

Bitcoin Awareness and Usage in Canada

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Digital transformation of the retail payments ecosystem

ECB and Banca d'Italia joint conference

Rome, Italy

1 December 2017

The views expressed are those of the author. No responsibility for them should be attributed to the Bank of Canada.

Key findings

- ① 64% of Canadians are aware of Bitcoin (BTC).
- ② However, only 2.9% of Canadians actually own BTC.
- ③ Most owners of BTC (60 percent) have 1 or less, i.e. hold \$1,000 CAD or less.
- ④ Most prevalent stated reason for BTC ownership: "I am interested in new technologies".
- ⑤ BTC owners have objectively higher levels of knowledge about the technology/protocol of BTC.

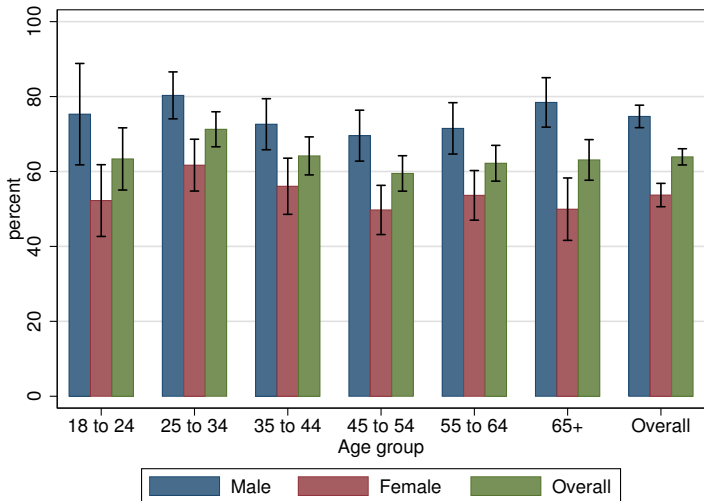
Background and Motivation

- ① Central bank concerns:
 - *Will digital currency reduce demand for bank notes?*
 - ◊ Unique features as a payment method.
 - *Should the central bank issue its own digital currency?*
- ② Why focus on BTC?
 - *Dominance in terms of market cap and trading volumes.*
 - *Still nascent field of empirical work in this area.*
- ③ Pilot study approach.
 - *Gathering lessons learned and developing best practices; Schuh & Shy (2016).*
 - *Informing a full-scale Digital Currency Survey.*

BTC Omnibus Study (BTCOS)

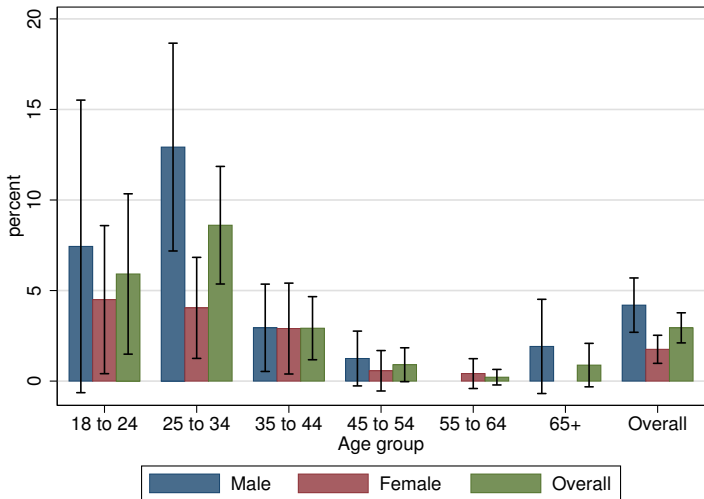
- Conducted in two waves - November/December 2016.
 - *Total of N = 1,997 respondents.*
 - *Weighted with respect to age, gender, and region.*
- Online methodology, flexible and short questionnaire.
 - *Less than 5 minutes to complete.*
 - *Added an extra question in Wave 2.*
- Objectives:
 - ① Obtain estimates of the prevalence of BTC **use** and **awareness** in Canada.
 - ② Investigate **reasons** for BTC **ownership/non-ownership**.
 - ③ Inform future work on digital currencies using **respondent-driven sampling**.

BTC awareness: age and gender



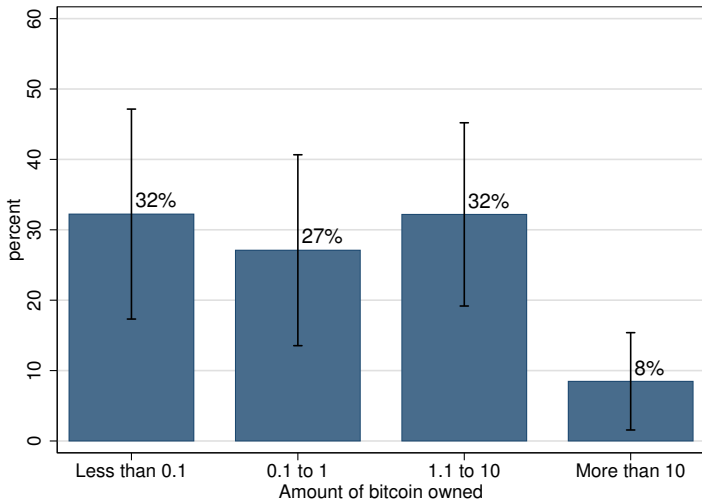
Respondents were asked: "Have you heard of BTC?"

BTC ownership: age and gender



**Those aware of BTC were asked:
“Do you currently have or own any BTC?”**

BTC holdings



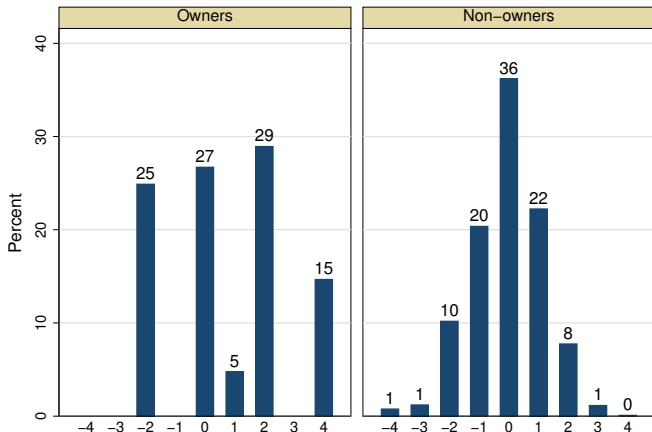
Note: 1 BTC \approx \$700-\$800 USD in the period considered.

Main reason for ownership

	≤1 BTC		>1 BTC		Total	
	No.	%	No.	%	No.	%
I am interested in new technologies	9	32	8	24	17	29
I use it to buy goods and services in physical stores in Canada/elsewhere	3	14	5	14	8	14
It is an investment	2	7	4	18	6	12
I use it to make remittances or other international payments	3	13	3	8	6	11
It uses secure blockchain technology to prevent loss and fraud	3	7	3	8	6	7
I use it to buy goods and services on the internet in Canada/elsewhere	1	2	3	15	4	7
It allows me to make payments anonymously	1	3	3	13	4	7
I do not trust banks	2	6	0	0	2	3
I do not trust the government or the Canadian dollar	2	4	0	0	2	3
Other	3	12	0	0	3	7
Total	29	100	29	100	58	100

Note: This table provides the distribution of responses to the question “Please tell us your main reason for owning BTC.” Percentages are calculated using post-stratification weights with respect to region, age, and gender. The sample consists of 58 Canadians aged 18 or older who said they have or own BTC.

Testing knowledge of BTC



- Asked 5 true/false questions; used 4 to create an overall score.
- Distinguishes between owners and non-owners.
- Attempting questions highly correlated with ownership.

High awareness but low ownership

We explore two potential motives for ownership:

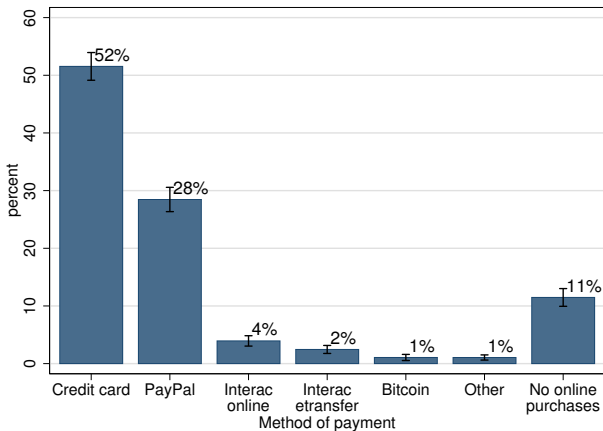
① Transactional:

- Use for typical retail payments.
 - Take advantage of anonymous online transactions?
- Shadow economy.
- Alternative to cash.

② Store-of-value:

- Hold as an investment, including speculation.
- Precautionary motives.
 - Compare with cash from 2013 Methods-of-Payment survey.
 - Median 'other' cash holdings of \$300; many high values observed.

Figure: Preferred method of online payment

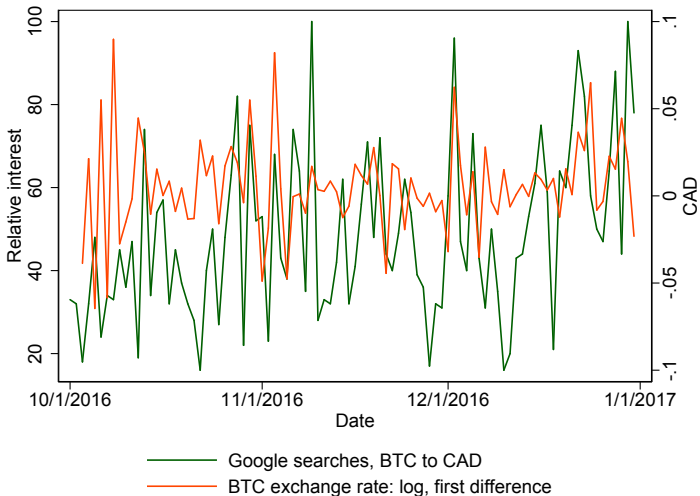


- 1 32% non-owners: 'My current payment methods meet all my needs'.
- 2 21% stated buying goods/services (online or physical store) as main reason.
- 3 Only 1% of merchants identified as accepting BTC from BoC cost study.

Precautionary BTC holdings?

	Cash	BTC
18-34	0.190	0.687
35-54	0.369	0.235
55+	0.442	0.078
Male	0.529	0.701
Female	0.471	0.299
High School	0.329	0.214
College	0.407	0.041
University	0.264	0.745
<\$45k	0.244	0.147
\$45k - \$84k	0.391	0.484
\$85k+	0.365	0.37

Note: *Cash* is defined as respondents who hold \geq \$1000 in 'other' cash, i.e. cash stored at home/elsewhere for precautionary/store-of-value purposes, from the 2013 MOP. *BTC* consists of respondents from the BTCOS who reported holding more than 1 BTC (\approx \$1000) during the period considered.



- *'On the Value of Virtual Currencies'* - Bolt & Van Oordt (2016).
- Their model finds 80% of the price of BTC due to speculation.

Discussion of results

- ① How can we evaluate our estimates?
 - Back of the envelope calculation:
~1 million Bitcoins held in Canada.
 - $\approx 6\%$ of total circulation in Q4 2016.
- ② Need to calibrate survey results with external data.
 - Lohr & Raghunathan (2017) provides a methodology.
 - Utilize data from Canadian BTC exchange.
- ③ BTCOS was designed as a pilot study.
 - Small sample of BTC users \implies qualify conclusions.
 - Many areas for improvement: methodology, refine questions and knowledge test, broaden scope to other digital currencies.

Future work

- ① Full-scale digital currency survey.
 - Substitution of BTC with other digital currencies.
 - Identify types of users: casual vs. investors/speculators vs. miners, etc.
 - Measure intensity of usage.
- ② Innovative sampling methodologies.
 - Traditional sampling approach: $N=16,000+$ to get a sample of 500 BTC users.
 - Respondent-driven sampling may offer a more efficient approach.
 - Developing simulations and methodology.

Thank you/Merci/Grazie Mille