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Research Data Report

2022 Survey and Diary of Consumer Payment Choice: Summary Results

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Abstract

In October 2022, US consumers reported making 39 payments per month on average, unchanged from 2021 when adjusted for questionnaire changes. As a share of all payments by number, most payments were by credit card (31 percent) or debit card (29 percent). By value, 43 percent of payments value was made electronically from a bank account using one of two ACH methods and 35 percent were made using a card (debit, credit, or prepaid).

For 2022, the Survey and Diary of Consumer Payment Choice found the following:

- The total value of payments per consumer per month was $5,029.
- Eighty-three percent of consumers reported that they had used cash in the past 30 days, down from 85 percent in 2021.
- Two-thirds of consumers had used an electronic way to pay from a bank account in the past 30 days, the same as in 2021.
- The share of purchases made remotely remained about 20 percent in 2022, the same as in 2021 and 2020 and double the share of remote purchases in 2019.
- Two-thirds of consumers reported that they had adopted an online payment account such as PayPal, Venmo, or Zelle.
- Almost half of consumers reported that they had been offered to make a purchase using buy now, pay later in the prior 30 days, up from one-third in 2021.
- Ownership of crypto assets was stable at about 10 percent of US consumers.

In 2022, a questionnaire change was introduced to help respondents remember to report all the payments they make. This report includes a description of this change and its effect. Interactive charts, showing payment use by transaction type and dollar value, card and nonbank account adoption by income, and recent use of a payment instrument by income are on the Atlanta Fed website, along with data for download, questionnaires, codebooks, and other resources for data users.

Keywords: cash, checks, checking accounts, debit cards, credit cards, prepaid cards, electronic payments, payment preferences, unbanked, Survey of Consumer Payment Choice, Diary of Consumer Payment Choice

JEL Classifications: D12, D14, E42

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This report, which may be revised, is available on the Atlanta Fed website.

Acknowledgments appear on the following page. The authors are responsible for any errors. The views expressed in this paper are those of the authors. They do not necessarily reflect the views of the Federal Reserve Banks of Atlanta or Boston, other Federal Reserve Banks, or the Board of Governors of the Federal Reserve System.

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Introduction

This paper reports the results of the 2022 Survey and Diary of Consumer Payment Choice (SDCPC), a survey of US consumers conducted annually in October by the Federal Reserve Banks of Atlanta, Boston, and San Francisco. It reports the number, dollar value, and shares of payments by transaction type and by payment instrument based on data on individual payments from daily records kept by consumers. It also reports consumers' adoption of bank and nonbank payment accounts, use of payment instruments, rankings of instruments for security and other characteristics, and preference for using payment instruments for specific types of transactions (bills, online purchases, and in-person purchases).

In October 2022, US consumers reported making 39 payments per month on average, constant from 2021 when adjusted for questionnaire changes. As a share of all payments by number, most payments were by credit card (31 percent) or debit card (29 percent). By value, 43 percent of payments value was made electronically from a bank account using one of two ACH methods and 35 percent were made using a card (debit, credit, or prepaid).

For 2022, the Survey and Diary of Consumer Payment Choice found the following:

- The total value of payments per consumer per month was $5,029.
- Eighty-three percent of consumers reported that they had used cash in the past 30 days, down from 85 percent in 2021.
- Two-thirds of consumers had used an electronic way to pay from a bank account in the past 30 days, the same as in 2021.
- The share of purchases made remotely remained about 20 percent in 2022, the same as in 2021 and 2020 and double the share of remote purchases in 2019, giving some indication that changes consumers made early in the pandemic have persisted.
- Two-thirds of consumers reported that they had adopted an online payment account, for example, PayPal, Venmo, or Zelle.
- Almost half of consumers reported that they had been offered to make a purchase using buy now, pay later in the prior 30 days, up from one-third in 2021.
- Ownership of crypto assets was stable at about 10 percent of US consumers.

The Survey and Diary of Consumer Payment Choice aims to provide a comprehensive understanding of the payment behavior of US consumers. It is comprised of the Survey of Consumer Payment Choice (SCPC), the 15th in a series of surveys that ask consumers to assess characteristics of payment instruments and to report their adoption of payment instruments, and the Diary of Consumer Payment Choice (DCPC), conducted in 2012 and annually since 2015, in which consumers record details of specific transactions (including dollar values) and their payment choices.[1]

[1] For reports on earlier versions of the SCPC, see Foster et al. (2009, 2011); Foster, Schuh, and Zhang (2013); Schuh and Stavins (2014, 2015); Greene, Schuh, and Stavins (2016, 2017); Greene and Stavins (2018b); and Foster, Greene, and Stavins (2019, 2020, 2021). For the DCPC, see Briglevics and Shy (2012); Shy (2013); Shy and Stavins

For purposes of this research, payment instruments are paper (cash, check, money order), cards (debit, credit, prepaid), and electronic via the ACH system, which includes bank account number payment (BANP, defined in the survey questionnaire as "You pay by giving your bank's number [sometimes called a "routing number"] and your account number") and online banking bill payment (OBBP, defined in the survey questionnaire as "a payment made from your bank's online banking website or mobile app"). Transaction types are bills, purchases, and person-to-person (P2P) payments, made in person or remotely. This report for 2022 focuses on the number and shares of payments by transaction type and payment instrument as well as on changes from 2021. A total of 4,761 respondents completed the 2022 survey and diary.

Summary of tables

The remainder of this paper comprises two parts: a summary of the key results and 20 tables showing detailed findings related to consumers' payment choices. The report also summarizes consumer activity related to banking, consumer assessments of payment characteristics, and a rich set of consumer and household demographic characteristics.

- Adoption of accounts and payment instruments: Tables 1–4
- Use of payment instruments in past 30 days: Table 5
- Number and dollar value of payments by type of payment instrument, transaction type, location, and merchant payee: Tables 6–13
- Cash holdings: Tables 14–15
- Loss, assessments of payment instrument characteristics, and preferences: Tables 16–18
- Household characteristics: Tables 19–20

Based on cognitive interviews with respondents, the 2022 SDCPC questionnaire was changed to include a checklist of the prior day's payments on diary reporting days 2 and 3. Then consumers were asked to record any payments they had previously omitted. This change affected the total number and value of payments and trickled down to the subtotals by payment instrument by number and value. Allowing after-the-day reporting of payments for diary days 1 and 2 increased the total number of reported payments by about four per month Researchers using the data set may choose whether to include or exclude these payments reported on the "day after" from their analysis.

The tables in this report include payments reported the day after, so readers should exercise caution when interpreting estimates of changes in payment behavior from 2021 to 2022. Also, for year-to-year comparability, transactions with value greater than $20,000 are omitted from the calculations used to make tables 6 through 13. This results in four payment transactions being removed from analysis, while more than 18,000 payment transactions remain in the analysis data set. All transactions are included in the data set posted on the Atlanta Fed website, so data users may choose to identify outliers differently. Estimates reported here may

(2014); Schuh (2017); Greene and Schuh (2017); Greene, O'Brien, and Schuh (2017); Greene and Stavins (2018a, 2019, 2020a, 2021). For the 2021 combined report, see Foster, Greene, and Stavins (2022).

be revised in the future because of additional process improvement or insights from new data. Small discrepancies in the estimates may exist throughout the paper due to rounding.

Interactive charts online

Building on the work in Connolly and Stavins (2015), charts posted online with this paper enable users to examine payment instrument use in the past 30 days and adoption of cards and nonbank payment accounts by four household income categories (less than $35,000, $35,000 to $75,000, $75,000 to $125,000, $125,000 or more) and by six age groupings beginning at 18. Other interactive charts depict payment instrument use by transaction type and dollar value ranges. Other research using the SDCPC data investigates payments behavior and demographic characteristics—for example, Greene and Shy (2022).

Online data and user guides

All SDCPC data are available free to the public at the Atlanta Fed website.[2] Survey data are available for all years, 2008 through 2020, and consolidated with diary data in 2021 and 2022. Diary data are for 2012 and 2015 through 2020 (consolidated with survey data for 2021 and 2022). Public-use microdata sets containing responses to all questions are available in CSV, R, and Stata formats and include the following:

- Individual-level data sets: "Survey-style" questions (questions that do not ask for specific point-in-time information). Includes bank account adoption, assessments, preferences, income, and demographics.
- Day-level data sets: Questions asked on diary days 1, 2, and 3. Includes cash holdings in wallet and storage and the payment instruments the respondent carried or had access to that day.
- Transaction-level data sets: Date, time, dollar value, payment instrument, location, device used, merchant for all transactions reported.

See the 2022 SDCPC Data Codebook for more information about each data set, including detailed descriptions of every variable in all three data sets.

Additional resources posted for data users include the following:

- Tables in pdf and Excel format (including tables of confidence intervals)
- Online questionnaires
- Definitions of important survey concepts
- Data codebook explaining structure of the data set and including definitions of all variables
- Research data reports
- Interactive charts

[2] https://www.atlantafed.org/banking-and-payments/consumer-payments.aspx

Account and payment instrument adoption in 2022

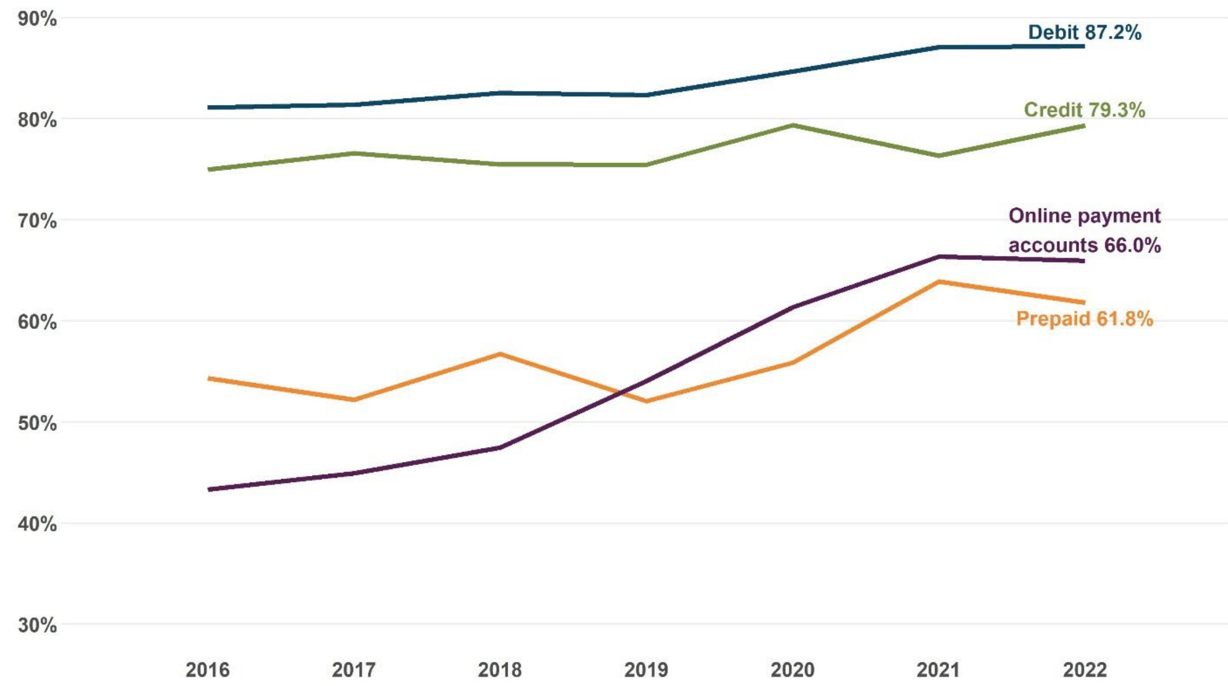
Payment behavior is measured as a two-step process. The consumer must first "adopt"—that is, own or have set up for use—the payment instrument to be able to use it. Adopting a bank account is a prerequisite to adopting several payment instruments—for example, a debit card or online banking bill pay. Bank account adoption has been high—always greater than 90 percent of US consumers—in each of the 15 years of the SCPC. In 2022, 94 percent of US consumers had a bank account, unchanged from 2021. Adoption by account type was also unchanged from 2021: 93 percent of consumers had a checking account and 75 percent had a savings account (table 1).

Of consumers with a bank account, three-quarters reported not paying any bank account fees. Five percent of bank account adopters paid two or more types of fees (table 1). The most common fees paid were ATM fees, paid by one in five bank account adopters, and overdraft fees, paid by one in 10.[3] Among the 5 percent of US consumers without a bank account, just over one-third said they did not like dealing with banks and almost another third said they didn't write enough checks to make it worthwhile (table 2). Fifteen percent cited reasons related to cost (minimum balance required, fees, service charges).

From 2019 to 2020, there were statistically significant increases in the shares of consumers adopting online payment accounts—that is, accounts like PayPal, Venmo, or Zelle—that could be used to effect physical distancing or remote payments during the COVID-19 pandemic. That growth continued but at a slower rate in 2021. The share remained steady in 2022, with two-thirds of consumers having used an online payment account to make a purchase or pay another person in the prior 12 months, indicating again that some changes consumers made early in the pandemic have persisted. The percentage of consumers adopting PayPal declined 5 percentage points, a statistically significant change. There was no change to the adoption of other accounts. Adoption of payment cards was the highest recorded since 2015, with 98 percent of consumers owning a debit, credit, or prepaid card—more than the share of consumers reporting that they had a bank account and up 0.5 percentage points from 2021. Consumers adopting credit cards returned to 79 percent, the same share as in 2020. While the dip in credit card adoption from 2020 to 2021 was statistically significant, as was the increase from 2021 to 2022, the change in percentage of consumers adopting credit cards from 2020 to 2022 was not statistically significant. Shares of consumers adopting debit cards were stable at 87 percent and the share of consumers adopting prepaid cards fell back slightly to 62 percent (not statistically significant). Figure 1 shows the percentage shares of consumers adopting cards and online payment accounts.

[3] In 2020 and earlier, fees questions asked about overdrafts only. For 2021, the data collection was expanded to include other bank account fees and credit card fees (table 4).

Figure 1: Shares of US consumers who adopted payment cards and online payment accounts



Source: 2016–22 SDCPC

Half of consumers had one or two credit cards, and 20 percent had five or more. Three-quarters of credit card adopters reported that they did not pay any credit card fees (table 4), unchanged from 2021. Compared to 2020 and 2021, shares of consumers carrying an unpaid credit card balance were statistically unchanged at about half of consumers (table 4). In 2022, two-thirds of consumers reported their unpaid balance was "much lower," "lower," or "about the same" compared to October 2021, unchanged from those reporting in these categories in 2021. Of credit card adopters with an unpaid balance ("revolvers"), the median unpaid balance increased from $1,900 in 2021 to $2,700 (up 42 percent) and the mean increased from $4,848 to $5,539 in 2022 (up 14 percent).

The share of consumers with paper checks on hand was unchanged at three-quarters of consumers.

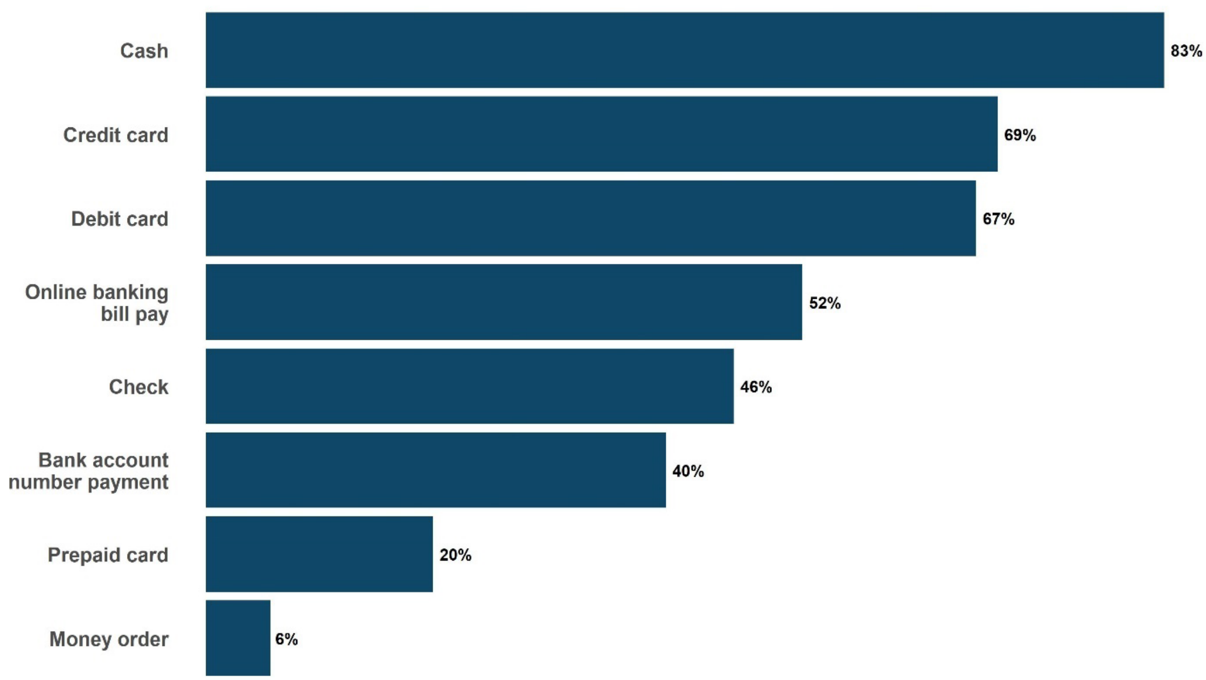
Use of payment instruments

Most consumers have a wide range of payment instruments at their disposal and use them regularly. Shares of consumers using a payment instrument in the past 30 days were flat or increased by one or two percentage points from 2021. Changes in shares of cash, credit cards, and prepaid cards were statistically significant; no other payment method changes in shares were statistically significant (figure 2 and table 5).

Cash is used more extensively than any other payment instrument. In 2022, 83 percent of consumers reported that they had used cash to pay at least once in the past 30 days, down from 85 percent in 2021 (table 5). Also in 2022, 94 percent of consumers reported they had used cash to pay at least once in the past 30 days and/or held some cash on their person or stored elsewhere (table 3).

Almost 70 percent used debit and credit cards; 93 percent of consumers had used at least one type of card (credit, debit, or prepaid) in the past 30 days. More consumers used online banking bill pay than used a paper check. Prepaid cards and money orders were used by the smallest shares of consumers.

Figure 2: Shares of US consumers using a payment instrument in the past 30 days, 2022



Source: 2022 SDCPC

Number and value of payments

In 2022, US consumers made on average 39 payments for the month,[4] or about one-and-one-quarter payments per day (table A and table 6). On any given day, an average of 40 percent of consumers reported making zero payments (compared to 46 percent in 2021 and perhaps affected by survey changes). US consumers made on average $5,029 worth of payments for

[4] All the data reported in this paper refer to October 2022, unless specified otherwise.

the month.[5] Dividing the value of payments by the number of payments yields an average value per consumer payment of $130 (able 7).

Table A: Average number of payments in October

	2016	2017	2018	2019	2020	2021	2022
Average number of payments	45.9	41.0	43.3	38.7	34.8	35.8	38.8
95% confidence interval	[44.2, 47.6]	[39.1, 42.9]	[41.2, 45.4]	[36.8, 40.6]	[32.6, 36.9]	[34.7, 36.9]	[37.7, 39.9]

Source: 2022 Survey/Diary of Consumer Payment Choice, Table 6, and Table 6 Confidence Intervals

The number of consumer payments increased about 8 percent (that is, by about three payments) compared with October 2021. As noted above, that increase could be at least partially due to questionnaire changes. The total value of payments increased by $202 (4 percent, not statistically significant) to $5,029. The average transaction dollar value was about the same, $130 in 2022 compared to $135 in 2021 (table 7).

Number and value of payments by instrument

US consumers made 63 percent of payments with payment cards (debit, credit, and prepaid): 24 payments in October 2022. They used paper instruments (cash, checks, and money orders) for 22 percent of payments, eight payments and electronic methods for 13 percent, five payments (table 1).

Although cards were used more frequently than electronic payments, the total value of payments made electronically exceeded that of payments made by cards: $2,163 compared to $1,767. By value, payments using electronic instruments were 43 percent of the monthly total, compared to 35 percent for cards and 17 percent for paper instruments (table 6).

Debit cards, credit cards, and cash were used for almost 80 percent of payments, with credit cards exceeding debit cards for most payments per month (table 6). This is a change from 2021, when debit cards were the most frequently used payment instrument. In 2022, 31 percent of payments were with credit cards, 29 percent with debit cards, and 17 percent with cash.

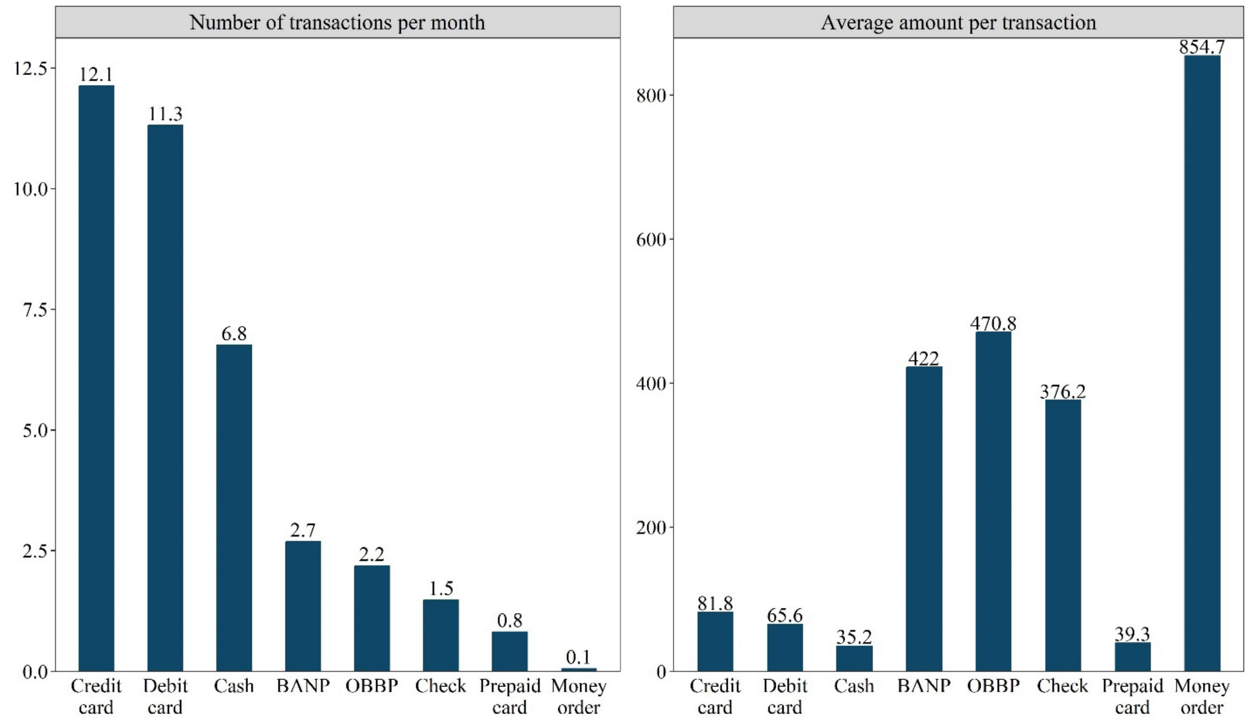
The distribution by value is different. Cash, debit, and credit payments accounted for about 40 percent of the value of payments: 20 percent in credit cards, 15 percent in debit cards, and 5 percent in cash (table 6). The difference between the distribution by volume and by value reflects consumers' tendency to use cash and payment cards more often, but for relatively

[5] Consumer payments are not the same as consumer (or household) expenditures, so the estimated value of consumer payments (and its growth rate) should not be compared with data on expenditures. Consumer payments include transfers between accounts—for example, savings or investment—as well as tax payments, which are excluded from consumer expenditures. Consumer payments omit any payments made by others on behalf of consumers—for example, health costs paid by insurance.

low-value payments, and their tendency to use checks and electronic payments less often, but for relatively high-value payments (figures 3 and 4).

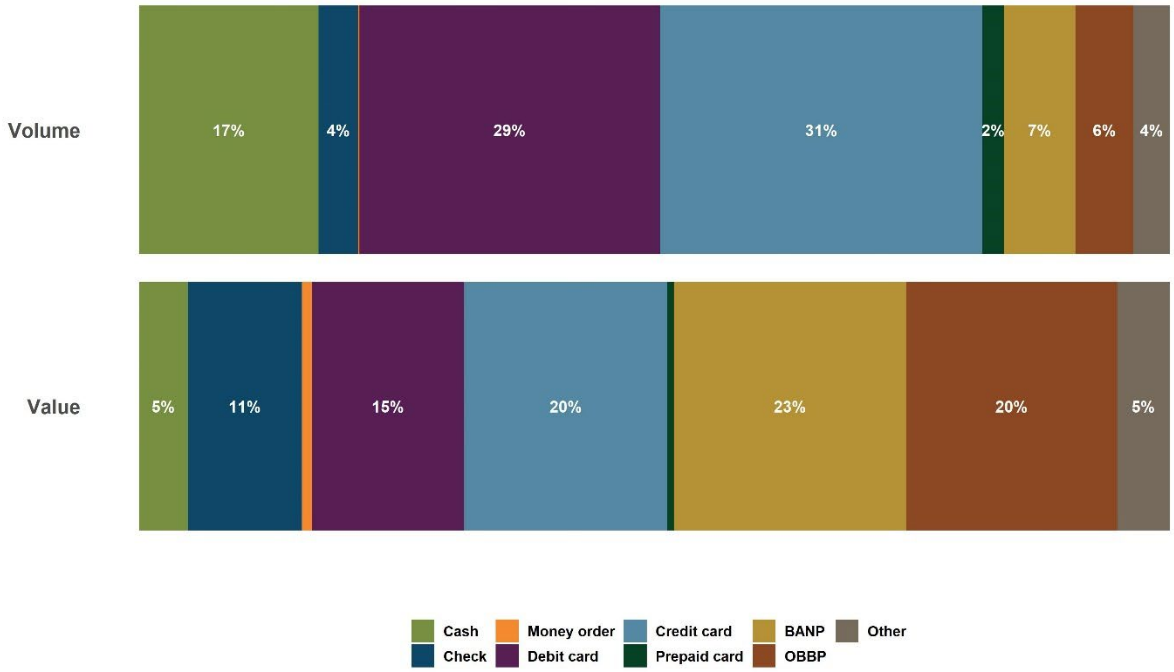
For example, US consumers on average made fewer electronic-instrument payments than cash payments (five compared with seven), but they used electronic payments for transactions that were higher in average value than cash transactions ($444 compared with $35). The average value when using payment cards is between the two, at $73 (tables 6 and 7).

Figure 3: Number and average value of payments by instrument, October 2022



Note: There were fewer than 25 money order payments recorded in the 2022 diary. Taking the average of a small number of observations can allow outliers to have outsize influence on the mean. In the 2022 diary, one money order payment was for greater than $6,100, and the remaining observations were for less than $1,200.
Source: 2022 SDCPC, tables 6 and 7

Figure 4: Percentage shares of payments by number and value, October 2022



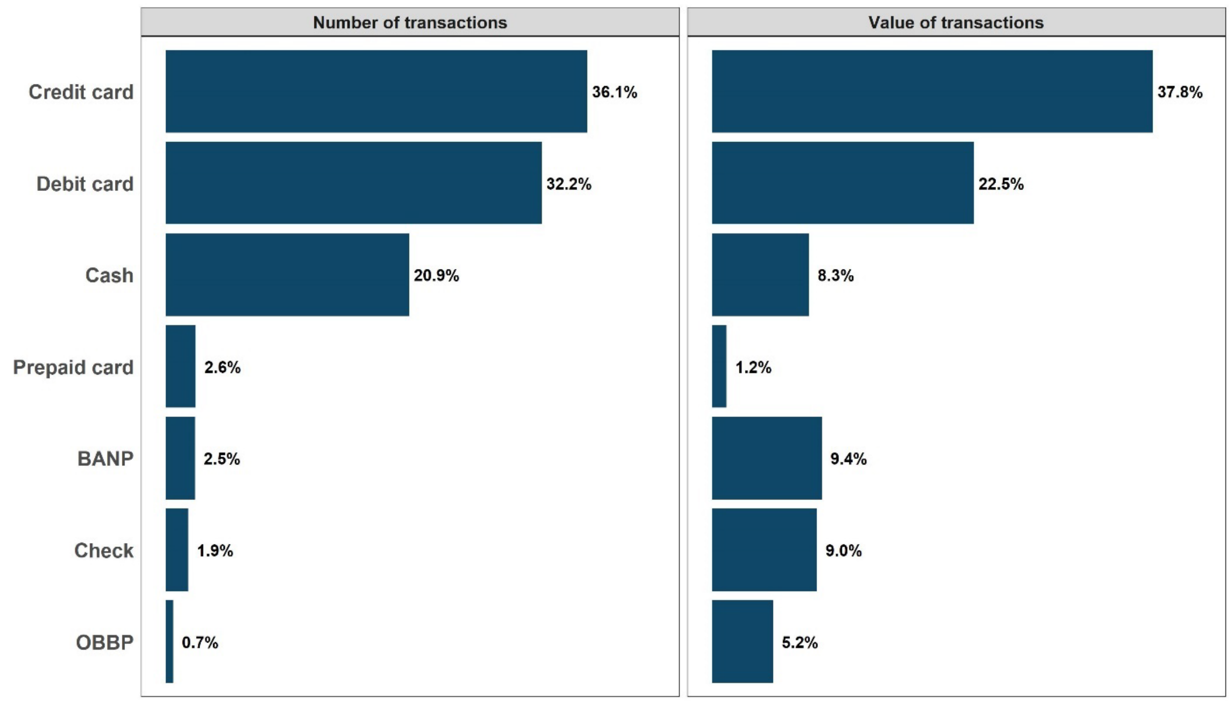
Source: 2022 SDCPC, table 5

Payments by transaction type: Purchases and bills

US consumers on average made 31 purchases and eight bill payments per month (tables 9 and 11). Purchases (both online and in person and including P2P) accounted for almost 80 percent of all payments by number in 2022. All the increase in the total number of payments from 2021 to 2022 can be attributed to changes in the number of purchases, which increased by about three purchases (table 9). As noted above, questionnaire changes contributed to this change. Tables 9a and 9b include goods and services bought in person and online as well as payments to another person—for example, as a gift or allowance. Purchases were 79 percent of payment by number and 40 percent by value. The average dollar value of purchases was $65.

Credit card was the most frequently used payment method for purchases, accounting for 36 percent of purchases by number, followed by debit cards (32 percent) (figure 7). Cash was used for 21 percent of purchases. In terms of dollar value, 62 percent of all purchases were with cards, 38 percent with credit cards and 23 percent with debit cards. The dollar-value relationship to payment instrument choice described above pertains here: average dollar values for cash, debit card, and credit card purchases were, respectively and in ascending order, $26, $45, and $68 (table 9).

Figure 5: Shares of payment instrument use for purchases, by number and value

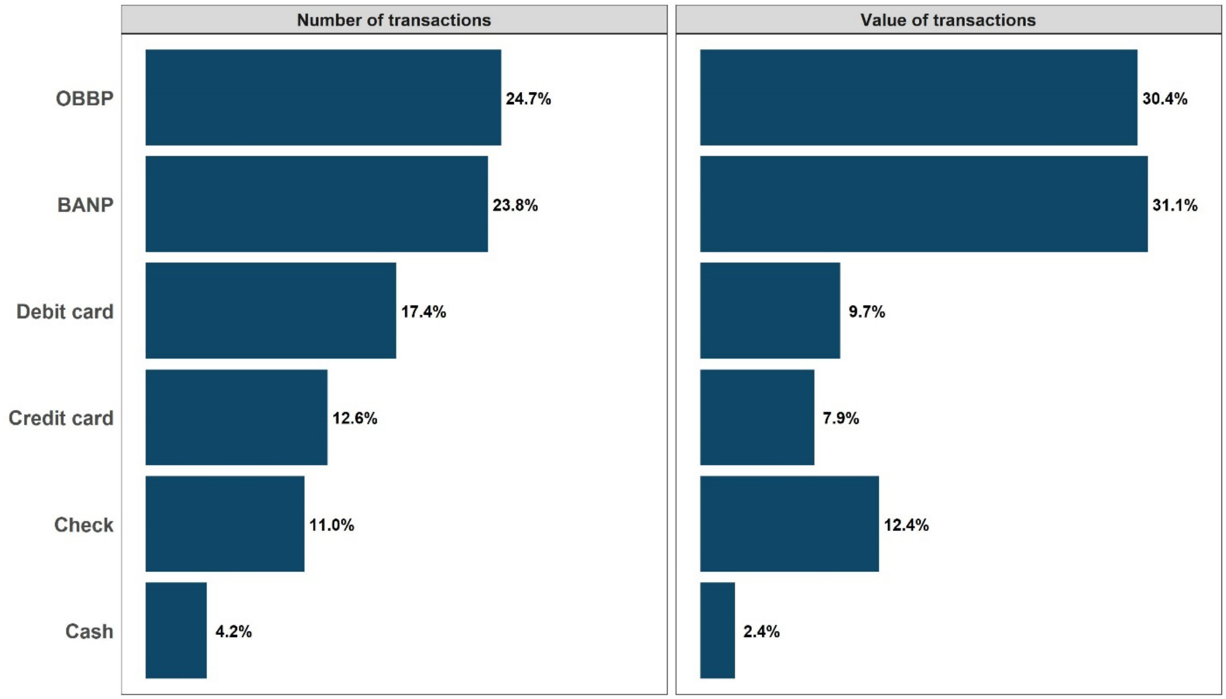


Note: Shares do not sum to 100 because less-common payment instruments are omitted.
Source: 2022 SDCPC

About 19 percent of purchases were made remotely (table 10), similar to the shares in 2020 and 2021. Of remote purchases, three-quarters by number and half by value were made with cards.

In 2022, bill payments accounted for 21 percent of all payments by number and 60 percent by value. Electronic payment methods and debit cards are used most for bill pay: 24 percent of bills by number were paid by BANP, 25 percent by OBBP, and 17 percent by debit cards, totaling two-thirds of all bill payments for the three methods (table 11 and figure 8). Thirty percent of bills were paid with cards (credit, debit, or prepaid). Checks were 11 percent of bill payments. In 2020, 50 percent of consumers reported they had used a check at least once in the past 30 days. That share was 46 percent in 2022. When asked how they prefer to pay bills, 45 percent of consumers chose a card, 37 percent chose electronic methods (BANP or OBBP), and 8 percent chose checks (table 18).

Figure 6: Shares of payment instrument use for bills, by number and value



Note: Shares do not sum to 100 because less common payment instruments are omitted.
Source: 2022 SDCPC

In contrast to purchases, 85 percent of bill payments by both number and value were made remotely, either online or by mail (table 12). Three in 10 remote bill payments were made with cards, representing almost 20 percent of remote bill pay value. More than half of remote bill payments were made electronically, by BANP or OBBP, representing 70 percent of remote bill pay value.

Payments by payees

Of the average 39 payments per month that US consumers reported, 13 were for everyday purchases (groceries, pharmacies, other stores, and online shopping) and eight were for food consumed away from home (including restaurants, bars, and fast food). Consumers made on average four payments at gas stations, and three were related to financial services companies, including insurance, IRA and mutual funds, and credit card, mortgage, and other loan payments (table 13).

The remaining payments were for services related to housing (rent, utilities, and communications), for medical and education expenses, for other services and recreation, and for charitable donations. Consumers made two payments per month to another person, defined in the questionnaire as “friends, family, coworkers, or a person you pay for goods or services.”

Shopping (including grocery stores, convenience stores, pharmacies, and other physical stores, as well as online shopping) represented one-third of all payments by number and 17 percent by value (table 13). Similarly, the purchase of food consumed away from home was 21 percent of payments by number and just 4 percent by value, reflecting the relatively low average dollar value of such payments. In contrast, payments to financial services companies, which include loan repayments, transfers to another account, and purchases of financial assets, are 9 percent of all payments by number and 40 percent by value, the greatest share of any payee type. Most payments to financial institutions are credit card bill payments (table B), and loan payments including credit card bills are more than 86 percent of payments by value.

Table B: By number and value, most payments to financial institutions are for credit card bills

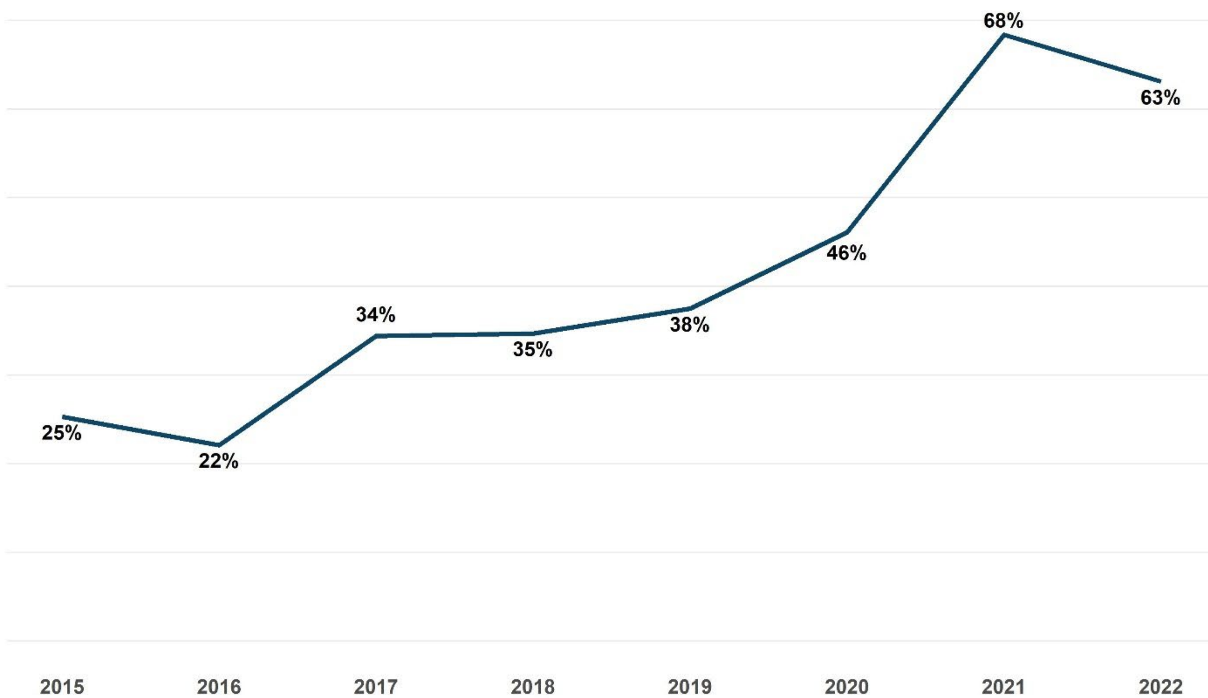
	Share, #	Share, $
Credit card bill	48.1%	50.4%
Loan payment	24.6%	35.8%
Mortgage	11.1%	24.5%
Other loan	13.5%	11.3%
Other (remittance, fees, transfer, investment, etc.)	27.3%	13.7%

Source: 2022 SDCPC

Mobile payments

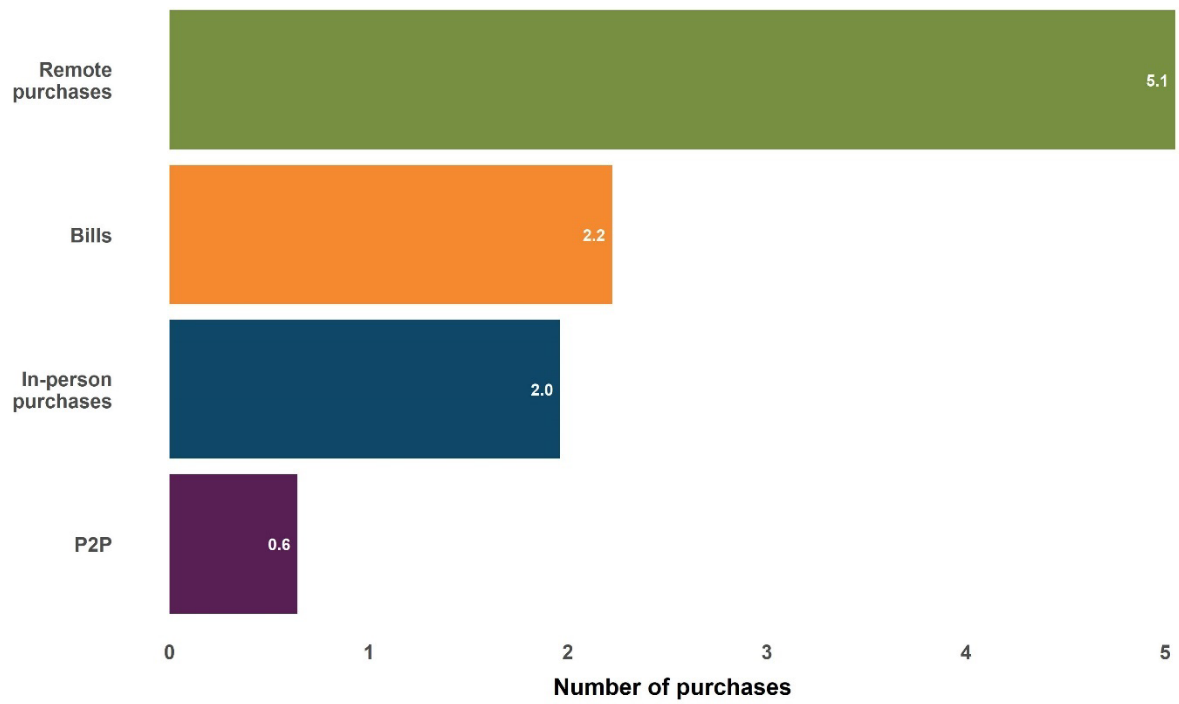
About two-thirds of consumers made at least one payment using a phone or tablet in the 12 months ending in October 2022, in line with the share in 2021 (figure 7). Most mobile payments were for purchases. Of the 9.9 mobile payments reported in 2022 on average, 7.1 were for purchases, 2.2 for bills, and 0.6 to pay another person (figure 8). Half of mobile payments were for remote purchases.

Figure 7: Shares of consumers making at least one mobile or tablet payment, 12 months ending in October



Source: 2022 SDCPC

Figure 8: Number of mobile payments, October 2022



Source: SDCPC

Cash holdings

The DCPC obtains data on consumers' holdings of cash on their person (pocket, purse, or wallet) and stored elsewhere (home, car, office, and such). The data on cash holdings were collected every night during the diary recording period; the data on stored cash were collected on the first and last nights. For both measures, respondents were asked to count the exact number of bills held by denomination, and the online questionnaire automatically summed the dollar values of cash holdings by denomination and in total. Respondents did not report holdings of coins.

In 2020, cash holdings by US consumers increased notably, from an average of $60 on person in October 2019 to $76 in 2020. Compared to cash holdings in 2019, cash holdings in 2021 and 2022 remained elevated, $69 in 2021 and $73 in 2022. By value, 45 percent of the cash on person was in the form of $20 bills and one-third was in $100 bills (table 14). About 78 percent of consumers carried at least $1 at the beginning of at least one of their diary days.

Fewer consumers store cash elsewhere; 45 percent of consumers had at least $1 stored elsewhere. For all consumers, the average value of cash stored elsewhere was $418, up from $408 (table 15). Among those with at least $1, the average value was $937. Cubides and O'Brien (2023) further describes cash holdings.

Fraud, assessments, and preferences

Shares of consumers reporting identify theft or fraudulent use of payment instruments, which increased markedly from 2020 to 2021, were stable in 2022. In 2021 and 2022, 7 percent of consumers said they had been a victim of identity theft, compared to 4 percent in 2020. The share of consumers reporting credit card theft or fraud remained at 10 percent in 2022, after tripling in 2021. The share of consumers reporting debit card theft or fraud, which had doubled in 2021, remained at 8 percent in 2022. Check fraud was comparatively rare and unchanged.

Despite the experience of credit card fraud, consumers rank credit cards as superior to all other payment instruments for security, defined in the survey questionnaire as “security against permanent financial loss or unwanted disclosure of personal information” (table 17). They have ranked credit cards best for security in all of the past six years. Online banking bill pay is ranked next. Debit cards get a middling rank for security. Cash, checks, and prepaid cards all rank relatively poorly. For 2022, 2,636 new respondents rated eight payment instruments (cash, check, money order, credit card, debit card, prepaid card, OBBP, and BANP). The 2022 rankings are based on the responses of those respondents.

Credit cards generally are viewed more positively than other payment instruments. In addition to security, credit cards have ranked first for acceptance, payment records, and convenience in all years since 2017. Cash is considered best for cost and ease of getting and setting up. Prior research has found that such assessments are relevant for consumer payment choice (Stavins 2017). As you can see in table 17, these ratings are quite stable over the years.

To derive the rankings reported in table 17, the mean rating for each payment instrument is calculated, for example, the 2022 security rating for a credit card is 3.6. Security ratings for the other payment instruments range from 2.7 to 3.4, with cash rated the worst at 2.7. Then, that mean rating is used to rank the payment instruments from one to eight for each characteristic. For year-to-year comparability, the set of payment instruments ranked is consistent from year to year. In addition, in 2021 and 2022, consumers were asked to assess the characteristics of making a mobile payment. When compared to the ratings of payment instruments, the mobile method of paying (regardless of payment instrument used to make the mobile payment) generally ranked in the lower middle of the pack. For acceptance, it was rated poorly (table 17b).

Since 2015, respondents have been asked to report the payment method they prefer to use for paying bills and making in-person and online purchases. A preference for cards is strong for all these transaction types. Table 18 reports that data over time, you can see a steady decline in the shares of consumers who prefer to use checks to pay bills from 17 percent in 2016 to 8 percent in 2021 and 2022. In 2022, 45 percent of consumers reported that they prefer to pay bills with some type of card; 37 percent preferred one of the electronic methods (BANP or OBBP).

For in-person purchases, three-quarters of consumers prefer to use a card; one in five prefer cash. The decline for the preference for cash in the pandemic year persisted in 2021 and 2022.

(For more on cash preferences, see Cubides and O'Brien 2023.[6]) Fifty-four percent of consumers prefer a credit card for online payments, compared to 37 percent who prefer a debit card.

Special topics

Special questions in 2021 and 2022 inquired into consumers' familiarity with and use of buy now, pay later (BNPL), sometimes called pay-in-four or checkout loans. The survey defined this form of immediate borrowing as follows:

> "Buy now, pay later" allows people to make a purchase and spread payments over a period of time. This type of payment is sometimes offered by online stores when checking out through finance companies called Affirm, AfterPay, Klarna, QuadPay, Sezzle, etc. This type of payment is like a loan, but for smaller purposes and sometimes without any interest to pay."

Almost half of consumers had been offered a buy-now, pay-later purchase in the prior 30 days and under one-fifth of those offered had made a purchase in this way (6 percent of all consumers). Seventeen percent of those using BNPL had used it three or more times in the past 30 days, 25 percent used it twice, and 58 percent used it once (table C).

Table C: Buy now, pay later

Percentage of US consumers, October

	2021	2022
Heard of BNPL	53.6	73.0
Offered BNPL in last 30 days	33.4	46.5
Used BNPL in last 30 days	6.9	5.8

Source: 2022 SDCPC

Crypto assets

After doubling from 2019 to 2020 and again from 2020 to 2021, shares of consumers owning cryptocurrency were flat from 2021 to 2022, with 10 percent of consumers saying they owned some crypto asset. Some owners changed their motivations for owning crypto. In 2022, 68 percent of owners cited investment as their primary reason for owning crypto, down from 82 percent in 2021. Twenty percent said they were interested in new technologies, up from 13 percent in 2021.

[6] https://www.frbsf.org/cash/publications/fed-notes/2023/may/2023-findings-from-the-diary-of-consumer-payment-choice/

Survey methods

Questionnaire changes

Changes to the questionnaire for 2022 were intended to improve data quality. There has been concern that respondents were not including all payments, perhaps due to survey fatigue or to forgetting. As a result, a new, shorter questionnaire was introduced for 2021 (Foster et al. 2022 details the changes).

To learn more about the likelihood that some payments are not reported, cognitive interviews were conducted in 2022 after respondents completed the 2021 SDCPC. Fifteen respondents were asked to compare the payments they reported over their three diary days to their checking account statements for the same period. In those one-on-one interviews, seven respondents said that they missed or inaccurately reported transactions due to forgetting to record deposits, transfers, or automatic bill payments; to making payments after completing the diary for the day; and to forgetting to report using cash. In 2022, to address the omission of late-in-day payments, we tested "day-after" nudges to give respondents an opportunity to check their reported transactions for the previous day or days before beginning their day 2 and day 3 reporting, as follows:

> Before we begin with today's diary, we want to make sure we have a complete list of all the payment you made yesterday. According to our records you made the following payments yesterday.

A list of payments followed, with the question "Did you make any other payments yesterday?" Consumers who answered yes were returned to the payment entry screen for day 1 or day 2, respectively, to add payments.

This addition to the survey increased the average number of payments reported by about four monthly payments, or just above 10 percent overall from 2021 to 2022 (table D). By extension, including a nudge after day 3 would expect an increase in the number of payments reported by 15 percent. We plan to implement the day-after nudges fully in 2023, with a new day 4 diary module to provide them for day 3. We found that bill payments and cash payments appear to be affected most by this change.

Researchers using this data may choose whether or not to include the "day-after" payments; for detail, see the codebook.

Table D: Summary of Effects of Questionnaire Changes in 2022

	Excluding day-after nudge		Including day-after nudge
	2021	2022	2022
Average number per consumer per month			
Payments	35.8	34.8	38.8
Cash payments	8.6	7.4	8.3

Card payments	21.4	22.2	24.3
Bill payments	8.2	5.9	8.0
Purchases	27.6	28.8	30.8
In-person purchases	23.7	24.3	26.2
Remote purchases	12.1	10.4	12.6
Grocery, etc.	6.4	6.7	7.2
Average dollar value per consumer per month			
Payments	$907	$661	$844
Cash payments	$312	$196	$238
Card payments	$1,688	$1,563	$1,767
Bill payments	$3,036	$2,304	$3,039
Purchases	$1,791	$1,859	$1,990
In-person purchases	$1,541	$1,558	$1,767
Remote purchases	$3,274	$2,605	$3,260
Grocery, etc.	$298	$323	$349

Source: Federal Reserve Bank of Atlanta

Assessments

Respondents' assessments of payment instruments on characteristics like security, cost, and convenience have proved important to research since the classic survey was first implemented in 2008. For multiyear respondents, these assessments have proved stable from one year to the next. Therefore, in 2021 and 2022, only new respondents were asked to assess the eight payment instruments to shorten response times and reduce survey burden. Longitudinal respondents will be asked to rate payment instrument characteristics once every three years, compared to annually in the past. This part of the survey, which comprised six screens of tables asking the respondent to rate eight rows of payment instruments along five response options, takes respondents an average of five minutes to complete. For 2022, 2,636 new respondents rated eight payment instruments (cash, check, money order, credit card, debit card, prepaid card, OBBP, and BANP). The 2022 rankings are based on the responses of these 2,636 respondents.

Sample

The 2022 SDCPC was implemented with representative samples from the Understanding America Study (UAS), managed by the University of Southern California (USC) Dornsife Center for Economic and Social Research (CESR) (table E).

Table E: Overview of samples, 2015–22

	2015	2016	2017	2018	2019	2020	2021	2022
Understanding America Study available panel	2140	4776	4759	4718	5228	5267	9283	9356
Number of unique respondents	1087	3047	2871	2992	3154	3485	4896	5170
Respondents completing all DCPC days	1016	2848	2793	2873	3016	3235	4453	4761
Number of longitudinal panelists	—	799	2226	2276	2388	2486	3008	3919

Note: In 2020, the sample was split in two, with half of respondents completing the standard questionnaires and half the experimental version.
Source: Federal Reserve Bank of Atlanta

Conclusion

In 2022, consumers' payments choices were similar to those reported in 2021, indicating that some changes made early in the pandemic persisted. Consumers made 60 percent of payments by number with a debit card or credit card, and 43 percent of the value of payments was made electronically from a bank account using BANP or OBBP. Continuing behavior observed in 2020 and 2021, about 20 percent of purchases were made remotely (up from 10 percent in 2019). Compared to 2021, about the same share of consumers (83 percent) had used cash in the past 30 days. Three-quarters of consumers reported that they prefer to use a debit or credit card for in-person purchases and almost half to pay bills. As in past years, consumers view credit cards most positively on multiple measures.

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