

The 2012 Diary of Consumer Payment Choice

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Abstract: This paper describes the results, content, and methodology of the 2012 Diary of Consumer Payment Choice (DCPC), the first edition of a survey that measures payment behavior through the daily recording of U.S. consumers' spending by type of payment instrument. A diary makes it possible to collect detailed information on individual payments, including dollar amount, device (if any) used to make the payment (computer, mobile phone, etc.), and payee type (business, person, government). This edition of the DCPC included about 2,500 participants and was conducted in October 2012. During that month, U.S. consumers on average made about two payments per day. For the month, they paid mostly with cash (40 percent of payments) and debit cards (24 percent), followed by credit cards (17 percent). For recurring bill payments, consumers most commonly used electronic payments and checks. Like other payment-value data, the DCPC data show correlations between the choice of payment instrument and the dollar value of expenditure. For example, consumers tend to use cash more often than other instruments for small-value payments. The results of subsequent editions of the DCPC are reported in separate papers.

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This report, which may be revised, is available on the website of the Federal Reserve Bank of Boston at <http://www.bostonfed.org/economic/rdr/index.htm>.

Acknowledgments appear on the first page of this report. The primary authors are responsible for any errors.

The views expressed in this paper are those of the authors and do not necessarily represent the views of the Federal Reserve Bank of Boston or the Federal Reserve System.

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Introduction

The U.S. economy is undergoing a transformation of money and payments from paper instruments (cash, checks, money orders) to electronic instruments (payment cards, online banking, mobile payments) that is altering the way households, businesses, and governments make transactions. Generally, this transformation has been occurring with only minimal documentation in the form of publicly available data on payment choices, especially those of consumers who are among the ultimate end users of the payment system. This deficiency of information motivates the measurement and study of consumer payment choice. The 2012 Diary of Consumer Payment Choice (DCPC) was the first official payment diary conducted by the Federal Reserve Bank of Boston. It was implemented, in October 2012, to gain an in-depth understanding of the cash and noncash payment behavior of U.S. consumers.

This paper includes the official tables and reports the main results from the 2012 DCPC. We find that by volume (that is, number of payments), U.S. consumers use cash, debit cards, and credit cards for the bulk of their payments. The results also show that the dollar-value shares of consumer payments differ markedly from the volume shares, because consumers' choice of payment instrument is correlated with the dollar value of the payment. In particular, consumers on average used cash more often than other instruments for small-value payments, so the value share (12.2 percent) of cash payments was much smaller than the volume share (40.2 percent). Payment diaries in other countries and U.S. merchant data sources have previously shown similar results regarding cash payments.¹

Official DCPC Tables and Data

This report contains 16 tables with detailed estimates of consumers' payment choices, estimates of consumer activity related to cash management, and a rich set of consumer and household demographic characteristics.² There are five types of tables:

¹ See Klee (2008) and Bagnall et al. (2016) for evidence from payment diaries in other industrial countries; see Cohen and Rysman (2013), and Wang and Wolman (2016) for other U.S. evidence.

² The official definitions of survey concepts are found in Schuh and Stavins (2014) Definition Tables 1–7.

1. *Total number and value of payments per consumer for October 2012*: payments by type of instrument, type of consumer expenditure, type of consumer expenditure and payment instrument, and dollar value. [DCPC Tables 1–4]
2. *Total number and value of purchases and person-to-person (P2P) payments per consumer for October 2012* (hereafter called “nonbill payments”): purchases by instrument type, consumer expenditure type, and type of device used. [DCPC Tables 5–7]
3. *Total number and value of bill payments per consumer for October 2012*: bill payments by instrument type, consumer expenditure type, and location. [DCPC Tables 8–10]
4. *Consumer cash management for October 2012*: holdings by denomination, deposits and withdrawals by location, withdrawals by source of funds, and shares of consumers managing their cash. [DCPC Tables 11–15]
5. *Consumer Characteristics*: information about consumer demographic characteristics and household income. [DCPC Table 16]

All DCPC data are available free of charge to the public, along with complete technical documentation.³ The 2012 DCPC public-use microdata set contains the consumer-level DCPC responses to all of the survey questions, including those used to create the official tables. A complete list of variables in the 2012 DCPC datasets can be obtained from the questionnaire and Technical Appendix, both posted online.⁴ All DCPC data users are strongly encouraged to read the Technical Appendix (Angrisani, Foster, and Hitczenko 2017) for more information on the data. For more information about the measurement approach and content of the DCPC, see Greene, O’Brien, and Schuh (2017), which summarizes differences in survey methodology between the 2012 DCPC and its second edition in 2015. The DCPC estimates reported here may be revised in the future as a result of additional process improvement and insights from new data. Rounding may have produced small discrepancies in the estimates throughout the paper.

³ See <http://www.bostonfed.org/economic/cprc/data-resources.htm>.

⁴ To obtain the 2012 DCPC dataset and questionnaire, see <https://www.bostonfed.org/publications/diary-of-consumer-payment-choice.aspx>.

The remainder of this paper is organized as follows. First, we provide context and motivation for the DCPC, and then we report data on consumer payments and cash management for the month of October 2012. Next, we briefly compare the 2012 DCPC results to the 2012 Survey of Consumer Payment (SCPC) and provide a nontechnical description of the content and survey methodology of the DCPC. (A corresponding technical appendix is available in Angrisani, Foster, and Hitzenko [2017].) Before concluding, we describe the main concepts and definitions of the DCPC and summarize the changes made since 2012. The official tables follow the conclusion.

Motivation for a Consumer Diary

In 2010, the Boston Fed teamed with the Federal Reserve Banks of Richmond and San Francisco to develop and field a Diary of Consumer Payment Choice. This U.S. effort joined an international movement by central banks and researchers to develop consumer payment diaries; see Bagnall et al. (2016) for an inter-country comparison of consumer payment choices in Australia, Austria, Canada, France, Germany, the Netherlands, and the United States (using preliminary 2012 DCPC results for the U.S. data).⁵ The primary motivation for the DCPC was the belief that daily recording of payment activity would produce more accurate results than those from recall-based surveys such as the SCPC. The DCPC asks respondents to record every payment they make each day; the SCPC asks respondents to recall from memory how many payments they typically make during a longer period of time (a week, month, or year). Therefore, the DCPC can be used to benchmark and evaluate the effectiveness of the SCPC, which the Boston Fed has administered annually since 2008.⁶

A second important motivation for developing and implementing the DCPC was to obtain dollar values of consumer payments, which are not collected in the SCPC. Dollar values are important for understanding payment behavior, because the choice of payment instrument is

⁵ The International Association of Currency Affairs (IACA) also helped facilitate this movement by bringing the parties together in an environment conducive to voluntary collaboration and mutual development. In particular, Adrian Baxter, Eugenie Foster, and Rick Haycock were instrumental in encouraging and facilitating collaboration among central bank researchers who were developing consumer surveys and diaries of payment choice.

⁶ The 2012 SCPC and DCPC are compared below.

correlated with the dollar amount of payments, as Klee (2008) and Cohen and Rysman (2013) found from examining grocery store scanner data. In addition, the DCPC was designed to enrich our understanding of consumer cash usage—which is particularly important for the Cash Product Office of the San Francisco Fed—because there is a lack of data on cash usage by U.S. consumers. To our knowledge, the only publicly available data on consumer-level cash behavior came from the Survey of Currency and Transaction Account Usage (SCTAU), conducted by the Board of Governors of the Federal Reserve System in 1984 and 1986, and the SCPC, which, as noted, launched in 2008.⁷ The DCPC adds further details about consumers’ use of cash by obtaining data on the types of cash expenditures, details of cash management, and information about cash holdings and use of currency denominations. For a further discussion of U.S. measures of cash and noncash payments, see Greene, Schuh, and Stavins (2016), in particular Figures 1 and 18.

Total Number and Value of Payments

U.S. consumers on average made 59 payments in October 2012, or almost two per day. The average total dollar value of payments per consumer for the month was \$4,043, for an average per-payment value of \$69. These estimates are based on DCPC respondents’ daily recording of their transactions during a three-day period. The daily values were converted to monthly values using appropriate weights.⁸

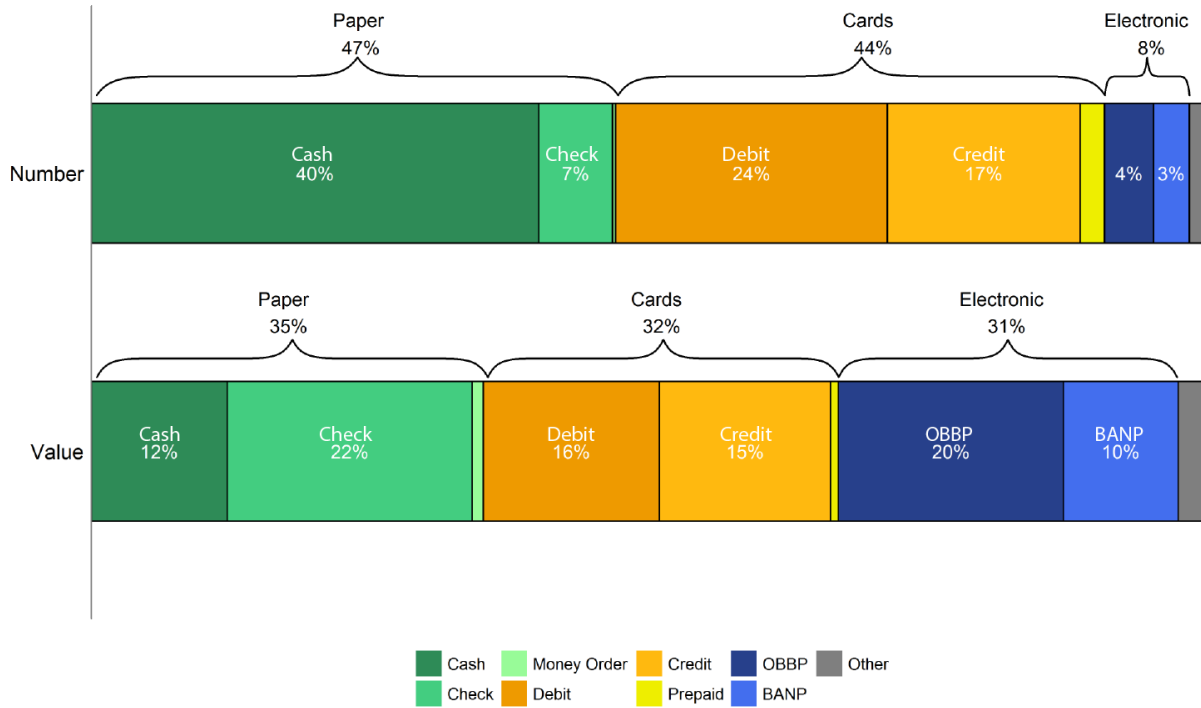
Number Shares by Payment Instrument

The most commonly used payment instrument was cash, followed by debit and credit cards. Consumers on average made 23.7 cash payments (40.2 percent of total payments), 14.4 debit card payments (24.4 percent), and 10.2 credit card payments (17.3 percent) in October 2012 (DCPC Table 1). The use of paper instruments—cash, check, and money order—accounted for nearly half of all payments (47.1 percent), with payment-cards use close behind (43.9 percent of all payments). Electronic payments—online banking bill payments (OBBP) and bank account

⁷ See Avery et al. (1986 and 1987) for more details on the SCTAU.

⁸ See Angrisani, Foster, and Hitczenko (2017) for details on how the weights were constructed and applied.

number payments (BANP)—constituted only 7.6 percent of all payments. The top panel of Figure 1 shows the share of each payment instrument in terms of the number of transactions. Over the three-day diary period, cash was used by more consumers than other payment instruments: 72.7 percent of consumers used cash, and debit cards were next, with 45.2 percent of consumers using them for payments.



Source: 2012 DCPC, Federal Reserve Bank of Boston.

Figure 1: Payment instrument use, shares by number and value

Value Shares by Payment Instrument

The DCPC also collects data on the dollar value of each transaction. Unlike the number shares, the value shares were approximately evenly distributed across paper, cards, and electronic payments (DCPC Table 1). The bottom panel of Figure 1 plots the shares of the dollar value of payments by payment instrument. Cash payments account for 40.2 percent of the number of payments but only 12.2 percent of the total dollar value of consumer payments. In contrast with cash, check and electronic payments tended to be used for greater-value payments and therefore had substantially greater shares by value than by volume. The share of check by

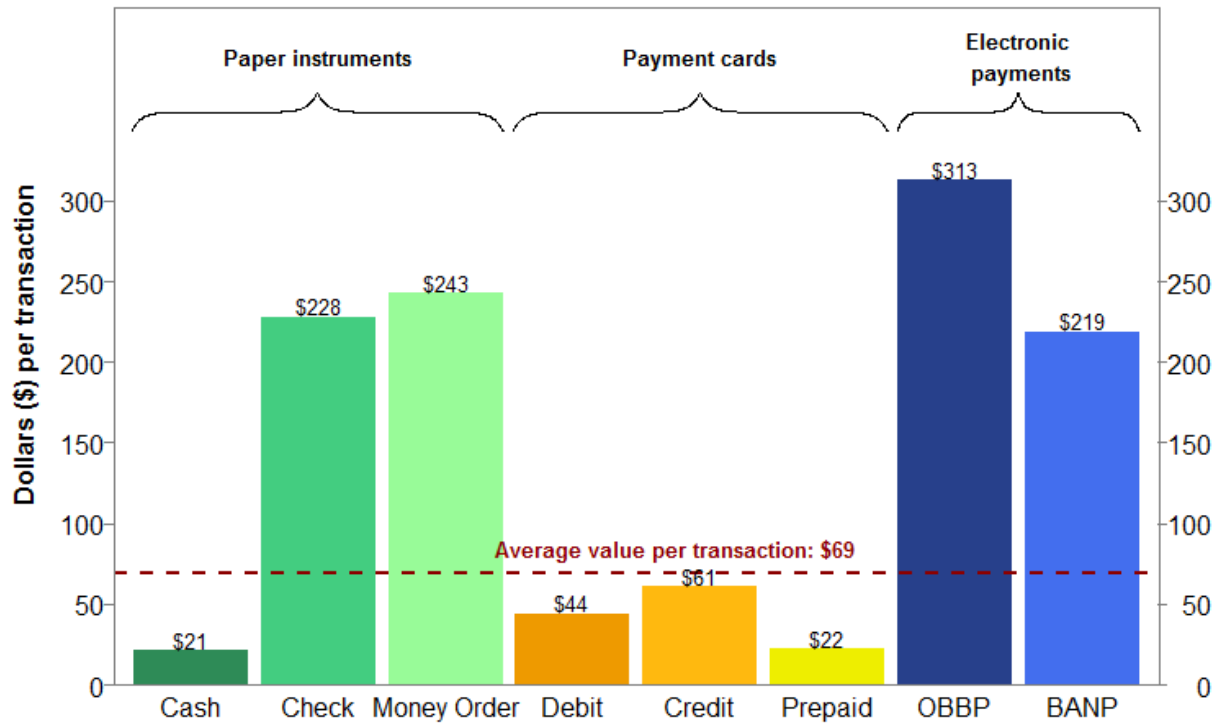
value was 22 percent, and the shares of OBBP and BANP were 20.2 and 10.3, respectively. The value shares of debit and credit cards were less than their respective volume shares, at 15.8 percent and 15.4 percent, respectively.

Like previous studies, the 2012 DCPC shows that consumer choices of payment instrument were correlated with the dollar values of their payments.⁹ DCPC Table 4 shows, for example, that two-thirds of payments for less than \$10 were made with cash.

Average Value of Payment by Instrument

As noted above, consumer choices of payment instrument are correlated with the dollar value of payments. Figure 2 shows the average value per payment by payment instrument, which varied substantially across payment instruments. Cash had the lowest average value at \$21 per payment, closely followed by prepaid cards at \$22 per payment. The average debit and credit card payments were \$44 and \$61, respectively. OBBP had the highest average payment value: \$313.

⁹ These studies include Bagnall et al. (2016), Cohen and Rysman (2013), Klee (2008), and Bounie and François (2006). See Greene, O'Brien, and Schuh (2017) for evidence of these correlations in the 2012 DCPC data.

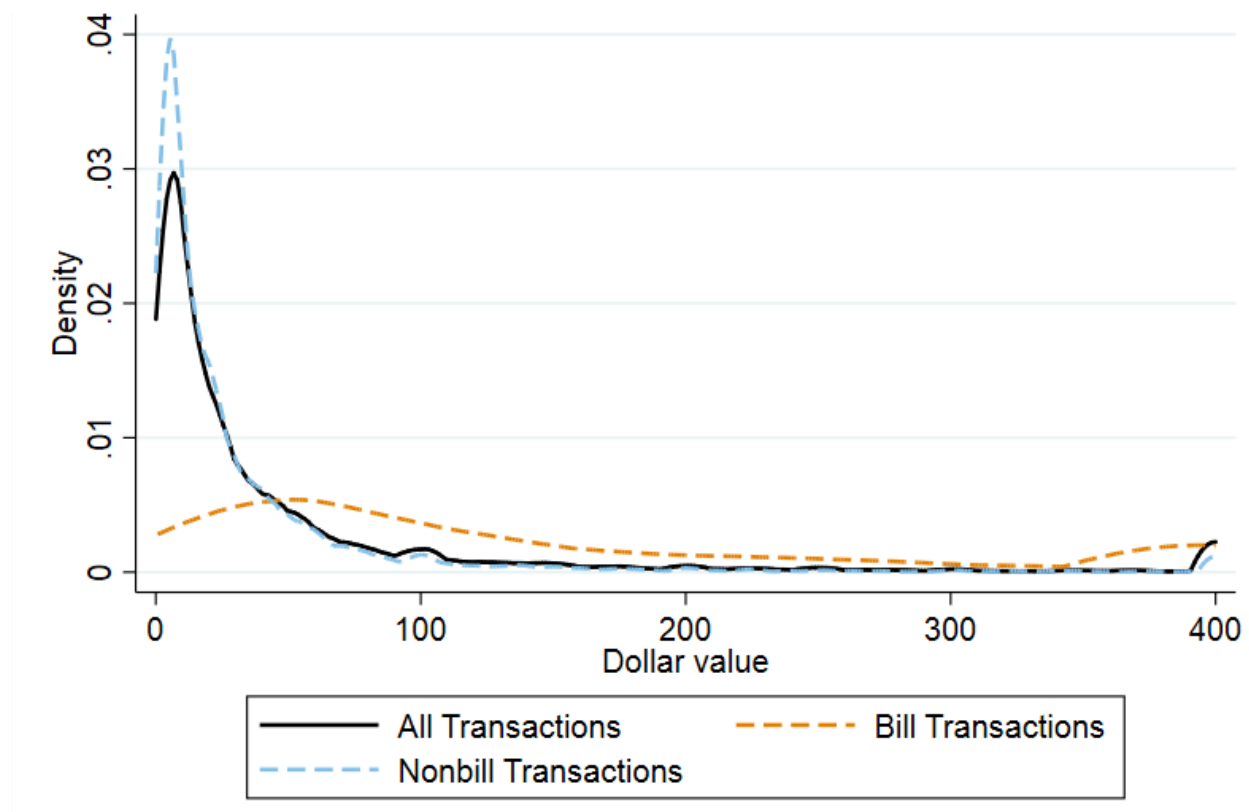


Source: 2012 DCPC, Federal Reserve Bank of Boston.

Figure 2: Dollar value per payment by payment instrument

The correlation between payment instrument choice and payment value shown here is unconditional, that is, it does not control for factors such as characteristics of the consumer or payment that might explain the payment instrument choice and alter the estimated (conditional) correlation. Nevertheless, this simple result confirms that collecting dollar values of payments can contribute to a better understanding of consumer payment choices.

Individual Payment Values



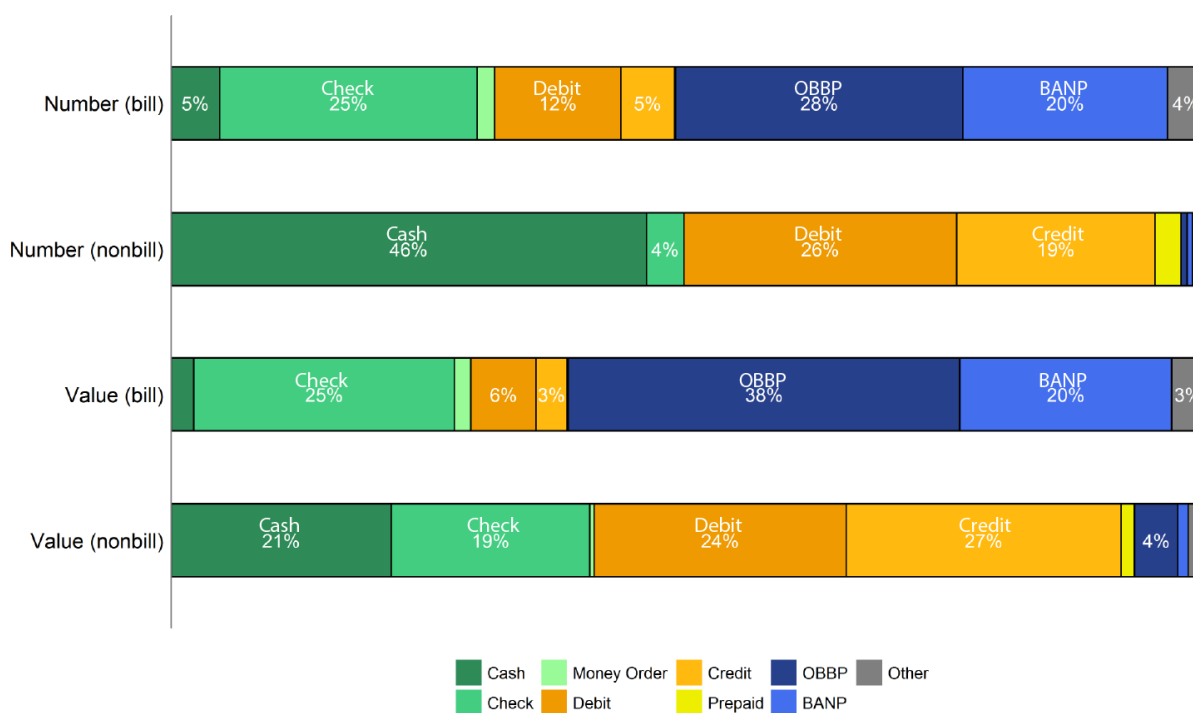
Source: 2012 DCPC, Federal Reserve Bank of Boston. Note: All values were truncated at \$400. The smooth distribution of the data was constructed by estimating the probability density function of individual payment values.

Figure 3: Distribution of individual payment values for all transactions, bills, and nonbills

Figure 3 shows the distribution of individual payment values for all payments (solid line), bill payments, and nonbill payments (including purchases and P2P, dashed lines), with all values truncated at \$400. The graph shows that the majority of all payments were for low values. In fact, 34.3 percent of all payments were for less than \$10, and 51.3 percent of all payments were for less than \$20. The distribution was strongly skewed, especially for nonbill payments: 39.5 percent were for less than \$10, and 58.5 percent were for less than \$20. Bill payments were more evenly distributed throughout the value range.

Consumer Payments by Type of Expenditure

In the broad categories of purchases, P2P payments, and bills, the vast majority of payments recorded in the DCPC were purchases and P2P payments (hereafter called “nonbills”): of the 59 monthly payments consumers made on average, 50.7 were nonbills (86 percent) and 8.3 were bill payments (14 percent). Because nonbills constituted the majority of payments, the breakdown of the number of these payments resembles the breakdown of all payments (DCPC Table 5). Figure 4 shows an analysis of bill and nonbill payments by payment instrument, categorizing them by number of payments (top two horizontal bars) and value of payments (bottom two horizontal bars).



Source: 2012 DCPC, Federal Reserve Bank of Boston.

Figure 4: Payment instrument use for bills and nonbills, shares by number and value

Compared to nonbills, bill payments were much more frequently paid by check or electronic payments: the share of check payments was 24.9 percent for bills and 3.6 percent for nonbills, and the share of electronic payments was 47.5 percent for bills and 1.1 percent for nonbills (DCPC Tables 5 and 8). Of the two electronic payment types, consumers used OBBP

more frequently than BANP for bill payments: 2.3 payments or 27.8 percent of all bills on average for OBBP and 1.6 payments or 19.8 percent for BANP.

Cash and cards were consumers' preferred choices for nonbill payments, accounting for nearly all such payments (94.2 percent of the total number). Among card payments, debit was the most common method (13.4 payments or 26.4 percent on average), followed by credit (9.7 payments or 19.2 percent) and prepaid cards (1.3 payments or 2.5 percent). Consumers employed cards to pay 52.3 percent of the total value of nonbills and only 9.3 percent of the total value of bills. They used cash to pay 46.0 percent of the number of nonbills, 21.3 percent of the total value of nonbills, and only 2.2 percent of the total value of bills.

The breakdown of bill shares by value reveals that electronic bill payments (OBBP and BANP) accounted for more than half the value of all bill payments (58.4 percent). Bills paid by OBBP, by BANP, and by check had the highest average values at \$315, \$239, and \$234 per payment, respectively. On average, bills paid by cash (\$110) or by card (\$123) were lower in value. Though consumers used cash far less frequently for bills than for other payments, cash bill payments were on average much larger in value than other cash payments (\$110 versus \$19).

DCPC Table 7 shows nonbill payments by device. Almost all in-person payments were made with no device. Of the nonbill payments that were not made in person (on average only 3.3 payments out of 50.7), about half were made on a computer, and the rest were made by mail or on a mobile phone. Almost all bill payments were not made in person (7.3 out of 8.3; DCPC Table 10). The most common location for bill payments was by mail (4.0 payments).

Respondents also classified their payments by broad merchant category (DCPC Table 4).¹⁰ DCPC Tables 6 and 9 show nonbill and bill payments by payee type. While food expenditures

¹⁰ The classification of payments by merchant category versus expenditure category is complex and imperfect. So, while the total number and value of payments may be reasonably good estimates of actual U.S. totals, detailed estimates by industry or product type may not provide good estimates of the disaggregated categories. Preliminary analysis of the number and value of payments by DCPC merchant category seems to support this hypothesis, so the reader is cautioned to treat estimates by merchant category circumspectly. The methodology of classifying payments by industry and product was developed further for the 2015 and 2016 DCPCs and is an ongoing area of research.

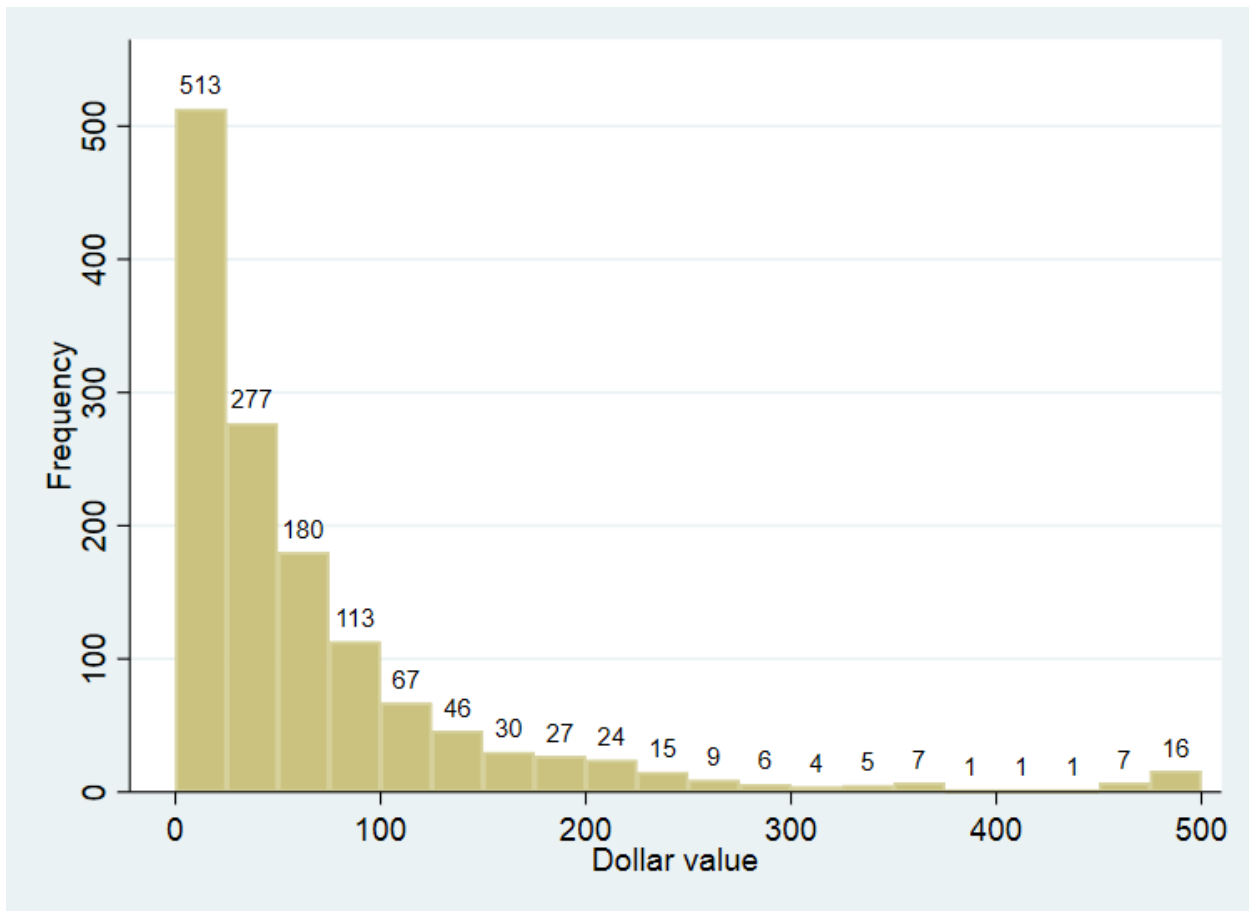
constituted the largest share of payments by number at 55 percent of all nonbill payments (DCPC Table 6), they accounted for only 28 percent of the overall value of nonbill payments, as the average value of food payments was the lowest among all merchant categories. For bills, housing-related expenditures accounted for the highest share of payments in terms of both number and value (DCPC Table 9).

Cash Management

Holdings and Use

The DCPC asked respondents to count the cash in their wallet, purse, or pocket by denomination at the beginning of their first diary day and each night. Figure 5 shows frequency distributions of cash holdings for respondents' opening day of the DCPC.¹¹ Half of consumers held \$25 or less. The average amount of cash held was \$57. DCPC Table 11 shows the distribution of cash holdings by denomination. The most commonly held bill was \$1 (47.5 percent of all bills), followed by \$20 (26.8 percent) and \$5 (13.2 percent). The most value held was in \$20 bills (54.4 percent of the total value held).

¹¹ See DCPC Table 11 for the results on cash holdings by denomination, and see Fulford et al. (2015) and Greene and Schuh (2014) for details on consumers' holding and use of \$1 and \$100 bills, respectively.



Source: 2012 DCPC, Federal Reserve Bank of Boston. Note: All values were truncated at \$500.

Figure 5: Frequency distribution of cash holdings at the start of respondents' first diary day

Deposits and Withdrawals

The DCPC asked respondents to record any transactions involving cash, so in addition to noting the purchases, P2P payments, and bill payments summarized above, they also recorded cash deposits and withdrawals. On average, consumers made 0.86 deposits and 5.0 withdrawals in October 2012 (DCPC Tables 12 and 13). The average value per deposit was \$320, although deposits at a bank teller were higher on average than those at an ATM (\$353 and \$140, respectively). A bank teller was the most common location for cash deposits.

The average amount per cash withdrawal overall was \$107, and the average amount per ATM withdrawal was \$105. Withdrawals at other locations, such as from an employer or bank teller, were on average greater in value, but they occurred less frequently. The most frequent

source of cash was a family member or a friend (31 percent), followed by an ATM withdrawal (25.4 percent). Of the five monthly withdrawals, on average 2.0 were from a bank account (ATM or teller), 1.6 were from another person, and 0.9 was through another payment instrument, such as cashing a check, getting a credit card advance, or withdrawing from a prepaid card.

Consumers withdrew cash more frequently than they deposited it. While only 6.3 percent of consumers deposited cash during their three DCPC days (see DCPC Methodology below), 34 percent withdrew cash during the same period. On average, consumers withdrew \$540 and deposited \$276 in cash in October 2012. The finding that consumers withdrew more cash than they deposited is not surprising, given that only 4.7 percent of consumers reported that they are paid in cash, but 40.2 percent of transactions by number and 12.2 percent by value were conducted in cash. The average total value of cash payments in October 2012 was \$495 (DCPC Table 1), which is slightly less than the total amount withdrawn. However, while the withdrawals, deposits, and transactions measure cash flows, consumers hold some stock of cash in their wallets and elsewhere, as discussed above. The difference between the amount withdrawn and the amount used for transactions can be attributed in part to changes in that stock.

Comparison to the 2012 Survey of Consumer Payment Choice

Since 2008, the Federal Reserve Bank of Boston has been conducting the annual Survey of Consumer Payment Choice (SCPC), an internet-based, half-hour survey of about 2,000 U.S. consumers (ages 18 years and older) that obtains detailed estimates of their adoption and use of the most common payment instruments. The DCPC is designed, in part, to validate and supplement the SCPC, which obtains data on the number of consumer payments from respondents' recall of their recent typical behavior.¹² Largely because of potential measurement error from recall, the SCPC collects only the number of payments made by consumers and not the dollar value of those payments.

¹² See Schuh and Stavins (2014) for a detailed summary.

A comparison of the DCPC to the SCPC reveals three key findings. First, in the SCPC, respondents reported 69 payments in a typical month, or 10 more than they recorded in the DCPC in October 2012. Most of this discrepancy is attributable to bill payments: on average, consumers reported paying 22 bills per month in the SCPC but only 8.3 bills in the DCPC. It is not clear why the number was lower in the DCPC, but inadequacies in the DCPC questionnaire’s ability to elicit bill-payment reporting is a likely leading explanation.¹³ In the SCPC, for example, respondents were asked about all payments made in a typical month, so recurrent and previously scheduled bill payments might have been more easily recalled (Table 1). This issue warrants additional research.¹⁴

2012	SCPC	DCPC	Difference
Total transactions per respondent per month	68.9	59.0	-9.9
Bills	22.0 (31.9%)	8.3 (14.1%)	-13.7
Automatic	6.1 (8.9%)	3.1 (5.3%)	-3.0
Nonautomatic	15.9 (23.1%)	5.2 (8.8%)	-10.7
Nonbills	46.9 (68.1%)	50.7 (85.9%)	3.8
In person, by mail or by phone	42.0 (61.0%)	47.8 (81.0%)	5.8
Online or electronic	5.0 (7.3%)	2.8 (4.7%)	-2.2

Source: 2012 DCPC and 2012 SCPC, Federal Reserve Bank of Boston. Note: Numbers may not sum due to rounding.

Table 1: Number of bill/nonbill transactions in 2012 SCPC and DCPC

Second, cash, debit cards, and credit cards accounted for the bulk of consumer payments in both the SCPC and DCPC, but the shares of debit and credit card transactions recorded in the SCPC were greater than those recorded in the DCPC, while the share of cash transactions was lower in the SCPC than in the DCPC (Table 2).

¹³ Questionnaire changes in 2015 address this concern.

¹⁴ Adjustments to the questionnaire in 2015 improved DCPC’s ability to measure bill payments. See Greene, O’Brien, and Schuh (2017).

2012	SCPC	DCPC	Difference
Total transactions per respondent per month	68.9	59.0	-9.9
Cash	18.4 (26.8%)	23.7 (40.2%)	+5.3
Check	6.5 (9.5%)	3.9 (6.6%)	-2.6
Debit card	20.6 (29.9%)	14.4 (24.4%)	-6.2
Credit card	14.9 (21.6%)	10.2 (17.3%)	-4.7
Prepaid/Gift/EBT card	0.8 (1.2%)	1.3 (2.2%)	+0.5
Online banking bill pay (OBBP)	3.2 (4.7%)	2.6 (4.4%)	-0.6
Bank account number payment (BANP)	3.3 (4.7%)	1.9 (3.2%)	-1.4

Source: 2012 DCPC and 2012 SCPC (Table 27), Federal Reserve Bank of Boston. Note: Numbers may not sum due to rounding. Money orders, traveler's checks, text payments, and other/unreported omitted from this table.

Table 2: Payments by payment instrument in 2012 SCPC and DCPC

Third, in terms of payments by instrument, the DCPC found significantly more cash payments than did the SCPC. The SCPC respondents reported 18.4 cash payments (26.8 percent of all payments) on average, compared to 23.7 cash payments in the DCPC (40.2 percent). Some of this difference likely stems from the SCPC respondents' recording more bill payments, which are less frequently made with cash.¹⁵ The discrepancy in the number of cash payments indicates that consumers may remember their cash payments more accurately when they record them the same day instead of trying to recall them later. Consumers may not remember their low-value payments, especially when they're providing an estimate of aggregate monthly payments. Aggregation may be as important as lack of recall, and the two effects might interact with each other.

DCPC Methodology

The DCPC was designed to measure all daily U.S. consumer payments by payment instrument over a fixed calendar period (month). Each participant recorded details about his or her daily payments for three consecutive days. This strategy generated aggregate estimates of the number and value of consumer payments for each day in the DCPC sample and, when the estimates were summed across all days, for the month. October was chosen so that the aggregate

¹⁵ Later improvements to the way in which the DCPC collects information about bills are described in Greene, O'Brien, and Schuh (2017), which includes an analysis of the ways in which these improvements may have affected the comparability of 2012 and 2015 DCPC results.

estimates of the number of payments could be compared to those in the SCPC, which is fielded primarily in October (see Angrisani, Foster, and Hitczenko 2013) and because October has a relatively small seasonal component.¹⁶

The unit of measurement in the DCPC is a U.S. consumer, as opposed to a U.S. household. It is less complicated and less costly to measure payments by one consumer versus all members of one household, but doing so creates challenges for measuring payments that are made jointly by household members, such as utility bills (electricity, water, etc.). However, the DCPC contains considerable information about the composition of each respondent's household and his or her role in the household, which is helpful in analyzing individual consumer payment choices.

Because each respondent participates for only three consecutive days of the month, an individual consumer's recorded payment activity is unlikely to be a representative or comprehensive picture of his or her payments for the month.

The DCPC was designed to collect data that complement and enhance the data collected by the SCPC (Table 3). The primary similarity between the two surveys is the counting of the number of consumer payments by payment instrument. The primary difference is that the DCPC also collects the dollar value of each payment. Given the observed correlations between payment instruments and average dollar values of payments, having data on both the number and dollar value of payments provides a significant advantage to researchers seeking to document and understand consumer payment choice.

For each payment they recorded, respondents were asked to record five additional characteristics: time of day; location (payment made in person or not in person); device, if used (computer, tablet, mobile phone, landline phone, mail or delivery service, or none of these); merchant type (from one of 45 categories, see Table 9); and merchant name (only in paper diary, not reported online). The DCPC also records more detail than the SCPC about cash management (such as currency denomination, cash deposits, source of cash withdrawals, and coin-to-bill

¹⁶ Hernandez, Jonker, and Zwaan (2016) reports seasonal variation of as much as nearly 10 percent in Dutch payments for certain months, but the authors find that October seasonal variation is essentially zero.

transactions) and income (such as type, dates of previous and next income receipt, and form of income payment). The decision to record many of these details stemmed from the need to carefully track the nature of daily payments.

Feature	SCPC	DCPC
Financial responsibility	x	
Assess payment instruments (PI)	x	
Adoption of PI	x	x (implied)
Incidence of use of PI	x	x
Cash activity	x	x
Frequency of use of PI	x	x
Dollar values of payment activity		x

Source: Federal Reserve Bank of Boston.

Table 3: Comparison of data collected by SCPC and DCPC

Despite the detailed information about specific transactions, diary recordings may contain flaws not found in data from financial institutions or other more exact measures. For example, diary respondents might not record all payments accurately for various reasons: they forget payments, delay payment recording or data entry, omit illegal or embarrassing payments, make data-entry errors (online), or postpone payments until after the diary period to avoid response burden.

Mixed-Mode Data Collection

A daily diary of consumer payment choice has the potential to minimize respondent recall error by providing a means for near-real-time recording of individual payments. DCPC respondents were asked to record their payments in detail each day, thus reducing the period of recall to one day at most. The 2012 DCPC used sequential mixed-mode survey methodology.¹⁷ In the first stage, respondents were asked to carry a paper memory aid and use it or some other method of their choosing to record their transactions each day. In the second stage, respondents completed an unassisted online survey questionnaire, entering their daily transactions data and answering questions about recurring bill payments and other items that were not included in the

¹⁷ See Chapter 8 of Dillman, Smyth, and Christian (2009).

memory aids. To our knowledge, the DCPC is the only payment diary that has attempted to collect data on recurring bill payments.

We decided to rely on respondents to enter diary data online based on the results from pilot studies in 2010 and 2011, each of which involved 350 to 400 panelists. In 2010, respondents were required to fill out their memory aids and complete the online survey. They were asked (and paid) to mail their memory aids to the RAND Corporation, the survey vendor. RAND then re-entered the memory-aid data into the online survey independently for cross-checking. A comparison of the respondent-entered and RAND-entered data revealed only a few discrepancies, and they were small and of minor consequence.¹⁸

The 2012 DCPC offered a choice of two paper memory aids: a long form and a short form. Figure 6 shows a page of the long-form memory aid, on which respondents recorded seven core variables for each nonbill payment every day.¹⁹ Respondents who chose not to use either paper aid were encouraged to use some other form of recording, such as collecting receipts. Experience from and experiments with the 2010 and 2011 DCPC pilot studies informed this flexible approach to reporting.

¹⁸ The 2011 pilot study included some remedies to the questionnaire and data-entry process to reduce errors and inconsistencies.

¹⁹ The memory aids are available online at <https://www.bostonfed.org/publications/diary-of-consumer-payment-choice/2012-diary.aspx>.

DAY 1 – DAILY PAYMENTS AND CASH ACTIVITY

- It's OK if you don't make any purchases today. Just tell us when you go online tonight. We're interested in all types of payment behavior, even 0 purchases.
- We will ask you about any bills and cash deposits online.
- Please write today's date in the space provided _____/_____/_____

Please circle the Payment Method codes to tell us what you carried out of the house today.	P1 P2 P3 P4/P5 P6 P9 P10	I did not leave the house today. <input type="checkbox"/>
--	---------------------------------	---

Time	Amount Spent	Payment Method	Location	Device	Merchant Type	Merchant Name
____ am ____ pm	\$ _____.	P	L	D	M	
____ am ____ pm	\$ _____.	P	L	D	M	
____ am ____ pm	\$ _____.	P	L	D	M	

<u>Payment Method Codes</u>	
P1: Cash	P7: Bank account number payment
P2: Check	P8: Online banking bill payment
P3: Credit card	P9: Money order
P4: Debit card (Used PIN)	P10: Traveler's check
P5: Debit card (Did not use PIN)	P11: Text message payment
P6: Prepaid/Gift/EBT card	P12: Other payment method

<u>Location Codes</u>	
L1: Payment in person	L2: Payment not in person

<u>Device Codes</u>	
D1: Computer (laptop or desktop)	D4: Landline phone
D2: Tablet (e.g., iPad, Kindle)	D5: Mail or delivery service
D3: Mobile phone	D6: None of the above

Source: 2012 DCPC, Federal Reserve Bank of Boston.

Figure 6: Main page of the long-form memory aid in the 2012 DCPC

Recording of transactions appears to have been successful. Most respondents (85.9 percent) carried a paper memory aid (54.3 percent), collected receipts (71.4 percent), or did both to support their nightly online data entry (Table 4). Some respondents saved their receipts from all payments and cash management and stored them in a pouch provided to them. Other

respondents used their mobile phone, their own paper device, or some other method. It is possible that some respondents didn't use any recording device, in which case their diary responses would be essentially the same as those from a one-day recall survey. About 28 percent of respondents reported using the large paper diary, and about 37 percent reported using the smaller, checkbook-size version. The majority saved their receipts and used them to record their transactions.

	Percentage
Used paper memory aid and/or collected receipts	85.9
Used paper memory aid	54.3
Used large paper diary	27.5
Used small checkbook diary	37.1
Used paper memory aid, but did not collect receipts	14.4
Collected receipts	71.4
Referenced financial records	23.3
Used other memory aid	5.8
Did not use memory aid	9.8

Source: 2012 DCPC, Federal Reserve Bank of Boston. Note: Respondents could have used more than one type of memory aid. These numbers are unweighted.

Table 4: Share of respondents using memory aids

Regardless of how they tracked their daily transactions, all respondents were asked to answer an online survey that was expected to take as long as 20 minutes per day to complete. Respondents were asked to go online at the end of each assigned diary day, or no longer than one day later, to minimize recall error, lost records, or other problems. The online survey tracked the time and day a respondent logged in, so it could be compared to his or her assigned calendar starting day; respondents were asked to affirm that the data they entered was for the proper calendar day. Both of these error checks were added to the DCPC as a result of the pilot studies.

Respondents were asked to enter their daily transactions into the online questionnaire, which was designed to resemble the structure and formatting of the long-form memory aid. After they entered their daily transactions, respondents were asked to answer as many as four additional survey questions about their daily transactions (the number of questions depended on the payment instrument used), such as whether their payment card had a Visa or MasterCard

logo and whether they received a discount or paid a surcharge for using their payment instrument. In addition, respondents were asked to report their recurring bill payments, which were not included in the paper memory aids.

Sampling Methodology

The DCPC was implemented in October 2012 with more than 2,500 respondents from the American Life Panel (ALP) of the RAND Corporation. The 2012 DCPC used a random sampling method designed to obtain a nationally representative sample of consumers for the month of October 2012 within the structure of the ALP convenience panel. Respondents were randomly selected in advance (September 2012) using age, race, and household income to generate sampling probabilities (sampling was conducted jointly with the SCPC). Each respondent was asked to complete the DCPC for three consecutive days starting on one of 33 days from September 29 through October 31 (with the final three-day period ending November 2). Thus, each day could be expected to include about 225 diarists representative of the U.S. population evenly divided by those filling out the first, second, and third days of the DCPC.²⁰ This overlapping wave structure was designed to smooth out potential variation in responses by day of diary participation caused by issues such as diary fatigue (Figure 7).

	Number	Percentage of previous row
American Life Panel members (September 2012)	5,093	—
Members accepting invitation to participate in the DCPC	3,427	67.3
Participants randomly selected for possible participation	2,721	79.4
Members agreeing to participate	2,547	93.6
Participants who completed all three days	2,468	96.9

Source: Federal Reserve Bank of Boston.

Table 5: Acceptance and participation rates for the 2012 DCPC

²⁰ Diarists who declined to participate in their randomly selected assigned period were not allowed to reschedule their assigned diary period. Instead, they were replaced by other randomly selected diarists. Diarists who canceled their participation at the last minute were replaced, as best as possible, by other demographically similar respondents. For more information on sample selection and participation, see the technical appendix.

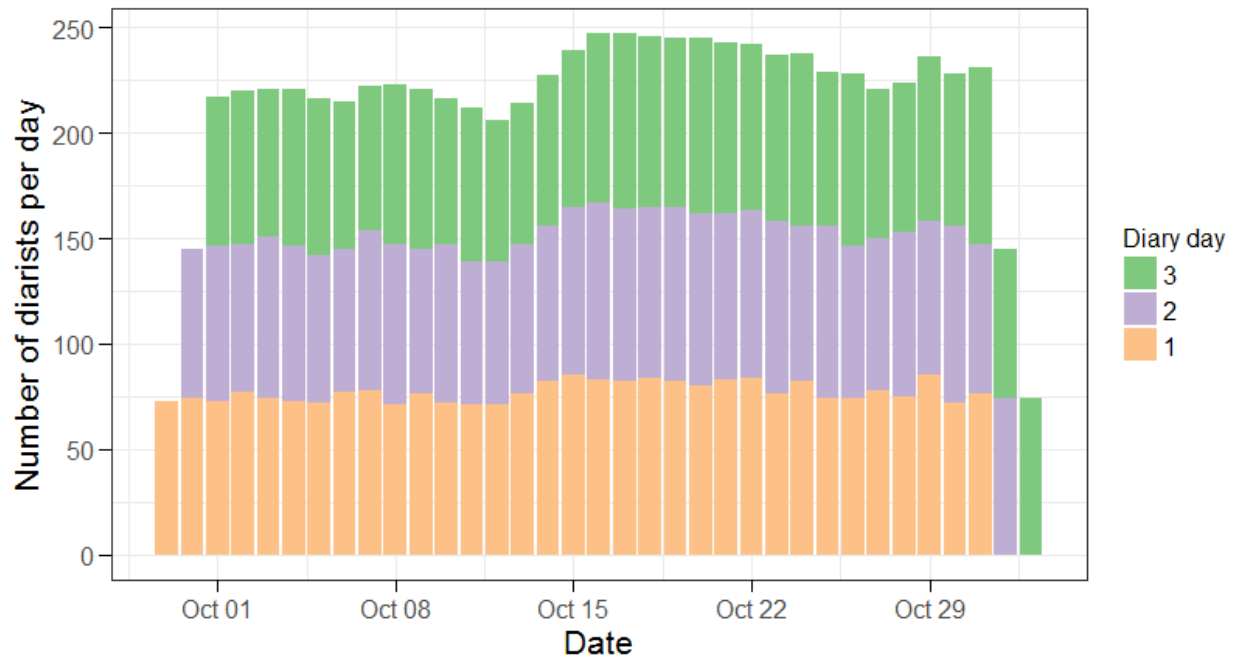
As documented by Table 5, about two-thirds (67.3 percent) of all ALP members accepted the initial invitation to participate in the DCPC. About four-fifths (79.4 percent) of these members were randomly selected to potentially populate the final DCPC sample and were sent invitations. Of these invitees, 93.6 percent agreed to participate (“participation rate”); of those who agreed, 96.9 percent completed all three days of the DCPC (“completion rate”). The 2012 DCPC respondents were chosen in such a way as to coincide as much as possible with the respondents to the 2012 SCPC, which was implemented about the same time. Respondents who completed both the SCPC and all three days of the DCPC provide the maximum information and data on their consumer payment choices. Most respondents who participated in both surveys completed the SCPC first. **Table 5** shows the 2012 DCPC response rates, and Table 6 shows the number of respondents in the 2012 SCPC and DCPC.

2012	Respondents
Total SCPC	3,176
Total DCPC	2,547
Total SCPC & DCPC	2,354
Official SCPC	2,065
Official DCPC	2,468

Source: Federal Reserve Bank of Boston.

Table 6: Number of respondents

Figure 7 depicts the outcome of the DCPC sampling strategy. As expected, the number of diarists participating on a typical day ranged from 200 to 250, except for the rolling start-up (September 29 and 30) and shut-down (November 1 and 2) periods. Also as expected, the proportion of diarists completing each of the three days was roughly equal (about one-third on each of the three days).



Source: 2012 DCPC, Federal Reserve Bank of Boston. Note: Including start-up and shut-down days in September and November.

Figure 7: Daily participation in 2012 DCPC

DCPC Performance

In addition to respondent acceptance and participation, several other metrics can be used to measure the performance of the 2012 DCPC. First, respondent burden for the DCPC was less than expected. On average, consumers made only 1.9 payments per day (not including cash-management transactions), so daily recording of transactions on the memory aid probably was not burdensome. The median time spent completing the online questionnaire was 39 minutes total over three days, which was well below the expected time of 20 minutes per day and 60 minutes total. Respondents received a \$20-per-day incentive for completing each diary day, which is typical for an ALP survey module.

Second, diary respondents generally were prompt in completing their online surveys each day; about 70 percent logged in to complete their nightly survey on the assigned date, and nearly 20 percent more did so on the following day or two. Overall, 86 percent of respondents completed their online input within one day of their last assigned reporting day, 93 percent within three days, and 95 percent within five days. Therefore, the vast majority of respondents likely made few if any recall errors. Only a small portion of respondents waited a week or more after their

assigned date to log in to the online survey; the data from these late respondents may have been susceptible to recall errors, record loss, and other concerns. In addition to implementing the main DCPC, following Hurricane Sandy in late October 2012, we fielded a short survey asking respondents whether (and how) they were affected by Hurricane Sandy. The survey focused on the hurricane’s impact on the respondents’ ability to make payments and/or withdraw cash.

Third, completion rates for the main DCPC questions were high, as shown in **Table 7**. Each type of transaction—purchase, bill, and cash withdrawal or deposit—had several associated questions. More than 94 percent of all questions were completed for each of the four transaction types, leaving very few non-responses to these core questions.

Transaction type	Number of Transactions	Percentage for which all questions were answered
Purchase	12,647	94.1
Bills	1,353	95.2
Withdrawals	1,237	95.2
Deposits	202	98.0

Source: 2012 DCPC, Federal Reserve Bank of Boston.

Table 7: Share of complete responses by transaction type, 2012 DCPC

Concepts and Definitions

Many of the DCPC concepts are the same as those from the SCPC. These include definitions of payment instruments, the consumer behavior that indicates adoption of payment instruments, and transaction types. This section defines additional concepts underlying the data collected in the DCPC.

Payment Instruments and Adoption

Schuh and Stavins (2014), Definitions Table 2, defines the nine payment instruments covered by the SCPC and DCPC. The 2012 DCPC additionally distinguishes between debit card payments made using a personal identification number (PIN) and those made without using a PIN. This distinction helps separate debit card payments authorized by a PIN from those that used other forms of authorization: signature, card-not-present (CNP), and neither signature nor CNP. We included this simple distinction because consumers (partly as a result of merchants’

classification) sometimes refer to signature debit cards as “credit” or simply might not have been aware of the distinction. Also, the retail scanner data used in previous studies on individual retail payments (such as Klee 2008) does not make this distinction.

Schuh and Stavins (2014), Definitions Table 3, defines adoption of bank accounts, payment instruments, and relevant technology (mobile phone, for example). Data on consumer adoption of payment instruments and deposit accounts were obtained from the responses to the SCPC and then brought in to the DCPC. In addition, the DCPC’s online questionnaire asked respondents to report which payment instruments they carried with them each day, which might differ from adoption. A decision about using a credit card, for example, depends crucially on whether the consumer is carrying the instrument when making a payment in person at the point of sale. Similarly, consumers need to carry cash in order to use it. Therefore, respondents were asked each night to report cash balances in their wallet or purse by denomination.

Characteristics of Payments

DCPC respondents received detailed instructions about the additional characteristics of payments—time, location, device, and merchant (that is, payee type)—in the long-form memory aid and online questionnaire. Respondents were asked to record a location and device for each payment because of the increasing complexity of the payment system. A consumer must be “in person” to make certain types of payments. For example, cash cannot be used when the consumer is not present. The device, sometimes called the payment “channel,” is of interest because it could correlate with the choice of payment instrument. Also, it has become a necessity to ask about devices because of the emergence of the mobile phone, which can be used not only for remote payments (like a computer) but also as a replacement for a plastic card within certain apps.²¹ Table 8 shows the choices respondents were offered for designating device and location.

²¹ Having data about the use of a device also makes it possible to track changes in shopping patterns over time, which may affect propensity to use cash in the future.

Device	Location
Computer	In person
Tablet	Not in person
Mobile phone	
Landline phone	
Mail of delivery service	
None of the above	

Source: Federal Reserve Bank of Boston.

Table 8: Respondent choices for device and location

Transaction Types

Schuh and Stavins (2014), Definitions Table 5, describes transaction types (for example, bill payments, purchases, and person-to-person payment). DCPC respondents were not asked to record bill payments in the long-form memory aid, though some appear to have done so (as observed by duplicate payments in the bill and nonbill sections). Each night, when they went online, respondents were reminded that they may not pay bills every day; some reminders were included to prompt better recall of bills. The online survey collected data about two categories of bill payments: automatic payments for recurring bills and other (including regularly scheduled recurring bills that are not automatically paid, irregularly timed bill payments, and one-time bills).

Respondents were expected to record all other payments made in the United States each day in their long-form memory aid or other recording device, regardless of whether they were traveling, but excluding payments made in foreign countries.²² U.S. payments could take the form of person to business (P2B), person to government (P2G), or person to person (P2P). P2B Payments could be further classified into nonfinancial and financial businesses. Nonfinancial payments were for the purchase of goods and services, which for the most part pertained to the economic concept of consumption. Financial payments pertained to debt service, asset purchases,

²² Payments made during foreign travel were excluded, but local cross-border payments made in U.S. dollars (at the U.S.-Canada border, for example) and remittances authorized in the United States may have been reported by some respondents if they did not consider this to be “foreign travel.”

portfolio reallocation (asset transfers), fees to financial institutions, and the like. For the most part, they pertained to savings (including debt reduction) or investment in assets such as real estate.

Payee and Expenditure Types

Another informative way to classify consumer payments is by the payee, that is, the recipient of the consumer's payment. Any exchange of money or credit for goods and services involves two parties: the payer (for purposes of this report, a consumer) and the payee. Thus, while a consumer may prefer a particular payment instrument, the payee also must agree to accept payment with that instrument. For example, airlines do not accept cash for onboard food and beverages, and small retailers sometimes do not accept credit cards. The 2012 DCPC employed the North American Industry Classification System (NAICS) to classify merchants, but it modified the system to incorporate other recipients of consumer payments.²³ NAICS uniquely assigns businesses into well-defined industries based on the products and services produced or sold. The NAICS is related to expenditure types through the products that define the industry. NAICS coding makes it possible to compare the DCPC data with benchmark values of expenditure data from other sources (for example, "Retail Sales," NAICS 44–45).

A related way to classify consumer payments is by the goods and services consumers buy or receive in exchange for their payment, that is, the type of consumer expenditure. For example, consumers may wish to pay for necessities (such as food and gas) out of their checking account balance or cash holdings (currency) and use credit cards for larger expenses (such as airline tickets) or durable goods (computers) to spread the cost over time. Minimal research has been done to investigate the potential link between payment choices and specific types of goods and services. Moreover, this idea is complicated by consumer shopping behavior that combines many types of goods and services into one payment (for example, at grocery stores and general merchandise stores such as Walmart and Target). Therefore, measuring consumer expenditures by payment values (or the "shopping basket") produces information that is less precise than data from surveys that measure consumer expenditures at the level of individual products (such as

²³ For more details about NAICS, see: <https://www.census.gov/eos/www/naics/>.

milk, eggs, and cereal). Most efforts to collect data on consumer expenditures use categories of goods and services that are familiar to consumers and typically conform to the economic definition of consumption.²⁴

In the long-form memory aid for the DCPC and the online questionnaire, respondents were asked to classify each of their payments into one of 45 merchant-expenditure categories. The 2012 DCPC employed a blended classification system for payees that aimed to combine the merchant (NAICS industry) and consumer expenditure type categories (from the Bureau of Labor Statistic's Consumer Expenditure Survey and Bureau of Economic Analysis's National Income and Product Accounts personal consumption expenditures). Industry and expenditure category definitions do not always align, so the merchant-expenditure category system has some limitations.²⁵ DCPC Tables 2, 3, 6, and 9 report payments by type of payee ("merchant") or consumer expenditure in 10 categories. Table 9 shows how these 10 categories relate to categories offered in the questionnaire.²⁶

²⁴ The Consumer Expenditure Survey (CEX) by the Bureau of Labor Statistics is a leading example of this approach (<http://www.bls.gov/cex/>). Another consumer study that also uses the American Life Panel is the one by Hurd and Rohwedder (2010). The definitive classification of consumption is found in the National Income and Product Accounts (NIPA) produced by the Bureau of Economic Analysis. Although broadly similar, the sources exhibit some differences in classification. For more details about the measurement of consumer expenditures using payment diaries, see Schuh (2017).

²⁵ The mapping of merchant (payee or NAICS code) to consumer expenditure categories for the 2012 DCPC is described in detail in Schuh (2017).

²⁶ Schuh (2017) demonstrates that the aggregate U.S. DCPC payment values in these high-level expenditure categories are considerably greater than aggregate U.S. CE expenditure values and relatively close to estimates of personal consumption expenditures (PCE) in these categories.

Merchant Category in DCPC Tables	Questionnaire Category	NAICs	Broad expenditure category, related to CEX	
Food and personal care supplies	Fast food, food service, food trucks, snack bars	722	1. Food, general merchandise, personal care supplies and services	
	Restaurants, bars			
	Grocery, pharmacy, liquor stores, convenience stores (without gas stations)	44-45		
Department and discount stores and websites, wholesale clubs and websites				
Online shopping (Amazon.com, etc.)				
Other stores (book, florist, hobby, music, office supply, pet, sporting goods)				
Clothing and accessories stores	448			
Vending machines	454			
Auto and vehicle related	Auto maintenance and repair	811		2. Vehicle purchases (net outlay); Gasoline and motor oil; Vehicle insurance; Vehicle rental, leases, licenses, and other charges; Air fare, taxis, bus fares; Miscellaneous transportation
	Auto rental and leasing	532		
	Auto vehicle and parts dealers	441		
	Gas stations	447		
	Parking lots and garages	488		
	Tolls	48-49		
Transportation (includes public transportation)				
Entertainment and transportation	Entertainment, recreation, arts, museums	71	3. Entertainment; Fees and admissions; Audio and visual equipment and services; Pets, toys, hobbies and playground equipment	
	Hotels, motels, RV parks, camps	72		
	Movie theaters	512		
	Phone/Internet (wired/wireless/satellite), online and print news, online games	51	4. Shelter; Utilities, fuels, and public services; household operations; Housekeeping supplies; Household furnishings and equipment	
	Housing related	Building contractors (electrical/plumbing/HVAC, tile, painting, etc.)		81
Building services		561		
Electric, natural gas, water and sewage		22		
Furniture and home goods stores, appliance and electronics stores, hardware and garden stores		44-45		
Heating oil dealers, propane dealers		454		
Rent, real estate agents and brokers		53		

	Mortgage		
	Trash collection	562	
Medical, education, and personal services	Child care, elder care, youth and family services, emergency and other relief services	62	
	Doctors, dentists, other health professionals	62	5. Health insurance; Medical services; Drugs; Medical supplies
	Hospitals, residential care		
	Education	61	6. Tuition; Test prep; School books and supplies for all types of school
	Veterinarians	81	3. Entertainment; Fees and admissions; Audio and visual equipment and services; Pets, toys, hobbies and playground equipment
Financial, professional, miscellaneous services	Personal care, dry cleaning, pet grooming and sitting, photo processing, death care		1. Food, general merchandise, personal care supplies and services
	Rental centers	532	4. Shelter; Utilities, fuels, and public services; household operations; Housekeeping supplies; Household furnishings and equipment
	Repair/maintenance of electronics and personal and household goods	811	
	Financial services, insurance	52	7. Personal insurance and pensions
	Employment services, travel agents, security services, office administrative services	561	8. Miscellaneous (includes legal fees, funeral expenses, bank service charges, etc.)
	Legal, accounting, architectural, and other professional services	54	
	Mail, delivery, storage	48–49	
Government and nonprofit	Taxes, fees, fines and other payments to governments	—	
	Charitable, religious, professional, civic (not government) organizations	813	9. Charity; Child support and alimony; Donations to charities, churches, educational institutions, and political organizations; Other gifts
Gifts and transfers to people	Friends and family	—	
	People who provide goods and services	814	
	Other people	—	
Other/unknown expenditure category.			

Source: Schuh (2017), 2012 DCPC, Federal Reserve Bank of Boston. Note: Broad expenditure categories 1, 3, and 4 appear in more than one row of this table.

Table 9: Mapping of DCPC Merchant Codes to NAICS and Broad CE Expenditure Categories

Developments Since 2012

Since 2012, the DCPC has been implemented three more times (2015, 2016, and 2017). The newer versions of the DCPC incorporated several improvements compared to the 2012 version. This section provides a high-level summary of changes to the DCPC since the 2012 version.²⁷ Improvements include the collection of the following additional data:

- Balances held in checking accounts and nonbank deposit accounts such as prepaid cards, PayPal, etc.
- Outstanding debt balances from credit card bill payments.
- Adjusted classification of expenditures based on official National Income and Product Account (NIPA) definitions.
- Dollar values, types, and frequencies of personal income receipts.²⁸
- Details about the timing and nature of bill payments to improve classification of expenditures.

Data from the 2015 and 2016 DCPC are described in Greene and Schuh (2017).

In 2015, the DCPC added a “Day 0” module that asked consumers to carefully count their cash holdings by denomination before they started recording their daily transactions on Day 1. On Day 0, they were also asked to report their bank account ownership and balances, as well as their preferences regarding payment instruments. Also in 2015, detailed reminders about bill payments and follow-up questions about the timing of bill payments, credit card management, and other types of debt were added to the Day 3 module (the final day of the DCPC). In addition, the 2015 DCPC questionnaire (and those that followed) explicitly mentioned large-value and very-small-value transactions (such as tolls and purchases from vending machines) to facilitate recall. Follow-up questions for all purchases were also added. These improvements were made in order to increase the accuracy and reliability of the DCPC data.

²⁷ For detail see Greene, O’Brien, and Schuh (2017).

²⁸ The 2012 DCPC asked for the days on which the respondent received income, not the dollar amount of income. In 2015 and following, respondents are asked to report the dollar amount of income received.

Because each type of survey has its own comparative advantages, we continued to conduct the SCPC annually after launching the DCPC in 2012. The results of the two surveys are qualitatively similar in terms of the shares of transactions conducted with each payment instrument, but each collects data that the other cannot obtain.

Conclusion

Following two pilot studies conducted in 2010 and 2011, the 2012 DCPC was the first official diary survey implemented as part of a long-term consumer survey program. The DCPC complements the SCPC, adding detailed information about individual transactions, in particular, the dollar value and merchant type for each transaction. The DCPC provides rich information on consumer payment behavior, including types of merchants and locations for retail purchases and bill payments conducted in person, online, or by mail. This detailed data can be used to improve understanding of consumer payment preferences and decisions.

The DCPC shows that consumers' choice of payment instrument strongly correlates with the dollar value of the transaction. In particular, cash is often used for smaller-value transactions and constitutes a value share that is smaller than its volume share for all consumer payments. In October 2012, consumers made 4 of 10 payments using cash. By value, payments were evenly distributed among paper (cash and checks), cards (debit, credit, and prepaid), and electronic (BANP and OBBP) instruments.

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The 2012 Diary of Consumer Payment Choice

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Table 1**All Payments by Type of Instrument in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All payments	59.0	69	4043
Paper instruments	27.8	51	1424
Cash.....	23.7	21	495
Check or money order.....	4.1	228	930
Check.....	3.9	228	890
Money order.....	0.2	243	39
Traveler's check.....	0.0	0	0
Payment cards	25.9	50	1289
Debit.....	14.4	44	638
PIN debit.....	7.3	44	316
Non-PIN debit.....	7.1	45	323
Credit.....	10.2	61	622
Prepaid/Gift/EBT card.....	1.3	22	29
Electronic payments	4.5	274	1231
Online banking bill payment.....	2.6	313	817
Bank account number payment.....	1.9	219	415
Text payment	0.0	142	1
Other payment method	0.8	116	95
Unreported payment method*	0.0	69	2
Percent share	Number per consumer	Value	
		per transaction	per consumer
All payments	100.0	—	100.0
Paper instruments	47.1	—	35.2
Cash.....	40.2	—	12.2
Check or money order.....	6.9	—	23.0
Check.....	6.6	—	22.0
Money order.....	0.3	—	1.0
Traveler's check.....	0.0	—	0.0
Payment cards	43.9	—	31.9
Debit.....	24.4	—	15.8
PIN debit.....	12.3	—	7.8
Non-PIN debit.....	12.1	—	8.0
Credit.....	17.3	—	15.4
Prepaid/Gift/EBT card.....	2.2	—	0.7
Electronic payments	7.6	—	30.5
Online banking bill payment.....	4.4	—	20.2
Bank account number payment.....	3.2	—	10.3
Text payment	0.0	—	0.0
Other payment method	1.4	—	2.3
Unreported payment method*	0.1	—	0.1

* Unreported payment method refers to transactions for which the respondent did not report a payment instrument type.

Table 2**All Payments by Type of Consumer Expenditure in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All payments	59.0	69	4043
Food and personal care supplies.....	28.1	22	619
Auto and vehicle related.....	7.0	74	519
General merchandise.....	7.5	58	432
Entertainment and transportation.....	3.7	64	236
Housing related.....	3.6	246	899
Medical, education, and personal services.....	2.5	106	267
Financial, professional, miscellaneous services.....	1.8	297	547
Government and nonprofit.....	1.1	106	117
Gifts and transfers to people.....	1.9	61	118
Other/unknown expenditure category.....	1.6	183	289
Percent share	Number per consumer	per transaction	per consumer
All payments	100.0	—	100.0
Food and personal care supplies.....	47.7	—	15.3
Auto and vehicle related.....	11.9	—	12.8
General merchandise.....	12.7	—	10.7
Entertainment and transportation.....	6.3	—	5.8
Housing related.....	6.2	—	22.2
Medical, education, and personal services.....	4.3	—	6.6
Financial, professional, miscellaneous services.....	3.1	—	13.5
Government and nonprofit.....	1.9	—	2.9
Gifts and transfers to people.....	3.3	—	2.9
Other/unknown expenditure category.....	2.7	—	7.1

Table 3**All Payments by Type of Consumer Expenditure and Payment Instruments in October 2012**

Percentage share of the number and value of transactions at the given type of consumer expenditure

Number of Transactions	Cash	Check	Credit	Debit	PP	BANP	OBBP	Other
All payments	40.0	6.6	17.4	24.4	2.3	3.2	4.4	1.7
Food and personal care supplies.....	50.2	1.6	17.1	26.8	3.5	0.0	0.1	0.6
Auto and vehicle related.....	35.3	3.1	22.4	31.5	1.7	1.9	2.0	2.0
General merchandise.....	28.8	5.0	26.0	30.6	1.4	2.8	3.9	1.5
Entertainment and transportation.....	38.9	7.5	14.7	17.6	3.0	6.7	8.5	3.2
Housing related.....	8.4	25.3	14.3	13.7	0.2	10.5	22.7	5.0
Medical, education, and personal services.....	27.3	16.9	19.9	22.0	0.2	3.8	6.5	3.3
Financial, professional, miscellaneous services.....	15.4	17.4	6.7	11.3	0.1	23.0	21.5	4.5
Government and nonprofit.....	43.8	38.3	3.7	3.3	0.0	3.9	5.3	1.7
Gifts and transfers to people.....	68.3	9.1	3.9	7.1	0.0	2.9	7.2	1.5
Unknown expenditure category.....	19.8	20.2	5.8	12.4	0.0	19.6	17.5	4.6
Value of Transactions	Cash	Check	Credit	Debit	PP	BANP	OBBP	Other
All payments	12.4	22.3	15.4	15.8	0.8	10.6	19.5	3.2
Food and personal care supplies.....	29.6	4.6	25.0	34.9	3.3	0.1	1.1	1.4
Auto and vehicle related.....	18.7	22.7	16.8	23.0	0.5	5.0	11.0	2.3
General merchandise.....	11.4	13.2	32.1	25.4	0.8	3.4	12.6	1.0
Entertainment and transportation.....	13.3	10.4	21.3	19.2	0.8	11.6	18.9	4.4
Housing related.....	4.8	31.3	6.9	6.8	0.1	14.5	31.1	4.5
Medical, education, and personal services.....	7.1	23.9	27.0	18.5	0.0	7.6	10.4	5.5
Financial, professional, miscellaneous services.....	2.2	35.8	7.0	3.2	0.0	18.5	31.3	2.0
Government and nonprofit.....	5.7	48.4	5.5	2.7	0.0	7.9	26.6	3.2
Gifts and transfers to people.....	40.2	21.9	4.2	4.0	0.0	5.6	17.8	6.3
Unknown expenditure category.....	4.8	18.6	2.5	4.4	0.0	31.0	33.0	5.6

Table 4

Payments by Dollar Value in October 2012

Top: Number of transactions within each dollar value range

Bottom: Share of transactions within each dollar value range

Average number	\$0 to \$9.99	\$10 to \$24.99	\$25 to \$49.99	\$50 to \$99.99	Over \$100
All payments	20.2	14.1	9.9	7.0	7.7
Paper instruments	13.4	7.0	3.2	1.9	2.4
Cash.....	13.2	6.4	2.3	1.1	0.7
Check or money order.....	0.1	0.6	0.9	0.8	1.6
Check.....	0.1	0.6	0.9	0.8	1.5
Money order.....	0.0	0.0	0.0	0.0	0.1
Traveler's check.....	0.0	0.0	0.0	0.0	0.0
Payment cards	6.5	6.7	5.8	4.0	2.8
Debit.....	3.7	3.8	3.3	2.2	1.4
PIN debit.....	1.8	1.9	1.7	1.2	0.7
Non-PIN debit.....	2.0	1.9	1.5	1.0	0.7
Credit.....	2.1	2.7	2.3	1.7	1.3
Prepaid/Gift/EBT card.....	0.7	0.2	0.2	0.1	0.0
Electronic payments	0.1	0.3	0.8	0.9	2.4
Online banking bill payment.....	0.0	0.2	0.4	0.5	1.4
Bank account number payment.....	0.1	0.1	0.3	0.4	0.9
Text payment	0.0	0.0	0.0	0.0	0.0
Other payment method	0.3	0.1	0.1	0.1	0.2
Unreported payment method*	0.0	0.0	0.0	0.0	0.0
Percent share within each range	\$0 to \$9.99	\$10 to \$24.99	\$25 to \$49.99	\$50 to \$99.99	Over \$100
All payments	100.0	100.0	100.0	100.0	100.0
Paper instruments	66.0	49.4	32.0	27.5	30.4
Cash.....	65.3	45.4	22.9	15.8	9.2
Check or money order.....	0.7	4.0	9.1	11.7	21.2
Check.....	0.7	3.9	8.8	11.6	19.8
Money order.....	0.0	0.1	0.3	0.1	1.4
Traveler's check.....	0.0	0.0	0.0	0.0	0.0
Payment cards	31.9	48.0	59.1	57.4	35.9
Debit.....	18.4	26.9	33.1	31.6	17.9
PIN debit.....	8.7	13.4	17.7	17.0	8.7
Non-PIN debit.....	9.7	13.5	15.3	14.6	9.2
Credit.....	10.2	19.4	23.7	24.4	17.4
Prepaid/Gift/EBT card.....	3.4	1.6	2.4	1.4	0.6
Electronic payments	0.5	2.0	7.9	13.5	30.5
Online banking bill payment.....	0.1	1.2	4.5	7.7	18.4
Bank account number payment.....	0.4	0.8	3.4	5.8	12.1
Text payment	0.0	0.0	0.0	0.0	0.1
Other payment method	1.5	0.6	0.8	1.5	3.0
Unreported payment method*	0.0	0.0	0.1	0.1	0.1

* Unreported payment method refers to transactions for which the respondent did not report a payment method.

Table 5

Nonbill Payments by Type of Instrument in October 2012

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	50.7	42	2122
Paper instruments	25.2	34	867
Cash.....	23.3	19	452
Check or money order.....	1.9	223	415
Check.....	1.8	221	407
Money order.....	0.0	386	8
Traveler's check.....	0.0	0	0
Payment cards	24.4	45	1110
Debit.....	13.4	39	517
PIN debit.....	7.0	40	281
Non-PIN debit.....	6.4	37	236
Credit.....	9.7	58	565
Prepaid/Gift/EBT card.....	1.3	22	28
Electronic payments	0.5	202	110
Online banking bill payment.....	0.3	299	88
Bank account number payment.....	0.2	86	21
Text payment	0.0	163	1
Other payment method	0.5	65	33
Unreported payment method*	0.0	48	1
Percent share	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	100.0	—	100.0
Paper instruments	49.7	—	40.9
Cash.....	46.0	—	21.3
Check or money order.....	3.7	—	19.6
Check.....	3.6	—	19.2
Money order.....	0.0	—	0.4
Traveler's check.....	0.0	—	0.0
Payment cards	48.2	—	52.3
Debit.....	26.4	—	24.4
PIN debit.....	13.9	—	13.3
Non-PIN debit.....	12.6	—	11.1
Credit.....	19.2	—	26.6
Prepaid/Gift/EBT card.....	2.5	—	1.3
Electronic payments	1.1	—	5.2
Online banking bill payment.....	0.6	—	4.2
Bank account number payment.....	0.5	—	1.0
Text payment	0.0	—	0.0
Other payment method	1.0	—	1.6
Unreported payment method*	0.1	—	0.1

* Unreported payment method refers to transactions for which the respondent did not report a payment instrument type.

Table 6**Nonbill Payments by Type of Consumer Expenditure in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	50.7	42	2122
Food and personal care supplies.....	28.0	21	601
Auto and vehicle related.....	6.6	56	371
General merchandise.....	6.7	49	328
Entertainment and transportation.....	2.6	43	109
Housing related.....	1.2	172	210
Medical, education, and personal services.....	1.9	83	154
Financial, professional, miscellaneous services.....	0.7	282	187
Government and nonprofit.....	0.8	65	52
Gifts and transfers to people.....	1.7	48	79
Unknown expenditure category.....	0.6	52	31
Percent share	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	100.0	—	100.0
Food and personal care supplies.....	55.3	—	28.3
Auto and vehicle related.....	13.0	—	17.5
General merchandise.....	13.2	—	15.4
Entertainment and transportation.....	5.0	—	5.2
Housing related.....	2.4	—	9.9
Medical, education, and personal services.....	3.7	—	7.2
Financial, professional, miscellaneous services.....	1.3	—	8.8
Government and nonprofit.....	1.6	—	2.5
Gifts and transfers to people.....	3.3	—	3.7
Unknown expenditure category.....	1.2	—	1.5

Table 7

Nonbill Payments by Device in October 2012

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	50.7	42	2122
In-person	47.3	36	1687
No device.....	45.0	34	1541
Computer.....	0.5	97	44
Tablet.....	0.1	48	3
Mobile.....	0.1	30	4
Phone.....	0.0	29	1
Mail.....	0.1	79	10
Unreported device.....	1.6	54	84
Not in-person	3.3	131	433
No device.....	0.9	118	108
Computer.....	1.5	137	206
Tablet.....	0.1	53	6
Mobile.....	0.3	59	15
Phone.....	0.1	111	13
Mail.....	0.4	228	84
Unreported device.....	0.0	42	1
Unreported location*	0.0	64	2
Percent share	Number per consumer	Value	
		per transaction	per consumer
All nonbill payments	100.0	—	100.0
In-person	93.4	—	79.5
No device.....	88.7	—	72.6
Computer.....	0.9	—	2.1
Tablet.....	0.1	—	0.1
Mobile.....	0.3	—	0.2
Phone.....	0.1	—	0.1
Mail.....	0.2	—	0.5
Unreported device.....	3.1	—	3.9
Not in-person	6.5	—	20.4
No device.....	1.8	—	5.1
Computer.....	3.0	—	9.7
Tablet.....	0.2	—	0.3
Mobile.....	0.5	—	0.7
Phone.....	0.2	—	0.6
Mail.....	0.7	—	3.9
Unreported device.....	0.1	—	0.1
Unreported location*	0.1	—	0.1

* Unreported location refers to transactions for which the respondent did not report a location.

Table 8**Bill Payments by Type of Instrument in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All bill payments	8.3	231	1921
Paper instruments	2.6	214	557
Cash.....	0.4	110	43
Check or money order.....	2.2	233	514
Check.....	2.1	234	483
Money order.....	0.1	222	31
Traveler's check.....	0.0	0	0
Payment cards	1.5	123	179
Debit.....	1.0	119	121
PIN debit.....	0.2	145	34
Non-PIN debit.....	0.8	111	86
Credit.....	0.4	133	57
Prepaid/Gift/EBT card.....	0.0	83	1
Electronic payments	4.0	284	1122
Online banking bill payment.....	2.3	315	728
Bank account number payment.....	1.6	239	393
Text payment	0.0	120	1
Other payment method	0.3	202	62
Unreported payment method*	0.0	177	1
Percent share	Number per consumer	Value	
		per transaction	per consumer
All bill payments	100.0	—	100.0
Paper instruments	31.2	—	29.0
Cash.....	4.7	—	2.2
Check or money order.....	26.5	—	26.8
Check.....	24.9	—	25.2
Money order.....	1.7	—	1.6
Traveler's check.....	0.0	—	0.0
Payment cards	17.5	—	9.3
Debit.....	12.2	—	6.3
PIN debit.....	2.9	—	1.8
Non-PIN debit.....	9.3	—	4.5
Credit.....	5.2	—	3.0
Prepaid/Gift/EBT card.....	0.1	—	0.1
Electronic payments	47.5	—	58.4
Online banking bill payment.....	27.8	—	37.9
Bank account number payment.....	19.8	—	20.5
Text payment	0.1	—	0.0
Other payment method	3.7	—	3.2
Unreported payment method*	0.1	—	0.0

* Unreported payment method refers to transactions for which the respondent did not report a payment instrument type.

Table 9**Bill Payments by Type of Consumer Expenditure in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All bill payments	8.3	231	1921
Food and personal care supplies.....	0.2	122	18
Auto and vehicle related.....	0.4	343	149
General merchandise.....	0.8	134	104
Entertainment and transportation.....	1.1	112	127
Housing related.....	2.4	284	689
Medical, education, and personal services.....	0.7	173	114
Financial, professional, miscellaneous services.....	1.2	306	360
Government and nonprofit.....	0.3	210	64
Gifts and transfers to people.....	0.3	136	39
Unknown expenditure category.....	1.0	264	257
Percent share	Number per consumer	Value per transaction	Value per consumer
All bill payments	100.0	—	100.0
Food and personal care supplies.....	1.8	—	1.0
Auto and vehicle related.....	5.2	—	7.7
General merchandise.....	9.3	—	5.4
Entertainment and transportation.....	13.6	—	6.6
Housing related.....	29.1	—	35.8
Medical, education, and personal services.....	7.9	—	5.9
Financial, professional, miscellaneous services.....	14.1	—	18.8
Government and nonprofit.....	3.7	—	3.4
Gifts and transfers to people.....	3.5	—	2.0
Unknown expenditure category.....	11.7	—	13.4

Table 10**Bill Payments by Location in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All bill payments	8.3	231	1,921
In-person	1.0	218	226
Not in-person	7.3	233	1,695
Automatic bill payment.....	3.1	221	680
Percent share	Number per consumer	per transaction	per consumer
All bill payments	100.0	—	100.0
In-person	12.4	—	11.7
Not in-person	87.6	—	88.3
Automatic bill payment.....	37.0	—	35.4

Table 11**Cash Holdings by Denomination in October 2012**

Mean and median number and value of end-of-day holdings

Average	Number per consumer		Value per consumer	
	Mean	Median	Mean	Median
All bills	5.8	4.3	57	25
\$1.....	2.8	2.0	3	2
\$2.....	0.0	0.0	0	0
\$5.....	0.8	0.4	4	2
\$10.....	0.5	0.0	5	0
\$20.....	1.6	0.7	31	13
\$50.....	0.1	0.0	4	0
\$100.....	0.1	0.0	11	0
Percent Share	Number per consumer		Value per consumer	
	Mean	Median	Mean	Median
All bills	100.0	—	100.0	—
\$1.....	47.5	—	4.8	—
\$2.....	0.4	—	0.1	—
\$5.....	13.2	—	6.7	—
\$10.....	9.0	—	9.2	—
\$20.....	26.8	—	54.4	—
\$50.....	1.2	—	6.3	—
\$100.....	1.8	—	18.6	—

Table 12**Cash Deposits by Location in October 2012**

Top: Dollar value per transaction, dollar value per consumer and number of transactions per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All deposits	0.86	320	276
ATM.....	0.24	140	34
Bank teller.....	0.44	353	156
Other location.....	0.16	508	82
Unreported location*.....	0.02	238	5
Percent share	Number per consumer	Value	
		per transaction	per consumer
All deposits	100.0	—	100.0
ATM.....	28.0	—	12.2
Bank teller.....	51.1	—	56.4
Other location.....	18.7	—	29.6
Unreported location*.....	2.3	—	1.7

* Unreported location refers to transactions for which the respondent did not report a location.

Table 13**Cash Withdrawals by Location in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All withdrawals	5.0	107	540
ATM.....	1.3	105	134
Retail or grocery store.....	0.5	30	16
Bank teller.....	0.6	219	132
Family or friend.....	1.6	61	95
Check cashing store.....	0.1	212	21
Employer.....	0.4	231	92
Cash refund from returning goods.....	0.1	34	4
Other location.....	0.4	89	38
Unreported location*.....	0.0	272	9
Percent share	Number per consumer	Value	
		per transaction	per consumer
All withdrawals	100.0	—	100.0
ATM.....	25.4	—	24.8
Retail or grocery store.....	10.4	—	2.9
Bank teller.....	11.9	—	24.3
Family or friend.....	31.1	—	17.6
Check cashing store.....	2.0	—	3.9
Employer.....	7.9	—	17.1
Cash refund from returning goods.....	2.2	—	0.7
Other location.....	8.4	—	7.0
Unreported location*.....	0.6	—	1.6

* Unreported location refers to transactions for which the respondent did not report a location.

Table 14**Cash Withdrawals by Source of Funds in October 2012**

Top: Number of transactions per consumer, dollar value per transaction, and dollar value per consumer

Bottom: Percent share of transactions and dollar value per consumer

Average	Number per consumer	Value	
		per transaction	per consumer
All withdrawals	5.0	107	540
Bank account	2.0	113	223
Checking account.....	1.8	109	198
Savings or other bank account.....	0.2	157	25
Payment instrument	0.9	172	153
Cashing a check.....	0.4	166	70
Credit card cash advance.....	0.4	176	72
Prepaid card cash withdrawal.....	0.1	201	11
Salary, wages or tips	0.1	121	10
Another person	1.5	62	90
Other source	0.5	94	48
Unreported source*	0.1	138	16
Percent share	Number per consumer	Value	
		per transaction	per consumer
All withdrawals	100.0	—	100.0
Bank account	39.1	—	41.2
Checking account.....	36.0	—	36.6
Savings or other bank account.....	3.1	—	4.6
Payment instrument	17.6	—	28.3
Cashing a check.....	8.4	—	13.0
Credit card cash advance.....	8.1	—	13.2
Prepaid card cash withdrawal.....	1.1	—	2.0
Salary, wages or tips	1.7	—	1.9
Another person	29.0	—	16.6
Other source	10.2	—	8.9
Unreported source*	2.4	—	3.1

* Unreported source refers to transactions for which the respondent did not report a source.

Table 15**Share of Consumers Managing Their Cash in October 2012**

Share of consumers holding cash denominations, depositing and withdrawing in October

Percentage of consumers	1-Day	3-Day
Held bills	80.7	88.3
\$1.....	65.1	76.9
\$2.....	1.7	2.2
\$5.....	44.5	59.5
\$10.....	33.9	47.5
\$20.....	49.3	60.5
\$50.....	5.1	6.4
\$100.....	5.0	6.4
Made deposits (location)	2.4	6.4
ATM.....	0.8	2.0
Bank teller.....	1.3	3.7
Other location.....	0.3	0.9
Unreported location*.....	0.0	0.1
Made withdrawals (location)	14.4	33.0
ATM.....	4.4	11.3
Retail or grocery store.....	1.6	4.3
Bank teller.....	1.9	5.1
Family or friend.....	4.4	10.9
Check cashing store.....	0.3	0.8
Employer.....	1.3	2.9
Cash refund from returning goods.....	0.3	0.9
Other location.....	1.2	3.0
Unreported location*.....	0.1	0.4
Made withdrawals (source)	14.4	33.0
Checking account.....	5.8	15.2
Savings or other bank account.....	0.6	1.6
Salary, wages or tips.....	1.3	2.8
Cashing a check.....	1.3	3.6
Credit card cash advance.....	0.2	0.4
Prepaid card cash withdrawal.....	0.2	0.5
Another person.....	4.1	10.2
Other source.....	1.3	3.6
Unreported source**.....	0.5	1.3

* Unreported location refers to transactions for which the respondent did not report a location.

** Unreported source refers to transactions for which the respondent did not report a source.

Table 16
Demographics: Gender, Age, Race, and Education

	Percentage of consumers	Un-weighted	Weighted
Gender			
Male.....		39.9	48.1
Female.....		60.1	51.9
Age			
18–24.....		5.6	7.8
25–34.....		21.0	22.7
35–44.....		15.3	15.9
45–54.....		20.4	19.5
55–64.....		22.1	16.3
65 and older.....		15.6	17.7
Race			
White.....		78.4	76.4
Black.....		11.2	11.9
Asian.....		2.3	2.1
Other.....		8.2	9.6
Ethnicity			
Hispanic or Latino.....		15.9	17.6
Education			
No high school diploma.....		3.8	8.2
High school.....		15.8	34.7
Some college.....		26.0	19.4
College.....		37.2	25.8
Post-graduate study.....		17.1	11.9
Household Income			
Less than \$25,000.....		22.3	23.6
\$25,000 to \$49,999.....		27.4	25.5
\$50,000 to \$74,999.....		19.5	18.2
\$75,000 to \$99,999.....		11.8	11.9
\$100,000 to \$124,999.....		9.0	9.9
\$125,000 to \$199,999.....		7.6	8.4
Greater than \$200,000.....		2.4	2.4