

# Payment Card Adoption and Payment Choice

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## Summary:

Using data from the 2021 Diary of Consumer Payment Choice, this article investigates two questions: how do consumers without credit or debit cards make payments, and do consumers without these payment cards differ from other consumers?

## Key findings:

1. Consumers without cards use cash for three-quarters of their payments, compared to about one-fifth for consumers overall.
2. Consumers without cards are four times as likely to use a prepaid card as other consumers and use these cards for 8 percent of their payments.
3. Consumers without cards could rely on household members, other family, or friends to make online and bill payments.
4. Most consumers have a credit or debit card: 93 percent of US consumers 18 and older.
5. Consumers without cards have a lower median household income: \$10,000. In contrast, consumers with credit cards have \$75,000 median household income, and consumers with only debit cards have \$35,000.

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Key words: payment choice, payment card adoption, payments inclusion, unbanked

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## **1. Introduction**

The emergence of cashless stores and the growth in online shopping and bill payment have highlighted the need for more research on how consumers pay. Lack of payment cards (debit card associated with a bank account or credit card) makes it hard for consumers to pay for some goods and services and make online payments. This issue has been raised on many occasions; see BIS (2016), for example. In fact, the Federal Reserve Bank of Atlanta has recently formed a [Special Committee on Payments Inclusion](#) to explore solutions for all individuals to become better connected to the economy, including to innovative payment services.

### **1.1 The Policy Debate**

More recently, the possible introduction of central bank digital currency (CBDC) has been a topic of some discussion. These discussions also raised concerns about whether and how CBDC can facilitate access to digital payments by consumers who currently do not own credit or debit cards; see FRB (2022a), for example. Shy (2021b) argues that CBDC is not guaranteed to solve the consumer access problem unless CBDC (or any other digital solution) is designed to solve the “last mile” problem in which consumers will be able to connect directly to CBDC (or any other digital solution) without the use of payment cards or even outside the banking system. Toh (2021b) finds that low-income consumers, regardless of banking status, are less likely to pay bills via digital solutions.

We center this investigation around card adoption. Other research into this topic views payment access through the lens of bank account adoption, including Cole and Greene (2017), Goodstein and Rhine (2017), Bostic et al. (2020), FDIC (2020), Shy (2020), Greene and Stavins (2021), and Shy (2021a). Adoption of prepaid cards or accounts can be considered an alternative to bank account adoption. Toh (2021a) investigates unbanked households’ low adoption rates of prepaid cards, and Greene and Shy (2015) examine the use of prepaid cards by consumers without checking accounts. For purposes of this article, prepaid cards are excluded from the definition of card adoption, which encompasses debit cards for making payments from a bank account and credit cards.

### **1.2 Data**

The analysis of consumer payment choice involves a classification of payment methods into categories such as cash, paper checks, credit cards, debit cards, prepaid cards, and ACH payments from bank accounts. Data on how consumers pay are collected by consumer surveys in which consumers list all the payment instruments they have (adopt) and how they use them.

In consumer diary surveys, consumers record—either in real time or at the end of each day—information about all their payment-related activities, including dollar amounts, transaction types, merchant types, and payment methods, as well as money transfers and ATM cash withdrawals.

We use data from the 2021 Diary of Consumer Payment Choice (DCPC). The DCPC surveys a representative sample of US adults 18 and older. DCPC respondents record all their transactions during three consecutive days. Transactions include purchases (in person or online), bill payments, person-to-person (p2p) payments, and ATM withdrawals and deposits. Respondents' three-day diaries are evenly distributed throughout the month of October each year. Each October diary day has an equal number of overlapping respondents recording their first-, second-, and third-day payment information.

### **1.3 Ownership of Payment Cards and Payment Choice**

In this article, we use the 2021 Diary of Consumer Payment Choice to investigate two questions:

1. How do consumers without credit or debit cards make payments?
2. Do consumers without these payment cards differ from other consumers?

Such data-based explorations of consumer payment behavior are essential to devising precise solutions to the problem of access to digital payments.

We classify the consumer population into three mutually exclusive groups:

- Consumers who either have (adopt) both credit and debit cards or credit cards only (group 1).
- Consumers who have debit cards but not credit cards (group 2).
- Consumers who have neither credit cards nor debit cards (group 3).

The three-quarters of US consumers (77 percent) who belong to group 1 have no limitation on their use of digital payments, including making online and mobile payments using credit or debit cards. These consumers can also use online bill payments and automatic deductions from their bank account. Almost all consumers in this group also have adopted debit cards (see table 1).

About one in five US consumers (18 percent) belong to group 2. These consumers also have access to digital payments, like consumers in group 1. Because they have no credit card, however, they are limited to immediate funding for payments. By definition, all consumers who have debit cards have bank accounts.

Almost all consumers in group 3 (a 6 percent share of consumers) are shut out from making digital payments because most online and mobile payments rely on funding via credit or debit cards. Exceptions are consumers who report making digital payments, perhaps using their spouse's or parents' or friends' payment cards as authorized users.

Payments behavior varies among the three groups, with consumers holding both cards making more payments overall and more bill payments (see figure 1). Consumers with no cards make the smallest number of payments and the smallest number of bill payments.

**Table 1: Three-Quarters of US Consumers Have Both Credit and Debit Cards**

**Description of groups by card adoption status, October 2021**

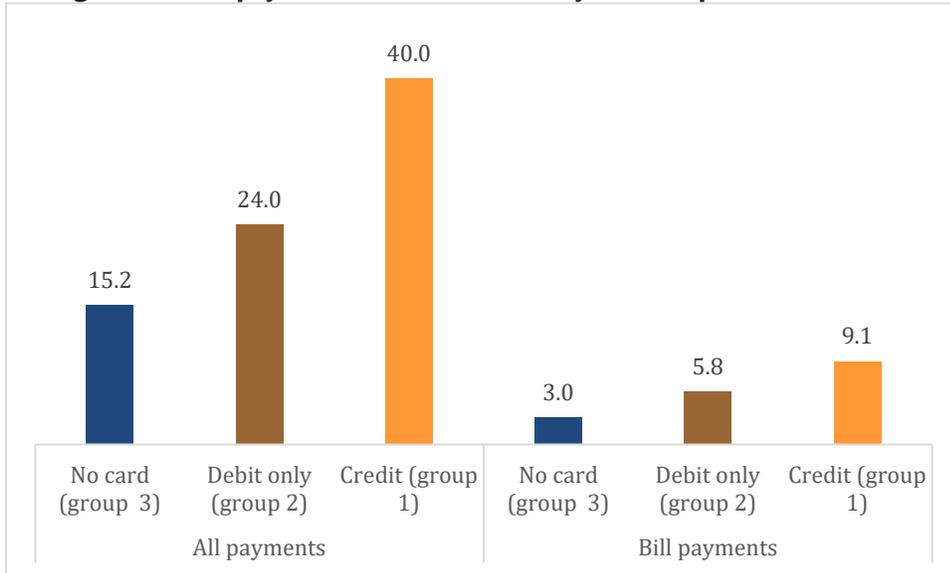
Card adoption status	All consumers	At least credit card (group 1)	Debit card, no credit card (group 2)	Neither credit nor debit card (group 3)
Credit card adopter, shares	77%	100%	0%	0%
Debit card adopter, shares	93%	99%	100%	0%
Number of respondents	4,164	3,189	729	247
Share of all respondents	100%	77%	18%	6%
Average number of payments for the month	36.6	40.0	24.0	15.2
Average number of bills for the month	8.4	9.1	5.8	3.0
Average number of p2p payments for the month	1.5	1.5	1.3	1.3
Median household income	\$64,500	\$74,940	\$34,950	\$9,950

Note: Data are current as of October 2021. Values in the top four rows and the bottom row are weighted.

Source: Authors' calculations from the 2021 Diary of Consumer Payment Choice, Federal Reserve Bank of Atlanta

### Figure 1: Consumers without Cards Make Fewer Payments Than Consumers with Cards

Average number of payments in October 2021 by card adoption status



Note: The calculation of the average number of payments includes consumers who made no payments during their three-day diary reporting period.

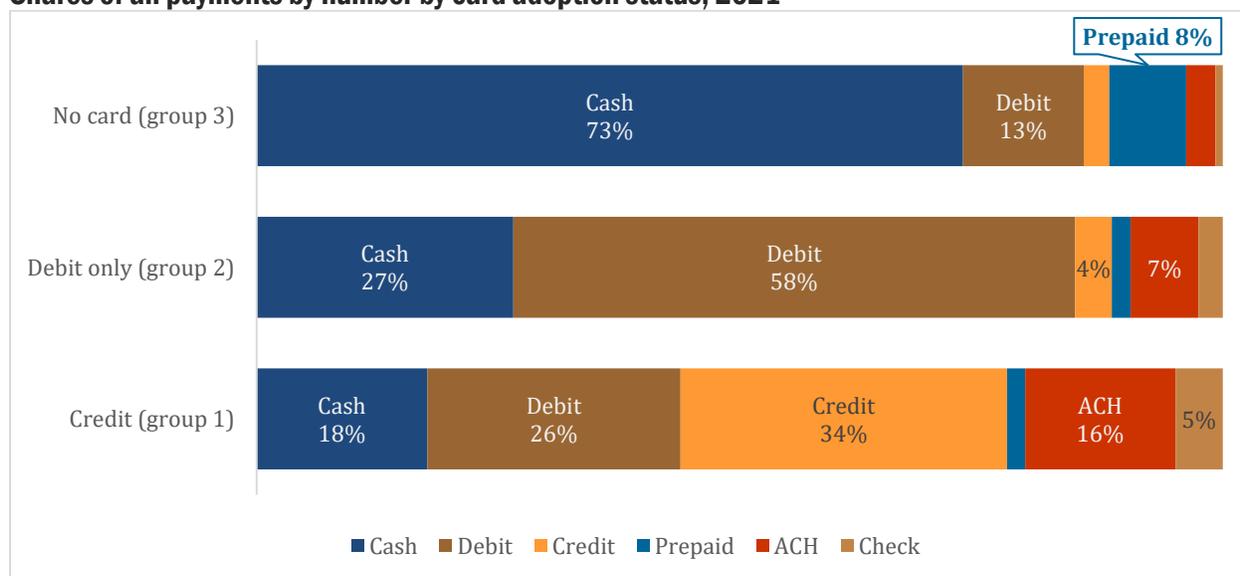
Source: 2021 Diary of Consumer Payment Choice, Federal Reserve Bank of Atlanta

## 2. Availability of Credit and Debit Cards Affects Choice of Payment Instrument

Consumers who adopt neither card (group 3) have their payment choices constrained (see figure 2). As noted above, these consumers make fewer payments overall and fewer bill payments, which could relate to their choice not to adopt cards, their inability to adopt cards due to financial characteristics such as low credit score, or demographics such as education or household size. In this section, we look at differences in the payment instrument choices of the three groups described above. We look at two aspects of choice: first, paper versus digital format and, second, funding source.

**Figure 2: Consumers without Cards Make 7 of 10 Payments with Cash**

**Shares of all payments by number by card adoption status, 2021**



Note: ACH includes BANP and OBBP.<sup>1</sup>

Source: 2021 Diary of Consumer Payment Choice, Federal Reserve Bank of Atlanta

For shopping online, paying bills, and purchasing some types of goods and services (renting a car, for example), the ability to make a digital payment can facilitate a transaction. Consumers in group 1 make up more than three-quarters (77 percent) of payments by number via digital methods (cards or ACH). Consumers rate cards highly for convenience, which the Survey of Consumer Payment Choice (SCPC) defines as “speed, control over payment timing, ease of use, effort to carry, ability to keep or store.” In every year from 2015 to 2021, credit and debit cards were ranked first and second for convenience compared to other payment

<sup>1</sup> BANP: Bank account number payment, that is, providing the payee with a bank routing number and account number. OBBP: Online banking bill pay, that is, using a bank website or mobile app to pay. Both are classified as automated clearing house (ACH) payments.

methods.<sup>2</sup> Group 1 consumers use cards (credit, debit, or prepaid) for six in 10 payments. These consumers use cash for 18 percent of payments. (Table 1 in the appendix details how consumers pay by payment card adoption group.)

Consumers in group 2 make 7 in 10 payments via digital methods. Like consumers in group 1, they use cards for about 6 in 10 payments, although they use debit cards far more than consumers in group 1: for 58 percent of payments compared to 26 percent for group 1 (see figure 2). These consumers are more likely than group 1 consumers to make cash payments (27 percent of payments).

Consumers in group 3 can be viewed as the inverse of consumers in group 1. These consumers make three quarters (74 percent) of payments by number with paper instruments, almost all in cash (1 percent via paper check). As a percentage share, group 3 consumers are four times as likely to make payments with a prepaid card compared to the other groups. They make 8 percent of payments with a prepaid card.

Funding source also is important for choice. Consumers in group 1 can borrow to make payments. They use credit cards for one-fifth of their payments by value (see figure 3). They fund three-quarters of payments by value from a bank account, using a debit card, paper check, or ACH<sup>3</sup> methods. They make 5 percent of payments with cash or a prepaid card. For funding, prepaid cards are grouped with cash because, like a wallet, they must be loaded with funds obtained in advance.

Credit cards are not available to consumers in group 2 or are available only through others. Like group 1 consumers, group 2 consumers fund three-quarters of payments by value from a bank account. They use cash or a prepaid card more, for 21 percent of payments by value.

By value, consumers in group 3 make 28 percent of payments from a bank account, possibly a household account that they might or might not own (see figure 3). Cash and prepaid cards account for two-thirds of the value of their payments; therefore, these consumers could be more exposed to loss of paper payment methods. Consumers rank cash worst for security, defined in the SCPC as “permanent financial loss or unwanted disclosure of personal information.”<sup>4</sup>

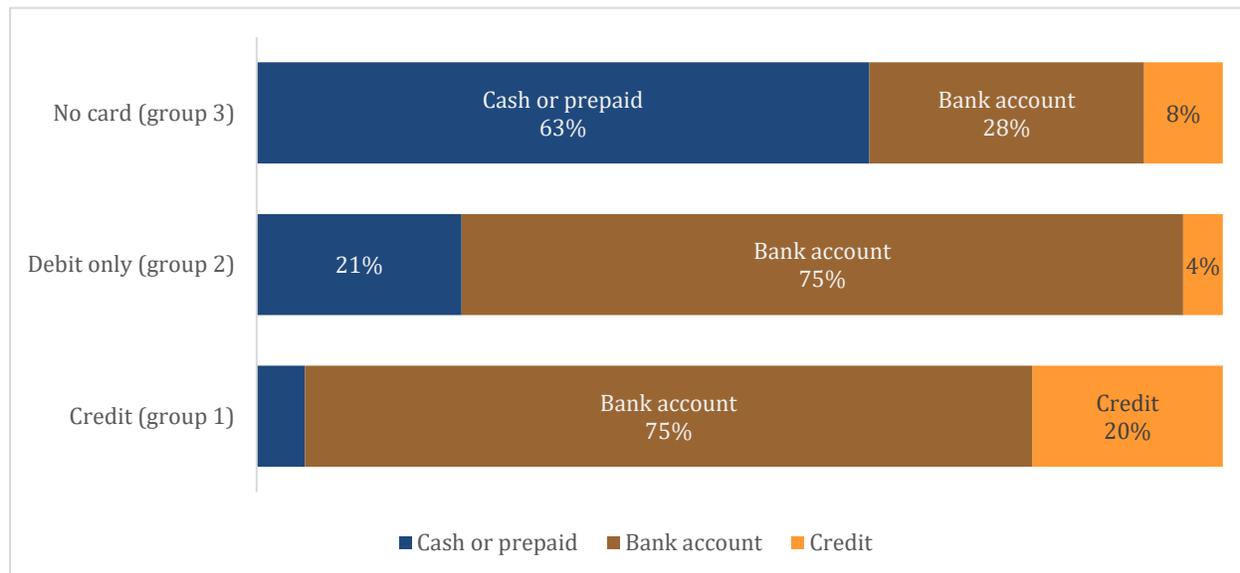
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<sup>2</sup> Other methods ranked were cash, check, money order, prepaid card, BANP, and OBBP, see the [Survey of Consumer Payments Choice \(SCPC\)](#).

<sup>3</sup> ACH comprises OBBP and BANP.

<sup>4</sup> The SCPC’s request for information is, “Suppose a payment method has been stolen, misused, or accessed without the owner’s permission. Please rate the security of each method against permanent financial loss or unwanted disclosure of personal information.”

**Figure 3: Consumers without Cards Pay Two-Thirds of Value via Cash or Prepaid Cards**  
**Shares of all payments by value by card adoption status, 2021**



Note: Bank account payments comprise debit cards, ACH (OBBP, BANP), and checks. Results are not weighted.

Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

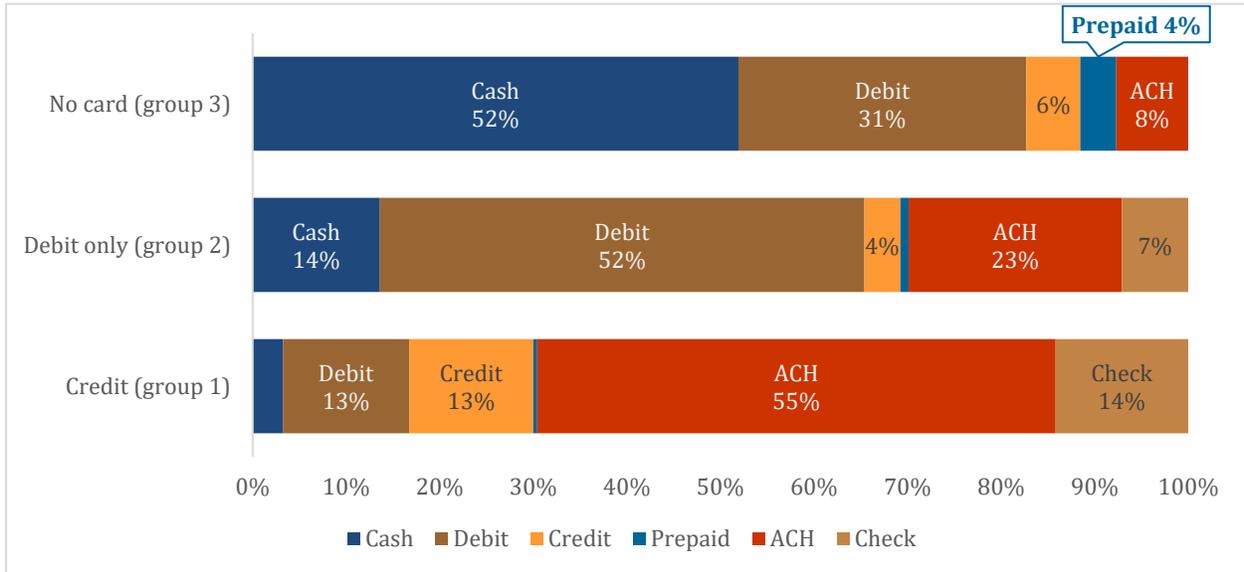
### 3. Consumers without Cards Mostly Use Cash for Bill Pay

Consumers without cards pay bills differently than other consumers. As noted above, on average, consumers without cards pay fewer bills than other consumers: 3 bills per month, compared to 5.8 bills for group 2 and 9.1 bills for group 1 (as shown in figure 1). In addition, consumers without cards make relatively fewer bill payments as a share of all their payments compared to other consumers. Just one-fifth of their payments are for bills compared to about one-quarter for other consumers.

For bill payments, the differences among the three groups reflect the difficulty of paying bills with cash. Consumers with credit cards (group 1) pay almost no bills with cash, just 3 percent (see figure 4). Consumers with only debit cards (group 2) pay one in seven bills with cash. Consumers without cards (group 3) use cash for about half of all bill payments by number. They also pay about 50 percent of the value of bills with cash. Surprisingly, group 3 consumers also use debit and credit cards to pay bills, perhaps the cards of household members or friends. By value, group 3 consumers pay one-third of their bills with credit or debit cards. All groups use credit cards relatively less often for bill payments.

**Figure 4: Consumers without Cards Pay about Half of Bills with Cash**

**Shares of bill payments by number by card adoption status, 2021**



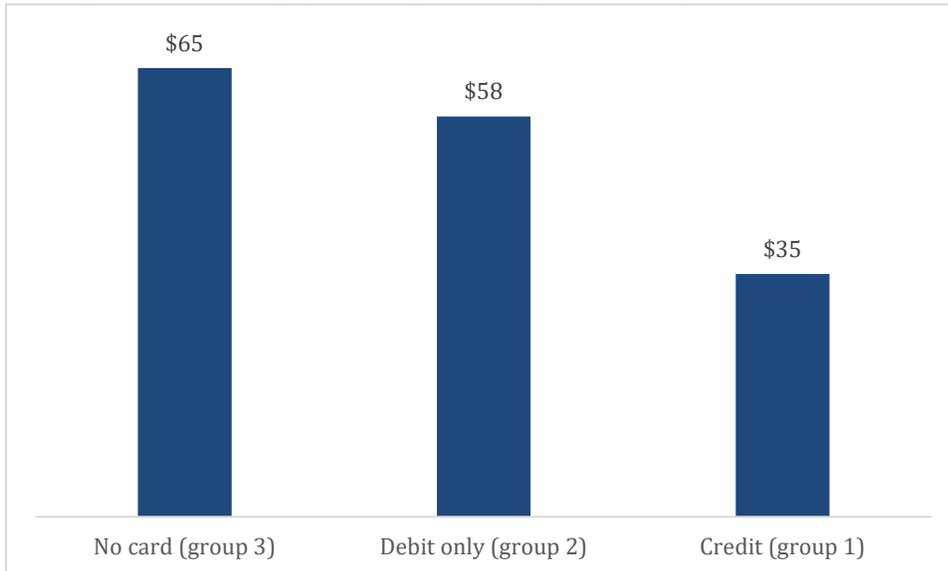
Note: ACH includes OBBP and BANP.

Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

The greater likelihood that consumers without cards (group 3) use cash to pay bills is reflected in the high average dollar value of their cash payments: \$65. Cash payments for consumers in group 2 average \$58, and consumers in group 1 average \$35 (see figure 5). Other research has shown that consumers often choose cash for low-dollar-value payments and move away from cash for high-value payments (Kim, Kumar, and O’Brien 2020). The \$65 average cash payment for group 3 shows that these consumers are using cash at times when other consumers have shifted to cards or other ways to pay based on dollar value. (Table 2 in the appendix details how consumers pay bills by payment card adoption group.)

### Figure 5: Consumers without Cards Average Higher-Value Cash Payments

Average value of cash payments by card adoption status, 2021



Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

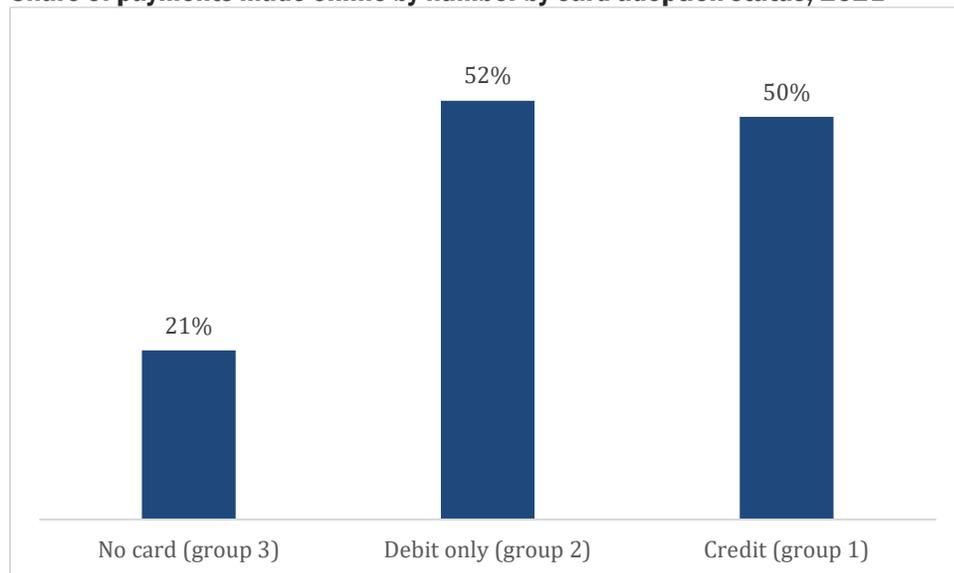
#### 4. Consumers without Cards Are Less Likely to Pay Online

As noted above, consumers without credit cards lose the opportunity to borrow for current purchases and other expenses. Consumers with neither credit cards nor debit cards (group 3) also lose a cost advantage when they face obstacles to paying online (see figure 6). Toh (2021b) has estimated costs and concluded that paying in person and by mail are more expensive than paying online.

Consumers without cards (group 3) are less likely to make online payments. They make one-fifth of payments online, compared to half for other consumers.

### Figure 6: Consumers without Cards Are Half as Likely to Pay Online

Share of payments made online by number by card adoption status, 2021



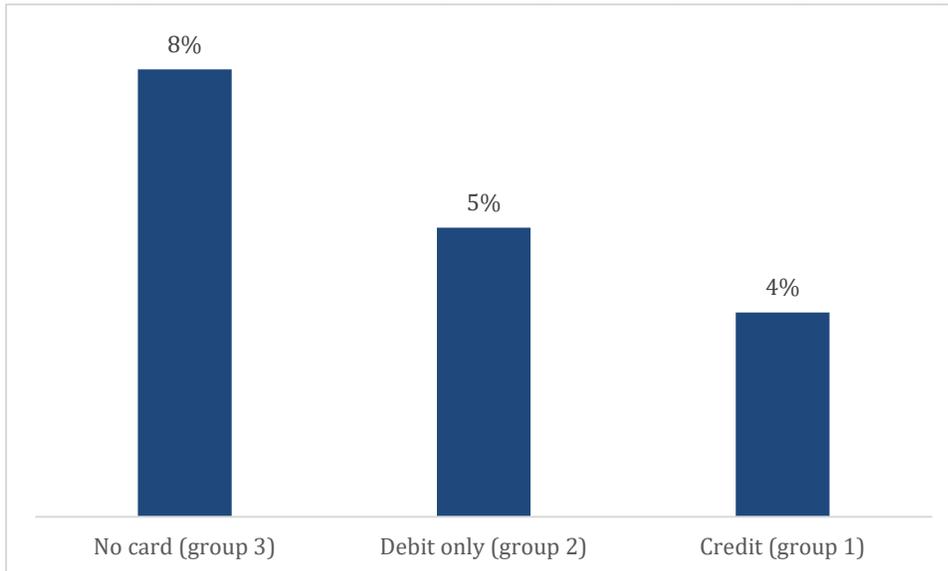
Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

In addition, consumers without cards are more likely to make payments to other people, perhaps in part to gain online access. As noted above, consumers with credit cards (group 1) make more payments per month, on average, compared to other consumers. The numbers of person-to-person (p2p) payments made by the three groups are similar: 1.5 for group 1, 1.3 for group 2, and 1.3 for group 3. As a percentage share of all their payments, however, consumers without cards make more payments to another person compared to other consumers, perhaps in part a result of the need to repay friends or family who help them gain online or mobile access (see figure 7).

Other research has shed some light on possible informal friend-and-family arrangements. Private saving and borrowing associations and trade-offs among family members in good times and bad are described in Servon (2017), Morduch and Schneider (2017), and Buckland and Wilson (2021). The Federal Reserve's 2021 [Survey of Household Economics and Decisionmaking](#) found that 8 percent of US adults would borrow from a family member or friend to meet an emergency expense of \$400 (FRB 2022b).

### Figure 7: Consumers without Cards Make Relatively More Payments to Another Person

Share of payments made to another person by number by card adoption status, 2021



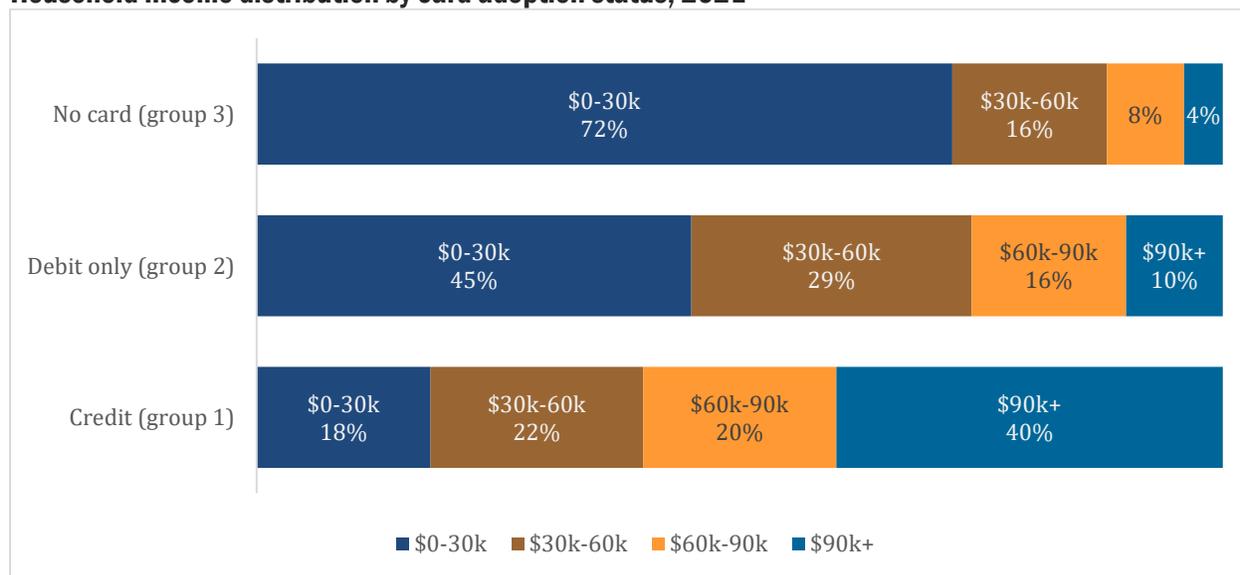
Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

#### 5. Who Does Not Own Credit or Debit Cards?

Credit card ownership correlates with higher household income (see figure 8). Credit card adopters have higher household income compared to the other groups, median income of \$75,000 compared to \$35,000 for those with a debit card only, and \$10,000 for those with no credit or debit card (see table 1). Forty percent of credit card adopters (group 1) have household income of \$90,000 or more, compared to 10 percent of those with only a debit card (group 2) and 4 percent of those with neither card (group 3). Table 3 in the appendix, which describes the distribution of consumers in the sample, shows that individuals with household income less than \$30,000 are 26 percent of the full sample and 72 percent of group 3.

### Figure 8: 7 in 10 Consumers without Cards Have Household Income Less than \$30k

Household income distribution by card adoption status, 2021



Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

In addition to the low-income cohort, some demographic groups are disproportionately represented in group 3 (see table 3 in the appendix):

- Consumers 25–34 are 23 percent of the full sample and 34 percent of group 3.
- Consumers whose highest education is high school are 31 percent of the sample and 48 percent of group 3.
- Black consumers are 13 percent of the full sample and 33 percent of group 3.
- Hispanic consumers are 13 percent of the full sample and 21 percent of group 3.

With the exception of ethnicity, these differences hold true when we estimate the probability of being a member of each group based on income and demographics (see table 4 in the appendix). We find that, all things equal, wealthier, older, more educated, and White or Asian consumers are more likely to belong to group 1 and less likely to belong to either group 2 or group 3. These results are statistically significant (see table 2).

- Every \$10,000 of household income makes a consumer about 2 percentage points more likely to belong to group 1.
- Every three years of age makes a consumer about 1 percentage point more likely to belong to group 1.
- Compared to consumers with a college degree, consumers with a graduate degree are 6 percentage points more likely to belong to group 1. Consumers with less than a four-year college degree all are less likely to belong to group 1. Income and education are highly correlated, so the income effect would be stronger if education level were omitted from the model.

- Compared to White consumers, Black consumers are 8 percentage points less likely to belong to group 1 and 4 percentage points more likely to belong to group 3.

Gender and ethnicity were not predictive of holding or not holding credit and debit cards. Table 2 below summarizes the most relevant income and demographics. Table 4 in the appendix contains complete results.

**Table 2: Wealthier, Older Consumers Are More Likely to Adopt Cards**

**Demographic characteristics predictive of credit and debit card adoption**

Card adoption status	Credit card (group 1)	Debit card, no credit card (group 2)	Neither credit nor debit card (group 3)
Household income (\$1,000s)	0.0020 <sup>***</sup>	-0.0015 <sup>***</sup>	-0.0007 <sup>***</sup>
Age	0.0036 <sup>***</sup>	-0.0024 <sup>***</sup>	-0.0012 <sup>***</sup>
Education less than high school	-0.3053 <sup>***</sup>	0.1464 <sup>***</sup>	0.2399 <sup>***</sup>
Education graduate	0.0661 <sup>**</sup>	-0.0579 <sup>**</sup>	-0.0271
Race is Black	-0.0778 <sup>***</sup>	0.0271	0.0358 <sup>***</sup>

Note: <sup>\*\*\*</sup>p < 0.001; <sup>\*\*</sup>p < 0.01; <sup>\*</sup>p < 0.05 This table shows average marginal effects. For complete regression results, see table 4 in the appendix.

Source: Authors' calculations from 2021 Diary of Consumer Payment Choice

## 6. Do Consumers without Cards Rely On Informal Arrangements to Make Payments?

Consumers with a credit card (group 1) or debit card (group 2) are four times more likely to use cards (percentage share by number) as are consumers without either of these cards (group 3). In addition, consumers in group 3 are not making use of prepaid cards as one might expect, given that other consumers use cards for more than 60 percent of their payments. Consumers in group 3 used prepaid cards for only 8 percent of payments. Importantly, they also reported using credit and debit cards for 15 percent of their payments, presumably cards shared by a friend or family member. This support via informal relationships could be a factor in consumers' choice not to adopt credit and debit cards and should be investigated in further research.

The 2021 DCPC on which this research is based surveys all consumer types (groups 1, 2, and 3). We therefore lack more detailed information on how group 3 consumers manage to make payments given that they do not have credit and debit cards. FDIC (2020) provides some information, but we still need to further investigate how group 3 consumers manage to pay some of their bills and make online payments and to what degree informal arrangements play a role. Such research requires more detailed surveys that are targeted only to unbanked consumers and consumers who do not have credit and debit cards.

## **7. Concluding Remarks**

The larger policy question is whether or not full participation in the digital economy should be reliant on requesting a favor from a friend. This tenuous connection could be difficult to sustain if members of a social network have different values related to spending and saving or different ideas about the acceptability of different expenses or payees. Full freedom to manage finances requires full freedom to make payment choices, which could be constrained in this situation. In addition, such informal arrangements exclude consumers without the necessary social networks.

Income, educational, and racial differences in card adoption imply unequal access to the digital economy. People without cards are less than half as likely to make online purchases and at least twice as likely to pay bills through nondigital methods. By extension, members of group 3 are likely to be excluded from innovations that could make shopping more convenient (such as cashless stores and contactless pay) and also could lose access to some types of in-person payees (fast food, food trucks, and parking garages, for example).

Although CBDC is, for now, unfamiliar to most consumers, its use assumes a consumer's digital access. That access could be accomplished via card, digitally via a bank account, or through another digital portal yet to be created. The omission of some members of our economy from an easy method of digital access (credit and debit cards) shows the importance of enabling access for all in the design of CBDCs.

## Appendix

### Appendix Table 1: How Consumers Pay by Card Adoption Group

#### Number, shares, and average values of all payments, October 2021

Group	Variable	All	Cash	Credit	Debit	Prepaid	BANP	OBBP	Check
All	Average number	36.6	7.1	11.1	10.6	0.7	2.8	2.5	1.7
All	Share (number)	100	19.5	30.4	29.0	2.0	7.6	6.9	4.6
All	Share (value)	100	5.6	18.8	15.4	0.9	21.2	21.4	16.8
All	Average value	\$140	\$40	\$86	\$74	\$61	\$388	\$432	\$510
1	Average number	40.0	7.1	13.5	10.5	0.8	3.2	3.0	2.0
1	Share (number)	100	17.7	33.8	26.2	1.9	8.1	7.5	4.9
1	Share (value)	100	4.2	19.7	13.3	0.8	22.1	22.6	17.2
1	Average value	\$147	\$35	\$86	\$75	\$62	\$404	\$445	\$519
2	Average number	24.0	6.4	0.9	13.9	0.5	1.1	0.6	0.6
2	Share (number)	100	26.6	3.8	58.2	1.9	4.5	2.5	2.5
2	Share (value)	100	19.7	4.1	52.1	1.5	8.1	2.9	11.7
2	Average value	\$78	\$58	\$84	\$70	\$61	\$139	\$89	\$360
3	Average number	15.2	11.1	0.4	1.9	1.2	0.3	0.2	0.1
3	Share (number)	100	73.1	2.7	12.5	8.0	1.9	1.1	0.8
3	Share (value)	100	58.9	8.1	20.4	4.6	6.0	1.8	0.3
3	Average value	\$81	\$65	\$249	\$132	\$46	\$256	\$130	\$31

Note: Values are unweighted. Averages divide values by the total number of respondents including those who did not have any payment. Shares are in percentages (%).

Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

### Appendix Table 2: How Consumers Pay Bills by Card Adoption Group

#### Number and shares of bill payments, October 2021

Group	Variable	All	Cash	Credit	Debit	Prepaid	BANP	OBBP	Check
All	Average number	8.4	0.4	1.0	1.5	0.0	2.0	2.3	1.1
All	Share (number)	100	5.0	12.2	17.6	0.5	24.3	27.1	13.3
All	Share (value)	100	2.8	7.8	10.2	0.8	30.0	32.5	16.0
1	Average number	9.1	0.3	1.2	1.2	0.0	2.4	2.7	1.3
1	Share (number)	100	3.3	13.3	13.5	0.4	25.8	29.6	14.2
1	Share (value)	100	1.6	8.0	8.2	0.8	31.0	34.2	16.3
2	Average number	5.8	0.8	0.2	3.0	0.1	0.8	0.5	0.4
2	Share (number)	100	13.6	3.9	51.8	0.9	13.9	8.9	7.1
2	Share (value)	100	17.5	2.4	48.1	0.6	13.2	5.0	13.1
3	Average number	3.0	1.6	0.2	0.9	0.1	0.2	0.1	0.0
3	Share (number)	100	51.9	5.8	30.8	3.9	5.8	1.9	0.0
3	Share (value)	100	47.8	12.6	22.6	2.8	12.0	2.2	0.0

Note: Values are unweighted. Averages divide values by the total number of respondents including those who did not have any payment. Shares are in percentages (%).

Source: 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

**Appendix Table 3: Sample Distribution****Demographics and income by card adoption group**

	Variable	All	Group 1	Group 2	Group 3
	Number of respondents	4164	3189	729	247
Gender	Male	0.49	0.48	0.51	0.51
	Female	0.51	0.52	0.49	0.49
Age	Under 25	0.06	0.05	0.1	0.16
	25-34	0.23	0.21	0.27	0.34
	35-44	0.16	0.16	0.17	0.18
	45-54	0.15	0.16	0.14	0.16
	55-64	0.17	0.17	0.16	0.11
	Over 65	0.23	0.26	0.16	0.05
Race	White	0.72	0.74	0.68	0.56
	Black	0.13	0.1	0.21	0.33
	Asian	0.05	0.06	0.02	0.01
	Other	0.09	0.09	0.09	0.08
Ethnicity	Hispanic	0.13	0.12	0.14	0.21
	Non-Hispanic	0.87	0.88	0.86	0.79
Citizenship	U.S. citizen	0.97	0.97	0.97	0.93
	Non-citizen	0.03	0.03	0.03	0.07
Education	Less than high school	0.07	0.04	0.15	0.33
	High school	0.31	0.26	0.47	0.48
	Some college	0.16	0.17	0.17	0.12
	Associate degree	0.1	0.11	0.07	0.03
	College	0.19	0.23	0.1	0.02
	Graduate	0.16	0.2	0.04	0.01
Income	0k-30k	0.26	0.18	0.45	0.72
	30k-60k	0.23	0.22	0.29	0.16
	60k-90k	0.19	0.2	0.16	0.08
	Over 90k	0.33	0.4	0.1	0.04

Note: Values are weighted. Shares are fractions.

Source: The 2021 [Diary of Consumer Payment Choice](#), Federal Reserve Bank of Atlanta

**Appendix Table 4: Regression Results, Average Marginal Effects****Dependent variable belonging to Group 1, 2, or 3**

		<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
<b>Gender (reference is female)</b>	Male	0.0017	-0.0011	-0.0024
		-0.0113	-0.0108	-0.0061
<b>Age (years)</b>	Additional year	0.0036***	-0.0024***	-0.0012***
		-0.0004	-0.0004	-0.0002
<b>Race (reference is White)</b>	Black	-0.0778***	0.0271	0.0358***
		-0.0197	-0.0175	-0.0108
	Asian	0.0763**	-0.0618*	-0.0137
		-0.0277	-0.0252	-0.0185
	Other	0.012	-0.0048	-0.0079
		-0.0203	-0.0198	-0.0103
<b>Ethnicity (reference is non-Hispanic)</b>	Hispanic	0.0019	-0.0114	0.0114
		-0.0173	-0.0163	-0.01
<b>U.S. citizenship (reference is citizen)</b>	Non-citizen	-0.0332	0.0297	0.0097
		-0.0414	-0.041	-0.0221
<b>Education (reference is college degree)</b>	Less than high school	-0.3053***	0.1464***	0.2399***
		-0.0361	-0.0347	-0.054
	High school	-0.1723***	0.1150***	0.1129***
		-0.0221	-0.0215	-0.0315
	Some college	-0.0874***	0.0563**	0.0806**
		-0.0189	-0.0185	-0.0268
	Associate degree	-0.0648**	0.0431*	0.0705*
	-0.0214	-0.0209	-0.0313	
	Graduate degree	0.0661**	-0.0579**	-0.0271
		-0.0209	-0.018	-0.0154
<b>Household income (\$1,000s)</b>		0.0020***	-0.0015***	-0.0007***
		-0.0002	-0.0002	-0.0001
	Number of observations	4073	4073	4073
	Log Likelihood	-1511.989	-1437.167	-524.426
	Deviance	3023.9788	2874.3345	1048.852

Note: \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ .

Source: 2021 Diary of Consumer Payment Choice, Federal Reserve Bank of Atlanta

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