



**CASH PRODUCT OFFICE
FEDERAL RESERVE SYSTEM**

2019 Findings from the Diary of Consumer Payment Choice

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June 2019

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Summary

The 2019 Diary of Consumer Payment Choice (Diary) highlights findings from the fifth Diary study conducted by the Federal Reserve. A demographically-representative sample of 2,873 individuals participated in the study and reported all of their payments and transactions over three consecutive days, staggered throughout October 2018.¹ The high-level findings are:

- Consumers used cash in 26 percent of transactions, down from 30 percent in 2017
- Debit cards were the most used instrument, accounting for 28 percent of payments
- Credit cards accounted for 23 percent of payments, a 2 percentage point increase from 2017
- Cash was used heavily for small-value payments, representing 49 percent of payments under \$10
- The share of cash use among individuals under 25 years old is the highest of any age group
- In-person² payments accounted for 73 percent of all transactions. Participants used cash for 35 percent of in-person payments

The 4 percentage point decline in cash's share of payments is largely due to two factors: 1) cash use declined to 11 payments per month, down from 12 in 2017, and 2) total payments increased from 41 to 43 transactions per month. The year-over-year decline of one cash payment between 2017 and 2018 was less than the two cash payment decline between 2016 and 2017.

Cash continues to be used extensively for small-value purchases, representing nearly half of all payments under \$10 and 42 percent of payments less than \$25. In contrast, cash is used for approximately 10 percent of payments \$25 and higher.

Individuals aged 18 to 25 have the highest share of cash use, 34 percent, followed by those 65 and older who report using cash for 33 percent of payments. The share of cash use is lowest for individuals between the ages of 25 and 44 years old, who reduced their average cash usage by two payments per month. Debit cards are the most popular for this age cohort, used for approximately 14 payments, or 34 percent. While debit cards are the most popular for those 25 to 44, this group's credit card usage has increased 9 percentage points from 2016 to 2018.

Lastly, the share of in-person payments declined 4 percentage points to 73 percent in 2018. For these in-person payments, cash is used 35 percent of the time, followed by debit and credit cards at 30 and 25

¹ See Appendix for a detailed description of the Diary of Consumer Payment Choice.

² Participants identify each payment as either "in-person" or "not-in-person" when entering their payment information. Examples of in-person payments are payments that takes place at a brick-and-mortar location, given to a person, or at a vending machine.

percent, respectively. The use of credit cards for in-person purchases increased from 20 percent in 2016 to 25 percent in 2018.

The body of this paper is structured into four sections, with each section exploring various aspects of cash usage. Section 1 details trends in cash usage; Section 2 discusses how payment preferences influence the use of cash; Section 3 explores cash holding by demographic cohort; and Section 4 outlines payment use by transaction characteristic and merchant type. Appendix A provides an overview of methodology. Additional information about the Diary is available through the Federal Reserve Bank of Atlanta.³

Acknowledgements

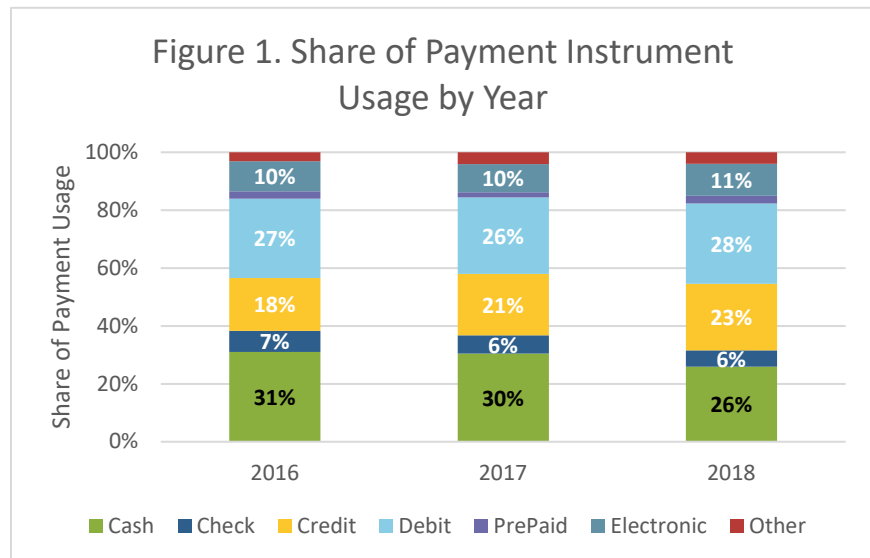
This paper would not have been possible without the support and contributions of the following individuals. From the Atlanta Fed: Kevin Foster, Claire Greene, Marcin Hitczenko, and Oz Shy. From the Boston Fed: Joanna Stavins. From the San Francisco Fed: Tom Flannigan, Fernanda Nechio, Louise Willard, and Justin Wray. From the Cash Product Office: Alexander Bau, Jonathan Bromma, Amy Burr, Ben Gold, Kelly McGuire, Margaret Riley, Steve Son, Claire Wang, and Kathleen Young. Finally, the Richmond Fed for their continued support of this research.

³ <https://www.frbatlanta.org/banking-and-payments/consumer-payments/diary-of-consumer-payment-choice>

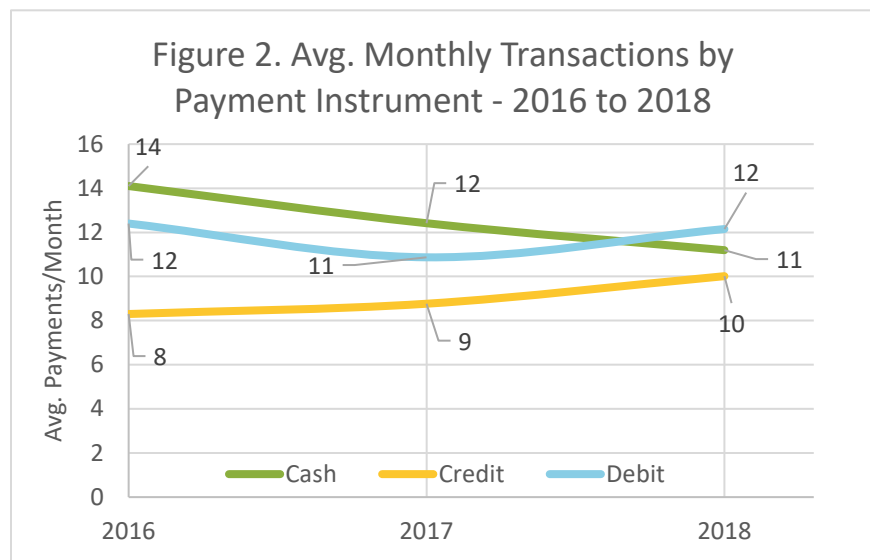
Section 1. Trends in Cash Usage

Cash is the second most used payment instrument

In 2018, Diary participants made an average of 1.4 payments per day, compared to the 1.3 and 1.5 payments per day diarists made in 2017 and 2016, respectively.⁴ These average daily payments equate to approximately 43 payments per month, including both bill and non-bill payments. This year's Diary is the first time participants reported debit cards as the most frequently used payment instrument, accounting for 28 percent of payments (Figure 1), while cash was second, used 26 percent of the time. Consumers' credit card usage has steadily increased from 2016 to 2018, rising from 18 percent to 23 percent.



Cash's share of payments declined 4 percentage points from 2017, a change that results from two factors: Diary participants' cash use declined by one payment per month and their total payments increased from 41 to 43 payments per month. The change in cash use from 2017 to 2018 (one fewer payment) was less than the change from 2016 to 2017 (two fewer payments) as seen in Figure 2. Between 2016 and 2018 the average number of debit transactions remained steady, ranging between 11

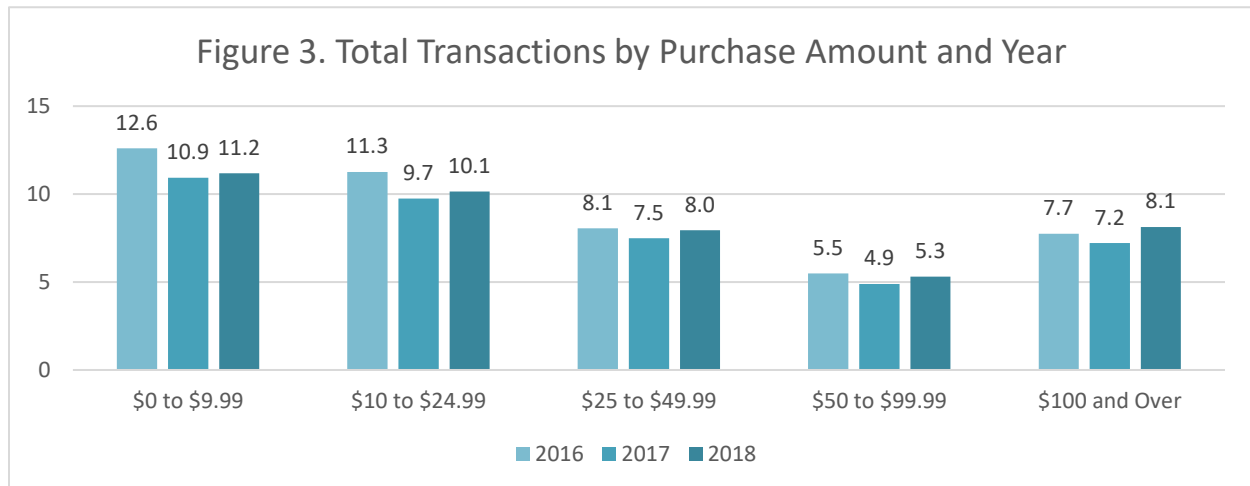


⁴ For additional information regarding the Diary, see Angrisani, Foster, and Hitczenko (2017b); Angrisani, Foster, and Hitczenko (2018); Greene, Schuh, and Stavins (2018); Greene and Schuh (2017); Greene, O'Brien, and Schuh (2017); Greene and Stavins (2018); Kumar, Maktabi, and O'Brien (2018); Sampranathak, Schuh, and Townsend (2017); and Schuh (2017).

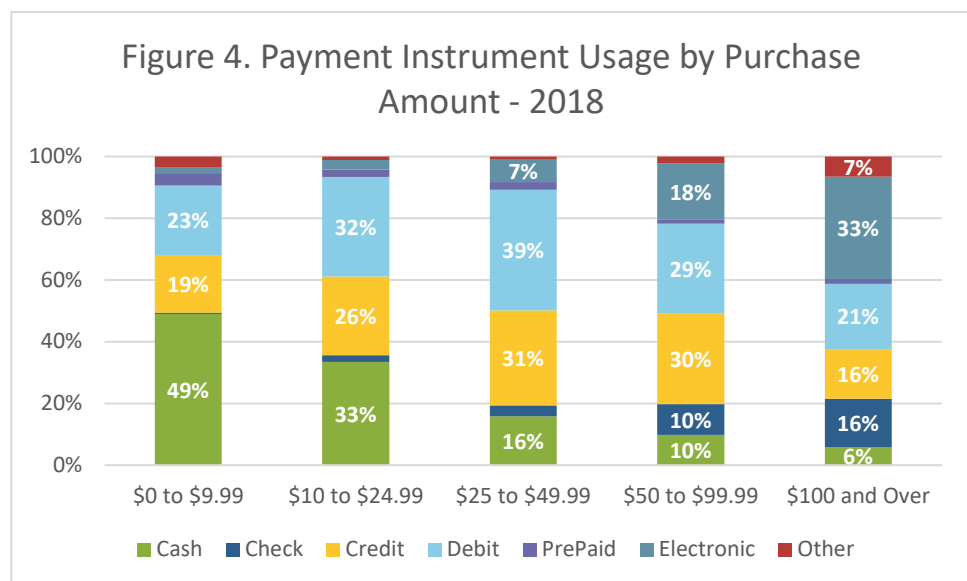
and 12 payments, while credit card usage increased from 8 to 10 payments.

Cash is king for small-value payments

Of all payments reported in the 2018 Diary, approximately 50 percent were less than \$25 and approximately 25 percent were less than \$10. This equates to consumers making 21 payments a month that were less than \$25 and only 13 purchases greater than \$50 (Figure 3).



Of all the cash payments reported, 80 percent were for payments below \$25. The combination of these two factors illustrates why cash continues to be a popular payment instrument. However, the share of cash payments has been decreasing. The 2018 Diary represents the first year cash was not used for the majority of transactions under \$10. In 2017, 56 percent of payments under \$10 were conducted using cash while data from the 2018 Diary show that share declined to 49 percent, though cash was used more than twice as often as debit cards, at 23 percent. In the \$10 to \$24.99 payment range, cash and debit card usage are nearly identical at 33 and 32 percent, respectively. Checks and electronic payments⁵ are used



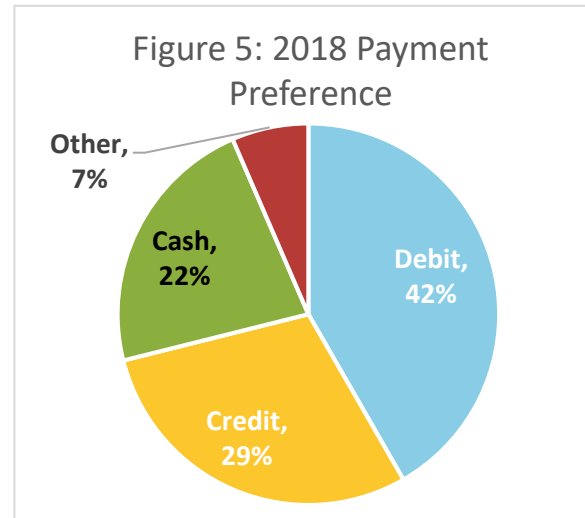
⁵ “Electronic” payments include bank account number payments, online banking bill pay, and payment services like PayPal. “Other” payments include money orders, traveler’s checks, transfers, and direct deposit.

more frequently for purchases above \$100 – a price range more often associated with bill payments.

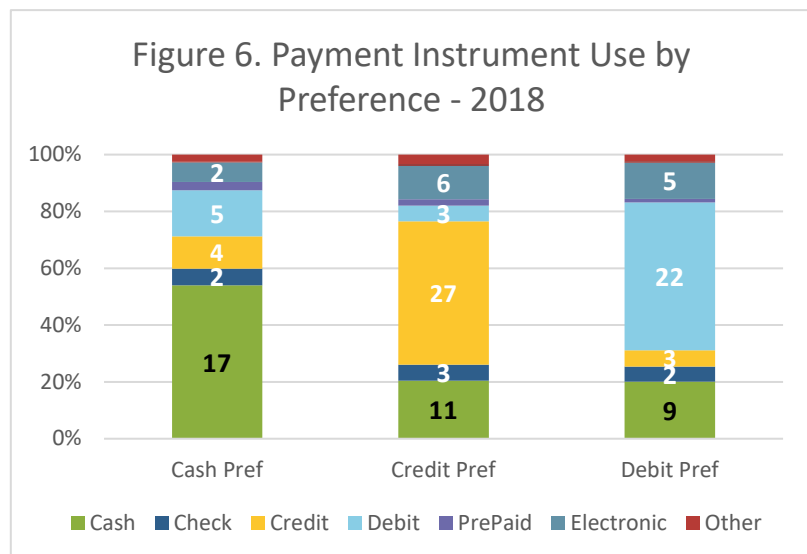
Section 2. Who is using cash?

Payment preferences remain consistent across years

Participants' 2018 payment preferences remained similar to those stated in 2017. Most participants prefer to pay with debit cards (42 percent), while the next largest group prefer to pay with credit cards (29 percent); both shares remain unchanged from 2017. Cash is the third most preferred payment method, with 22 percent of participants reporting it as their primary way to pay for goods and services. The preference for cash has decreased over the last three years, most recently declining by 2 percentage points from 2017. In place of cash, consumers reported a slight increased preference for other⁶ payment instruments (Figure 5).

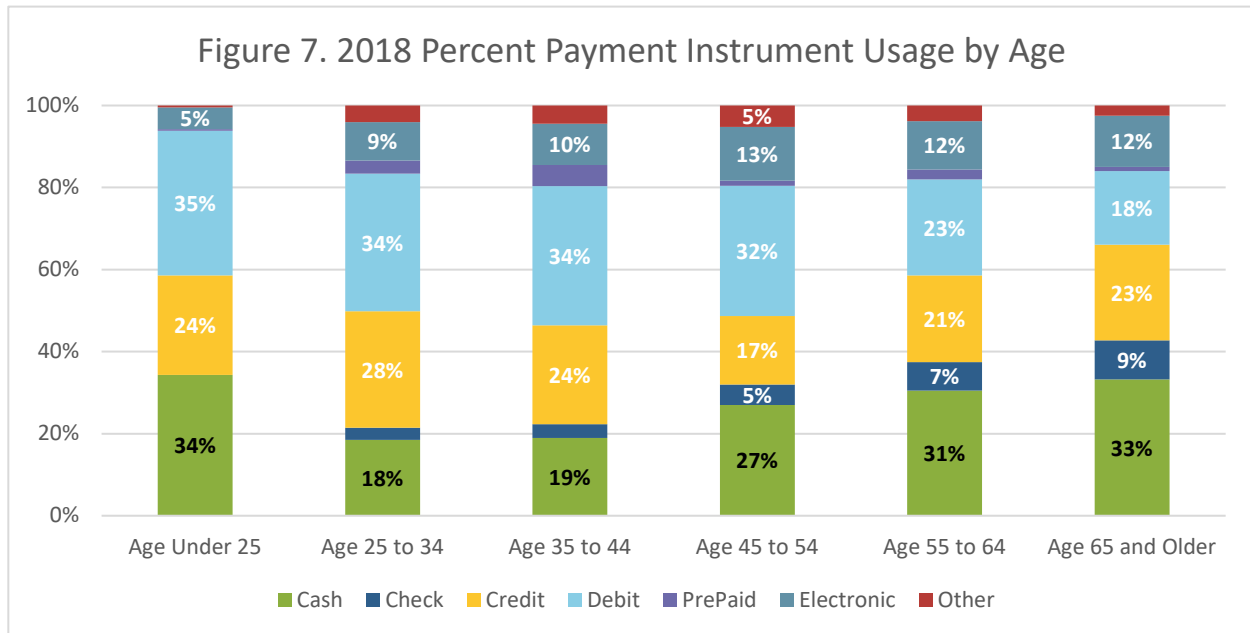


Consumers' stated payment preferences closely align with their payment habits. Diary participants used the payment method they identified as their most preferred for the majority of their payments. Cash-heavy consumers used debit and credit cards as a backup payment at nearly equal rates (Figure 6). Conversely, consumers who preferred to pay with credit or debit cards infrequently substituted between other payment cards and instead used cash more commonly as their backup payment method. This secondary cash use by those preferring cards aligns with what diarists indicated when asked about their backup payment preferences (not shown).

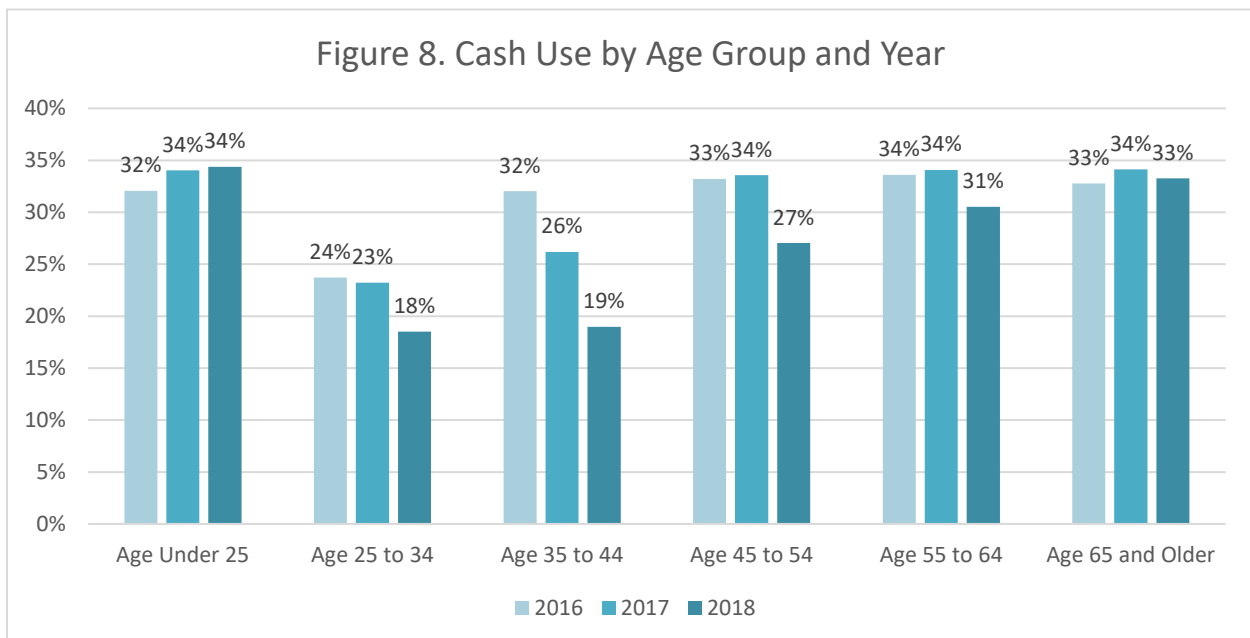


⁶ The definition of "Other" in Figure 5 and figure 13 are different than other references in this paper. "Other" in this case is the sum of all payment shares that are not cash, credit cards, or debit cards, while "Other" in additional instances is the sum of money orders, traveler's checks, transfers, mobile, and direct deposit payments.

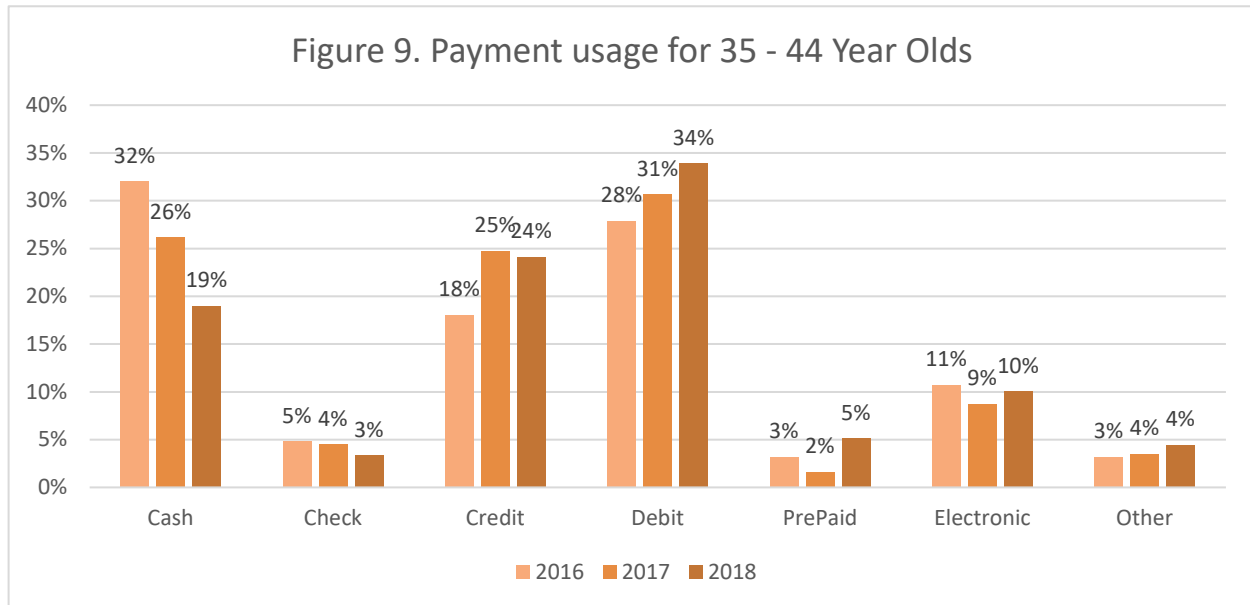
Cash is popular among younger and older age groups



Cash is used among all age groups, but the share of cash use tends to be higher among individuals 18 to 25 and those older than 45 (Figure 7). Even though individuals over 45 tend to use cash at a higher rate, their cash use has declined approximately 3 percentage points, from 33 percent in 2017 to 30 percent in 2018. The largest drop came from the 45 to 55 age group, for which cash use dropped 7 percentage points over the course of a year (Figure 8). A portion of this decrease was the result of increased total payments from 2017 to 2018, but the decrease in cash for this age group was partly offset by an increase in the



share of debit card usage by 5 percentage points, while credit card usage remained consistent. Ages 25 to 44 continue to have the lowest cash use. Specifically, the 35 to 44 age group has shown large declines in



cash usage over the years, declining 13 percentage points since 2016. This age cohort seems to have replaced cash usage primarily with an increase in debit card usage, with credit also contributing (Figure 9).

Section 3. Who is holding cash?

Older individuals and high-income households hold more cash

The amount of cash held by consumers varies significantly based on age and income. Cash holdings are highest among individuals over the age of 65 – a trend that has continued since the Diary began - with the average value held in 2018 increasing to \$104. The amount of cash held by other age groups has fluctuated with no obvious pattern emerging. However, the average value of cash held among all participants has remained steady over the past three years: ranging from \$57-\$59 (Figure 10).

Figure 10. Average Daily Holdings by Age and Year

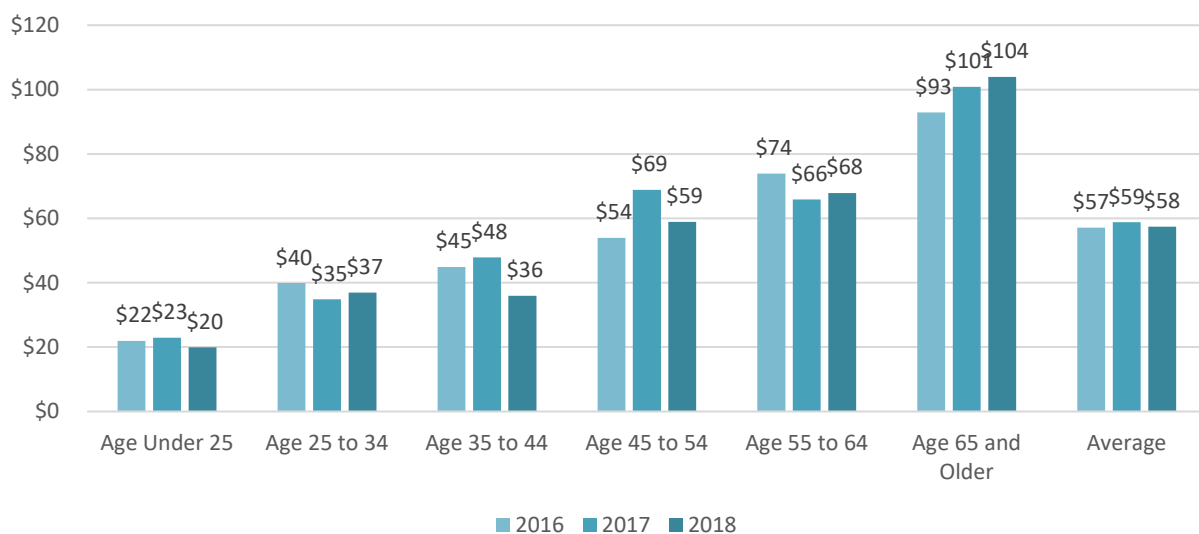
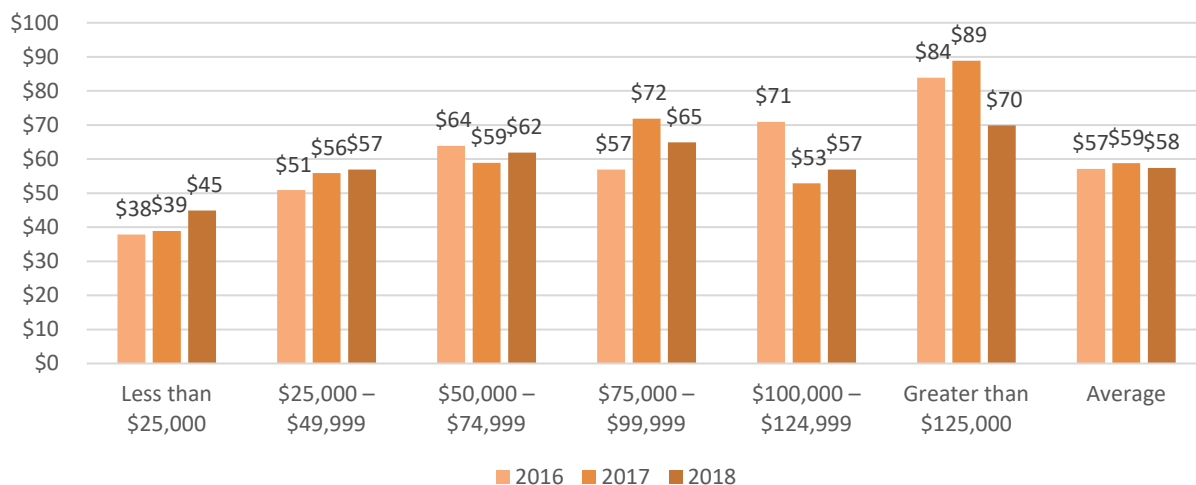


Figure 11. Average Daily Holdings by Household Income and Year

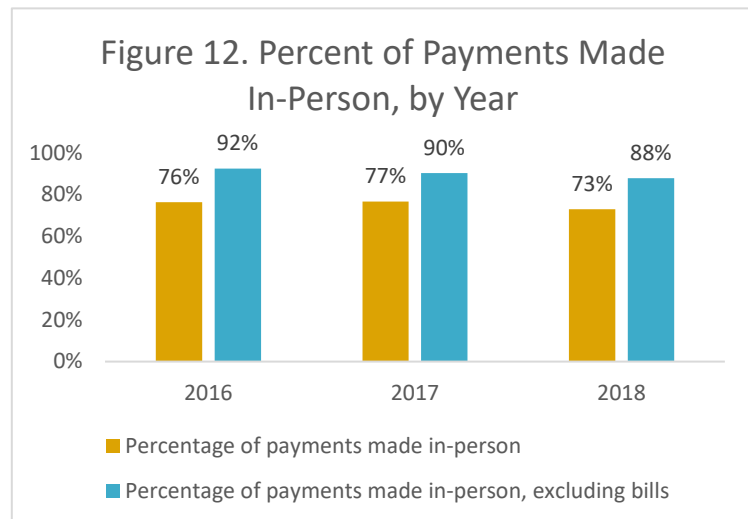


Cash holdings vary by household income as well, though the difference is not as dramatic and the correlation not as strong. While those living in households earning more than \$125,000 hold the highest amount of cash, there was a noticeable decrease in value reported in 2018 (Figure 11). Additionally, the amount of cash held by households earning between \$25,000 and \$49,999 and the amount held by households with significantly higher annual earnings - \$100,000 and \$124,999 – is the same, and is similar to the value held at income levels in between. The most noteworthy pattern for cash holdings by household income is from lower-income households: those that earn less than \$50,000 annually have been increasing the amount of cash they hold for the past three years, a trend not present for individuals in households earning more than \$50,000.

Section 4. Where is cash being used?

Transactions are made in-person and often with cash, though credit use is rising

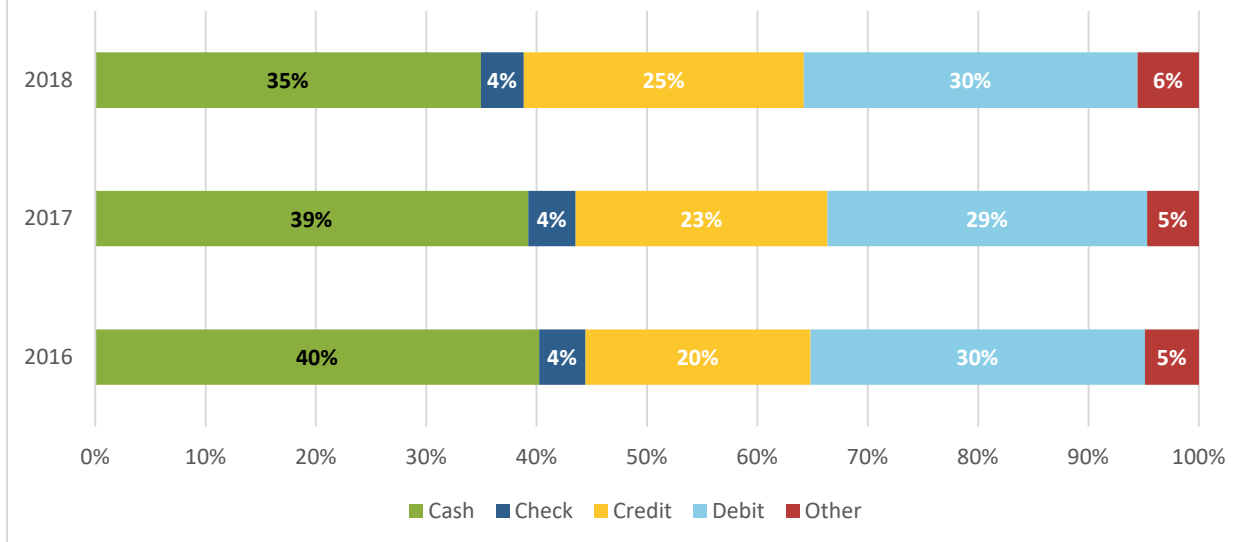
The rise of online shopping and e-commerce has increased the share of transactions that are “not-in-person.” However, 73 percent of all payments continue to be made physically at the point of sale (Figure 12). In addition, approximately 56 percent of not-in-person payments are bill payments. When bill payments are excluded and one looks only at non-bills, the percentage of in-person payments increases to 88 percent. The reason for analyzing data that excludes bill payments is these payments tend to be



higher in value and people are, generally, less likely to use cash for these payments. This non-bill statistic provides insight into the share of point of sale payments that, 10 to 15 years ago, likely would have been made in-person with the option for people to use cash. As more payments are made online/not-in-person, the opportunities to use cash will continue to decrease.

Since the option to use cash is largely confined to in-person payments, cash’s share rises when looking exclusively at in-person transactions. Just as with overall payment shares, use of cash for in-person payments posted a 4 percentage point decline between 2017 and 2018. Even so, cash is the most used payment instrument for in-person payments at 35 percent (Figure 13). In-person credit card usage has grown over the last few years, cutting into cash’s share, while debit card use has remained relatively stable.

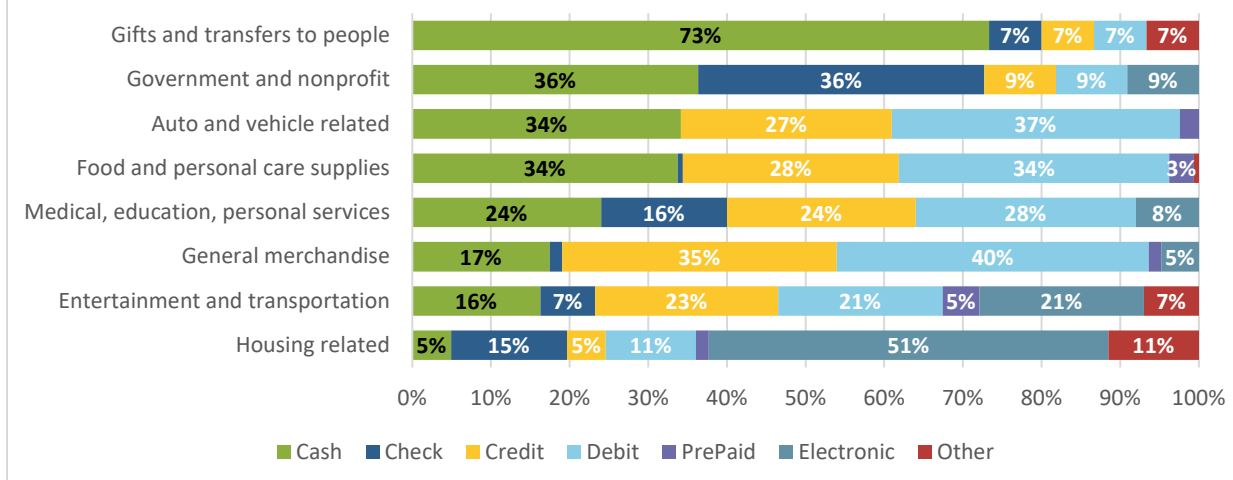
Figure 13. Percent in-person payment use by year



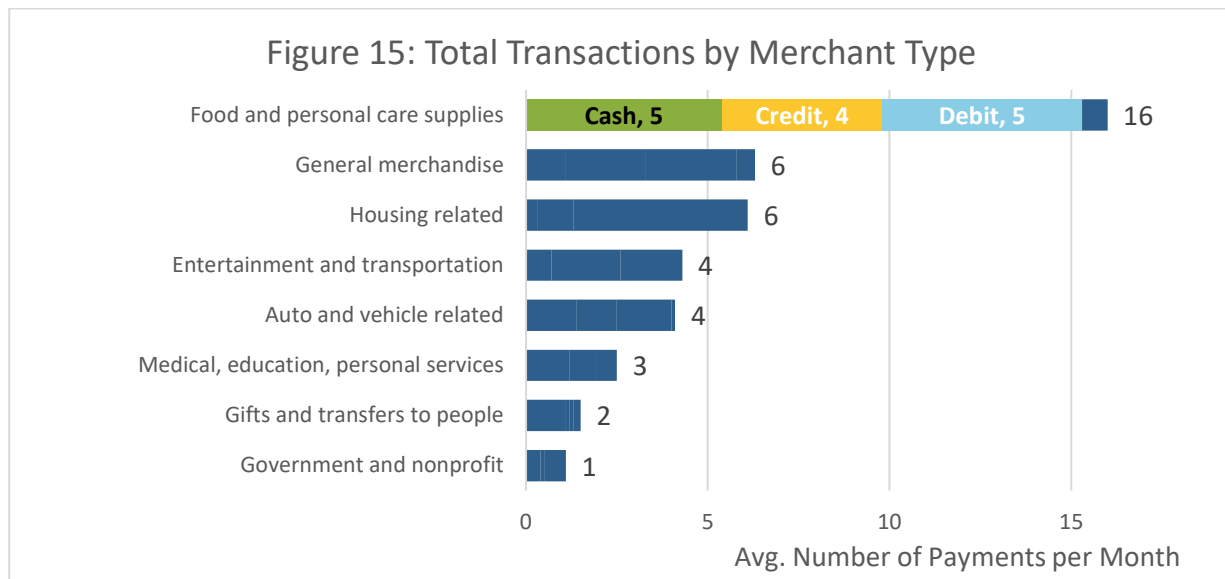
Cash is widely gifted and transferred from person to person

Consumers continue to use cash for a wide variety of payments and across merchant types. Across the different merchant types (Figure 14) consumer's share of cash use was either highest or second highest in five of the eight categories. Cash use was most popular for gifts and person-to-person (P2P) transfers. However, there have been shifts in payment usage within this payment type. The 2018 Diary represents the first year both debit and credit cards were used for gifts and transfers, indicating the popularity of peer-to-peer apps such as Venmo, Apple Pay, Square cash, etc. Electronic payments were used for the majority of housing related purchases, while debit was the most used payment instrument for general merchandise.

Figure 14: 2018 Payment Instrument Use by Merchant Type



While participants used cash at a range of merchant types, the total number of transactions varied dramatically by merchant category. The largest share of payments take place for food and personal care supplies, where consumers make an average of 16 payments each month. Within this merchant category, participants used cash and debit cards most often and to an equal degree, 34 percent each, accounting for approximately five payments per person per month. Because the 16 purchases consumers made in a month for food and personal care supplies is more than double the purchases they made for general merchandise, cash use on food and personal care expenditures is a key component of overall cash usage (Figure 15).



Conclusion

Even as new payment methods continue to emerge, consumers tend to use the established payment methods of cash, debit cards, and credit cards for daily spending. Although the 2018 Diary study marks the first time cash was not the most used payment instrument, it continues to be used widely across different demographic groups, especially for small-value purchases. For those preferring to use debit and credit cards, cash remains the second most frequently used payment instrument accounting for 20 percent of their payments.

Although consumers are paying with cash less often, the amount of cash they hold on a regular basis has remained consistent, ranging from \$57 to \$59. Cash use continues to be popular among younger and older age groups, who use cash for approximately one third of payments. Cash is also the most used payment instrument for transactions that take place in-person, which is where almost three-quarters of all payments take place and where nearly 90 percent of non-bill payments are conducted.

The 2019 Diary of Consumer Payment Choice highlights the important role cash plays in the present economy, while also illustrating the significant role of competing payment methods and emerging technologies.

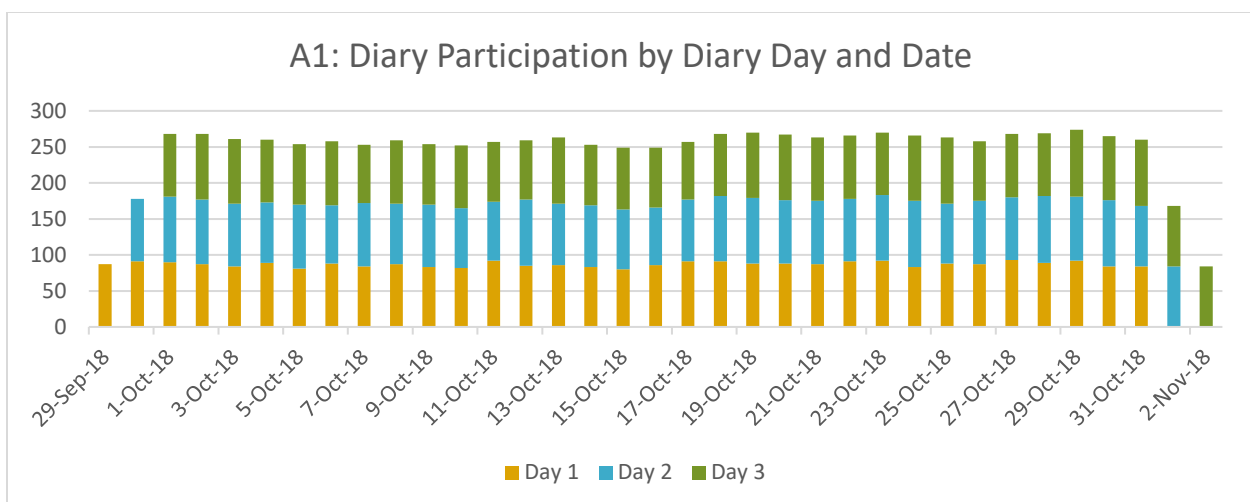
Appendix

Diary of Consumer Payment Choice

The Federal Reserve’s national Cash Product Office (CPO) uses data from the Diary of Consumer Payment Choice (Diary) to understand consumer cash use and anticipate its ongoing role in the payments landscape. Developed by the Federal Reserve Bank of Boston’s Consumer Payment Research Center (CPRC) and currently managed by the Retail Payments Risk Forum at the Federal Reserve Bank of Atlanta, the Diary includes a unique, nationally representative survey of consumer shopping and payment decisions administered by the University of Southern California (USC) Dornsife Center for Economic and Social Research. USC’s Understanding America Study panel comprises approximately 6,000 individuals from across the United States, of which 2,873 panelists completed the 2018 Diary.

By tracking consumer payment transactions and preferences during the month of October every year, the CPO compares cash with other payment instruments, such as debit and credit cards, checks, and electronic options. Diary participants also report the amount of cash on-hand after each survey day, as well as whether they deposited or withdrew cash throughout the day. The CPO analyzes the Diary data, including the impact of age and income on an individual’s payment behavior and preferences. This detail of the stock and flow of cash at an individual level provides insight into how consumers use cash.

To ensure a nationally representative sample, responses are weighted to match national population estimates based on the Census Bureau’s Current Population Survey. The Diary is administered throughout the month of October, which was selected as a “typical month” to minimize seasonality effects in consumer spending patterns. Participants were each assigned a three day period within the month, with some individuals assigned a starting date in late September and others assigned to finish in early November. As Figure A1 shows, this ensures a near uniform distribution of participants for each October day. For a more detailed description of the Diary of Consumer Payment Choice, see Angrisani, Foster, and Hitczenko (2017b); Angrisani, Foster, and Hitczenko (2018); Greene, Schuh, and Stavins (2018); Greene and Schuh (2017); Greene, O’Brien, and Schuh (2017); and Schuh (2017).



About the Cash Product Office

As the nation's central bank, the Federal Reserve ensures that cash is available when and where it is needed, including in times of crisis and business disruption, by providing FedCash® Services to depository institutions and, through them, to the general public. In fulfilling this role, the Fed's primary responsibility is to maintain public confidence in the integrity and availability of U.S. currency.

The Federal Reserve System's Cash Product Office (CPO) provides strategic leadership for this key function by formulating and implementing service level policies, operational guidance, and technology strategies for U.S. currency and coin services provided by Federal Reserve Banks nationally and internationally. In addition to guiding policies and procedures, the CPO establishes budget guidance for FedCash® Services, provides support for Federal Reserve currency and coin inventory management, and supports business continuity planning at the supply chain level. It also conducts market research and works directly with financial institutions and retailers to analyze trends in cash usage.

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