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CASH IN THE 21ST CENTURY

Data from Federal Reserve surveys

Claire Greene
Shaun O’Brien
Oz Shy

Claire.Greene@atl.frb.org, Shaun.Obrien@sf.frb.org, Oz.Shy@atl.frb.org
Today’s presenters

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Senior Policy Advisor & Economist
FRB Atlanta

Claire Greene
Payments Risk Expert
FRB Atlanta

Shaun O’Brien
Senior Policy Consultant
FRB San Francisco
Tickets
Purchase Tickets / Add Value
Credit / Debit Cards Only

NO CASH
Credit / Debit Cards Only

MBTA FARES

TICKETS & PASSES

SINGLE RIDE
CharlieCard
$2.70
$2.20
$2.05

CharleTicket
$2.00
$1.75
$1.50

Senior/TAP
$1.50
$1.30

Student
$1.25
$1.10

PASS

1-Day
$4.00
$3.00
$2.00

3-Day
$6.00
$4.50
$3.00

7-Day
$8.00
$6.00
$4.00

Monthly
$100.00
$74.00
$54.00

Please Insert Credit Card

Welcome to the MBTA

Have a CharlieCard?

LinkPass on your CharlieCard!
CREDIT CARD ONLY
WE ARE GOING CASHLESS!

June 1st, 2018

TEAM SAFETY
Going cashless is safer for our staff.

---
A brief history of cash

- Earliest coins: Lydia (Western Turkey), 7th century BCE
- First paper bills: China, ~800 CE
- Europe catches up: Paper money printed in Sweden, 1661
Demand for cash continues rise

As of April 2019, U.S. currency in circulation reached 1.68 trillion worldwide, a 5.4% increase over 2018.

Source: Cash Product Office.
Consumer’s share of payments made in cash dropped 5 percentage points, 2016–2018

Shares of Payment Instrument Usage, volume, 2016–2018
(2018 shaded darkest)

Change in shares is combined effect of decrease in cash payments and increase in card payments (mostly credit)

Source: Diary of Consumer Payment Choice.
Cash share for small-dollar payments dropped 2017-18

Volume shares by dollar value

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.01-$9.99</td>
<td>36%</td>
<td>40%</td>
<td>55%</td>
<td>49%</td>
</tr>
<tr>
<td>$10-$24.99</td>
<td>60%</td>
<td>32%</td>
<td>33%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Source: 2018 Diary of Consumer Payment Choice.
Everyone
Cash prefer-ers use cash more than others

Payment use (volume shares) by stated preference

Cash Preferred
- Cash: 54%
- Debit: 16%
- Credit: 11%
- Other: 6%

Debit Preferred
- Cash: 20%
- Debit: 52%
- Credit: 6%
- Other: 20%

Credit Preferred
- Cash: 20%
- Debit: 50%
- Credit: 6%
- Other: 20%

Source: 2018 Diary of Consumer Payment Choice.
Preferences shifting away from cash

Shares of consumers preferring each payment instrument

- **2016**
  - Cash: 26%
  - Debit: 41%
  - Credit: 27%

- **2017**
  - Cash: 22%
  - Debit: 42%
  - Credit: 22%

- **2018**
  - Cash: 22%
  - Debit: 41%
  - Credit: 30%

Source: 2018 Diary of Consumer Payment Choice.
Cash switchers lean toward **debit**

Of consumers preferring cash in 2016, shares preferring cash in later years

- **2016**: 100%
- **2017**: 60%
- **2018**: 55%

Source: 2018 Diary of Consumer Payment Choice.
Unbanked make most payments with cash; underbanked are similar to banked consumers.

Volume shares of payments, by banking status:

- **Unbanked**
  - Cash: 61.9%
  - Money order: 4.7%
  - Prepaid card: 17.2%

- **Underbanked**
  - Cash: 26.7%
  - Bank account linked: 56.7%

- **Fully banked**
  - Cash: 20.1%
  - Bank account linked: 50.2%

Source: 2018 Diary of Consumer Payment Choice.
Lower income correlates to cash use, higher income to credit card use

Volume shares of payments made by income, October 2018

Source: 2018 Diary of Consumer Payment Choice.
Millennials used cash relatively less often than others: ages 24–38 in 2018

Volume shares of payments made using cash, by age, October 2018

Source: 2018 Diary of Consumer Payment Choice.
Urban households used credit cards more, # of cash transactions similar

Volume shares of payments made by community type, October 2018

Rural: 29% Cash, 16% Credit, 23% Other
Mixed: 26% Cash, 23% Credit, 27% Other
Urban: 24% Cash, 27% Credit, 16% Other

Source: 2018 Diary of Consumer Payment Choice.
We mostly get cash from family & friends

Volume shares of instances of getting cash, 2017

<table>
<thead>
<tr>
<th>Source</th>
<th>Volume Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family or friend</td>
<td>35%</td>
</tr>
<tr>
<td>ATM</td>
<td>21%</td>
</tr>
<tr>
<td>Employer</td>
<td>13%</td>
</tr>
<tr>
<td>Cash back at a retail store</td>
<td>13%</td>
</tr>
<tr>
<td>Bank teller</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
</tr>
</tbody>
</table>
By value, we get 40% of cash on Fridays

• On average, consumers get $200 on Fridays

• We get the least cash by value on Sunday

Source: “How Consumers Get Cash: Evidence from a Diary Survey.”
Mostly, we get cash in multiples of $20

Source: “How Consumers Get Cash: Evidence from a Diary Survey.”
Cash used for $\frac{3}{4}$ of P2P payments; New methods take share from checks

 Shares of P2P payments by number

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash</th>
<th>Paper check</th>
<th>Cards</th>
<th>PayPal</th>
<th>Account-to-account transfer</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Diary of Consumer Payment Choice.
For in-person payments, **Cash** is used most

**Shares of in-person payments by number**

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash</th>
<th>Debit</th>
<th>Credit</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>35%</td>
<td>30%</td>
<td>25%</td>
<td>9%</td>
</tr>
<tr>
<td>2017</td>
<td>39%</td>
<td>29%</td>
<td>23%</td>
<td>9%</td>
</tr>
<tr>
<td>2016</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: Diary of Consumer Payment Choice.
## Cash used for 1/3 of nonprofits, food, gas

### Payment instrument use by payee type (volume shares), 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Cash</th>
<th>Card</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government and nonprofit</td>
<td>36%</td>
<td>18%</td>
<td>45%</td>
</tr>
<tr>
<td>Auto and vehicle related</td>
<td>34%</td>
<td>66%</td>
<td></td>
</tr>
<tr>
<td>Food and personal care supplies</td>
<td>34%</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Medical, education, personal services</td>
<td>24%</td>
<td>52%</td>
<td>24%</td>
</tr>
<tr>
<td>General merchandise</td>
<td>17%</td>
<td>76%</td>
<td>6%</td>
</tr>
<tr>
<td>Entertainment and transportation</td>
<td>16%</td>
<td>49%</td>
<td>35%</td>
</tr>
<tr>
<td>Housing related</td>
<td>5%</td>
<td>18%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Source: 2018 Diary of Consumer Payment Choice.
Cash used for almost half of small-dollar purchases

Volume shares of payments by purchase amount, 2018

<table>
<thead>
<tr>
<th>Purchase Amount</th>
<th>Cash</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.01 - $9.99</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td>$10 - $24.99</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>$25 - $49.99</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>$50 - $99.99</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>$100+</td>
<td>6%</td>
<td></td>
</tr>
</tbody>
</table>

Source: 2018 Diary of Consumer Payment Choice.
What influences the choice to use cash?

- Consumer likely to choose cash when:
  - $10 or less
  - HHI > $110k

- Consumer likely to choose debit when:
  - Age > 65
  - HHI > $48k

- Consumer likely to choose credit when:
  - $20 or less
  - Age < 54
  - HHI < $48k

Source: “How Currency Denomination and the ATM Affect the Way We Pay.”
Behavior differs at the point of sale

When paying in person...

- Sit-down restaurants & bars: 10%
- General services: 4%
- Grocery, convenience, pharmacies: 27%
- Gas stations: 17%
- General merchandise: 20%
- Fast-food restaurants, coffee shops, etc.: 22%

choices differ with card ownership

- Neither non-prepaid debit nor credit: 9/10 purchases in cash
- Both non-prepaid debit and credit: 1/3 purchases in cash

At left, share of cash payments (volume) by merchant type
Source: "Cashless Stores and Cash Users."
### Cash for paying

**Access**

“I don't think we will ever be entirely cashless, maybe in large part because I don't know if we will ever be in a world that **every person** has a smartphone or a mobile device.”

---

**Legislative action**

<table>
<thead>
<tr>
<th>Year</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>2019</td>
<td>Philadelphia, New Jersey, San Francisco</td>
</tr>
</tbody>
</table>

**Proposed**

- Cash Buyer Discrimination Act

PayPal CEO, WSJ, 2/20/2018
Cash for emergencies

Cash demand soars
Or glitches (September 2019, Harvard Square)

CASH ONLY!

We apologize for the inconvenience
Or merchant preference (July 2019, Boston)
Surveys of U.S. consumers, 18+

  - Adoption of deposit accounts and payment instruments
  - Use (# per month) of payment instruments by 7 payment types
  - Respondents rate payment instruments on characteristics

  - Use (# and $) of payment instruments for all payment types
  - Types of payees and consumer expenditures
References and survey data

References


“Cash Me If You Can: The impacts of cashless businesses on retailers, consumers, and cash use” by Claire Wang, Federal Reserve Bank of San Francisco, August 2019.


Fed consumer surveys

- Survey of Consumer Payment Choice
- Diary of Consumer Payment Choice
- Survey of Consumer Finances
- Survey of Household Economics and Decisionmaking
- Survey of Consumer Expectations
- Consumers & Mobile Financial Services
- Federal Reserve Payments Study

Follow the blog

- Take on Payments, every Monday