Bitcoin Awareness and Usage in Canada

Christopher S. Henry*, Kim P. Huynh*, and Gradon Nicholls*

*Bank of Canada

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

Note: 1 BTC $700-$800 USD in the period considered.
# Main reason for ownership

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

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.

<table>
<thead>
<tr>
<th>Percent</th>
<th>Owners</th>
<th>Non-owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>-3</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>-2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>-1</td>
<td>29</td>
<td>10</td>
</tr>
<tr>
<td>0</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
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.
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?

<table>
<thead>
<tr>
<th></th>
<th>Cash</th>
<th>BTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-34</td>
<td>0.190</td>
<td>0.687</td>
</tr>
<tr>
<td>35-54</td>
<td>0.369</td>
<td>0.235</td>
</tr>
<tr>
<td>55+</td>
<td>0.442</td>
<td>0.078</td>
</tr>
<tr>
<td>Male</td>
<td>0.529</td>
<td>0.701</td>
</tr>
<tr>
<td>Female</td>
<td>0.471</td>
<td>0.299</td>
</tr>
<tr>
<td>High School</td>
<td>0.329</td>
<td>0.214</td>
</tr>
<tr>
<td>College</td>
<td>0.407</td>
<td>0.041</td>
</tr>
<tr>
<td>University</td>
<td>0.264</td>
<td>0.745</td>
</tr>
<tr>
<td>&lt;$45k</td>
<td>0.244</td>
<td>0.147</td>
</tr>
<tr>
<td>$45k - $84k</td>
<td>0.391</td>
<td>0.484</td>
</tr>
<tr>
<td>$85k+</td>
<td>0.365</td>
<td>0.37</td>
</tr>
</tbody>
</table>

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.
Google searches, BTC to CAD
BTC exchange rate: log, first difference

- 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:
     \(\sim 1\) 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 \(\Rightarrow\) 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