The 2021 Survey and Diary of Consumer Payment Choice: Summary Results

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Abstract

In October 2021, US consumers reported making 36 payments per month on average, up about one payment from 2020. As a share of all payments by number, most payments were by debit card (29 percent) or credit card (28 percent). By value, 40 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 2021, the Survey and Diary of Consumer Payment Choice found the following:

- The total value of payments, around $4,800, increased 10 percent from 2020, a change that is not statistically significant.
- Most changes in the number and value of payments by payment instrument (paper, card, electronically from a bank account) were not statistically significant, except for the decline in the number of check payments from 2.3 per month in 2020 to 1.5 in 2021 and the increase in the total dollar value of debit card payments from $516 to $811 ($288).
- Eighty-five percent of consumers reported that they had used cash in the past 30 days, up from 82 percent in 2020, but not a statistically significant change.
- The share of purchases made remotely remained about 20 percent in 2021, the same as in 2020 and double the share of remote purchases in 2019.
- Two-thirds of consumers reported that they had adopted an online payment account, for example, PayPal, Venmo, or Zelle, a statistically significant increase from 61 percent in 2020.
- One-third of consumers reported that they had been offered to make a purchase using buy now, pay later in the prior 30 days.
- Ownership of crypto assets doubled to 9 percent of US consumers.

This report includes a summary of questionnaire changes that aim to reduce respondent burden and increase sample size to improve data quality. 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 at the 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 2021 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, as well as changes in these shares from 2020 to 2021, 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 2021, US consumers reported making 36 payments per month on average, up about one payment from 2020. As a share of all payments by number, most payments were by debit card (29 percent) or credit card (28 percent). By value, 40 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 2021, the Survey and Diary of Consumer Payment Choice found the following:

- The total value of payments, around $4,800, increased 10 percent from 2020, a change that is not statistically significant.[1]
- Most changes in the number and value of payments by payment instrument were not statistically significant, except for the decline in the number of check payments from 2.3 per month in 2020 to 1.5 in 2021 and the increase in the total dollar value of debit card payments from $516 to $811 ($288).
- Eighty-five percent of consumers reported that they had used cash in the past 30 days, statistically unchanged from 82 percent in 2020.
- The share of purchases made remotely remained about 20 percent in 2021, the same as in 2020 and double the share of remote purchases in 2019.
- Two-thirds of consumers reported that they had adopted an online payment account, for example, PayPal, Venmo, or Zelle, a statistically significant increase from 61 percent in 2020.
- One-third of consumers reported that they had been offered to make a purchase using buy now, pay later in the prior 30 days.
- Ownership of crypto assets doubled to 9 percent of US consumers.

The Survey and Diary of Consumer Payment Choice aims to gain a comprehensive understanding of the payment behavior of US consumers. It is comprised of the Survey of Consumer Payment Choice (SCPC), the 14th 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

[1] Throughout this report, we take statistical significance to indicate a calculated p-value < 0.05 against a null hypothesis that the true measure of interest, usually a difference in years, is zero.

2012 and annually since 2015, in which consumers record details of specific transactions (including dollar values) and their payment choices.[2]

For purposes of this research, payment instruments are paper (cash, check, money order), cards (debit, credit, prepaid), and electronic via the ACH system, which include 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. This report for 2021 focuses on the number and shares of payments by transaction type and payment instrument as well as on changes from 2020. A total of 4,137 respondents completed the 2021 Survey and Diary.

Summary of tables

The remainder of this paper comprises two parts: a summary of the key results and 17 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, and merchant payee: Tables 6-10
- Cash holdings: Tables 11-12
- Loss, assessments, and preferences: Tables 13-15
- Household characteristics: Tables 16-17

As noted above, the 2021 SDCPC questionnaire includes changes, so readers should exercise caution when interpreting estimates of changes in payment behavior. Beginning in 2021, questions asking respondents to recall their "typical" number of payments in a month by transaction type were eliminated in favor of the diary-style reporting method discussed below. For year-to-year comparability, transactions with value greater than $20,000 are omitted from the calculations used to make tables 6 through 10. All transactions are included in the dataset online, so data users may choose to identify outliers differently. Estimates reported here may 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

[2] 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 (2014); Schuh (2017); Greene and Schuh (2017); Greene, O'Brien, and Schuh (2017); Greene and Stavins (2018a, 2019, 2020a, 2021).

instrument use by transaction type and dollar value ranges. Other research investigates payments behavior and demographic characteristics—for example, Greene and Shy (2022).

Online data and user guides

All Survey and Diary data are available free to the public at the Atlanta Fed website.[3] Survey data are available for all years, 2008 through 2021; diary data are for 2012 and 2015 through 2021. 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: Questions asked in the SCPC and Diary Day Zero, also called the "night before" survey. Includes bank account adoption, assessments, preferences, income, and demographics. "Survey-style" questions (questions that do not ask for specific point-in-time information), are included in this data set.
- 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 2021 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 dataset and including definitions of all variables
- Research data reports
- Interactive charts

Account and payment instrument adoption in 2021

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 14 years of the SCPC. In 2021, 95 percent of US consumers had a bank account, the highest share reported since 2008. Ninety-three percent of consumers had a checking account and 74 percent had a savings account (Table 1).

Of consumers with a bank account, three-quarters reported not paying any bank account fees. Four 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.[4] Among the 5 percent of US consumers without a bank account, just over one-third said they did not like dealing with banks and

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

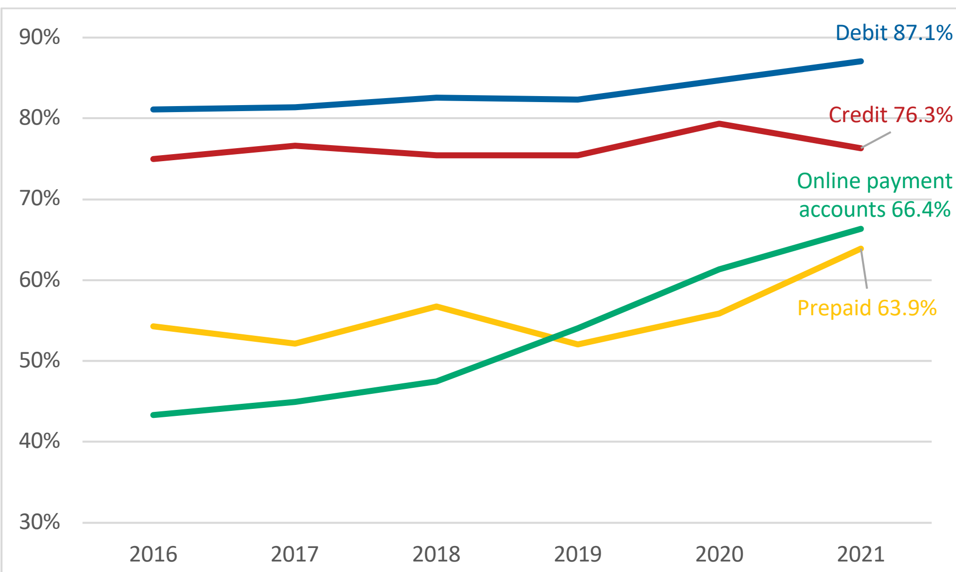
[4] In 2020 and earlier, fees questions asked about overdrafts only. For 2021, the data collection was expanded to include other bank account fees and credit card fees (Table 4).

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. By 2021, 66 percent of consumers had used an online payment account to make a purchase or pay another person in the prior 12 months, up from 61 percent in 2020. This 2020-21 increase was again statistically significant. The percentage of consumers adopting PayPal was flat at 42 percent in 2020 and 2021. The increase in the shares adopting Zelle and Venmo were statistically significant in 2021, from 17 percent to 22 percent and from 24 percent to 29 percent, respectively.

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. The increase in the share of consumers adopting prepaid cards was statistically significant in 2021, from 56 percent to 64 percent. The share of consumers with credit cards declined to 76 percent, but the decline was not statistically significant. Figure 1 shows the percentage shares of consumers adopting cards and online payment accounts.

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



Source: 2016–21 SDCPC

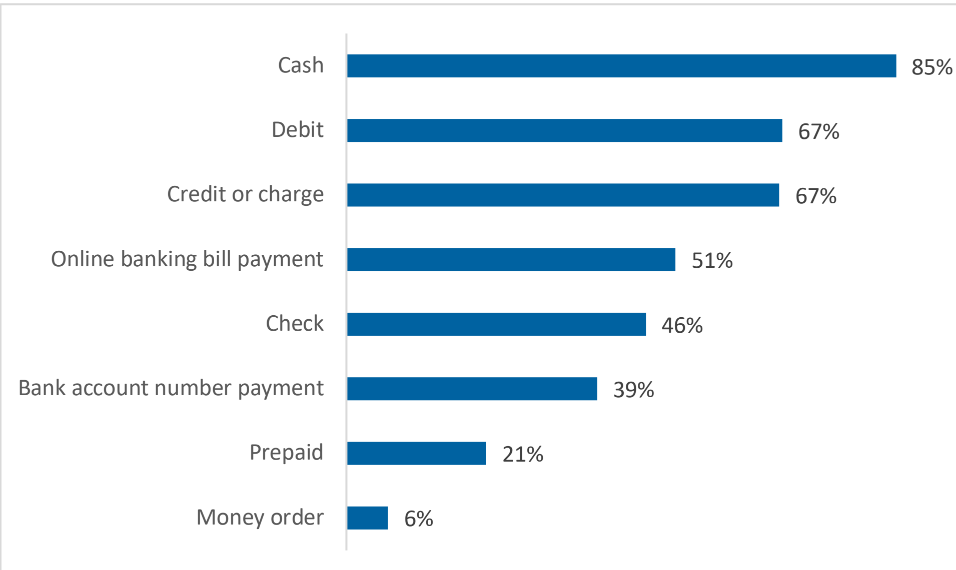
Half of consumers had one or two credit cards, and 20 percent had five or more. Three-quarters of credit card adopters reported that they did not pay any credit card fees (Table 4). Compared to 2020, shares of consumers carrying an unpaid credit card balance were statistically unchanged at about half of consumers (Table 4). In 2021, two-thirds of consumers reported their unpaid balance was "much lower," "lower," or "about the same" compared to October 2020. Of credit card adopters with an unpaid balance ("revolvers"), the median unpaid balance was about $1,900 (the mean was $4,848).

The share of consumers with paper checks on hand remained 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. Cash is used more extensively than any other payment instrument. In 2021, 85 percent of consumers reported that they had used cash to pay at least once in the past 30 days (Table 5). Two-thirds of consumers used a debit card, two-thirds used a credit card, and 92 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, 2021



Source: 2021 SDCPC

As one might expect in the second year of the COVID-19 pandemic, when most businesses were open and the emphasis on physical distancing had declined, the share of consumers using cash in the past 30 days was flat, from 82 percent to 85 percent in 2021 (Table 5). Also in 2021, 95 percent of consumers reported they had used cash to pay in the past 30 days and/or held some cash on their person or stored elsewhere, up from 91 percent in 2020 (Table 3). This change is statistically significant. Shares of consumers using a payment instrument in the past 30 days were flat or slightly increased, except checks, which 46 percent reported using in the past 30 days, compared to 50 percent in 2020, not a statistically significant change (Table 5).

Number and value of payments

In 2021, US consumers made on average 36 payments for the month,[5] or a bit more than one payment per day (Table A and Table 6). On any given day, an average of 46 percent of consumers reported making zero payments (compared to 50 percent in 2020). US consumers made on average $4,827 worth of payments for

[5] All the data reported in this paper refer to October 2021, unless specified otherwise.

the month.[6] Dividing the value of payments by the number of payments yields an average value per consumer payment of $135 (Table 7).

Table A: Average number of payments in October

	2016	2017	2018	2019	2020	2021
Average number of payments	45.9	41.0	43.3	38.7	34.8	35.8
95 percent 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]

Source: 2021 SDCPC, Table 6, and Table 6 Confidence Intervals

The number of consumer payments increased about 3 percent (that is, by about one payment) compared with October 2020, a change that is not statistically significant. While up from its 2020 low, the 2021 total number of payments is lower than the number of payments reported in October of all other years covered by this report. The total value of payments increased by $434 (10 percent, not statistically significant) to $4,827 and in 2021 exceeds total values reported in each of the prior years of this report. Although not statistically significant, the 10 percent increase in the total dollar value of payments exceeds the year-over-year inflation rate of 6.2 percent for October 2021.[7,8] The average transaction dollar value was $135 and increased from $126 in 2020, not statistically significant (Table 7).

Number and value of payments by instrument

US consumers made 60 percent of payments with payment cards (debit, credit, and prepaid): 21 payments in October 2021. They used paper instruments (cash, checks, and money orders) for one-quarter of payments, nine payments, and electronic methods for 13 percent, five payments (Table 1). Compared with 2020, the number shares of cards increased, the number shares of electronic instruments were stable, and the number shares of paper instruments declined. None of these changes in shares were statistically significant.

Although cards were used more frequently than electronic payments, the total value of payments made electronically exceeded that of payments made by cards: $1,915 compared to $1,688. By value, payments

[6] 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.
[7] https://www.bls.gov/opub/ted/2021/consumer-prices-increase-6-2-percent-for-the-year-ended-october-2021.htm.
[8] All payments, including bill payments, include only payments made by the individual survey respondent and exclude any payments made by other members of the household.

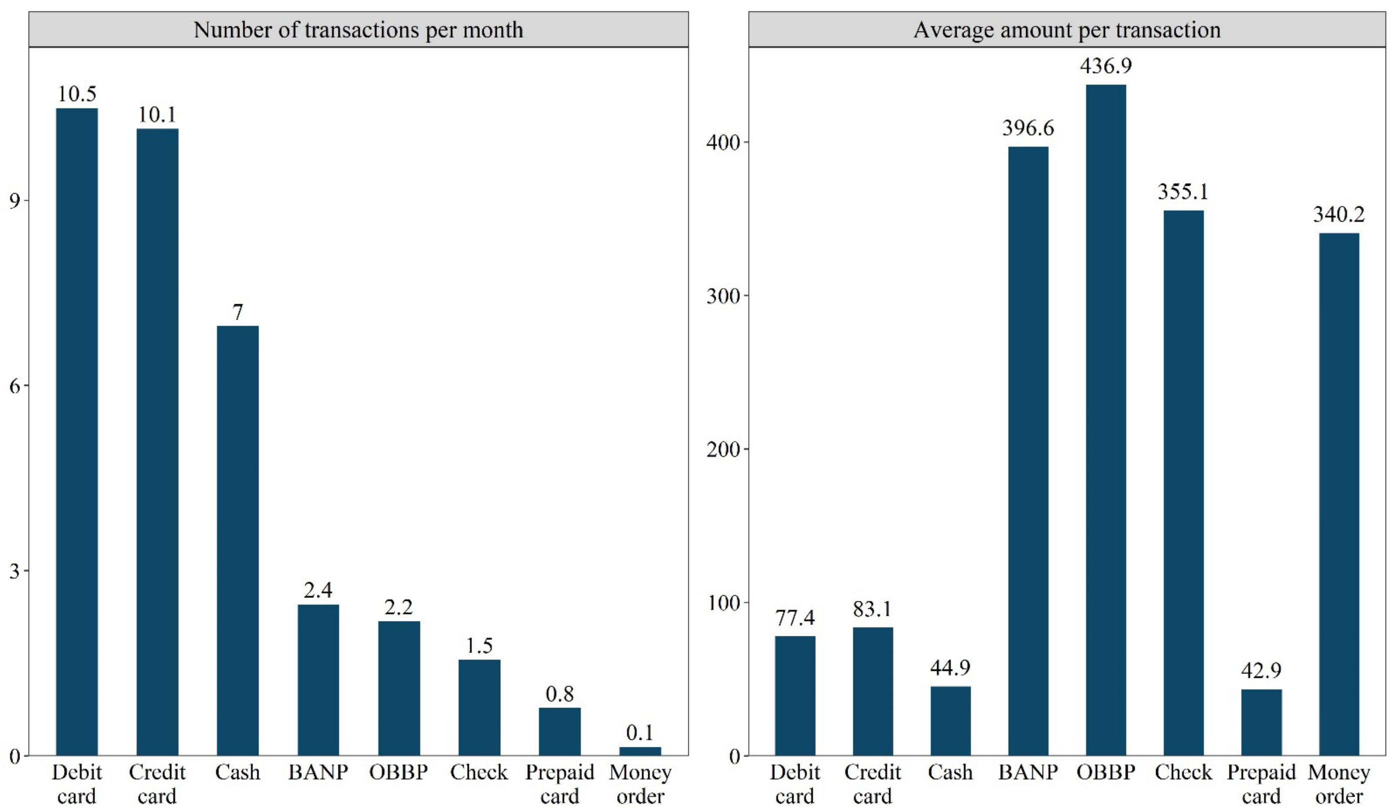
using electronic instruments were 40 percent of the monthly total, compared to 35 percent for cards and 19 percent for paper instruments (Table 6).

Debit cards, credit cards, and cash were used for almost 80 percent of payments, with debit cards just exceeding credit cards for most payments per month (Table 6). Twenty-nine percent of payments were with debit cards, 28 percent with credit cards, and 19 percent with cash.

The distribution by value is different. Cash, debit, and credit payments accounted for about 40 percent of the value of payments: 7 percent in cash, 17 percent in debit cards, and 18 percent in credit cards (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 low-value payments, and their tendency to use checks and electronic payments less often, but for relatively high-value payments (Figures 3 and 4).

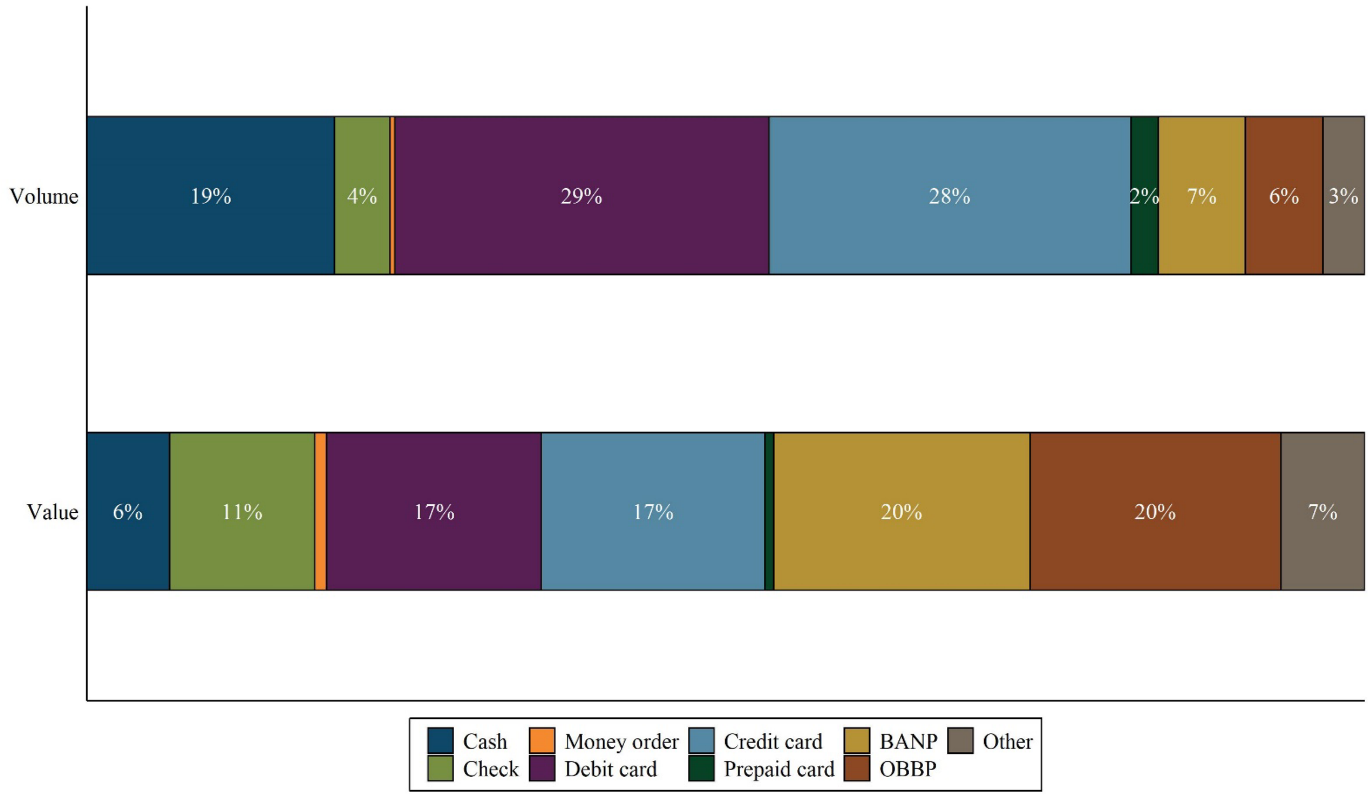
For example, US consumers on average made fewer electronic-instrument payments than cash payments (five compared with seven), but they used electronic payments for transactions that were higher in average value than cash transactions ($416 compared with $45). The average value when using payment cards is between the two, at $79 (Tables 6 and 7).

Figure 3: Number and average value of payments by instrument, October 2021



Source: 2021 SDCPC, Table 5.

Figure 4: Percentage shares of payments by number and value, October 2021

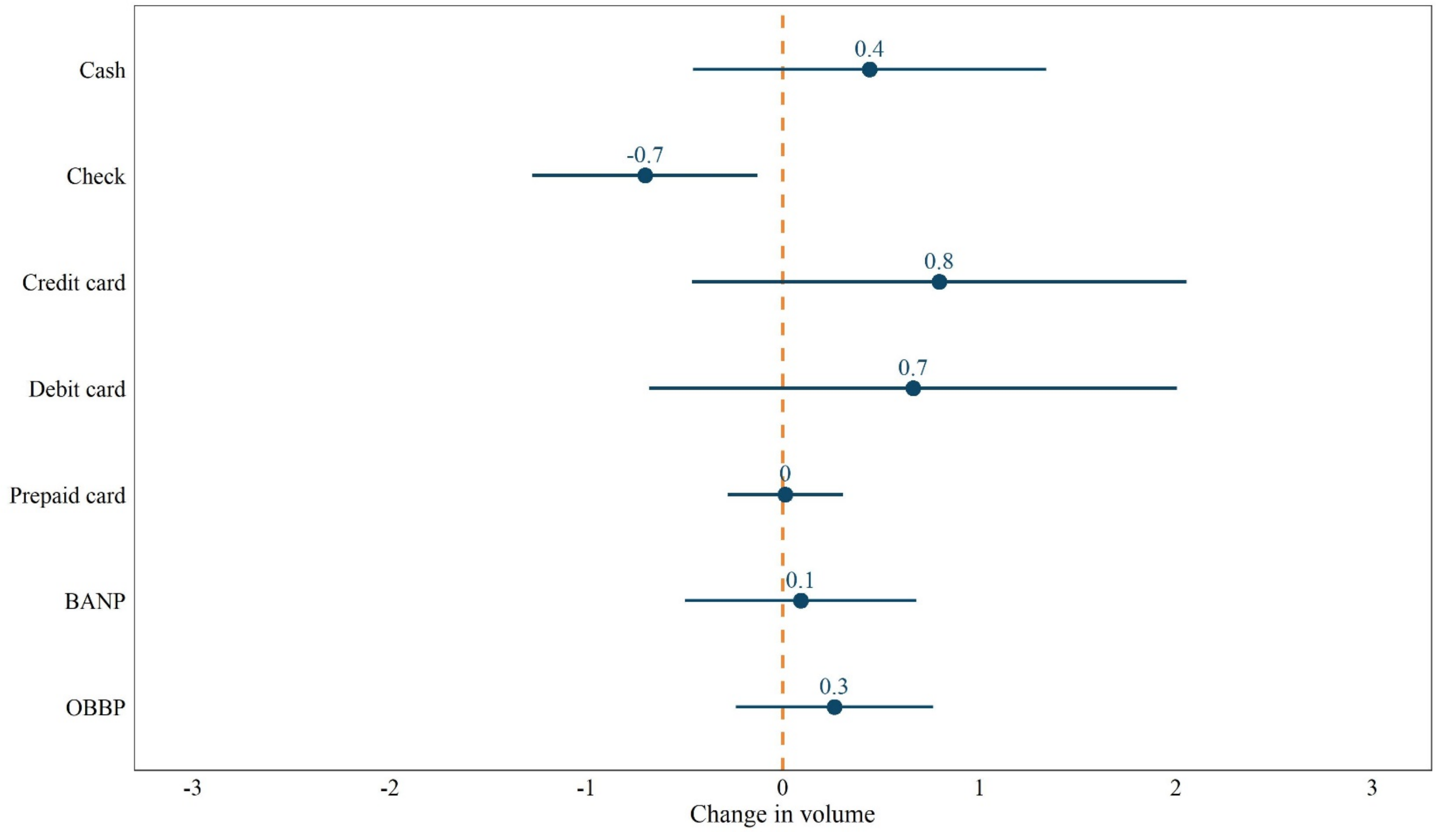


Source: 2021 SDCPC, Table 5.

Changes in number and value by instrument

As noted above, the overall number of US consumer payments was relatively flat from 2020 to 2021 and the total value of payments for the month was statistically unchanged. Looking at individual payment instruments, the number of payments per month also was flat. Only the decline in the number of check payments from 2.3 payments in 2020 to 1.5 in 2021 is statistically significant (Table 6 and Figure 5). No other changes for individual payment instruments are statistically significant. The increase in the number of cash payments (about half a payment) was not statistically significant (Table 6 and Figure 5).

Figure 5: Changes in the number of payments per month by payment instrument, 2020 to 2021



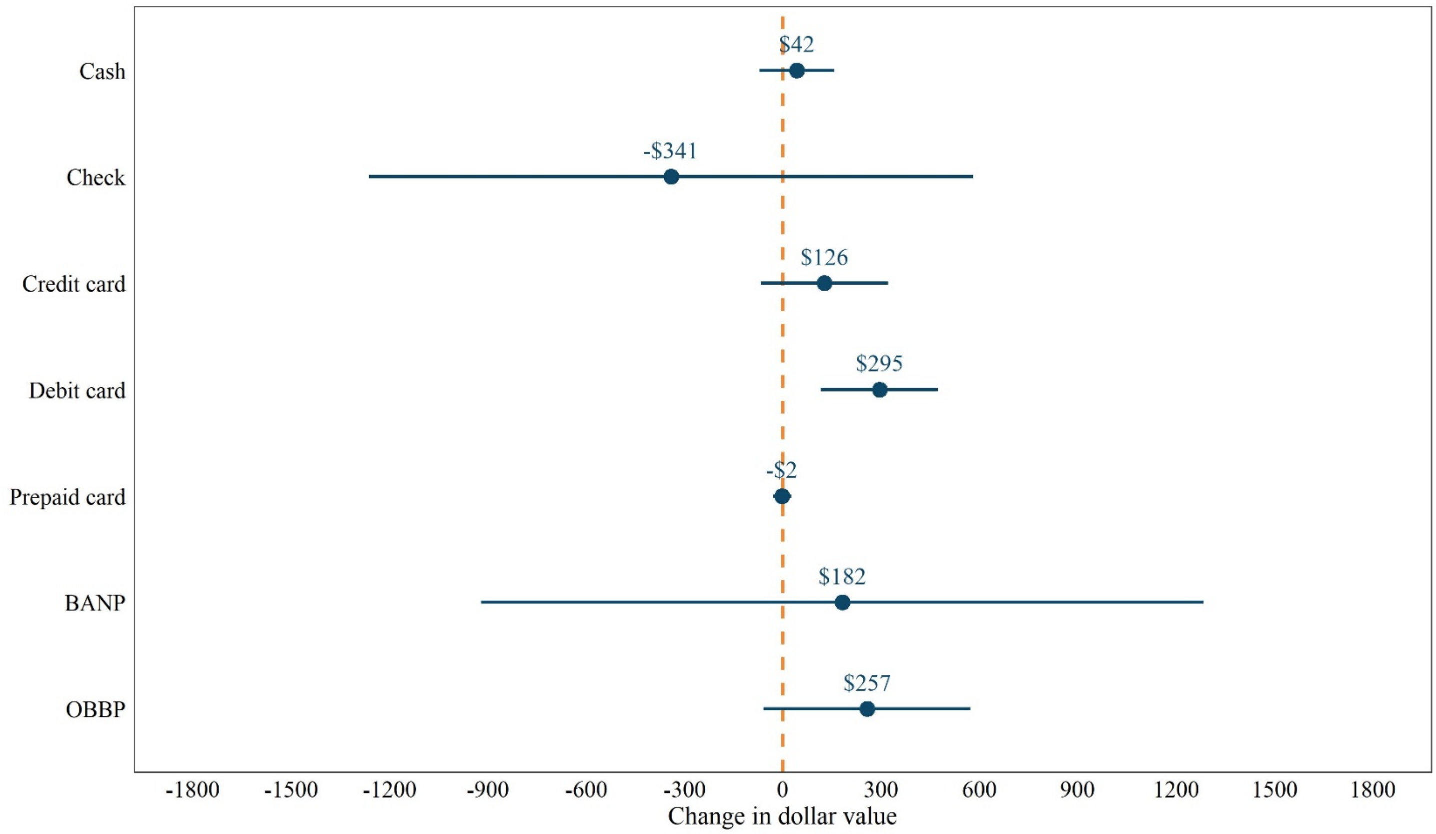
Notes: The vertical lines depict the 95 percent confidence intervals of the changes in the number of payments between 2020 and 2021. The numbered dots depict the point estimates. Confidence intervals that lie entirely above or below the horizontal zero line indicate changes that are statistically significantly different from zero.

Source: 2020 and 2021 SDCPC

As noted above, the average monthly total dollar value of all payments per consumer increased from $4,393 in 2020 to $4,827 in 2021. Examining each payment instrument separately, only debit card payments showed a significant change in total dollar value per month from 2020 to 2021, by $295 (Figure 6), about three-quarters of the $434 increase overall.

The average dollar value of payments, which increased substantially in the first pandemic year, 2020, continued to grow, increasing to $135 from $126 in 2020 (Table 7). The change in the average dollar value of payments was not statistically significant. Apart from debit cards, none of the changes in dollar value by payment instrument were statistically significant (Figure 6).

Figure 6: Changes in the total dollar value of payments per month by payment instrument, 2020 to 2021



Notes: The vertical lines depict the 95 percent confidence intervals of the changes in the total dollar value of payments between 2020 and 2021. The numbered dots depict the point estimates. Confidence intervals that lie entirely above or below the horizontal zero line indicate changes that are statistically significantly different from zero. Money orders are omitted from this figure.

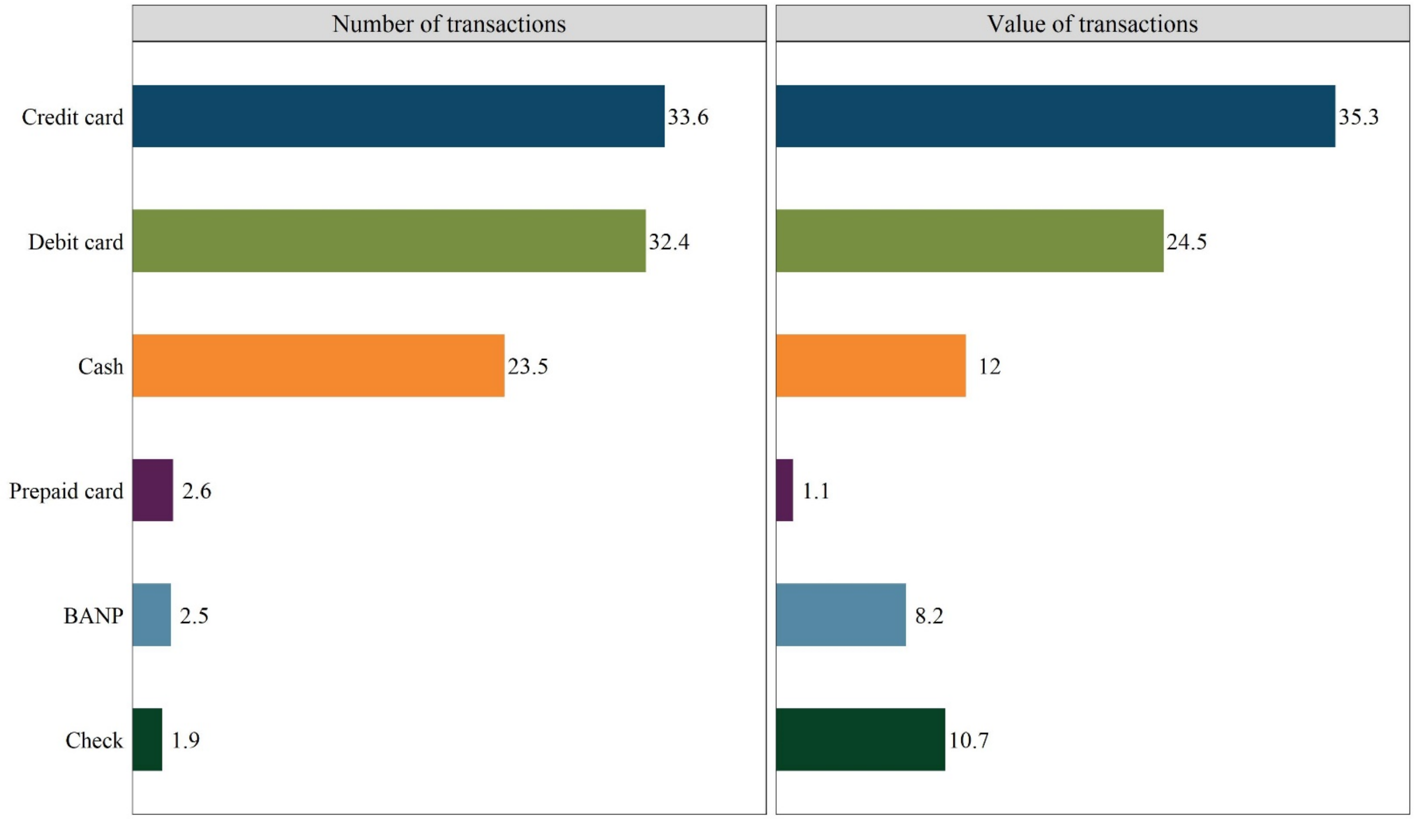
Source: 2020 and 2021 SDCPC

Payments by transaction type: Purchases and bills

US consumers on average made 28 purchases and eight bill payments per month (Tables 8 and 9). Purchases (both online and in person, and including P2P) accounted for almost 80 percent of all payments by number in 2021. The increase in the total number of payments from 2020 to 2021 can be attributed to changes in the number of purchases, which increased by about one purchase (Table 8). Tables 8a and 8b include goods and services bought in person and online as well as payments to another person—for example, as a gift or allowance. The number of purchases had dropped significantly from 31 to 26 from 2019 to 2020, the first year of the COVID-19 pandemic. The total value of purchases increased 13 percent, from $1,583 in 2020 to $1,791, in 2021. Purchases were 37 percent of all payments by value in 2021, about the same as in 2019 and 2020. The average dollar value of purchases, $61 in 2020, was $65 in 2021.

Credit card was the most frequently used payment method for purchases, accounting for 34 percent of purchases by number, closely followed by debit cards (32 percent) (Figure 7). Cash was used for 24 percent of purchases. In terms of dollar value, 61 percent of all purchases were with cards, 35 percent with credit cards and 25 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, $33, $49, and $68 (Table 8).

Figure 7: 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: 2021 SDCPC

The number of bill payments per month was constant from 2020 at eight.[8] Bill payments accounted for 23 percent of all payments by number and 63 percent by value. Electronic payment methods and debit cards are used most for bill pay: 21 percent of bills by number were paid by BANP, 24 percent by OBBP, and 19 percent by debit cards, totaling two-thirds of all bill payments for the three methods (Table 9 and Figure 8). Thirty percent of bills were paid with cards (credit, debit, or prepaid).

The decline in the use of checks to pay bills from 2020 is notable. In 2020, checks were 19 percent of bill payments by number and 23 percent by value. This dropped to 12 percent by number and 12 percent by value in 2021. By both number and value, the two electronic methods and debit card each accounted for a greater share of bill payments than check. The average dollar value of a bill paid by check, $348 in 2021, was

[8] All payments, including bill payments, include only payments made by the individual survey respondent and exclude any payments made by other members of the household.

down from $628 in 2020. In 2020, 50 percent of consumers reported they had used a check at least once in the past 30 days. That share dropped to 46 percent in 2021. When asked how they prefer to pay bills, 44 percent of consumers chose a card, 37 percent chose electronic methods (BANP or OBBP), and 8 percent chose checks (Table 15).

Figure 8: 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: 2021 SDCPC

Payments by payees

Of the average 36 payments per month that US consumers reported, 12 were for everyday purchases (groceries, pharmacies, stores, and online shopping) and seven were for food consumed away from home (including restaurants, bars, and fast food), up from six in 2020. While payments for food consumed away from home increased in 2021, they still were below the prepandemic number, which averaged eight per person for October 2019. Consumers made on average three 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 10).

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 15 percent by value (Table 10). Similarly, the purchase of food consumed away from home was 20 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 8 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). Shy (2020) and Cohen, Shy, and Stavins (2022) examine payment instrument choice by merchant type.

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

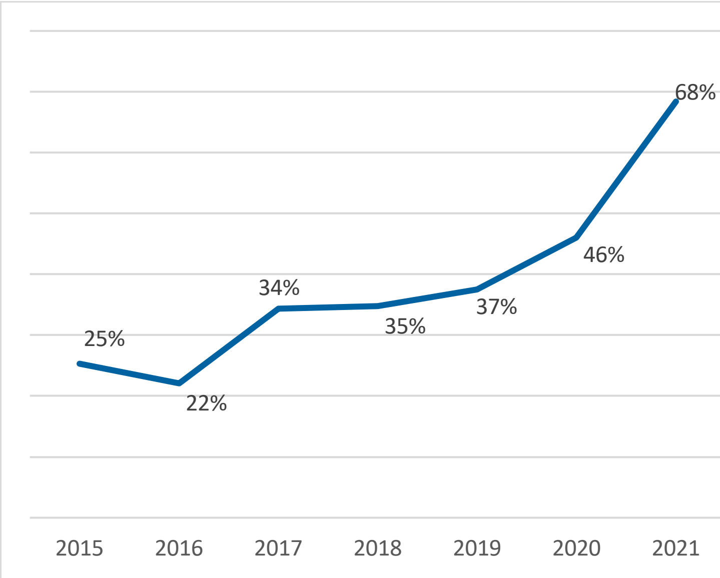
	Share, #	Share, $
Credit card bill	44.6%	46.4%
Loan payment	27.8%	40.0%
Mortgage	15.0%	31.4%
Other loan	12.8%	8.6%
Other (remittance, fees, transfer, investment, etc.)	27.6%	13.6%

Source: 2021 SDCPC

Mobile payments

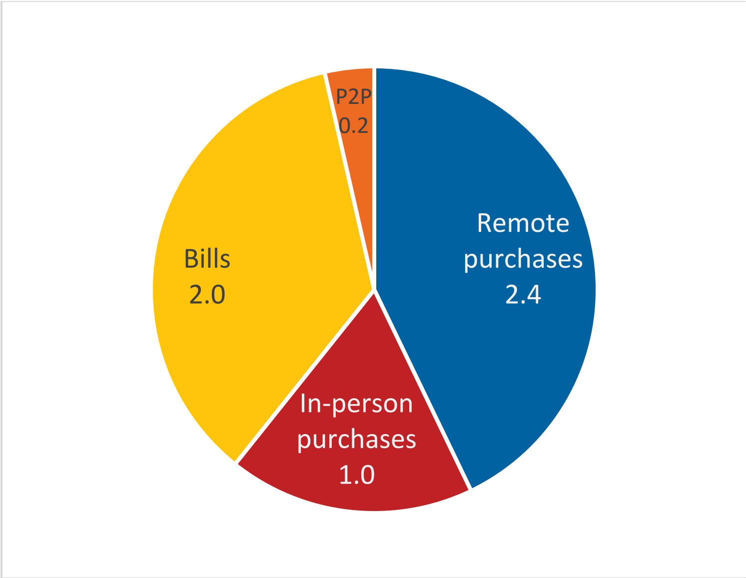
Two-thirds of consumers made at least one payment using a phone or tablet in the 12 months ending in October 2021, a sharp increase from 2020, when fewer than half of all consumers reported making at least one mobile payment (Figure 9). Most mobile payments were for purchases. Of the 5.6 mobile payments reported in 2021 on average, 3.4 were for purchases, 2.0 for bills, and 0.2 to pay another person (Figure 10).

Figure 9: Shares of consumers making at least one mobile or tablet payment, 12 months ending in October



Source: 2021 SDCPC

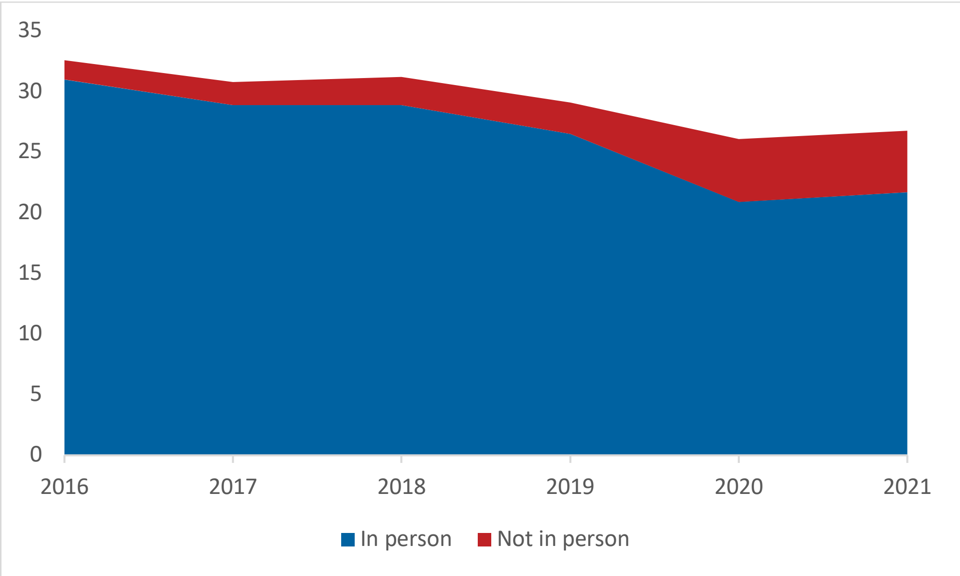
Figure 10: Number of mobile payments, October 2021



Source: 2021 SDCPC

Of all payments in October 2021, 29 percent were made using electronic devices (computers, tablets, or mobile phones) and 16 percent of all payments were made using a mobile phone. Part of the increase in mobile and tablet payments is related to the increase in remote purchasing, online or in an app. Beginning in 2020 with the COVID-19 pandemic, the shares of purchases made remotely increased and continued to grow in 2021. Of 27 purchases excluding P2P in October 2021, five (20 percent) were not in person (Figure 11).

Figure 11: Average number of purchases by location, 2016–21



Source: 2021 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. Cash on person fell back to $69 in 2021 (not statistically significant). By value, about 40 percent of the cash on person was in the form of $20 bills and one-third was in $100 bills (Table 11). About 70 percent of consumers carried at least $1 at the beginning of at least one of their diary days.

Fewer consumers store cash elsewhere; 42 percent of consumers had at least $1 stored elsewhere. For all consumers, the average value of cash stored elsewhere was $408, up from $308. Cubides and O'Brien (2022) further discuss cash holdings.

Fraud, assessments, and preferences

In the COVID-19 pandemic, increasing numbers of online purchases and online payments have been associated with increased fraud (Ma and McKinnon 2022). Shares of consumers reporting identify theft or fraudulent use of payment instruments in the SDCPC increased markedly from 2020 to 2021. In 2021, 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 tripled to 11 percent in 2021. The share of consumers reporting debit card theft or fraud doubled to 8 percent. Check fraud was comparatively rare and unchanged.

Despite increasing 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 14). Debit cards get a middling rank for security. Cash, checks, and prepaid cards all rank relatively poorly. For 2021, 2,500 respondents who had not taken the survey previously rated eight payment instruments (cash, check, money order, credit card, debit card, prepaid card, OBBP, and BANP). The 2021 rankings are based on the responses of these 2,500 respondents.

Credit cards generally are viewed more positively than other payment instruments. They 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).

To derive the rankings reported in Table 14, the mean rating for each payment instrument is calculated within each characteristic. Then, using the average rating as a score, the payment instruments are given a ranking from one to eight within each characteristic. For year-to-year comparability, the set of payment instruments ranked is consistent from year to year. In addition, in 2021, 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.

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 15 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. In 2021, 44 percent of consumers reported that they prefer to pay bills with some type of card.

For in-person purchases, three-quarters of consumers prefer to use a card; one in five prefer cash. (For more on cash preferences see Cubides and O'Brien 2022.[9]) More than half of consumers prefer a credit card for online purchases, compared to 40 percent who prefer a debit card.

Special topics

Buy now, pay later

Special questions in 2021 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."

One-third of consumers had been offered a buy-now, pay-later purchase in the prior 30 days and one-fifth of those offered had made a purchase in this way (7 percent of all consumers). Fifteen percent of those using BNPL had used it three or more times in the past 30 days; 25 percent used it twice, and 60 percent used it once (Table C).

Table C: Buy now, pay later, October 2021

Percentage of US consumers

Heard of BNPL	53.6
Offered BNPL in last 30 days	33.4
Used BNPL in last 30 days	6.9

Source: 2021 SDCPC

Crypto assets

After doubling from 2019 to 2020, shares of consumers owning crypto currency doubled again from 2020 to 2021, with 9 percent of consumers saying they owned some crypto asset, a statistically significant increase

[9] 2022 Findings from the Diary of Consumer Payment Choice – Cash (frbsf.org)

from 4 percent in 2020. Of owners, the vast majority—8 in 10—said their holdings of crypto assets were "for investment." Thirteen percent said they were interested in new technologies. Not trusting the government was the primary reason for only 2 percent of owners in 2021. More than 80 percent of owners said they had bought cryptocurrency in the past 12 months; the median dollar value of owners' holdings was $348 at the time of reporting.

Questionnaire changes

Changes to the questionnaire for 2021 aim to reduce response burden and, thus, improve data quality (Table D) (Groves et al. 1999, Kleinert et al. 2021 Warriner 1991). Based on analysis of external data sources, there was concern that respondents were underreporting low dollar value payments, perhaps due to survey fatigue, perhaps due to forgetting. Therefore, a new, shorter questionnaire with additional reminders of transaction types was introduced for 2021. This section describes questionnaire changes and their effect on data analysis.

The 2021 changes exclusively affect survey-style questions—that is, the SCPC and the night-before questions in the DCPC. To prompt respondent recall, survey-style questions were added for six methods of paying ("in the past 12 months, have you…"), including using a computer, using a mobile phone or tablet, and using a phone to make a P2P payment. Everyday reporting of payments during the three assigned diary days was unchanged.

Changes to the survey-style questions were tested in a 2020 experiment, when half of respondents (randomly assigned) took the classic SDCPC combination, which had remained relatively unchanged since 2016 (hereafter, the "classic"). The other half took the shorter experimental version, which combines questions from the classic survey and diary in one survey instrument and eliminates questions that were repeated from one questionnaire to the other (hereafter, the "new").

Table D: Summary of the 2020 Survey and Diary experiment

Survey and Diary 2020 experiment	**Classic**	**New**
Questionnaire elements—changed		
Recall of payments “typical month”	ü	
Use of payment instruments, past 30 days (y/n)		ü
Follow-up questions not used in research	ü	
Reminders: Five types of payments		ü
Questionnaire elements—unchanged		
Assessments of eight payment instruments	ü	ü
Adoption of bank and nonbank accounts, cards, checks	ü	ü
Reporting of payments for each of 3 assigned response days	ü	ü
Cash on person and elsewhere	ü	ü
Account balances	ü	ü
Income and employment	ü	ü
Demographics	ü	ü
Results		
Average total completion time per respondent	73 minutes (SCPC, Day 0, and Days 1, 2, and 3)	31 minutes (new Day 0, new Days 1, 2, and 3)
Average number of payments reported per 3-day diary		
Share of days with no payments reported		
Share reporting zero cash wallet		
Sample		
N respondents (2020)	1748	1799
Completing all days	1596	1697
Completing rate	91 percent	94 percent

Source: Federal Reserve Bank of Atlanta

Analysis of the 2020 experiment

Average total completion time was reduced from 40 minutes for the 2020 classic SCPC and DCPC Day 0 to 14 minutes for the 2021 new Day 0 by eliminating redundant questions that were repeated from the classic survey to the classic diary and eliminating classic survey questions that had not been used in research. The 2020 testing found no significant differences in debit, credit, and check adoption due to the changes and a slight tendency for respondents to the "new" to report having at least $1 in cash in their wallets.

2021 reporting changes

Recall

Most importantly, the classic survey "recall method" of estimating payments in a "typical month" was eliminated in favor of the diary "reporting method" of entering payments online every night as they occur over an assigned three-day period, in the belief that daily reporting produces more accurate results than hazy memories of activity over the past month (Bagnal et al. 2016). In addition, the reporting method provides detailed data on each payment, which enables analysis linking, for instance, payment choice and dollar value (Shy 2019), payment choice and merchant payee (Cohen, Shy, and Stavins 2022), payment choice and merchant surcharging (Shy and Stavins 2014), payment choice and cash holdings (Briglevics and Schuh 2014, Shy 2019).

A disadvantage of the reporting method is that it does not provide a full-month overview of an individual consumer's recall, including recall of bill payments for the month or P2P payments for the month. However, given the concerns about the accuracy of the recall method this consideration was moot. The new SDCPC questionnaire design continues to enable analysis of payments according to the seven types included in the classic SDCPC—that is, bill payments (automatic, online, and mail/in person/phone), purchases (retail goods in person, retail services in person, online), and P2P.

Adoption

Some definitions of payment instrument adoption used since 2008 have proved too broad to be useful because they involve a consumer's remembering that the payment instrument was used at least once at some time in the past 12 months. For 2021 and following years, "adoption" applies to accounts and payment instruments that can be owned, including all types of payment cards, paper checks, bank accounts, nonbank accounts, and cash. The definition of cash adopters, the union of having some on hand and having used cash to make a payment over a specified time period, has been narrowed to having used cash to make a payment in the past 30 days from having used cash at least once in the past 12 months (Table E).

For other payment instruments—OBBP, BANP, and money order--measures of adoption have been eliminated in favor of measures of using the payment instrument at some point in the past 30 days. This is related to the questionnaire changes that ask respondents to report specific behavior as opposed to "typical" behavior. Adoption of these payment instruments previously had been defined in whole or in part based on being used more than once in a "typical year" or being set up and ready to use (but not necessarily used). For year-to-year comparability of adoption, both estimates—2020 classic comparable back through 2015 and 2020 new, which is comparable to 2021—are reported in Table 3.

Table E: Survey redesign narrowed definition of payment instrument adoption

	2020 classic and prior years	2020 experimental and 2021
Definition changed for 2020 experiment and 2021		
Cash	Have some (on person or elsewhere) or used at least once in past 12 months	Have some (on person or elsewhere) or used to make a payment in past 30 days
Money order	Used in past 12 months or reported using >0 in "typical" year	Used to make a payment in past 30 days
OBBP	Have "set up"	Used to make a payment in past 30 days
BANP	Recalled using at least once in "typical" year	Used to make a payment in past 30 days
Definition unchanged, 2008–21		
Check	Have paper checks on hand	
Prepaid card	Have one or more	
Credit card	Have one or more	
Debit card	Have one or more	

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, only new respondents were asked to assess the eight payment instruments to shorten response times and reduce survey burden (Table D). Beginning with 2021, 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.

Obsolete and unused questions

Also for 2021, some questions that were not used in research over the life of the classic SDCPC were eliminated. Some eliminated questions had become obsolete: whether the respondent owns a cell phone, uses telephone banking, or has a charge card (as opposed to a credit card) or ATM card (as opposed to a debit card), for example. Some activities had low participation, so the classic results were not useful; for example, use of certified check, text message payments, availability of debit card rewards (credit card rewards questions are retained), for example. Some questions were too complex for the respondent to answer and had not been used in research: interest rates paid on checking and savings accounts and card cobranding.

In addition, some questions were simplified. For respondents who own crypto currency, questions were simplified to make it less complicated to report on buying and selling crypto assets or using crypto to make payments. Reporting on ownership of prepaid cards also was streamlined.

Sample

Given these changes, the invitation to participate in the new SDCPC was revised to describe a 10-minute survey and three-day diary. The classic invitation survey describes a 30-minute survey and three-day diary. Although the time commitment was reduced by 20 minutes, the payment amount ($90 for completing all) remained the same. Reducing survey time made it possible to recruit a larger sample (Table F), with the sample size increased 31 percent over 2019 and 19 percent over 2020.

Table F: Overview of samples, 2015–21

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

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

Consumers continued to face challenges in 2021 due to the COVID-19 pandemic, and their payments choices were similar to those reported in 2020. Consumers made 60 percent of payments by number with a debit card or credit card, and 40 percent of the value of payments was made electronically from a bank account using BANP or OBBP. Continuing behavior observed in the pandemic year 2020, about 20 percent of purchases were made remotely (up from 10 percent in 2019). Compared to 2020, more consumers (85 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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