 1968, the Toronto Dominion Bank achieved a milestone when it introduced Chargex, the first Canadian credit card. In the decades since then, debit cards and various forms of digital currency have been introduced; and credit cards have overtaken cash as the most used payment method. In 2009, 54 percent of transactions at the point of sale were conducted in cash,¹³ but by 2019, this number had dropped to a mere 20 percent,¹⁴ representing just 11 percent of the total value of all purchases.¹⁵

In parallel with the shift away from cash was a proliferation of cryptocurrencies (e.g. Bitcoin) and stablecoins (e.g. USDC).¹⁶ These privately-owned digital currencies are a new form of decentralized money — free from government regulation and secured by cryptography methods that make them highly secure and difficult to hack, counterfeit, or double-spend.¹⁷ Digital currencies can be used for online purchases, investments, or other transactions, all without the involvement of conventional banks or the scrutiny of government. The popularity of these currencies has grown across industries,¹⁸ leading central banks, including the Bank of Canada,¹⁹ to criticize that Bitcoin

¹³ Bank of Canada, "Contingency planning for a central bank digital currency," February 25, 2020, <https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Stablecoins are cryptocurrencies whose value is tied to some other commodity, central bank money, or financial asset (e.g. USDC is backed by the USD). Because of this, their value is typically much more stable compared to traditional cryptocurrencies, whose value can often be extremely volatile. (Source: Investopedia, "Stablecoins: Definition, How They Work, and Types," June 13, 2024, <https://www.investopedia.com/terms/s/stablecoin.asp>)

¹⁷ Investopedia, "Cryptocurrency Explained With Pros and Cons for Investment," June 15, 2024, <https://www.investopedia.com/terms/c/cryptocurrency.asp>

¹⁸ Crypto News, "How Cryptocurrency Is Driving Evolution Across Industries," December 03, 2024, <https://cryptonews.net/editorial/guides/how-cryptocurrency-is-driving-evolution-across-industries/#:~:text=Cryptocurrency%20has%20become%20a%20transformative%20force%20across%20multiple,to%20rethink%20traditional%20systems%20and%20adopt%20innovative%20solutions.>

¹⁹ Wealth Professional, "Canada ranks as top 8 most crypto-friendly nation," May 08, 2024, <https://www.wealthprofessional.ca/news/industry-news/canada-ranks-as-top-8-most-crypto-friendly-nation/385811>



and other unregulated digital currencies can be used for illicit activity, cause financial instability,²⁰ ²¹ and disrupt monetary policies²² — something that is not unique to digital money.

Other jurisdictions, including many American states, have introduced legislation proposing a range of provisions to regulate the use of cryptocurrencies, from Bitcoin reserves to task forces designed to better inform state policies on digital assets.²³ This could happen in Canada as well.

Against this backdrop, policymakers around the globe have been exploring central bank digital currencies as an alternative to cash and cryptocurrencies. In Canada, those discussions, and the ongoing efforts to implement Digital IDs (which would integrate with CBDCs to provide an exquisitely detailed view of individuals' conduct, associations, purchases, and interests) are hampered by the knowledge that Canadians have no confidence that a government that imposes CBDCs would respect rights and freedoms.

What is a central bank digital currency (CBDC)?

A CBDC is a digital form of an existing government-issued currency,²⁴ like the Canadian dollar. Instead of using physical coins or banknotes in various denominations, a CBDC is intangible (nonphysical) just as Bitcoin is. However, unlike Bitcoin and other non-CBDC digital currency products, which are privately created and owned and are unregulated, CBDCs are created, owned, and regulated by a government's central bank.²⁵

A notable difference between CBDCs and current methods of digital banking (such as e-transfers, debit cards, credit cards, and Apple Pay) is that in the current digital system, purchases are ultimately paid using funds held by the purchaser in their bank account. These funds are a claim on the bank,²⁶ and when a purchase is made using a debit card, for example, money is transferred from the purchaser's bank account to the bank account of the merchant.

CBDCs, on the other hand, are a direct claim on the central bank,²⁷ which would allow direct peer-to-peer (or purchaser-to-merchant) transfers without needing a bank account – although banks could continue to operate as they do now, depending on the structure of the CBDC in use. With this

²⁰ Jonathan Chiu, Cyril Monnet, "Public and Private Money Creation for Distributed Ledgers..."

²¹ Central banks contend that cryptocurrencies' risk of illicit financial activity is one of the key reasons they are exploring CBDCs; yet the US Department of the Treasury has conceded that, "Although virtual currencies are used for illicit transactions, the volume is small compared to the volume of illicit activity through traditional financial services." (Source: Forbes, "The False Narrative Of Bitcoin's Role In Illicit Activity," December 13, 2021, <https://www.forbes.com/sites/haileylenon/2021/01/19/the-false-narrative-of-bitcoins-role-in-illicit-activity/>)

²² Central banks claim that the proliferation of private monies threatens monetary sovereignty and the policies they use to control prices (e.g. inflation, money supply), especially during financial turmoil. While the BoC has noted that the value of cryptocurrencies is too volatile to become a huge threat to central bank money, stablecoins, however, could become strong competitors. (Source: Bank of Canada, "Contingency planning...")

²³ Cointelegraph, "Crypto bills stack up across the US, from Bitcoin reserves to task forces". February 14, 2025 <https://cointelegraph.com/news/crypto-bills-across-us-bitcoin-reserves-task-forces>

²⁴ McKinsey & Company, "What is CBDC (Central Bank Digital Currency)?," March 01, 2023, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-central-bank-digital-currency-cbdc>

²⁵ Investopedia, "What Is a Central Bank Digital Currency (CBDC)?," June 14, 2024, <https://www.investopedia.com/terms/c/central-bank-digital-currency-cbdc.asp>

²⁶ Raphael Auer and Rainer Böhme, "Central bank digital currency: the quest for minimally invasive technology," Bank For International Settlements (BIS), Working Papers No 948, June 2021, <https://www.bis.org/publ/work948.pdf>

²⁷ Ibid.

and other features like resilience (i.e. reliable and secure) and near-universal accessibility,²⁸ potentially including offline capabilities,²⁹ CBDCs are intended to function more like cash while preserving the comforts of digital banking.

Importantly, there are two broad types of CBDCs: wholesale and retail. Wholesale CBDCs are designed for use among financial institutions for interbank payments and securities transactions,³⁰ but are not available to the general public.³¹ Retail CBDCs, on the other hand, are intended for use by the general public and can offer a variety of benefits — and pose various threats to individuals. This report only discusses retail CBDCs and explores their potential impact on the rights and freedoms of Canadians.

The state of CBDC across the globe today

Governments around the world are looking at ways to modernize their financial systems to maintain control over exchange rates and currencies, to improve financial inclusion, and to enhance economic growth and stability.

Many nations have explored the potential for implementing CBDCs and several have developed, piloted, or launched CBDC projects to gauge their feasibility. As of January 2025, 134 countries and currency unions (representing about 98 percent of global GDP) were exploring a CBDC, with 66 countries already in advanced stages of implementation.³² Every G20 country is exploring a CBDC, 19 of which are already in advanced stages.

²⁸ Bank of Canada, “Contingency planning...”

²⁹ Bank of Canada, “A central bank digital currency for offline payments,” February 2023, <https://www.bankofcanada.ca/2023/02/staff-analytical-note-2023-2/>

³⁰ World Economic Forum, “CBDCs come in two forms: retail and wholesale. What’s the difference?,” February 06, 2024, <https://www.weforum.org/stories/2024/02/wholesale-retail-cbdc-difference/#:~:text=A%20retail%20CBDC%20is%20a%20form%20of%20central,financial%20institutions%20for%20interbank%20payments%20and%20securities%20transactions.>

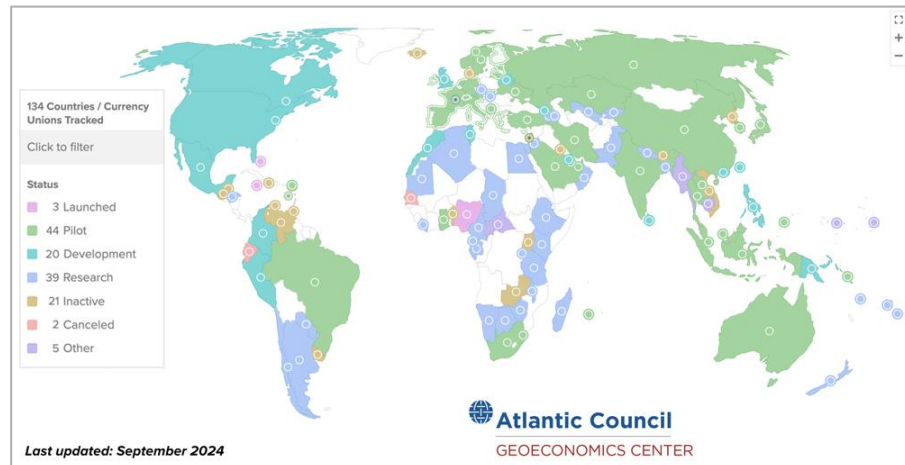
³¹ Wholesale CBDCs are aimed at streamlining operations within the financial sector, especially concerning transactions between banks or between banks and central banks. They focus on enhancing existing systems used by banks for significant financial transactions and settlements. Central banks can use this leverage to substantially influence monetary policy, by controlling money supply and interest rates.

Canada has already experimented with wholesale CBDCs with its *Project Jasper*, which launched in 2016 and has completed several phases of exploration by successfully making interbank transfers (Source: Payments Canada, Bank of Canada, and R3, “*Project Jasper: A Canadian Experiment with Distributed Ledger Technology for Domestic Interbank Payments Settlement*,” https://www.payments.ca/sites/default/files/2022-09/jasper_report_eng.pdf).

³² Atlantic Council, “*Central Bank Digital Currency Tracker*,” Retrieved January 10, 2025, <https://www.atlanticcouncil.org/cbdctracker/>



While the type and structure of CBDCs vary greatly from country to country — with some granting the central bank access to all user data and others offering more robust privacy protections — 44 countries including all original BRICS member states (Brazil, Russia, India, China, and South



Africa) are already in the pilot phase (“the live testing of a quasi-final product”³³) with millions of users.³⁴ Most countries seek to complement their existing cash currencies with a CBDC, while others governments look forward to replacing physical currency altogether.³⁵

To date, however, the Bahamas’ Sand Dollar, Nigeria’s eNaira, and Jamaica’s Jam-Dex are the only retail CBDCs officially issued at the national level — with reports of generally slow uptake by their respective populations³⁶; all of those countries continue to use traditional forms of money such as physical bills and coins.

Do CBDCs really provide benefits?

Governments eager to modernize their financial systems have referred to the rising demand for digital payments, and the increasing popularity of private digital currencies (i.e. stable- and cryptocurrencies), and cited safety, efficiency, resiliency, and inclusion³⁷ as key benefits of CBDCs and justification for exploring their implementation.

On closer inspection, it becomes clear that the validity of these claimed ‘benefits’ is questionable.

For example, financial inclusion is a primary reason given for exploring CBDCs, since their use would eliminate the need for bank accounts and associated fees. The offline and direct peer-to-peer transfer capabilities (without needing a bank account) that CBDCs offer could provide greater access for people in remote areas and those without bank accounts (the “unbanked”) — which

³³ International Money Fund (IMF), “Central Bank Digital Currency - Virtual Handbook,” November 2024, <https://www.imf.org/en/Topics/fintech/central-bank-digital-currency/virtual-handbook>

³⁴ Atlantic Council, “Central Bank Digital Currency Tracker,”

³⁵ World Economic Forum, “What are central bank digital currencies and what could they mean for the average person?,” October 6, 2023, <https://www.weforum.org/stories/2023/10/what-are-central-bank-digital-currencies-advantages-risks/>

³⁶ International Banker, “Recent Global Trends in CBDC Development,” February 12, 2025, <https://internationalbanker.com/banking/recent-global-trends-in-cbdc-development/>

³⁷ OECD, “Central Bank Digital Currencies (CBDCs) and democratic values...,”

might make sense in countries like Nigeria, where 36 percent of adults are unbanked.³⁸ In Canada, however, where 99 percent of adults already have a bank account,³⁹ ‘inclusivity’ is not irrelevant, but it makes the prospect of CBDCs a threat to financial inclusivity for anyone who does not or cannot use computers or similar digital devices.

Another claimed benefit is *efficiency*, as payments and transfers that currently take three to five business days could be reduced to just seconds with a CBDC. That argument ignores the important fact that banking is already digital, and payments and transfers can be executed instantaneously — although the required interbank processing time⁴⁰ delays completion by several days and enables banks to use the funds in the interim. Furthermore, there is no assurance that the completion of transactions using CBDCs wouldn’t also be delayed. Moreover, new technologies like Real-Time Rail already address delayed transfer settlements, providing instantaneous transfers⁴¹ and other benefits CBDCs promise.

Another oft-cited justification for CBDCs is that they are more secure against fraud and money laundering, and more reliable and resistant to operational failures. Given that current banking and payment systems were designed and optimized for decades with these priorities in mind,⁴² accepting that argument is an admission that the well-established regulatory and prosecutorial regime to detect and prevent fraud and money laundering has failed. Perhaps more importantly, the claim that CBDCs will prevent fraud or money laundering remains speculative.

Despite the credibility and operational challenges, governments view private sector digital payment platforms and the emergence of stablecoins and other crypto-assets as competition. Moreover, according to the BoC,⁴³ private currencies undermine or weaken the efficacy of monetary policies, threatening the central bank’s ability to control inflation and regulate money supply.

A centralized CBDC could help maintain monetary sovereignty; but it could also be used by governments to wield an unprecedented level of economic control and implement financial policies⁴⁴ that would threaten people’s rights and freedoms.

³⁸ Cointelegraph, “Nigeria’s eNaira CBDC: An overview,” March 13, 2024, <https://cointelegraph.com/learn/articles/nigeria-enaira-cbdc>

³⁹ Canadian Bankers Association (CBA), “Canada’s banking sector by the numbers,” Retrieved January 12, 2025, <https://cba.ca/article/fast-facts-the-canadian-banking-system>

⁴⁰ TD Commercial Banking Bill Payment Processing Times, <https://www.tdcommercialbanking.com/wbb/help/English/wbwBPProcessingTimes.html>

⁴¹ Payments Canada, “The Real-Time Rail Canada’s fastest payment system,” Retrieved January 5, 2025, <https://www.payments.ca/systems-services/payment-systems/real-time-rail-payment-system>

⁴² Canadian Bankers Association (CBA), “CBA position paper examining the issuance of a Canadian Central Bank Digital Currency (CBDC),” August 22, 2022, <https://bankingquestions.cba.ca/article/examining-the-issuance-of-a-Canadian-CBDC>

⁴³ Bank of Canada, “Contingency planning...”

⁴⁴ Patrick Schueffel, “CBDCs: Pros and Cons - A comprehensive list and discussion of the advantages and disadvantages of central bank digital currency,” The Journal of Digital Assets, August 08, 2023, http://journal-digitalassets.org/browse/issue_detail.php?issue_id=6&id=8&display=all&mdiv=previous#ref19



Is a CBDC coming to Canada?

In September 2024, after commercial lenders and the Bank of Canada spent years⁴⁵ exploring the viability of a Canadian CBDC, the BoC announced it would be “shifting its focus to broader payments system research and policy development.”⁴⁶ The change in direction came less than a year after the BoC reported that a public survey it commissioned revealed that Canadians are firmly opposed to a CBDC.⁴⁷

Astute observers noted that merely ‘scaling down’ work on a retail central bank digital currency is different from ceasing efforts to develop or implement CBDCs.

Despite Canadians having little interest⁴⁸ in (or trust for) centrally-controlled digital currency, and despite an admission⁴⁹ by Tiff Macklem, Governor of the BoC, that there is no “compelling case” for a Canadian CBDC, he announced that the BoC would continue to ‘monitor’ global CBDC developments and “be ready to ensure Canadians always have a safe and secure supply of public money.” In his view, the Bank of Canada continuing its CBDC-related work “will be invaluable if, at some point in the future, Canadians, through their elected representatives, decide they want or need a digital Canadian dollar”.⁵⁰

Governor Macklem’s comments echo those of his predecessor, Stephen S. Poloz, who, in announcing the BoC’s ‘contingency plan’ for a central bank digital currency in 2020, said that there was no plan to launch a CBDC, and that the intention was to merely build the capacity “should the need for one ever arise”.⁵¹ Poloz also speculated that, as technology evolves, a Canadian CBDC could eventually become desirable, or even necessary.⁵²

While the BoC appears to have taken a measured approach, the decision to create a CBDC lies with Parliament,⁵³ and a Canadian CBDC could be implemented as soon as enough Canadian lawmakers are persuaded that a CBDC is a good idea, regardless of whether it is necessary or not. In addition, the possibility exists that a government declaration of a national emergency could empower whatever party forms government at the time to impose a CBDC — without public or parliamentary debate or scrutiny.

⁴⁵ Finextra, “Canada shelves retail CBDC work,” <https://www.finextra.com/newsarticle/44776/canada-shelves-retail-cbdc-work>

⁴⁶ Global News, “The Bank of Canada is ‘scaling down’ plans for a possible digital Loonie,” September 24, 2024, <https://globalnews.ca/news/10772381/bank-of-canada-digital-loonie-tiff-macklem/>

⁴⁷ Bank of Canada, “A Digital Canadian Dollar: What we heard 2020 — 23 and what comes next,” November 2023, <https://www.bankofcanada.ca/digitaldollar/a-digital-canadian-dollar-what-we-heard-2020-23-and-what-comes-next/>

⁴⁸ Finextra, “Bank of Canada paper casts doubt on CBDC value” <https://www.finextra.com/newsarticle/42779/canada-paper-casts-doubt-on-cbdc-value>

⁴⁹ Bank of Canada, “Digital Canadian Dollar”, <https://www.bankofcanada.ca/digitaldollar/>

⁵⁰ Bank of Canada, “Digital Canadian Dollar”, <https://www.bankofcanada.ca/digitaldollar/>

⁵¹ Bank of Canada, “Contingency planning...”

⁵² Ibid.

⁵³ Ibid.

What are the concerns about a CBDC?

CBDC and a cashless economy

Cash offers many intangible benefits that digital currencies cannot fully replicate, such as privacy, anonymity, autonomy, near-universal acceptance, and resilience.⁵⁴ The primary concern about adopting a CBDC depends on whether it will merely complement or fully replace existing currency systems and payment methods. In reality, however, a CBDC implemented to serve a complementary role could easily be shifted by the government of the day to see cash replaced, whether by design or through a gradual, voluntary transition.

While governments might not force people to transition to a CBDC-only economy by eliminating cash, voluntary transitions driven by consumer behaviour (perhaps influenced by government and industry) could achieve the same result. Central banks,⁵⁵ including the BoC,⁵⁶ claim that CBDCs are only intended to complement existing payment methods. But as money becomes increasingly digitized and cash usage declines, maintaining the infrastructure needed to create, manage, and handle cash will become (or be portrayed as becoming) more inconvenient and expensive for governments, banks, and businesses alike. Indeed, many Canadian businesses have already stopped accepting cash.⁵⁷ One report suggests that 26 percent of grocery stores in Canada will cease to accept cash within five years.⁵⁸ While not all countries may intend to go cashless as they adopt CBDCs, the World Economic Forum forecasts the "gradual obsolescence of paper currency" as a characteristic of a "well-designed CBDC."⁵⁹

Canada lacks the legislative protection needed to ensure cash continues to be made available, and has no legislation requiring merchants to accept cash; thus, the continuing shift toward digital payment systems might inspire the BoC and other central banks to declare cash as being redundant, and prompt them to reduce the number of denominations and the overall amount of cash in circulation. In fact, regulating the money supply is a primary central bank objective to ensure a healthy economy.⁶⁰ If most transactions were conducted via a CBDC, it could become economically beneficial to remove a significant amount of cash from circulation — an argument

⁵⁴ About Financials, "Advantages of Cash: 17 Reasons to use physical currency," Retrieved, January 08, 2025, <https://aboutfinancials.com/advantages-of-cash/>

⁵⁵ Atlantic Council, "The basics of CBDC," April 25, 2024, <https://www.atlanticcouncil.org/blogs/econographics/the-basics-of-central-bank-digital-currency-cbdc/>

⁵⁶ Bank of Canada, "Digital Canadian Dollar," Retrieved January 13, 2025, <https://www.bankofcanada.ca/digitaldollar/>

⁵⁷ Financial Post, "Why businesses should be forced to accept cash," November 01, 2022, <https://financialpost.com/news/economy/cash-king-businesses-forced-accept-money>

⁵⁸ National Post, "Convenience of going cashless comes at a cost to privacy: report," February 02, 2023, <https://nationalpost.com/news/canada/cashless-grocery-stores>

⁵⁹ World Economic Forum, "5 questions about central banks and digital currency," September 28, 2017, <https://www.weforum.org/stories/2017/09/5-questions-about-central-banks-and-digital-currency/>

⁶⁰ Investopedia, "How Central Banks Control the Supply of Money," September 27, 2024, <https://www.investopedia.com/articles/investing/053115/how-central-banks-control-supply-money.asp>



that resulted in Swedish⁶¹ and Australian⁶² banks refusing cash and cheques, creating a model for other nations seeking to shift toward CBDCs while meeting the needs of modern economies.

Despite attempts to popularize CBDCs, and predictions by banking experts in 2019⁶³ that Sweden would be the first country to eliminate cash by 2023, uptake has been slow, and overall enthusiasm in the banking industry is waning. The annual survey of central bankers conducted by the Digital Monetary Institute reveals that “just 13 per cent of respondents picked CBDCs as the most promising fix for cross-border payments, down from 31 per cent last year.”⁶⁴

Incremental steps to protect the economy have already seen Canada⁶⁵ and other governments remove large denomination banknotes from circulation⁶⁶ ostensibly to combat crimes like money laundering, terrorism financing, and tax evasion — although the Bank of Canada reports⁶⁷ more counterfeit \$20 bills in circulation than counterfeit \$100 bills.

Combatting crime is also why an entire regime was established in Canada (and other countries) that requires casinos, banks, and other financial institutions to report any transactions (or combined transactions within 24 hours) of \$10,000 or more, regardless of the payment method.^{68, 69} Some jurisdictions have gone further: A new provision in Quebec’s Bill 54, adopted in March 2024, makes it a crime to carry \$2,000 or more in cash and requires individuals to justify their possession of such sums, even without evidence of criminal activity.⁷⁰



Canada stopped producing \$25 and \$500 bank notes in 1935, and they ceased to be legal tender as of January 1, 2021, along with the \$1, \$2, and \$1,000 bills from every Bank of Canada series.

Another incentive for removing cash could be central banks’ desire for greater control over monetary policy, which CBDCs provide. One policy they could pursue with a CBDC is to place positive and negative interest rates on people’s savings, forcing them to save or spend; but, to do this effectively, the BoC has admitted it would require restricting cash, or removing it altogether.⁷¹

⁶¹ The Conversation, “Sweden is a nearly cashless society — here’s how it affects people who are left out,” December 18, 2024, <https://theconversation.com/sweden-is-a-nearly-cashless-society-heres-how-it-affects-people-who-are-left-out-216586>

⁶² Newswire, “Aussie bank ditches cash payments,” May 14, 2024, <https://au.finance.yahoo.com/news/aussie-bank-ditches-cash-payments-045700020.html>

⁶³ SmarterTravel, “Visiting These Cities Could Soon Require You to Go Cashless,” October 1, 2019, <https://www.omfif.org/future-of-payments-2024/>

⁶⁴ OMFIF Digital Monetary Institute, “Future of Payments 2024,” <https://www.omfif.org/future-of-payments-2024/>

⁶⁵ National Post, “Canadian \$1,000 bill hunt: There are nearly a million left, most in the hands of criminal elites,” November 15, 2012, <https://nationalpost.com/news/canada/the-hunt-for-canadas-1000-bills-there-are-nearly-a-million-left-most-in-the-hands-of-criminal-elites>

⁶⁶ Investopedia, “Why Governments Seek to Eliminate Cash,” April 19, 2024, <https://www.investopedia.com/articles/investing/021816/why-governments-want-eliminate-cash.asp>

⁶⁷ Bank of Canada, Statistics on the counterfeiting of Canadian bank notes, <https://www.bankofcanada.ca/rates/banking-and-financial-statistics/statistics-on-the-counterfeiting-of-canadian-bank-notes-formerly-b4/>

⁶⁸ Government of Canada, “Reporting transactions to FINTRAC: The 24-hour rule,” October 23, 2023, <https://fintrac-canafe.canada.ca/guidance-directives/transaction-operation/24hour/1-eng>

⁶⁹ Government of Canada, “Financial transactions reported to FINTRAC,” Retrieved January 09, 2025, <https://fintrac-canafe.canada.ca/individuals-individus/rpt-eng>

⁷⁰ Le journal de Montreal, “Loi 54: quand transporter 2000\$ comptant fait de vous un criminel présumé,” September 25, 2024, <https://www.journaldemontreal.com/2024/09/25/loi-54-quand-transporter-2000-comptant-fait-de-vous-un-criminel-presume>

⁷¹ Bank of Canada, “CBDC and Monetary Policy,” February 2020, <https://www.bankofcanada.ca/2020/02/staff-analytical-note-2020-4/>

Government benefits of CBDCs

Transitioning away from cash toward CBDCs could offer governments an outcome that, for them, would be advantageous: having access to exquisitely detailed and accurate customer and transactional information, allowing the government to monitor and control the population.

Being able to track and analyze transactions as they occur, and monitor and analyze the detailed historical records of money movements, could provide law enforcement agencies with evidence to detect criminal activity; but governments could also use the information for political purposes, rewarding or punishing individuals based on their beliefs, their political opinions, or any legal behavior of which the government of the day happens to disapprove. This would be equally true even if it were done through traditional banks.

In 2022, Canadians experienced precisely this kind of government overreach when the banks were instructed to freeze over 200 accounts of peaceful protestors and donors to the Freedom Convoy.⁷² If this level of control was possible under the current system where cash remains available and banking is not controlled by the BoC, a largely (or entirely) cashless society under a CBDC would make easy work of restricting funds and freezing bank accounts — with even more harmful and destructive results: Canadians would have no way to buy groceries or fuel, pay rent, utility bills, or for transit passes, leaving them entirely at the mercy of the government. As one Canadian remarked,

*A digital dollar sounded great until we saw the federal government freeze private bank accounts of its own citizens for supporting a political movement it disagreed with.*⁷³

The behaviour of our federal government in 2022 echoes China's notorious social credit system, where citizens' behaviours and transactions affect their social standing and access to basic goods and services.

While Canada is not there yet, the government's disregard for *Charter* freedoms during Covid has shown that the possibility of further overreach is entirely possible. If governments could monitor Canadians' purchases, what would stop them from using this information to reward and punish people like China does, where a low 'social credit' score can result in dire consequences?

If cash were eliminated, Canadians would have no choice but to rely on a CBDC, allowing the government to have all transactions monitored and to impose penalties for alleged misconduct. Anonymous bureaucrats or artificial intelligence systems could impose travel bans, restrict internet access, restrict educational and employment opportunities, reduce credit scores to disqualify

⁷² CBC, "Most Bank Accounts Frozen Under the Emergencies Act are Being Released, Committee Hears," February 22, 2022, <https://www.cbc.ca/news/politics/emergency-bank-measures-finance-committee-1.6360769>.

⁷³ The Conversation, "Canadians have serious trust issues when it comes to a central bank digital currency," December 11, 2023, <https://theconversation.com/canadians-have-serious-trust-issues-when-it-comes-to-a-central-bank-digital-currency-219192>



applicants from being able to get loans or mortgages and even confiscate pets⁷⁴ for infractions such as buying ‘too much’ fuel, donating to the ‘wrong’ political party, or questioning government policy.

Canadians should approach the adoption of a CBDC with great caution, and demand policies that explicitly protect the availability of cash and require that any CBDC introduced must be designed, implemented and operated in a way that maximizes Canadians’ rights and freedoms.

Privacy and anonymity

A key concern about CBDCs is the implications for Canadians’ privacy and anonymity — terms that are related and often used interchangeably but are not the same.

A broad definition of *privacy* could include “freedom from unjustified surveillance”; and defining privacy as a right would reflect the rich jurisprudence on this subject, including by the Supreme Court of Canada.⁷⁵

The notion of ‘privacy’ is not a modern concept, but it is often incorrectly assumed to be about secrecy. In fact, privacy relates to a person’s desire and ability to determine and control whether, when, why and with whom “his thoughts, sentiments, and emotions shall be communicated to others.”⁷⁶

“It is certain every man has a right to keep his own sentiments, if he pleases. He has certainly a right to judge whether he will make them public, or commit them only to the sight of his friends.” Court of King’s Bench of England — 1769⁷⁷

Anonymity, on the other hand, is an aspect of protecting privacy that involves concealing a person’s identity so that, even if others have access to the data, it cannot be traced back to the individual’s identity. Breaking the link between identity and data can be accomplished by removing personally identifiable information from data sets, so that the people whom the data describes remain anonymous. In the context of banking and purchasing activity, however, the process would not necessarily conceal their financial behaviour or data.⁷⁸

Protecting an individual’s identity by anonymizing data is not foolproof, since the increasing power of computers, artificial intelligence, and the growing amount of information about people that continues to be amassed by companies and governments makes it increasingly easy to match anonymous data with publicly available information, and discern the identity of the person to whom the data relates. As a result, it is increasingly difficult to ensure that anonymity can be maintained.

⁷⁴ Business Insider, “Explained: China Social Credit System, Punishments, Rewards - Business Insider,” November 28, 2022, <https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4>

⁷⁵ Privacy Commissioner of Canada, 2018-2019 Annual Report to Parliament on the *Privacy Act* and the *Personal Information Protection and Electronic Documents Act*, https://www.priv.gc.ca/en/opc-actions-and-decisions/ar_index/201819/ar_201819/

⁷⁶ G.D. v. South Coast British Columbia Transportation Authority, 2024 BCCA 252 (CanLII), <https://canlii.ca/t/k5ll3>

⁷⁷ *Millar v. Taylor*, 4 Burr. 2303, 2379 (1769), 98 E.R. 201

⁷⁸ *Ibid.*

A **direct CBDC**, under a *single-tier system*, requires that all accounts and transaction data would be recorded and validated at the central bank,⁸³ thus granting the Bank of Canada unrestricted access to all customer account and transaction data.⁸⁴ Even if the BoC used a shared distributed ledger with intermediaries (where the BoC would delegate responsibilities such as user onboarding, and conducting regulatory checks to commercial banks as they do in the current banking system), the BoC would still have access to the shared ledger and, therefore, to all user accounts and transaction data. Since BoC would take on all traditional bank responsibilities, this would effectively do away with traditional banks and would have a significant negative impact on the economy.⁸⁵

A decentralized *two-tier system* provides a degree of protection against the invasiveness of centrally controlled digital currency. In the decentralized model, CBDCs are distributed and handled by traditional banks, which provide all customer services and manage user data. Under this decentralized system, it could be possible that the central bank would not have access to any retail transaction information, depending on whether it is a *hybrid CBDC* or a *fully intermediated CBDC* (according to models of the Bank of International Settlements (BIS)).⁸⁶

With a **hybrid CBDC**, the central bank records no account or transaction data, but still records retail balances periodically.⁸⁷ This model would limit the BoC's ability to view detailed purchasing data (e.g. who bought what, from whom, when and for how much), but this backup copy of retail balances would still give the central bank insight into how much money individuals hold in their accounts.⁸⁸

By contrast, a fully **intermediated CBDC** is relatively more privacy-protective since user data would still be accessed by traditional banks — similar to the current online digital banking system — but the central bank would not have direct access to retail data.⁸⁹

The different models merely show that privacy is possible, but the question is: Which model will central banks choose to implement? Governments and central banks in Western democracies have promised that the CBDCs they introduce will respect privacy and that intermediaries (e.g. traditional banks) would operate as they do currently^{90, 91, 92} — but it remains unclear what specific

⁸³ Bank of Canada, "Security of a CBDC," June 2020, <https://www.bankofcanada.ca/2020/06/staff-analytical-note-2020-11/>

⁸⁴ Jonathan Chiu, Cyril Monnet, "Public and Private Money Creation for Distributed Ledgers..."

⁸⁵ Gregory Baer, "Central Bank Digital Currencies: Costs, Benefits and Major Implications for the U.S. Economic System," April 07, 2021, Bank Policy Institute, <https://bpi.com/central-bank-digital-currencies-costs-benefits-and-major-implications-for-the-u-s-economic-system/>

⁸⁶ Raphael Auer and Rainer Böhme, "Central bank digital currency: the quest for minimally invasive technology," Bank For International Settlements (BIS), Working Papers No 948, June 2021, <https://www.bis.org/publ/work948.pdf>

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ John Mullin, "Fed Eyes Central Bank Digital Currency," Federal Reserve Bank of Richmond, 2022, https://www.richmondfed.org/publications/research/econ_focus/2022/q2_federal_reserve

⁹¹ Bank of England and HM Treasury, "The digital pound: a new form of money for households and businesses? Consultation Paper," February 2023, <https://www.bankofengland.co.uk/-/media/boe/files/paper/2023/the-digital-pound-consultation-working-paper.pdf?la=en&hash=5CC053D3820DCE2F40656E772D9105FA10C654EC>

⁹² OECD, "Central Bank Digital Currencies (CBDCs) and democratic values..."

model or implementation method each country will employ. That said, however, the Canadian Bankers Association has already advocated for the two-tier hybrid model,⁹³ which, despite using intermediaries, could still give the BoC⁹⁴ access to information about account holdings and potentially indirect access to transaction data.

Even if governments do choose the intermediated model (where they do not have direct access to retail accounts and transaction data), the privacy afforded to individuals still hinges on banks honouring their confidentiality commitments and resisting government pressure to disclose user data or to collaborate with the government to freeze or close accounts, as happened during the Freedom Convoy in 2022. The willingness of commercial banks to comply with government demands to freeze the accounts of protesters and donors,⁹⁵ without providing any opportunity for customers to defend themselves against unfounded allegations, serves as a stark reminder of how susceptible the banking system is, and how that jeopardizes Canadians' privacy and financial security. Sadly, few financial institutions, or their officials, chose customer privacy over political expediency, and their response to consumer backlash was that they were "just following orders". Indeed, Canada's largest banks were in negotiations with the government about freezing accounts of Freedom Convoy participants and supporters even before the *Emergencies Act* was invoked.⁹⁶

In view of the events in 2022, it cannot be overstated that, despite government and bank assurances about respecting customers' privacy, the fact that some of Canada's largest banks seized some customers' accounts and closed others — even though banks were not subject to penalties or prosecution had they chosen not to comply⁹⁷ with government requests — illustrates how vulnerable any form of digital banking is to political influence, interference, and control, regardless how privacy-protective the system might be.

No CBDC or other form of traceable digital money can be completely safe from exploitation. Digital money can be monitored, frozen, intercepted, and erased accidentally or intentionally.

The lesson is clear: cash is indispensable. Sufficient cash must remain readily accessible so that individuals can retain a degree of privacy and financial autonomy that no digital system, no matter how carefully designed, can provide.

⁹³ Canadian Bankers Association (BCA), "Examining the Design Features of a Canadian CBDC," August 30, 2023, <https://briefings.cba.ca/article/examining-the-design-features-of-a-canadian-cbdc>

⁹⁴ It should be noted that as long as cash and private digital currencies remain viable alternatives to CBDCs, central banks would likely have at least some incentive to keep user data private. In trying to identify the ideal amount of privacy, the Bank of Canada has stated that they are trying to balance their objectives of combatting illicit activity and maintaining financial stability, with incentives faced by CBDC users. The less private a CBDC would be, the more people would use private stablecoins. Unless the government would make stablecoins illegal, they would have to provide CBDC users with enough confidence that their money is private, so that people do not just migrate over to private stablecoins. (Source: Jonathan Chiu, Cyril Monnet, "Public and Private Money Creation for Distributed Ledgers...") One could see how this would happen even if cash were available, due to the convenience of online payments, and long-distance transfers.

Readers will have to decide for themselves which competing incentive they think would win: the incentive to allow a higher degree of privacy in a CBDC so people will use it, or, removing cash and private digital currencies as alternatives to force people to use their less private CBDC.

⁹⁵ Financial Post, "Banks have frozen millions in convoy funds under the Emergency Act," February 23, 2022, <https://financialpost.com/fp-finance/banking/convoy-leader-denied-bail-as-canadian-officials-warn-of-unrest>

⁹⁶ House of Commons, Canada, "Special Joint Committee on the Declaration of Emergency," Evidence, November, 17, 2022, <https://www.parl.ca/DocumentViewer/en/44-1/DEDC/meeting-18/evidence>

⁹⁷ Parliament of Canada, "Report on the Special Joint Committee on the Declaration of Emergency," December 2024, https://publications.gc.ca/collections/collection_2024/sen/yc3/YC3-441-0-1-3-eng.pdf



Digital authoritarianism and autonomy concerns

A feature of CBDCs that is often characterized as beneficial is their programmability, which proponents say “can revolutionize the transfer of money and help make our world more efficient.”⁹⁸

That same programmability allows digital money to have built-in rules and constraints for users. CBDCs can be programmed to include functions like automatic point-of-sale tax collection, or ‘smart contracts’ that could determine where, when, and what each person is allowed to purchase.^{99, 100} The digital currency can be programmed to have an expiration date, and rules can be individualized to provide specific restrictions applicable to each person. Programmability would also allow governments to implement targeted financial policies, such as negative interest rates on people’s savings, forcing them to spend.¹⁰¹

Some countries view programmable money as an exciting opportunity to improve convenience and efficiency, and provide a vehicle for “monetary and social policy that could restrict their use to necessities, specific locations, or defined periods of time.”¹⁰² Speaking at a high-level roundtable on CBDC in Washington D.C. in 2022, International Monetary Fund Deputy Managing Director Bo Li, a former Deputy Governor of the People’s Bank of China, openly praised this capability.¹⁰³ He highlighted how it could be used for targeted policy goals like welfare payments, consumption coupons, and food stamps, determining what people can purchase and own.¹⁰⁴ Similarly, CBDCs could be programmed to support ‘green’ agendas by limiting what foods or how much gasoline a person could purchase; or promote healthy living by restricting the purchase of junk food and sweetened beverages. Indeed, under a *direct CBDC* model, where central banks have access to all user accounts and transactions, CBDCs could be programmed to make it impossible to purchase whatever the programmers choose — from airplane tickets to clothing or medicine — or even erase the digital money from people’s e-wallets with the push of a button.

The control aspect of programmable CBDCs was demonstrated in Thailand, where the government issued subsidies with a digital currency to low-income residents, but the subsidy was not available to individuals with records of prior criminal or fraudulent activity, or to merchants with spotty records.¹⁰⁵ A six-month spendable timeframe was programmed as a way to encourage economic activity, requiring recipients to ‘use it or lose it’. Furthermore, the CBDC was programmed with

⁹⁸ Giesecke+Devrient GmbH, How to bring the benefits of programmability to CBDC, <https://www.gi-de.com/en/spotlight/currency-technology/benefits-of-programmability-to-cbdc>

⁹⁹ Gabriel Soderberg, John Kiff, Hervé Tourpe, Marianne Bechara, Stephanie Forte, Kathleen Kao, Ashley Lannquist, Tao Sun, Akihiro Yoshinaga, “How Should Central Banks Explore Central Bank Digital Currency?,” International Monetary Fund (IMF), Fintech Notes, September 08, 2023, <https://www.imf.org/en/Publications/fintech-notes/Issues/2023/09/08/How-Should-Central-Banks-Explore-Central-Bank-Digital-Currency-538504>

¹⁰⁰ The Sociable, “BIS ponders if CBDC programmability can be introduced after CBDC is already launched,” June 01, 2023, <https://sociable.co/government-and-policy/bis-cbdc-programmability-after-launch/>

¹⁰¹ Edward Snowden, “Edward Snowden: CBDCs Are ‘Cryptofascist Currencies’ That Could ‘Casually Annihilate’ Savings,” decrypt, October 10, 2021, <https://decrypt.co/83124/edward-snowden-cbdcs-are-cryptofascist-currencies-that-could-casually-annihilate-savings>

¹⁰² Ian De Bode, Matt Higginson, and Marc Niederkorn,

¹⁰³ The Sociable, “BIS ponders if CBDC programmability...”

¹⁰⁴ Ibid.

¹⁰⁵ Financial Times, “Thailand may tell us a great deal about the future of money,” August 05, 2024, https://www.ft.com/content/9194ca11-7788-4a1d-a6cc-cf6ea18d0c9d?utm_source=chatgpt.com

usage restrictions so that it could not be used for online shopping or to purchase ‘undesirable’ products like alcohol, cigarettes, and marijuana.

By contrast, a *decentralized two-tier model*, particularly under an intermediated CBDC, would not necessarily give the government access to such granular data (e.g. individual accounts and transaction data). The government could, however, still pressure commercial banks to implement restrictions and limitations on its behalf, whether as part of the bank’s licensing or through regulations, leaving everyone at the mercy of banks and governments.

The potential for the sweeping power and corruption available through centrally-controlled CBDCs harkens back to the Stasi¹⁰⁶ that had similar insights into — and control over — the conduct of each person living in East Germany, and it raises significant concerns about the risk of authoritarian overreach.

What central planners are doing has been tried before, hundreds of times. It is the misuse of the powerful tool called bank credit creation. While we could use it to have high, sustainable, equitable economic growth without crises and without inflation in every country, based on a system of hundreds of small, local banks lending to small firms, the central planners have delivered the opposite. They are killing the small banks and concentrating the banking system. While we could have almost unthinkable abundance for all, the central planners have used the power of bank credit creation to cause big cycles and crises, increasing their powers.

— Prof. Richard A. Werner, *European Conference on Banking and the Economy 2024*

Given the very real potential for programmable CBDCs to be weaponized and used as a punitive tool, it is encouraging that several Western central banks have signaled that they would not introduce programmable CBDCs;¹⁰⁷ but times and governments change, and with it, bank policies often change. The threat of programmable CBDCs becomes all the more possible considering that the functionality can be added to CBDCs already in use *without a major redesign*.¹⁰⁸ In other words, once citizens have become accustomed to a CBDC, governments could introduce authoritarian programmable features under the guise of any plausible justification, such as increasing convenience or preventing crime.

¹⁰⁶ The Stasi was a secret police agency of the German Democratic Republic (East Germany), and one of the most hated and feared institutions of that country’s communist government.

¹⁰⁷ Gabriel Soderberg, John Kiff, Hervé Tourpe, Marianne Bechara, Stephanie Forte, Kathleen Kao, Ashley Lannquist, Tao Sun, Akihiro Yoshinaga, “*How Should Central Banks Explore...*”

¹⁰⁸ Bank for International Settlements, “*Central bank digital currencies: ongoing policy perspectives*,” May 25, 2023, <https://www.bis.org/publ/othp65.htm>



Equality and access concerns

Among the benefits being promoted is that CBDCs are a way to increase ‘financial inclusion’, but that argument is often glossed over with vague examples of how it might help certain groups.

Upon closer examination, it becomes clear that, even if CBDCs did not reduce access to or availability of cash, not everyone would have equal access to the system, benefit from it equally, or choose to use digital currency. The very fact that CBDCs are digital would impede access to economic participation for many Canadians including those who cannot afford the smartphones, computers, or other technology needed to use digital currency. Many young, elderly, homeless, and technologically illiterate Canadians would face the same fate of having to rely on cash, and would therefore be excluded from commonplace activities in the same way that many people in Sweden are unable to participate in that country’s largely cashless society, leaving them to feel like second-class citizens.^{109, 110}

The assertion that CBDCs would improve access to financial services also disregards the reality that people in regions with unreliable electricity or internet connectivity would see fewer benefits from CBDCs and would still have to rely on cash. While central banks are exploring offline options, it remains unclear to what extent such technologies could operate without internet connectivity or for how long, due to fear of double-spending.¹¹¹

Without robust legislation, governments could coercively increase the adoption of CBDCs by restricting the distribution of money, so that government-issued funds — including grants, tax rebates, or social welfare payments like employment insurance, child benefits, or old age security — would only be available in the form of CBDCs. Anyone who did not use CBDCs, whether by choice or necessity, would be ineligible to receive funds. Similarly, the programmability of CBDCs could allow governments to restrict how funds are spent, like restricting their use to specific locations during defined periods of time, or for government-defined ‘necessities’.

Safety and security concerns

In the decades since credit cards were introduced, economies have shifted toward digital banking, which has increasingly been used to perpetrate online scams, cyber-attacks, and other crimes. The proliferation of computers and hand-held devices has created easy targets for hackers and scammers, whose ploys have become more lucrative and easier to carry out thanks to computer vulnerabilities and inadequately trained personnel. Given that reality, it is questionable whether the assurances of central banks that CBDCs would enhance the safety and security of money are credible. On the contrary, the mere existence of CBDCs would create an attractive target, thus

¹⁰⁹ The Conversation, “Sweden is a nearly cashless society — here’s how it affects people who are left out,” December 18, 2024, <https://theconversation.com/sweden-is-a-nearly-cashless-society-heres-how-it-affects-people-who-are-left-out-216586>

¹¹⁰ Ibid.

¹¹¹ Bank of Canada, ‘Security of a CBDC,’

raising significant security and privacy concerns. Indeed, central banks have admitted that security would be an increasing challenge with a CBDC.¹¹²

Once again, though, the level and nature of these threats depend largely on how the CBDC is structured. Unfortunately, finding a secure, reliable, and cost-effective solution is unlikely because centralized systems create dangerous risks with a single point of failure, while more complex decentralized systems and offline functionalities introduce other security challenges that remain unresolved.¹¹³

The consequences of a security breach could be severe. With digital money, the funds, user data, and sensitive personal information can be compromised. Stringent Know-Your-Customer (KYC) protocols require bank customers to provide sensitive personal information, including signatures, biometrics, proof of address, and copies of government-issued photo identification.¹¹⁴ Log-in credentials — the usernames and

passwords that are required to access and transfer funds — are often reused across different platforms, and that makes it easy for fraudsters who get access to user credentials (whether

through phishing attacks, online scams, or other manner of unauthorized access) to log in to the victim’s CBDC account and access their transaction data¹¹⁵ or initiate unauthorized transactions.



Securing customers’ personal information is critical since any compromise of the data entrusted to banks could cause significant harm beyond simply stealing funds: the wealth of identifying information can be used to highjack legitimate identities¹¹⁶ and open new accounts, apply for services, and conduct other fraudulent activities,¹¹⁷ and undermine trust in government, banks, and other public institutions.

Digital economies are also increasingly at risk of cyberattack, a phenomenon that has skyrocketed in recent years. For example, in Israel, which has been pushing to reduce cash usage in everyday life due to alleged financial crimes, two cyberattacks in late 2024 targeted credit cards and other online payment systems, resulting in thousands of users and businesses being unable to conduct

¹¹² The Federal Reserve, ‘Security Considerations for a Central Bank Digital Currency,’ February 03, 2022, <https://www.federalreserve.gov/econres/notes/feds-notes/security-considerations-for-a-central-bank-digital-currency-20220203.html>

¹¹³ Bank of Canada, “Security of a CBDC,”

¹¹⁴ Dow Jones, “Understanding the “Know Your Customer” Process,” Retrieved January 11, 2025, <https://www.dowjones.com/professional/risk/glossary/know-your-customer/>

¹¹⁵ Thomson Reuters, “Understanding digital identity theft and fraud,” June 10, 2024, <https://legal.thomsonreuters.com/blog/what-is-digital-identity-theft-and-fraud/>

¹¹⁶ Thomson Reuters, “Understanding digital identity theft....”

¹¹⁷ Ibid.



financial transactions.¹¹⁸ Similarly, the U.S. Treasury Department revealed that Chinese hackers had breached its systems in a “major cyber security incident” on December 30, 2024.¹¹⁹

The inability of organizations as robust as the U.S. Treasury Department to avoid cyberthreats leaves little doubt that CBDCs are also not immune to cyberthreats, and those concerns have led people in Finland,¹²⁰ Norway,¹²¹ and Sweden¹²² — where cash usage is almost abandoned — to call for legislation to protect the usage of cash in everyday life.

A recent Bank of Canada public survey showed that a sizable majority of Canadians — 79 percent — indicated that they did not trust the BoC to be able to build a secure CBDC that could resist cyberattacks and would not be immune from theft or tampering.¹²³ This is against the backdrop of Canadian governments and corporations routinely ensuring that the data they hold is safe; yet, despite billions of dollars spent to improve data and systems, cyberattacks and data breaches repeatedly expose system vulnerabilities.¹²⁴ Cyberattacks on the Canada Revenue Agency,¹²⁵ a month-long security breach at Global Affairs Canada¹²⁶ that affected 'many' government employees, an attack on Canada’s financial intelligence unit FINTRAC and the RCMP¹²⁷ — all give Canadians cause to distrust that government or public institutions would — or could — adequately safeguard their data.¹²⁸ Recent history shows that the government and public bodies struggle to secure data against cybercriminals and state-sponsored hackers who have the means, motivation, and money to upgrade and adapt their methods to maximize profits.

In addition to the very real risk of cyberthreats are the operational and technical failures that will undermine CBDCs. For example, in January 2022, DCash, the digital currency that is used by seven Eastern Caribbean countries, went offline for two months because of technical issues.^{129, 130} The DCash experience demonstrates the weaknesses associated with a large-scale rollout of CBDCs

¹¹⁸ Ctech, “Cyber attacks expose flaws in cashless ambitions,” December 01, 2024, <https://www.calcalistech.com/ctechnews/article/nn0kotx6a>

¹¹⁹ Daily Wire, “Chinese Hackers Breach Treasury Dept In ‘Major Cyber Security Incident,’” December 31, 2024, <https://www.dailywire.com/news/chinese-hackers-breach-treasury-dept-in-major-cyber-security-incident?sevid=42851>

¹²⁰ Cash Matters, “Finnish Legislation Supports Cash,” July 05, 2022, <https://www.cashmatters.org/blog/finnish-legislation-supports-cash>

¹²¹ naked capitalism, “Norway, One of World’s Most Cashless Economies, Just Made It A Lot Easier to Pay With Cash,” October 11, 2024, <https://www.nakedcapitalism.com/2024/10/another-largely-cashless-economy-norway-just-made-it-easier-rather-than-harder-to-pay-with-cash.html>

¹²² Finextra, “Swedish central bank calls for legislation to protect cash,” March 15, 2024, <https://www.finextra.com/newsarticle/43854/swedish-central-bank-calls-for-legislation-to-protect-cash>

¹²³ Bank of Canada, “Digital Canadian Dollar Public Consultation Report,”

¹²⁴ Sharon Polsky, “Potential Dangers of a Global Digital ID and Currency...”

¹²⁵ Financial Post, “Canada Revenue Agency suspends online services after cyberattacks hacked thousands of accounts,” August 16, 2020, <https://financialpost.com/personal-finance/thousands-of-cra-and-government-accounts-disabled-after-cyberattack>

¹²⁶ CBC, “Authorities investigating massive security breach at Global Affairs Canada”, January 30, 2024, <https://www.cbc.ca/news/politics/global-affairs-security-breach-1.7099290>

¹²⁷ National Post, Canada’s cybersecurity under siege and even the government is powerless”, March 12, 2024, <https://nationalpost.com/news/canadas-cybersecurity-under-siege-and-even-the-government-is-powerless>

¹²⁸ Bank of Canada, “Digital Canadian Dollar Public Consultation Report,”

¹²⁹ Bloomberg, “A Bold Caribbean Experiment in E-Cash Hits a Major Obstacle,” Retrieved January 16, 2025, <https://www.bloomberg.com/news/articles/2022-02-21/eastern-caribbean-dcash-outage-is-test-for-central-bank-digital-currencies?leadSource=verify%20wall&sref=YMVUXTCK>

¹³⁰ McKinsey & Company, “What is CBDC (Central Bank Digital Currency)?,”

and is not unique. To date, every country trying to implement a large-scale rollout has had significant problems.¹³¹

Internet interruptions and electricity outages pose another significant risk. Central banks are working to identify ways to mitigate the risk through the use of offline technologies like e-cards or dedicated offline devices; but any prolonged outages could still result in major problems for customers, with ripple effects across the economy.

Increased government control of money

The concern that CBDCs would facilitate increased government surveillance of and control over individuals' saving and spending could be dwarfed by another particularly problematic concern: BoC activities could remain largely hidden from view. For instance, governments could use CBDCs to issue subsidies directly to recipients without having to go through traditional banks as they do now, shielding such transactions from public scrutiny and accountability. The capability to conduct financial transactions confidentially could be used to provide preferential treatment by, for instance, issuing subsidies to news outlets, businesses, and other non-governmental organizations whose views align with public policy and ideological agendas such as climate initiatives, 'Diversity Equity and Inclusion' programs, and other politically motivated activities.

The concern about central bank transparency is not novel to CBDCs.¹³² Professor Richard Werner, a leading global financial expert, contends that banks are some of the least transparent institutions.¹³³ His assessment applies to the Bank Canada as well since, although the BoC is subject to the *Privacy Act*, any request for information could be met with the oft-repeated refrain, "There are no responsive records" — and the country's access-to-information laws offer no effective way to verify the veracity of such a claim.

As Professor Werner points out, not only are central banks not transparent, they actually have incentives to accumulate new powers and pursue their own agendas.¹³⁴ Some use these powers to promote climate programs,¹³⁵ and calls have been made that central banks do more — even calling for 'creative disruptions' to transform the financial system so ideologically-motivated policies can be implemented¹³⁶ more easily.

As Canadians face a future in which corporate and individual purchases and conduct are regulated and permitted based on their environmental impact, the folly of such climate sustainability plans

¹³¹ Bloomberg, "A Bold Caribbean Experiment"

¹³² European Central Bank, "Transparency," <https://www.ecb.europa.eu/ecb/our-values/transparency/html/index.en.html#:~:text=Today%2C%20most%20central%20banks%2C%20including%20the%20ECB%2C%20consider.the%20public%20to%20understand%20the%20ECB%27s%20monetary%20policy.>

¹³³ Richard Warners, *Princes of the Yen | The Hidden Power of Central, YouTube, Independent POV, November 04, 2014*, https://www.youtube.com/watch?v=p5Ac7ap_MAY&t=2s

¹³⁴ [Central banks: Powerful, political and unaccountable? | The British Academy](#)

¹³⁵ World Economic Forum, "How central banks are tackling the risks of climate change," <https://www.weforum.org/stories/2021/05/central-banks-tackling-climate-change-risks/>

¹³⁶ Marin Sokol, and Jennie C. Stephens, "Central banks should be fighting the climate crisis — here's why," *The Conversation*, January 04, 2024, <https://theconversation.com/central-banks-should-be-fighting-the-climate-crisis-heres-why-217744>



are increasingly being seen in countries around the world. Measures such as the EU Green Deal Plan, endorsed by the EU Parliament in 2021 to help the EU achieve climate neutrality by 2050 — which inadvertently or intentionally provide markers to be included in CBDC programmability — are being delayed or set aside entirely.¹³⁷ European parliamentarians have come to recognize the reality that complex regulations and ‘red tape’ are preventing EU businesses from maintaining competitiveness and are hindering economic investment.¹³⁸

Implementing a CBDC would also increase the government’s control over the money supply, enabling the BoC to create new money at will. In the current system, when the government runs out of money, it can borrow money from the market by issuing and selling government bonds (promissory notes with fixed interest rates and maturity date, i.e. payment deadline) to investors.¹³⁹ With a CBDC, however, the traditional method of issuing bonds would become irrelevant, and the BoC could simply create new money with a few keystrokes, financing the government’s spending¹⁴⁰ with little accountability. With a fully digital currency, it is possible that problematic or suspicious transactions could be hidden with computer code such that even auditors would be unable to detect questionable digital transactions.

Armed with capabilities to create new money at will and to issue instantaneous money transfers (subsidies) to recipients without being subject to scrutiny sets the banking system up for the possibility of significant corruption and abuse of power. Recent revelations about USAID laundering billions of dollars to the Taliban through an Afghanistan Bank in the name of ‘humanitarian aid’ foretell CBDCs’ potential for abuse. Whereas USAID money had to be delivered as piles of cash in a massive cash-transfer operation, CBDCs would be instantaneous fund transfers that could occur covertly at the BoC, thus evading public or parliamentary scrutiny and accountability.

The dangers here are obvious: Being able to bypass the traditional banking system and having access to (or the ability to create) an endless supply of money, are strong incentives to fund unaffordable or unpopular programs without public or parliamentary scrutiny.

Canadians have a right to know how their governments spend their tax dollars. CBDCs would obscure the necessary transparency to enable Canadians to hold their governments to account, making it highly undemocratic. Simply trusting that governments would resist using CBDCs for their

¹³⁷ JURISTnews, “[EU proposes to scrap sustainability reporting laws for businesses](https://www.jurist.org/news/2025/02/eu-proposes-to-scrap-sustainability-reporting-laws-for-businesses/),” February 27 2025, <https://www.jurist.org/news/2025/02/eu-proposes-to-scrap-sustainability-reporting-laws-for-businesses/>

¹³⁸ Ibid.

¹³⁹ World Economic Forum, “[What is government debt and how is it paid back?](https://www.weforum.org/stories/2022/10/government-debt-economy-bonds-loans/),” October 14, 2022, <https://www.weforum.org/stories/2022/10/government-debt-economy-bonds-loans/>

¹⁴⁰ In the current system, central banks can and do create new money as a key monetary policy to control inflation and keep up with the growing economy. They do this by conducting open market operations in which the BoC buys government bonds (or other securities) from banks and other investors in the market, and credits those accounts with new money, thereby allowing banks to continue to lend out money, which stimulates economic activity (buying, borrowing, investing, etc.) (Source: BoC, “[Understanding quantitative easing](https://www.boc.ca/en/~/media/2025/02/understanding-quantitative-easing-2025-03-03.pdf),” February 03, 2025). The BoC did this during Covid, when it created \$455 billion from March 2020 to March 2021 in this way.¹⁴⁰ While this policy has helped economies as it stimulates the economy in the short run (U.S. Federal Reserve used this method to get out of the 2008 financial crisis), it typically results in inflation, as we’re observing now (Source: Richard Werner, “[Why central banks are too powerful and have created our inflation crisis...](https://www.conversation.com.au/news/2023/03/central-banks-are-too-powerful-and-have-created-our-inflation-crisis-...),” The Conversation, March 14, 2023).

Sometimes governments have central banks purchase government bonds directly from the government itself (Source: Parliament of Canada: [How the Bank of Canada Creates Money Through its Asset Purchases](https://www150.ca.ca/bank-of-canada/~/media/2022/02/bank-of-canada-creates-money-through-its-asset-purchases-2022-02-03.pdf)). This is controversial, as governments (through their central bank) simply create new money out of thin air to buy their own bonds, thereby “borrowing” money from themselves to finance their own, often out-of-control spending. CBDCs would make this even easier, as no such bond purchasing would be needed. In essence, this could supply governments with an endless supply of money, ever-increasing the national debt, with a costly due date for future generations.

own benefit or power, and that they would be ethical and respect democratic traditions and *Charter* rights, would be shortsighted.

Canadians oppose CBDCs. But could they arrive soon anyway?

Implementing a Central Bank Digital Currency in Canada would require support and approval by parliamentarians, as well as widespread use and acceptance by the Canadian public.¹⁴¹ The risk is that, if Canadians are skeptical about the CBDC or how it will be (ab)used, it would not be used willingly, regardless of how many benefits it supposedly offers.¹⁴²

A public survey conducted by the BoC revealed that a sweeping majority of Canadians — 82 percent of 89,423 survey respondents — were strongly opposed to the BoC researching and developing the capability to issue a digital Canadian dollar.¹⁴³ In addition, 74 percent of survey respondents completely distrust the government of Canada to “follow a strict and transparent process to access and safeguard data that include your identity and transaction records.”¹⁴⁴ In short, Canadians neither trust nor want a CBDC, despite the alleged benefits they would provide.

Canadians’ trust in government and public institutions, and their lack of interest in CBDCs, might not be enough to prevent digital currency from being imposed. Governments and central banks throughout history have capitalized on crises to gain support for major structural changes. For example, central banks in Japan, the four Asian Tiger countries (Hong Kong, Singapore, South Korea, and Taiwan), and the European Union, used financial calamities to create public support for structural financial change that resulted in greater power for the central banks.¹⁴⁵ Indeed, in Japan’s case, the Bank of Japan intentionally created an economic crisis for this purpose. First, it created an economic boom by artificially creating vast amounts of new money, leading to very high inflation, and eventually triggering the predicted (desired) market crash.¹⁴⁶ The prolonged recession that followed was useful to convince Japanese voters that a structural change was indeed needed.¹⁴⁷

The current geopolitical and economic climate is ripe for similar manipulation. Many Canadians are struggling due to high inflation rates caused by years of government policy, and the U.S.A.’s threatened tariffs would exacerbate Canadians’ financial concerns, arguably generating a financial crisis. Indeed, on March 12, when announcing a 25-point cut to the overnight interest rate, the BoC said that “[w]e’re now facing a new crisis,” and “the economic impact could be severe.”¹⁴⁸ This comes after the BoC declared last year, after a period of low economic activity, that the country is

¹⁴¹ Bank of Canada, “Contingency planning...”

¹⁴² Bank for International Settlements, “*Digital currencies and the soul of money*,” January 18, 2022, <https://www.bis.org/speeches/sp220118.htm>

¹⁴³ Bank of Canada, “Digital Canadian Dollar Public Consultation Report,” November 2023

¹⁴⁴ Bank of Canada, “Digital Canadian Dollar Public Consultation Report,” November 2023

¹⁴⁵ Richard Warners, “*Princes of the Yen | The Hidden Power of Central*,” YouTube, Independent POV, November 04, 2014, Banks https://www.youtube.com/watch?v=p5Ac7ap_MAY&t=2s

¹⁴⁶ Ibid.

¹⁴⁷ Ibid.

¹⁴⁸ CBC News, “*Bank of Canada cuts interest rate to 2.75% as country faces 'new crisis' from tariffs*,” March 12, 2025, <https://www.cbc.ca/news/business/bank-of-canada-march-12-2025-1.7481284>



faced with an economic “emergency.”¹⁴⁹ How far the government and the BoC would be willing to go if this “crisis” were indeed severe and prolonged, is uncertain.

As Canadians struggle financially, it is unclear how much worse conditions would have to be for them to accept politicians’ arguments that a CBDC is needed to address these concerns. While most Canadians oppose CBDC at this time, public officials may try to convince Canadians that a CBDC is needed.

In the face of a real or fabricated emergency, manipulating the public to embrace CBDCs is an option. Leveraging a crisis to implement CBDCs could be accomplished by offering subsidies and ‘pandemic level’ economic stimulus programs to help Canadians and businesses weather the financial hardships — and stipulate that the financial assistance would only be available in the form of CBDCs.

To accelerate the transition to CBDCs,¹⁵⁰ governments could also incentivize greater adoption by making it the exclusive method for receiving social welfare payments like pension payments, (CPP and OAS), employment insurance (EI), tax credits, or grants, all of which would only be available to CBDC users. Certain online services could be offered exclusively to those who use CBDCs,¹⁵¹ and businesses could be offered incentives to accept payment only via CBDCs. Meanwhile, governments could disincentivize cash use by limiting its availability, pressuring even reluctant individuals to transition to CBDC. Even without such coercive methods, according to Sharon Polsky, a Canadian privacy expert and President of the Privacy & Access Council of Canada, and a Privacy by Design Ambassador, “Getting people to use digital ID and digital currency might be like facial recognition used at the airport, where it's not mandatory, but nobody tells you there's any options, so people go along.”¹⁵²

Nigeria, where the *eNaira* CBDC was implemented,¹⁵³ is already an example of CBDCs being implemented against the will of the majority of the population. When adoption was slow – only at 0.5 percent – the Nigerian government began offering incentives (like discounts on taxi fares) for CBDC users.¹⁵⁴ When that failed, they redoubled efforts by restricting access to cash itself.¹⁵⁵ For perspective, more than 50 percent of Nigerians have or are using cryptocurrencies, revealing that they are not against digital currencies as such, but specifically against a *central bank* digital

¹⁴⁹ Global News, “*Weak productivity is an economic ‘emergency,’ Bank of Canada warns,*” March 26, 2024, <https://globalnews.ca/news/10384078/bank-of-canada-productivity-emergency/>

¹⁵⁰ It should be noted that it is unlikely that cash will ever be eliminated completely, as countries like Sweden, which have attempted to go completely cashless, have demonstrated. This is because there will always be individuals who rely on cash, such as the elderly, the homeless, those with severe mental health issues, or those who cannot get a bank account due to lacking credit or cannot afford digital technology. (Source: The Conversation, [Sweden is a nearly cashless society – here's how it affects people who are left out](#), Dec. 18, 2024)

¹⁵¹ Sharon Polsky, “*WizeUp Episode 13 - Sharon Polsky - Digital ID & Currency,*” WizeUp, YouTube, December 09, 2024, <https://www.youtube.com/watch?v=u84-Y21Ezm0>

¹⁵² Sharon Polsky, “*Potential Dangers of a Global Digital ID and Currency | Sharon Polsky | Guest | Bridge City News,*” YouTube - 8:55, September 20, 2023, <https://www.youtube.com/watch?v=9dpcirTS3gl>

¹⁵³ Cointelegraph, “*Nigeria's eNaira CBDC...*,”

¹⁵⁴ Cato Institute, “*Nigerians' Rejection of Their CBDC Is a Cautionary Tale for Other Countries,*” March 03, 2023, <https://www.cato.org/commentary/nigerians-rejection-their-cbdc-cautionary-tale-other-countries>

¹⁵⁵ Ibid.

currency.¹⁵⁶ Exasperated Nigerians took to the streets in 2023 to protest cash shortages, demanding that cash be restored, in large part due to concerns related to privacy and other financial freedoms.¹⁵⁷

Citizens in Europe have similarly long been concerned about a CBDC and have made efforts to prevent its implementation, using petitions, signs, and other forms of protest.^{158, 159}

Similarly, Canadians need to educate themselves on the issue so they can be effective in challenging the imposition of CBDCs, and ensure their rights and freedoms are not infringed upon. Canadian Governments and public institutions like the Bank of Canada exist to serve the citizenry, not the other way around.

¹⁵⁶ Ibid.

¹⁵⁷ Nicholas Anthony, "Nigerians' Rejection of Their CBDC Is a Cautionary Tale for Other Countries," Cato Institute, March 06, 2023, <https://www.cato.org/commentary/nigerians-rejection-their-cbdc-cautionary-tale-other-countries>

¹⁵⁸ Financial Times, "The real scandal of central bank digital currency," Retrieved January 10, 2025, <https://www.ft.com/content/7ad33055-2618-4a43-97c3-a1ed6bbc0e2e>

¹⁵⁹ Financial Times, "Central banks' digital currency plans face public backlash," Retrieved January 10, 2025, <https://www.ft.com/content/e0b7f134-c935-4cd6-bf27-460c37db1512>



What can be done to address these concerns?

Governments and public institutions like the Bank of Canada exist to serve Canadians, many of whom lack a clear understanding of the role and purpose of these institutions, or how their work affects individuals' privacy or their fundamental freedoms. In a country where accountability is a cornerstone of democracy, Canadians are often aghast to realize how opaque many public institutions are, but unsure how to effect change to increase accountability or influence public policy to ensure things Canadians do want are implemented, and things they do not want are not.

Use cash and get active

The most fundamental component for protecting cash is to use it often. The experiences of Nigeria¹⁶⁰, New Zealand¹⁶¹ and Australia¹⁶² are cautionary examples. As more people used digital forms of payment, banks reduced the availability of cash: In Australia, 926 ATMs and 230 local branches¹⁶³ were closed in one year, and Macquarie Bank,¹⁶⁴ one of that country's largest financial institutions, has already phased out cash and cheque services entirely.

Using cash also supports the local economy since payments made with cash ensure the merchant can retain the entire amount, without having to lose a significant portion to credit card processing¹⁶⁵ fees, transaction fees, interchange fees, assessment fees, and other fees merchants must pay.

In addition to using cash, Canadians can participate in directing proper policies by drafting Parliamentary petitions and gaining motivating Members of Parliament to sponsor those petitions; signing Parliamentary petitions (keeping in mind that politicians have no obligation to pay any heed to other online petitions); calling and emailing Members of Parliament; standing for elected office; and becoming engaged in the political and legislative processes.

Becoming engaged with the legislative process and communicating with elected representatives at all levels of government is essential to protect fundamental rights and freedoms, such as the privacy and anonymity afforded by cash. Rare efforts have been made by parliamentarians to protect the use of cash and to protect Canadians against the threats of CBDC. For example, In June 2024, Ted Falk, the Conservative Member of Parliament for Provencher, Manitoba, tabled Bill

¹⁶⁰ The Guardian, "CBN fines nine banks N1.35b for not dispensing cash via ATMs," January 15, 2025, <https://guardian.ng/news/cbn-fines-nine-banks-n1-35b-for-not-dispensing-cash-via-atms/>

¹⁶¹ Techspot, "Bank stops handling cash in some branches as more people go digital," April 23, 2023, <https://www.techspot.com/news/98185-bank-stops-cash-withdrawals-branches-more-people-go.html>

¹⁶² News.com.au, "Australia's big four reveal plans after major bank scraps cash," September 15, 2023, <https://www.news.com.au/finance/business/banking/australias-big-four-reveal-plans-after-major-bank-scraps-cash/news-story/50c16292a8abad230b4147b058b4a460>

¹⁶³ NineNews, "Cash may no longer be king, but here's why it looks set to stay," January 3, 2025, <https://www.9news.com.au/finance/cashless-society-cash-is-no-longer-king-but-past-year-has-proved-it-could-be-here-to-stay/1077a426-ca2f-4c5e-8ccf-fc9d7fc5ccbf>

¹⁶⁴ News.com.au, "Australia's big four reveal plans after major bank scraps cash," September 15, 2023, <https://www.news.com.au/finance/business/banking/australias-big-four-reveal-plans-after-major-bank-scraps-cash/news-story/50c16292a8abad230b4147b058b4a460>

¹⁶⁵ DirectPayNet, "Average Fees for Credit Card Processing in 2025," January 10, 2025, <https://directpaynet.com/average-fees-for-credit-card-processing/>

C-400¹⁶⁶ in Parliament, to “establish a framework for the continued access to and use of cash in Canada.” That effort was a good starting point to protect cash as a form of payment, but the bill did not progress beyond being introduced in the House of Commons.

Citizen engagement in future parliamentary sessions is vital to convince Members of Parliament that Canadians support politicians who support cash. Communicating with elected representatives is also essential to ensure they understand that Canadians want robust policy measures to protect their right to use cash, to prevent coercive implementation of any form of digital currency and, with it, to protect individuals’ privacy rights and freedoms.

An actively engaged citizenry is also essential to blunt the effect of sophisticated marketing campaigns launched by public officials to convince Canadians that a CBDC is a good idea. The impact of voters engaging in constructive dialogue with their elected representatives (and with candidates vying for election) is a fundamental component of civic engagement, and crucial to guard against schemes that would infringe on their freedoms. Ongoing education is necessary to protect Canadians’ *Charter* rights and freedoms and ensure public policy aligns with individuals’ legitimate needs for privacy, security, autonomy, and equal access to economic participation.

If a CBDC is introduced at some point in the future, Canadians can also use these methods to help ensure that a CBDC would not replace cash, and is structured in a way that safeguards their rights and freedoms.

Policy recommendations

Below are some important first steps the Justice Centre recommends policymakers take. It should be noted that this is not an exhaustive list of policy measures needed to adequately protect Canadians’ rights and freedoms. The Canadian government should actively consult with other stakeholders, civil rights organizations, and financial and privacy experts on how to protect Canadians against the threats of a Canadian CBDC.

Protect cash in legislation

1. Mandate widespread acceptance of cash
 - Pass legislation stating that paying with cash is a right not to be undermined by government, industry, banking, or commercial entities.
 - Pass legislation requiring that all government offices and services accept physical cash.
 - Pass legislation requiring that all businesses accept physical cash, with limited exceptions (e.g. online-only operations), and enforce compliance.
 - Pass legislation that requires commercial and retail banks to ensure adequate physical cash is available for their customers at all times.

¹⁶⁶ [Private Member's Bill C-400 \(44-1\) - First Reading - Framework on the Access to and Use of Cash Act - Parliament of Canada](https://www.parl.ca/DocumentViewer/en/44-1/bill/C-400/first-reading) House of Commons of Canada, “*Private Member's Bill C-400 (44-1) - First Reading - Framework on the Access to and Use of Cash Act*,” June 13, 2024, <https://www.parl.ca/DocumentViewer/en/44-1/bill/C-400/first-reading>



2. Prohibit exclusive use of digital currency for government benefits
 - Pass legislation that prevents governments from distributing social benefits (e.g. pensions, employment insurance, benefits, grants, subsidies, etc.) solely in digital form, and ensure a cash or cheque option is always available.
3. Appoint a Cash Access Committee¹⁶⁷
 - Give this committee — composed of independent privacy and financial experts, and representatives from civil rights organizations who are not affiliated with or funded by government or industry — a clear mandate to investigate the actions necessary to preserve Canadians’ access, use, and acceptance of cash, and propose legislative protections to that end.

Additional recommendations (if a CBDC is implemented)

4. Prohibit programmable restrictions on CBDC
 - Pass legislation that bans “smart contract” capabilities and other controls that could restrict how CBDC funds are spent, distributed, or transferred.
 - Pass legislation prohibiting the distribution, availability, forfeiture or cancellation of CBDCs to be based on data acquired from or cross-matched with data from other platforms, services, or sources (including insurance and health insurance records, Digital ID, biometric and genetic details, housing information, credit card and banking records, location information, retail purchase records, information from data brokers, and personal associations or conduct).
5. Preserve user privacy
 - Pass legislation to limit intermediaries’ transaction data collection with a CBDC, and restrict data access to only what is necessary for fraud prevention and lawful investigation of actual (not potential or possible) criminal activity.
 - Pass legislation to prohibit the Bank of Canada as well as federal and provincial governments (and any third parties on their behalf) from accessing or obtaining data about how, when, and where Canadians spend, save, invest, and donate their money. Such laws should ensure this restriction is by *design* (i.e., details cannot be accessed by simply “unveiling” data hidden by default or changing code in the back end.)
6. Maintain support for offline transactions
 - Pass legislation to require offline payment alternatives to CBDC, to ensure access to banking and payment systems are always available in rural and remote regions, during internet or power outages, and for those who cannot or do not want to use digital payment/banking.

¹⁶⁷ Aftab Ahmed, “The case for the legislative protection of cash,” Policy Options, September 25, 2023, <https://policyoptions.irpp.org/magazines/september-2023/keep-cash-in-circulation/>

Conclusion

Canadians deeply value their *Charter* rights and freedoms, and recognize that emerging CBDCs are a threat. Amid growing concerns already present in our current digital banking system, Canadians do not want to be pushed further into the digital world, whether by their governments, central banks, or by industry stakeholders. Canadians trust cash and value its benefits, some of which no digital currency can replicate. The overwhelming majority of Canadians simply see no compelling reason for Central Bank Digital Currency, which poses significant threats that government and those who would benefit from the imposition of CBDCs seem to either downplay or fail to acknowledge.

Weaknesses in Canada's current digital system that supposedly could be solved by CBDCs should instead be addressed within the current framework, rather than by introducing a new technology that shares the same technological vulnerabilities and is detrimental to individuals and their fundamental rights and freedoms. The challenges other nations have had with their CBDCs clearly indicates that they are not ready for widespread implementation; and the fact that CBDCs are being adopted elsewhere is not a legitimate reason or adequate justification for Canada to follow suit. Innovation and ingenuity are important, but they should not come at the expense of Canadians' fundamental freedoms.

The many shortcomings and negative consequences from CBDCs detailed in this report leaves no doubt that, first of all, many of the purported benefits cited as reasons for adopting a CBDC do not even apply to Canada. For example, while *inclusivity* or *banking access* is frequently cited, Canada already has one of the most inclusive financial systems in the world. As for *resilience*, no digital currency could ever beat the reliability of cash.

Moreover, this report reveals that the ability to program CBDC's with tracking features makes it a serious threat to Canadians' privacy, autonomy, and financial freedom, as it would enable widespread surveillance and control of the population. Even if programmability was not included initially, the functionality could easily be added later. CBDCs could also threaten Canadians' access to economic participation as many children, elderly, homeless and technologically illiterate individuals would be left out of the financial system. CBDCs also introduce new security concerns, posing greater threats to Canadians' data and financial security. Finally, governments' increased control of money, allowing their financial transactions to occur directly at the BoC, raises significant concerns about transparency and accountability around government spending and their ability to create an endless supply of money to finance it.

In conclusion, while CBDCs are marketed as harmless, beneficial, convenient, and even characterized as necessary, the reality paints a far different picture. Centrally controlled digital currency poses the very real risk that Canadians' privacy, security, autonomy, and access to economic participation will be restricted according to the whims of bureaucrats and the government of the day; thus, Canadians must educate themselves on the potential implications of CBDCs and resist the efforts of policymakers who uncritically pursue this invasive new technology.



Appendix A: Privacy in CBDCs - the technical side

Central banks are exploring various design possibilities that could, in theory, afford users a degree of privacy, although central banks have not indicated what degree of privacy they are pursuing. Accordingly, it is important to be aware of what design possibilities are being explored.

Fully anonymous CBDCs are possible, but central banks have said they will avoid that type of CBDCs due to know-your-customer (KYC) and anti-money laundering and countering terrorism-funding (AML/CTF) regulatory requirements. As such, the CBDCs must balance privacy with these protocols; a critical factor is who manages these protocols.

Single-tier System

The most important questions pertaining to privacy in different CBDC models is how and where user account and transaction data are recorded and managed, by whom, and who has access to the data. For instance, a critical factor is whether the CBDC operates on a *single-tier system* or incorporates intermediary institutions (i.e. traditional banks), in a decentralized, *two-tiered system* with a hybrid or fully intermediated CBDCs.

With a **direct CBDC** under a single-tier system, all accounts and transaction data would be recorded and validated on a central ledger managed at the central bank.¹⁶⁸ This structure would grant the central bank access to all customer account and transaction data.¹⁶⁹ In other words, the Bank of Canada and our governments would know everything about how, when, and where Canadians spend, save, invest, and donate their money. Governments would also know a great deal about the whereabouts, travel, habits, preferences, and predilections of every Canadian. As such, single-tiered *direct CBDCs* would be the most privacy-invasive and problematic of all CBDC models.

To what extent the central bank would handle personal data directly through user onboarding and conducting regulatory checks — as opposed to delegating these responsibilities to commercial banks as they do in the current Canadian banking system — would depend largely on whether the direct CBDC was *account-based* or *token-based*.¹⁷⁰ With account-based CBDCs, users would hold accounts directly with the central bank, which would validate transactions by identifying the account holder.¹⁷¹ Here, the central bank would take on the same responsibilities that commercial and traditional banks do now: onboard users, conduct know-your-customer (KYC) checks, distribute the CBDC directly, validate transactions, and enforce anti-money laundering and

¹⁶⁸ Bank of Canada, “Security of a CBDC,”

¹⁶⁹ Jonathan Chiu, Cyril Monnet, “Public and Private Money Creation for Distributed Ledgers...”

¹⁷⁰ There is much discussion about the differences between these two, and how account-based CBDCs track everything but token-based do not. The reality is that there is no such clear distinction between the two, and both can have varying levels of integrated privacy protection. Additionally, both direct and hybrid/intermediated CBDCs could operate on either account or token-based models. (Source: Raphael Auer and Rainer Böhme, “Central bank digital currency...”)

They do offer different functionalities though. For example, token-based CBDCs offer more potential features, such as offline functionalities and programmable money.

¹⁷¹ Raphael Auer and Rainer Böhme, “The technology of retail central bank digital currency,” Bank for International Settlements (BIS), March 2020, https://www.bis.org/publ/qtrpdf/r_qt2003j.pdf

countering terrorism-funding (AML/CTF) protocols.¹⁷² Customer services would increase the central banks' responsibilities — as well as their ability to peer into everyone's lives, make assumptions about individuals based on banking and other data — and would make traditional banks largely irrelevant. Due to legitimate privacy concerns and the massive operational challenges of implementing such a CBDC — which would effectively do away with traditional banks — few central banks are exploring this model.

Alternatively, with *direct token-based CBDCs*, users would have to have devices capable of employing e-wallets, where individual tokens would be held; and transactions would be validated by identifying the digital signature of each token on the central ledger.¹⁷³ This model would allow central banks to use a shared distributed ledger that intermediaries (e.g. traditional banks) could have access to, and would thus allow the BoC to delegate user onboarding,¹⁷⁴ distribution, and all other customer service responsibilities to commercial banks. However, transactions would still be recorded on this central ledger that the BoC would have access to, allowing the BoC access to all retail account and transaction data.¹⁷⁵

Privacy-preserving mechanisms, such as Privacy Enhancing Tools (PETs), could hide user data *by default*. A comprehensive literature review of the privacy implications of CBDC identifies the wide range of PETs that have been explored.¹⁷⁶ The report finds that CBDCs relying on *privacy by default* by using PETs are not as reliably private as those that are *private by design* using two-tiered CBDC models, which store retail data separately at intermediaries without central banks' ability to access it.¹⁷⁷ In any event, with a *direct* CBDC, the Bank of Canada would have ultimate oversight of CBDCs and the capacity to remove privacy-protective features at will. For example, the BoC has indicated that data could be “pseudo-anonymized” by default so it could validate transactions without necessarily seeing all data attached to each transaction.¹⁷⁸ Protecting personal and transactional data this way would depend on the BoC concealing data; yet the BoC would be able to quietly ‘unveil’ data at any time — and the uncertainty further supports Canadians' skepticism about being able to trust that their personal and transaction information would be confidential and not used against them to support government or ideological objectives.

In short, single-tiered *direct CBDCs*, regardless of their specific design or implementation (i.e. account- or token-based), can by their very design not guarantee user privacy. Even if efforts were made to minimize exposure of granular account and transaction data *by default*, using some

¹⁷² Ibid. and Martin Miernicki, “Cash, accounts, and central bank digital currencies:...”

¹⁷³ Raphael Auer and Rainer Böhme, “The technology of retail central bank digital...” — p. 94

¹⁷⁴ Raphael Auer and Rainer Böhme, “Central bank digital currency...”

& Bank of Canada, “Security of a CBDC,”

¹⁷⁵ Martin Miernicki, “Cash, accounts, and central bank digital currencies:...” — p. 92

¹⁷⁶ Guneet Kaur, “Privacy implications of central bank digital currencies (CBDCs): a systematic review of literature,” EDPACS, July 15, 2024, <https://www.tandfonline.com/doi/full/10.1080/07366981.2024.2376794#abstract>

¹⁷⁷ Ibid.

¹⁷⁸ Bank of Canada, “Security of a CBDC,”



combination of PETs, the BoC would still have ultimate oversight and capability to remove these data-obscuring features, allowing it access to all user account and transaction data at will.

Two-tier System

In a decentralized *two-tier system*, a CBDC is distributed and handled by traditional banks, which provide all customer services and record and manage all retail account and transaction data. Under this system, the central banks would not store any retail transactions on its central ledger, but would instead use cryptographic techniques, private channels, and a tiered ledger system where retail account balances and transaction data may be partitioned to separate ledgers at intermediaries to maintain customer confidentiality.¹⁷⁹ However, while not recording retail transactions, the central banks could still record some information such as retail account balances, depending on whether it is a hybrid CBDC or an intermediated CBDC. The Bank of International Settlements (BIS) explains what these two models could look like.¹⁸⁰

With a **hybrid CBDC**, retail account and transaction data would be handled by intermediaries. The BoC would be unable to access or record transaction data, but would still periodically (i.e., hourly) record retail account balances.¹⁸¹ This would limit the ability of the BoC to view detailed purchasing data (e.g. who bought what, from whom, when, and for how much), but keeping this backup copy of retail balances would grant the BoC insight into how much money individuals hold in their accounts.¹⁸² In terms of inter-bank transfer settlements, this design would make it easy for the BoC to back balances in the event of a commercial bank's insolvency,¹⁸³ but this model hardly promises the kind of privacy Canadians have indicated they want.

With a fully **intermediated CBDC**, on the other hand, the BoC would not record or store any retail data on its central ledger, but only the details of wholesale transactions between banks.¹⁸⁴ This design represents the most privacy-respecting model, possibly ensuring privacy to a similar degree as the current digital banking system does. Though not anonymous, fully intermediated CBDCs could hide all user data from the BoC *by design*; but since user data would still be accessed by traditional banks, similar to the current online digital banking system, the level of privacy would depend on the level of commitment to privacy by the traditional banks.

Fully intermediated CBDCs also present challenges for central banks, which would have no way of validating claims made by retail and commercial banks for interbank transfers or in case of insolvency, necessitating that they back user holdings without proof.¹⁸⁵ Central banks would have to rely entirely on the integrity and records kept by these traditional banks, which generates a variety of

¹⁷⁹ Bank of Canada, "Security of a CBDC,"

¹⁸⁰ Raphael Auer and Rainer Böhme, "Central bank digital currency..."

¹⁸¹ Ibid.

¹⁸² Ibid.

¹⁸³ Ibid.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid.

concerns for central banks, including the potential for fraud and mismanagement.¹⁸⁶ The inability to verify interbank transactions could also be leveraged to facilitate money laundering, thereby contradicting one of the primary reasons given for introducing and adopting CBDCs. As such, this design comes with many complicated technological issues that have not yet been resolved.¹⁸⁷

Although governments and central banks promise privacy, it remains unclear whether they would choose a fully private intermediated CBDC or why they would even want to. This leaves Canadians to wonder whether their privacy will be respected or whether their personal information and transaction data will be captured, analyzed, and used in ways they would neither want nor expect.

It should be noted that on the other end of the spectrum from a *direct* CBDC, an *indirect* or “synthetic” CBDC model has been explored. This is an alternative to retail CBDCs and is sometimes considered not to be a CBDC at all. Under this model, commercial banks issue their own digital currency, and users’ money would be a claim on intermediaries and not the central bank.¹⁸⁸ Banks could issue their own stablecoin that would be pegged to the central bank’s currency, or they could use tokenized deposits (i.e., user account holdings), fully backed by traditional bank reserves at the central bank.¹⁸⁹ Because this would be a fully separate retail currency, like other stablecoins, central banks would have no access to user data.¹⁹⁰ However, this model is not popular, as it introduces several concerns, including central banks having to fully back accounts they have no record of in case of a commercial bank’s insolvency,¹⁹¹ and the much greater complexity of retail transactions between customers using different banks.¹⁹² Ultimately, while this might be the most privacy-guarantying model, its adoption is unlikely.

The graph below, created by the Bank of International Settlements, provides a visual breakdown of the different types of CBDCs.

¹⁸⁶ Central Banks are also exploring how they could have token-based CBDCs allow anonymized transactions for small-value transactions. For example, European Central Bank is also exploring how they might offer a higher degree of privacy for low-value transactions, where KYC checks are done during onboarding, but transactions remain highly private, potentially even unknown to intermediaries and central banks for low-value offline transactions. (Source: European Central Bank (ECB), “Progress on the investigation phase of a digital euro,” Retrieved January 15, 2025, https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb_degov220929_en.pdf) It remains unclear, however, to what extent this is a possibility, or whether this is even a realistic pursuit for central banks due to benefiting from having all transactions recorded.

¹⁸⁷ Raphael Auer and Rainer Böhme, “Central bank digital currency: the quest...”

¹⁸⁸ Raphael Auer, Giulio Cornelli and Jon Frost, “Rise of the central bank digital currencies: drivers, approaches and technologies,” Bank for International Settlements (BIS), August 2020, <https://www.bis.org/publ/work880.pdf>

¹⁸⁹ Rodney Garratt and Hyun Song Shin, “Stablecoins versus tokenised deposits: implications for the singleness of money,” Bank for International Settlements (BIS), April 11, 2023, <https://www.bis.org/publ/bisbull73.pdf>

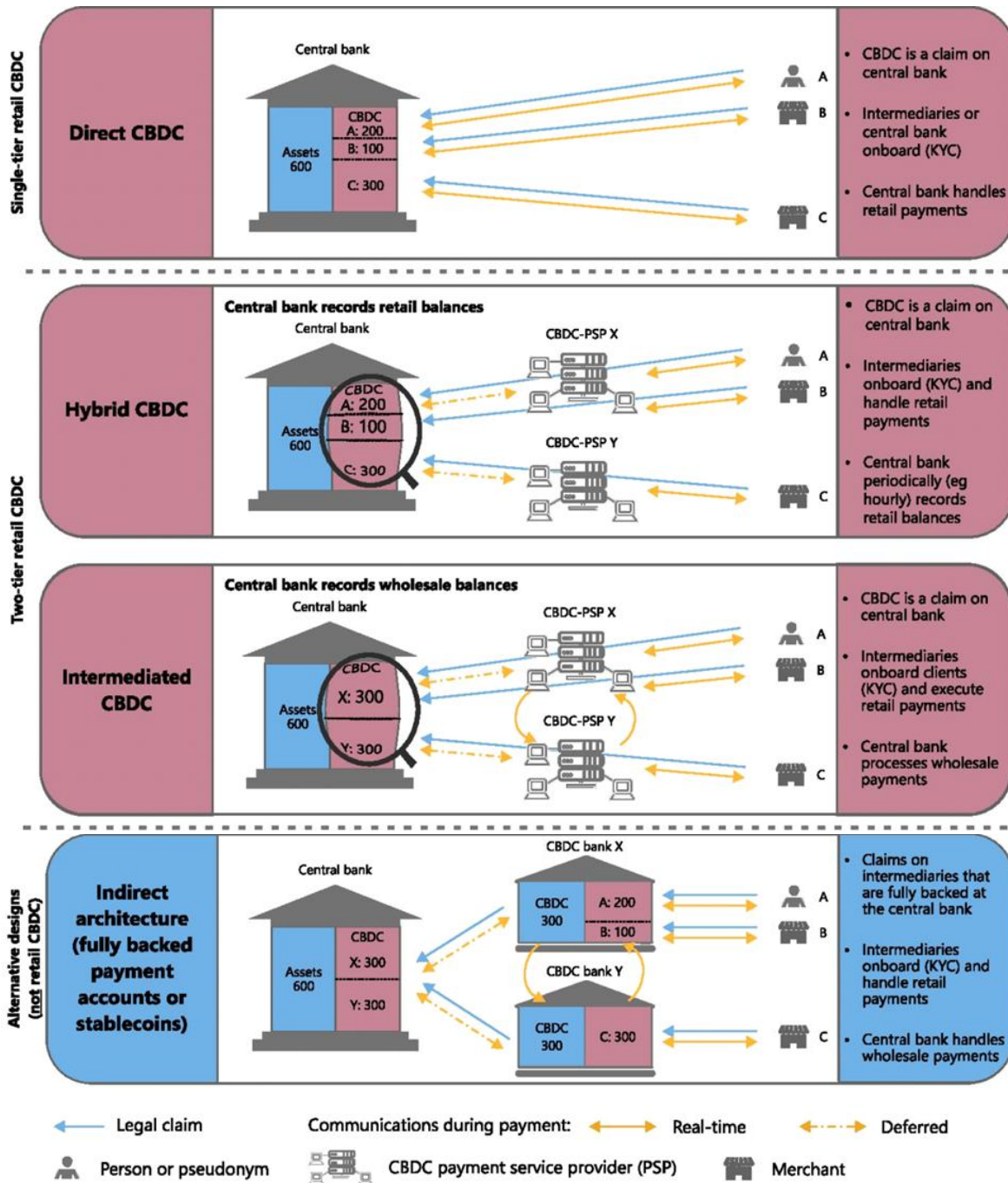
¹⁹⁰ Raphael Auer and Rainer Böhme, “Central bank digital currency: the quest...”

¹⁹¹ Ibid.

¹⁹² Rodney Garratt and Hyun Song Shin, “Stablecoins versus tokenised deposits...”



Retail CBDC architectures and fully backed alternatives¹⁹³



In the "Direct CBDC" model (top panel), the CBDC is a direct claim on the central bank, which also handles all payments in real time and thus keeps a record of all retail holdings. Hybrid CBDC architectures incorporate a two-tier structure with direct claims on the central bank while real-time payments are handled by intermediaries. Several variants of the hybrid architecture can be envisioned. The central bank could either retain a copy of all retail CBDC holdings (second panel), or only run a wholesale ledger (third panel). In the indirect architecture (bottom panel), a CBDC is issued and redeemed only by the central bank, but this is done indirectly to intermediaries. Intermediaries, in turn, issue a claim to consumers. The intermediary is required to fully back each claim with a CBDC holding at the central bank. The central bank operates the wholesale payment system only.

Sources: elaboration based on R Auer and R Böhme, "The technology of retail central bank digital currency", *BIS Quarterly Review*, March 2020, pp 85–100.

¹⁹³ Raphael Auer and Rainer Böhme, "Central bank digital currency: the quest..."

Bibliography

- About Financials, “*Advantages of Cash: 17 Reasons to use physical currency,*” Retrieved, January 08, 2025, <https://aboutfinancials.com/advantages-of-cash/>
- Aftab Ahmed, “*The case for the legislative protection of cash,*” Policy Options, September 25, 2023, <https://policyoptions.irpp.org/magazines/september-2023/keep-cash-in-circulation/>
- Atlantic Council, “*Central Bank Digital Currency Tracker,*” Retrieved January 10, 2025, <https://www.atlanticcouncil.org/cbdctracker/>
- Atlantic Council, “*The basics of CBDC,*” April 25, 2024, <https://www.atlanticcouncil.org/blogs/econographics/the-basics-of-central-bank-digital-currency-cbdc/>
- Bank for International Settlements, “*Central bank digital currencies: ongoing policy perspectives,*” May 25, 2023, <https://www.bis.org/publ/othp65.htm>
- Bank for International Settlements, “*Digital currencies and the soul of money,*” January 18, 2022, <https://www.bis.org/speeches/sp220118.htm>
- Bank of Canada, “*A central bank digital currency for offline payments,*” February 2023, <https://www.bankofcanada.ca/2023/02/staff-analytical-note-2023-2/>
- Bank of Canada, “*A Digital Canadian Dollar: What we heard 2020 — 23 and what comes next,*” November 2023, <https://www.bankofcanada.ca/digitaldollar/a-digital-canadian-dollar-what-we-heard-2020-23-and-what-comes-next/>
- Bank of Canada, “*Contingency planning for a central bank digital currency,*” February 25, 2020, <https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>
- Bank of Canada, “*Digital Canadian Dollar Public Consultation Report,*” November 2023, <https://www.bankofcanada.ca/wp-content/uploads/2023/11/Forum-Research-Digital-Canadian-Dollar-Consultation-Report.pdf>
- Bank of Canada, “*Digital Canadian Dollar,*” Retrieved January 13, 2025, <https://www.bankofcanada.ca/digitaldollar/>
- Bank of Canada, “*Privacy in CBDC technology,*” June 2020, <https://www.bankofcanada.ca/2020/06/staff-analytical-note-2020-9/>
- Bank of Canada, “*Security of a CBDC,*” June 2020, <https://www.bankofcanada.ca/2020/06/staff-analytical-note-2020-11/>
- Bank of England and HM Treasury, “*The digital pound: a new form of money for households and businesses? Consultation Paper,*” February 2023, <https://www.bankofengland.co.uk/-/media/boe/files/paper/2023/the-digital-pound-consultation-working-paper.pdf?la=en&hash=5CC053D3820DCE2F40656E772D9105FA10C654EC>
- Digital Currency, February 03, 2022, <https://www.federalreserve.gov/econres/notes/feds-notes/security-considerations-for-a-central-bank-digital-currency-20220203.html>



Bloomberg, “*A Bold Caribbean Experiment in E-Cash Hits a Major Obstacle*,” Retrieved January 16, 2025, <https://www.bloomberg.com/news/articles/2022-02-21/eastern-caribbean-dcash-outage-is-test-for-central-bank-digital-currencies?leadSource=uverify%20wall&sref=YMVUXTCK>

Business Insider, “*Explained: China Social Credit System, Punishments, Rewards - Business Insider*,” November 28, 2022, <https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4>

Businesstech Weekly, “*Security vs. Privacy vs. Anonymity: Understanding the differences*,” April 14, 2022, <https://www.businesstechweekly.com/cybersecurity/data-security/security-privacy/>

Canadian Bankers Association (BCA), “*Examining the Design Features of a Canadian CBDC*,” August 30, 2023, <https://briefings.cba.ca/article/examining-the-design-features-of-a-canadian-cbdc>

Canadian Bankers Association (CBA), “*Canada’s banking sector by the numbers*,” Retrieved January 12, 2025, <https://cba.ca/article/fast-facts-the-canadian-banking-system>

Canadian Bankers Association (CBA), “*CBA position paper examining the issuance of a Canadian Central Bank Digital Currency (CBDC)*,” August 22, 2022, <https://bankingquestions.cba.ca/article/examining-the-issuance-of-a-Canadian-CBDC>

Cash Matters, “*Finnish Legislation Supports Cash*,” July 05, 2022, <https://www.cashmatters.org/blog/finnish-legislation-supports-cash>

Cato Institute, “*Nigerians’ Rejection of Their CBDC Is a Cautionary Tale for Other Countries*,” March 03, 2023, <https://www.cato.org/commentary/nigerians-rejection-their-cbdc-cautionary-tale-other-countries>

CBC, “*Most Bank Accounts Frozen Under the Emergencies Act are Being Released, Committee Hears*,” February 22, 2022, <https://www.cbc.ca/news/politics/emergency-bank-measures-finance-committee-1.6360769>.

Cointelegraph, “*Nigeria’s eNaira CBDC: An overview*,” March 13, 2024, <https://cointelegraph.com/learn/articles/nigeria-enaira-cbdc>

Crypto News, “*How Cryptocurrency Is Driving Evolution Across Industries*,” December 03, 2024, <https://cryptonews.net/editorial/guides/how-cryptocurrency-is-driving-evolution-across-industries/#:~:text=Cryptocurrency%20has%20become%20a%20transformative%20force%20across%20multiple,to%20rethink%20traditional%20systems%20and%20adopt%20innovative%20solutions.>

Ctech, “*Cyber attacks expose flaws in cashless ambitions*,” December 01, 2024, <https://www.calcalistech.com/ctechnews/article/nn0kotx6a>

Dow Jones, “*Understanding the “Know Your Customer” Process*,” Retrieved January 11, 2025, <https://www.dowjones.com/professional/risk/glossary/know-your-customer/>

Edward Snowden, “*Edward Snowden: CBDCs Are ‘Cryptofascist Currencies’ That Could ‘Casually Annihilate’ Savings*,” decrypt, October 10, 2021, <https://decrypt.co/83124/edward-snowden-cbdc-are-cryptofascist-currencies-that-could-casually-annihilate-savings>

- Éducaloi, “Do You Have the Right to Pay in Cash?,” February 05, 2024, <https://educaloi.qc.ca/en/legal-news/do-you-have-the-right-to-pay-in-cash/>
- European Central Bank (ECB), “Progress on the investigation phase of a digital euro,” Retrieved January 15, 2025, https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb.degov220929.en.pdf
- European Central Bank (ECB), “Progress on the investigation phase of a digital euro,” Retrieved January 15, 2025, https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb.degov220929.en.pdf
- European Central Bank (ECB), “The digital euro - a work in progress,” January 18, 2023, https://www.ecb.europa.eu/press/conferences/shared/pdf/the_digital_euro_a_work_in_progress.c_e.pdf — would like more/better sources
- Financial Post, “Banks have frozen millions in convoy funds under the Emergency Act,” February 23, 2022, <https://financialpost.com/fp-finance/banking/convoy-leader-denied-bail-as-canadian-officials-warn-of-unrest>
- Financial Post, “Canada Revenue Agency suspends online services after cyberattacks hacked thousands of accounts,” August 16, 2020, <https://financialpost.com/personal-finance/thousands-of-cra-and-government-accounts-disabled-after-cyberattack>
- Financial Post, “Why businesses should be forced to accept cash,” November 01, 2022, <https://financialpost.com/news/economy/cash-king-businesses-forced-accept-money>
- Financial Times, “Central banks’ digital currency plans face public backlash,” Retrieved January 10, 2025, <https://www.ft.com/content/e0b7f134-c935-4cd6-bf27-460c37db1512>
- Financial Times, “The real scandal of central bank digital currency,” Retrieved January 10, 2025, <https://www.ft.com/content/7ad33055-2618-4a43-97c3-a1ed6bbc0e2e>
- Finextra, “Swedish central bank calls for legislation to protect cash,” March 15, 2024, <https://www.finextra.com/newsarticle/43854/swedish-central-bank-calls-for-legislation-to-protect-cash>
- Forbes, “No Government Will Allow Anonymous Digital Currency,” March 08, 2022, <https://www.forbes.com/sites/davidbirch/2021/04/06/no-government-will-allow-anonymous-digital-currency/>
- Forbes, “The False Narrative Of Bitcoin’s Role in Illicit Activity,” December 13, 2021, <https://www.forbes.com/sites/haileylennon/2021/01/19/the-false-narrative-of-bitcoins-role-in-illicit-activity/>
- Gabriel Soderberg, John Kiff, Hervé Tourpe, Marianne Bechara, Stephanie Forte, Kathleen Kao, Ashley Lannquist, Tao Sun, Akihiro Yoshinaga, “How Should Central Banks Explore Central Bank Digital Currency?,” International Monetary Fund (IMF), Fintech Notes, September 08, 2023, <https://www.imf.org/en/Publications/fintech-notes/Issues/2023/09/08/How-Should-Central-Banks-Explore-Central-Bank-Digital-Currency-538504>
-



- Gabriel Soderberg, John Kiff, Hervé Tourpe, Marianne Bechara, Stephanie Forte, Kathleen Kao, Ashley Lannquist, Tao Sun, Akihiro Yoshinaga, “*How Should Central Banks Explore...*”
- Global News, “*The Bank of Canada is ‘scaling down’ plans for a possible digital Loonie,*” September 24, 2024, <https://globalnews.ca/news/10772381/bank-of-canada-digital-loonie-tiff-macklem/>
- Government of Canada, “*Financial transactions reported to FINTRAC,*” Retrieved January 09, 2025, <https://fintrac-canafe.canada.ca/individuals-individus/rpt-eng>
- Government of Canada, “*Reporting transactions to FINTRAC: The 24-hour rule,*” October 23, 2023, <https://fintrac-canafe.canada.ca/guidance-directives/transaction-operation/24hour/1-eng>
- Gregory Baer, “*Central Bank Digital Currencies: Costs, Benefits and Major Implications for the U.S. Economic System,*” April 07, 2021, Bank Policy Institute, <https://bpi.com/central-bank-digital-currencies-costs-benefits-and-major-implications-for-the-u-s-economic-system/>
- Guneet Kaur, “*Privacy implications of central bank digital currencies (CBDCs): a systematic review of literature,*” EDPACS, July 15, 2024, <https://www.tandfonline.com/doi/full/10.1080/07366981.2024.2376794#abstract>
- House of Commons of Canada, “*Private Member's Bill C-400 (44-1) - First Reading - Framework on the Access to and Use of Cash Act,*” June 13, 2024, <https://www.parl.ca/DocumentViewer/en/44-1/bill/C-400/first-reading>
- House of Commons, Canada, “*Special Joint Committee on the Declaration of Emergency,*” Evidence, November, 17, 2022, <https://www.parl.ca/DocumentViewer/en/44-1/DEDC/meeting-18/evidence>
- Ian De Bode, Matt Higginson, and Marc Niederkorn. “*Central bank digital currency and stablecoin: Early coexistence on an uncertain road,*” McKinsey & Company, October 11, 2021, <https://www.mckinsey.com/industries/financial-services/our-insights/cbdc-and-stablecoins-early-coexistence-on-an-uncertain-road>
- International Money Fund (IMF), “*Central Bank Digital Currency - Virtual Handbook,*” November 2024, <https://www.imf.org/en/Topics/fintech/central-bank-digital-currency/virtual-handbook>
- Investopedia, “*Stablecoins: Definition, How They Work, and Types,*” June 13, 2024, <https://www.investopedia.com/terms/s/stablecoin.asp>
- Investopedia, “*Cryptocurrency Explained With Pros and Cons for Investment,*” June 15, 2024, <https://www.investopedia.com/terms/c/cryptocurrency.asp>
- Investopedia, “*How Central Banks Control the Supply of Money,*” September 27, 2024, <https://www.investopedia.com/articles/investing/053115/how-central-banks-control-supply-money.asp>
- Investopedia, “*What Is a Central Bank Digital Currency (CBDC)?,*” June 14, 2024, <https://www.investopedia.com/terms/c/central-bank-digital-currency-cbdc.asp>
- Investopedia, “*Why Governments Seek to Eliminate Cash,*” April 19, 2024, <https://www.investopedia.com/articles/investing/021816/why-governments-want-eliminate-cash.asp>

- Jeff Stewart, “ProgressSoft: Offline Use in Central Bank Digital Currencies - Between a Rock and a Hard Place,” Currency Research, August 23, 2022, <https://cbpn.currencyresearch.com/blog/2022/08/23/between-a-rock-and-a-hard-place-offline-use-in-central-bank-digital-currencies>
- John Mullin, “Fed Eyes Central Bank Digital Currency,” Federal Reserve Bank of Richmond, 2022, https://www.richmondfed.org/publications/research/econ_focus/2022/q2_federal_reserve
- Jonathan Chiu, Cyril Monnet, “Public and Private Money Creation for Distributed Ledgers: Stablecoins, Tokenized Deposits, or Central Bank Digital Currencies?,” Bank of Canada, October 2024, <https://www.bankofcanada.ca/2024/10/staff-working-paper-2024-35/>
- Le journal de Montreal, “Loi 54: quand transporter 2000\$ comptant fait de vous un criminel présumé,” September 25, 2024, <https://www.journaldemontreal.com/2024/09/25/loi-54-quand-transporter-2000--comptant-fait-de-vous-un-criminel-presume>
- Martin Miernicki, “Cash, accounts, and central bank digital currencies: a legal view on the introduction of account- and token-based digital central bank money,” Law and Financial Markets Review, February 12, 2024, <https://www.tandfonline.com/doi/full/10.1080/17521440.2024.2308800#abstract> - should really look at the primary source
- McKinsey & Company, “What is CBDC (Central Bank Digital Currency)?,” March 01, 2023, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-central-bank-digital-currency-cbdc>
- Nadia Pocher, Andreas Veneris, “Privacy and Transparency in CBDCs: A Regulation-by-Design AML/CFT Scheme,” 2021, <https://www.eecg.utoronto.ca/~veneris/21icbc2.pdf>
- naked capitalism, “Norway, One of World’s Most Cashless Economies, Just Made It A Lot Easier to Pay With Cash,” October 11, 2024, <https://www.nakedcapitalism.com/2024/10/another-largely-cashless-economy-norway-just-made-it-easier-rather-than-harder-to-pay-with-cash.html> - Need one or two more
- National Post, “Canadian \$1,000 bill hunt: There are nearly a million left, most in the hands of criminal elites,” November 15, 2012, <https://nationalpost.com/news/canada/the-hunt-for-canadas-1000-bills-there-are-nearly-a-million-left-most-in-the-hands-of-criminal-elites>
- National Post, “Convenience of going cashless comes at a cost to privacy: report,” February 02, 2023, <https://nationalpost.com/news/canada/cashless-grocery-stores>
- Net Zero Watch, “Bank of England downgrades Net Zero and cuts climate spending,” March 13, 2023, <https://www.netzerowatch.com/all-news/bank-of-england-downgrades-net-zero-and-cuts-climate-spending>
- Newswire, “Aussie bank ditches cash payments,” May 14, 2024, <https://au.finance.yahoo.com/news/aussie-bank-ditches-cash-payments-045700020.html>
- Nicholas Anthony, “Nigerians’ Rejection of Their CBDC Is a Cautionary Tale for Other Countries,” Cato Institute, March 06, 2023, <https://www.cato.org/commentary/nigerians-rejection-their-cbdc-cautionary-tale-other-countries>
-



- OECD, ‘*Central Bank Digital Currencies (CBDCs) and democratic values* | OECD,’ OECD Business and Finance Policy Papers, July 05, 2023, https://www.oecd.org/en/publications/central-bank-digital-currencies-cbdcs-and-democratic-values_f3e70f1f-en.html#:~:text=This%20paper%20explores%20how%20the%20design%20and%20implementation,of%20privacy%2C%20and%20citizens%E2%80%99%20trust%20in%20central%20banks.
- OECD, “*Central Bank Digital Currencies (CBDCs) and democratic values*,” OECD Business and Finance Policy Papers, 5 July 2023, https://www.oecd.org/en/publications/central-bank-digital-currencies-cbdcs-and-democratic-values_f3e70f1f-en.html#:~:text=This%20paper%20explores%20how%20the%20design%20and%20implementation,of%20privacy%2C%20and%20citizens%E2%80%99%20trust%20in%20central%20banks.
- Parliament of Canada, “*Report on the Special Joint Committee on the Declaration of Emergency*,” December 2024, https://publications.gc.ca/collections/collection_2024/sen/yc3/YC3-441-0-1-3-eng.pdf 2
- Patrick Schueffel, “CBDCs: Pros and Cons - A comprehensive list and discussion of the advantages and disadvantages of central bank digital currency,” *The Journal of Digital Assets*, August 08, 2023, http://journal-digitalassets.org/browse/issue_detail.php?issue_id=6&id=8&display=all&mdiv=previous#ref19
- Payments Canada, “*The Real-Time Rail Canada’s fastest payment system*,” Retrieved January 5, 2025 <https://www.payments.ca/systems-services/payment-systems/real-time-rail-payment-system>
- Payments Canada, Bank of Canada, and R3, “*Project Jasper: A Canadian Experiment with Distributed Ledger Technology for Domestic Interbank Payments Settlement*,” https://www.payments.ca/sites/default/files/2022-09/jasper_report_eng.pdf
- Raphael Auer and Rainer Böhme, “*Central bank digital currency: the quest for minimally invasive technology*,” Bank For International Settlements (BIS), Working Papers No 948, June 2021, <https://www.bis.org/publ/work948.pdf>
- Raphael Auer and Rainer Böhme, “*The technology of retail central bank digital currency*,” Bank for International Settlements (BIS), March 2020, https://www.bis.org/publ/qtrpdf/r_qt2003j.pdf — p. 94
- Raphael Auer, Giulio Cornelli and Jon Frost, “*Rise of the central bank digital currencies: drivers, approaches and technologies*,” Bank for International Settlements (BIS), August 2020, <https://www.bis.org/publ/work880.pdf>
- Rodney Garratt and Hyun Song Shin, “*Stablecoins versus tokenised deposits: implications for the singleness of money*,” Bank for International Settlements (BIS), April 11, 2023, <https://www.bis.org/publ/bisbull73.pdf>
- Sharon Polsky, “*Potential Dangers of a Global Digital ID and Currency* | Sharon Polsky | Guest | Bridge City News,” YouTube - 8:55, September 20, 2023, <https://www.youtube.com/watch?v=9dpcirTS3gl>
- Sharon Polsky, “*WizeUp Episode 13 - Sharon Polsky - Digital ID & Currency*,” WizeUp, YouTube, December 09, 2024, <https://www.youtube.com/watch?v=u84-Y21Ezm0>
- Tayo Tunyathon Koonprasert, Shiho Kanada, Natsuki Tsuda, and Edona Reshidi, “*Central Bank Digital Currency Adoption: Inclusive Strategies for Intermediaries and Users in*,” International Monetary

Fund (IMF), FinTech Notes Volume 2024 Issue 005 (2024), September 20, 2024,
<https://www.elibrary.imf.org/view/journals/063/2024/005/article-A001-en.xml>

TD Commercial Banking Bill Payment Processing Times,

<https://www.tdcommercialbanking.com/wbb/help/English/wbwBPProcessingTimes.html>

Techspot, “*Bank stops handling cash in some branches as more people go digital*,” April 23, 2023,

<https://www.techspot.com/news/98185-bank-stops-cash-withdrawals-branches-more-people-go.html>

The Conversation, “*Canadians have serious trust issues when it comes to a central bank digital currency*,” December 11, 2023, <https://theconversation.com/canadians-have-serious-trust-issues-when-it-comes-to-a-central-bank-digital-currency-219192>

The Conversation, “*Sweden is a nearly cashless society — here’s how it affects people who are left out*,” December 18, 2024, <https://theconversation.com/sweden-is-a-nearly-cashless-society-heres-how-it-affects-people-who-are-left-out-216586>

The Guardian, “*CBN fines nine banks N1.35b for not dispensing cash via ATMs*,” January 15, 2025,
<https://guardian.ng/news/cbn-fines-nine-banks-n1-35b-for-not-dispensing-cash-via-atms/>

The Sociable, “*BIS ponders if CBDC programmability can be introduced after CBDC is already launched*,” June 01, 2023, <https://sociable.co/government-and-policy/bis-cbdc-programmability-after-launch/>

The Sociable, “*Central Banks Not Interested in Programming CBDC, Programmability Is for Commercial Banks: Lagarde at BIS Innovation Summit*,” April 11, 2023,
<https://sociable.co/government-and-policy/central-banks-programming-cbdc-lagarde-bis-innovation-summit/>

Thomson Reuters, “*Understanding digital identity theft and fraud*,” June 10, 2024,
<https://legal.thomsonreuters.com/blog/what-is-digital-identity-theft-and-fraud/>

Wealth Professional, “*Canada ranks as top 8 most crypto-friendly nation*,” May 08, 2024,
<https://www.wealthprofessional.ca/news/industry-news/canada-ranks-as-top-8-most-crypto-friendly-nation/385811>

World Economic Forum, “*5 questions about central banks and digital currency*,” September 28, 2017,
<https://www.weforum.org/stories/2017/09/5-questions-about-central-banks-and-digital-currency/>

World Economic Forum, “*CBDCs come in two forms: retail and wholesale. What’s the difference?*,” February 06, 2024, <https://www.weforum.org/stories/2024/02/wholesale-retail-cbdcs-difference/#:~:text=A%20retail%20CBDC%20is%20a%20form%20of%20central,financial%20institutions%20for%20interbank%20payments%20and%20securities%20transactions.>

World Economic Forum, “*What are central bank digital currencies and what could they mean for the average person?*,” October 6, 2023, <https://www.weforum.org/stories/2023/10/what-are-central-bank-digital-currencies-advantages-risks/>





Justice Centre
for Constitutional Freedoms

#253, 7620 Elbow Drive SW, Calgary, AB T2V 1K2
www.jccf.ca | info@jccf.ca | +1403-475-3622