

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF DUKE ENERGY INDIANA, LLC PURSUANT )  
TO IND. CODE §§ 8-1-2-42.7 AND 8-1-2-61, FOR (1) )  
AUTHORITY TO MODIFY ITS RATES AND CHARGES FOR )  
ELECTRIC UTILITY SERVICE THROUGH A MULTI-STEP )  
RATE IMPLEMENTATION OF NEW RATES AND CHARGES )  
USING A FORECASTED TEST PERIOD; (2) APPROVAL OF )  
NEW SCHEDULES OF RATES AND CHARGES, GENERAL )  
RULES AND REGULATIONS, AND RIDERS; (3) APPROVAL )  
OF REVISED ELECTRIC DEPRECIATION RATES )  
APPLICABLE TO ITS ELECTRIC PLANT IN SERVICE, AND )  
APPROVAL OF REGULATORY ASSET TREATMENT UPON )  
RETIREMENT OF THE COMPANY'S LAST COAL-FIRED )  
STEAM GENERATION PLANT; (4) APPROVAL OF AN )  
ADJUSTMENT TO THE COMPANY'S FAC RIDER TO TRACK )  
COAL INVENTORY BALANCES; AND (5) APPROVAL OF )  
NECESSARY AND APPROPRIATE ACCOUNTING RELIEF, )  
INCLUDING AUTHORITY TO: (A) DEFER TO A )  
REGULATORY ASSET EXPENSES ASSOCIATED WITH THE )  
EDWARDSPORT CARBON CAPTURE AND )  
SEQUESTRATION STUDY, (B) DEFER TO A REGULATORY )  
ASSET COSTS INCURRED TO ACHIEVE ORGANIZATIONAL )  
SAVINGS, AND (C) DEFER TO A REGULATORY ASSET OR )  
LIABILITY, AS APPLICABLE, ALL CALCULATED INCOME )  
TAX DIFFERENCES RESULTING FROM FUTURE CHANGES )  
IN INCOME TAX RATES. )

CAUSE NO. 46038

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR  
PUBLIC'S EXHIBIT NO. 4  
TESTIMONY OF OUCC WITNESS  
BRIAN R. LATHAM

July 11, 2024

Respectfully submitted,



Thomas R. Harper  
Atty. No. 16735-53  
Deputy Consumer Counselor

**TESTIMONY OF OUCC WITNESS BRIAN R. LATHAM  
CAUSE NO. 46038  
DUKE ENERGY INDIANA, LLC**

1 **Q: Please state your name and business address.**

2 A: My name is Brian R. Latham, and my business address is 115 West Washington  
3 Street, Suite 1500 South, Indianapolis, Indiana 46204.

4 **Q: By whom are you employed and in what capacity?**

5 A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC")  
6 as a Utility Analyst in the Electric Division. A summary of my educational  
7 background and experience is included in Appendix A attached to my testimony.

8 **Q: Have you previously testified before the Indiana Utility Regulatory  
9 Commission ("Commission")?**

10 A: Yes.

11 **Q: What is the purpose of your testimony?**

12 A: Duke Energy Indiana, LLC ("Duke" or "Petitioner") is seeking authority to  
13 increase its retail rates and charges for electric service rendered in Indiana through  
14 a multi-step rate implementation, using a forecasted test period. My testimony  
15 addresses Duke's requested authority to track the effect of tax rate changes using  
16 regulatory assets and liabilities, its proposed card convenience fee ("card fee")  
17 elimination, and its proposed recovery of its restructuring cost.

18 **Q: Please describe the review and analysis you conducted to prepare your  
19 testimony.**

20 A: I reviewed relevant portions of Duke's petition, testimony, exhibits, data  
21 responses, and workpapers in this Cause. I also reviewed previous filings and the

1 Commission's Order in Cause No. 45253. I prepared discovery questions,  
2 reviewed Duke's responses to those questions, and met with other OUCC staff to  
3 discuss case issues.

4 **Q: If you do not address a specific topic, issue, or item in your testimony, should**  
5 **it be construed to mean you agree with Duke's proposal?**

6 A: No. My silence on any issue should not be construed as an endorsement. Also, my  
7 silence in response to any actions or adjustments stated or implied by Petitioner  
8 should not be construed as an endorsement.

#### I. TAX RATE REGULATORY ACCOUNT

9 **Q: What is Duke's proposal regarding a tax rate regulatory account?**

10 A: Duke is requesting deferral authority associated with potential future changes to  
11 statutory income tax rates (either state or federal).<sup>1</sup> Petitioner is proposing to defer  
12 the tax rate variance created when there is a statutory income tax rate change by  
13 creating a tax rate regulatory account. The resulting balance in the regulatory  
14 account (asset or liability) would be subject to consideration in a new docket  
15 outside of a general rate case to adjust its rates. This adjustment to rates would:

16 reflect the difference between (1) the amount of federal or state  
17 income taxes that the currently effective rates were designed to  
18 recover and (2) the amount of federal or state income taxes that  
19 would have been included in the design of currently effective rates  
20 had those statutory income tax rate changes been in effect at that

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<sup>1</sup> Petitioner's Exhibit No. 3, Verified Direct Testimony of Christa L. Graft, p. 42, ll. 4-20.

1                   time.<sup>2</sup>

2                   It is unclear whether Duke proposes to incur carrying costs on the deferred  
3                   amounts, or how such carrying costs would be calculated. This proposed balancing  
4                   account treatment is similar in structure to the accounting treatment for pension  
5                   balancing accounts requested but rejected in Indiana American Water Co's. Cause  
6                   No. 43680.<sup>3</sup>

7                   **Q: Does the OUCG support Duke's proposed balancing account?**

8                   No. Federal corporate income taxes are 21%, the lowest they have been since 1939  
9                   for a corporation in the highest income tax bracket (Duke would be expected to be  
10                  in the highest income bracket) (see Attachment BRL-1).<sup>4</sup>

11                  Indiana state corporate income tax rates are also at their lowest levels since  
12                  2003 (see Attachment BRL-2).<sup>5</sup> From July 2012 to July 2021, Indiana state  
13                  corporate income tax rates decreased every year. Indiana ratepayers did not receive  
14                  any balancing account benefit while investor-owned utilities enjoyed steadily  
15                  decreasing rates.<sup>6</sup> Now, with tax rates having trended lower, Duke seeks to have  
16                  ratepayers assume the more probable risk of potential tax rate increases. It is

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<sup>2</sup> Graft Direct, p. 42, ll. 4-11.

<sup>3</sup> *In re Duke Energy Ind., LLC's Request for an Increase to its Rates and Charges*, Cause No. 43680, Final Order pp. 111-112 (Ind. Util. Regul. Comm'n April 30, 2010).

<sup>4</sup> <https://taxfoundation.org/data/all/federal/historical-corporate-tax-rates-brackets/>.

<sup>5</sup> <https://www.in.gov/dor/resources/tax-rates-and-reports/rates-fees-and-penalties/corporate-sales-tax-history/>.

<sup>6</sup> *Id.*



1 unreasonable to now shift this possible business risk to ratepayers in the manner  
2 requested by Duke when ratepayers did not receive timely benefit of the steady  
3 decreases in state corporate tax rates in recent years.

4 In addition, Duke has not presented evidence or justification that any state  
5 tax change is either imminent or that multiple tax changes would lead to the level  
6 of volatility that such a balancing account would be needed to alleviate such  
7 unpredictability. Duke's request is speculative and would only serve Duke's  
8 interest as a hedge against a speculative risk.

9 In its investigation and response to the Tax Cuts and Jobs Act of 2017, the  
10 Commission dismissed without prejudice any utility whose base rates reflected  
11 income taxes less than 21% (see Attachment BRL-3).

12 Any state or federal tax rate changes should be incorporated as they  
13 traditionally have been, through base rate cases or in the event the Commission  
14 determines to address such changes consistently among affected utilities through  
15 an investigation case. Duke's tax regulatory account request in this case should be  
16 denied.

## II. CARD PAYMENT CONVENIENCE FEE

17 **Q: What is Duke's proposal regarding the card fees?**

18 A: Petitioner is proposing to eliminate its payment transaction card for residential  
19 customers paying with a credit card or other similar payment type and include an

1 estimated \$2.6 million in card fees within its cost of service.<sup>7</sup> Duke argues the per  
2 transaction card fee is dissatisfying to many of its customers and that fee-free card  
3 payments are important to its most vulnerable customers.<sup>8</sup> The current transaction  
4 fee is \$1.25 per transaction, which Duke only recently renegotiated down from  
5 \$1.50 per transaction.<sup>9</sup>

6 **Q: Do you agree with Duke's premise that customer dissatisfaction is good cause**  
7 **for eliminating card fees?**

8 A: No. As the Commission stated in Duke's last base rate Order, "[w]hile it is  
9 reasonable to expect that customer satisfaction for program participants who now  
10 can avoid paying a previously unavoidable convenience fee will be enhanced, we  
11 conclude that DEI's proposed fee-free payment option is unreasonable since it has not  
12 been shown to provide any value, including any level of enhanced customer  
13 satisfaction, to non-participating customers."<sup>10</sup> Here, it is similarly reasonable to  
14 expect that customer satisfaction would likely be enhanced for those customers  
15 who would pay by fee-free card payment, but Petitioner has not shown any value,  
16 including any level of enhanced customer satisfaction, for customers who pay by

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<sup>7</sup> Graft Direct, p. 28, ll. 9-10.

<sup>8</sup> Petitioner's Exhibit No. 24, Direct Testimony of Jacob S. Colley, p. 27, ll. 3-7 and p. 29, ll. 5-7.

<sup>9</sup> Colley Direct, p. 26, l. 15.

<sup>10</sup> *In re Duke Energy Ind., LLC's Request for an Increase to its Rates and Charges*, Cause No. 45253, Final Order p. 106 (Ind. Util. Regul. Comm'n June 29, 2020), *rev'd in part by Ind. Off. of Util. Consumer Couns. v. Duke Energy Ind., LLC*, 183 N.E.3d 266 (Ind. 2022).

1 other means. Therefore, the OUCC recommends that Duke's customer satisfaction  
2 argument be rejected due to the impact on non-participating customers.

3 **Q: Does Duke's proposal meet cost of service principles?**

4 A: No. Not all of Duke's residential customers should be required to pay for benefits  
5 used by a subset of customers, thereby resulting in a subsidy. This is true when the  
6 extra cost is easily identified and can easily be included in Duke's customer billing  
7 process. Cash-paying customers will be negatively impacted if forced to pay for  
8 benefits used by other customers, a situation that cost-of-service principles are  
9 designed to prevent. Duke has not shown how its cash-paying customers receive  
10 any value by paying an additional amount to subsidize the cost and fees associated  
11 with card payments.

12 **Q: What does the OUCC say about Duke's stated concern for protecting its most**  
13 **vulnerable customers?**

14 A: While the OUCC is concerned about vulnerable ratepayers, it disagrees with  
15 Duke's analysis of card cost effects on vulnerable populations. U.S. merchants pay  
16 banks a fee to accept credit card payments that is proportional to the dollar value  
17 of a sale using its card. In practice, however, credit card companies impose a no-  
18 surcharge rule that prohibits U.S. merchants from doing so [charging customers],  
19 and most merchants are reluctant to give cash discounts (see Attachment BRL-

1           4).<sup>11</sup> This is, in effect, a surcharge reflected in prices that cash customers already  
2           pay, allowing card customers to pay the same price as cash customers, despite the  
3           added cost which cannot be passed through. Agarwal, Presbitero, Silva, and Wix  
4           estimate that credit card markets account for “an aggregate annual redistribution  
5           of \$15 billion from less to more educated, poorer to richer, and high to low  
6           minority areas, widening existing disparities,” (see Attachment BRL-5).<sup>12</sup>

7                        In 2020 more than 90% of credit card purchase volume was made by credit  
8           cards that offer rewards (attachment BRL-6).<sup>13</sup> According to Schuh, Shy, and  
9           Stavins:<sup>14</sup>

10                       Because credit card spending and rewards are positively  
11                       correlated with household income, the payment instrument  
12                       transfer also induces a regressive transfer from low-income  
13                       to high-income households in general. On average, and  
14                       after accounting for rewards paid to households by banks,  
15                       the lowest-income household (\$20,000 or less annually)  
16                       pays \$21 and the highest-income household (\$150,000 or  
17                       more annually) receives \$750 every year.

18           Duke's proposed inclusion of fee costs may increase significantly in the next rate  
19           case as its ratepayers realize that card payments incur no fees and its ratepayers'

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<sup>11</sup> Schuh, Shy and Stavins, Fed. Rsr. Bank of Boston, Public Policy Discussion Papers No. 10-03, Who Gains and Who Loses from Credit Card Payments? Theory and Calibrations (2010), p. 1.

<sup>12</sup> Agarwal, Presbitero, Silva and Wix, Fed. Rsr. Bd., Finance and Economics Discussion Series, Who Pays for Your Rewards? Redistribution in the Credit Card Market (2023), p. 1.

<sup>13</sup> Bureau of Consumer Fin. Prot., Consumer Credit Card Market Report, page 89, figure 2 (2021).

<sup>14</sup> Schuh, Shy and Stavins, Fed. Rsr. Bank of Boston, Public Policy Discussion Papers No. 10-03, Who Gains and Who Loses from Credit Card Payments? Theory and Calibrations, cover page (2010), Abstract (title page).

1           desire to earn card rewards will significantly increase the overall cost. As a Duke  
2           customer, I will begin using a rewards card to pay my bill as soon as the fee is  
3           removed to earn rewards and take advantage of the transaction time between my  
4           Duke bill due date and when my credit card is eventually paid. My (and other  
5           peoples') use of a rewards card would increase costs to vulnerable Duke customers  
6           who pay via other means (cash, check, etc.). The OUCC recommends the  
7           Commission reject Duke's argument that ending the card fee will positively impact  
8           Duke's most vulnerable ratepayers.

9       **Q:    What do you recommend regarding Duke's proposed card payment fee**  
10       **elimination?**

11       A:    I recommend the Commission reject Duke's card payment fee elimination  
12           proposal. If Duke desires to improve its customer satisfaction performance and  
13           help its most vulnerable customers, then I recommend Duke's shareholders absorb  
14           the cost of the fees the company wishes to include in rates. Duke's estimated \$2.6  
15           million cost is immaterial relative to its reported 2023 \$2.7 billion Net Income  
16           Available to Duke Energy Corporation Common Stockholders.<sup>15</sup>

### **III.   RESTRUCTURING COST RECOVERY**

17       **Q:    What restructuring costs does Duke propose recovering?**

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<sup>15</sup> Duke 2023 Annual Report, <https://investors.duke-energy.com/financials/annual-reports/default.aspx>, p. 81.

1 A: In December 2023, Duke incurred \$6.3 million in restructuring charges. It states  
2 that these charges are expected to yield \$13.5 million in yearly Operations and  
3 Maintenance expense savings, which Duke represents is reflected in the 2025 test  
4 year O&M.<sup>16</sup> Duke is requesting recovery of the \$6.3 million over a three-year  
5 period.<sup>17</sup>

6 **Q: Does the OUCC accept Duke's proposed restructuring cost recovery?**

7 A: No. Duke's resulting annual savings of \$13.5 million would average \$1.125  
8 million per month (\$13.5 million/ 12 months). Therefore, by the end of June 2024,  
9 Duke will have saved \$6.75 million (\$1.125 million \* 6 months), which, 1) was  
10 not shared with ratepayers, and 2) exceeds its \$6.3 million restructuring costs. In  
11 addition, Indiana ratepayers will not see the benefit of the cost savings for several  
12 months beyond June 2024. Duke will enjoy several months of net cost savings  
13 beyond its restructuring cost recovery breakeven point (June 2024), at  
14 approximately \$1.125 per month, which it also is not proposing to share with  
15 ratepayers.

16 **Q: What does the OUCC recommend regarding Duke's proposed restructuring**  
17 **cost recovery?**

18 A: The OUCC recommends the Commission reject Duke's request for cost recovery  
19 related to its restructuring. Duke will enjoy \$1.125 million per month in cost

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<sup>16</sup> Graft-Direct, p. 41, l. 15 – p. 42, l. 1.

<sup>17</sup> *Id.*

1 savings beyond its \$6.3 million restructuring cost each month beyond June 2024,  
2 until it receives an order in this Cause. These excess cost savings, which are  
3 neither embedded in rates, nor proposed to be shared with customers, should be  
4 returned to Indiana ratepayers over the expected life of the rates. Assuming an  
5 order in this Cause is issued on February 1, 2025, the amount of \$7.875 million  
6 (\$1.125 million \* 7 months) should be amortized over the expected life of the rates  
7 and returned to ratepayers. OUCC witness Mike Eckert testifies regarding the  
8 expected life of the rates of four years. The recovery amount should be adjusted to  
9 account for the actual timing of the Commission's Final Order in this Cause.

#### IV. OUCC RECOMMENDATIONS

10 **Q: Please summarize the OUCC's position and recommendations.**

11 A: The OUCC recommends the Commission deny Duke's proposed tax balancing  
12 account and its proposed elimination of its card processing transaction fee, unless  
13 Duke's shareholders agree to fund the elimination of the card fee. The OUCC also  
14 recommends the Commission deny Duke's cost recovery request for its \$6.3  
15 million restructuring costs incurred in 2023. The OUCC further recommends the  
16 projected excess savings resulting from restructuring from July 1, 2024, through  
17 the Final Order in this Cause be amortized for the ratepayer's benefit over the  
18 anticipated life of the rates in this cause, as discussed above.

19 **Q: Does this conclude your testimony?**

20 A: Yes, it does.

**APPENDIX A**

**QUALIFICATIONS OF BRIAN R. LATHAM**

1 **Q: Please describe your educational background and experience.**

2 A: I graduated from Northern Illinois University in DeKalb, Illinois, with a bachelor's  
3 degree in accounting. I then attended Illinois State University in Normal, Illinois,  
4 and obtained a master's degree in accounting. In addition, I have participated in  
5 various continuing education programs sponsored by my current and former  
6 employers.

7 I began my employment in 1992 as a Staff Accountant with OSI Industries  
8 (Aurora, Illinois). In 1995, I was hired as a cost accountant at Rexnord in  
9 Milwaukee, Wisconsin. In 1998, I was hired as a cost accounting manager at  
10 Morton Metalcraft (Morton, Illinois) and eventually promoted to a Controller role  
11 at Illinois Machine and Tool Works. In 2001, was hired at Hamernik Associates,  
12 where I was a work-out and bankruptcy consultant. I was an independent financial  
13 recruiter in 2007 and 2008. In March 2008, I was hired as Vice President of  
14 Finance for Junior Achievement of Central Indiana. In 2009, I was hired as a  
15 Utility Analyst for the Indiana Utility Regulatory Commission, where I worked as  
16 a member of the Water Division Staff, reviewing water and wastewater utility  
17 filings and making recommendations based on witness' testimony and Indiana  
18 law. In 2018, I was hired as Controller for Aqua Indiana, where I was responsible  
19 for Aqua Indiana's financial operations, and my roles included the oversight and




1           accountability of the monthly, quarterly, and annual financial closings and  
2           reporting, SOX and audit compliance, budget, forecasting, and five-year planning,  
3           regulatory petitions, acquisitions, and other strategic projects. After a short stint as  
4           Controller at Senior Home Companions, I was hired at the OUCC as a Utility  
5           Analyst in October 2022.

6                     At the OUCC, I provide written testimony ranging from rate cases to clean  
7           energy generation facilities and regional transmission organization adjustments. I  
8           work on demand supply management relationships and commission investigation  
9           teams. I attended the NARUC Staff Subcommittee on Accounting and Finance  
10          Spring Conference in early April 2023.

**AFFIRMATION**

I affirm, under the penalties for perjury, that the foregoing representations are true.



Brian R. Latham  
Utility Analyst II  
Indiana Office of Utility Consumer Counselor

Cause No. 46038  
DEI, LLC

Date: July 11, 2024



# Historical U.S. Federal Corporate Income Tax Rates & Brackets, 1909-2020

August 24, 2021 • 8 min read

## Historical Federal Corporate Income Tax Rates and Brackets, 1909 to 2020

Year	Taxable Income Brackets	Rates (%)	Notes:
2018-2020	All taxable income	21	For tax years beginning after 2017, the Tax Cuts and Jobs Act (P.L. 115-97) replaced the graduated corporate tax structure with a flat 21% corporate tax rate.
1993-2017	First \$50,000	15	The Revenue Reconciliation Act of 1993 increased the maximum corporate tax rate to 35% for corporations with taxable income over \$10 million. Corporations with taxable income over \$15 million are subject to an additional tax of 3% of the excess over \$15 million, or \$100,000, whichever is smaller

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	\$50,000-\$75,000	25	
	\$75,000-\$100,000	34	
	\$100,000-\$335,000	39	
	\$335,000-\$10,000,000	34	
	\$10,000,000-\$15,000,000	35	
	\$15,000,000-\$18,333,333	38	
	Over \$18,333,333	35	
1988-1992	First \$50,000	15	
	\$50,000-\$75,000	25	
	\$75,000-\$100,000	34	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	\$100,000-\$335,000	39	
	Over \$335,000	34	
1987	First \$25,000	15	The Tax Reform Act of 1986 (TRA86) established a new rate structure effective for Tax Year 1988 and made the rates for Transition Year 1987 an average of the pre-TRA rates for 1986 and the post-TRA rates for 1988.
	\$25,000-\$50,000	16.5	A new "alternative minimum tax" (AMT) replaced the add-on minimum tax, effective in 1987. It required a calculation of an alternative measure of taxable income that reduced or eliminated many tax preference items. The tax was 20 percent of the excess of this "alternative minimum taxable income" (AMTI) over \$40,000. The \$40,000 exemption was reduced by 25 percent of the excess of AMTI over \$150,000. AMT in excess of regular tax could be carried over as a credit against regular tax in future years. In 1998, "small" corporations (generally, those with average gross receipts of less than \$5 million) were exempted from the AMT.
	\$50,000-\$75,000	27.5	
	\$75,000-\$100,000	37	The maximum tax rate on capital gains was capped at 34 percent for 1987, which was to be the rate on the highest corporate tax bracket in 1988 and after, according to TRA86. The maximum capital gain rate was raised to 35 percent when the highest corporate rate bracket was increased in 1993.
	\$100,000-\$335,000	42.5	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	\$335,000-\$1,000,000	40	
	\$1,000,000-\$1,405,000	42.5	
	Over \$1,405,000	40	
1984-1986	First \$25,000	15	
	\$25,000-\$50,000	18	
	\$50,000-\$75,000	30	The maximum tax rate on long-term capital gains was 28 percent.
	\$75,000-\$100,000	40	
	\$100,000-\$1,000,000	46	
	\$1,000,000-\$1,405,000	51	
	Over \$1,405,000	46	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
1983	First \$25,000	15	Beginning in 1983, incorporated professional practices ("personal service corporations") have been taxed on all taxable income at the corporate tax rate applicable to the highest income bracket.
	\$25,000-\$50,000	18	
	\$50,000-\$75,000	30	The maximum tax rate on long-term capital gains was 28 percent.
	\$75,000-\$100,000	40	
	Over \$100,000	46	
1982	First \$25,000	16	
	\$25,000-\$50,000	19	
	\$50,000-\$75,000	30	The maximum tax rate on long-term capital gains was 28 percent.
	\$75,000-\$100,000	40	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	Over \$100,000	46	
1979-1981	First \$25,000	17	
	\$25,000-\$50,000	20	
	\$50,000-\$75,000	30	The maximum tax rate on long-term capital gains was 28 percent.
	\$75,000-\$100,000	40	
	Over \$100,000	46	
1975-1978	First \$25,000	20	
	\$25,000-\$50,000	22	
	Over \$50,000	48	The holding period for long-term capital gain treatment of assets was increased from 6 months to 9 months in 1977 and 12 months in 1978. The rate remained at 30 percent.

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.



Year	Taxable Income Brackets	Rates (%)	Notes:
1971-1974	First \$25,000	22	
	Over \$25,000	48	The maximum tax rate on long-term capital gains was increased to 30 percent.
1970	First \$25,000	22.5 5	Includes a 2.5 percent Vietnam War surcharge.
	Over \$25,000	49.2	The maximum tax rate on long-term capital gains was increased to 28 percent.
1968-1969	First \$25,000	24.2	From 1969 through 1986, corporations were also subject to an "add-on minimum tax" on certain "tax preference" items (such as percentage depletion, accelerated depreciation) above a certain amount. For Tax Years 1969 through 1976, the tax was 10 percent of tax preferences in excess of \$30,000; after 1976, the tax was 15 percent of preferences in excess of the greater of \$10,000 or regular income tax.
	Over \$25,000	52.8	Rates include the Vietnam War surcharge of 10 percent.
1965-1967	First \$25,000	22	
	Over \$25,000	48	
1964	First \$25,000	22	
	Over \$25,000	50	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
1952-1963	First \$25,000	30	From April 1, 1954, through Calendar Year 1969, the maximum tax rate on capital gains was 25 percent.
	Over \$25,000	52	
1951	First \$25,000	28.75	These rates reflect a tax increase (for the Korean War), effective March 31, 1951. The maximum capital gain tax rate was also increased to 26 percent.
	Over \$25,000	50.75	
1950	First \$25,000	23	An excess profits tax was also in effect from July 1950 through Calendar Year 1953. The tax was 30 percent of an adjusted profits figure reduced by credits for the level of prewar profits. It was not offset against income tax, but the sum of income and excess profits taxes was capped at a given percentage of income (from 62 percent to 70 percent).
	Over \$25,000	42	Beginning with Tax Year 1942, gains on the sale of assets held for more than 6 months (long-term capital gains) could be treated separately from other taxable income and taxed at a maximum rate of 25 percent.
1946-1949	Taxable income \$50,000 or less:		These rates are the sum of the "normal tax" rates and the "surtax" rates, which actually applied to slightly different definitions of taxable income.
	First \$5,000	21	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	Next \$15,000	23	
	Next \$5,000	25	
	Next \$25,000	53	Beginning with Tax Year 1942, gains on the sale of assets held for more than 6 months (long-term capital gains) could be treated separately from other taxable income and taxed at a maximum rate of 25 percent.
	Taxable income over \$50,000	38	
1942-1945	Taxable income \$50,000 or less:		These rates are the sum of the "normal tax" rates and the "surtax" rates, which actually applied to slightly different definitions of taxable income.
	First \$5,000	25	
	Next \$15,000	27	Beginning with Tax Year 1942, gains on the sale of assets held for more than 6 months (long-term capital gains) could be treated separately from other taxable income and taxed at a maximum rate of 25 percent.
	Next \$5,000	29	
	Next \$25,000	53	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	Taxable income over \$50,000	40	
1941	Taxable income \$38,461.54 or less:		These rates are the sum of the "normal tax" rates and the "surtax" rates, which actually applied to slightly different definitions of taxable income.
	First \$5,000	21	
	Next \$15,000	23	
	Next \$5,000	25	
	Next \$13,461.54	44	
	Taxable income over \$38,461.54	31	
1940	Taxable income \$31,964.30 or less:		From June 1940 to the end of 1945, a tax on profits in excess of average prewar earnings was also imposed. It was taken into account, as either a deduction or a credit, for the income tax and the other excess profits tax.
	First \$5,000	14.8 5	The rates for 1940 include extra "defense tax" rates that are integrated with the regular rates in later years.

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	Next \$15,000	16.5	
	Next \$5,000	18.7	
	Next \$6,964.30	38.3	
	Taxable income over \$31,964.30, not over \$38,565.84:		
	First \$5,000	15.4	
	Next \$15,000	16.9	
	Next \$5,000	18.9	
	Next \$13,565.84	36.9	
	Taxable income over \$38,565.84	24	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
1938-1939	Taxable income \$25,000 or less:		
	First \$5,000	12.5	
	Next \$15,000	14	
	Next \$5,000	16	
	Taxable income over \$25,000	19	
1936-1937	First \$2,000	8	An additional surtax ranging from 7 percent to 27 percent was imposed on undistributed profits.
	Over \$2,000, not over \$15,000	11	
	Over \$15,000, not over \$40,000	13	
	Over \$40,000	15	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
1932-1935	All taxable income	13.75	An additional "declared value" excess profits tax, based on profits in excess of a percentage of the value of corporate stock, was in effect from 1933 through 1945. It was a deduction for income tax purposes.
1930-1931	First \$3,000	0	
	Over \$3,000	12	
1929	First \$3,000	0	
	Over \$3,000	11	
1928	First \$3,000	0	
	Over \$3,000	12	
1926-1927	First \$2,000	0	
	Over \$2,000	13.5	
1925	First \$2,000	0	
	Over \$2,000	13	
1922-1924	First \$2,000	0	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.

Year	Taxable Income Brackets	Rates (%)	Notes:
	Over \$2,000	12.5	
1919-1921	First \$2,000	0	
	Over \$2,000	10	
1918	First \$2,000	0	
	Over \$2,000	12	
1917	All taxable income	6	An additional tax on "excess profits" and/or "war profits" was in effect from 1917 to 1922. It was allowed as a deduction for computing income tax.
1916	All taxable income	2	
1913 (March 1)-1915	All taxable income	1	
1909-1913 (February 28)	First \$5,000	0	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>

2011-2020: Internal Revenue Service, Instructions for Form 1120.



Year	Taxable Income Brackets	Rates (%)	Notes:
	Over \$5,000	1	

Source: SOI Tax Stats – Historical Table 24 (1909-2010) <https://www.irs.gov/statistics/soi-tax-stats-historical-table-24>  
2011-2020: Internal Revenue Service, Instructions for Form 1120.

## U.S. Corporation Income Collections, 1934 to 2020

Year	Collections [nominal] (millions)	Collections as a % of GDP (Percentage)
2020	211,845	1.0
2019	230,245	1.1
2018	204,733	1.0
2017	297,048	1.5
2016	299,571	1.6
2015	343,797	1.9
2014	320,731	1.9
2013	273,506	1.6
2012	242,289	1.5

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentage)</b>
2011	181,085	1.2
2010	191,437	1.3
2009	138,229	1.0
2008	304,346	2.1
2007	370,243	2.6
2006	353,915	2.6
2005	278,282	2.2
2004	189,371	1.6
2003	131,778	1.2
2002	148,044	1.4
2001	151,075	1.4
2000	207,289	2.0
1999	184,680	1.9
1998	188,677	2.1
1997	182,293	2.2

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentge)</b>
1996	171,824	2.2
1995	157,004	2.1
1994	140,385	2.0
1993	117,520	1.7
1992	100,270	1.6
1991	98,086	1.6
1990	93,507	1.6
1989	103,291	1.9
1988	94,508	1.8
1987	83,926	1.8
1986	63,143	1.4
1985	61,331	1.4
1984	56,893	1.4
1983	37,022	1.0
1982	49,207	1.5

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentage)</b>
1981	61,137	2.0
1980	64,600	2.3
1979	65,677	2.6
1978	59,952	2.6
1977	54,892	2.7
1976	41,409	2.3
1975	40,621	2.5
1974	38,620	2.6
1973	36,153	2.7
1972	32,166	2.6
1971	26,785	2.4
1970	32,829	3.1
1969	36,678	3.7
1968	28,665	3.2
1967	33,971	4.1

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentge)</b>
1966	30,073	3.9
1965	25,461	3.6
1964	23,493	3.6
1963	21,579	3.5
1962	20,523	3.5
1961	20,954	3.8
1960	21,494	4.0
1959	17,309	3.4
1958	20,074	4.2
1957	21,167	4.6
1956	20,880	4.8
1955	17,861	4.4
1954	21,101	5.5
1953	21,238	5.6
1952	21,226	5.9

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentge)</b>
1951	14,101	4.3
1950	10,449	3.7
1949	11,192	4.0
1948	9,678	3.7
1947	8,615	3.6
1946	11,883	5.2
1945	15,988	7.1
1944	14,838	6.9
1943	9,557	5.2
1942	4,719	3.2
1941	2,124	1.8
1940	1,197	1.2
1939	1,127	1.2
1938	1,287	1.4
1937	1038	1.2

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

<b>Year</b>	<b>Collections [nominal] (millions)</b>	<b>Collections as a % of GDP (Percentge)</b>
1936	719	0.9
1935	529	0.8
1934	364	0.6

Source: White House: Office of Management and Budget: Historical Tables 2.1, 2.3 <https://www.whitehouse.gov/omb/historical-tables/>

# Corporate & Sales Tax History

## Gross Income Tax (general corporations)

Timeframe	High Rate	Low Rate
May 1933 - June 1963	1.00 %	.250%
July 1963 - Feb. 1973	2.00%	.500%
April - Dec. 1973	1.90%	.475%
1974	1.80%	.450%
1975	1.70%	.425%
1976	1.60%	.400%
1977	1.55%	.3875%
1978	1.50%	.375%
1979	1.45%	.3623%
1980	1.40%	.350%
1981	1.35%	.3375%
1982 - 1984	1.30%	.325%
1985	1.25%	.3125%
1986 - 2002	1.20%	.300%
2003	0%	0% (repealed Jan. 1, 2003)

## Adjusted Gross Income Tax (general corporations, non-financial institutions)

Timeframe	Rate
July 1963 - 1972	2.00%
1973 - 1986	3.00%
Jan. - June 1987	3.20%
July 1, 1987 - 2002	3.40%
2003 - June 30, 2012	8.50%
July 1, 2012 - June 30, 2013	8.00%
July 1, 2013 - June 30, 2014	7.50%
July 1, 2014 - June 30, 2015	7.00%
July 1, 2015 - June 30, 2016	6.50%
July 1, 2016 - June 30, 2017	6.25%



Timeframe	Rate
July 1, 2017 - June 30, 2018	6.00%
July 1, 2018 - June 30, 2019	5.75%
July 1, 2019 - June 30, 2020	5.50%
July 1, 2020 - June 30, 2021	5.25%
July 1, 2021 - Present	4.90%

## **Supplemental Net Income Tax (all corporations, financial institutions until 1989)**

Timeframe	Rate
1973 - 1974	2.00%
1975 - 1976	2.50%
1977 - 1980	3.00%
1982 - 1986	4.00%
1987 - 2002	4.50%
Jan. 1, 2003 (repealed)	0%

## **Financial Institutions Tax (replaced former bank taxes)**

Timeframe	Rate
1990 - 2013	8.50%
Jan. 1, 2014 - Dec. 31, 2014	8.00%
Jan. 1, 2015 - Dec. 31, 2015	7.50%
Jan. 1, 2016 - Dec. 31, 2016	7.00%
Jan. 1, 2017 - Dec. 31, 2017	6.50%
Jan. 1, 2018 - Dec. 31, 2018	6.50%
Jan. 1, 2019 - Dec. 31, 2019	6.25%
Jan. 1, 2020 - Dec. 31, 2020	6.00%
Jan. 1, 2021 - Dec. 31, 2021	5.50%
Jan. 1, 2022 - Dec. 31, 2022	5.00%
Jan. 1, 2023 - Present	4.90%

## **Utility Receipts Tax (retail sales of utility services)**

Timeframe	Rate
2003 - Present	1.40%

Timeframe	Rate
2003 - 2021	1.40%
Jan. 1, 2022 - June 30, 2022	1.46%
July 1, 2022 (repealed)	0%

## Utility Service Use Tax (use tax sales of utility services)

Timeframe	Rate
2006 - Present	1.40%
2006 - 2021	1.40%
Jan. 1, 2022 - June 30, 2022	1.46%
July 1, 2022 (repealed)	0%

## Sales Tax Rate History

Effective Date	Rate
April 1, 2008 - Present	7.00%
Dec. 1, 2002 - March 31, 2008	6.00%
Jan. 1, 1983	5.00%
May 1, 1973	4.00%
Oct. 24, 1963 (sales tax first adopted)	2.00%

FILED

JUN 29 2018

INDIANA UTILITY  
REGULATORY COMMISSION

STATE of INDIANA



INDIANA UTILITY REGULATORY COMMISSION  
101 WEST WASHINGTON STREET, SUITE 1500 EAST  
INDIANAPOLIS, INDIANA 46204-3419

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Office: (317) 232-2701  
Facsimile: (317) 232-6758

IN THE MATTER OF THE INDIANA UTILITY )  
REGULATORY COMMISSION'S INVESTIGATION INTO )  
THE IMPACTS OF THE TAX CUTS AND JOBS ACT OF ) CAUSE NO. 45032  
2017 AND POSSIBLE RATE IMPLICATIONS )  
)  
)  
RESPONDENTS: ALL JURISDICTIONAL RATE- )  
REGULATED, INVESTOR-OWNED UTILITIES )

You are hereby notified on this date the Indiana Utility Regulatory Commission ("Commission") has caused the following entry to be made:

On June 7, 2018, the Presiding Officers notified the parties in this Cause of the Commission's intent to take administrative notice of the Commission's October 5, 1983 Order in Cause No. 37017 and to dismiss, without prejudice, Painted Hills Utilities Corporation as a Respondent because its base rates reflect income taxes at a federal rate of less than 21%. Any objection to these actions was to be filed on or before June 21, 2018. No objection has been filed.

Accordingly, the Presiding Officers dismiss, without prejudice, Painted Hills Utilities Corporation as a Respondent in this Cause.

**IT IS SO ORDERED.**

  
\_\_\_\_\_  
James F. Huston, Chairman

  
\_\_\_\_\_  
Loraine L. Seyfried, Chief Administrative Law Judge

Date: June 29, 2018

FILED

JUN 29 2018

INDIANA UTILITY  
REGULATORY COMMISSION

STATE of INDIANA



INDIANA UTILITY REGULATORY COMMISSION  
101 WEST WASHINGTON STREET, SUITE 1500 EAST  
INDIANAPOLIS, INDIANA 46204-3419

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James F. Huston, Chairman

  
\_\_\_\_\_  
Loraine L. Seyfried, Chief Administrative Law Judge

Date: June 29, 2018

# Who Gains and Who Loses from Credit Card Payments? Theory and Calibrations

Scott Schuh, Oz Shy, and Joanna Stavins

**Abstract:**

Merchant fees and reward programs generate an implicit monetary transfer to credit card users from non-card (or “cash”) users because merchants generally do not set differential prices for card users to recoup the costs of fees and rewards. On average, each cash-using household pays \$149 to card-using households and each card-using household receives \$1,133 from cash users every year. Because credit card spending and rewards are positively correlated with household income, the payment instrument transfer also induces a regressive transfer from low-income to high-income households in general. On average, and after accounting for rewards paid to households by banks, the lowest-income household (\$20,000 or less annually) pays \$21 and the highest-income household (\$150,000 or more annually) receives \$750 every year. We build and calibrate a model of consumer payment choice to compute the effects of merchant fees and card rewards on consumer welfare. Reducing merchant fees and card rewards would likely increase consumer welfare.

**Keywords:** credit cards, cash, merchant fees, rewards, regressive transfers, no-surcharge rule

**JEL Classifications:** E42, D14, G29

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This paper, which may be revised, is available on the web site of the Federal Reserve Bank of Boston at <http://www.bos.frb.org/economic/wp/index.htm>.

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The views and opinions 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.

**This version: August 31, 2010**

## 1. Introduction

The typical consumer is largely unaware of the full ramifications of paying for goods and services by credit card. Faced with many choices—cash, check, debit or credit card, etc.—consumers naturally consider the costs and benefits of each payment instrument and choose accordingly. For credit cards, consumers likely think most about their benefits: delayed payment—“buy now, pay later”—and the rewards earned—cash back, frequent flier miles, or other enticements. What most consumers do not know is that their decision to pay by credit card involves merchant fees, retail price increases, a nontrivial transfer of income from cash to card payers, and consequently a transfer from low-income to high-income consumers.

In contrast, the typical merchant is acutely aware of the ramifications of his customers’ decisions to pay with credit cards. For the privilege of accepting credit cards, U.S. merchants pay banks a fee that is proportional to the dollar value of the sale. The merchant’s bank then pays a proportional interchange fee to the consumer’s credit card bank.<sup>1</sup> Naturally, merchants seek to pass the merchant fee to their customers. Merchants may want to recoup the merchant fee only from consumers who pay by credit card. In practice, however, credit card companies impose a “no-surcharge rule” (NSR) that prohibits U.S. merchants from doing so, and most merchants are reluctant to give cash discounts.<sup>2</sup> Instead, merchants mark up their retail prices for all consumers by enough to recoup the merchant fees from credit card sales.

This retail price markup for all consumers results in credit-card-paying consumers being subsidized by consumers who do not pay with credit cards, a result that was first discussed in Carlton and Frankel (1995), and later in Frankel (1998), Katz (2001), Gans and King

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<sup>1</sup>Shy and Wang (Forthcoming) show that card networks extract higher surplus from merchants using proportional merchant fees (rather than fixed, per-transaction fees). The amount of surplus that card networks can extract increases with the degree of merchants’ market power.

<sup>2</sup>See Appendix D for additional discussion on the implications of the NSR. Card associations allow U.S. merchants to give cash discounts under certain restrictions. However, cash discounts are not widely observed. Frankel (1998) argues that a prohibition on credit card surcharges can have effects different from those resulting from a prohibition on cash discounts, because card surcharges allow merchants to vary their charges according to the different merchant fees they pay on different cards, whereas a cash discount is taken from a single card price.

(2003), and Schwartz and Vincent (2006). For simplicity, we refer to consumers who do not pay by credit card as cash payers, where “cash” represents all payment instruments other than credit cards: cash, checks, debit and prepaid cards, etc.<sup>3</sup> “Subsidize” means that merchant fees are passed on to all buyers in the form of higher retail prices regardless of the means of payments buyers use to pay. Thus, cash buyers must pay higher retail prices to cover merchants’ costs associated with the credit cards’ merchant fees. Because these fees are used to pay for rewards given to credit card users, and since cash users do not receive rewards, cash users also finance part of the rewards given to credit card users.

If the subsidy of card payers by cash payers results from heterogeneity in consumer preferences and utility between cash and card payments, the subsidy may be innocuous in terms of consumer and social welfare. However, U.S. data show that credit card use is very positively correlated with consumer income. Consequently, the subsidy of credit card payers by cash payers also involves a regressive transfer of income from low-income to high-income consumers. This regressive transfer is amplified by the disproportionate distribution of rewards, which are proportional to credit card sales, to high-income credit card users.<sup>4</sup> Frankel (1998, Footnote 85) was the first to connect the wealth transfers to average income of groups of consumers (that is, poorer non-cardholders subsidizing wealthier cardholders). This idea was later discussed in Carlton and Frankel (2005, pp. 640–641) and Frankel and Shampine (2006, Footnote 19).<sup>5</sup>

Our contribution to this line of research is that we are the first to compute who gains and loses from credit card payments in the aggregate economy. We compute dollar-value estimates of the actual transfers from cash payers to card users and from low-income to

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<sup>3</sup>McAndrews and Wang (2008) demonstrates the possibility of a subsidy in the opposite direction (from card to cash users) in cases where merchants’ cost of handling cash exceeds merchants’ card fees. McAndrews and Wang’s definition of cards includes debit cards, which are less costly than credit cards, whereas in our paper debit cards are considered part of “cash.” Humphrey et al. (1996) and Humphrey et al. (2006) also provide evidence that electronic payment instruments, such as debit cards, are less costly than paper instruments, such as cash or check. Again, however, we focus only on credit cards, which have high merchant fees and are more costly than other payment instruments, paper or electronic.

<sup>4</sup>See Hayashi (2009) and her references for a comprehensive overview of card reward programs.

<sup>5</sup>Similar points were made recently in *New York Times* articles by Floyd Norris, “Rich and Poor Should Pay Same Price,” October 1, 2009; and by Ron Lieber, “The Damage of Card Rewards,” January 8, 2010.

high-income households. A related paper by Berkovich (2009) estimates the total amount transferred from non-rewards consumers to rewards consumers in the United States resulting from gasoline and grocery purchases only.<sup>6</sup>

We propose a simple, model-free accounting methodology to compute the two transfers by comparing the costs imposed by individual consumer payment choices with actual prices paid by each buyer. On average, each cash buyer pays \$149 to card users and each card buyer receives \$1,133 from cash users every year, a total transfer of \$1,282 from the average cash payer to the average card payer. On average, and after accounting for rewards paid to households by banks, when all households are divided into two income groups, each low-income household pays \$8 to high-income households and each high-income household receives \$430 from low-income households every year. The magnitude of this transfer is even greater when household income is divided into seven categories: on average, the lowest-income household (\$20,000 or less annually) pays a transfer of \$21 and the highest-income household (\$150,000 or more annually) receives a subsidy of \$750 every year. The transfers among income groups are smaller than those between cash and card users because some low-income households use credit cards and many high-income households use cash. Finally, about 79 percent of banks' revenue from credit card merchant fees is obtained from cash payers, and disproportionately from low-income cash payers.

To conduct welfare and policy analysis of these transfers, we construct a structural model of a simplified representation of the U.S. payments market and calibrate it with U.S. micro data on consumer credit card use and related variables. Parameters derived from the model are notably reasonable given the simplicity and limitations of the model and data. High-income households appear to receive an inherent utility benefit from credit card use that is more than twice as high as that received by low-income households. Eliminating the merchant fee and credit card rewards (together) would increase consumer welfare by 0.15 to

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<sup>6</sup>This estimated transfer is about \$1.4b to \$1.9b, and rewards are found to have a disproportionate impact on low-income minorities and to resemble a regressive tax on consumption. These estimates focus exclusively on rewards transfers and do not account for the full range of transfers from low- to high-income consumers resulting from merchant fees.



0.26 percent, depending on the degree of concavity of utility, which also can be interpreted in an aggregate model as the degree of aversion to income inequality in society.

Our analysis is consistent with, but abstracts from, three features of the U.S. payments market. First, we focus on the convenience use of credit cards (payments only) and do not incorporate a role for revolving credit, which is an important feature of the total consumer welfare associated with credit cards.<sup>7</sup> U.S. data indicate that household propensity to revolve credit card spending is surprisingly similar across income groups, so it is unlikely that interest income plays a major role in the transfers. This fact supports working with a static model that is more tractable for data analysis. Second, we abstract from the supply-side details of the payments market for both cash and cards. We take as given the well-established, seminal result of Rochet and Tirole (2006) concerning the critical role of an interchange fee between acquiring and issuing banks in the two-sided credit card market, a result that notes that the optimal level of the interchange fee is an empirical issue.<sup>8</sup> By incorporating both merchant fees and card rewards rates, we can assume that the interchange fee lies between these rates and is set internally in the banking sector to the optimal level conditional on fees and rewards. Finally, we do not incorporate a role for the distribution of bank profits from credit card payments to households that own banks, because of a lack of sufficient micro data. Given these three simplifications, we can assess only the consumer welfare implications of the payment instrument transfers but not the full social welfare implications.

We want to be clear that we do not allege or imply that banks or credit card companies have designed or operated the credit card market intentionally to produce a regressive transfer from low-income to high-income households. We are not aware of any evidence to

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<sup>7</sup>For example, the work of Carroll (1997) provides motivation for credit cards to help consumers smooth income in the face of income and wealth shocks and achieve optimal consumption plans. However, the actual impact of credit card borrowing on consumer and social welfare is complicated, as can be seen from literature, including Brito and Hartley (1995), Gross and Souleles (2002), Chatterjee et al. (2007), and Cohen-Cole (Forthcoming).

<sup>8</sup>A complete list of contributions to two-sided markets is too long to be included here. The interested reader can consult Chakravorti and Shah (2003), Gans and King (2003), Rochet (2003), Wright (2003), Roson (2005), Evans and Schmalensee (2005), Armstrong (2006), Schwartz and Vincent (2006), Bolt and Chakravorti (2008), Hayashi (2008), Rysman (2009), and Verdier (Forthcoming). For a comprehensive empirical study of interchange fees, see Prager et al. (2009).

support this allegation or any *a priori* reason to believe it. However, the existence of a non-trivial regressive transfer in the credit card market may be a concern that U.S. individuals, businesses, or public policy makers wish to address. If so, our analysis suggests several principles and approaches worth further study and consideration, which we discuss briefly at the end of the paper. Recent U.S. financial reform legislation, motivated by concerns about competition in payment card pricing, gives the Federal Reserve responsibility for regulating interchange fees associated with debit (but not credit) cards. Our analysis provides a different but complementary motivation—income inequality—for policy intervention in the credit card market.

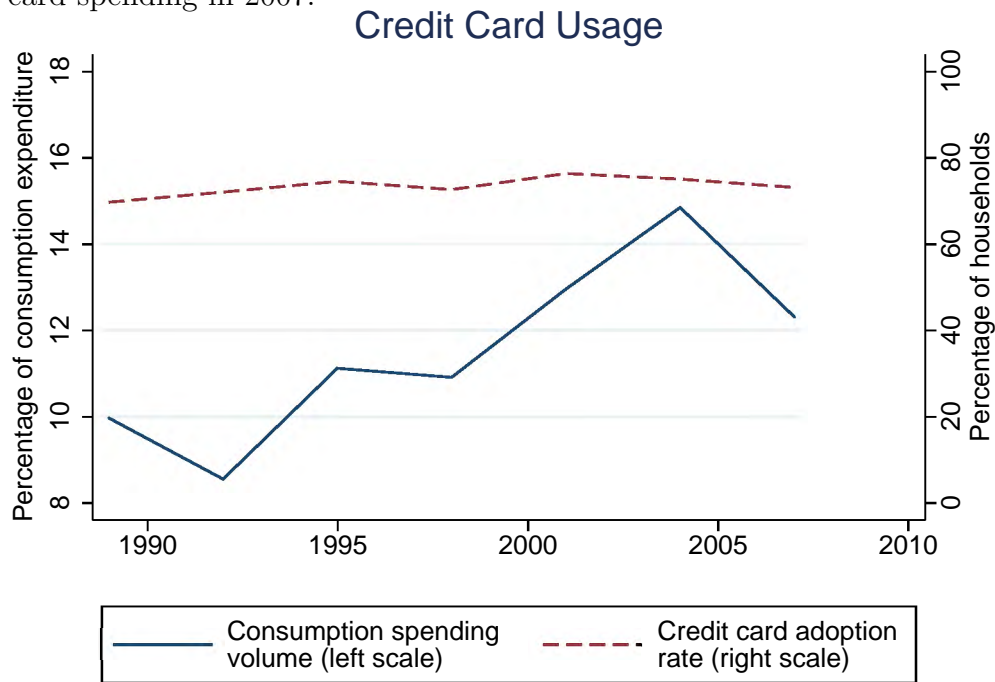
Section 2 documents three basic facts about card card use. Section 3 demonstrates a simple “accounting” of transfers from cash to card users and from low-to high-income buyers. Section 4 presents an analytical model, which is then used in Section 5 to calibrate the welfare-maximizing merchant fees and rewards to card users, and to compute changes in welfare associated with a total elimination of card reward programs and merchant fees. Policy implications are explored in Section 6. Section 7 subjects our computations of income transfers to a wide variety of tests associated with additional modifications of the data. Section 8 concludes. An appendix provides data details and sensitivity analysis of the calibrated model.

## **2. Basic Facts about Credit Cards**

This section establishes three basic facts about credit cards: 1) consumer credit card use has been increasing; 2) consumer credit card use and rewards are positively correlated with household income; and 3) credit card use varies across consumers due to heterogeneity in nonpecuniary benefits from cards, even within income groups. These facts motivate our analysis and modeling of transfers among consumers, associated with convenience use of cards.

## 2.1 Credit cards in the economy

Over the last two decades, payment cards have enjoyed increased popularity in all sectors of the economy. Our research focuses on credit and charge cards issued by banks, stores, and gas stations and used by consumers only. Figure 1 shows that the fraction of households who have a credit card (adopters) has been steady at about 70–75 percent during the past two decades, reflecting the maturity of the market. However, the percentage of total consumption expenditure paid for by credit card increased from about 9 percent to 15 percent during the same period.<sup>9</sup> As a result, revenue from merchant fees, which are proportional to credit card spending, also increased. Consumer credit card spending accounts for approximately half of all credit card spending in 2007.<sup>10</sup>



Sources: Survey of Consumer Finances 1989–2007

**Figure 1:** Credit card adoption and spending rates.

<sup>9</sup>Both series were taken from the Survey of Consumer Finances (SCF), which asked consumers about the amount of credit card charges they had in the previous month (variable *x412*) since 1989 (“Consumption spending volume”) and about credit card adoption (variable *x410*) since 1989 (“Credit card adoption rate”).

<sup>10</sup>Total credit card spending, which includes business and government expenditures, was about \$42 billion in 2007, according to the Federal Deposit Insurance Corporation’s Call Report data (series *rcfdc223* and *rcdfc224*).

## 2.2 Card use and income

Although previous literature found a positive relationship between income and credit card adoption (Stavins (2001), Mester (2003), Bertaut and Haliassos (2006), Klee (2006), Zinman (2009a), Schuh and Stavins (2010)), there has been less focus on the relationship between income and credit card use. Publicly available data sources, such as the 2007 Survey of Consumer Finances, typically provide only the dollar amounts charged on credit cards, which we define here as use. However, data on the number of transactions consumers make with credit cards are available from the new 2008 Survey of Consumer Payment Choice (SCPC).

The data reveal a strong positive correlation between consumer credit card use and household income, as shown in Table 1. (The unequally sized income categories are as reported in published aggregate data from the Consumer Expenditure Survey.) The proportion of households who hold (have adopted) at least one credit card increases monotonically with income (first column). Average new monthly charges on all credit cards held by a household also increases monotonically with income among households who have adopted credit cards (second column).<sup>11</sup> And the share of credit card spending in total household consumption also increases monotonically with income (third column).<sup>12</sup>

The data also reveal a strong positive correlation between consumer credit card rewards and household income, as shown in Table 2. The share of credit card holders earning any type of rewards increases monotonically with income. A similar pattern is visible for each of the major types of rewards as well: cash back, frequent flyer miles, discounts, and others.

In most of our analysis, we split the consumer population into two income groups: households earning less than \$100,000 and households earning more than that.<sup>13</sup> This decision

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<sup>11</sup>The new charge numbers are based on the following question from the 2007 SCF: “On your last bill, roughly how much were the new charges made to these [Visa, MasterCard, Discover, or American Express] accounts?” Because merchant fees are proportional to the amount charged on credit cards, regardless of whether the cardholder pays his monthly balance or carries it over to the next month, total new credit card charges for each household is the relevant measure of credit card use.

<sup>12</sup>The share of credit card spending in household income actually decreases with household income, however, because the marginal propensity to consume falls with household income.

<sup>13</sup>Table 7 generalizes our results to multiple income groups.

Annual income	Have cc	Average monthly cc charge by adopters	Share of cc spending in consumption
Under \$20,000	42%	\$447	8.4%
\$20,000–49,999	67%	\$478	9.3%
\$50,000–79,999	87%	\$714	12.8%
\$80,000–99,999	92%	\$1,026	15.7%
\$100,000–119,999	93%	\$1,293	17.9%
\$120,000–149,999	97%	\$1,642	20.9%
Over \$150,000	97%	\$4,696	27.6%
Under \$100,000	68%	\$616	11.3%
Over \$100,000	96%	\$2,966	24.8%
Whole sample	73%	\$1,190	16.9%

**Table 1:** Households’ credit card adoption rates and new monthly charges by annual household income. *Source:* 2007 Survey of Consumer Finances.

is motivated by the need for parsimony in modeling, by the significant differences in credit card behavior between these two broad income groups shown in Tables 1 and 2, and by our desire to put the focus more on the transfer to higher-income households (and less on the transfer from lower-income households). Table 1 shows that credit card spending by high-income consumers is nearly five times higher than credit card spending by low-income consumers, and Table 2 shows that high-income consumers are 20 percentage points more likely to receive credit card rewards. The difference between the lowest-income (less than \$20,000 per year) and the highest-income (\$150,000 per year or more) households’ credit card spending and rewards is markedly greater.

### 2.3 Non-income factors affecting credit card use

Income is not the only factor that is positively correlated with credit card use. Schuh and Stavins (2010) estimated the use of payment instruments as a function of various characteristics of these instruments, employing a 2006 survey of U.S. consumers. They found that, after controlling for income, the characteristics of convenience, cost, and timing of payment have a statistically significant effect on credit card use. Using the more extensive 2008 SCPC, we re-estimated the effects of payment instrument characteristics on consumer adoption and

Income	Any Reward	Cash Back	Airlines Miles	Discounts	Other Rewards
Under \$20,000	48	27	17	13	8
\$20,000–49,999	50	28	17	11	10
\$50,000–79,999	62	35	26	13	12
\$80,000–99,999	68	38	36	15	11
\$100,000–119,999	71	37	33	16	15
\$120,000–149,999	82	44	39	19	25
Over \$150,000	75	33	48	15	19
Under \$100,000	57	32	23	12	10
Over \$100,000	77	37	40	16	19
Whole sample	61	33	27	13	12

**Table 2:** Percentage (%) of credit card adopters receiving credit card rewards. *Source:* 2007–2008 Consumer Finance Monthly survey conducted by the Ohio State University.

use of credit cards, using the following specification:

$$\frac{CC_i}{TOTPAY_i} = f(CHAR_i, DEM_i, Y_i, NUM_i), \tag{1}$$

where  $CC_i/TOTPAY_i$  is consumer  $i$ 's share of the number of credit card payments in total payments;  $CHAR_i$  is a vector of characteristics of credit cards relative to all other payments adopted by consumer  $i$ ,  $DEM_i$  is a vector of demographic variables for consumer  $i$ , including age, race, gender, education, and marital status;  $Y_i$  is a set of income and financial variables;  $NUM_i$  is the set of dummy variables indicating the number of other payment instruments adopted by consumer  $i$ .

Table 3 shows the distribution of credit card use, calculated as a share of credit card payments in all payments for each consumer. The share of credit card transactions is higher for the over \$100K income group than for the under \$100K income group across the whole distribution. However, there is substantial variation within each income group. For example, among the high-income consumers, the 10th percentile of credit card users pay for 4 percent of their transactions with credit cards, compared with 70 percent of transactions for the 90th percentile of users. Therefore, there is variance in credit card use within income groups that needs to be explained.

Several relative payment-instrument characteristics have a significant effect on credit card

Percentile	Under \$100K	Over \$100K	Whole Sample
10 <sup>th</sup>	0	4	1
25 <sup>th</sup>	5	13	5
50 <sup>th</sup>	15	30	18
75 <sup>th</sup>	34	55	39
90 <sup>th</sup>	63	70	66

**Table 3:** Distribution (%) of credit card use within income groups for credit card adopters. *Note:* Based on the 2008 Survey of Consumer Payment Choice, and weighted using the population weights from the 2008 SCPC.

use. Table 4 shows the estimated coefficients on payment-instrument characteristics from estimating equation (1) for three different samples. While the cost of credit cards (which includes rewards as well as interest rates and fees) is significant in all specifications and for both income groups, other attributes of credit cards also are important determinants of credit card use, conditional on cost. Controlling for income categories (column 1 of Table 4), ease of use and record keeping have a strong and statistically significant effect on credit card use. In separate regressions by household income category, record keeping and cost have much stronger effects on higher-income consumers (column 3) than on lower-income consumers (column 2), while ease of use was not statistically significant for the higher-income group.

The preceding results indicate that payment-instrument characteristics are valued differently by consumers both within and between income groups. The model in Section 4 captures consumers’ nonpecuniary benefits from using credit cards relative to cash, such as record keeping, in a utility parameter labeled as  $b_i$ , specific to income group  $i$ . This parameter turns out to be an important factor determining the choice of cash versus credit card for payments.

### 3. Transfer Accounting

This section demonstrates a simple, model-free approach to computing two implicit monetary transfers between U.S. consumers that result when some buyers pay with credit cards and others do not. One transfer is from cash buyers to credit card buyers; the other is from

Explanatory Variables	(1)		(2)		(3)	
	Whole Sample		Under \$100K		Over \$100K	
Cost	0.10	***	0.10	***	0.13	***
Speed	0.00		-0.05		0.11	
Security	0.01		0.02		-0.02	
Control	0.01		0.01		-0.00	
Records	0.11	***	0.08	**	0.17	**
Acceptance	0.06		0.06		0.08	
Ease	0.11	***	0.12	**	0.11	
Income categories included?	Yes		No		No	

**Table 4:** Three credit card use regressions. *Note:* Authors’ estimation using the 2008 Survey of Consumer Payment Choice. \*\*\* significant at the 1% level, \*\* significant at the 5% level.

low-income buyers to high-income buyers. Our methodology decomposes national income account data on consumption into consumer groups defined by payment choice and income level, using micro data on consumption, credit card spending, and related variables (along with the benchmark estimates of payment costs). Humphrey, Kaloudis, and Øwre (2004) use an analogous methodology to estimate cash use in Norway.

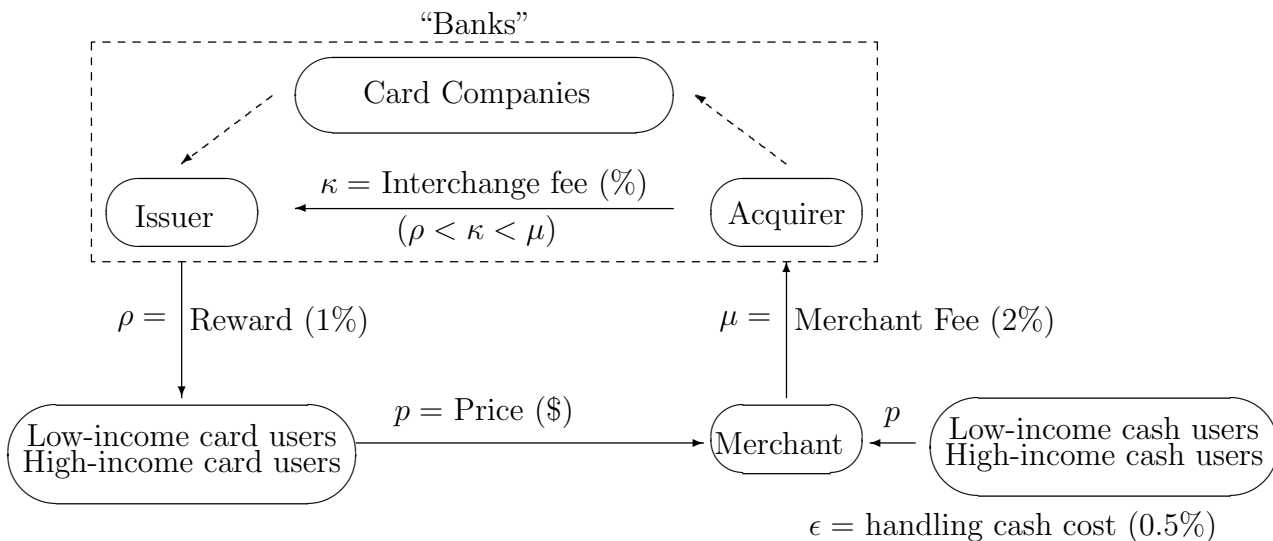
### 3.1 The payments market

Figure 2 illustrates a simplified version of the U.S. payments market that frames the computation of aggregate transfers. There are three types of agents: buyers (consumers), merchants, and “banks.” Buyers can have high or low incomes and pay by credit card or cash (all other non-credit card payments). A representative merchant sells a representative good to all consumers. This assumption is not strictly true for all markets, so we explore the implications of relaxing it in Section 7. However, it is a good approximation for most transactions and it is necessary to compute the transfers, given the lack of micro data on payment choice at the level of individual transactions.<sup>14</sup> Finally, “banks” represents the financial market that provides credit card payment services. It includes banks that issue cards to consumers

<sup>14</sup>It also greatly simplifies the modeling task by avoiding the need to have search and matching of individual consumers, merchants, and goods—a level of detail for which proper data are not currently available anyway—in addition to payment choice.



(“issuers”), banks that receive card payments from merchants (“acquirers”), and card companies (Visa or MasterCard are examples) that facilitate interactions among banks and between banks and their customers.<sup>15</sup> The literature on two-sided markets analyzes the details of the “banks” and merchant markets but tends to abstract from consumer heterogeneity, restricting analysis of transfers among consumers. Our analysis takes the opposite approach.



**Figure 2:** Fees and payments in a simple market with a card network.

Payments occur as follows. Buyers purchase a good for an endogenously determined price,  $p$ , using cash or credit card according to buyers’ preferences for the payment instruments. The merchant incurs a cost with either payment choice. For cash, the merchant bears a cost, denoted  $0 \leq \epsilon < 1$ , associated with handling cash transactions. Thus, the merchant’s cost of accepting a cash transaction is  $\epsilon \cdot p$ .<sup>16</sup> For credit cards, the merchant pays a fee,  $\mu$ , to banks (acquirers) that is proportional to card sales. Thus, the merchant’s cost of accepting a credit card transaction is  $\mu \cdot p$ . Card buyers receive a partial rebate of the merchant fee from banks (issuers) in the form of card rewards,  $\rho$ , that are proportional to card sales and

<sup>15</sup>Until recently, Visa and MasterCard were owned by banks. Visa became public in early 2008, and MasterCard in 2006.

<sup>16</sup>As drawn, the cash-handling cost  $\epsilon$  is a marginal cost. However, the actual cost of handling cash may include a fixed cost as well. Footnote 22 presents estimates of the cost of handling cash where  $\epsilon$  could be interpreted as average cost that includes possible fixed costs because the data do not distinguish well between fixed and marginal costs.

are given to encourage use.<sup>17</sup> Thus, card buyers receive reward income of  $\rho \cdot p$ .

The merchant fee and reward rate are closely related to pricing decisions internal to banks. Acquirers pay a proportional fee,  $\kappa$ , to issuers. When the card issuer and card acquirer are owned by different financial institutions,  $\kappa$  is called an interchange fee. Because interchange fees involve the fixing of fees by competing card issuers, they have triggered many debates and court cases against card organizations by antitrust authorities and merchant associations.<sup>18</sup> Typically, banks make profits by setting  $\rho < \kappa < \mu$ , which we assume holds. Our analysis of the transfers among consumers requires only the merchant fee and reward rate and not the inclusion of the interchange fee.

Regardless of whether buyers choose cash or credit card, U.S. merchants tend to charge the same price,  $p$ , despite incurring different costs from the two payment instruments. Under the no-surcharge rule, merchants cannot charge credit card buyers a higher price than the price they charge cash buyers to recoup the extra cost ( $\mu - \epsilon \approx 1.5$  percent in our calculations). However, under certain conditions card companies do allow the merchant to offer a discount to cash buyers, which is conceptually the same as surcharging cards.<sup>19</sup> Nevertheless, while some U.S. merchants have offered cash discounts from time to time, they generally do not do so widely or consistently. One reason may be the cost of offering two prices. Another reason may be concerns about adverse customer reactions to differential pricing and especially to penalizing card buyers, who tend to be higher-income households and to buy more goods.

The simplified payments market in Figure 2 covers only convenience use of credit cards and not the revolving credit feature of cards. In reality, banks also receive revenue from consumers through interest payments on revolving debt and from credit card fees (annual, over-the-limit, etc.), so it is possible that card rewards may be funded from sources of

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<sup>17</sup>To fund rewards, banks use revenue from merchant fees and possibly other sources, such as annual fees or interest from revolving credit card debt. Funding of rewards is discussed more later.

<sup>18</sup>Some court cases in the United States and worldwide are discussed in Bradford and Hayashi (2008).

<sup>19</sup>For example, Section 5.2.D.2 of Visa U.S.A. April 2008 operating regulations states that “A Merchant may offer a discount as an inducement for a Cardholder to use a means of payment that the Merchant prefers, provided that the discount is clearly disclosed as a discount from the standard price and, non-discriminatory as between a Cardholder who pays with a Visa Card and a cardholder who pays with a ‘comparable card’.” See also Footnote 2.

credit card revenue other than merchant fees.<sup>20</sup> However, our data and analysis presented below suggest that these alternative sources of credit card revenue are unlikely to alter our qualitative conclusions about transfers. Furthermore, the welfare effects of credit card borrowing and lending are extremely difficult to identify in economic theory and practice—revolving debt may be welfare improving, even at very high interest rates—whereas the welfare effects of transfers among consumers associated with convenience use of credit cards are less so.

### 3.2 Data and assumptions

The payments market discussed in Section 3.1 generates implicit monetary transfers between consumers, regardless of whether revolving credit is extended for card purchases. Calculation of these transfers does not require a formal economic model, only data and arithmetic—hence the terminology “transfer accounting.”<sup>21</sup> However, the transfer calculations are based on three key economic assumptions described below.

The quantitative fees and costs portrayed in Figure 2 represent “benchmark” estimates of recent conditions in the U.S. payments market. The limited available data suggest that a reasonable, but very rough, estimate of the per-dollar merchant effort of handling cash is  $\epsilon = 0.5$  percent.<sup>22</sup> Available data suggest that a reasonable estimate of the merchant fee across all types of cards, weighted by card use, is  $\mu = 2$  percent.<sup>23</sup> And available data

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<sup>20</sup>Section 7.2 discusses the funding of card rewards and the relevant literature.

<sup>21</sup>See Appendix A for more details about the data.

<sup>22</sup>Garcia-Swartz, Hahn, and Layne-Farrar (2006) report that the marginal cost of processing a \$54.24 transaction (the average check transaction) is \$0.43 (or 0.8 percent) if it is a cash transaction and \$1.22 (or 2.25 percent) if it is paid by a credit/charge card. The study by Bergman, Guibourg, and Segendorf (2007) for Sweden found that the total private costs incurred by the retail sector from handling 235 billion Swedish Crown (SEK) worth of transactions was 3.68 billion SEK in 2002, which would put our measure of cash-handling costs at  $\epsilon = 1.6$  percent. For the Norwegian payment system, Gresvik and Haare (2009) estimates that private costs of handling 62.1 billion Norwegian Crown (NOK) worth of cash transactions incurred by the retailers was 0.322 billion NOK in 2007, which would imply  $\epsilon = 0.5$  percent.

<sup>23</sup>Merchant fees in the United States were in the range of \$40–\$50 billion in 2008; see, for example, “Card Fees Pit Retailers Against Banks,” *New York Times*, July 15, 2009. This range approximately equals 2 percent of the U.S. credit card sales for that same year in the Call Report data for depository institutions. Actual merchant fees are complex and heterogeneous, varying over cards and merchants. We estimate merchant fees across cards as follows: general purpose (Visa, MasterCard, and Discover) 2 percent; American

suggest that a reasonable estimate of the reward rate is  $\rho = 1$  percent.<sup>24</sup> However, according to Table 2, only 55 percent of low-income credit card holders receive rewards, compared with 75 percent of high-income card holders. For this reason, the average card user in either income group will not receive the full reward,  $\rho$ , but only  $\rho$  multiplied by the fraction of credit cards with rewards among all credit cards carried by this income group. Thus  $\rho_L = 0.57$  and  $\rho_H = 0.79$  denote the *effective* reward rates received by an average household belonging to income groups  $L$  (low) and  $H$  (high), respectively.<sup>25</sup>

In addition to the benchmark specifications, the only data needed to calculate the transfers are sales revenues (credit card and total) and the number of buyers. Let  $t$  denote the quantity of transactions and  $S = t \cdot p$  denote sales revenue. Sales are measured by consumption from the National Income and Product Accounts (NIPA) and Consumer Expenditure Survey (CEX), which were  $S = \$9.83$  trillion in 2007.<sup>26</sup> About 42 percent of this consumption does not involve a payment choice for consumers, for example, imputed rental of owner-occupied housing, employer-provided health insurance, and fees paid for financial services, and thus this portion is excluded from the calculations<sup>27</sup>. Let  $N = N_L + N_H$  be the total number of buyers and the sum of buyers with low and high incomes (subscripts  $L$  and  $H$ , respectively). Buyers are measured by the number of households, as reported by the Census Bureau, which was  $N = 116.0$  million in 2007. The proportions of high- and low-income households and credit card spending data are obtained from the Survey of Consumer Finances (SCF) and applied to  $N$ .<sup>28</sup> For reasons described earlier, we set \$100,000 as the

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Express 2.2 percent; and specific purpose (branded) 1 percent, see Hayashi (2009) for some numbers.

<sup>24</sup>One-percent cash back is widely observed. Most airline mileage and other points systems also have an approximate cash value of about  $\rho = 1$  percent.

<sup>25</sup>Parameters  $\rho_L$  and  $\rho_H$  are set to be equal to the credit-card-spending-weighted average of the adoption numbers in the top half of Table 2, which explains the slight difference from 0.55 and 0.75. In practice, the actual reward rate could be even lower, because holders of reward credit cards may not claim all of their rewards or the rewards may expire, but we do not have data on the rate at which consumers actually claim their rewards.

<sup>26</sup>For more details about the CEX data source, see Harris and Sabelhaus (2000).

<sup>27</sup>We would like to thank Tim Chen ([Nerdwallet.com](http://nerdwallet.com)), Leon Majors (Phoenix Marketing International), and Jay Zagorsky (Boston University) for helping us clarify whether credit cards can be used for mortgage payments.

<sup>28</sup>Zinman (2009b) compares the SCF with industry data and finds that the two sources match up well on credit card charges and fairly well on account balance totals.

cutoff level of household income (denoted  $I$ ).

It is well known that consumption and income are distributed unevenly across households, and this situation is evident in Table 5. Low-income buyers account for 81 percent of all households but only 58 percent of transactions. Low-income buyers also tend to favor cash payments: 70 percent of all households are low-income cash buyers, and 50 percent of all transactions are conducted by low-income cash buyers. In addition, high-income households have a disproportionately higher share of credit card transactions (about  $13/42 \approx 31$  percent) than their population share (19 percent). All this shows that high-income households make higher use of credit cards.<sup>29</sup>

	Distribution of Households			Distribution of Transactions		
	$I_L$	$I_H$	Total	$I_L$	$I_H$	Average
Cash buyers	70	13	83	50	29	79
Card buyers	12	6	17	8	13	21
Total	81	19	100	58	42	100

**Table 5:** Distribution of households and transactions (percentage of total).

Three assumptions are needed to define the implicit transfers among households.

- A-1** All households pay the same price,  $p$ , for the representative product (good or service); that is, the merchant does not charge different prices to cash buyers and card buyers.
- A-2** The merchant passes through the full merchant fee to its customers via the retail price.
- A-3** Rewards to card users are not funded by banks' revenue generated by borrowing activities.

The validity of these assumptions is an empirical matter and the data needed to verify them are not available. One needs data on individual transactions that identify not only the payment instrument but also the consumer who uses it and the merchant who receives it.

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<sup>29</sup>The household units in Table 5 are representative agents created across heterogeneous households to obtain a parsimonious aggregate representation of the data for modeling purposes. Households without credit cards are literally cash-only households (where cash means non-credit-card). However, there are no households that strictly use credit cards only, and most households use both cash and credit cards. Our aggregate transfer calculations cannot account for this within-household heterogeneity, a refinement we leave for future research.

Such matched consumer-merchant data are extremely rare, and may not even be sufficient. If consumers of different income groups buy different products within merchants, and if merchants price those products not only according to their price elasticities of demand but also by their probabilities of being paid for by cash versus credit, then consumer-merchant data are needed at the level of detailed individual products (goods and services) as well. Future research based on such rich and finely graded data would provide valuable refinements of our calculations. However, Section 7 considers some alternative calculations that explore the effects of relaxing these assumptions on the transfers.

### 3.3 Transfer definitions

Our goal is to measure the actual transfers in the U.S. payments market and their effects on consumer welfare. Thus, we define each transfer as the difference between the actual money paid by a household toward merchant payment costs, on one hand, and the reference value (amount of money) the household would pay if it faced the full cost of its payment choice in the current payment environment, on the other. The actual money paid is the household's share of the merchant's total cost of payments ( $\mu S^d + \epsilon S^h$ ). The reference value of the payment depends on the marginal cost of the good for the household. As shown in Section 4, the marginal cost of producing the good (denoted  $\sigma$ ) is the same for all households but the marginal cost of payment varies across households according to the household's payment choice. Households paying by cash impose a marginal cost of  $\epsilon \cdot p$  for their transactions, and households paying by credit card impose a marginal cost of  $\mu \cdot p$  for their transactions.

With this transfer definition in mind, consider first the transfer between cash and credit card users. Let  $X$  denote the transfer made (or subsidy received, if the transfer is negative). Then the transfer made by cash users (superscript  $h$ ) is

$$X^h \stackrel{\text{def}}{=} \left\{ \frac{S^h}{S} (\mu S^d + \epsilon S^h) \right\} - \epsilon S^h \quad \text{and} \quad x^h \stackrel{\text{def}}{=} \frac{X^h}{N_L^h + N_H^h}, \quad (2)$$

where  $x^h$  denotes the transfer per household, our preferred metric. The term of  $X^h$  in braces is what cash users actually pay toward total merchant payment costs: the cash share of total

spending,  $(S^h/S) = 0.79$ , times the total merchant cost of transactions,  $(\mu S^d + \epsilon S^h) = \$47$  billion. Cash users indirectly pay a portion of the cost of credit card payments,  $(\mu S^d) = \$24$  billion, because cash and credit card buyers pay the same equilibrium price,  $p$ , which will be calibrated later using the model in Section 4. The last term of  $X^h$  (outside the braces) is the total cost of cash transactions: that is, cash-handling costs,  $(\epsilon S^h) = \$22$  billion.

Similar to (2), the transfer (or subsidy received, if the transfer is negative) made by credit card users (superscript  $d$ ) is

$$X^d \stackrel{\text{def}}{=} \left\{ \frac{S^d}{S} (\mu S^d + \epsilon S^h) - (\rho_L S_L^d + \rho_H S_H^d) \right\} - \mu S^d \quad \text{and} \quad x^d \stackrel{\text{def}}{=} \frac{X^d}{N_L^d + N_H^d}. \quad (3)$$

The term of  $X^d$  in braces is what credit card users actually pay toward total merchant payment costs net of the rewards they receive. The first term inside the braces is their contribution to merchants' transaction costs: the card share of total spending,  $(S^d/S) = .21$ , times the total merchant cost of transactions. The second term inside the braces adjusts for credit card rewards,  $(\rho_L S_L^d + \rho_H S_H^d) = \$8.5$  billion. The last term of  $X^d$  (outside the braces) is the total merchant cost of credit card transactions, which equals banks' fee revenue from all credit card transactions.

The credit card transfer, equation (3), contains two components. One is the point-of-sale (POS) transfer, which occurs at the merchant:

$$\tilde{X}^d \stackrel{\text{def}}{=} \left\{ \frac{S^d}{S} (\mu S^d + \epsilon S^h) \right\} - \mu S^d \quad \text{and} \quad \tilde{x}^d \stackrel{\text{def}}{=} \frac{\tilde{X}^d}{N_L^d + N_H^d}. \quad (4)$$

The second component is an adjustment for rewards,  $-(\rho_L S_L^d + \rho_H S_H^d)$ , which are subtracted from the POS transfer because rewards are rebated to credit card users by banks and reduce the contribution of card users to total merchant payment costs. The rewards adjustment to the POS transfer captures the portion of the overall transfer that occurs because credit card users do not pay the full value of the rewards they receive. Instead, cash users pay for part of the rewards, and this rewards-related transfer varies across income groups. Thus, the POS transfer, which excludes rewards, understates the actual transfer occurring as a

result of credit card payments.<sup>30</sup> Nevertheless, the POS transfer provides an informative, lower-bound estimate of the transfer, so we report both estimates. Furthermore, the POS transfer would be the appropriate measure if credit card users paid the full value of their own rewards.<sup>31</sup>

Section 2.2 established a positive correlation between card use and income, which motivates calculation of the transfer between low-income and high-income households. Similar to the transfer definitions given by (2) and (3), the transfers paid by each household income group are

$$X_L \stackrel{\text{def}}{=} \left\{ \frac{S_L}{S} (\mu S^d + \epsilon S^h) - \rho_L S_L^d \right\} - (\mu S_L^d + \epsilon S_L^h), \quad (5)$$

$$X_H \stackrel{\text{def}}{=} \left\{ \frac{S_H}{S} (\mu S^d + \epsilon S^h) - \rho_H S_H^d \right\} - (\mu S_H^d + \epsilon S_H^h). \quad (6)$$

The first terms in braces are what households actually pay toward total merchant payment costs: the amounts of merchant payment costs borne by income groups  $L$  and  $H$ , respectively, ( $(S_L/S) = .58$  and  $(S_H/S) = .42$ ), less their credit card rewards,  $(\rho_L S_L^d) = \$2.7$  billion and  $(\rho_H S_H^d) = \$5.8$  billion, respectively. The second terms are the total merchant costs of each household's own payment choice:  $(\mu S_L^d + \epsilon S_L^h) = \$24$  billion and  $(\mu S_H^d + \epsilon S_H^h) = \$23$  billion. Note that the total (aggregate) transfer among households by income level is the same as between cash-using and card-using households:

$$X = X_L + X_H = -(\rho_L S_L^d + \rho_H S_H^d). \quad (7)$$

Similar to equation (4), the POS transfers between low-income and high-income house-

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<sup>30</sup>See Appendix B for more details on this point. We especially thank Fumiko Hayashi, Bob Triest, and Paul Willen for helping us to clarify our thinking about the transfer definitions, especially the central and crucial definition in equation (3).

<sup>31</sup>A simple way to see this point is think of an alternative payment market in which merchants surcharge credit card users for their rewards at the POS and then rebate the full rewards instantly to households using credit cards. In this case, merchants would pay a fee to banks net of rewards,  $(\mu - \rho)$ , rather than paying the full merchant fee and having banks pay rewards to households later.



holds are

$$\tilde{X}_L \stackrel{\text{def}}{=} \left\{ \frac{S_L}{S} (\mu S^d + \epsilon S^h) \right\} - (\mu S_L^d + \epsilon S_L^h) \quad (8)$$

$$\tilde{X}_H \stackrel{\text{def}}{=} \left\{ \frac{S_H}{S} (\mu S^d + \epsilon S^h) \right\} - (\mu S_H^d + \epsilon S_H^h) \quad (9)$$

and they omit the adjustment for rewards, which varies by income group. At the household level, the relative magnitudes of the income group transfers are determined primarily by two facts that favor high-income households:  $S_H^d > S_L^d$  and  $\rho_H > \rho_L$ .

### 3.4 Transfer estimates

Applying the benchmark specification and data described in Section 3.2 to the transfer equations defined in Section 3.3 yields the central results of this paper. Table 6 displays the transfer estimates in billions of 2007 dollars and on a per household basis. These two types of estimates are qualitatively equivalent but we focus on the latter. Recall that positive (negative) numbers indicate that households using a payment instrument paid a transfer (received a subsidy).

	Total (\$ Billions)			Per household, total (\$)		
	$I_L$	$I_H$	Total	$I_L$	$I_H$	Average
Cash buyers	9.0	5.3	14.3	111	352	149
Card buyers	-8.3	-14.5	-22.8	-613	-2,188	-1,133
Total/Average	0.8	-9.3	-8.5	8	-430	-73
	POS only (\$ Billions)			Per household, POS (\$)		
	$I_L$	$I_H$	Total	$I_L$	$I_H$	Average
Cash buyers	9.0	5.3	14.3	111	352	149
Card buyers	-5.6	-8.7	-14.3	-414	-1,311	-710
Total/Average	3.4	-3.4	0	37	-160	0

**Table 6:** Transfers in the payment market by household income and payment instrument.

To our knowledge, the results in Table 6 are the first quantitative estimates for the aggregate economy of theoretical measures of transfers between buyers stemming from the choice of payment instrument. Two main conclusions can be drawn from the results.

**Result 1.** *Cash payers subsidize credit card payers. The average cash-paying household transfers \$149 ( $x^h = 149$ ) annually to card users, and the average credit-card-paying household receives a subsidy of \$1,133 ( $x^d = -1,133$ ) annually from cash users.*

The annual transfer gap (difference) between the average cash and card users is \$1,282 ( $x^h - x^d = \$1,282$ ), which represents 1.8 percent of median income across all households in 2007.

**Result 2.** *Low-income households subsidize high-income households. The average low-income household transfers \$8 ( $x_L = 8$ ) annually to high-income households, and the average high-income household receives a subsidy of \$430 ( $x_H = -430$ ) annually from cash users.*

The annual transfer gap (difference) between the average low-income household and the average high-income household is \$438 ( $x_L - x_H = \$438$ ), which represents 0.6 percent of median income across low-income households in 2007. By far, the bulk of the transfer gap is enjoyed by high-income credit card buyers, who receive a \$2,188 subsidy every year. Although low-income credit card buyers also receive a subsidy (\$613) and high-income cash buyers pay a larger transfer (\$352) than low-income cash buyers, the greater use of credit cards and receipt of rewards gives high-income households a non-trivial subsidy each year.

These transfer estimates, based on only two income categories (defined by a cutoff of \$100,000), significantly understate the magnitude of the transfer between the lowest- and highest-income households. Dividing households into seven income categories instead, as in Table 7, reveals that the transfer gap between the lowest-income households (less than \$20,000) and the highest-income households ( $\geq \$150,000$ ) increases to \$771 per household each year. The average lowest-income household pays \$21 each year, and the average highest-income household receives \$750 each year, from the convenience use of credit cards. In between, the transfer gap is nonlinear across groups—relatively flat until household income rises above \$100,000 annually, then sharply increasing in the highest categories. Thus, each of a large number of lower-income households pays a relatively small dollar amount of transfer,

while each household of a small number of higher-income groups receives a relatively large dollar amount of subsidy.<sup>32</sup>

Income range	Transfers paid	
	POS	Total
Under \$20,000	\$32	\$21
\$20,000–49,999	\$45	\$26
\$50,000–79,999	\$35	–\$11
\$80,000–99,999	\$16	–\$61
\$100,000–119,999	–\$11	–\$113
\$120,000–149,999	–\$50	–\$207
Over \$150,000	–\$313	–\$750

**Table 7:** Transfers in the payment market by disaggregated income categories.

Section 4 develops a model to quantify the potential loss to consumer welfare resulting from these transfers. Before doing so, let us put the payment transfer estimates into perspective by viewing them in the context of another public policy issue. The literature on inflation finds that the potential welfare gain of reducing steady-state inflation from 10 percent to 0 percent ranges between 0.2 and 1.0 percent of the GDP (see Ireland (2009) and Lucas (2000)). These estimates translate into an annual per household cost of \$243 to \$1,213 (using 2007 GDP data). Thus, the magnitude of the payments transfers would seem to merit attention from policy makers similar to that devoted to controlling inflation.

### 3.5 Sources of banks’ income

This subsection decomposes banks’ gross and net income from merchant fees,  $\mu S^d$ , into sources of revenue from each of the four buyer groups. We multiply gross income (revenue) by the share of total spending of each group of buyers:  $S_L^h/S$ ,  $S_L^d/S$ ,  $S_H^h/S$ , and  $S_H^d/S$ . The results appear in the first panel of Table 8. We then compute rewards paid to credit card

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<sup>32</sup>Table 7 implies that the transfers computed with only two income groups may be sensitive to the cutoff income level. We chose a cutoff of \$100,000 because the transfer paid increases nonlinearly with income, so a higher cutoff level is more representative of the transfer paid by the highest income groups. If the cutoff household income is \$50,000, then the low-income household pays \$37 instead of \$8, whereas the high-income household receives \$200 instead of \$430.

users in the second panel of the table. The third panel reports the net income of banks from merchant fees, that is, gross income (first panel) minus rewards (second panel).

	Revenue from Merchant Fees					
	Total (\$ billions)			Per household (\$)		
	$I_L$	$I_H$	Total	$I_L$	$I_H$	Total
Cash buyers	12.0	7.0	19.9	149	469	199
Card buyers	2.0	3.1	5.2	149	473	256
Total	14.0	10.1	24.2	149	470	209
	Rewards to Consumers (expenditure)					
	Cash payers	0	0	0	0	0
	Card payers	2.7	5.8	8.5	199	877
	Total	2.7	5.8	8.5	28	270
	Net (\$ billions)			Net Per household (\$)		
	Cash payers	12.0	7.0	19.0	149	469
	Card payers	-0.7	-2.7	-3.3	-49	-404
	Total	11.4	4.3	15.7	120	200

**Table 8:** Banks’ gross income sources and expenditure.

From Table 8 we can derive the following results about sources of banks’ income from merchant fees:

**Result 3.** *Low-income households bear a disproportionately large burden of merchants’ cost of credit cards because they tend to use cash more often than high-income households. Cash users pay 82 percent ( $\approx 19.9/24.2$ ) of banks’ gross income from merchant fees, and low-income cash users pay 50 percent ( $\approx 12.0/24.2$ ) of banks’ gross income.*

**Result 4.** *Cash payers receive no rewards (naturally) and high-income households receive the lion’s share of credit card rewards. The average high-income card payers receive \$877 in rewards annually, while the average low-income card payers receive only \$199, less than one-fourth as much.*

**Result 5.** *Banks earn negative net income from credit card users, as rewards paid exceed revenues received from these households (net revenue of  $-\$3.3$  billion), but banks more than*

*offset this loss with net income from cash-paying households (\$19.0 billion). Almost three-quarters ( $\approx 11.4/15.7$ ) of banks' net income is generated from low-income households, despite the fact that the high-income group uses credit cards more than the low-income group ( $13/21 \approx 60$  percent in Table 5).*

Overall, the picture painted by these data and results is one in which low-income cash payers account for the bulk of the costs (merchant fee revenue) imposed by the payment choices (credit card purchases) of mostly high-income households.

## 4. A Model of Cash and Card Users

To investigate the welfare consequences associated with the redistribution of income among households, we construct an analytical model and then calibrate it. Endogenously determined variables will be denoted by lower case letters. Exogenous parameters will be denoted by roman capital and Greek letters.

### 4.1 Buyers

There are  $N_L$  low-income buyers and  $N_H$  high-income buyers. Income levels are denoted by  $I_L$  and  $I_H$ , respectively. Income group  $i$  buyers ( $i = L, H$ ) are uniformly indexed by  $b_i$  on the unit interval  $[\beta_i - 1, \beta_i]$ , (where  $0 \leq \beta_i \leq 1$ ) according to the benefit they derive from paying with a card relative to paying with cash, as illustrated in Figure 3 and described in Section 2.3. Thus,  $b_i$  measures the nonpecuniary benefit from paying with a card by an income group  $i$  buyer who is indexed by  $b_i$ .  $b_i = \beta_i$  denotes buyers of income group  $i$  who benefit the most from using a card.  $b_i = \beta_i - 1$  are income group  $i$  buyers who most prefer paying with cash over card.

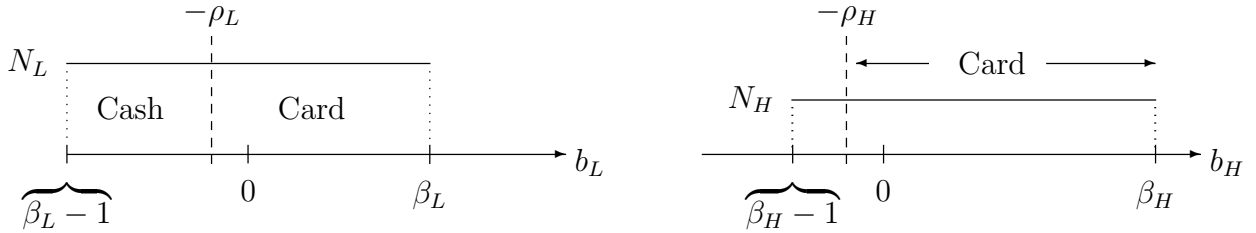
Buyers have an endogenous choice of paying with cash or paying with a card. Banks (card issuers) reward card users by paying  $\rho \cdot p$  as “cash back,” where  $0 < \rho < 1$  is the fraction of the price  $p$  that is paid back to the buyer. Therefore, the effective price paid by buyers belonging to income group  $i = H, L$  is

$$p^b = \begin{cases} p(1 - \rho_i) & \text{paying with a card} \\ p & \text{paying cash.} \end{cases} \quad (10)$$

Thus, assuming that buyers spend their entire budget, low-income buyers perform  $I_L/p^b$  transactions, whereas high-income buyers perform  $I_H/p^b$  transactions. Therefore, we define the utility function of an income group  $i$  buyer who is indexed by  $b_i$  by

$$U_{b_i} = \begin{cases} \left[ (1 + b_i) \frac{I_i}{p(1 - \rho_i)} \right]^\alpha & \text{paying with a card} \\ \left( \frac{I_i}{p} \right)^\alpha & \text{paying cash,} \end{cases} \quad \text{for } 0 < \alpha \leq 1. \quad (11)$$

Equation (11) implies that a buyer's utility is increasing with the number of transactions (income divided by price). In addition, if the buyer pays with a card, the buyer gains an additional per-transaction benefit  $b_i$  (loss for buyers indexed by  $b_i < 0$ ).



**Figure 3:** Distribution of buyers according to increased benefits from paying with cards. *Note:* Based on results presented later, the figure assumes  $N_L > N_H$  (most buyers are low income) and  $\beta_L < \beta_H$  (more high-income buyers prefer paying with a card relative to low-income buyers).

For each income group  $i = L, H$ , buyers who are indifferent between paying cash and paying with a card are found by solving

$$\left[ (1 + \hat{b}_i) \frac{I_i}{p(1 - \rho_i)} \right]^\alpha = \left( \frac{I_i}{p} \right)^\alpha \quad \text{hence} \quad \hat{b}_i = -\rho_i. \quad (12)$$

Thus, buyers indexed by  $b_i > \hat{b}_i$  pay with cards and buyers  $b_i < \hat{b}_i$  pay cash; see Figure 3. In the special case where  $\rho_i = 0$ , buyers indexed by  $\hat{b}_i = 0$  separate those who pay with cards,  $b_i > 0$ , from those who pay cash,  $b_i < 0$ . This means that card rewards induce some buyers who otherwise prefer to pay cash to use their cards in order to collect rewards.

The remainder of this section computes the number of card and cash payers as well as the number of transactions made with each payment instrument. Recall that superscripts “*h*” (for cash) denote cash payers, whereas superscripts “*d*” (for card) denote card payers. In view of the “indifferent” buyers described in (12) and Figure 3, the number of buyers from group *i* who pay cash is

$$n_i^h = [-\rho_i - (\beta_i - 1)] N_i, \quad \text{hence} \\ n^h = n_L^h + n_H^h = N_L[(1 - \beta_L) - \rho_L] + N_H[(1 - \beta_H) - \rho_H], \quad (13)$$

which is the total number of buyers (both income groups combined) who pay cash.

Next, the number of buyers from income group *i* who pay with cards is

$$n_i^d = (\beta_i + \rho_i) N_i, \quad \text{hence} \quad n^d = n_L^d + n_H^d = N_L(\beta_L + \rho_L) + N_H(\beta_H + \rho_H), \quad (14)$$

which is the total number of buyers (both income groups combined) who pay with cards.

The total number of cash and card transactions made by each income group  $i = L, H$ , denoted by  $t_i^h$ , and  $t_i^d$  in the model, multiplied by the price  $p$ , equals spending. Thus,

$$S_i^h = pt_i^h = n_i^h I_i \quad \text{and} \quad S_i^d = pt_i^d = n_i^d \frac{I_i}{1 - \rho_i}. \quad (15)$$

## 4.2 Merchants

Merchants supply one “good,” which could be either a product or a service. Free entry results in normal (zero) profits. Similar to Wang (2010), we model a “mature” card market in the sense that we assume that all merchants accept payment cards and cash. Thus, we assume for simplicity that consumers do not have to search for a merchant who accepts their preferred payment instrument. Let  $\sigma$  denote the unit production (marginal) cost borne by merchants, and recall that  $0 \leq \epsilon < 1$  denotes the effort (disutility) of the merchant from a cash transaction relative to a card transaction. Thus, the merchant’s disutility from handling cash is  $\epsilon \cdot p$ . Under free entry, merchant profits are reduced to zero, so

$$0 = t^h[p(1 - \epsilon) - \sigma] + t^d[p(1 - \mu) - \sigma] \quad \text{hence} \quad p = \left[ \frac{1}{\frac{t^h}{t^h + t^d}(1 - \epsilon) + \frac{t^d}{t^h + t^d}(1 - \mu)} \right] \sigma, \quad (16)$$

which is the equilibrium price in a competitive merchant industry. In the above,  $t^h[p(1 - \epsilon) - \sigma]$  is the profit from  $t^h$  cash transactions, and  $t^d[p(1 - \mu) - \sigma]$  is the profit from  $t^d$  card transactions, where  $p(1 - \mu)$  is the net price a merchant receives after paying the fee to the card acquirer.

### 4.3 Calibrations

We first use the model to calibrate the number of cash and card users within each group,  $n_L^h$ ,  $n_L^d$ ,  $n_H^h$ , and  $n_H^d$ . These can be solved from (15) as functions of  $I_L$  and  $I_H$ . Because the numbers of low- and high-income households are known, solving  $n_L^h + n_L^d = N_L$  and  $n_H^h + n_H^d = N_H$  yields the calibrated values of  $I_L$  and  $I_H$ , which should be interpreted as consumption expenditures because savings are not modeled.

Next, in view of Figure 3, the key parameters to be calibrated are the maximal benefits from using cards relative to cash,  $\beta_L$  and  $\beta_H$ . These two parameters are solved directly from equations (13) and (14), assuming the card reward rates reported in Section 3.1. Transactions data from the Survey of Consumer Payment Choice (SCPC) show that credit cards accounted for 21.3 percent of consumer payments in 2008. Table 9 summarizes the model’s parameter values obtained under the above computations.

### 4.4 Equilibrium price and markup

Substituting the calibrated parameters from Table 9 into (13)–(16), the equilibrium price (16) becomes

$$p|_{\substack{\mu=2\% \\ \rho=1\%}} = \$27.56, \quad \sigma = 27.34, \quad \text{and} \quad L(p, \sigma; \mu, \rho) = \left( \frac{p - \sigma}{p} \right) 100 = 0.82 \text{ percent}, \quad (17)$$

which is the Lerner’s index commonly used for measuring markup over marginal cost. Thus, our calibrations imply the following result:

**Result 6.** *Convenience use of credit cards induces a retail price markup of 0.82 percent over marginal cost (or 22¢ over \$27.34).*

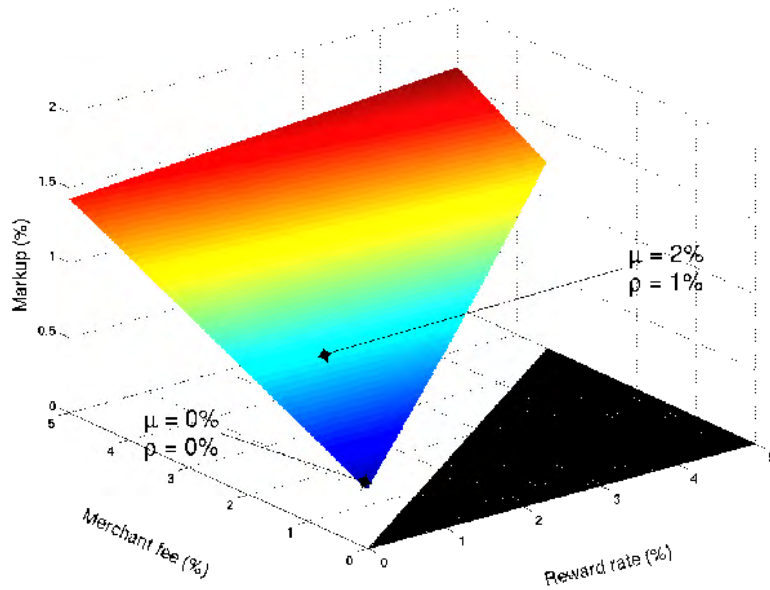


Parameter	Notation	Value	Procedure
Cash effort	$\epsilon$	0.5%	Assumed
Merchant fee	$\mu$	2.0%	Assumed
Card reward	$\rho$	1.0%	Assumed
Rewards to low-income (cc-spend. weighted avg.)	$\rho_L$	0.57%	OSU 2007
Rewards to high-income (cc-spend. weighted avg.)	$\rho_H$	0.79%	OSU 2007
Number of credit card transactions	$t_d$	43.9bn	SCPC 2008
Total Spending Low-income	$N_L \cdot p \cdot t_L$	\$3.33tr	NIPA 2007
Total Spending High-income	$N_H \cdot p \cdot t_H$	\$2.35tr	NIPA 2007
Total Credit Card Spending Low-income	$N_L \cdot p \cdot t_L^d$	\$0.47tr	SCF 2007
Total Credit Card Spending High-income	$N_H \cdot p \cdot t_H^d$	\$0.74tr	SCF 2007
Low income level (excluding saving)	$I_L$	\$34,879	Calibration
High income level (excluding saving)	$I_H$	\$110,153	Calibration
Maximum card benefit (low income)	$\beta_L$	0.137	Calibration
Maximum card benefit (high income)	$\beta_H$	0.300	Calibration
Price	$p$	\$27.56	Calibration
Marginal cost	$\sigma$	\$27.34	Calibration

**Table 9:** Computed values of model parameters and variables.

To assess the sensitivity of this result, Figure 4 plots the retail price markup as a function of  $\mu$  and  $\rho$ . The graph excludes all points in which banks make negative profit, which is depicted by the shaded triangle on the floor of the three-dimensional graph. Each relationship between the markup and the two parameters is each approximately linear, but the markup is more sensitive (steeper slope) to the merchant fee than to the reward rate. The reason for this result follows from equation (16), which shows that the merchant fee affects price directly because it is a cost for the merchant, whereas the reward rate has only an indirect effect by making credit cards more attractive, thereby increasing the number of card users, see equation (14).

The elasticity of the markup with respect to the merchant fee (evaluated at  $\mu = 2$  percent,  $\rho = 1$  percent, and  $\epsilon = 0.5$  percent) is 0.52. In other words, eliminating the merchant fee (a change of  $-100$  percent) would about halve the markup (from 0.82 percent to around 0.40 percent). These numbers are illustrated in Figure 4 by the point corresponding to no



**Figure 4:** Consumer price markup as a function of the merchant fee and the reward rate.  
*Note:* The color gradations facilitate distinguishing among levels (dark red, the highest, through dark blue, the lowest).

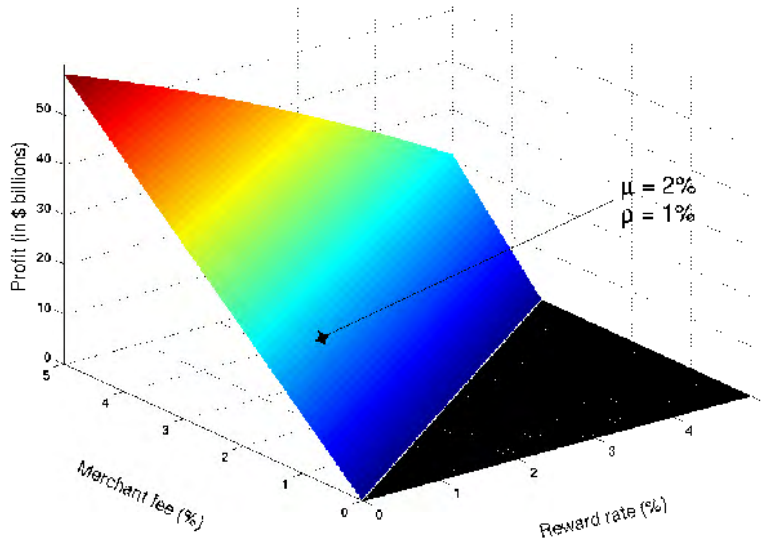
merchant fee and no rewards,<sup>33</sup> in which case the markup would be 0.40 percent to cover the costs of cash-handling ( $\epsilon = 0.5$  percent) imposed by the 79 percent of the population who pay cash. On the other hand, rewards have a much smaller effect on the markup; the corresponding elasticity of the markup (measured at the same point) is only 0.014, meaning that abolishing rewards (−100 percent change) would yield only a 1.4 percent reduction in the markup to 0.79 percent.

#### 4.5 Banks’ income from consumer credit cards

Banks’ net income from income group  $i$  buyers is given by  $p \cdot t_i^d(\mu - \rho_i)$ ,  $i = L, H$ . Like the transfers analyzed in previous sections, banks’ net income is nonlinear with respect to the merchant fee and reward rate. Banks’ income from consumer credit card payments, net of rewards, was \$15.7 billion in 2007 (see Table 8). Thus, banks keep 65 percent of the revenues from merchant fees, while consumers receive 35 percent in rewards.

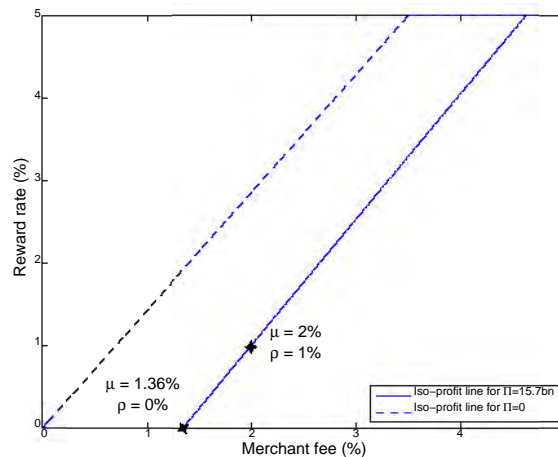
<sup>33</sup>Since the markup responds very little to a change in the reward rate, the vast majority of the reduction in the markup comes directly from the change in the merchant fee.

Figure 5 displays banks' net income from credit card spending as a function of the merchant fee,  $\mu$ , and the reward,  $\rho$ . One interesting feature of the net income function



**Figure 5:** Banks' net income as a function of the merchant fee and the reward rate.

evident in the graph is that the iso-profit lines are nearly linear with respect to  $\mu$  and  $\rho$ . Thus, banks can keep the same net income using different combinations of merchant fee and reward rates, while keeping  $(\mu - \rho)$  approximately constant. This result is shown in Figure 6. The dashed line shows the combinations of parameters for which bank profits are



**Figure 6:** Banks' iso-profit lines as functions of the merchant fee and the reward rate

zero—combinations of reward rates and merchant fees to the left of this line would result

in losses to the banks. Since the rates at which households *actually* receive rewards ( $\rho_i$ ) are both less than one, the slope of the iso-profit curves is greater than one, meaning that banks could offer a higher reward rate than the merchant fee, since they earn merchant fees on every credit card payment while they have to give rewards for only a fraction of these transactions. The solid line, which runs through the benchmark point, shows the combinations of parameters for which bank profits are constant at \$15.7 billion. Reducing the merchant fee and reward rate to the point ( $\mu = 1.36$  percent,  $\rho = 0$  percent) would not alter bank profits, but would result in a lower retail price markup, as explained in the previous subsection.

## 5. Consumer Welfare Calibrations

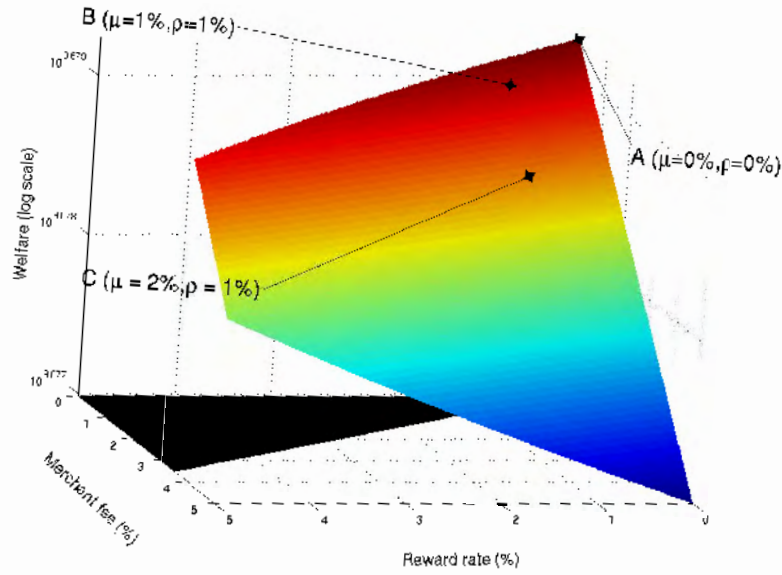
The analytical framework developed in this paper enables us to calibrate the consequences of merchant fees and card rewards on consumer welfare stemming from the implicit monetary transfers between the two income groups.<sup>34</sup> In view of the buyers' utility function (11) and Figure 3, aggregate consumer welfare of income group  $i$  buyers is given by

$$cw_i(\rho_i, \mu) = N_i \left\{ \left( \frac{I_i}{p} \right)^\alpha [-\rho_i - (\beta_i - 1)] + \left[ \frac{I_i}{p(1 - \rho_i)} \right]^\alpha \int_{-\rho_i}^{\beta_i} (1 + b_i) db_i \right\}, \quad i = L, H, \quad (18)$$

where the equilibrium price  $p$  is given in (16). The above expression consists of the sum of utilities gained by cash users and card users (whose utilities must be integrated over  $b_i$  because buyers derive different benefits from card use). Therefore, total buyer welfare as a function of the reward rate,  $\rho$ , and merchant fee,  $\mu$ , is given by  $cw(\rho_L, \rho_H, \mu) = cw_L(\rho_L, \mu) + cw_H(\rho_H, \mu)$ , and is plotted in Figure 7.<sup>35</sup>

<sup>34</sup>This partial equilibrium model does not take into consideration how changes in banks' profits affect consumption demand, because we do not have micro data on bank ownership (stocks). For this reason, we do not extend this analysis to include social welfare. However, if household ownership of banks is increasing in income too, then taking bank profits into consideration would likely magnify our central results. Section 7.3 and Appendix B discuss the implications of income changes due to redistribution of banks' profits.

<sup>35</sup>A more general formulation of aggregate consumer welfare could take the form of  $cw(cw_L, cw_H) = (cw_L)^\gamma (cw_H)^{1-\gamma}$ . For our limited calibration purposes, the additive function is sufficient.



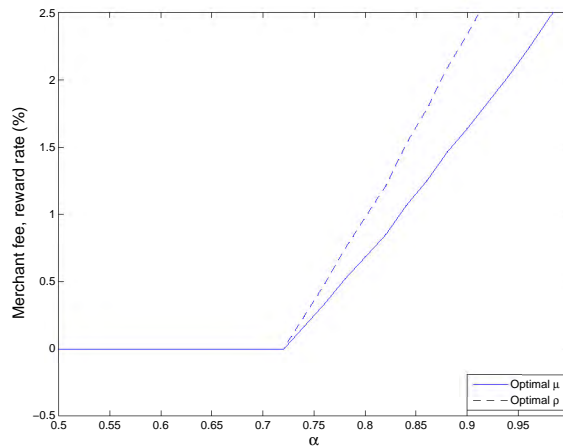
**Figure 7:** Consumer welfare as a function of the merchant fee and the reward rate (assuming  $\alpha = 0.5$ )

Consumer welfare increases monotonically with the reward rate, keeping  $\mu$  constant. The reason for this result is that rewards are pure windfalls received by the households from the banks in this partial equilibrium setup. On the other hand, consumer welfare falls very fast with an increase in the merchant fee. More precisely, the elasticity of the welfare function with respect to the merchant fee evaluated at the benchmark (point  $C$  on the graph, where  $\mu = 2$  percent,  $\rho = 1$  percent) is  $-0.0021$ , meaning that eliminating the merchant fee (while leaving rewards unchanged) would increase aggregate consumer welfare by  $-0.0021(-100 \text{ percent}) = 0.21$  percent. However, this change is infeasible without reducing  $\rho$  as well. The elasticity with respect to the reward rate at point  $C$  is  $0.0006$ . Hence, eliminating rewards, while leaving the merchant fee unchanged would lead to a  $0.06$  percent decline in aggregate consumer welfare.

Using these elasticities, we can infer the welfare implications of certain changes in the payment fee structure. If, for example, the merchant fee is cut in half to  $1$  percent, the economy would move to point  $B$  ( $\mu = 1$  percent,  $\rho = 1$  percent). Based on the aforementioned elasticities, this move would entail a  $0.105$  percent ( $= -0.0021(-50 \text{ percent})$ ) increase in consumer welfare. However, Figure 7 reveals that this is not the maximum attainable level of welfare.

A move from point *B* to point *A* ( $\mu = 0$  percent,  $\rho = 0$  percent) would further increase consumer welfare, although this move would raise welfare by a smaller amount than the move from point *C* to *B*. The elasticities calculated above confirm this. The welfare improvement would amount to only a further 0.045 percent, which is the difference between the welfare gain from another 1-percent reduction in the merchant fee and the welfare loss from the elimination of rewards ( $0.0006(-100 \text{ percent}) = -0.06 \text{ percent}$ ).<sup>36</sup> So, eliminating the merchant fee, and hence rewards, would result about in a 0.105 percent + 0.045 percent = 0.15 percent increase in consumer welfare compared with the benchmark starting point.

The parameter  $\alpha$  affects the shape of the utility function and hence the optimal transfer levels. As  $\alpha$  declines, the transfer between household income groups becomes less desirable because the marginal utility loss from the low-income transfer becomes larger, while the marginal utility gain from the high-income subsidy gets smaller. When applied to aggregate data, as we do here, the parameter  $\alpha$  can be interpreted equivalently as a measure of the economy’s aversion to income inequality (lower  $\alpha$  means greater inequality aversion).



**Figure 8:** Consumer welfare-maximizing merchant fee and reward rate as functions of  $\alpha$  (assuming zero bank profits)

Figure 8 plots the welfare-maximizing values of the merchant fee and reward rate for different values of  $\alpha$  and portrays the following result:

<sup>36</sup>This computation is slightly imprecise because we assume that the elasticity at point *C* is the same as at point *B*. The exact calculation is given in Table 11 below.

**Result 7.** *The merchant fee and card reward that maximize total consumer welfare decline with an increase in the degree of concavity of buyers' utility function (11) with respect to the number of transactions (a decrease in  $\alpha$ ).*

Result 7 highlights the distortion in the income distributions caused by the merchant fee and card use programs. When buyers' utility becomes more concave ( $\alpha$  decreases), any transfer from low- to high-income buyers has a greater impact on low-income buyers. For low values of  $\alpha$ , eliminating merchant fees and card rewards is optimal. In the opposite-extreme case of linear utility, the loss to low-income buyers is smaller than the gain to high-income buyers, so positive merchant fees and rewards become optimal.

However, even for high levels of  $\alpha$ , such as linear utility ( $\alpha = 1$ ), the move from point  $C$  to point  $A$  in Figure 7 would still be welfare improving. In fact, with a linear utility function, welfare would increase by 0.26 percent (relative to the case in which  $\alpha = 0.5$ ). Whereas the consumer optimum in this case would be at  $\mu = 2.66$  percent and  $\rho = 3.79$  percent, a move to  $\mu = 0$  percent and  $\rho = 0$  percent would still raise welfare, because such a move eliminates banks' net income, so all households would be paying lower prices.<sup>37</sup>

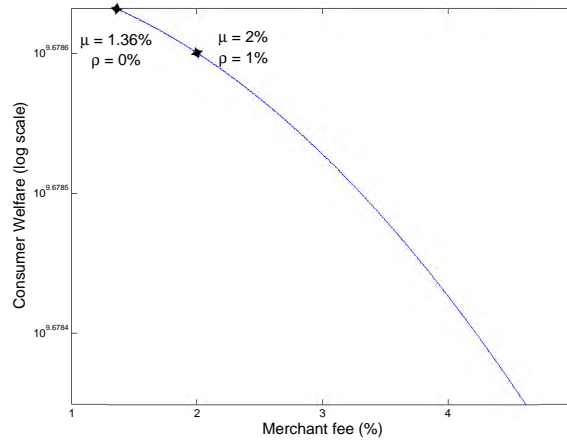
Finally, Figure 9 illustrates the combinations of merchant fee and card rewards such that it is possible to reduce the merchant fee from  $\mu = 2$  percent to  $\mu = 1.36$  percent, and card reward from  $\rho = 1$  percent to  $\rho = 0$ , while keeping banks' net income constant and also improving total consumer welfare. The consumer welfare maximum is at  $\mu = 1.36$  percent and  $\rho = 0$  percent, the same point as depicted in the banks iso-profit function in Figure 6.

## 6. Policy Implications

Our model and analysis suggest that aggregate consumer welfare likely can be increased by reducing transfers between consumers, especially between low-income and high-income

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<sup>37</sup>The reason why this improvement is bigger than the one in our benchmark model follows from the different shapes of the utility functions. In particular, a higher  $\alpha$  results in higher marginal utilities, so the welfare effects of zero banks' net income are magnified.



**Figure 9:** Welfare-improving fee and reward reductions along banks’ iso-profit line

consumers. While it is natural to consider public policy initiatives in this endeavor, our research and discussions suggest preemptive actions that private sector agents (households, merchants, and banks) could take that would reduce the transfers. However, if private agents are not willing or able to take these actions to reduce the transfers, then public policy makers may wish to enact policies that would do so. Given the limitations of our model and analysis, we cannot provide precise policy recommendations that would necessarily optimize social welfare. Nevertheless, our research suggests some general principles and implications pertaining to consumer welfare that may be useful for policy deliberations:

- *Cost-based pricing*—One condition supporting the transfers is uniform pricing across payment instruments. Policies that would allow and encourage merchants to charge differential prices according to the costs imposed by payment instruments could help to reduce the transfers by reducing payment cross subsidies. Eliminating the NSR would seem to be an obvious option, but it may not be a sufficient incentive to induce differential pricing (for example, see Bolt and van Renselaar (2009)).
- *Full information*—Another condition supporting the transfers is the lack of full information about about merchant fees and other aspects of payment costs that have an impact on retail prices and consumer welfare. Policies that would require merchants, banks, or credit card companies to fully disclose fees, costs, and price markups to



consumers could help to reduce transfers by giving consumers the incentive to make optimal payment choices.

- *Redistribution*—The transfers can be reduced by compensating low-income households, using tax policies to redistribute money from high-income households according to credit card use and receipt of rewards. Direct methods may be complicated and costly, but tax deductions for reward contributions may be feasible.
- *Competition*—If there is inadequate competition in the credit card market, then government efforts to promote alternative payment instruments could help to reduce the transfers. Expanding access to low-cost existing networks, such as the Automatic Clearing House (ACH), is one possibility.
- *Regulation of fees and rewards*—The transfers likely can be reduced by regulating the merchant fee, but two important caveats apply. First, economists would caution as usual that regulators may have difficulty determining the optimal fee, so regulation of the merchant fee could actually reduce consumer welfare if the wrong level of the fee were selected. Second, and unique to our analysis, regulators should consider the merchant fee and reward rate simultaneously.

Of course, these policy implications and ideas would require more research and formulation before they could be considered and adopted.

Finally, these policies to reduce transfers are closely related to recent policies enacted to regulate payment card interchange fees worldwide. Policy makers in Australia and Spain, as well as the European Commission, have already taken actions to limit the interchange fees associated with credit cards. Actions taken by various countries are discussed in Bradford and Hayashi (2008). The recent U.S. financial reform bill (officially, the “Dodd-Frank Wall Street Reform and Consumer Protection Act” of 2010), signed into law on July 21, 2010, includes the Durbin Amendment, giving the Federal Reserve responsibility for regulating interchange fees associated with debit cards. In each of these cases, regulation of interchange fees was

motivated in part by concerns over an alleged lack of competition in payment card markets. Our analysis provides a different but complementary motivation—income inequality—for policy intervention.

Given that policy makers have been and will be focusing on regulating interchange fees, we can provide some potentially helpful information about the properties of merchant fees and rewards for policy makers who wish to take these parameters into consideration. Table 10 summarizes the key elasticities with respect to the merchant fee and the reward rate in the model. Recall from Section 4.4 that regulating the merchant fee without changing the

Variable	Merchant Fee	Reward rate
Markup	0.52	0.014
Transfer paid by low income ( $X_L$ )	5.99	-3.560
Transfer received by high income ( $-X_H$ )	0.50	0.658
Consumer Welfare	-0.0021	0.0006

**Table 10:** Key elasticities (at  $\mu = 2\%$ ,  $\rho = 1\%$ ) with respect to  $\mu$  and  $\rho$  in the model

reward rate would have a much larger effect on the price markup and consumer welfare than regulating the reward rate without changing the merchant fee (first and last lines of Table 10). However, it is important to remember that optimal policy would require simultaneous regulation of the merchant fee and the reward rate. It would also require an analysis and treatment of household claims to banks’ profits, which we have not considered here.

Table 11 provides a guide to the effects of policy changes by showing the percentage changes in consumer welfare associated with reductions in merchant fee and reward rates below their benchmark values ( $\mu = 2$  percent and  $\rho = 1$  percent). A positive number indicates an increase in consumer welfare. The maximum possible increases in consumer welfare are found at the top of each column where banks’ net income is the smallest for the column.

$\mu$	Reward rate ( $\rho$ )				
	0	0.25	0.50	0.75	1.0
0.00	0.147	.	.	.	.
0.25	0.121	0.137	.	.	.
0.50	0.095	0.111	0.128	.	.
0.75	0.069	0.085	0.101	0.118	0.134
1.00	0.043	0.059	0.075	0.091	0.107
1.25	0.018	0.033	0.049	0.065	0.081
1.50	-0.008	0.007	0.022	0.038	0.054
1.75	-0.034	-0.019	-0.004	0.011	0.027
2.00	-0.060	-0.045	-0.030	-0.015	0.000

**Table 11:** Percentage changes in consumer welfare associated with reductions in merchant fee and reward rates below their benchmark values ( $\mu = 2\%$  and  $\rho = 1\%$ ).

## 7. Qualifications and Extensions

Our analysis relies on several assumptions and simplifications imposed due to lack of data or for tractability. Relaxing these restrictions could alter the magnitudes of the transfer estimates. This section explores the potential impact of these restrictions, and provides some qualifications and extensions to the central results.

### 7.1 Transfer accounting assumptions

Section 3.2 lists three key assumptions underlying the estimates of the transfers between cash and card payers and between low-income and high-income households. In reality, each assumption may not hold exactly. So we designed some alternative transfer calculations to approximate more realistic conditions in the payments market that would occur if we relaxed the assumptions. Table 12 reports the results of our alternative transfer calculations and their deviations from the benchmark estimates based on two household income categories. To simplify the analysis, columns three and four report only the transfer gap, which we defined earlier as the difference between the average transfer per low-income household and the average transfer per high-income household. The remaining two columns report the percentage change for the alternative transfer estimate relative to the benchmark estimate.

Assumption	Alternative	Transfer Gap (\$)		Change (%)	
		Card	Income	Card	Income
–	Benchmark (two income categories)	1,282	438	–	–
A-1	Partial price differentiation	1,234	365	–3.7	–16.7
A-2	Imperfect competition (merchants)	1,004	421	–21.7	–3.9
A-2a	Price markup (10%)	1,292	494	0.8	12.8
A-2b	Bargaining power over $\mu$	995	372	–22.4	–15.1
A-3	Interest funding of rewards	1,148	314	–10.4	–28.4

**Table 12:** Changes in the transfer gap estimates due to relaxing the underlying assumptions.

First, we relaxed assumption A-1, one price for all buyers, and instead allowed for partial price differentiation between cash and credit card buyers. Price differentiation could arise for many reasons, including the following: the representative merchant could surcharge credit cards or discount cash purchases; there may exist heterogeneous merchants and/or products for which only cash or only credit cards are accepted; or low-income and high-income households may shop at different merchants so that cash and credit card purchases are segregated. Each of these reasons can be simulated in observationally equivalent fashion by excluding a portion of cash or card spending (or both) from the transfer calculations. We excluded 4.2 percent of consumption from broad NIPA categories that are likely paid for by cards only or cash only.<sup>38</sup> With partial price differentiation in the economy, the card transfer gap falls by 3.7 percent and the income transfer gap falls by 16.7 percent.

Next, we relaxed assumption A-2, complete (100 percent) pass-through of the merchant fee to consumers, and instead allowed for the pass-through to be more or less than complete by introducing two forms of imperfect competition. One form is classic market power for the merchant, which results in a traditional price markup over marginal costs and the cost of the payment instrument. The transfer formula for this price markup is:

$$X_i \stackrel{\text{def}}{=} \frac{\eta}{\eta + 1} \frac{S_i}{S} (\mu S^d + \epsilon S^h) - (\mu S_i^d + \epsilon S_i^h) - \rho_i S_i^d \quad i = L, H. \quad (19)$$

We simulate the effects of a 10-percent markup based on an elasticity of  $\eta = 10$ . The

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<sup>38</sup>We subtracted from aggregate consumption the spending on “household furnishings and equipment,” “air transportation,” and “accommodations,” which are likely paid mostly with credit cards.

other form is market power held by a very large merchant (for example, Walmart) over banks, giving the merchant leverage in bargaining over the merchant fee. We simulated this possibility by reducing the aggregate merchant fee 0.5 percentage points to 1.5 percent. The price markup of 10 percent increases the income transfer gap by 12.8 percent because the pass-through of payment costs in the retail price is more than 100 percent; the card transfer gap is only slightly higher. In contrast, bargaining power over the merchant fee reduces the card transfer gap by 22.4 percent and the income transfer gap by 15.1 percent. Combining these two different effects of market power, we see that imperfect competition tends to affect primarily the card transfer gap (21.7 percent lower) but leaves the income transfer gap largely the same (3.9 percent lower).

Finally, we relaxed assumption A-3, no funding of credit card rewards from revolving debt activity, and instead assumed that interest revenue from revolving debt held by high-income households is used to fund rewards paid to low-income households. As we show in more detail below, this alternative transfer calculation is not supported well by the data, even though it is often alleged in the literature. In any case, this alternative does not affect the card transfer gap, but it reduces the income transfer gap by 28.4 percent because of the direct transfer of interest payments from high-income to low-income household rewards.

One clear overall conclusion emerges from these alternative transfer calculations: both transfers remain economically significant even after adjusting for alternative conditions in the payments market. Although relaxing some assumptions leads to reductions in some of the estimates, the adjusted transfers are still about three-quarters (or more) as large as their benchmark values. Furthermore, we have omitted from the benchmark transfer calculations two very important features of credit card markets—redistribution of bank profits (discussed in Appendix B) and business credit card use (discussed below)—that likely would *increase* the transfer estimates. We believe that these increases to the transfer estimates are most likely greater (in absolute value) than the reductions reported in Table 12.

## 7.2 Revolving credit

It is important to emphasize once more that our model and analysis focus on the convenience use of credit cards and do not incorporate a role for revolving credit. Revolving credit is an important part of the value of credit cards to the economy, and we support future research that expands our analysis in this direction. We also recognize that debt activity could be another source of revenue for banks and credit card companies. This subsection explores the evidence on this issue further to reassure the reader that we have not grossly mischaracterized the transfers.

High interest and penalties paid by credit card borrowers on revolving debt may directly or indirectly fund some of the bank issuers' expenses on card rewards. In fact, Chakravorti and Emmons (2003) demonstrate an equilibrium in the market for credit cards (as opposed to debit and charge cards) in which the "convenience use" of credit cards by nonborrowing consumers is subsidized by liquidity-constrained consumers who borrow on their credit cards and pay high interest. Chakravorti and Emmons's results explain that borrowers pay high interest rates on credit card debt because this interest is used to reward all credit card users, including those who avoid interest charges by paying their full balances on time. However, the evidence suggests that rewards are funded at least partly by merchant fees. Levitin (2007) reports that 44 percent of interchange fees goes to fund reward programs. Hayashi (2009) also investigates the degree to which card reward programs are financed by merchant fees, but does not draw definite conclusions. In our calculations, rewards make up about 35 percent ( $\approx 8.5/24.2$ ) of merchant fees. If we look at interchange fees instead of merchant fees, subtracting 0.5 percent (acquiring banks' profit) from 2 percent we compute 35 percent times  $4/3 \approx 47$  percent, which is fairly close to the result in Levitin (2007).

The SCF provides data on credit card revolving debt, reported in Table 13, that help one to evaluate the idea of Chakravorti and Emmons (2003). The survey poses two questions related to revolving credit, and both show surprisingly little difference between low-income and high-income households. First, the SCF asks whether respondents usually pay off their

balances. For high-income households, 30.7 percent answer “sometimes” or “hardly ever,” while for the low-income group, 32.9 percent provide the same answer. The second question is about the outstanding balance after the last payment, showing that 43.2 percent of low-income and 47.5 percent of high-income households carried debt. The similarity in revolving credit between income groups belies the conventional notion that credit card debt is predominantly a problem for low-income households.

	Low-income	High-income
Revolving debt (reported incidence)	32.9%	30.7%
Revolving debt (actual incidence)	43.2%	47.5%
Revolving debt (revolvers)	\$6, 243	\$11, 709
Interest rate (card holders/revolvers)	12.90%/12.20%	12.85%/11.15%
Annual interest payment (debt × rate)	\$788	\$1316
Aggregate interest payment (payment × households)	\$30.9 billion	\$13.4 billion
Aggregate annual rewards (from Table 8)	\$2.7 billion	\$5.8 billion

**Table 13:** Revolving credit activity by household income group

The remainder of Table 13 shows the implications of revolving credit for interest revenues to banks. Among revolvers, high-income households carry about twice as much revolving debt as low-income households, but their credit cards have interest rates about 1 percentage point lower.<sup>39</sup> The last two rows of Table 13 reveal that both income groups pay more than enough interest to cover the credit card rewards earned by the group. Thus, it seems unlikely that interest from either group cross-subsidizes the rewards of the other, so we conclude that the transfer calculations based only on convenience use of credit cards are likely accurate.

### 7.3 Other extensions

We close this section with a brief discussion of some extensions to our model and some analysis that we leave for future research.

<sup>39</sup>The interest rates in Table 13 are for all credit card holders (the first rate shown) and the debt-weighted average for all revolvers (the second rate shown). The other figures in the table, except for those shown in the last two rows, are averages over the entire income group.

**Bank profits:** We have not incorporated household ownership of banks (including card companies). In our analysis, banks make \$15.7 billion of undistributed profits on consumer credit card services, which would be distributed to households in reality. Because the wealthiest 20 percent of the U.S. population holds the majority of all stocks, bank profits from merchant fees likely would be distributed disproportionately to high-income households. Thus, incorporating household ownership of banks is likely to increase the transfers from low-income to high-income households.

**Business credit cards:** We use data on credit card use by consumers only. The Call Report data on total U.S. credit card transactions indicate that total credit card spending by business (and including government) is about equal to consumer credit card spending. If businesses used credit cards at the same establishments as consumers, they would impose further costs on the merchants and raise retail prices even more. If businesses (and their profits) are more likely to be owned by high-income households, then incorporating business use of credit cards into the analysis is likely increase the transfers from low-income to high-income households.

**Congestion (externality) effects:** Murphy and Ott (1977) suggests that cash buyers impose more costs on merchants' sales staffs than on card users. If cash transactions take significantly longer to handle than credit card transactions, cash users may impose an externality on card users by slowing them down at the point of payment. This externality would offset, at least partly, the transfer from cash users to card users. However, the available data on the time it takes to handle a transaction by payment method do not provide strong support for this view.<sup>40</sup> It is possible that cash congestion effects may be relevant for highway toll booths, as discussed in Amromin, Jankowski, and Porter (2007). But electronic

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<sup>40</sup>According to a 2000 study by the Food Marketing Institute, titled "It All Adds Up: An Activity Based Cost Study of Retail Payments," a credit card transaction takes longer to handle than a cash transaction: 49 seconds compared to 29 seconds. However, a 2006 study by MasterCard International titled "MasterCard PayPass: The Simpler Way to Pay," finds that the average cash transaction is slower than the average credit card transaction if no signature is required: 34 seconds compared to 27 seconds.



toll transponders that serve as a faster alternative to cash are not credit cards, and the proportion of toll payments is relatively small.

**Credit card annual fees:** Card fees are another potential source of revenue to fund card rewards that could affect the transfer estimates. If credit card holders pay for their rewards with high annual fees, then our transfer calculations would overstate the transfers. However, this possibility is unlikely to be a major factor. According to the 2003 Synergistics Credit Card Market survey, low-income households paid an average annual fee of \$5.7, while high-income households paid \$7.7. These data imply trivial changes in the transfer estimates.<sup>41</sup>

The preceding list of extensions suggests that the magnitudes of our estimates and results for transfers from low-income to high-income consumers may be altered quantitatively by future research. However, if anything, the qualitative nature of the regressive transfer is almost surely robust and the quantitative estimates are likely to increase relative to our benchmark.

## 8. Conclusion

We proposed an accounting methodology to calculate two types of implicit monetary transfers occurring in a simplified representation of the U.S. payments market: 1) the transfer between cash buyers and credit card buyers; and 2) the transfer between low-income and high-income households. Both of these transfers are estimated to be economically significant and robust to potential changes in the assumptions underlying the accounting methodology.

We also built an empirically tractable theoretical model of payment for consumption that includes all of the salient and economically important features of U.S. credit card payments. We calibrated this model with the best, most detailed data available to us and derived estimates of the average payment, retail price markup over marginal cost, and nonpecuniary

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<sup>41</sup>Including credit card annual fees would reduce the card transfer gap by 0.6 percent to \$1274, and reduce the income transfer gap by 0.5 percent to \$436.

utility benefit of card use over cash use. The results are remarkably plausible given the relative simplicity of our data and model.

Extending our model and analysis with better data and more realistic features of the credit card market surely would provide more refined quantitative estimates of the two transfers. However, we are confident that the qualitative existence of these two transfers is robust to changes in the model and data. On balance, our estimates of the transfers likely understate the true values of the transfers, especially between income classes. Taking into account the quantitative impact of all potential improvements and extensions to the data and model, it is most likely that including in future research the factors we omitted from this analysis will yield higher estimates of the transfers.

## **Appendix A Data**

To get total consumption expenditure, we looked at the National Income and Product Accounts (NIPA) for 2007. From the Personal Consumption Expenditure figure, we subtracted a number of subcategories, where we believe that the transfers analyzed in the paper did not take place, because assumption A-1 was not satisfied. Table 14 below details these calculations for our benchmark model and for the alternative simulation with partial price differentiation (the second row in Table 12): This adjustment resulted in dropping \$4.13 trillion of personal consumption expenditures from the headline figure of \$9.83 trillion. The drawback of using NIPA data is that we cannot break down consumption expenditure by income categories. To do that, we used the 2008 edition of the Consumer Expenditure Survey (CEX). Tables 2 and 2301 of the 2008 CEX contain the most detailed breakdown available of consumption by income. To make our calculations consistent with our NIPA consumption spending figure we had to take the same spending categories out of the CEX consumption figure as we took out of the NIPA. Unfortunately, the subcategories in the CEX and the NIPA do not map into each other one-for-one. So, from the CEX “Average annual expenditure” figure, we took out the entire “Healthcare” category as well as “Mortgage and

Line	Category name	Amount (\$ Billions)
1	Personal consumption expenditures	\$9,826.4
<i>Benchmark model</i>		
29	Food produced and consumed on farms	\$0.4
46	Net expenditures abroad by U.S. residents	\$6.1
50	Housing	\$1,472.9
60	Health care	\$1,465.4
84	Food furnished to employees (including military)	\$14.1
87	Financial services	\$507.9
93	Net health insurance	\$158.3
106	Social services and religious activities	\$134.3
109	Foreign travel by U.S. residents	\$113.9
111	NPISHs	\$254.2
Total adjustments made		\$4,127.5
<i>Partial price differentiation</i>		
8	Furnishings and durable household equipment	\$277.7
74	Air transportation	\$51.6
85	Accommodations	\$80.8
Additional adjustments made		\$410.1

**Table 14:** Adjustments to PCE figure using NIPA Table 2.4.5, revised, August 5, 2010.

interest charges,” “Property taxes,” “Rented dwellings,” “Cash contributions,” and “Pensions and Social Security.” (Expenditures on financial services are not measured in the CEX at all.) Once we had the relevant consumption and income figures from the CEX (readily available in Tables 2 and 2301 of the CEX publication), we could construct the average propensity to consume by each income category (except for the bottom income group). For the lowest income group, where consumers’ average income was negative, the average total consumption expenditure per weighted respondent was matched so that it was equal to that of the second-lowest group. These average propensities could then be multiplied by the income figure in the Survey of Consumer Finances (SCF) 2007 to yield an estimate of total consumption expenditure by income group. We measured household income as the sum of variables  $x5702$ ,  $x5704$ ,  $x5706$ ,  $x5708$ ,  $x5710$ ,  $x5712$ ,  $x5714$ ,  $x5716$ ,  $x5718$ ,  $x5720$ ,  $x5722$ , and  $x5724$ . To make the resulting consumption number consistent with the NIPA data, we also multiplied the resulting number by a scalar so that it matched our adjusted total Personal

Consumption Expenditures figure.

Total annual credit card spending was computed as the sum of the values data gathered in response to questions in the SCF asking about consumers’ total use of credit cards in the past month,  $x_{412}$ ,  $x_{426}$ ,  $x_{420}$ , and  $x_{423}$ , all multiplied by 12. For the partial price discrimination scenario we subtracted “Other lodging” and “Household furnishings and equipment” spending by income group from their respective total credit card spending. The figures for total annual credit card transactions were taken from Table 19 (monthly credit card use multiplied by 12) in SCPC 2008 (Foster et al. (2009)).

## Appendix B Transfer Accounting Details

To understand better why it is appropriate to adjust the POS transfer for rewards, consider the aggregate accounting of the complete flow of funds among households, merchants, and banks. The revenue from merchant fees is paid to banks, which then distribute rewards to households that use credit cards. Thus, banks’ profits ( $\Pi$ ) are:<sup>42</sup>

$$\Pi = \mu S^d - (\rho_L S_L^d + \rho_H S_H^d). \quad (20)$$

Viewed this way, credit card rewards act as a claim on banks’ profits that is paid to credit card users only, rather than to all owners of banks, and the distribution of rewards precedes the distribution of profits to owners of banks.<sup>43</sup> Because households own banks (either publicly or privately), banks’ profits ultimately are income for households. Thus, rewards represent a transfer of profits and dividend income from owners of banks to credit card users who may or may not be owners of banks. Let  $D^i$  denote the dividends received by household type  $i$ . After rewards are paid to credit card holders, the distribution of profits to the owners of banks is

$$\Pi = D^h + D^d. \quad (21)$$

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<sup>42</sup>In this equation, we omit the costs of providing credit card services for simplicity and clarity. If banks are perfectly competitive, then these profits would be zero.

<sup>43</sup>In a sense, owners of banks have subordinated claims to profits and credit card users have primary claims. However, this would be irrelevant if credit card users were the sole owners of banks.

Because our computations omit the distribution of banks' profits given in (21), the sum of transfers equals the negative amount of rewards,

$$X = X^h + X^d = -(\rho_L S_L^d + \rho_H S_H^d) < 0, \quad (22)$$

rather than zero. Therefore, estimates of the full aggregate transfer between cash-paying and card-paying households depends crucially on the structure of ownership of banks by households. In contrast, the sum of transfers at the point of sale,

$$\tilde{X} = X^h + \tilde{X}^d = 0, \quad (23)$$

does equal zero and does not depend on the ownership of banks.

Data on household ownership of banks by household payment choice and household income are not available, so we cannot estimate the full aggregate transfer. However, unless cash-paying households own a large portion of the banks, the full aggregate transfer likely is greater than the POS transfer for two reasons: (1) the dividend income of cash-paying households is reduced by the payment of rewards to credit card users; and (2) the post-rewards distribution of dividend income to households may not be proportional to the payment costs imposed on merchants by household payment choices. The credit card transfer, equation (3), includes rewards as an estimate of (1), but it does not include an estimate of (2). However, if the ownership of banks is positively correlated with income, the net effects of bank ownership on total (pre-reward) profits is likely to make the full aggregate transfer at least as large as the rewards-adjusted transfer. The rewards-adjusted transfer also allows evaluation of the independent effects of changes in the merchant fees versus changes in rewards. Clearly, more data and additional research in this area would produce more complete and refined estimates of the full aggregate transfer.

Transfer equations (2) and (3) can be rewritten using the definitions above to clarify the role of rewards in the transfers. Let  $w^h = (S^h/S)$  and  $w^d = (S^d/S)$  denote the spending shares of cash and card users, respectively, so that  $w^h + w^d = 1$ , and recall that  $S^d = S_L^d + S_H^d$ . Merchant fee revenue is divided between credit card users (in the form of rewards) and owners

of banks (in the form of profits), so that  $\mu = (\pi + \rho)$ , where  $\pi$  is profit expressed as a rate. Substituting this identity into the transfer equations, and then collecting and rearranging terms, yields

$$X^h \stackrel{\text{def}}{=} \{w^h [\pi S^d + \epsilon S^h] + w^h \rho (S_L^d + S_H^d)\} - \epsilon S^h \quad (24)$$

$$X^d \stackrel{\text{def}}{=} \{w^d [\pi S^d + \epsilon S^h] + (w^d \rho - \rho_L) S_L^d + (w^d \rho - \rho_H) S_H^d\} - [\pi S^d + \rho S^d]. \quad (25)$$

The structure of the rewritten transfer equations mirrors the original equations. In both equations, the first term in braces represents what payment users actually pay toward total merchant payment costs, and the second term (outside braces) represents the merchant cost of the household's payment choice. With regard to rewards, it is now clear from equation (25) that the credit card transfer represents the amount of imbalance between the rewards portion of credit card costs borne by the merchant ( $-\rho S^d$ ), on the one hand, and the portion of that cost paid by credit card users  $((w^d \rho - \rho_L) S_L^d + (w^d \rho - \rho_H) S_H^d)$ , on the other. The portion paid by credit card users clearly shows that card users do not pay the full value of their rewards:  $(w^d \rho - \rho_L) = (0.21 - 0.55) = -0.34$  and  $(w^d \rho - \rho_H) = (0.21 - 0.75) = -0.54$ .

## Appendix C Sensitivity Analysis

The following sections present the sensitivity analysis to changes in  $\beta_H$  and  $\epsilon$ . Since we are not aware of any study that has directly estimated  $\beta_H$ , we would like to see how our assumption that richer people derive higher utility from using credit cards affects our results. Also, as noted above, some empirical studies find values that differ from our estimates for the costs of handling the payment instruments that we labeled as "cash," and these differences could have important implications for our results.

When thinking about the welfare implications of different parameter values, one has to look carefully at the utility of all four groups in the model: (i) low-income cash users, (ii) low-income card users, (iii) high-income cash users and (iv) high-income card users. The different parameter values considered below lead to different estimates of the transfers between these

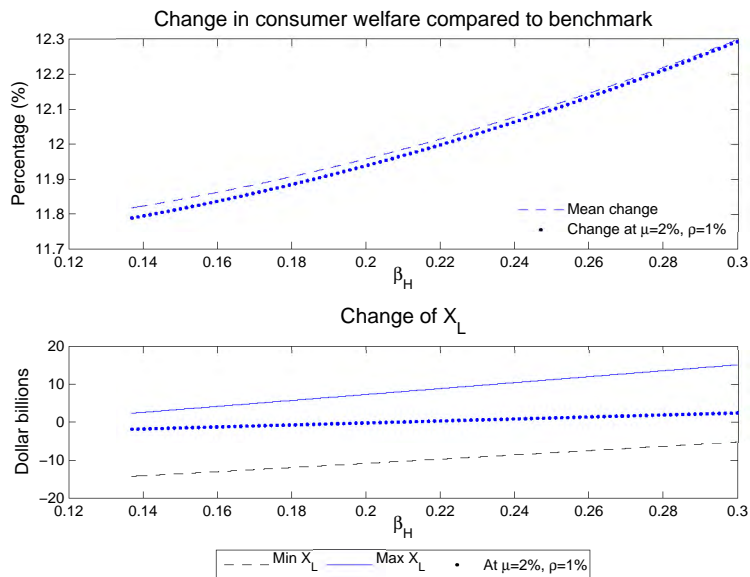
groups. In general, since our social welfare function is utilitarian, a redistribution to groups with higher marginal utility will be desirable. With our concave individual utility functions, low-income households will have higher marginal utilities, but the  $(1 + b_i)$  (with  $b_i > 0$ ) term in card users' utility will raise their marginal utility above cash users' within their respective income groups.

### C.1 Sensitivity analysis with respect to $\beta_H$

We will now analyze what would happen if  $\beta_H$  decreased all the way to the level of  $\beta_L$ . Having  $\beta_H > \beta_L$  means two things in the model: (i) a higher share of card users in the high-income group (see equation (14)) and (ii) a higher average marginal utility of card users in that income category. The former means that for  $\beta_H > \beta_L$ , the cash-payer-to-card-payer transfer will amplify the redistribution of income between the income groups as well. Intuitively, there will be more card payers who underpay in the high-income group, so the cash payers (in both income categories) will have to overpay by more, but with the number of card payers in the low-income category fixed (for a given  $\beta_L$ ), this overpaying will result in a cross-subsidy from low-income households to their high-income counterparts. For concave utility functions, this redistribution will lower total consumer welfare. At the same time, a higher  $\beta_H$  also results in a higher utility gain from redistributing money from cash users to card users within the high-income group. Remember that in both income groups card payers derive higher marginal utilities from an additional transaction (for a given  $t$ ), so a redistribution from cash to card payers *within* each income group is welfare increasing until the marginal utilities of cash and card users within the income groups are equalized. As  $\beta_H$  increases, this utility gain is traded off against the utility loss from a simultaneous redistribution of income from low- to high-income groups.

The top panel of Figure 10 helps to gauge the effect of a change in  $\beta_H$  on the aggregate consumer welfare function. The mean change in the consumer welfare function has the exact same shape as the maximum change (not shown) or the change at the point of ( $\mu = 2$  percent,  $\rho = 1$  percent). This finding indicates, that changes in  $\beta_H$  will not affect the shape

of the consumer welfare function drastically, so we expect our results to remain robust to changes in  $\beta_H$ . The bottom panel of the same figure shows that the shape of the transfers paid by the low-income group changes with the value of  $\beta_H$ , as we would expect based on the discussion above, but the magnitude of the transfer at  $\mu = 2$  percent and  $\rho = 1$  percent stays fairly constant.



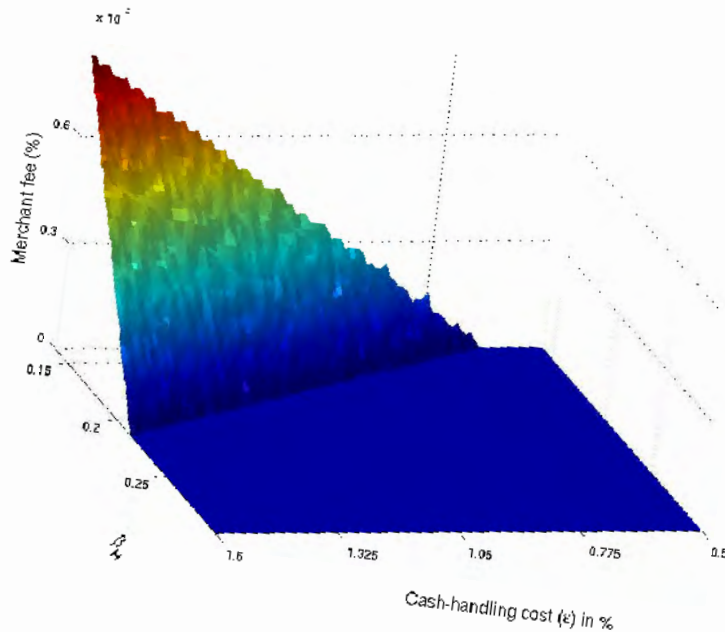
**Figure 10:** Welfare and transfers as a function of  $\beta_H$

Figure 11 plots the welfare-maximizing level of  $\mu$  as a function of  $\beta_H$  and  $\epsilon$ , illustrating the story about the within- and across-income-group redistribution outlined above. A higher  $\beta_H$  leads to a relatively higher number of card payers among the rich, and thus more of the cash-to-card-payer redistribution becomes also low-income-to-high-income redistribution. Since this latter is detrimental to aggregate welfare, the optimal level of  $\mu$  decreases with  $\beta_H$  to curtail the amount of cash-to-card-payer redistribution.

## C.2 Sensitivity analysis with respect to $\epsilon$

According to Figure 12, changes in  $\epsilon$  lead to changes in the consumer welfare function that are of similar magnitude to the changes produced by different values of  $\beta_H$ . Again the upper



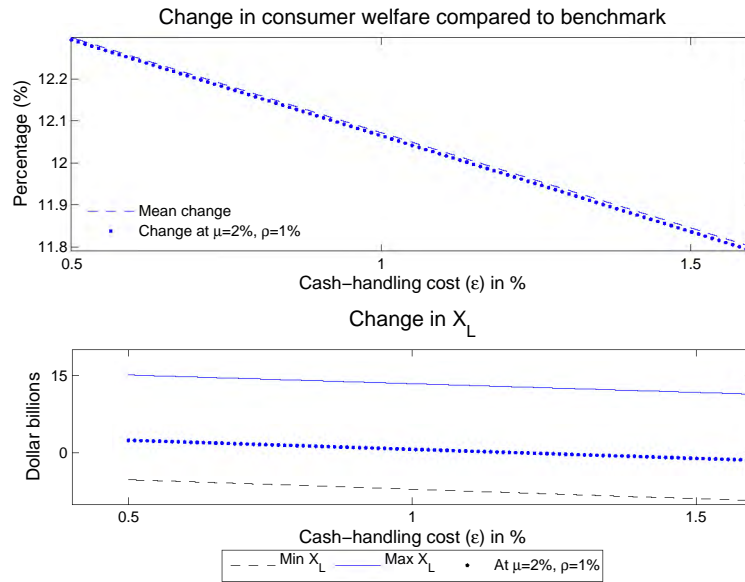


**Figure 11:** Optimal merchant fee as a function of  $\beta_H$  and  $\epsilon$

panel of Figure 12 suggests that the shape of the consumer welfare function does not change by much as  $\epsilon$  takes on different values. Surprisingly, the redistribution also stays fairly constant as  $\epsilon$  changes. From Equation 5 one can see that

$$\frac{\partial X_L}{\partial \epsilon} = \frac{-S_L}{S} S^h - S_L^h = \frac{S_L}{S} S^h - \frac{S_L^h}{S^h} S^h = -0.05 \cdot S^h,$$

where the last line makes use of the figures in Table 5. In words, a change in  $\epsilon$  changes low-income households' contribution to the costs imposed and to the costs paid by roughly the same amount. A rise in the cost of handling cash leads to a redistribution from card to cash payers, just as the increase in the merchant fee leads to a transfer from cash payers to card payers. Again, the no-surcharge rule forces merchants to recover the higher costs imposed by cash payers by charging higher prices to all customers, so as  $\epsilon$  increases, the price paid by card users will increase, even though their purchases do not impose any additional costs to the merchants. Since this transfer means a redistribution from high- to low-income households (with  $\beta_H > \beta_L$ ), it can increase social welfare as long as it helps to equalize marginal utilities between the income groups. As can be seen from Figure 11, however, this redistribution can become inefficiently high for high values of  $\epsilon$ , which would then validate a nonzero merchant fee to redirect some of the transfer to low-income households back to high-income households.

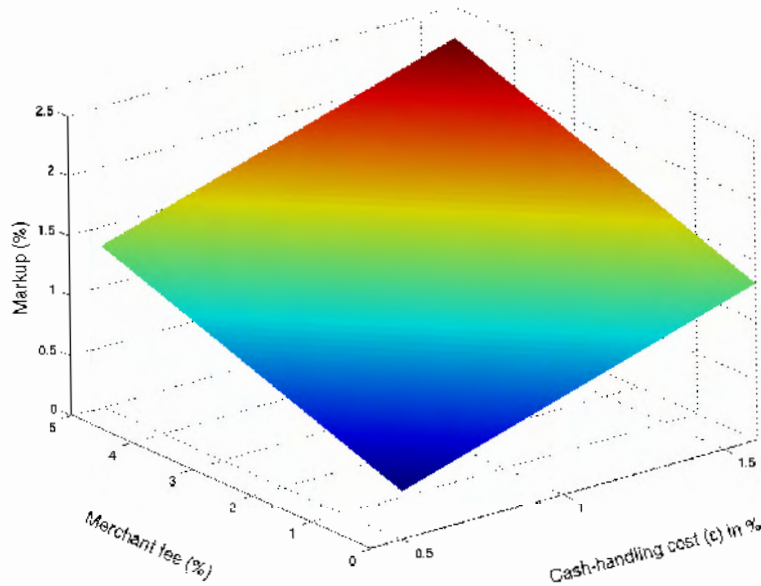


**Figure 12:** Welfare and transfers as a function of  $\epsilon$

However, in our benchmark model with a high  $\beta_H$ , a 1.6 percent cash-handling cost would still not warrant a positive merchant fee to maximize consumer welfare. Also, as noted above, for high cash-handling costs the optimal merchant fee changes markedly with different values of  $\beta_H$ , as the difference between  $\beta_L$  and  $\beta_H$  (difference between the fraction of card users in the two income groups) increases the between-income group redistribution. If there were no redistribution between income groups, the transfer resulting from cash-handling costs would decrease welfare, since it would channel income from (high marginal utility) card payers to (lower marginal utility) cash payers. This is why, in the case of equal  $\beta$ s and high  $\epsilon$ , a high merchant fee (0.9 percent) would be optimal to offset the transfer from card payers to cash payers. As  $\beta_H$  increases, however, the redistribution towards cash payers becomes more desirable, as it becomes a subsidy from high-income to low-income households, while the redistribution caused by the merchant fee becomes less desirable, since it works in the opposite direction. Note that in Figure 11, a high merchant fee is optimal only for low  $\beta_H$  and high  $\epsilon$ .

Cash-handling costs play an important role in determining the markup. Because of the high fraction of cash payers (approximately 86 percent in the low- and 69 percent in the high-

income group), the markup moves almost one-for-one with  $\epsilon$ . Figure 13 plots the markup as a function of cash-handling costs and the merchant fee. Note that while the merchant fee goes from 0 to 5 percent, cash-handling costs vary only between 0.5 and 1.6 percent. Keeping this in mind, Figure 13 shows that the markup is almost five times more responsive to changes in  $\epsilon$  than to changes in  $\mu$ .



**Figure 13:** Markup as a function of  $\mu$  and  $\epsilon$

## Appendix D Discussions of the NSR

Our analysis is conducted under the assumption that merchants obey the *no-surcharge rule* (NSR). Under the NSR, merchants sign an agreement under which they cannot charge consumers an additional fee for using a card. Over the years, formal NSR agreements have been declared illegal by several antitrust authorities but not in the United States. Most merchants in the United States still do not impose a surcharge on card payments and many do not give discounts for cash payments. Bolt and van Renselaar (2009) provide an empirical analysis of the effect of surcharging card payments on actual payment behavior in the Netherlands, where surcharging is currently allowed.

There are a number of explanations for why merchants do not surcharge buyers for card payments, despite having to pay a high fee for each card transaction.

**Buyers' perceptions:** Most buyers are not aware of the high fees imposed on merchants.

Buyers may suspect that the sole purpose of a card surcharge is to enhance merchants' profit with no cost justification. Clearly, educating consumers may solve this problem.

**Proper marking:** Most states require shops to mark prices on all items they sell. Imposing a surcharge on cards may require placing two labels. By itself, this should not be a big problem; however, when a sale is declared, merchants will have difficulties with marking down different prices associated with the different means of payment.

**Competition:** Card acceptance under high merchant fees may reflect a "bad" equilibrium for merchants, in which no merchant can profitably deviate by refusing to accept card payments. See Hayashi (2006) for a theoretical study.<sup>44</sup>

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<sup>44</sup>Borzekowski and Kiser (2008) present evidence showing that merchants can substantially reduce their cost by not accepting credit cards. In fact, Ausubel (1991) has already suggested that the use of plastic cards by buyers cannot always be explained in a rational matter. Merchants may also manifest similar behavior.

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# Who Pays For Your Rewards?

## Redistribution in the Credit Card Market

Sumit Agarwal    Andrea F. Presbitero    André F. Silva    Carlo Wix\*

December 2022

### Abstract

We study credit card rewards as an ideal laboratory to quantify redistribution between consumers in retail financial markets. Comparing cards with and without rewards, we find that, regardless of income, sophisticated individuals profit from reward credit cards at the expense of naïve consumers. To probe the underlying mechanisms, we exploit bank-initiated account limit increases at the card level and show that reward cards induce more spending, leaving naïve consumers with higher unpaid balances. Naïve consumers also follow a sub-optimal balance-matching heuristic when repaying their credit cards, incurring higher costs. Banks incentivize the use of reward cards by offering lower interest rates than on comparable cards without rewards. We estimate an aggregate annual redistribution of \$15 billion from less to more educated, poorer to richer, and high to low minority areas, widening existing disparities.

**Keywords:** household finance; credit cards; financial sophistication; rewards

**JEL Classification:** G21; G40; G51; G53

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## I. Introduction

Consumers lacking financial sophistication often make costly mistakes (e.g., [Campbell, 2006](#); [Gomes, Haliassos, and Ramadorai, 2021](#)). In the consumer credit card market, such behavior can entail overindebtedness ([Gross and Souleles, 2002](#); [Heidhues and Kőszegi, 2010](#)) and sub-optimal repayments ([Ponce, Seira, and Zamarripa, 2017](#); [Gathergood, Mahoney, Stewart, and Weber, 2019](#)). Banks, in response, can design financial products to exploit these mistakes, combining salient benefits with shrouded payments ([DellaVigna and Malmendier, 2004](#); [Heidhues and Kőszegi, 2017](#)). Naïve consumers might underestimate these payments and incur costs from usage. Sophisticated consumers, in contrast, might rake in the benefits while avoiding the payments and thus profit from usage. Such products can therefore generate an implicit redistribution from naïve to sophisticated consumers ([Gabaix and Laibson, 2006](#)) and thereby contribute to inequality ([Campbell, 2016](#); [Lusardi, Michaud, and Mitchell, 2017](#)).

Despite these theoretical predictions, empirically quantifying the extent of such redistribution is challenging. First, for many financial products such as mortgages, optimal behavior depends on consumers' risk aversion, economic expectations, and other hard-to-measure variables ([Campbell and Cocco, 2003](#); [Fisher, Gavazza, Liu, Ramadorai, and Tripathy, 2021](#); [Guiso, Pozzi, Tsoy, Gambacorta, and Mistrulli, 2021](#)). To determine what constitutes biased behavior is therefore not straightforward. Second, linking redistribution to individual characteristics requires detailed individual-level data on the costs and benefits of using a financial product, whereas the latter in particular are often unobservable or at least difficult to quantify.

In this paper, we use credit card rewards as an ideal laboratory to study such redistribution between consumers in retail financial markets. Reward credit cards—which offer points, miles, or cash back to cardholders for every dollar spent—are a ubiquitous feature in Anglo-Saxon consumer credit card markets and are also gaining market share in other countries. In 2019, reward credit cards accounted for 60 percent of all new credit

card originations in the United States (CFPB, 2019), with the largest U.S. banks paying \$35 billion in rewards. We use comprehensive credit card data from the Federal Reserve Board's Y-14M reports which encompass the near-universe of accounts in the U.S. This data set contains detailed monthly account-level information and is therefore uniquely suited to study redistribution between different consumers. It allow us to compute a cardholder's monthly net reward, defined as the dollar value received in rewards minus interest and fee payments, which captures both the benefits and the costs of credit card usage.

We start our empirical analysis by investigating whether reward credit cards induce redistribution between consumers across the FICO score distribution. To this end, we compare the outcomes of reward cards to those of similar classic cards across cardholders in the *same FICO and income percentiles*, living in the *same ZIP code*, and who are clients at the *same bank*, while further controlling for an extensive set of card- and consumer-level characteristics.<sup>1</sup> We find that for sub-prime (with a FICO score below 660) and near-prime (660 to 720) cardholders, monthly net rewards are on average \$5.4 and \$6.8 lower, respectively, on reward cards relative to similar classic cards. For prime (720 to 780) and super-prime (above 780) cardholders, monthly net rewards are on average \$7.3 and \$16.0 higher, respectively. This result is driven by both the cost and the benefit margin of net rewards. Super-prime cardholders earn on average \$9.5 in rewards and pay \$7.1 less in interest on reward cards than on classic cards. In contrast, sub-prime consumers earn only \$1.8 in rewards but pay \$6.4 more in interest. Thus, high-FICO cardholders on average earn money with the use of reward cards while low-FICO cardholders on average lose money. In aggregate terms, we find an annualized redistribution of \$15.1 billion induced by credit card rewards.

Next, we study whether the redistribution across FICO scores is driven by differences in cardholders' income, suggesting a transfer from poor to rich consumers. Indeed,

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<sup>1</sup>We adopt the following terminology: "Reward cards" are credit cards that earn either cash back, miles, or points; "classic cards" are credit cards that are do not earn any form of rewards.

credit card rewards are often framed as a “reverse Robin Hood” mechanism in which the poor subsidize the rich.<sup>2</sup> Our results, however, show that this explanation is at best incomplete. Since FICO scores and income are only moderately correlated, as documented in [Beer, Ionescu, and Li \(2018\)](#), we can disentangle these two margins. We find a redistribution from low- to high-FICO consumers regardless of income. While super-prime high-income consumers benefit the most from reward credit cards (\$20.1 in net rewards relative to classic cards), high-income consumers with sub-prime FICO scores on average pay the most (-\$12.8). Meanwhile, super-prime low-income consumers benefit less (\$9.7), but sub-prime low-income consumers also pay less (-\$2.6). Thus, high-income consumers with high FICO scores benefit from reward credit cards largely at the expense of high-income consumers with low FICO scores.

As our findings are inconsistent with the “reverse Robin Hood” hypothesis, we next investigate whether differences in cardholders’ financial sophistication can explain our results. Since FICO scores are based on an individual’s payment history and outstanding debt relative to available credit, they capture the same type of credit card behavior that is associated with a lack of financial sophistication i.e., overindebtedness and sub-optimal repayment behavior. FICO scores might thus serve as a proxy for financial sophistication (e.g. [Agarwal, Rosen, and Yao, 2016](#); [Amromin, Huang, Sialm, and Zhong, 2018](#); [Bhutta, Fuster, and Hizmo, 2021](#)). Our results are consistent with this interpretation.

We first provide quasi-experimental evidence that reward credit cards induce low-FICO consumers to overborrow on their credit cards. To this end, we compare the spending and borrowing responses of consumers who received a *bank-initiated* credit limit increase on reward cards to those who received a limit increase on classic cards. We find that the spending response is stronger for consumers with a limit increase on re-

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<sup>2</sup>See, for example, “Credit Cards Take From Poor, Give to the Rich” in the [Wall Street Journal](#), and more recently “How credit card companies reward the rich and punish the rest of us” at [Brookings](#), and “The ugly truth behind your fancy rewards credit card” at [Vox](#).

ward cards and that this effect is present in all FICO groups. However, while prime and super-prime consumers also exhibit a proportional increase in credit card payments, this is not the case for sub-prime and near-prime consumers. As a result, following a limit increase on reward cards relative to classic cards, unpaid balances increase more for low-FICO consumers, while they remain unchanged for high-FICO consumers. This pattern is consistent with the documented tendency of naïve consumers to overborrow on their credit cards (Heidhues and Kőszegi, 2010; Lusardi and Tufano, 2015) and thus in line with the interpretation of FICO scores as a proxy for financial sophistication.

In a separate exercise, we also show that FICO scores are strongly correlated with mistake-based measures of financial sophistication, as suggested by Calvet, Campbell, and Sodini (2009) and Jørring (2022), and that this association is more pronounced on reward cards. Focusing on individuals with multiple credit cards at the same bank, we follow Ponce, Seira, and Zamarripa (2017) and Gathergood, Mahoney, Stewart, and Weber (2019) and calculate the share of misallocated credit card payments.<sup>3</sup> We find that this share is strongly decreasing in FICO scores and, for sub-prime and near-prime cardholders, larger for reward cards than for similar classic cards. We also show that low-FICO consumers in particular tend to follow a sub-optimal (and costly) balance-matching heuristic when repaying their credit cards. In line with the sub-optimal repayment behavior of naïve consumers (Kuchler and Pagel, 2021), these findings provide further corroborative evidence that the observed redistribution across FICO scores is driven by financial sophistication.

Next, we turn to the supply side and study reward credit cards from the banks' perspective, investigating both pricing strategies and profits. Despite reward cards incurring additional expenses for banks, we find that banks offer lower annual percentage

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<sup>3</sup>Given the total repayment amount, the optimal, interest-minimizing repayment behavior is to first make the minimum required payment on all cards, then repay as much as possible on the card with the highest interest rate, and allocate further payments to subsequently cheaper cards. We calculate the share of misallocated payments as the difference between this optimal and the actually observed payment behavior as a mistake-based measure of financial sophistication.

rates (APRs) on reward cards than on similar classic cards across the entire FICO distribution, suggesting that banks incentivize the use of reward cards. How does this pricing strategy affect banks' profitability of reward and classic cards? We define a bank's profits on a credit card as the sum of income from interest payments, fee payments, and interchange fees, minus reward expenses, realized charge-offs, and funding costs for revolving balances. We find that banks profit from reward cards across all FICO scores, but that profits are highest for near-prime and prime cardholders in the middle of the FICO distribution. We further document substantial differences regarding banks' sources of revenue between high- and low-FICO consumers. For sub-prime cardholders, more than 60 percent of banks' revenues stem from interest income, while for super-prime cardholders, up to 80 percent stem from interchange income.

Finally, we study the geographic distribution of net rewards across ZIP codes and investigate whether the large aggregate transfer induced by credit card rewards is correlated with socio-demographic variables. We find that average net rewards are higher in ZIP codes with higher education levels, with a higher average income, and with a lower share of Black residents. Credit card rewards thus transfer income from less to more educated, from poorer to richer, and from high- to low-minority areas, thereby widening existing spatial disparities.

Our contribution to the literature is threefold. First, we empirically quantify the redistribution from naïve to sophisticated consumers, which has largely been studied theoretically. [DellaVigna and Malmendier \(2004\)](#) and [Heidhues and Kőszegi \(2010\)](#) model the contract design of profit-maximizing firms and show that firms can exploit the time-inconsistent preferences of naïve consumers by charging back-loaded fees. In [Gabaix and Laibson \(2006\)](#) and [Heidhues and Kőszegi \(2017\)](#), products with this type of pricing schemes benefit sophisticated consumers at the expense of naïve consumers and the latter cross-subsidize the former. Two recent papers empirically study such redistribution in the context of mortgage markets. For Italy, [Guiso, Pozzi, Tsoy, Gambacorta,](#)



and Mistrulli (2021) report a subsidy from naïve to sophisticated households of 303 euros per year, induced by banks steering naïve households towards sub-optimal mortgages. For the United Kingdom, Fisher, Gavazza, Liu, Ramadorai, and Tripathy (2021) find that counterfactual mortgage rates without cross-subsidization would be 20 basis points higher than the teaser rates which benefit sophisticated households. Our paper, in contrast, studies redistribution in the credit card market induced by reward programs. Our empirical setting combined with our unique data enable us to readily quantify the costs (interest and fee payments) and, importantly, also the benefits (rewards) of financial product usage in monetary terms, thereby allowing for a straightforward estimation of the redistribution from naïve to sophisticated consumers.

Second, we contribute to the literature on reward credit cards, which has largely focused on interchange fees as a source of funding for credit card rewards. Interchange fees get passed through to merchants, which potentially respond by increasing retail prices for all consumers. Thus, credit card rewards might to some extent be funded by cash and debit card users who pay higher prices without receiving any rewards to compensate. Hayashi (2009) provides a comprehensive overview of the market for credit card reward programs. Schuh, Shy, and Stavins (2010) study the redistribution from cash to credit card users and report an annual monetary transfer of \$149 per cash-using household. Felt, Hayashi, Stavins, and Welte (2020) also study the redistribution from cash to credit card users and find that they imply a transfer from low-income to high-income consumers. The legal literature has also documented this regressive redistribution, relating it to a stronger need for consumer protection (e.g., Levitin, 2008; Sarin, 2019). In contrast, our study focuses on the redistribution within credit card users, which is, as we argue, a more important margin. We show that the relevant transfer is from naïve to sophisticated consumers rather than across income cohorts.

Third, by documenting a large redistribution through credit cards rewards, our analysis contributes to the literature that highlights the role of the financial system in driving

wealth inequality (Lusardi, Michaud, and Mitchell, 2017; Bach, Calvet, and Sodini, 2020; Campbell, Ramadorai, and Ranish, 2019). In particular, our main finding that rewards programs redistribute income from naïve to sophisticated consumers is related to existing studies that link heterogeneity in asset returns with measures of financial literacy (Deuflhard, Georgarakos, and Inderst, 2019) and financial sophistication (Fagereng, Guiso, Malacrino, and Pistaferri, 2020).

## II. Credit Card Rewards Programs

Credit card rewards—in the form of cash back, miles, or points—are loyalty programs by banks which offer various benefits to cardholders per dollar spent on the credit card. Cash back cards refund a small percentage amount of the net purchase volume (usually between 0.5 and 3 percent), while miles and points cards let cardholders accrue bonus points that can be redeemed at frequent flyer programs (miles cards) or, more generally, at partnering airlines, hotels, or retailers (points cards). Reward credit cards are a ubiquitous and increasingly important aspect of consumer finance, accounting for over 60 percent of all new credit card originations in the United States (CFPB, 2019). In 2019, the largest U.S. banks paid out \$35 billion in rewards. For cardholders, credit card rewards are an opportunity to earn money or perks with the use of their credit cards. For banks, credit card rewards are an incentive scheme to induce consumers to adopt and increase the usage of the banks' credit card products (Agarwal, Chakravorti, and Lunn, 2010; Ching and Hayashi, 2010).

Other than the cardholder and the card issuer, the market underlying credit card payments and rewards typically involves three parties: (i) the merchant, (ii) the merchant acquirer, and (iii) the card network.<sup>4</sup> Following Felt, Hayashi, Stavins, and Welte (2020), consider the example of a cardholder making a \$100 purchase with a reward credit card.

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<sup>4</sup>See also Hayashi (2009), Shy and Wang (2011), and Felt, Hayashi, Stavins, and Welte (2020) for further discussion of the underlying market structure of credit card payments and rewards.

This payment initially flows from the cardholder to the card-issuing bank, which in turn rewards the cardholder with, for instance, \$1 in cash back, miles, or points. The card issuer then retains a \$2 interchange fee and sends the remaining \$98 to the merchant acquirer, which in turn pays a \$0.15 network fee to the card network. The merchant acquirer subsequently sends \$97.70 to the merchant, not only passing through interchange and network fees, but also additionally charging a merchant service charge (\$0.15). Thus, merchants only receive a fraction of the initial purchase amount and can potentially respond by increasing retail prices, implying that credit card rewards might to some extent be funded by cash and debit card users who pay higher prices without receiving any rewards to compensate (Schuh, Shy, and Stavins, 2010; Felt, Hayashi, Stavins, and Welte, 2020).

Another source of funding for credit card rewards, however, are interest payments from credit cardholders with unpaid outstanding balances as well as fees e.g., late and overlimit fees. Credit cards as a payment device have become increasingly popular over recent years. While in 2008 cash accounted for over 30 percent of consumer payments and credit cards for only 17 percent, in 2019 the share of credit card payments (25 percent) exceeded the share of cash payments (22 percent) for the first time (Foster, Greene, and Stavins, 2021). Moreover, in 2019, the largest U.S. banks reported \$89.7 billion in interest income and \$9.9 billion in fee income from credit cards, compared to \$41.3 billion income from interchange fees. From the banks' perspective, interest and fees therefore constitute a substantially larger share of income than interchange fees. Overall, the redistribution within credit card users is likely more important than the transfer from cash to card users in recent years.

Contrasting the \$34.8 billion in rewards expenses with the combined \$99.6 billion earned in interest and credit card fees suggests that credit card rewards constitute a substantial annual transfer. These aggregate numbers, however, are neither informative about the extent of the redistribution—since cardholders can simultaneously re-

ceive rewards and pay interest or fees—nor about which type of consumers benefit and lose from using reward credit cards. In this paper, we study these questions using comprehensive and granular data on individual credit card accounts.

### III. Data and Summary Statistics

#### A. Data

We obtain account-level data on consumer credit cards from the Federal Reserve Board's FR Y-14M reports. These reports require large U.S. bank holding companies, with at least \$100 billion in total assets, to report detailed information on individual credit card accounts on a monthly basis. Our data contain information on 19 banks, which cover a large portion of the market and account for 70 percent of aggregate outstanding balances on consumer credit cards (CFPB, 2019). For our main empirical analysis, we obtain data on cardholders' accumulated rewards, interest and fee payments, purchase volumes, FICO credit scores, credit limits, and further card characteristics. We also obtain data on the card issuing bank as well as the cardholders' ZIP code.

Our main outcome variable of interest intends to capture the benefits minus the costs of credit card usage. To this end, we construct the variable *Net Rewards* which subtracts the amount of interest and fees paid on card  $i$  in month  $t$  from the rewards earned on the card during the same period:<sup>5</sup>

$$\text{Net Rewards}_{i,t} = \text{Rewards}_{i,t} - \text{Interest Paid}_{i,t} - \text{Total Fees}_{i,t} \quad (1)$$

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<sup>5</sup>While our dataset does not contain the amount of monthly rewards, we observe the amount of accumulated rewards as of the reporting month net of redeemed rewards. Online Appendix A explains in detail the estimation of monthly rewards from the variables in our dataset. Our data, by construction, do not capture non-pecuniary rewards associated with reward credit cards (e.g., access to airport lounges). In that respect, what we measure is a lower bound of cardholders' net rewards.

Cardholders with positive net rewards thus benefit from the use of credit cards, while cardholders with negative net rewards pay for the use of credit cards.

Our analysis focuses on the cross section of all credit cards in March 2019.<sup>6</sup> We focus on general purpose and private label, unsecured, consumer credit cards with a revolving feature. We further exclude corporate credit cards and closed accounts. This sample construction procedure results in sample of about 238 million credit cards as of March 2019.

## *B. Summary Statistics*

Table I presents card-level summary statistics as of March 2019 for all cards in our sample ( $n=237,573,278$ ), as well as separately for reward cards ( $n^R=119,730,353$ ) and classic cards ( $n^C=117,842,925$ ). Panel A presents variables related to the calculation of net rewards. The average reward card earns \$9 in monthly rewards and the average classic card—by definition—zero. However, reward cards also exhibit on average higher interest charges than classic cards (\$18 versus \$10) and higher fee payments (\$3 versus \$2). Thus, on aggregate, the average reward card yields a (negative) net reward of -\$12—the same as the average classic card.

[Table I about here]

Panel B presents other card-level variables. On average, reward cards have lower APRs than classic cards (18% versus 22%), yield higher bank profits per card in a given month (\$23 versus \$6), and have higher credit limits (\$10 thousand versus \$4 thousand).<sup>7</sup> These card-level differences, however, are not necessarily due to differences between the two types of credit card products, but could conceivably be driven by differences in consumers who choose to use reward cards and classic cards, respectively.

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<sup>6</sup>We focus on March 2019 as a recent month before the COVID-19 pandemic which is also not subject to seasonal effects in consumption (such as December).

<sup>7</sup>We describe the calculation of card-level bank profits in detail in Section VII.B.

Cardholders of reward cards have, on average, higher FICO scores than cardholders of classic cards (743 versus 716) and earn a higher annual income (\$98 thousand vs. \$79 thousand). The remainder of Panel B provides further summary statistics for the control variables in our regressions.

## IV. Redistribution in the Credit Card Market

### A. Empirical Approach

To study the extent to which credit card rewards generate a redistribution between consumers and what drives this redistribution, we compare credit card outcomes between reward cards and classic cards with similar card- and cardholder characteristics across the FICO distribution.

Let  $Y_i$  be an outcome for credit card account  $i$  issued by bank  $b$  to individual  $j$ . Our baseline regression specification is then given by:

$$Y_{ibj} = \sum_F (\delta^F \times \text{Reward Card}_i \times D_j^F) + \alpha_{b,z,w,f} + \sum_m X_i^m + \sum_n Z_j^n + \varepsilon_{ibj} \quad (2)$$

where *Reward Card* is a dummy variable which takes the value 1 for reward cards and 0 for classic cards;  $D^F$  is a battery of FICO bucket dummy variables which take the value of 1 for sub-prime cardholders (with a FICO score below 660), near-prime cardholders (600-720), prime cardholders (720-780), and super-prime cardholders (above 780), respectively. To avoid endogeneity problems arising from the joint determination of net rewards and FICO scores (e.g., due to high unpaid balances), we use FICO scores as of March 2018, one year prior to our data on credit card outcomes.  $\alpha_{b,z,w,f}$  are interacted fixed effects at the Bank  $\times$  ZIP code  $\times$  Income percentile  $\times$  FICO percentile level. That is, we compare credit card outcomes between reward and classic cards for cardholders in the *same FICO percentile*, the *same income percentile*, living in the *same ZIP code*,

which are clients at the *same bank*. We control for the following card-level characteristics  $X$ : the credit limit (in dollar terms), the amount past due (in dollar terms), the age of the card (in years), a joint account indicator which takes the value of 1 if the account has more than one primary obligor, a fraud flag indicator which takes on the value of 1 if the account is currently frozen due to potential fraud, and a workout program indicator which takes on the value of 1 if the account entered into any type of workout program. We further control for cardholder-level characteristics  $Z$ : a deposit relationship indicator which takes on the value of 1 if the cardholder has a deposit relationship with the same bank, a lending relationship indicator which takes on the value of 1 if the cardholder has a lending relationship with the same bank, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator which takes on the value of 1 if the cardholder has completed or is in an ongoing bankruptcy process.

## *B. Net Rewards*

Figure 1 illustrates the magnitude of net rewards across the FICO distribution and point to a clear redistribution between cardholders. For both reward cards and classic cards, average net rewards are increasing in FICO scores, suggesting that low-FICO consumers pay more for credit card usage. The relative magnitudes between the two card types, however, differ substantially across FICO scores. For cardholders with super-prime scores (above 780), net rewards are on average positive for reward cards and slightly negative for classic cards.<sup>8</sup> These consumers earn money with the use of reward cards, as the monetary benefits outstrip their costs. This pattern is reversed for consumers at the lower end of the FICO distribution. For cardholders with sub-prime (below 660) and near-prime (below 720) scores, net rewards are around -\$40 for reward

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<sup>8</sup>Note that the net rewards of classic cards can—by definition—at best be zero if consumers incur no interest or fee payments.

cards and -\$25 for classic cards. On average, low-FICO cardholders lose money with reward cards, both in absolute dollar terms and relative to classic cards.

[Figure 1 about here]

This descriptive pattern might be driven by differences between individuals with low and high FICO scores, regardless of the type of card they use. To control for these differences, Table II present the estimation of Equation (2). All specifications include card- and cardholder control variables. To make the comparison as homogeneous as possible in terms of individual characteristics, we include, alternatively, Bank  $\times$  ZIP code  $\times$  Income percentile (column 1), Bank  $\times$  ZIP code  $\times$  FICO score percentile (column 2), and Bank  $\times$  ZIP code  $\times$  Income percentile  $\times$  FICO score percentile (column 3) fixed effects. All specifications show that net rewards are significantly higher for reward cards than for similar classic cards. The coefficient of our preferred and most stringent specification in column (3) indicates that a reward card, on average, yields a \$3.5 higher net reward than a very similar classic card.

[Table II about here]

This average net reward differential between reward and classic cards, however, masks important differences between cardholders across the FICO distribution. Taking the specification in column (3) as our baseline, column (4) reports the differences in net rewards between reward and classic cards, separately for sub-prime, near-prime, prime, and super-prime cardholders. Consistent with Figure 1, net rewards for sub-prime and near-prime cardholders are between \$5.4 and \$6.8 lower on reward cards than on similar classic cards. On the other end of the FICO distribution, net rewards turn positive and are, on average, \$7.3 and \$16.0 higher for prime and super-prime cardholders, respectively. Thus, while reward cards are more beneficial than classic cards on average,



only high-FICO consumers gain from them, while low-FICO consumers would be better off choosing classic cards, other things equal.<sup>9</sup>

**Robustness.** While our baseline results compare very similar cardholders by using a granular set of fixed effects, our results could still be driven by remaining heterogeneity across cards and cardholders. As shown in Table I, reward cards tend to have lower APRs and higher credit limits than classic cards. Individuals might therefore chose to hold reward cards to access more credit at a cheaper price and our results might be driven by such differences in consumer preferences. To alleviate these concerns, columns (1) and (2) of Table III augment our baseline specification with credit limit percentile and APR percentile fixed effects. While the sample size is now substantially smaller, due to the increased number of fixed effects, we obtain significant and qualitatively similar results, albeit smaller in magnitude. In columns (3) and (4), we replicate our baseline specification on the sample used in columns (1) and (2) and find that the change in magnitudes is largely driven by sample selection effects.

[Table III about here]

Our dataset further contains a unique individual identifier within banks which allows us to compare credit card outcomes between reward and classic cards within the same cardholder  $j$ . Restricting our sample to the set of individuals who own at least one reward card and one classic card at the same bank, we can estimate our baseline specification with cardholder fixed effects, thus comparing the outcomes of reward and classic cards *within the same individual*. As shown in columns (5) and (6) of Table III, we obtain quantitatively similar results as in our baseline specification in Table II. One limitation of our dataset is the impossibility to track individuals across banks. Thus, the interpretation of these results is subject to the caveat that individuals might hold additional,

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<sup>9</sup>To show that our regression results are not driven by our threshold values for the different FICO buckets, Figure A1 in Online Appendix C provides a coefficient plot which plots the coefficients  $\delta^F$  alongside the 95% confidence intervals when estimating Equation (2) with 50 instead of 4 different FICO buckets.

unobserved credit cards at other banks. Furthermore, while the within-individual comparison has the advantage of controlling for all unobservable individual heterogeneity (like differences in tastes and preferences), it ignores the potential spillover effects that other (reward or classic) credit cards could have on the outcomes of the observed cards.

**Aggregate redistribution.** Our results show that credit card rewards induce a redistribution from low- to high-FICO consumers. To illustrate the aggregate size, we sum up the net rewards of reward cards with positive and of reward cards with negative net rewards, both across all cardholders and within each FICO bucket. The economic magnitude is substantial. Cardholders with negative net rewards in aggregate pay \$4.1 billion for the use of reward cards and cardholders with positive net rewards earn \$1.3 billion.<sup>10</sup> The monthly \$1.3 billion positive net rewards translate into an annualized redistribution of \$15.1 billion induced by reward credit cards. Of the \$4.1 billion that are paid by cardholders with negative net rewards, \$1.0 billion come from sub-prime, \$1.6 billion from near-prime, \$1.1 billion from prime, and only \$0.4 billion from super-prime cardholders. Of the \$1.3 billion earned by cardholders with positive net rewards, only \$35 million go to sub-prime, \$134 million to near-prime, \$407 million to prime, and \$680 million to super-prime cardholders. Thus, while sub-prime and near-prime cardholders are the largest source of funding for credit card rewards, prime and super-prime cardholders are the biggest beneficiaries. Reward credit cards therefore constitute a substantial aggregate transfer from low- to high-FICO score consumers.

### *C. Net Rewards Components*

We next examine the three individual components of net rewards—rewards, interest charges, and total fee charges. The differences in net rewards along the FICO distribution suggests that these costs and benefits also vary across FICO scores. Figure 2 illus-

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<sup>10</sup>Table AI in Online Appendix D summarizes our aggregate findings. The difference of \$2.9 billion constitutes bank income. We study the banks' perspective on reward credit card in Section VII.

trates that this is the case. Rewards are increasing in FICO scores (Panel A) and highest for super-prime cardholders, whereas interest charges are hump-shaped in FICO scores (Panel B) and lowest for super-prime cardholders.<sup>11</sup> While interest charges are generally higher for reward cards than for classic cards, this difference is largest for near-prime cardholders in the left part of the distribution.

[Figure 2 about here]

We substantiate this descriptive evidence by estimating Equation (2) with rewards, interest charges, and total fee charges as outcome variables. Results are shown in Table IV. Rewards are on average \$6.4 higher on reward cards than on classic cards (column 1) but this difference increases along the FICO distribution, ranging from \$1.8 for sub-prime cardholders to \$9.5 for super-prime cardholders (column 2). High-FICO consumers do not only earn more money in rewards, they also incur lower interest charges. For sub-prime and near-prime cardholders, interest charges are on average \$6.4 and \$10.9 higher on reward cards than on similar classic cards, while for super-prime cardholders interest charges are \$7.1 lower (column 4). Finally, fee charges are economically less relevant: the difference between reward and classic card is less than a US dollar and is quite similar along the FICO distribution (columns 5 and 6). These results show how high-FICO consumers rake in the benefits while avoiding the costs of reward credit cards and therefore profit from usage, while low-FICO consumers incur high costs due to high interest charges.

[Table IV about here]

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<sup>11</sup>Figure A3 in Online Appendix C additional illustrates total fee charges, which are substantially smaller in magnitude relative to interest charges.

## V. The Reverse Robin Hood Hypothesis

We next investigate whether differences in net rewards across FICO scores are driven by underlying differences in cardholders' income, which would suggest a redistribution from poor to rich consumers. If FICO scores are positively correlated with income and high-income consumers spend more money, then they will earn higher rewards. Indeed, in the financial press, credit card rewards are often framed as a “reverse Robin Hood” mechanism in which the “poor foot much of the bill for credit card points, miles, and cash back” (Stewart, 2021).<sup>12</sup>

Our results, however, show that this explanation is at best incomplete. First, FICO scores and income are only moderately correlated, as documented in Beer, Ionescu, and Li (2018). This allows us to study net rewards across the FICO distribution within different income groups.<sup>13</sup> We split cardholders into terciles of low-income cardholders with an annual income below \$44 thousand, middle-income cardholders with an annual income between \$44 thousand and \$79 thousand, and high-income cardholders with an annual income above \$79 thousand.

Figure 3 illustrates the magnitude of net rewards for reward cards across the FICO distribution for the three income groups.<sup>14</sup> All income groups exhibit a pattern similar to what is observed in the whole sample, suggesting that FICO scores still play a key role in shaping the distribution of net rewards, regardless of income. For super-prime individuals, the distribution of average net rewards across income groups is consistent with a “reverse Robin Hood” hypothesis. High-income consumers with high FICO

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<sup>12</sup>See also “Credit Cards Take From Poor, Give to the Rich” (Derby, 2010) in the Wall Street Journal.

<sup>13</sup>Figure A4 shows that, while the distributions of FICO scores shifts to the right when moving from low- to high-income cardholders, they strongly overlap, suggesting that within given FICO buckets there are individuals with very different income levels.

<sup>14</sup>For ease of exposition, Figure 3 only plots net rewards for reward cards. Panel A of Figure A5 in Online Appendix C additionally plots net rewards for classic cards. Additionally, Panel B of Figure A5 shows the coefficient plot which traces the coefficients  $\delta^F$  alongside the 95% confidence intervals when estimating Equation (2) with 50 instead of 4 different FICO buckets for the three different income buckets, respectively. Figure A6 further illustrates the magnitude of net rewards across income percentiles, showing that there is no clear pattern in net rewards across the income distribution.

scores benefit the most from reward credit cards compared to mid- and low-income consumers with high FICO scores. At the lower end of the FICO distribution, however, this pattern is reversed. On average, net rewards are far more negative for high-income consumers with low FICO scores than for middle- and low-income consumers with low FICO scores.

[Figure 3 about here]

Table V shows that these patterns hold when including the granular set of fixed effects used in the baseline analysis and controlling for card- and cardholder-specific characteristics. Columns (1), (3), and (5) show that net rewards are higher for reward cards than for classic cards in all income groups. While average net rewards are increasing with income, they remain positive also in the bottom tercile of the income distribution (\$1.9), inconsistent with the narrative that the poor pay for the positive net rewards of the rich. Instead, columns (2), (4), and (6) show that the relevant redistribution occurs from low- to high-FICO cardholders, regardless of the income level. In fact, sub-prime cardholders in the highest income tercile have more negative net rewards (-\$12.7) than sub-prime cardholders in the middle-income (-\$4.9) and low-income tercile (-\$2.6), respectively. By contrast, prime and super-prime cardholders exhibit positive net rewards across all income groups. High-income super-prime cardholders earn on average \$20.1 in net rewards, while middle- and low-income super-prime cardholders earn on average \$13.6 and \$9.7, respectively.

[Table V about here]

The combined results in Figure 3 and Table V show that, on average, high-income consumers with high FICO scores benefit from reward credit cards largely at the expense of high-income consumers with low FICO scores.<sup>15</sup> Hence, our findings are not primar-

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<sup>15</sup>Table A4 in Online Appendix D further substantiates this finding by showing very similar results for the top 10% and 5% of the income distribution, respectively.

ily driven by income and therefore inconsistent with a “reverse Robin Hood” mechanism.

## **VI. Credit Card Rewards and Financial Sophistication**

We next investigate whether our results can be explained by underlying differences in financial sophistication. Financial sophistication refers to the ability of consumers to make informed decisions and avoid mistakes in the use of financial products (Calvet, Campbell, and Sodini, 2009; Lusardi and Mitchell, 2014). Conversely, low financial sophistication is often linked to behavioral biases, such as over-indebtedness (Meier and Sprenger, 2010; Gathergood, 2012) and sub-optimal repayments (Kuchler and Pagel, 2021). The financial behavior of consumers is reflected in their FICO scores, which are largely based on an individual’s payment history and outstanding debt relative to available credit.<sup>16</sup> Consequently, individuals with higher (lower) FICO scores have been found to incur lower (higher) interest payments, fee payments, and charge-offs (Agarwal, Chomsisengphet, Mahoney, and Stroebel, 2015). FICO scores thus capture the same type of credit card behavior that is associated with a lack of financial sophistication, namely overindebtedness and sub-optimal repayment behavior. Therefore, a large stream of the existing literature uses FICO scores as a measure for financial sophistication (Agarwal, Rosen, and Yao, 2016; Amromin, Huang, Sialm, and Zhong, 2018; Bhutta, Fuster, and Hizmo, 2021).

### *A. Overindebtedness*

We first study whether reward cards induce consumers to incur higher levels of unpaid balances relative to classic cards and whether, consistent with the interpretation of FICO scores as a proxy measure for financial sophistication, this effect is stronger

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<sup>16</sup><https://www.myfico.com/credit-education/whats-in-your-credit-score>

for low-FICO cardholders. While there is anecdotal evidence that reward cards induce higher spending and borrowing, causal identification of such an effect is empirically challenging.<sup>17</sup> The ideal experiment would randomly assign a reward feature to a classic card and then track changes in credit card outcomes over time. We approximate this experiment by studying the differential spending and borrowing responses of reward and classic cards to increases in credit card limits and therefore an increase in credit supply (Gross and Souleles, 2002; Aydin, 2022).

We collect all credit cards which received a *bank-initiated* credit limit increase in March 2019, the month of our cross-sectional analysis.<sup>18</sup> We then obtain data on spending, repayments, and unpaid balances for these cards in a 1-year time window around the credit limit increase and compare the outcome changes of reward cards to the outcome changes of classic cards in a standard difference-in-differences setting:

$$\Delta Y_{i(\pm 6m)} = \sum_F (\delta^F \times \text{Reward Card}_i \times D^F) + \alpha_{z,b} + \sum_m X_i^m + \sum_n X_j^n + \varepsilon_i \quad (3)$$

The dependent variable is the change in average spending, repayments, or unpaid balances between the 6-month period before and the 6-month period after the credit limit increase. We calculate credit card outcomes by aggregating over all cards owned by the individual which received a credit limit increase.<sup>19</sup> As in Equation (2), *Reward Card* takes the value 1 for reward cards and 0 for classic cards, and  $D^F$  is a set of FICO bucket dummy variables for sub-prime cardholders (with a FICO score below 660), near-prime cardholders (600-720), prime cardholders (720-780), and super-prime cardholders (above 780). We include Bank  $\times$  ZIP code fixed effects, the standard set of card- and cardholder-

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<sup>17</sup>For example, the popular comparison website [Finder](#) warns that “the potential for travel perks, cash back and bonus points could cause you to spend more than normal, potentially resulting in high fees and interest on those purchases”. Similarly, a recent article on [nasdaq.com](#) cautions against “consistently overspending in the hopes of getting rewards”.

<sup>18</sup>Our dataset allows us to distinguish between credit limit increases initiated by the bank and those requested by the cardholder. We focus on the former to rule out anticipated changes in spending and borrowing.

<sup>19</sup>Table A6 in Online Appendix D provides a robustness check which only considers the cards with a credit limit increase, finding qualitatively similar results.

level control variables, and further income, FICO scores, spending, and payments, all measured by their pre-treatment averages.<sup>20</sup>

Table VI presents the estimation results of Equation (3) with spending, repayments, and unpaid balances as outcome variables. Across all cardholders in our sample, we find that the spending response to a credit limit increase is higher on reward than on similar classic cards (column 1). The difference is economically meaningful and amounts to \$76, which corresponds to about 9% of average monthly spending. We also find a differential increase in repayments, albeit smaller in magnitude (\$32, column 3). As a result, unpaid balances on reward cards increase compared to similar classic cards (\$19), suggesting that an increase in credit limits on reward cards induces consumers to overborrow relative to classic cards.

[Table VI about here]

As before, these average results mask important differences across the FICO distribution. While credit limit increases on reward cards induce all cardholders to spend more, with the effect being larger for high-FICO consumers (column 2), only prime and super-prime cardholders also increase their repayments (column 4). In contrast, for low-FICO consumers the increase in payments is statistically insignificant and close to zero in magnitudes. As a result, credit limit increases on reward cards yield a significant increase in unpaid balances for sub-prime (\$33.8) and near-prime (\$25.3) consumers, while unpaid balances do not change significantly for high-FICO consumers (column 6). These results suggest that credit card rewards induce sub- and near-prime consumers to overspend and subsequently overborrow on their credit cards, consistent with the interpretation of FICO scores as a measure for financial sophistication (Grubb, 2015; Lusardi and Tufano, 2015).

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<sup>20</sup>As our sample is now limited to cards with a credit limit increase in March 2019, we cannot estimate the model with the same set of granular fixed effects used in the baseline analysis, as such a specification would yield a very small and non-representative sample.



## *B. Sub-Optimal Repayment Behavior*

A recent stream of literature further attempts to quantify the financial sophistication of households by measuring the extent to which they make well-defined mistakes in the use of financial products (Calvet, Campbell, and Sodini, 2009; Jørring, 2022). Specifically, we follow Ponce, Seira, and Zamarripa (2017) and Gathergood, Mahoney, Stewart, and Weber (2019) and calculate the share of misallocated repayments for consumers with multiple credit cards at the same bank.<sup>21</sup> This measure can be interpreted as the share of payments that were incorrectly made on a cheaper card that should have been made on more expensive cards.

We first plot the share of misallocated payments at the borrower level across the FICO distribution, aggregated over both reward cards and classic cards. Panel A of Figure 4 shows that misallocated payments are decreasing in FICO scores, consistent with high-FICO consumers being more financially sophisticated. Panel B of Figure 4 further shows that misallocated payments are higher on reward cards, especially for low-FICO consumers. For super-prime cardholders, the misallocated payment share is as low as 6 percent on both reward cards and classic cards. Sub-prime cardholders, in contrast, misallocate up to 14 percent of all credit card repayments on reward cards and around 8 percent on classic cards.

[Figure 4 about here]

We next estimate Equation (2) with the share of misallocated payments as the outcome variable. Table VII presents the results for this analysis when imposing increasingly stricter sample restriction criteria. In the most restrictive sample in columns (5) and (6), we consider cards with different APRs owned by individuals with at least two cards with unpaid balances, who made minimum payments on all cards, and more than

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<sup>21</sup>The optimal repayment rule is to first make the minimum payment due on all cards, then pay off in full the card with the highest APR, and subsequently pay off cheaper cards in order of their APRs. The misallocated payment share is the difference between optimal and actual payments as a share of total payments. We describe the calculation of the misallocated payment share in detail in Online Appendix B.

the minimum on at least one card. In this sample, we find that the share of misallocated payments is almost 2 percentage points higher on reward than on classic cards (column 5). This result is exclusively driven by low-FICO cardholders. While we find a 4.2 percentage point higher share of misallocated payments on reward cards for sub-prime cardholders, there is no significant difference between reward and classic cards for prime- and super-prime cardholders. Thus, reward cards do not only induce low-FICO consumers to overborrow, but also to engage in sub-optimal repayment behavior. These results also hold true when relaxing some of the sample restrictions (columns 1-4).<sup>22</sup>

[Table VII about here]

Finally, we follow [Gathergood, Mahoney, Stewart, and Weber \(2019\)](#) and show that cardholders follow a sub-optimal balance-matching heuristic when repaying their credit cards. Rather than optimally allocating repayments across cards based on their APRs, individuals tend to repay their cards proportional to outstanding balances. We calculate the theoretical repayment amount based on three different rules: (i) the optimal repayment rule, (ii) the balance-matching heuristic, and (iii) an equal allocation across all cards (the 1/N heuristic). As shown in Panel A of Table VIII, actual payments are most strongly correlated with the balance-matching heuristic, in line with [Gathergood, Mahoney, Stewart, and Weber \(2019\)](#). Again, there is substantial heterogeneity across FICO scores. We find that the correlation between actual payments and the balance-matching heuristic is stronger for sub-prime (Panel B) and near-prime (Panel C) cardholders, while prime (Panel D) and super-prime (Panel E) cardholders exhibit repayment behavior most strongly correlated with the optimal allocation rule. Thus, sub-optimal repayment behavior tends to be more severe for low-FICO consumers.

[Table VIII about here]

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<sup>22</sup>Results are also robust to restricting the sample to individuals with only two cards—see Table A7 in Online Appendix D.

Overall, our findings in Section VI are consistent with the hypothesis that reward cards exploit the over-borrowing and sub-optimal repayment behavior of low-FICO consumers and that FICO scores are a reasonable proxy measure for financial sophistication. Our results therefore suggest that credit card reward programs induce a redistribution from naïve to sophisticated consumers. This interpretation of our results warrants some discussion. While we define financial sophistication as the ability of consumers to avoid mistakes in the use of financial products (Calvet, Campbell, and Sodini, 2009), we remain agnostic regarding the source of this ability. A lack of financial sophistication might therefore reflect individuals' unawareness about their time-inconsistent preferences (DellaVigna and Malmendier, 2004), low levels of financial literacy due to low educational attainment (Lusardi and Mitchell, 2014), attentional neglect due to resource scarcity (Shah, Mullainathan, and Shafir, 2021), or a combination thereof. These factors all yield a higher propensity for individuals to make financial mistakes, but disentangling these factors is beyond the scope of this paper.

## **VII. The Banks' Perspective: Pricing and Profits**

Our analysis so far focuses on the perspective of cardholders. In this section, we investigate the perspective of banks and study both their pricing strategies and profits in the credit card market, both across card types and across the FICO distribution.

### *A. Pricing*

We first study the interest rates offered by banks on reward cards relative to comparable classic cards. Panel A of Figure 5 shows that the average annual percentage rate

(APR) of interest on reward cards is systematically lower than interest rates on classic cards across the entire FICO distribution.<sup>23</sup>

[Figure 5 about here]

This pattern is confirmed in our standard regression setting, estimating Equation (2) with APRs as the outcome variable. Columns (1) and (2) of Table IX present the results. Across all cardholders, APRs on reward cards are on average 1.0 percentage points lower than on comparable classic cards. This interest rate differential between reward and classic cards is larger for high- than for low-FICO cardholders. For sub-prime cardholders, banks on average offer 0.2 percentage points lower interest rates on reward cards, while for super-prime cardholders the difference is 1.7 percentage points. This evidence indicates that banks incentivize consumers to adopt reward cards by offering better pricing term.

[Table IX about here]

## B. Bank Profits

At *prima facie*, offering lower interest rates on reward cards than on comparable classic cards to increase the number of reward cards may not appear as a profit-maximizing strategy. However, the evidence on higher interest and fee charges for reward cards (Figure 2) suggests that, even if with lower prices, these products could generate more profits for banks. To investigate more formally how this pricing strategy translates into profitability, we define a bank's profit on credit card  $i$  as:

$$\text{Profit}_i = \text{Interest Paid}_i + \text{Total Fees}_i + \text{Interchange Income}_i \quad (4)$$

$$- \text{Rewards}_i - \text{Realized Charge-Offs}_i - \text{WACC} \times \text{Unpaid Balances}_i \quad (5)$$

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<sup>23</sup>Given that all credit card accounts in the sample are initiated at least 12 months prior to March 2019, the lower APR on reward cards relative to classic cards does not reflect zero or low APRs during potential promotional periods.

The variables *Interest Paid*, *Total Fees*, and *Rewards* are defined as in Section III. Whereas interest and fees represent payments from the cardholder's perspective, they represent income from the bank's perspective. Conversely, whereas rewards represent income from the cardholder's perspective, they represent costs from the bank's perspective. Our analysis of bank profitability also introduces three new terms which are not included in the previous analysis: *Interchange Income*, *Realized Charge-Offs*, and  $WACC \times \text{Unpaid Balances}$ . As discussed in Section II, when consumers pay with their credit card, banks charge an interchange fee from the merchant acquirer, which generally ranges from 1 to 3 percent of the purchase price (GAO, 2009). We assess interchange income at the card level to be 1.5 percent of the purchase volume for classic cards and 2.5 percent for reward cards. Realized charge-offs are an expense incurred by the bank on accounts that remain delinquent for 180 days and for which the outstanding balance can no longer be considered an asset on the balance sheet (CFPB, 2019). From the cardholder's perspective, charge-offs do not matter for the net cash flow on a credit card. From a bank's perspective, however, realized charge-offs are an important determinant of the ex-post profitability of an account and we therefore include them in the definition of banks' profits. The third term captures banks' cost of financing revolving credit card balances. We assess these costs at a conservative 5 percent weighted average cost of capital (WACC).

Panel B of Figure 5 shows that bank profits are hump-shaped in FICO scores and substantially higher on reward than on classic cards across the entire FICO distribution. Columns (3) and (4) of Table IX present the estimation results of Equation (2) with bank profits as the outcome variable. Across all cardholders, bank profits are about \$7.4 higher on reward cards than on comparable classic cards. While banks profit from reward cards across the entire FICO distribution, profits are not uniformly distributed, as shown in column (4). We find that bank profits per card are highest for near-prime (\$15.3) and prime (\$9.0) cardholders in the middle of the FICO distribution. For sub-

prime cardholders, which tend to incur the highest charge-offs, profits are also higher on rewards cards, but with the differential being smaller in magnitude (\$4.1). For super-prime cardholders, which tend to earn a lot of rewards and also incur low interest payments, bank profits are only \$1.3 higher on reward than on classic cards. Thus, from the banks' perspective, near-prime and prime cardholders are the largest source of profits in the market for reward credit cards.

There are also substantial differences in banks' sources of revenue across the FICO distribution. Figure 6 illustrates the average revenue share of interest income, fee income, and interchange income as a percentage of total card revenue across the FICO distribution. For low-FICO cardholders, banks' revenues largely stem from interest income. For high-FICO cardholders, on the other hand, banks' revenues largely stem from interchange income. Fee income represents the smallest revenue source of banks across the FICO distribution.

[Figure 6 about here]

## **VIII. The Geography of Net Rewards**

Our analysis so far focuses on the redistribution from naïve to sophisticated consumers at the individual level. In this section, we focus on the aggregate implications and analyze the reward-induced redistribution across regions in the United States.

Figure 7 plots the average net reward (Panel A) and the average FICO score (Panel B) across counties. The figure illustrates the high level of spatial correlation between the two variables and confirm, at the aggregate level, the redistribution from naïve to sophisticated consumers in the credit card market. Regions with high average net rewards (the northeast, the north, and the west coast) tend to be regions with high average FICO scores. Conversely, regions with low average negative net rewards (the south) tend to be regions with low average FICO scores.

[Figure 7 about here]

A relevant concern is whether this redistribution is penalizing areas with specific socio-demographic characteristics, potentially widening existing spatial disparities. To answer this question we regress card-level net rewards on various ZIP code-level characteristics and estimate the following regression specification:

$$\text{Net Reward}_{i,z} = \sum_k \beta^k X_z^k + \gamma \times \overline{\text{CreditScore}}_z + \varepsilon_{i,z} \quad (6)$$

where the outcome variable is the net reward of card  $i$  in ZIP code  $z$  and where  $X_z^k$  are the following ZIP code-level characteristics: i) the percentage of residents with a high school diploma (but no more), as a measure for low educational attainment; ii) the median individual income; and iii) the percentage of residents who report their race as Black or African American. Since these socio-demographic characteristics are likely correlated with average FICO score, we report all coefficients with and without controlling for the average FICO score in ZIP code  $z$ .

As shown in columns 1,3, and 5 of Table X, higher net rewards are associated with a higher level of educational attainment, with a higher median income, and with a lower share of Black residents. These results suggest that credit card rewards are a potential channel that can exacerbate existing socio-economic disparities across regions in the United States, as they imply a transfer from less to more educated, from poorer to richer, and from high- to low-minority areas, thereby widening existing spatial disparities.<sup>24</sup> Columns 2,4, and 6 illustrate that all coefficients become statistically insignificant and close to zero in magnitude when controlling for a ZIP code's average FICO score, indicating that differences in financial sophistication are the underlying mechanism driving our geographical results.

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<sup>24</sup>Although FICO scores and income are only moderately correlated, as discussed in Section V, high FICO scores are still more prevalent among high-income cardholders, as shown in Figure A4. Thus, while our card-level results are not driven by differences in income, we still find a positive correlation between net rewards and income in our aggregate ZIP code-level analysis.

[Table X about here]

## **IX. Conclusion**

Credit card reward programs provide an ideal laboratory to study the redistribution across consumers in retail financial markets. Using comprehensive and granular data from the Federal Reserve's Y-14M reports, we find that high-FICO consumers benefit from reward programs at the expense of low-FICO consumers and estimate an annual redistribution of of \$15.1 billion. This redistribution is driven by both the cost and the benefit margin of reward credit cards. Super-prime and prime consumers spend more money and thus earn higher rewards, but they also pay back their balances in time and thus incur lower interest payments. Conversely, sub-prime and near-prime consumers earn lower rewards and incur higher interest payments due to higher outstanding balances on reward cards.

Notably, our results are not driven by income, as they hold within the sub-samples of low-, middle- and high-income individuals. In particular, high-FICO high-income consumers benefit the most from reward credit cards, but they do so at the expense of low-FICO high-income consumers. While credit card rewards are often framed as a "reverse Robin Hood" mechanism in which the poor subsidize the rich, our results show that this explanation is at best incomplete.

We rationalize our findings in terms of financial sophistication, meaning that reward cards constitute a redistribution from naïve to sophisticated consumers. We argue that FICO scores can be interpreted as a measure of financial sophistication and, consistent with that, we show that FICO scores are correlated with consumers' financial mistakes. First, we provide quasi-experimental evidence that reward credit cards induce low-FICO consumers to overborrow on their credit cards. Second, we show that FICO scores are



strongly correlated with the share of misallocated credit card payments, especially for sub-prime and near-prime cardholders.

We further show that banks incentivize consumers to use reward cards by offering lower interest rates than on comparable classic cards. Banks profits from reward cards are highest for near-prime and prime consumers in the middle of the FICO distribution.

We conclude by documenting that the costs and benefits of credit card rewards are unequally distributed across geographies in the United States. Credit card rewards transfer income from less to more educated, from poorer to richer, and from high- to low-minority areas, thereby widening existing spatial disparities.

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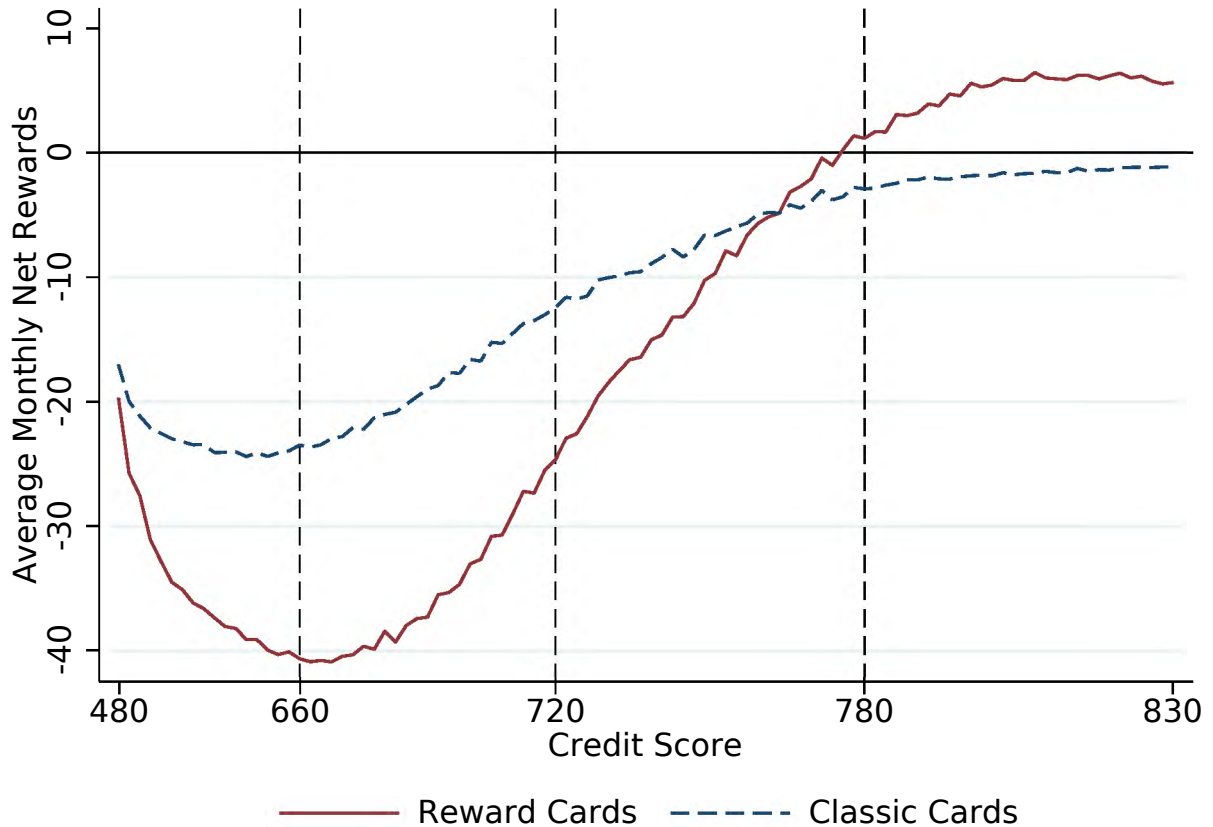
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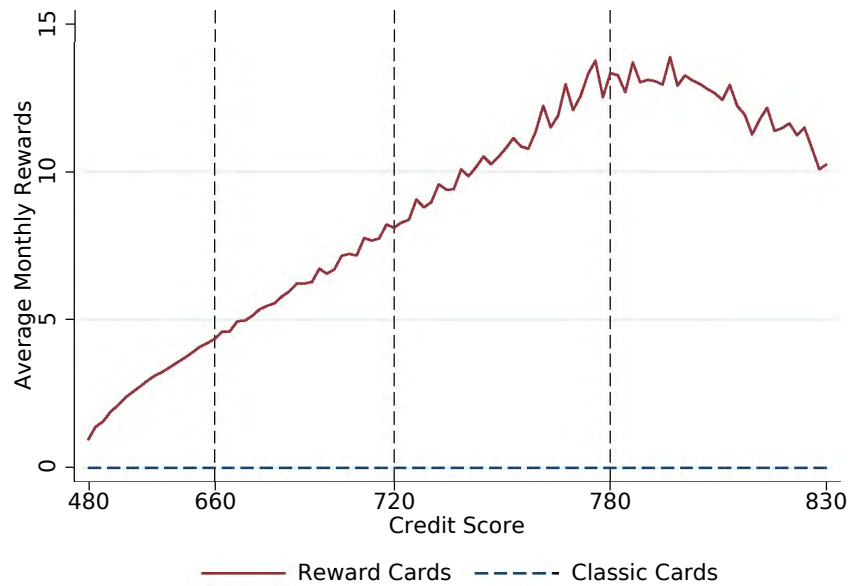
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**Figure 1. Net Rewards Across FICO Score Percentiles.** This figure illustrates the dollar magnitude of average net rewards across the FICO distribution, separately for reward cards (solid red line) and classic cards (dashed blue line). For each card type, we plot the average net reward for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

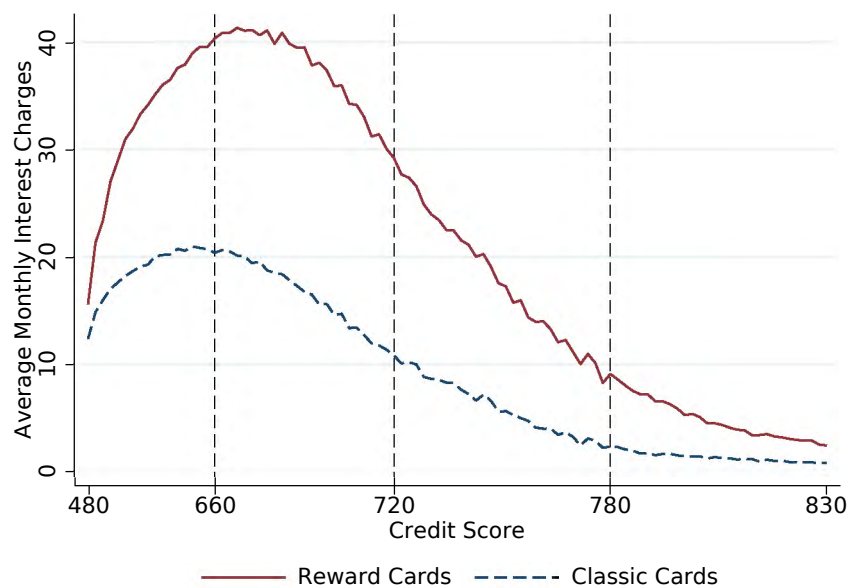


**Figure 2. Net Reward Components Across FICO Score Percentiles.** This figure illustrates the dollar magnitude of average rewards (Panel A) and interest charges (Panel B) across the FICO distribution, separately for reward cards (solid red line) and classic cards (dashed blue line). For each card type, we plot the average reward and interest charges for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

(A) Rewards

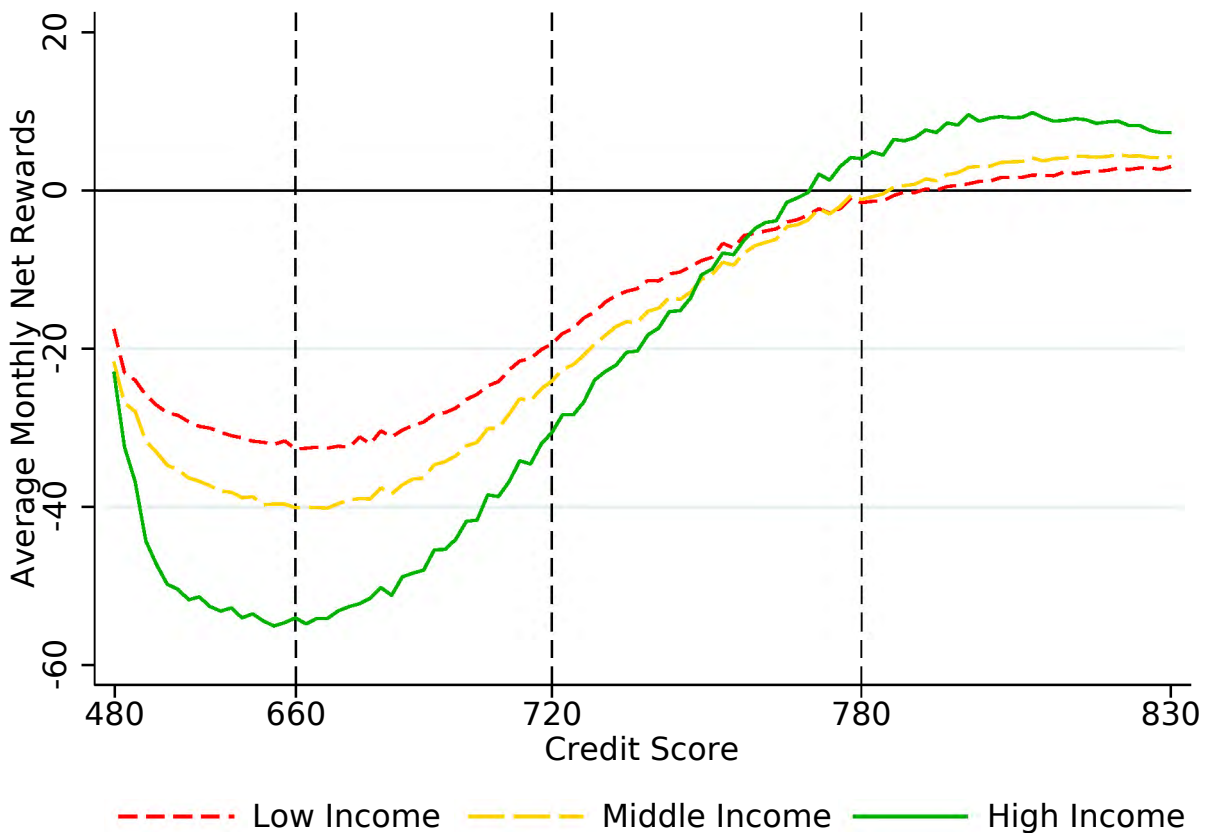


(B) Interest Charges



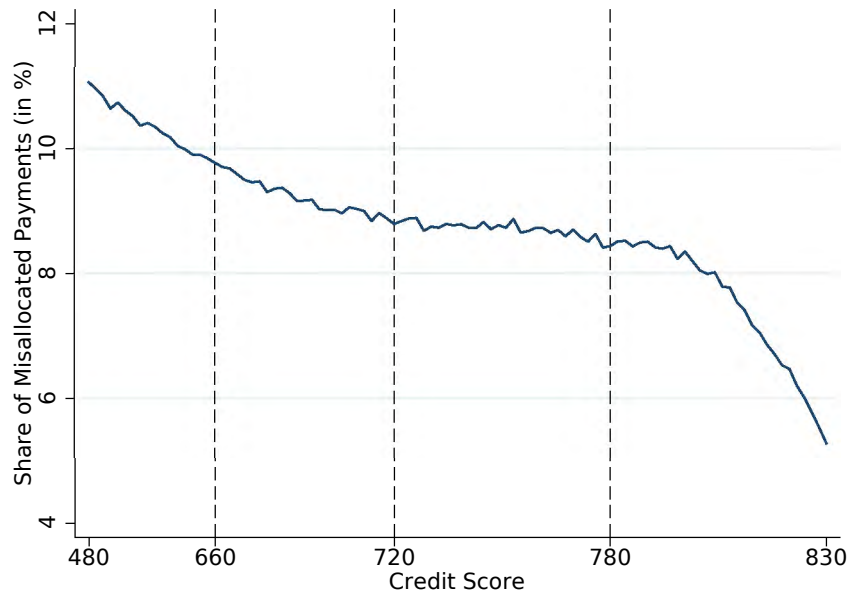


**Figure 3. Net Rewards Across FICO Score Percentiles by Income Groups.** This figure illustrates the dollar magnitude of average net rewards on reward cards across the FICO distribution by income groups. The red line plots the average net reward for borrowers with an annual income below 44 thousand, the yellow line for borrowers with an annual income between 44 thousand and 79 thousand, and the green line for borrowers with an annual income above 79 thousand. For each income group, we plot the average net reward (in dollar) for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

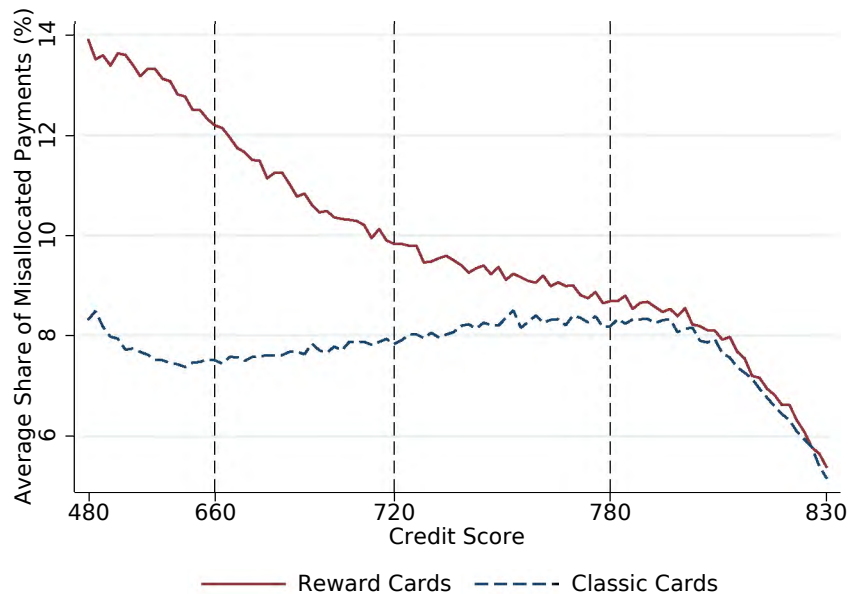


**Figure 4. Share of Misallocated Payments Across FICO Score Percentiles.** This figure illustrates the average percentage share of misallocated payments across the FICO distribution at the borrower level (Panel A) and separately for reward cards (solid red line) and classic cards (dashed blue line) (Panel B). In each panel, we plot the average share of misallocated payments for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our sample of 34 million credit cards of borrowers who hold multiple credit cards at the same bank in March 2019.

(A) Borrower Level

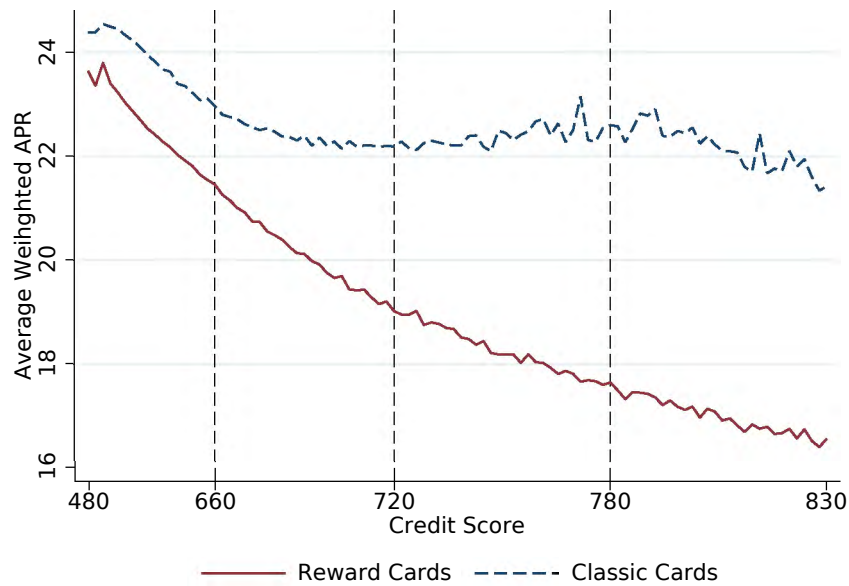


(B) Reward Cards versus Classic Cards

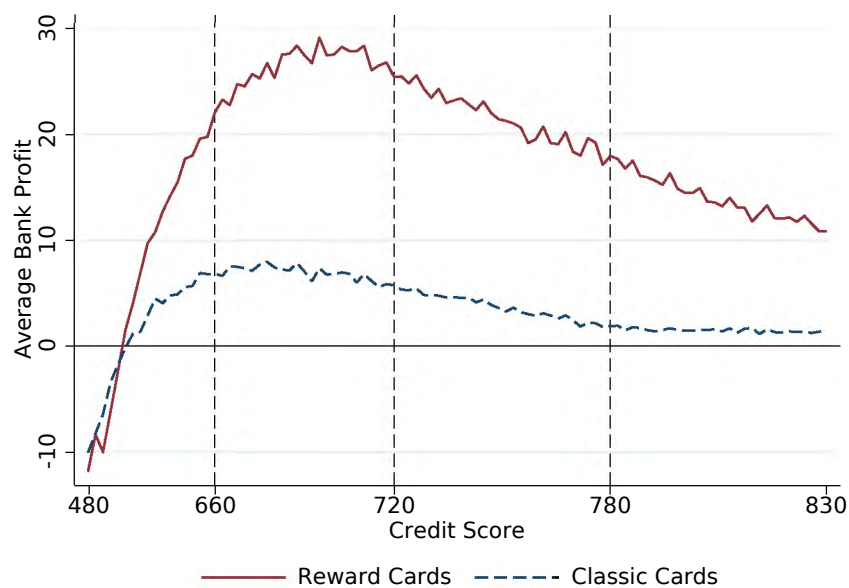


**Figure 5. APRs and Bank Profits Across FICO Score Percentiles.** This figure illustrates the average annual percentage rate (APRs) (Panel A) and the average dollar magnitude of bank profits per card (Panel B) across the FICO distribution, separately for reward cards (solid red line) and classic cards (dashed blue line). For each card type, we plot the average APR and bank profit for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

(A) APRs

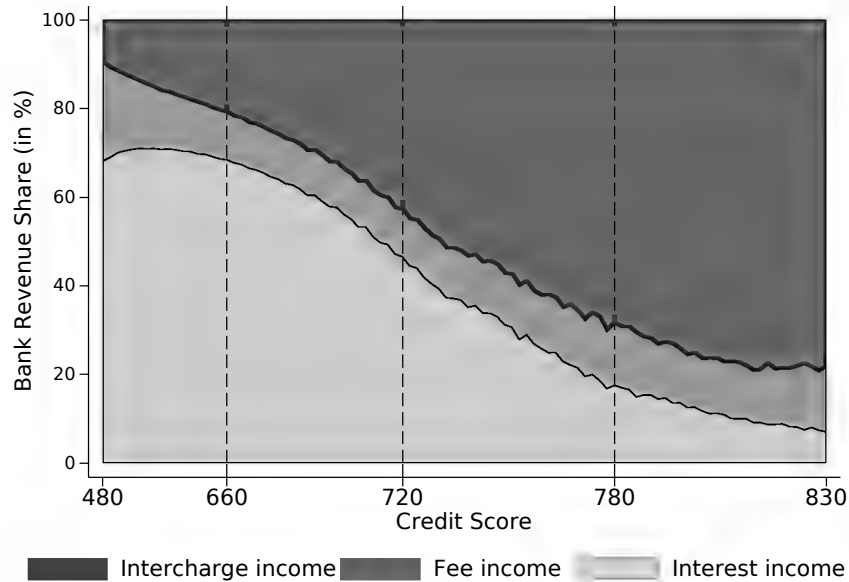


(B) Bank Profits

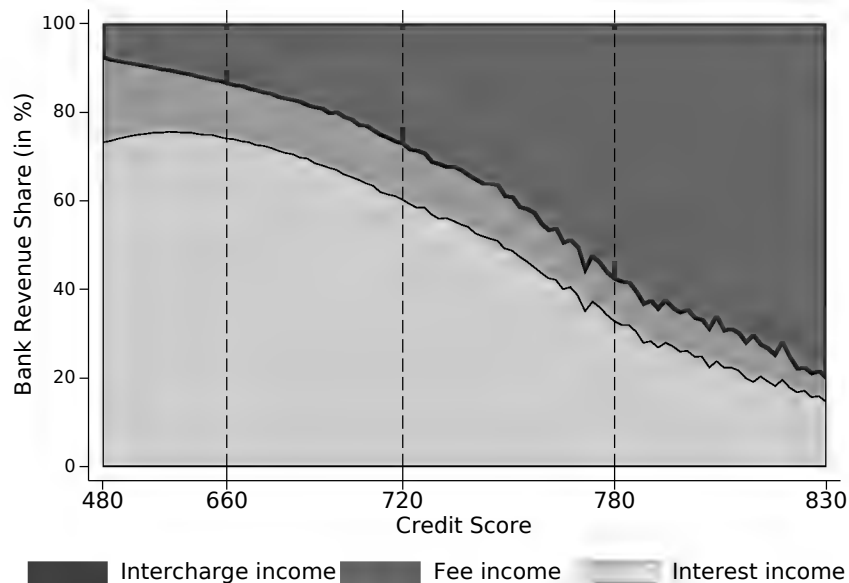


**Figure 6. Bank Revenue Shares Across FICO Score Percentiles.** This figure illustrates the average bank revenue share across the FICO distribution for 100 equal-sized FICO buckets between 300 and 850, separately for reward cards (Panel A) and classic cards (Panel B). For each card type, we plot the share of interchange income (black), fee income (dark gray), and interest income (light gray) as a percentage of total card revenue. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graphs are based on our baseline sample of 238 million credit cards in March 2019.

(A) Reward cards

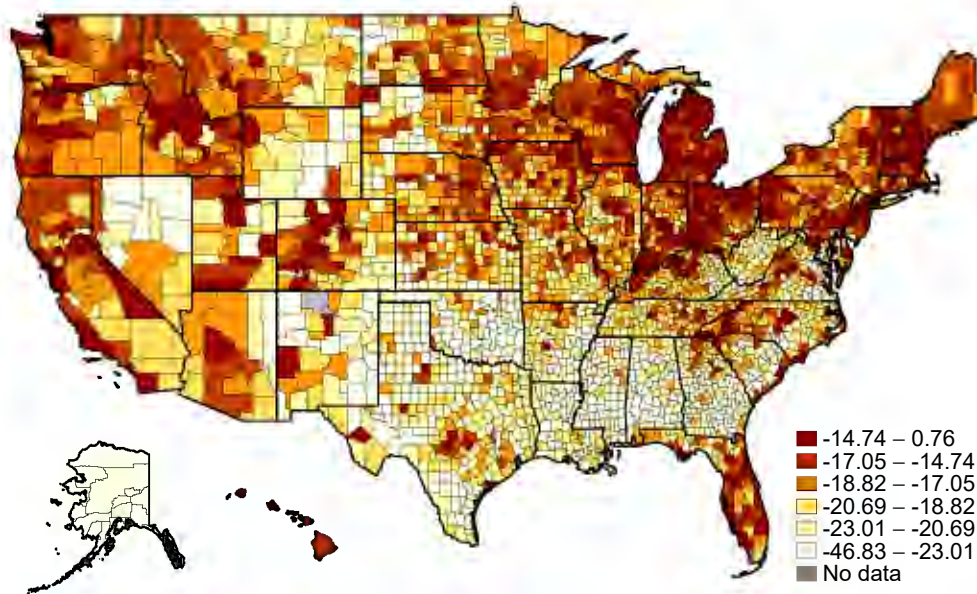


(B) Classic cards

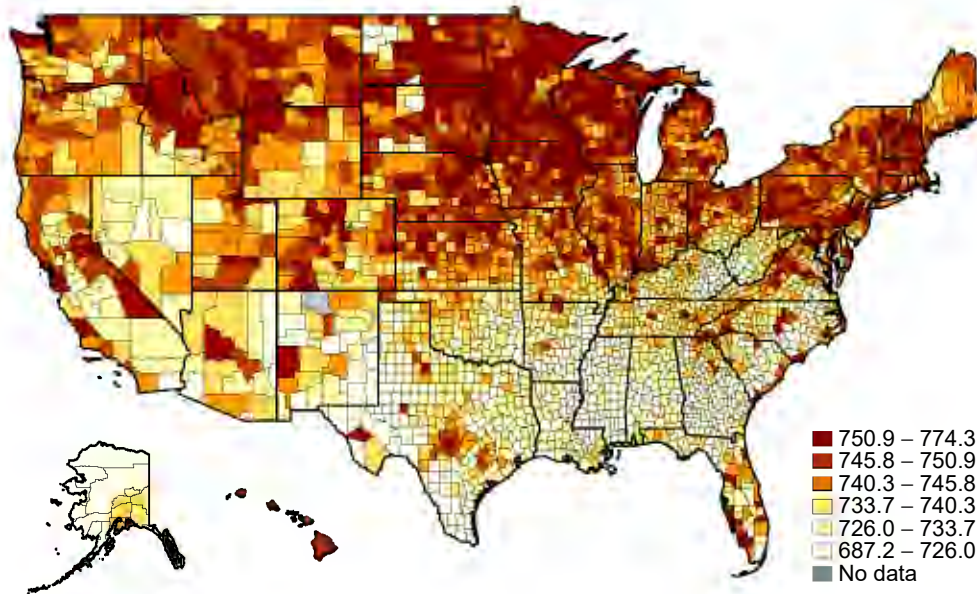


**Figure 7. The Geography of Net Rewards and FICO Scores.** This figure illustrates the average dollar amount of net rewards (Panel A) and the average FICO score (Panel B) across counties in the United States. The graph is based on our baseline sample of 238 million credit cards in March 2019.

(A) Average Net Rewards Across Counties



(B) Average FICO Scores Across Counties



**Table I. Summary Statistics**

This table presents card-level summary statistics as of March 2019, for all call cards in our sample (Columns 1 to 3), and separately for reward and classic cards (Columns 4 and 5). Panel A presents variables related to the calculation of net rewards (as described in Section A). Panel B presents other card-level outcome and control variables used in our analysis.

	(1)	All Cards (2)	(3)	Reward Cards (4)	Classic Cards (5)
	Mean	Median	SD	Mean	Mean
<i>Panel A. Net Reward Variables</i>					
Rewards (in \$)	4.69	0.00	20.42	9.30	0.00
Interest Charges (in \$)	14.38	0.00	37.91	18.34	10.36
Fee Charges (in \$)	2.64	0.00	11.01	3.33	1.93
Net Rewards (in \$)	-12.33	0.00	44.41	-12.37	-12.29
<i>Panel B. Other Variables</i>					
APR (in %)	20.63	21.49	7.15	18.64	22.64
Bank Profits (in \$)	14.53	1.11	232.94	22.54	6.39
FICO Score	729.60	742.00	75.65	743.22	715.77
Borrower Income (in \$k)	88.44	60.00	1863.36	98.02	78.71
Credit Limit (in \$k)	7.37	5.00	7.90	10.42	4.28
Amount Past Due (in \$)	10.26	0.00	172.45	8.19	12.37
Age of Card (in years)	7.43	4.83	7.36	7.61	7.24
Joint Account (0/1)	0.02	0.00	0.15	0.03	0.02
Fraud Flag (0/1)	0.00	0.00	0.06	0.00	0.00
Deposit Relationship With Same Bank (0/1)	0.19	0.00	0.39	0.28	0.10
Lending Relationship With Same Bank (0/1)	0.08	0.00	0.27	0.11	0.05
No. Cards With Same Bank (0/1)	2.11	2.00	1.25	1.89	2.34
Workout Program (0/1)	0.01	0.00	0.07	0.00	0.01
Bankruptcy Flag (0/1)	0.00	0.00	0.05	0.00	0.00
Observations		237,573,278		119,730,353	117,842,925

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**Table II. Net Rewards: Baseline Results**

This table presents the estimation results for differences in net rewards between reward cards and classic cards from Equation (2) in Section IV.A, where the outcome variable is the net reward of card  $i$  as defined in Equation (1) in Section III. The variable *Reward Card* takes on the value of 1 if card  $i$  is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Net Rewards			
	(1)	(2)	(3)	(4)
Reward Card	4.66*** (0.30)	3.88*** (0.37)	3.48*** (0.38)	
Reward Card × Sub-Prime				-5.37*** (0.67)
Reward Card × Near-Prime				-6.80*** (0.69)
Reward Card × Prime				7.28*** (0.44)
Reward Card × Super-Prime				16.05*** (0.93)
Card Controls	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y
FE: Bank × Zip × Income	Y	N	-	-
FE: Bank × Zip × FICO	N	Y	-	-
FE: Bank × Zip × Income × FICO	N	N	Y	Y
Observations	237,573,278			

**Table III. Net Rewards: Robustness Tests**

This table presents robustness checks for the estimation results for differences in net rewards between reward cards and classic cards. The outcome variable is the net reward of card  $i$  as defined in Equation (1) in Section III. The variable *Reward Card* takes on the value of 1 if card  $i$  is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Columns 1 and 2 additionally include credit limit percentile and APR percentile fixed effects. Columns 3 and 4 estimate our baseline specification from Equation (2) on the sample of columns 1 and 2. Columns 3 and 4 include cardholder fixed effects. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Net Rewards					
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	0.62*** (0.15)		1.94*** (0.51)		1.77*** (0.37)	
Reward Card × Sub-Prime		-0.49*** (0.09)		-1.02*** (0.16)		-5.53*** (1.07)
Reward Card × Near-Prime		-0.95*** (0.35)		-1.79*** (0.53)		-8.53*** (0.96)
Reward Card × Prime		1.20*** (0.30)		2.89*** (0.44)		4.08*** (0.47)
Reward Card × Super-Prime		2.62*** (0.34)		6.50*** (1.20)		14.09*** (1.03)
Card Controls	Y	Y	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y	-	-
FE: Bank × Cardholder	-	-	-	-	Y	Y
FE: Bank × Zip × Income × FICO	-	-	Y	Y	-	-
FE: Bank × Zip × Income × FICO × Limit × APR	Y	Y	-	-	-	-
Observations		12,381,801			65,513,743	



**Table IV. Net Reward Components**

This table presents the estimation results for differences in net reward components between reward cards and classic cards from Equation (2) in Section IV.A. The outcome variables are the dollar amount of rewards (columns 1 and 2), the dollar amount of interest charges (column 3 and 4), and the dollar amount of total fee charges (column 5 and 6). The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Rewards		Interest Charges		Total Fee Charges	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	6.38*** (0.35)		2.20*** (0.18)		0.70*** (0.08)	
Reward Card × Sub-Prime		1.79*** (0.14)		6.38*** (0.69)		0.78*** (0.10)
Reward Card × Near-Prime		4.83*** (0.27)		10.86*** (0.75)		0.78*** (0.12)
Reward Card × Prime		8.39*** (0.31)		0.34 (0.24)		0.77*** (0.08)
Reward Card × Super-Prime		9.45*** (0.38)		-7.09*** (0.64)		0.50*** (0.06)
Card Controls	Y	Y	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y	Y	Y
Observations	237,573,278					

**Table V. Net Rewards by Income Groups**

This table presents the estimation results for differences in net rewards between reward cards and classic cards from Equation (2) in Section IV.A, estimated separately for three different income groups: low-income cardholders with an annual income below \$44 thousand; middle-income cardholders with an annual income between \$44-79 thousand; and high-income cardholders with an annual income above \$79 thousand. The outcome variable is the net reward of card  $i$  as defined in Equation (1) in Section III. The variable *Reward Card* takes on the value of 1 if card  $i$  is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

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	Lower Tercile of Income Distribution		Middle Tercile of Income Distribution		Upper Tercile of Income Distribution	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	1.86*** (0.20)		2.73*** (0.28)		5.36*** (0.61)	
Reward Card × Sub-Prime		-2.56*** (0.34)		-4.88*** (0.59)		-12.75*** (1.18)
Reward Card × Near-Prime		-2.36*** (0.45)		-5.80*** (0.58)		-13.15*** (0.77)
Reward Card × Prime		5.93*** (0.33)		6.29*** (0.37)		8.70*** (0.58)
Reward Card × Super-Prime		9.71*** (0.60)		13.60*** (0.71)		20.10*** (1.03)
Card Controls	Y	Y	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y	Y	Y
Observations	75,159,536		79,540,729		82,873,013	

**Table VI. Overindebtedness: Difference-in-Differences Analysis**

This table presents the estimation results for the difference-in-differences regression in Equation (3) in Section VI.A. We compare changes in credit card outcomes of consumers who received a *bank-initiated* credit limit increase on reward cards to those who received a limit increase on classic cards in a time window 6 months before and after the credit limit increase. The outcome variables are changes in spending volumes (columns 1 and 2), credit card payments (columns 3 and 4), and unpaid balances (columns 5 and 6). The analysis considers all cards of consumers who received a bank-initiated credit line increase has. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups *D*: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the FICO score, the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls include income, a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, a bankruptcy indicator, and average spending and payments in the pre-treatment period. Borrower income and FICO are defined as of March 2018 i.e., one year prior. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Δ Spending		Δ Payments		Δ Unpaid Balances	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	75.77*** (6.83)		31.96*** (3.72)		19.17** (8.79)	
Reward Card × Sub-Prime		59.75*** (6.43)		5.06 (3.12)		33.82*** (11.24)
Reward Card × Near-Prime		62.88*** (7.18)		4.53 (4.29)		25.25* (13.53)
Reward Card × Prime		89.03*** (7.98)		73.19*** (6.17)		4.83 (12.16)
Reward Card × Super-Prime		164.85*** (14.14)		153.22*** (13.22)		-28.20 (25.26)
Card Controls (Pre-Period)	Y	Y	Y	Y	Y	Y
Cardholder Controls (Pre-Period)	Y	Y	Y	Y	Y	Y
Income and FICO (Pre-Period)	Y	Y	Y	Y	Y	Y
Spending and Payments (Pre-Period)	Y	Y	Y	Y	Y	Y
FE: Bank × Zip	Y	Y	Y	Y	Y	Y
Observations	1,236,604					

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**Table VII. Share of Misallocated Payments**

This table presents the estimation results for differences in the share of misallocated payments (as defined in Equation A5 in Section B) between reward cards and classic cards from Equation (2) in Section IV.A. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Share of Misallocated Payments					
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	1.24*** (0.28)		1.71*** (0.33)		1.74*** (0.37)	
Reward Card × Sub-Prime		2.65*** (0.20)		3.74*** (0.25)		4.18*** (0.30)
Reward Card × Near-Prime		0.76*** (0.28)		1.15*** (0.34)		1.08*** (0.35)
Reward Card × Prime		0.14 (0.37)		0.35 (0.41)		0.13 (0.42)
Reward Card × Super-Prime		0.07 (0.41)		0.30 (0.44)		0.12 (0.47)
<i>Restrictions:</i>						
At least two cards with revolving debt at the same bank	Y	Y	Y	Y	Y	Y
Not fully paid balance on all cards with revolving debt	Y	Y	Y	Y	Y	Y
Minimum payment on all cards with revolving debt and more than the minimum on at least one	N	N	Y	Y	Y	Y
Different APRs on all cards with revolving debt	N	N	N	N	Y	Y
Card Controls	Y	Y	Y	Y	Y	Y
FE: Cardholder × Bank	Y	Y	Y	Y	Y	Y
Observations	21,288,917		16,136,165		12,858,916	

**Table VIII. Misallocated Payments and Heuristics**

This table compares the actual payment amounts to the theoretical payment amounts based on three different heuristics as discussed in Section VI.B: (i) the optimal repayment rule, (ii) the balance-matching heuristic, and (iii) an equal allocation across all cards (the 1/N heuristic). The table presents the mean shares and correlation coefficients between the different payment amounts, separately for reward cards (columns 1 and 2) and for classic cards (1 and 2).

	Payment on Reward Card(s)		Payment on Classic Card(s)	
	Mean	$\rho$	Mean	$\rho$
	(1)	(2)	(3)	(4)
<i>Panel A: All Cardholders (n = 21, 288, 917)</i>				
Actual Share of Payment	48.7%		35.9%	
Optimal Share of Payment	47.0%	0.50	37.5%	0.49
Balance Matching Heuristic Share of Payment	47.5%	0.52	37.0%	0.54
1/N Heuristic Share of Payment	42.8%	0.38	41.4%	0.35
<i>Panel B: Sub-prime Cardholders (n = 7, 469, 187)</i>				
Actual Share of Payment	47.0%		38.8%	
Optimal Share of Payment	43.9%	0.39	41.6%	0.43
Balance Matching Heuristic Share of Payment	47.3%	0.47	38.6%	0.49
1/N Heuristic Share of Payment	43.6%	0.36	41.9%	0.42
<i>Panel C: Near-prime Cardholders (n = 7, 482, 795)</i>				
Actual Share of Payment	47.8%		34.6%	
Optimal Share of Payment	46.8%	0.51	35.6%	0.49
Balance Matching Heuristic Share of Payment	47.9%	0.55	34.6%	0.54
1/N Heuristic Share of Payment	41.8%	0.41	40.0%	0.40
<i>Panel D: Prime Cardholders (n = 4, 412, 700)</i>				
Actual Share of Payment	50.8%		34.3%	
Optimal Share of Payment	49.9%	0.55	35.3%	0.51
Balance Matching Heuristic Share of Payment	47.7%	0.53	37.3%	0.51
1/N Heuristic Share of Payment	42.8%	0.39	42.0%	0.32
<i>Panel E: Super-prime Cardholders (n = 1, 924, 235)</i>				
Actual Share of Payment	53.8%		32.9%	
Optimal Share of Payment	52.1%	0.63	34.5%	0.58
Balance Matching Heuristic Share of Payment	46.8%	0.56	39.9%	0.53
1/N Heuristic Share of Payment	43.4%	0.37	43.2%	0.26

**Table IX. Annual Percentage Rates (APR) of Interest and Bank Profits**

This table presents the estimation results for differences in net reward components between reward cards and classic cards from Equation (2) in Section IV.A. The outcome variables are the annual percentage rate of interest (APR) (columns 1 and 2) and the dollar amount of bank profits per card as defined in Equation 5 in Section VII.B (column 3 and 4). The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	APR		Profit	
	(1)	(2)	(3)	(4)
Reward Card	-0.96*** (0.19)		7.48*** (0.71)	
Reward Card × Sub-Prime		-0.20** (0.09)		2.66* (1.41)
Reward Card × Near-Prime		-0.47*** (0.16)		13.10*** (1.06)
Reward Card × Prime		-1.34*** (0.26)		9.80*** (0.49)
Reward Card × Super-Prime		-1.65*** (0.27)		3.98*** (0.43)
Card Controls	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y
Observations	237,573,278			

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**Table X. The Geography of Net Rewards**

This table presents the estimation results for net rewards at the ZIP code-level from Equation (6) in Section VIII. The outcome variable is the net reward of card  $i$  in ZIP code  $z$  and where  $X_k$  are the following ZIP code-level characteristics: the percentage of residents with a bachelor's degree as a proxy for education, the median income of individuals in the ZIP code, and the percentage of residents who report their race as Black or African American. Standard errors are clustered at the state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Net Rewards					
	(1)	(2)	(3)	(4)	(5)	(6)
Education	0.29*** (0.02)	-0.01 (0.02)				
Income			0.21*** (0.02)	0.00 (0.02)		
Black Population Share					-0.14*** (0.01)	0.00 (0.01)
Credit Score		0.19*** (0.01)		0.18*** (0.00)		0.19*** (0.00)
Observations	237,573,278					

## Online Appendix

### A. Estimating Monthly Net Rewards

While reward credit cards allow consumers to earn money through the use of credit cards, cardholders may also incur costs in the form of interest payments and fees. To measure the monthly net cash flow on a credit card, we construct the variable *Net Rewards* which subtracts the amount of interest and fees paid on card  $i$  in month  $t$  from the rewards earned on the card during the same period:

$$\text{Net Rewards}_{i,t} = \text{Rewards}_{i,t} - \text{Interest Paid}_{i,t} - \text{Total Fees}_{i,t} \quad (\text{A1})$$

In our dataset, we directly observe the dollar amounts of *Interest Paid* and *Total Fees*. However, we do not observe the amount of monthly rewards, but only the accumulated rewards as of the reporting month, net of redeemed rewards, that is:

$$\text{Cumulative Rewards}_{i,t} = \text{Cumulative Rewards}_{i,t-1} + \text{Rewards}_{i,t} - \text{Redemptions}_{i,t} \quad (\text{A2})$$

We have data on the stocks *Cumulative Rewards*, but not on the flows *Rewards* and on *Redemptions*. To calculate the monthly net rewards in Equation (1), we estimate the monthly variable *Rewards*. First, we estimate the effective reward rate of card  $i$  by dividing the month-to-month change in cumulative rewards by the purchase volume of card  $i$  during the given month:

$$\text{Card-Specific Reward Rate}_{i,t} = \frac{\Delta \text{Cumulative Rewards}_{i,t}}{\text{Purchase Volume}_{i,t}} \quad (\text{A3})$$

This estimated reward rate is correct if redeemed rewards in month  $t$  are zero. For example, if cumulative rewards on card  $i$  increase by 12 dollars in month  $t$  and if the card



exhibits a purchase volume of \$1000 during the same month, then the estimated effective reward rate equals 1.2 percent. If, however, the cardholder redeems rewards during the month, then this will underestimate the card-specific reward rate. In the case when all rewards are (automatically) redeemed in month  $t$ , we would estimate a card-specific reward rate of zero.

To filter out these card-specific idiosyncrasies in redemption behavior, we estimate reward rates at the individual credit card product-level. To this end, we cluster all cards in our sample into groups based on the following variables: bank, credit card type, product type, card network, reward type, fee type, and fee level.<sup>25</sup> Within each cluster, we calculate the median reward rate using only cards with a positive change in cumulative rewards, that is cards for which  $\Delta Cumulative Rewards_{i,t} > 0$ . We then use the estimated reward rate to calculate the monthly rewards of card  $i$  in month  $t$  as:

$$Rewards_{i,t} = Estimated\ Reward\ Rate_{i,t} \times Purchase\ Volume_{i,t} \quad (A4)$$

In the raw sample, this methodology yields an average monthly reward of \$13.34 per reward card, which implies an extrapolated average annual reward of \$160.08. This figure is very close to the \$167 in annual rewards per account reported in [CFPB \(2019\)](#), thereby confirming the validity of our approach.

Furthermore, we calculate the variable *Total Fees* as the sum of late, over limit, non-sufficient funds (NSF), cash advance, debt suspension, balance transfer, other, and monthly fees. Combining the data on total fees and interest paid with the estimated amount of monthly rewards from Equation (A4) allows us to calculate the monthly net rewards of card  $i$  in month  $t$  as defined in Equation (1).

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<sup>25</sup>This procedure yields 380 individual credit card product clusters. Table A2 in the appendix describes all the variables used in the calculation of the variable *Net Rewards*.

## B. Share of Misallocated Payments

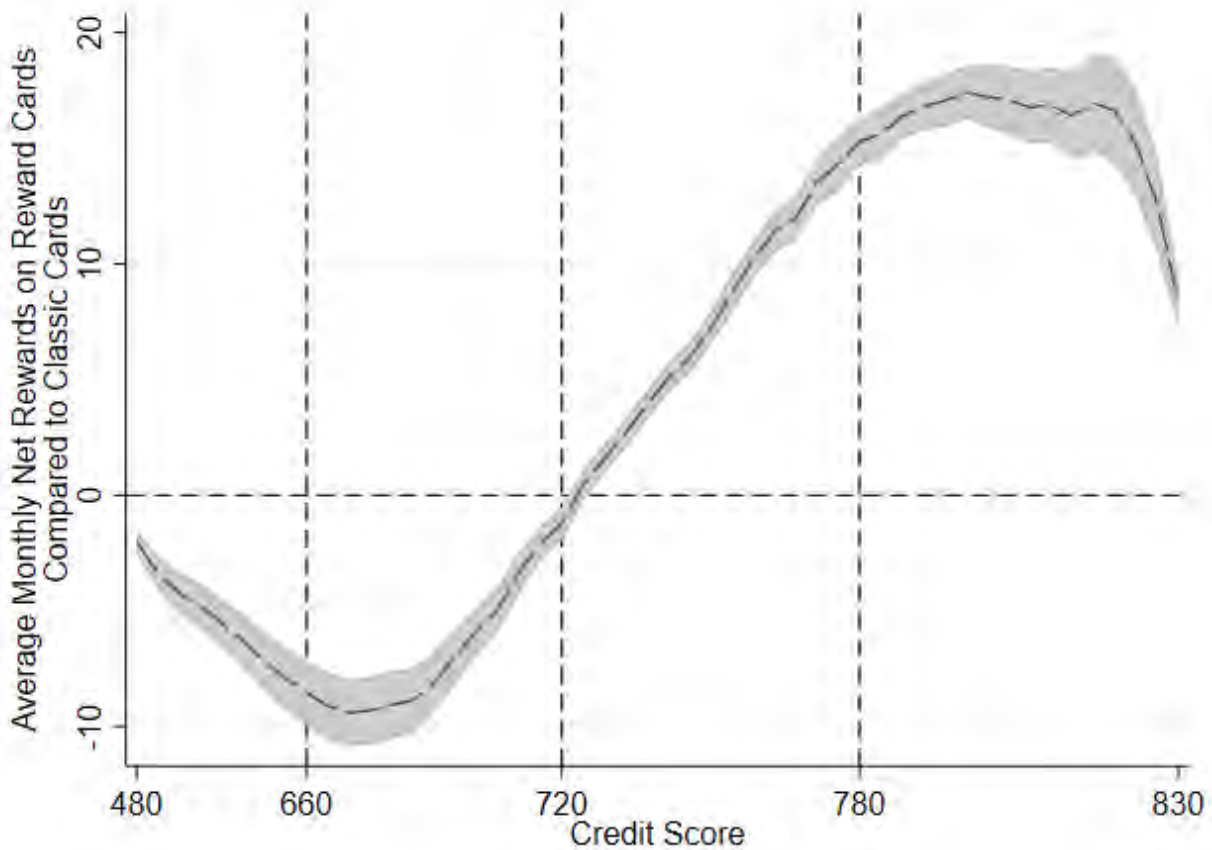
This appendix describes the calculation of the share of misallocated payments, following [Ponce, Seira, and Zamarripa \(2017\)](#) and [Gathergood, Mahoney, Stewart, and Weber \(2019\)](#). Given the amount of total funds used to pay off credit cards, the optimal, interest-cost-minimizing repayment rule is as follows. First, make the minimum payments due on all cards. Second, pay off in full the card with the highest interest rate. Third, subsequently allocate further repayments to cheaper cards ranked in order of their interest rates. Based on this rule, we calculate the misallocated payment (MP) share for borrower  $b$  on card  $i$  as the minimum between zero (if the actual payment is equal or lower than the optimal one) and the difference between the optimal payment amount (OPA) and the actual payment amount (APA) scaled by the total payment amount:

$$\text{MP Share} = \begin{cases} \frac{\text{Actual Payment Amount}_{i,b} - \text{Optimal Payment Amount}_{i,b}}{\text{Total Payment Amount}_{i,b}} & \text{if } \text{APA}_{i,b} > \text{OPA}_{i,b} \\ 0 & \text{if } \text{APA}_{i,b} \leq \text{OPA}_{i,b} \end{cases} \quad (\text{A5})$$

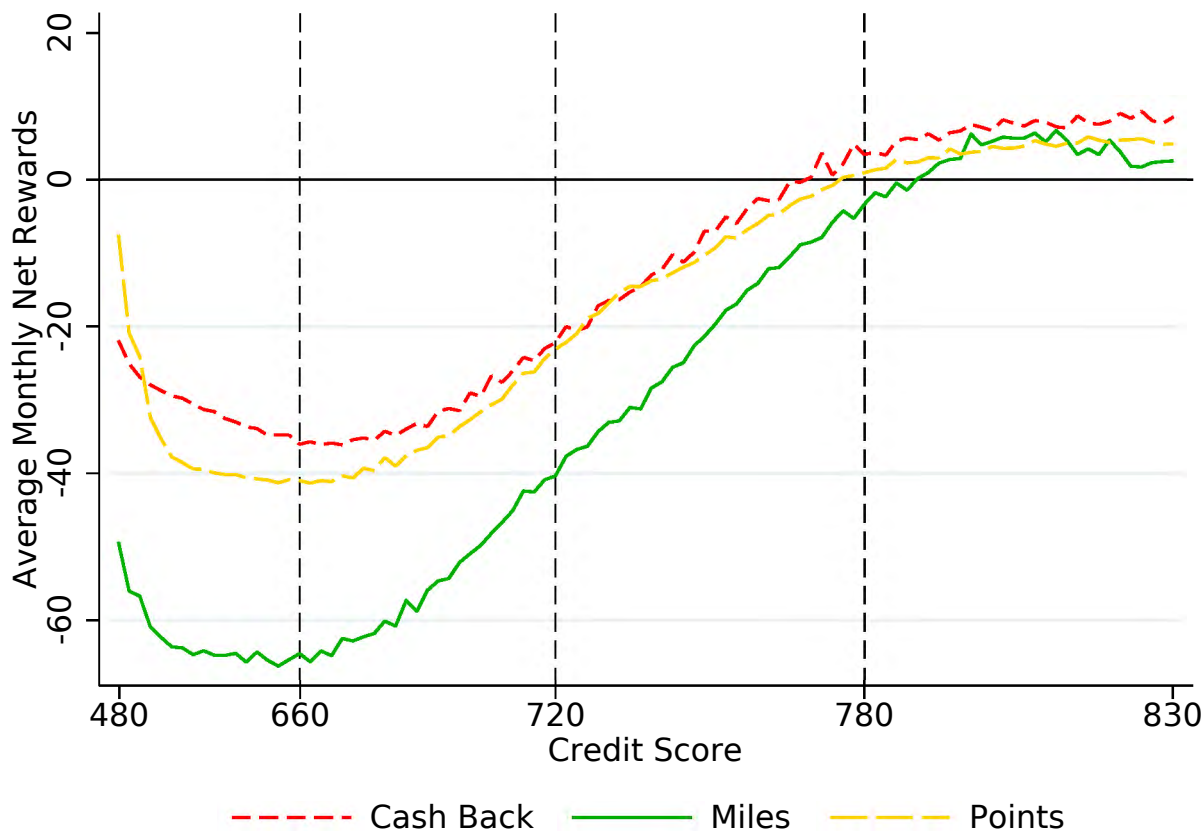
This measure can be interpreted as the share of payments that were incorrectly made on a cheaper card that should have been made on more expensive cards. Figure 4 illustrates the share of misallocated payments across the FICO distribution. The misallocated payment share is strongly decreasing in FICO scores. While low-FICO consumers misallocate more than 6 percent of all credit card repayments, the misallocated payment share is less than 2 percent for high-FICO consumers.

### C. Additional Figures

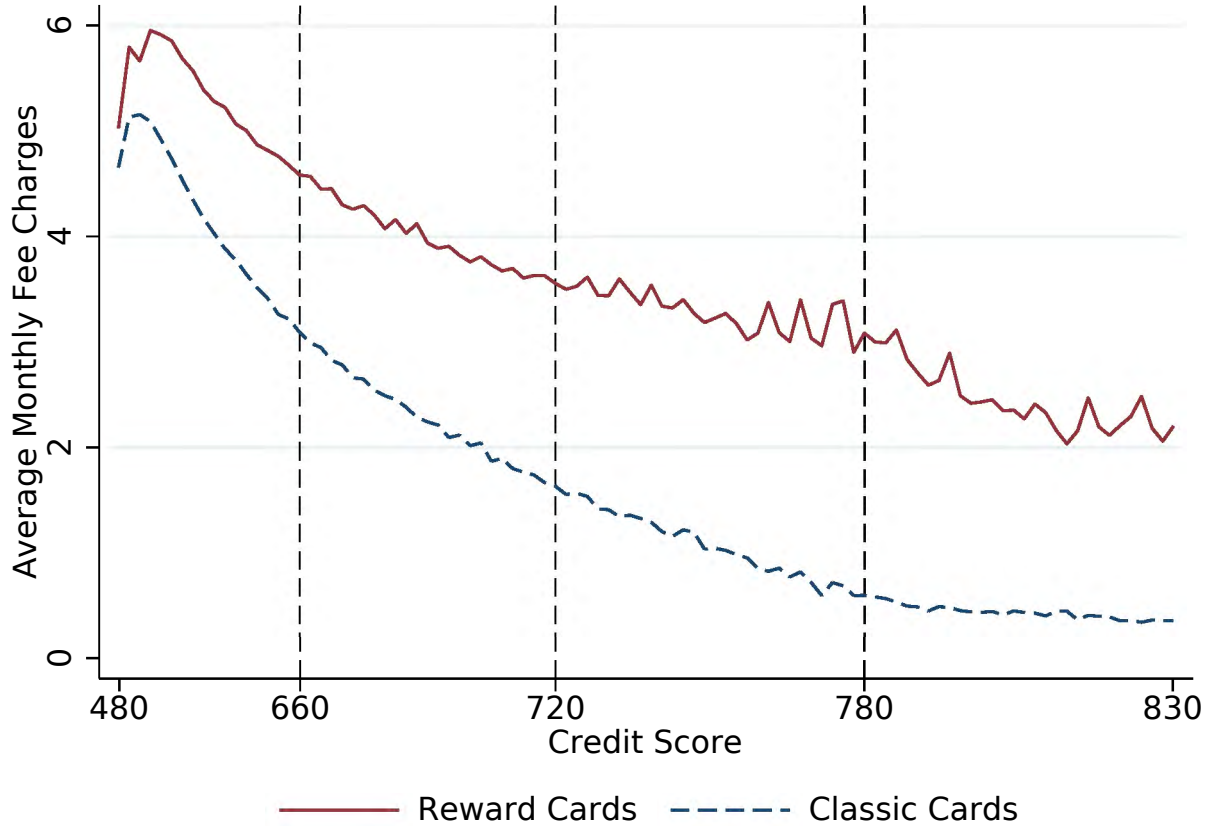
**Figure A1. Coefficient Plot: Net Rewards Across the FICO Distribution.** This figure illustrates the differential dollar magnitude of average net rewards between reward cards and classic cards across the FICO distribution. The figure plots the coefficients  $\delta^F$  alongside the 95% confidence intervals when estimating Equation (2) with 50 instead of 4 different FICO buckets. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.



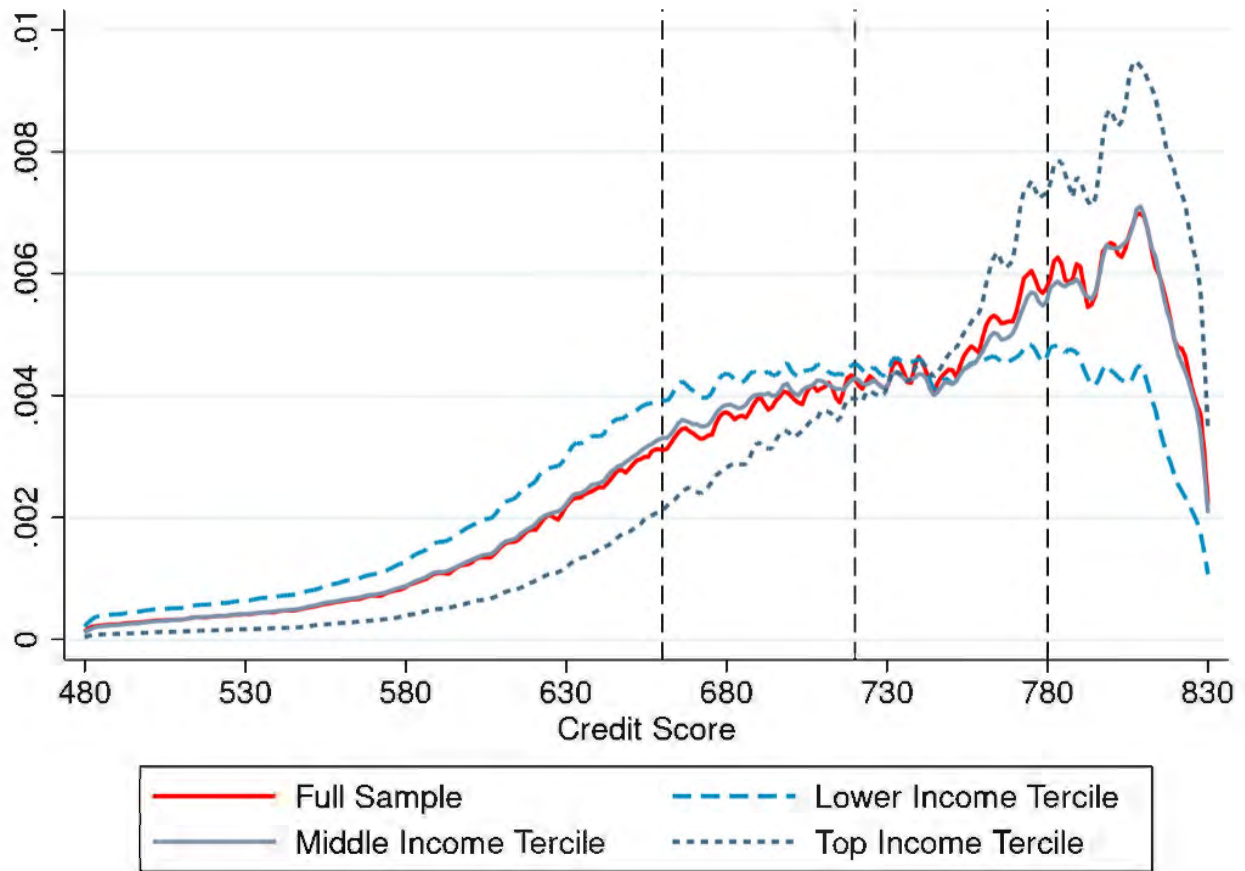
**Figure A2. Net Rewards Across FICO Score Percentiles by Reward Type.** This figure illustrates the dollar magnitude of average net rewards on reward cards across the FICO distribution by reward type. The red line plots the average net reward for borrowers with an annual income below 44 thousand, the yellow line for borrowers with an annual income between 44 thousand and 79 thousand, and the green line for borrowers with an annual income above 79 thousand. For each income group, we plot the average net reward (in dollar) for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.



**Figure A3. Fee Charges Across FICO Score Percentiles.** This figure illustrates the dollar magnitude of average fee charges across the FICO distribution, separately for reward cards (solid red line) and classic cards (dashed blue line). For each card type, we plot the average fee charge for 100 equal-sized FICO buckets between 480 and 830. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

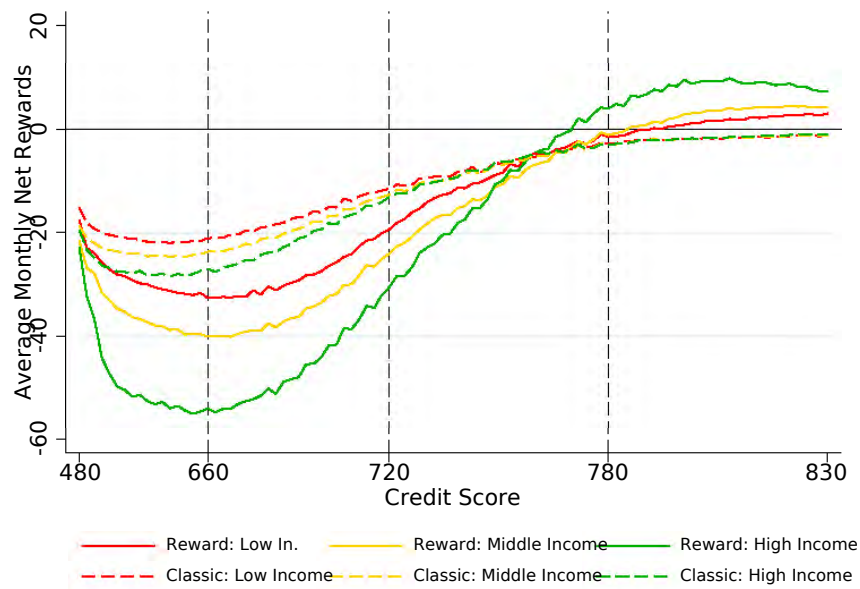


**Figure A4. FICO Score Distributions by Income Groups.** This figure illustrates the distribution of FICO scores across the full sample (solid red line) and three different income groups: low-income cardholders with an annual income below \$44 thousand; middle-income cardholders with an annual income between \$44-79 thousand; and high-income cardholders with an annual income above \$79 thousand. The dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

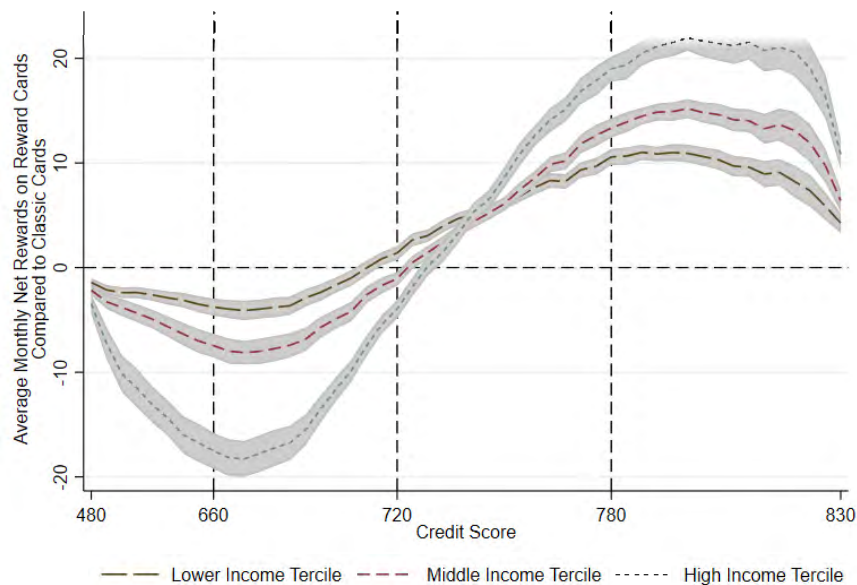


**Figure A5. Net Rewards Across the FICO Distribution by Income.** Panel A plots the dollar magnitude of average net rewards across the FICO distribution, separately for reward cards (solid lines) and classic cards (dashed lines), and for three different income groups (below 44 thousand, 44 thousand and 79 thousand, and above 79 thousand). Panel B plots the coefficients  $\delta^F$  alongside the 95% confidence intervals when estimating Equation (2) with 50 instead of 4 different FICO buckets separately for the same three different income buckets. In both panels, the dashed vertical lines mark FICO scores of 660, 720, and 780, our cut-off scores for near-prime, prime, and super-prime cardholders, respectively. The graph is based on our baseline sample of 238 million credit cards in March 2019.

(A) Reward Cards versus Classic Cards

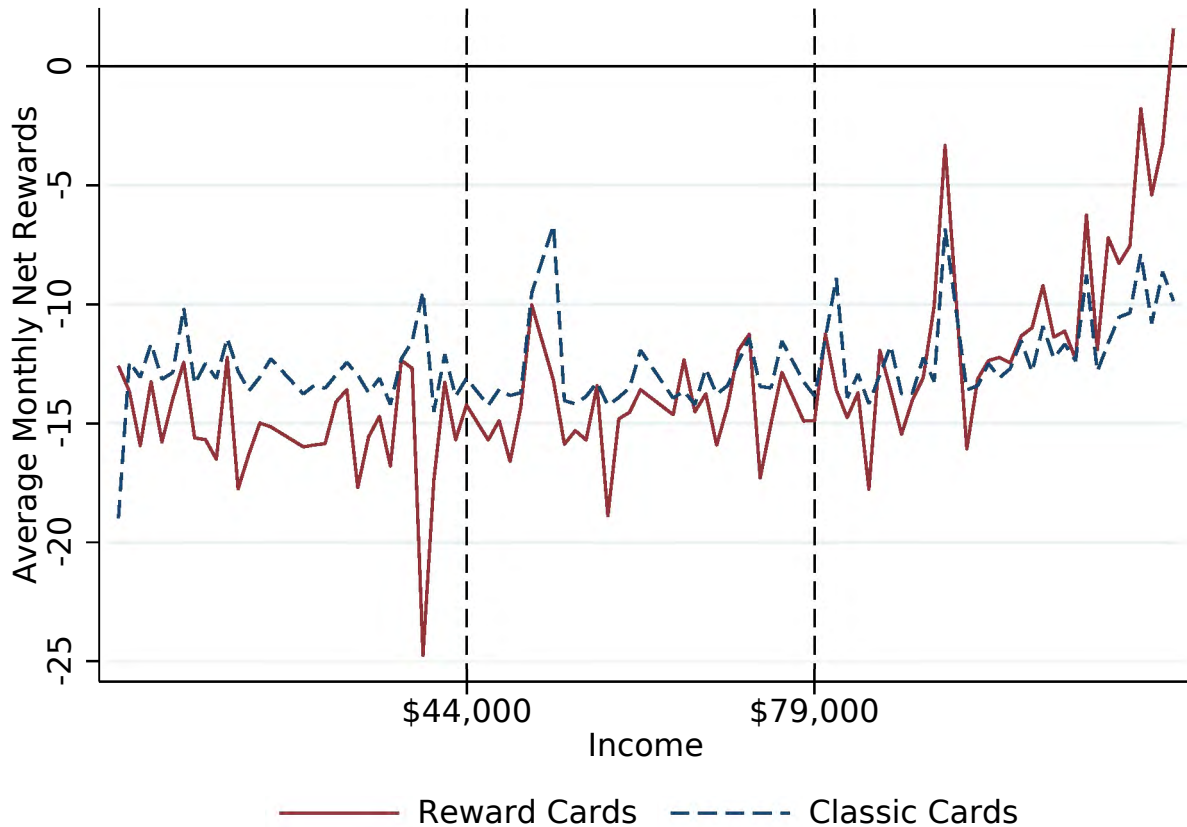


(B) Coefficient Plot





**Figure A6. Net Rewards Across Income Percentiles.** This figure illustrates the dollar magnitude of average net rewards across the income distribution, separately for reward cards (solid red line) and classic cards (dashed blue line). For each card type, we plot the average net reward for 100 equal-sized income buckets between \$3,000 and \$400,000. The dashed vertical lines mark income levels of \$44,000 and \$79,000, denoting the tercile values in our dataset. The graph is based on our baseline sample of 238 million credit cards in March 2019.





## D. Additional Tables

**Table A1. Aggregate Net Rewards**

This table presents the aggregate sum of net rewards (in USD million) for reward cards with negative (column 1) and positive (column 2) net rewards, both for the entire sample (first row) and across different FICO buckets (second to last row). In the second to last row, cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). The table is based on our sample of 91 million reward cards in March 2019.

	Negative Rewards (1)	Positive Rewards (2)	$\Delta$ (3)
All Reward Cards	-4140	1260	-2880
Sub-Prime	-1030	35	-996
Near-Prime	-1630	134	-1496
Prime	-1130	407	-723
Super-Prime	-361	680	319

**Table A2. Credit Card Categories**

This table reports the detailed categories used for credit card clustering at the individual product level in the calculation of net rewards in Section III.A. Our procedure yields 380 individual credit card product cluster.

Variable	Categories
Bank	19 banks
Credit Card Type	General Purpose Private Label
Product Type	Co-brand Oil and Gas Co-Brand Affinity Student Other
Network Type	Visa MasterCard American Express Discover Other
Reward Type	Cash Miles Other None
Fee Type	No fee Annual fee Monthly fee
Annualized Fee Amount	0 dollar 0-60 dollar 60-120 dollar 120+ dollar

**Table A3. Fee Components**

This table presents the estimation results for differences in annual fee, late payment fee, and other fee charges between reward cards and classic cards from Equation (2) in Section IV.A:

$$Y_i = \sum_F (\delta^F \times \text{Reward Card}_i \times D^F) + \alpha_{b,z,w,f} + \sum_m X_i^m + \sum_n X_j^n + \varepsilon_i$$

The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups *D*: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card characteristics include the credit limit, amount past due, card age, a joint account indicator, and a fraud dummy. Borrower characteristics including a deposit relationship indicator, a lending relationship dummy, the total number of cards the consumer has with the bank, a workout program dummy, and a bankruptcy indicator. Borrower income and FICO are defined as of March 2018 i.e., one year prior. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Annual Fee Charges		Late Payment Fee Charges		Other Fee Charges	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	0.51*** (0.05)		0.14*** (0.03)		0.06*** (0.02)	
Reward Card × Sub-Prime		0.56*** (0.04)		0.14* (0.08)		0.08*** (0.02)
Reward Card × Near-Prime		0.35*** (0.07)		0.19*** (0.04)		0.24*** (0.03)
Reward Card × Prime		0.57*** (0.06)		0.15*** (0.02)		0.05* (0.03)
Reward Card × Super-Prime		0.54*** (0.05)		0.08*** (0.01)		-0.12*** (0.02)
Card Controls	Y	Y	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y	Y	Y
Observations	237,573,278	237,573,278	237,573,278	237,573,278	237,573,278	237,573,278

**Table A4. Net Rewards by Income Groups—Top Income Distribution**

This table presents the estimation results for differences in net rewards between reward cards and classic cards from Equation (2) in Section IV.A:

$$Y_i = \sum_F (\delta^F \times \text{Reward Card}_i \times D^F) + \alpha_{b,z,w,f} + \sum_m X_i^m + \sum_n X_j^n + \varepsilon_i$$

We reports results separately for three different annual income groups. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups *D*: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card characteristics include the credit limit, amount past due, card age, a joint account indicator, and a fraud dummy. Borrower characteristics including a deposit relationship indicator, a lending relationship dummy, the total number of cards the consumer has with the bank, a workout program dummy, and a bankruptcy indicator. Borrower income and FICO are defined as of March 2018 i.e., one year prior. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

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	Top 10% of Income Distribution		Top 5% of Income Distribution	
	(1)	(2)	(3)	(4)
Reward Card	6.96*** (0.86)		7.70*** (0.96)	
Reward Card × Sub-Prime		-21.97*** (1.50)		-25.61*** (1.72)
Reward Card × Near-Prime		-18.35*** (1.00)		-19.43*** (1.15)
Reward Card × Prime		10.65*** (0.76)		11.77*** (0.86)
Reward Card × Super-Prime		22.33*** (1.14)		22.24*** (1.16)
Card Controls	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y
Observations	26,600,689	26,600,689	14,754,880	14,754,880

**Table A5. Net Rewards by Type of Reward Card**

This table presents the estimation results for differences in net rewards between reward cards and classic cards from Equation (2) in Section IV.A:

$$Y_i = \sum_F (\delta^F \times \text{Reward Card}_i \times D^F) + \alpha_{b,z,w,f} + \sum_m X_i^m + \sum_n X_j^n + \varepsilon_i$$

We reports results separately for the three types of reward cards i.e., miles, cash back, and points. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card of a given type, and 0 if it is a classic card. Cards are clustered in the following FICO score groups *D*: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card characteristics include the credit limit, amount past due, card age, a joint account indicator, and a fraud dummy. Borrower characteristics including a deposit relationship indicator, a lending relationship dummy, the total number of cards the consumer has with the bank, a workout program dummy, and a bankruptcy indicator. Borrower income and FICO are defined as of March 2018 i.e., one year prior. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Miles Cards		Cash Back Cards		Points Cards	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	-4.52*** (1.30)		7.25*** (0.73)		1.57*** (0.270)	
Reward Card × Sub-Prime		-26.84*** (2.30)		-2.57*** (0.47)		-6.42*** (0.46)
Reward Card × Near-Prime		-23.63*** (2.85)		-2.07*** (0.49)		-8.03*** (0.64)
Reward Card × Prime		0.47 (1.41)		12.41*** (0.70)		4.10*** (0.31)
Reward Card × Super-Prime		12.62*** (1.09)		22.48*** (1.30)		10.04*** (0.47)
Card Controls	Y	Y	Y	Y	Y	Y
Cardholder Controls	Y	Y	Y	Y	Y	Y
FE: Bank × Zip × Income × FICO	Y	Y	Y	Y	Y	Y
Observations	113,283,147	113,283,147	153,206,808	153,206,808	158,481,157	158,481,157

**Table A6. Overindebtedness: Difference-in-differences Analysis, Only Cards with a Bank-initiated Credit Line Increase**

This table presents the estimation results for the difference-in-differences regression in Equation (3) in Section VI.A. We compare changes in credit card outcomes of consumers who received a *bank-initiated* credit limit increase on reward cards to those who received a limit increase on classic cards in a time window 6 months before and after the credit limit increase. The outcome variables are changes in spending volumes (columns 1 and 2), credit card payments (columns 3 and 4), and unpaid balances (columns 5 and 6). The analysis considers only cards with a bank-initiated credit line increase. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups *D*: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the FICO score, the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls include income, a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, a bankruptcy indicator, and average spending and payments in the pre-treatment period. Borrower income and FICO are defined as of March 2018 i.e., one year prior. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Δ Spending		Δ Payments		Δ Unpaid Balances	
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	75.21*** (6.70)		43.76*** (3.61)		48.28*** (11.70)	
Reward Card × Sub-Prime		57.21*** (6.27)		18.83*** (2.82)		46.95*** (12.13)
Reward Card × Near-Prime		62.65*** (6.86)		21.26*** (3.47)		68.61*** (16.35)
Reward Card × Prime		89.06*** (8.10)		77.15*** (5.73)		37.70*** (13.88)
Reward Card × Super-Prime		169.17*** (13.02)		156.26*** (11.72)		-12.77 (26.40)
Mean Y		860.315		851.559		1922.45
Card Controls (Pre-Period)	Y	Y	Y	Y	Y	Y
Cardholder Controls (Pre-Period)	Y	Y	Y	Y	Y	Y
Income and FICO (Pre-Period)	Y	Y	Y	Y	Y	Y
Spending and Payments (Pre-Period)	Y	Y	Y	Y	Y	Y
FE: Bank × Zip	Y	Y	Y	Y	Y	Y
Observations	1,236,604	1,236,604	1,236,604	1,236,604	1,236,604	1,236,604

**Table A7. Share of Misallocated Payments—Two-card Sample**

This table presents the estimation results for differences in the share of misallocated payments (as defined in Equation A5 in Section B) between reward cards and classic cards from Equation (2) in Section IV.A. The analysis considers only individuals with two credit cards. The variable *Reward Card* takes on the value of 1 if card *i* is a reward card, and 0 otherwise. Cards are clustered in the following FICO score groups: sub-prime (below 660), near-prime (660-720), prime (720-780), and super-prime (above 780). Card controls include the credit limit, the amount past due, the card age, a joint account indicator, a fraud flag indicator, and a workout program indicator. Cardholder controls a deposit relationship indicator, a lending relationship indicator, the number of cards held by the cardholder at the same bank, and a bankruptcy indicator. Borrower income and FICO scores are defined as of March 2018 i.e., one year prior to the outcome variable. Standard errors are clustered at the bank-state level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Share of Misallocated Payments					
	(1)	(2)	(3)	(4)	(5)	(6)
Reward Card	1.15*** (0.34)		1.64*** (0.41)		1.74*** (0.46)	
Reward Card × Sub-Prime		2.96*** (0.28)		4.11*** (0.31)		4.60*** (0.38)
Reward Card × Near-Prime		0.40 (0.29)		0.79** (0.34)		0.83** (0.39)
Reward Card × Prime		-0.34 (0.38)		-0.12 (0.43)		-0.22 (0.47)
Reward Card × Super-Prime		-0.18 (0.50)		0.10 (0.55)		0.00 (0.59)
<i>Restrictions:</i>						
At least two cards with revolving debt at the same bank	Y	Y	Y	Y	Y	Y
Not fully paid balance on all cards with revolving debt	Y	Y	Y	Y	Y	Y
Minimum payment on all cards with revolving debt and more than the minimum on at least one	N	N	Y	Y	Y	Y
Different APRs on all cards with revolving debt	N	N	N	N	Y	Y
Card Controls	Y	Y	Y	Y	Y	Y
FE: Cardholders × Bank	Y	Y	Y	Y	Y	Y
Observations	13,080,528	13,080,528	9,909,754	9,909,754	8,862,432	8,862,432

**BUREAU OF CONSUMER FINANCIAL PROTECTION | SEPTEMBER 2021**

# The Consumer Credit Card Market





# Message from the Acting Director



Credit cards are one of the most commonly-held and widely-used financial products in America — over 175 million Americans hold at least one credit card. During the COVID-19 pandemic, credit cards played a vital role as both a source of credit in emergencies and a payment method as more transactions occurred online.

As the fifth biennial report to Congress on the credit card market, this report details how swift actions by both the public and private sectors likely impacted how many consumers used their credit cards and managed their debts during the pandemic. To address hardships caused by COVID-19, the Federal government provided consumers direct relief by issuing a series of economic impact payments, providing enhanced unemployment benefits, suspending student loan payments and interest accrual for federally held loans, offering mortgage forbearance, and enacting a moratorium on evictions. At the same time, credit card issuers provided voluntary relief to consumers by offering payment deferral and fee waivers.

Supported by these efforts, this report finds that the decline in credit card debt during the pandemic was unprecedented in speed and magnitude. Measures of consumer stress, such as late payment incidence and the share of accounts delinquent, hit record lows.

This report also highlights areas in the credit card market that may entail risks for consumers such as system deficiencies related to implementing relief programs and automatic payment processes. The Bureau continues to monitor indicators of credit card use, cost, and availability to identify potential for consumer harm, as well as study the impact of new, innovative products.

Our credit card market report is intended to present the latest research on this vital market to consumers, issuers, and policymakers. As many consumers, particularly those with non-prime credit scores, still face numerous hardships due to COVID-19, this report remains critical. The Bureau will carry out its mission in ensuring this market continues to benefit all participants during these times of heightened uncertainty.

Sincerely,

A handwritten signature in blue ink that reads "David K. Uejio". The signature is written in a cursive style with a blue ink color.

David Uejio

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# Executive summary

Credit cards are central to the financial lives of over 175 million American consumers. Over the last few years and through 2019, the credit card market, the largest U.S. consumer lending market measured by number of users, continued to grow in almost all measures until suddenly reversing course in March 2020. Despite macroeconomic shocks to the financial system, credit card market conditions remain relatively stable at the time of this report writing, with that stability likely supported by robust fiscal measures, lower consumer discretionary spending, and voluntary industry relief programs.

The COVID-19 pandemic significantly impacted how many consumers used and interacted with credit cards. Far fewer consumers applied for new credit cards in 2020 than the year prior. During the pandemic, existing cardholders paid off the highest share of their credit card debt in recent years. Additionally, late payment and default rates fell to historic lows, most notably for consumers with below-prime scores.

At the same time, credit cards continued to play a vital role as both a payment method and source of credit. Consumers still used their cards to facilitate transactions, smooth consumption, and earn rewards. As physical stores closed and a greater share of commerce was transacted digitally, cardholders benefited from the consumer protections afforded to credit cards such as limitations on liability and enhanced security.

In response to pandemic-related hardship, issuers provided a considerable number of payment deferrals and fee waivers to their cardholders in 2020. However, consumers calling their credit card issuers often faced long wait times to access these relief programs. Additionally, complaints submitted to the Bureau regarding credit cards spiked in the second quarter of 2020 and

remained elevated throughout the year.<sup>1</sup> Overall reported satisfaction with credit cards issuers fell significantly during the pandemic but remained higher than post-Great Recession levels.<sup>2</sup> Despite these indicators of lower consumer satisfaction, credit card issuers continue to generate profitable annual returns consistent with historic levels relative to other market lending activities even with an initial decline during the first half of 2020.<sup>3</sup>

In 2019 and 2020, innovation continued to reshape the credit card market for both users and providers. New providers, including large and small financial institutions as well as startup and mainstream technology companies have entered—or are in the process of entering—the market with competing products, features, and methods for issuing credit cards.<sup>4</sup>

This executive summary provides some background for the report, then summarizes key findings.

## **BACKGROUND**

In 2009, Congress passed the Credit Card Accountability Responsibility and Disclosure Act (CARD Act or Act).<sup>5</sup> The Act made substantial changes to the credit card market. The CARD Act mandated new disclosures and underwriting standards, curbed certain fees, and restricted interest rate increases on existing balances. Among the CARD Act's many provisions was a

<sup>1</sup> Bureau of Consumer Fin. Prot., *Consumer Response Annual Report*, at 39 (Mar. 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_2020-consumer-response-annual-report\\_03-2021.pdf](https://files.consumerfinance.gov/f/documents/cfpb_2020-consumer-response-annual-report_03-2021.pdf). Billing disputes remain the largest complaint category.

<sup>2</sup> See Press Release, J.D. Power, *Customers Losing Faith in Credit Card Issuers as COVID-19 Pandemic Lingers*, J.D. Power Finds (Aug. 20, 2020), <https://www.jdpower.com/business/press-releases/2020-us-credit-card-satisfaction-study>.

<sup>3</sup> Bd. of Governors for the Fed. Rsrv. Sys., *Report to the Congress on the Profitability of Credit Card Operations of Depository Institutions* (July 2021), <https://www.federalreserve.gov/publications/files/ccprofit2021.pdf>.

<sup>4</sup> Reference in this report to any specific commercial product, service, firm, or corporation name is for the information and convenience of the public and does not constitute endorsement or recommendation by the Bureau.

<sup>5</sup> The Act superseded a number of earlier regulations that had been finalized, but had not yet become effective, by the Office of Thrift Supervision (OTS), the National Credit Union Administration (NCUA), and the Board of Governors of the Federal Reserve System. Those earlier rules were announced in December of 2008 and published in the Federal Register the following month. See 74 FR 5244 (Jan. 29, 2009); 74 FR 5498 (Jan. 29, 2009). The rules were withdrawn in light of the CARD Act. See 75 FR 7657, 75 FR 7925 (Feb. 22, 2010).

requirement that the Board of Governors of the Federal Reserve System (Board) report every two years on the state of the consumer credit card market. With the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) in 2010, that requirement transferred to the Bureau of Consumer Financial Protection (Bureau) alongside broader responsibility for administering most of the CARD Act's provisions. This is the fifth report published pursuant to that obligation, building on prior reports published by the Bureau in 2013, 2015, 2017, and 2019.<sup>6</sup>

The CARD Act was enacted over ten years ago.<sup>7</sup> Since its passage, researchers, including the Bureau, have studied the effects of the CARD Act on the cost and availability of credit to consumers. This year the Bureau conducted a review of rules implementing the Act per section 610 of the Regulatory Flexibility Act,<sup>8</sup> and the Bureau expects to release its determination this fall.

## THE 2021 REPORT

This report continues the approach of the Bureau's previous reports. The Bureau revisits similar baseline indicators to track key market developments and trends. It also revisits some in-depth topics to assess how the market has changed. For example, the current report updates the deferred interest analysis last conducted in the 2017 Report. The Bureau also discusses the

<sup>6</sup> See Bureau of Consumer Fin. Prot., *Card Act Report* (Oct. 1, 2013) (2013 Report), [http://files.consumerfinance.gov/f/201309\\_cfpb\\_card-act-report.pdf](http://files.consumerfinance.gov/f/201309_cfpb_card-act-report.pdf); Bureau of Consumer Fin. Prot., *The Consumer Credit Card Market* (Dec. 2015) (2015 Report), [http://files.consumerfinance.gov/f/201512\\_cfpb\\_report-the-consumer-credit-card-market.pdf](http://files.consumerfinance.gov/f/201512_cfpb_report-the-consumer-credit-card-market.pdf); Bureau of Consumer Fin. Prot., *The Consumer Credit Card Market* (Dec. 2017) (2017 Report), [https://files.consumerfinance.gov/f/documents/cfpb\\_consumer-credit-card-market-report\\_2017.pdf](https://files.consumerfinance.gov/f/documents/cfpb_consumer-credit-card-market-report_2017.pdf); Consumer Fin. Prot., *The Consumer Credit Card Market* (Aug. 2010) (2010 Report), [https://files.consumerfinance.gov/f/documents/cfpb\\_consumer-credit-card-market-report\\_2010.pdf](https://files.consumerfinance.gov/f/documents/cfpb_consumer-credit-card-market-report_2010.pdf). The Bureau also held a conference in 2011 in which numerous market stakeholders contributed information and perspective on developments in the credit card market. See Press Release, Bureau of Consumer Fin. Prot., *CFPB Launches Public Inquiry on the Impact of the Card Act* (Dec. 19, 2012), <https://www.consumerfinance.gov/about-us/newsroom/consumer-financial-protection-bureau-launches-public-inquiry-on-the-impact-of-the-card-act>.

<sup>7</sup> Credit Card Accountability Responsibility and Disclosure Act of 2009, Public Law 111-24, 123 Stat. 1734 (2009).

<sup>8</sup> Public Law 96-354, 94 Stat. 1164 (1980) (5 U.S.C. 601 *et seq.*).

effects of COVID-19 throughout the report and specifically adds a section about its impact on credit card issuers and their responses to consumers' needs.

Below is a summary of the core findings from each section of the report:

- Total outstanding credit card balances continued to grow and peaked in 2019 at \$926 billion, but, by the second quarter of 2020, consumers reduced card balances to \$811 billion, the largest six-month reduction in U.S. history. At the end of 2020, debt crept back up to \$825 billion. The share of accounts with a revolving balance declined in 2020, and more consumers paid down their card debt in 2020. Utilization rates declined across credit score tiers, and the share of consumers with below-prime scores who used 90 percent or more of their general purpose credit line fell to record lows. A declining share of consumers were late in making their payments as of the second quarter of 2020.
- The total cost of credit (TCC) on revolving accounts continued to increase through 2019 but declined modestly in 2020. The 2020 declines in TCC for general purpose and private label cards were 0.8 and 1.5 percentage points, respectively. Recent TCC decreases are largely a result of decreases in the indices underlying variable rates, such as the prime rate, and lower overall fees assessed. The Bureau estimates that the five rate decreases by the Federal Reserve from early-2019 through 2020 led to a cumulative roughly \$18 billion that credit card borrowers did not pay over that period. Accounts held by consumers with deep subprime credit scores saw the greatest drop in fee-to-balance ratios in 2020.
- Most measures of credit card availability decreased in 2020 after continued growth since the Great Recession. Application volume for credit cards decreased sharply in 2020 from its peak level in 2019, likely due to the interaction between reduced acquisition efforts by issuers and a decline in consumer demand. Approval rates also declined modestly in 2020. Driven by these contractions in both supply and demand, annual growth in the number of credit card accounts opened and the amount of credit line on new accounts reached its lowest level since 2013. Total credit line across all consumer credit cards fell slightly in 2020 from a post-Great Recession high of over \$4.5 trillion in 2019 but remained above 2018 levels. Existing accounts held by consumers with subprime and deep subprime scores saw



the greatest constriction in available line.<sup>9</sup> While credit line decrease (CLD) incidence increased for consumers with below-prime credit scores, issuers did not substantially deviate from previous line management trends during the pandemic.

- Digital engagement is growing consistently across all age groups and nearly every platform type. The share of consumers electing to receive statements digitally (e-statements) rather than by mail is continuing to increase, though the pace of adoption tapered in 2020. E-statement adoption has been surpassed by mobile app adoption as a method to engage with issuers.
- Many consumers received some form of relief on their credit card debts from their credit card providers during the pandemic. The Bureau estimates that over 25 million consumer credit card accounts representing approximately \$68 billion in outstanding credit card debt entered relief programs in 2020, figures vastly higher than in prior years. The Bureau also estimates that surveyed issuers' cardholders were able to forgo principal payments of anywhere from \$0.5 billion to \$1.5 billion against their credit card debts in 2020 due to these relief programs. Entries into payment deferral relief were spread fairly evenly across credit score tiers, but accounts held by consumers with lower scores received payment deferrals at the highest rate.
- Since the 2019 Report, issuers have lowered the range of their daily limits on debt collection phone calls for delinquent credit card accounts while increasing the use of emails in collection. However, survey respondents reported that, on average, only 31.9 percent of accounts that received email clicked open their emails.
- Innovations aimed at expanding credit access, particularly for less creditworthy borrowers, continued to grow in both the number of offerings and users. Buy Now, Pay Later (BNPL) products are offering a new form of purchasing with payments spread out over time, typically in four installments. Credit card issuers are offering similar plans, providing consumers more ways to manage their cash flow.

<sup>9</sup> These trends of constricting credit availability do not appear to continue in 2021. See Corinne Candilis & Ryan Sandler, *Credit card limits are rising for most groups after stagnating during the pandemic*, Bureau of Consumer Fin. Prot. (Aug. 11, 2021), <https://www.consumerfinance.gov/about-us/blog/credit-card-limits-rising-for-most-groups-after-stagnating-during-pandemic/>.

## **CURRENT AND FUTURE BUREAU WORK IN THIS MARKET**

Over the past two years, the Bureau has been actively engaged in the credit card market and is taking measures to address regulatory uncertainty, identify compliance deficiencies as well as research new emerging technologies and products to ensure the adequacy of consumer protection and a transparent and competitive marketplace for all consumers.

- In June of 2020, the Bureau released a Notice of Proposed Rulemaking (NPRM) concerning the anticipated discontinuation of LIBOR,<sup>10</sup> including proposing examples of replacement indices that satisfy Regulation Z requirements.<sup>11</sup> As proposed, the rule would allow credit card issuers to replace the LIBOR index used in setting variable rates on many existing accounts with a replacement index before LIBOR becomes unavailable, if certain conditions were met. To the Bureau's knowledge, there are millions of consumer credit card accounts indexed on LIBOR. The proposed rulemaking should help credit card providers transition those affected accounts to a replacement index in an orderly manner. The Bureau expects to issue a final rule in January 2022.<sup>12</sup>
- Through the Prioritized Assessments conducted in May of 2020, the Bureau found that credit card issuers generally provided some form of relief to consumers experiencing hardships as a result of COVID-19, such as "skip-a-pay" or payment deferrals for one to six months, with or without interest accrual.<sup>13</sup> Other relief options included lowered interest rates, waivers of annual and other fees, and extended deferred interest periods for credit card accounts that had already received deferred interest. However, the Bureau also identified certain issues that may raise the risk of consumer harm such as system

<sup>10</sup> Press Release, Bureau of Consumer Fin. Prot., *CFPB Takes Steps to Facilitate LIBOR Transition* (June 4, 2020), <https://www.consumerfinance.gov/about-us/newsroom/cfpb-facilitates-libor-transition/>.

<sup>11</sup> 85 FR 36938 (June 18, 2020), <https://www.govinfo.gov/content/pkg/FR-2020-06-18/pdf/2020-12239.pdf>.

<sup>12</sup> Office of Info. & Regulatory Affairs, *Amendments to Regulation Z to Facilitate Transition From LIBOR* (2021), <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202104&RIN=3170-AB01>.

<sup>13</sup> Bureau of Consumer Fin. Prot., *Supervisory Highlights COVID-19 Prioritized Assessments Special Edition, Issue 23* (Jan. 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_supervisory-highlights\\_issue-23\\_2021-01.pdf](https://files.consumerfinance.gov/f/documents/cfpb_supervisory-highlights_issue-23_2021-01.pdf).

deficiencies related to implementing relief programs and automatic payment processes, as well as delays in timely delivery of certain disclosures and responding to billing disputes.

- The Bureau continues to monitor the expansion of credit access, especially when new and innovative technologies are used. Credit access expansion can be positive but should be done responsibly and in a way that is understandable to consumers. Consumers will be better served if the use of such technologies are clearly explained in case of adverse actions.<sup>14</sup> Forms of point-of-sale financing, such as BNPL products, offer not only convenience but a new way of financing for many consumers. The Bureau encourages all providers in this space to take steps to make sure users of these products are adequately informed of the risks of such products.
- The Bureau encourages study into the effects of certain lending practices and their impact on credit scores, particularly for those consumers with non-prime credit scores. Practices such as credit line decreases (CLD) and account closure not only reduce consumers' access to credit but also potentially inflate their credit utilization rate. This could adversely affect consumers' credit scores without any other changes in their behavior. Additionally, over the past decade, a declining share of credit card issuers reported information on a borrower's actual payment amount to nationwide consumer reporting agencies, which may have implications for consumer access to credit.
- As indicated in its January 28, 2021 announcement,<sup>15</sup> the Bureau intends to take bold and swift action on racial equity in financial services, including in the areas of credit card marketing and lending. Existing data available to the Bureau do not allow the Bureau to fully examine the disparity in use, cost, and availability of credit cards by racial groups. The Bureau intends to explore options to incorporate racial data in its data sources to inform its future work.

<sup>14</sup> Bureau of Consumer Fin. Prot., *Tech Sprint on Electronic Disclosures of Adverse Action Notices* (Oct. 2020), <https://www.consumerfinance.gov/rules-policy/innovation/cfpb-tech-sprints/electronic-disclosures-tech-sprint/>.

<sup>15</sup> Bureau of Consumer Fin. Prot., *The Bureau is taking much-needed action to protect consumers, particularly the most economically vulnerable* (Jan. 28, 2021), <https://www.consumerfinance.gov/about-us/blog/the-bureau-is-taking-much-needed-action-to-protect-consumers-particularly-the-most-economically-vulnerable/>.

- As described in the new technical specifications issued on August 20, 2021, the Bureau’s “Collect” website will be the mandatory vehicle issuers must use to submit credit card agreements and their associated data in 2022 and beyond. Not only does Collect provide a simplified submission process and robust audit trail for issuers, it will allow the Bureau and other organizations to expand their current research on credit card agreements.<sup>16</sup>

<sup>16</sup> Bureau of Consumer Fin. Prot., *Technical Specifications for Credit Card Agreement and Data Submission Required under TILA and the CARD Act (Regulation Z)* (Aug. 20, 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_tech-specs-credit-card-agreement-data-submissions\\_final-rule\\_2021-08.pdf](https://files.consumerfinance.gov/f/documents/cfpb_tech-specs-credit-card-agreement-data-submissions_final-rule_2021-08.pdf).

# 1. Introduction

## 1.1 Review mandate

The CARD Act became law on May 22, 2009. Its stated purpose was to “establish fair and transparent practices related to the extension of credit” in the credit card marketplace.<sup>17</sup> The Dodd-Frank Act, which became law on July 21, 2010, established the Bureau and, one year later, transferred authority and responsibility for implementing and enforcing the CARD Act from the Board to the Bureau.

Among those responsibilities Congress originally assigned the Board was a mandate to “review, within the limits of its existing resources available for reporting purposes, [the] consumer credit card market [every two years].”<sup>18</sup> In 2012, the Board and the Bureau agreed that responsibility for the review passed to the Bureau under the terms of the Dodd-Frank Act. This report represents the Bureau’s fifth mandated biennial report on its review of the consumer credit card market, following the Bureau’s reports on the market in 2013, 2015, 2017, and 2019.<sup>19</sup>

<sup>17</sup> See *supra* note 5, at 1. A full summary of the CARD Act rules implemented by the Board is at pages 11 through 13 of the Bureau’s 2013 Report. See 2013 Report, *supra* note 6. The Bureau subsequently reissued these rules without material changes in December 2011. The Bureau later revised one CARD Act rule issued by the Board. On November 7, 2012, the Bureau proposed selected revisions to the ability-to-pay rules, which were intended to address a number of unintended impacts of the prior rule on consumers who did not work outside the home. The final rule implementing this revision became effective on May 3, 2013, with an associated compliance deadline of November 4, 2013. See 78 FR 25818 (May 3, 2013). On March 22, 2013, the Bureau finalized another revision to the CARD Act rules in response to a federal court ruling in 2012 that had granted a preliminary injunction to block a part of the Board’s 2011 rule from taking effect. The final rule became effective March 28, 2013. See 78 FR 18795 (Mar. 28, 2013). See also Press Release, Bureau of Consumer Fin. Prot., *CFPB Finalizes Credit CARD Act Rule* (Mar. 22, 2013), <https://www.consumerfinance.gov/about-us/newsroom/consumer-financial-protection-bureau-finalizes-credit-card-act-rule>.

<sup>18</sup> 15 U.S.C. § 1616(a) (2012).

<sup>19</sup> See generally, *supra* note 6.

## 1.2 Report scope

This report fulfills Congress’s directive to review the consumer credit card market in two overlapping ways. First, it responds to the general congressional mandate in section 502 of the CARD Act to review and report on the “consumer credit card market.” Second, it addresses “within the limits of [the Bureau’s] existing resources available for reporting purposes” topics explicitly enumerated by Congress for inclusion in this review, including:

1. the terms of credit card agreements and the practices of credit card issuers;
2. the effectiveness of disclosure of terms, fees, and other expenses of credit card plans;
3. the adequacy of protections against unfair or deceptive acts or practices relating to credit card plans; and
4. whether or not, and to what extent, the implementation of this Act and the amendments made by this Act have affected:
  - a) the cost and availability of credit, particularly with respect to non-prime borrowers;
  - b) the safety and soundness of credit card issuers;
  - c) the use of risk-based pricing; or
  - d) credit card product innovation.<sup>20</sup>

The CARD Act also requires the Bureau to “solicit comment from consumers, credit card issuers, and other interested parties” in connection with its review.<sup>21</sup> As in past years, the Bureau has done so through a Request for Information (RFI) published in the Federal Register, and the

<sup>20</sup> 15 U.S.C. § 1616(a) (2012). While this report presents information which may be relevant to assessments of safety and soundness issues relating to credit card issuers, the Bureau does not produce any further analysis on this subject in this report. The prudential regulators (*e.g.*, the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, and the National Credit Union Administration) have the primary responsibility for monitoring the safety and soundness of financial institutions.

<sup>21</sup> 15 U.S.C. § 1616(b) (2012).

Bureau discusses specific evidence or arguments provided by commenters throughout the report.<sup>22</sup>

## 1.3 Methodology

This section reviews several aspects of the Bureau's general methodology in compiling this report. Methodological approaches used in specific sections of this report are explained in more detail in those sections.

### 1.3.1 Data sources

This report leverages several data sources. It primarily relies on sources already held by the Bureau, by other Federal regulators, and by industry stakeholders. All results reported from data throughout this report aggregate results from multiple industry participants.<sup>23</sup>

Sources include the following:

1. Data from the Bureau's Consumer Credit Panel (CCP), which is a comprehensive, national 1-in-48 longitudinal sample of de-identified credit records maintained by one of the three nationwide consumer reporting agencies. Other Bureau products, such as the Consumer Credit Trends reports, rely on these data.<sup>24</sup> These data contain no personal identifiers, such as name, address, or Social Security number.

<sup>22</sup> Request for Information Regarding Consumer Credit Card Market, 85 FR 53299 (Aug. 28, 2020). The RFI also separately solicited comment on the Bureau's review of the CARD Act consistent with section 610 of the Regulatory Flexibility Act (RFA). Public Law 96-354, 94 Stat. 1164 (1980). That review is out of the scope of this report.

<sup>23</sup> No results in this report can be used to identify the outcomes or practices of individual entities. At the same time, outcomes and patterns observed in the market as a whole may not be true for (or may only apply in a limited degree to) any particular industry player.

<sup>24</sup> See Bureau of Consumer Fin. Prot., *Consumer Credit Trends*, <https://www.consumerfinance.gov/data-research/consumer-credit-trends/> (last visited Jan. 11, 2021). For CCP research related to COVID-19, see also Ryan Sandler & Judith Ricks, *Special issue brief: The early effects of the COVID-19 pandemic on consumer credit*,

2. De-identified information that the Board collects as part of its “Y-14M” (Y-14) data collection. The Board collects these data monthly from bank holding companies that have total consolidated assets exceeding \$50 billion.<sup>25</sup> The Board shares with the Bureau data from Y-14 banks. The data received by the Bureau cover the period from the middle of 2012 through the present and accounted for just under 70 percent of outstanding balances on consumer credit cards as of year-end 2020.<sup>26</sup>

Information in the Y-14 data do not include any personal identifiers. Additionally, accounts associated with the same consumer are not linked across or within issuers. The Y-14 does not include transaction-level data pertaining to consumer purchases. In addition, this study reports only aggregate measures and reveals no information about any specific issuer.

These data replace loan-level credit card collections that the Bureau previously collected.<sup>27</sup> The Bureau no longer requires or oversees the collection of any loan-level credit card data on an ongoing basis.

Bureau of Consumer Fin. Prot. (Aug. 31, 2020), <https://www.consumerfinance.gov/data-research/research-reports/special-issue-brief-early-effects-covid-19-pandemic-on-consumer-credit/>; Éva Nagypál, *Special issue brief: The Recovery of Credit Applications to Pre-Pandemic Levels*, Bureau of Consumer Fin. Prot. (July 27, 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_recovery-of-credit-applications-pre-pandemic-levels\\_report\\_2021-07.pdf](https://files.consumerfinance.gov/f/documents/cfpb_recovery-of-credit-applications-pre-pandemic-levels_report_2021-07.pdf); and Ryan Sandler, *Delinquencies on credit accounts continue to be low despite the pandemic*, Bureau of Consumer Fin. Prot. Blog (June 16, 2021), <https://www.consumerfinance.gov/about-us/blog/delinquencies-on-credit-accounts-continue-to-be-low-despite-the-pandemic/>.

<sup>25</sup> See Bd. of Governors. of the Fed. Rsrv. Sys., *Report Forms FR Y-14M*, <https://www.federalreserve.gov/apps/reportforms/reportdetail.aspx?sOoYJ+5BzDYnbIw+U9pka3sMtCMopzoV> (last visited Jan. 11, 2021) (for more information on the Y-14M collection).

<sup>26</sup> The Board has expanded the fields it collects from banks over time; therefore, some results reported below do not extend all the way back to 2012. Additionally, these data are periodically revised retroactively, and are therefore not fully static. These issuers represent a large portion of the market but are not necessarily representative of the portion of the market not covered by the data the Bureau receives. The remainder of the market, representing a substantial number of consumer credit cards, are outside the scope of the Y-14 data used by the Bureau because, among other reasons, they are issued by banks with assets of less than \$50 billion, or are issued by non-banks, such as credit unions. Results reported from Y-14 data throughout this report should be interpreted accordingly.

<sup>27</sup> See generally Bureau of Consumer Fin. Prot., *Sources and Uses of Data*, at 57-58 (Sept. 26, 2018), <https://www.consumerfinance.gov/data-research/research-reports/sources-and-uses-data-bureau-consumer-financial-protection/>.



3. Information provided in response to a series of data filing orders made to several industry participants, comprised of two distinct sets:<sup>28</sup>
  - a) Data requested from a broad and diverse group of issuers to address a range of topics that neither CCP nor Y-14 data can address. This report refers to these data as Mass Market Issuer (MMI) data. These data cover application and approval volumes, rates, and channels, deferred interest, digital account servicing, certain aspects of the impact of COVID-19 on consumers and issuers, and loss mitigation policies and practices, including debt collection.
  - b) Data requested from a diverse group of specialized issuers. These summary data, which focus on basic indicators of usage and cost, in places supplement the Y-14 to allow for a broader or more detailed perspective into certain facets of the market than either the Y-14 or CCP allow. Where these data supplement Y-14 data, those data are collectively called “Y-14+”.<sup>29</sup>
4. The CFPB’s Credit Card Agreement Database, an online database available to the public at <http://www.consumerfinance.gov/credit-cards/agreements>, was created pursuant to the CARD Act. It contains most credit card agreements available to consumers as of quarter’s end for each quarter from the third quarter of 2011 to the fourth quarter of 2014, and from the first quarter of 2016 to present.<sup>30</sup> After the fourth quarter of 2014, the Bureau temporarily suspended collection of agreements for one year to reduce burden while the Bureau developed a more streamlined and automated electronic submission system.<sup>31</sup> Submission and publication resumed in the first quarter of 2016. Agreements in the second quarter of 2019 are incomplete due to technical submission issues at the Bureau, and

<sup>28</sup> The Bureau notes that many players in the credit card industry are also entities with which the Bureau has one or more institutional relationships, such as a research partnership or membership on a Bureau-convened body.

<sup>29</sup> As discussed in note 26 *supra*, the Y-14 data cover a large but not representative portion of the credit card market. The Y-14+ data cover a larger and more representative portion of the credit card market, but the remaining uncovered portion is still substantial, and the Y-14+ data should similarly not be considered representative of that uncovered portion.

<sup>30</sup> Credit card issuers are not required to submit any credit card agreements to the Bureau if the card issuer has fewer than 10,000 open credit card accounts as of the last business day of the calendar quarter. 12 CFR 1026.58(c)(5).

<sup>31</sup> 80 FR 21153 (Apr. 17, 2015); 12 CFR 1026.58(g).

agreements in 2020 and 2021 may include omissions due to the Bureau's previous COVID-19 regulatory flexibility statement.<sup>32</sup>

5. Responses to the RFI, which sought comment on all aspects of the review described in Section 1.2 above.<sup>33</sup> The RFI generated 11 comments.<sup>34</sup> That total includes six letters from trade associations representing credit card issuers and other market participants, two letters from individual issuers, one letter from an industry-side market participant, one letter from a consumer advocacy group, and one letter from a consumer.
6. Credit card complaints that consumers have submitted to the Bureau's Office of Consumer Response.<sup>35</sup>
7. Commercially available data sources to which the Bureau subscribes that focus on the credit card industry, including mail volume monitoring reports, industry analyst reports, and data services and analytics from industry consultants.
8. Numerous public sources, including but not limited to Securities and Exchange Commission (SEC) filings, analyst reports, studies and data produced by other regulators, academic scholarship, and the trade press.
9. Other information gathered informally through Bureau market monitoring activities.

### 1.3.2 Credit scores

Throughout this report, the Bureau refers to consumer credit scores. Lenders use these scores to predict a consumer's relative likelihood of default compared to other consumers. Credit scores

<sup>32</sup> Bureau of Consumer Fin. Prot., *Statement on Supervisory and Enforcement Practices Regarding Bureau Information Collections for Credit Card and Prepaid Account Issuers* (Mar. 26, 2020), [https://files.consumerfinance.gov/f/documents/cfpb\\_data-collection-statement\\_covid-19\\_2020-03.pdf](https://files.consumerfinance.gov/f/documents/cfpb_data-collection-statement_covid-19_2020-03.pdf).

<sup>33</sup> 82 FR 13313 (Mar. 10, 2017).

<sup>34</sup> As noted in note 22 *supra*, the RFI also solicited comment on the Bureau's review of the CARD Act consistent with the RFA, which is out of the scope of this report. The count of comments above includes all responses to the RFI, including those that addressed that RFA review, as well as certain other comments which were removed due to privacy concerns.

<sup>35</sup> Bureau of Consumer Fin. Prot., *Consumer Complaint Database*, <https://www.consumerfinance.gov/data-research/consumer-complaints/> (last visited Aug. 18, 2021).

provided by major national consumer reporting agencies are used by most credit card issuers to determine consumers’ eligibility for credit and to set pricing for credit lines.<sup>36</sup> Data relied upon in this report include widely-used, commercially-available credit scores.

There are two important limitations to the way the Bureau uses credit scores in this report. Different credit score models, while fundamentally similar, may include or exclude different data points or weight them differently. First, this means that data are aggregated on the basis of credit score even though not all consumer credit scores are computed using identical methodologies. Second, it means that, when reporting certain measures over longer time horizons, the introduction of new models and changes in the prevalence of various models complicates comparisons between different points in time. In some cases, one or both of those two issues could affect which “credit score tier” applies to a certain account or consumer. (“Credit score tiers” are defined further below). The Bureau believes that different credit scoring methodologies, over the time periods and set of market participants examined in this report, are sufficiently consistent that it remains informative and useful to report aggregated results and changes over time by credit score. The Bureau nevertheless proceeds with caution when assigning precision, beyond a reasonable degree, to certain results.

When reporting results by credit score in this report, scores are grouped into five tiers. This five-tier grouping aligns with the groupings used in the Bureau’s 2017 and 2019 Reports on the credit card market and the Bureau’s Consumer Credit Trends reporting, as well as other Bureau research and reports. Table 1 shows the distribution of adults, scored adults, and scored cardholders in each credit score tier.

**TABLE 1: CREDIT SCORE RANGE SHARES AS OF Q4 2019 (CCP)**

<b>Credit score tiers</b>	<b>U.S. adult population</b>	<b>U.S. scored population</b>	<b>U.S. scored credit cardholding population</b>
Superprime (scores of 720 or greater)	41%	54%	64%
Prime (scores from 660 to 719)	12%	16%	16%

<sup>36</sup> Section 7.1.1 discusses the increased reliance of some credit card lenders on data and/or scores other than those provided by the major national credit bureaus.

Near-prime (scores from 620 to 659)	6%	8%	8%
Subprime (scores from 580 to 619)	5%	7%	6%
Deep subprime (scores of 579 or less)	12%	16%	7%
Thin or stale score file	12%	-%	-%
Credit invisible <sup>37</sup>	11%	-%	-%

Credit scores in the CCP and Y-14 are refreshed regularly. Unless noted otherwise, accounts and consumers are classified into score tiers based on their credit score at that time. As a result, when analyzing trends over time within a particular credit score tier, the set of accounts or consumers in a tier changes over time. This fact is especially important to note given that many consumers experience changes in their credit score that are large enough to move them from one credit tier to another.<sup>38</sup>

An additional note of caution in interpreting credit scores is warranted due to COVID-19. In past reports, the Bureau has noted a general trend of increase in consumer credit scores.<sup>39</sup> However, research suggests that the Coronavirus Aid, Relief, and Economic Security Act’s (CARES Act) forbearance provisions, in combination with income support programs and reduced consumption during the pandemic, accelerated a decline in the share of borrowers with subprime credit scores.<sup>40</sup> This pronounced improvement in credit scores complicates analyses of credit measures using the above classifications during 2020.

<sup>37</sup> This estimate of the percentage of the U.S. adult population who are credit invisible is based on data from 2010. See Kenneth P. Brevoort, Philipp Grimm, & Michelle Kambara, *Data Point: Credit Invisibles*, Bureau of Consumer Fin. Prot., at 6 (May 2015), [http://files.consumerfinance.gov/f/201505\\_cfpb\\_data-point-credit-invisibles.pdf](http://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf).

<sup>38</sup> See 2015 Report, *supra* note 6, at 53-55.

<sup>39</sup> See 2019 report, *supra* note 6, at 22.

<sup>40</sup> See Sarena Goodman, Geng Li, Alvaro Mezza, & Lucas Nathe, *Developments in the Credit Score Distribution over 2020*, Bd. of Governors. of the Fed. Rsrv. Sys. (Apr. 2021), <https://www.federalreserve.gov/econres/notes/feds-notes/developments-in-the-credit-score-distribution-over-2020-20210430.htm>.

### 1.3.3 Other definitions

This subsection defines certain additional terms used frequently throughout this report. This is not exhaustive of all remaining defined terms in this report; for example, other defined terms more particular to certain sections or subsections of this report are introduced in those sections or subsections.

Throughout most of this report, the term “general purpose credit card” refers to credit cards that can transact over a network accepted by a wide variety of merchants, including the Visa, Mastercard, American Express, and Discover networks. The term “private label” refers to cards that can only be used at one merchant or a small group of related merchants.<sup>41</sup> In some instances, mainly in certain parts of Sections 4 and 5, the term “retail” refers to a combined category of private label cards and some network-branded cards that are managed by a business unit that specializes in retail credit cards.<sup>42</sup>

There are many ways to take a snapshot of consumer credit card indebtedness. The Bureau relies on two of the most prevalent, using nominal figures unless otherwise indicated. The first one entails measuring the current amount owed by consumers on a specific date, regardless of where in any individual consumer’s billing cycle that date falls. Debt calculated in this manner is referred to as “outstandings.” For example, if one were to report the total amount owed by consumers on credit cards as of December 31, 2020, it would be referred to as outstandings.

The second method entails measuring the amount owed by consumers at the end of their billing cycles, regardless of whether those cycles fall on a certain date. The Bureau refers to debt calculated in this manner as “balances,” and in most cases as “cycle-ending balances.” For example, if one were to report the total amount owed by consumers at the end of their billing

<sup>41</sup> Private label cards generally transact over a private network maintained by the issuer to which the merchant is granted access. Some cards can transact over both a private label network and a general purpose network. For example, a consumer may be issued a card that features a merchant’s brand as well as a general purpose network brand. When used at the merchant, the transaction may be routed over the issuer’s private network, but at other merchants the transaction is routed over the general purpose network. For the purposes of this report, those cards are considered to be general purpose credit cards except where explicitly noted otherwise.

<sup>42</sup> Retail cards do not include network-branded cards that carry hotel or airline branding, even if those cards are managed by a business unit that specializes in retail credit cards.

cycles that concluded in December 2020, it would be referred to as cycle-ending balances and, for some accounts, would calculate balances as of, *e.g.*, the 10th of the month.

This report also uses the term “debt” to refer to both of these amounts interchangeably. Note also that consumer debt on credit cards (whether calculated as month-end outstandings or cycle-end balances) includes both “revolving” debt—the amount owed on accounts for which the balance was not paid in full by the immediately prior statement due date—and “transacting” debt—charges incurred on accounts for which the balance was paid in full by the immediately prior statement due date. While transacting accounts represent a large share of all credit card purchase volume, revolving accounts generally represent a large share of all credit card debt at any given point in time. More detail on revolving and transacting patterns is provided in the subsequent sections of this report.

Throughout this report, the Bureau refers to “COVID-19.” While a full recounting of the onset of COVID-19 is beyond the scope of this report, it is important to reiterate here both the speed and the breadth with which the pandemic took hold. Within a period spanning just a few weeks, from mid-March to early-April of 2020, the World Health Organization declared COVID-19 to be a pandemic;<sup>43</sup> the United States declared a nationwide emergency;<sup>44</sup> and most U.S. states and territories promulgated mandatory stay-at-home orders.<sup>45</sup> As described elsewhere in this report, this period was characterized by sharp declines of movements of persons and activities entailing person-to-person interaction across the United States, with sharp attendant economic consequences too broad and varied to recount in full here. In summary, however, the total number of employed persons in the country dropped from approximately 150 million to 130 million from February to April 2020,<sup>46</sup> and the total annualized rate of wage and salary

<sup>43</sup> See World Health Organization, *WHO Director-General’s opening remarks at the media briefing on COVID-19* (Mar. 11, 2020), <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>.

<sup>44</sup> See 85 FR 15337 (Mar. 18, 2020).

<sup>45</sup> See Moreland, Amanda, et. al., *Timing of State and Territorial COVID-19 Stay-at-home orders and changes in population movement*, CDC (Sep. 4, 2020), <https://www.cdc.gov/mmwr/volumes/69/wr/mm6935a2.htm>.

<sup>46</sup> Fed. Rsrv. Bank of St. Louis, *Total Nonfarm Payroll*, <https://fred.stlouisfed.org/series/PAYNSA> (last visited Aug. 18, 2021).

disbursements to all employees dropped from \$9.7 trillion to \$8.7 trillion,<sup>47</sup> accompanied by an even starker decline in the annualized rate of personal consumption expenditures, from \$14.9 trillion to \$12.1 trillion.<sup>48</sup>

Except where otherwise and explicitly noted, all such references to “COVID-19” are used as shorthand for the period of economic crisis and broad social disruption beginning in 2020 associated with the onset of the COVID-19 pandemic, not the illness caused by the SARS-CoV-2 coronavirus. For example, the sentence “COVID-19 led to credit card issuers expanding their relief programs,” signifies that issuers expanded their relief programs in response to the economic crisis precipitated by the pandemic, not because of the direct impact of the illness on issuers. In contrast, the sentence “Fears of contracting the COVID-19 disease appear to have led to increased use of contactless payments by consumers,” does, in fact, refer directly to the impact of the pandemic on consumers.

Throughout this report, the Bureau refers to the “Great Recession,” which officially began in the final quarter of 2007 and ended in the second quarter of 2009.<sup>49</sup> The Bureau also refers to the “COVID-19 recession,” which officially began in February 2020 and concluded in April 2020.<sup>50</sup> Those references are generally used for convenience and should not be interpreted as a statement as to precisely when the recession began or concluded. Discussions of these time periods may also include broader commentary on economic conditions following the official trough in gross domestic product.

<sup>47</sup> Fed. Rsv. Bank of St. Louis, *Compensation of Employees, Received: Wage and Salary Disbursements*, <https://fred.stlouisfed.org/series/A576RC1> (last visited Aug. 18, 2021).

<sup>48</sup> Fed. Rsv. Bank of St. Louis, *Personal Consumption Expenditures*, <https://fred.stlouisfed.org/series/PCE> (last visited Aug. 18, 2021).

<sup>49</sup> Nat’l Bureau of Econ. Rsch., *Business Cycle Dating Committee Announcement September 20, 2010* (Sep. 20, 2010), <https://www.nber.org/news/business-cycle-dating-committee-announcement-september-20-2010>.

<sup>50</sup> Nat’l Bureau of Econ. Rsch., *Business Cycle Dating Committee Announcement July 19, 2021* (July 19, 2021), <https://www.nber.org/news/business-cycle-dating-committee-announcement-july-19-2021>.

### 1.3.4 Limitations

The limitations inherent to the Bureau's methodology in this report are substantially similar to those inherent in the Bureau's previous reports on the credit card market.<sup>51</sup> Those limitations are restated here briefly.

First, while the Bureau would ideally like data and evidence that allows it to definitively identify the causes of certain outcomes, the data available generally do not allow it to do so. The Bureau cautions against interpreting factual observations in the study as definitively proving or disproving particular causal relationships. Correlations presented throughout this report do not necessarily indicate causation.

Second, each of the data sources the Bureau analyzes have particular limitations. Some sources are not a comprehensive view of the market; some are limited to the account level or the aggregate level; and some are purely qualitative. Not all data sources use consistent definitions or delineations or cover the same periods, products, or phenomena. To the extent possible, the Bureau mitigates these limitations. Every attempt is made to harmonize definitions and to identify those places where the Bureau is unable to do so.

<sup>51</sup> See, in particular, the 2015 Report, *supra* note 6, at page 27.



## 2. Use of credit

To provide a foundation for analyses in subsequent sections, this section reviews market measures that cover several aspects of the consumer credit card market.

First, this section describes the prevalence of credit cards and the size of the market. By some measures, such as total credit card debt outstanding, the market has generally contracted over the course of the pandemic as consumers paid down balances, in part due to federal stimulus measures.<sup>52</sup> By other indicators, such as the total number of open general purpose card accounts, the market has never been so expansive.

Second, this section looks at spending and repayment behavior. Some of these data point to potentially significant differences between the credit card debt held by consumers prior to the pandemic and the debt they hold today.

Last, this section reports on delinquency and charge-off rates. These remain below historic norms even as widely relied-upon macroeconomic indicators—like the unemployment rate—have spiked and remain elevated relative to pre-pandemic periods.

### 2.1 Product prevalence

The Bureau estimates that 181 million of the 258 million adults in the United States (70 percent) had a credit card account in their name as of the end of 2020.<sup>53</sup> Around 90 million consumers

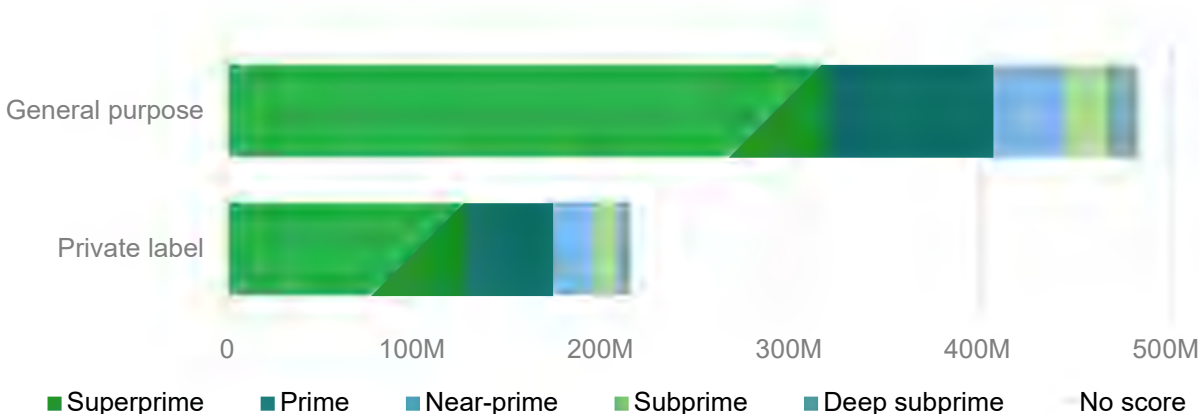
<sup>52</sup> See Matthew Dalton & AnnaMaria Andriotis, *Consumers, Flush With Stimulus Money, Shun Credit-Card Debt*, Wall St. J. (Aug. 2, 2020), <https://www.wsj.com/articles/consumers-flush-with-stimulus-money-shun-credit-card-debt-11596373201>.

<sup>53</sup> This estimate is according to coverage of credit records present in the CCP sample, though this does not include authorized users, who are individuals designated by the primary account holder to use the same credit account. A recent report from the Federal Reserve finds 83 percent of consumers report having at least one credit card. See Bd. of Governors of Fed. Rsrv. Sys., *Report on the Economic Well-Being of U.S. Households in 2020*, at 42 (May 2021),

hold at least one general purpose and at least one private label card. Some 79 million hold only general purpose cards. Just under 9 million hold only private label cards.

General purpose cards remain prevalent, while private label cardholding has become relatively less common. By year-end 2020, there were 485 million open general purpose card accounts and 214 million open private label accounts. For general purpose card accounts, that represents the high-water mark for open accounts since at least 2005, while the number of open private label accounts has remained nearly unchanged since 2013. General purpose cardholding is just as common today as it was prior to the Great Recession, though that share is down from 63 percent on the eve of the pandemic. In contrast, 36 percent of adults held at least one private label card in 2020, compared to 52 percent in 2005. Consumers in all credit score tiers have seen declines in private label card account holding. Most general purpose and private label cards are held by consumers with superprime scores, as shown in Figure 1.

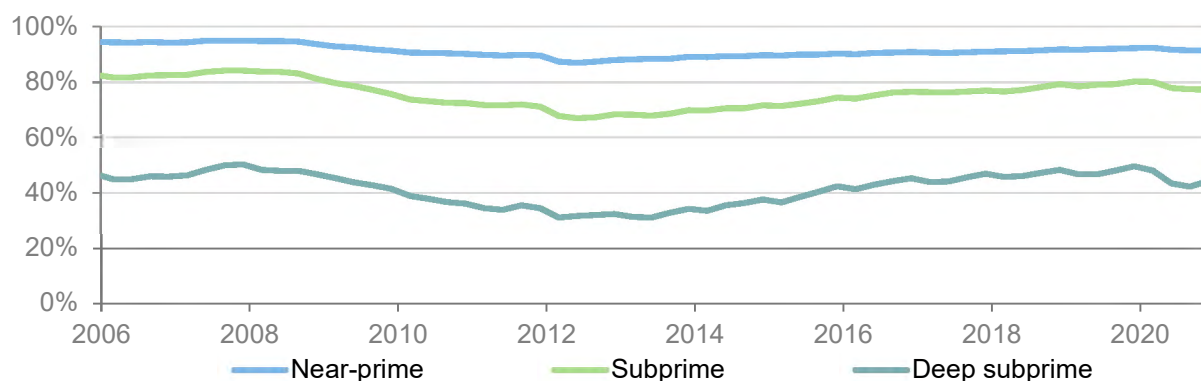
**Figure 1:** CREDIT CARD ACCOUNTS, YEAR-END 2020 (CCP)



<https://www.federalreserve.gov/publications/files/2020-report-economic-well-being-us-households-202105.pdf>. A recent report from the Federal Reserve Bank of Atlanta stated that 78 percent of consumers reported holding a credit card, see Kevin Foster, Claire Greene, & Joanna Stavins, *The 2020 Survey of Consumer Payment Choice: Summary Results* (Fed. Rsrv. Bank of Atlanta, Working Paper No. 21-1, 2021), <https://www.atlantafed.org/-/media/documents/banking/consumer-payments/survey-of-consumer-payment-choice/2020/2020-survey-of-consumer-payment-choice.pdf>. For estimates of the adult population in the United States, see Stella Ogunwole et. al, *Population Under Age 18 Declined Last Decade*, Census Bureau (Aug. 12, 2021), <https://www.census.gov/library/stories/2021/08/united-states-adult-population-grew-faster-than-nations-total-population-from-2010-to-2020.html>.

The share of consumers with below-prime scores holding at least one open credit card account fell in 2020 following several years of moderate growth. Cardholding dropped significantly across these credit score tiers during and shortly after the Great Recession. This metric has grown in recent years in the lower credit tiers but fell in 2020 and has yet to return to pre-COVID-19 recession levels for cardholders in any below-prime credit tier. As of year-end 2020, fewer than half of consumers with deep subprime scores held a credit card, while near-prime and subprime cardholding remains significantly more common than deep subprime cardholding, at 91 percent and 78 percent respectively.

**Figure 2:** SHARE OF CONSUMERS WITH NON-PRIME SCORES WITH AT LEAST ONE CREDIT CARD (CCP)

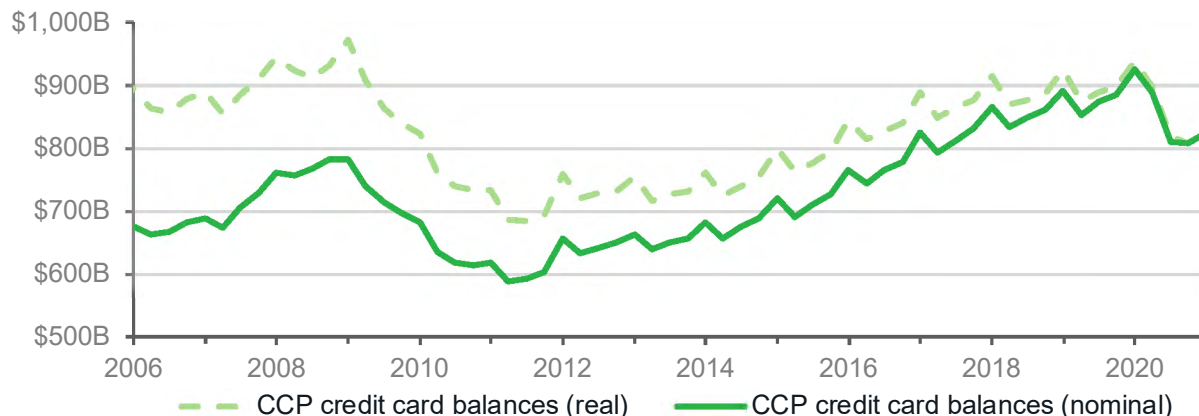


Cardholders carry fewer cards as of year-end 2020 than they did in 2018. The average cardholder carried 3.8 cards in 2020, compared to 4 in 2018. This decrease may reflect reduced demand for new cards during the pandemic, but it may also reflect an increase in card closures as issuers endeavored to reduce their exposure to potential losses during uncertain economic times.

## 2.2 Debt levels

Consumer credit card debt had been increasing every year since 2011, before reversing course suddenly following the onset of the pandemic. Credit card debt peaked in 2019 at \$926 billion, but by the second quarter of 2020 consumers had reduced card balances to \$811 billion, the largest six-month reduction in U.S. history. By the end of 2020, debt had crept back up to \$825 billion. Adjusted for inflation, current debt stands at 2016 levels, as shown in Figure 3.

**Figure 3:** AVERAGE CREDIT CARD BALANCES, NOMINAL AND INFLATION-ADJUSTED (CCP, BLS)<sup>54</sup>



General purpose credit card debt declined sharply in 2020, reversing a long-term trend of balance growth. In its last report the Bureau noted that balances had more-or-less steadily increased since the end of 2010 to nominal pre-Great recession levels. By the fourth quarter of 2020, however, general purpose credit card debt stood at \$745 billion, well below the \$793 billion mark reached in the fourth quarter of 2018. The decrease in balances is significant for cardholders in all score tiers – deep subprime cardholders reduced their balances by 24 percent in the second quarter of 2020 alone. This result has likely been caused by a temporary reduction in spending during the first few months of the pandemic, coupled with the impact of federal relief programs such as Economic Impact Payments and payment suspensions on other products such as federally held student loans.

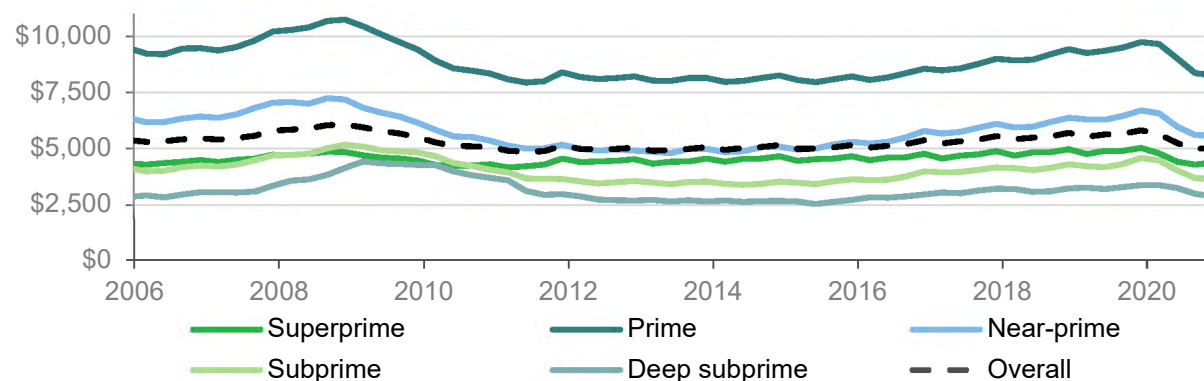
Private label credit card debt had also been growing rapidly in recent years, before declining in 2020. After rising to \$91 billion in the fourth quarter of 2018, private label debt fell to \$82 billion in the fourth quarter of 2020, a decline of 10 percent. Similar to general purpose cards, private label balance declines were most significant for cardholders with deep subprime scores, who reduced balances by 36 percent in 2020, the largest year-over-year decline since at least 2005.

<sup>54</sup> This chart displays average cycle-ending balances calculated across each full year, which decreases the effect of seasonality. See Bur. Of Labor Stat., Series CUUR0000SA0, <https://www.bls.gov/> (last accessed June 14, 2021).

## GENERAL PURPOSE

Indebted general purpose cardholders in every credit score tier reduced their average balances significantly in 2020, but cardholders with prime scores remain the most indebted. For consumers who held at least one such card with a balance, average general purpose credit card balances were roughly \$5,700 as of the end of 2018. At the end of 2019, that figure had risen to \$5,800, before declining to roughly \$5,000 by the end of 2020. Average balances declined for cardholders in all credit score tiers by 13 to 20 percent year-over-year in 2020, as shown in Figure 4. However, cardholders with prime credit scores continue to show significantly higher credit card balances on average than cardholders in any other credit score tier, at more than \$8,000 per indebted general purpose cardholder as of the end of 2020.

**Figure 4:** AVERAGE PER-CARDHOLDER CREDIT CARD BALANCES, GENERAL PURPOSE (CCP)



Many events and consumer behavioral trends may have contributed to the declines in general purpose card debt in 2020. As discussed in the next section, the beginning of the pandemic saw declines in spending, which may have enabled some cardholders to use those funds to pay down debt. Unprecedented levels of direct government assistance, such as Economic Impact Payments, enhanced unemployment benefits, and payment and interest suspensions on federally-held student loans may have provided some consumers with additional disposable income usable to reduce balances.<sup>55</sup> Reductions in payments on other credit products, such as mortgages following a refinance to lower rates, may also have been a factor. However, some

<sup>55</sup> See, e.g., Stefan Lembo Stolba, *Credit Card Debt in 2020: Balances Drop for the First Time in Eight Years*, Experian (Nov. 2020), <https://www.experian.com/blogs/ask-experian/state-of-credit-cards/>.

evidence also suggests that, rather than reduce debt, some consumers may have simply shifted purchasing behavior away from credit cards to debit cards or other forms of credit, such as buy-now pay-later or personal loan products. The debt paydown was also likely unevenly distributed, with those individuals that lost their jobs reporting a greater likelihood to have increased balances in the prior twelve months.<sup>56</sup> Similarly, cardholders did not equally benefit from CARES Act provisions.<sup>57</sup>

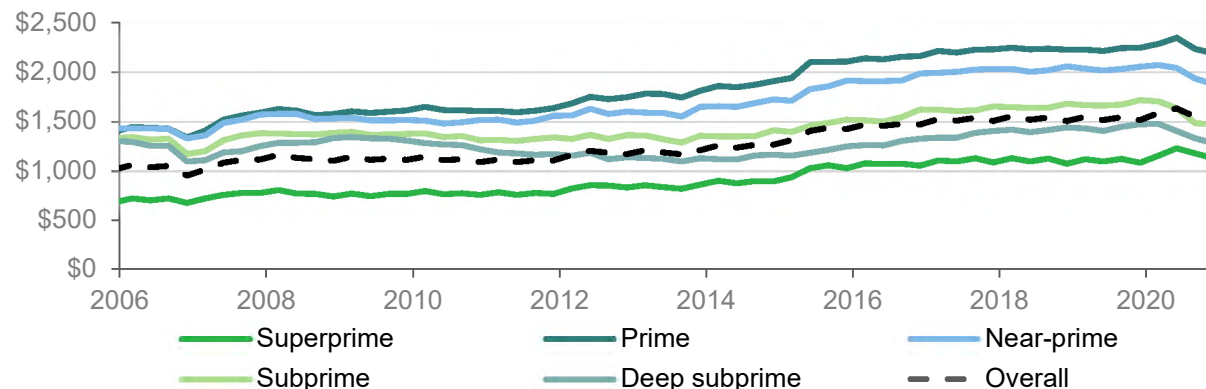
#### **PRIVATE LABEL**

In contrast to general purpose card trends, average per-cardholder balances for private label cardholders rose during the first and second quarters of 2020, before declining somewhat by the end of the year. Average private label balances for all credit tiers reached new peak nominal levels in late 2019 and 2020. Average per-cardholder private label balances rose to its highest level of more than \$1,600 in mid-2020 before falling to less than \$1,500 by the end of the year. While private label balances are lower on average than general purpose cards, cardholders with prime scores remain the biggest carriers of private label debt. Average private label balances for cardholders with prime scores peaked at \$2,300 in mid-2020 before declining to roughly \$2,200 by year-end 2020.

<sup>56</sup> See Bd. of Governors of Fed. Rsrv. Sys., *Report on the Economic Well-Being of U.S. Households in 2020*, at 42 (May 2021), <https://www.federalreserve.gov/publications/files/2020-report-economic-well-being-us-households-202105.pdf>. Bureau research finds some evidence that support this finding. See Sandler & Ricks, *supra* note 24, at 24-25.

<sup>57</sup> See AnnaMaria Andriotis & Orla McCaffrey, *Pausing Loan Payments During Coronavirus Is Producing Uneven Results*, Wall St. J. (Nov. 2020), <https://www.wsj.com/articles/pausing-loan-payments-during-coronavirus-is-producing-uneven-results-11606559401>.

**Figure 5:** AVERAGE PER-CARDHOLDER CREDIT CARD BALANCES, PRIVATE LABEL (CCP)



## 2.3 Purchase volume

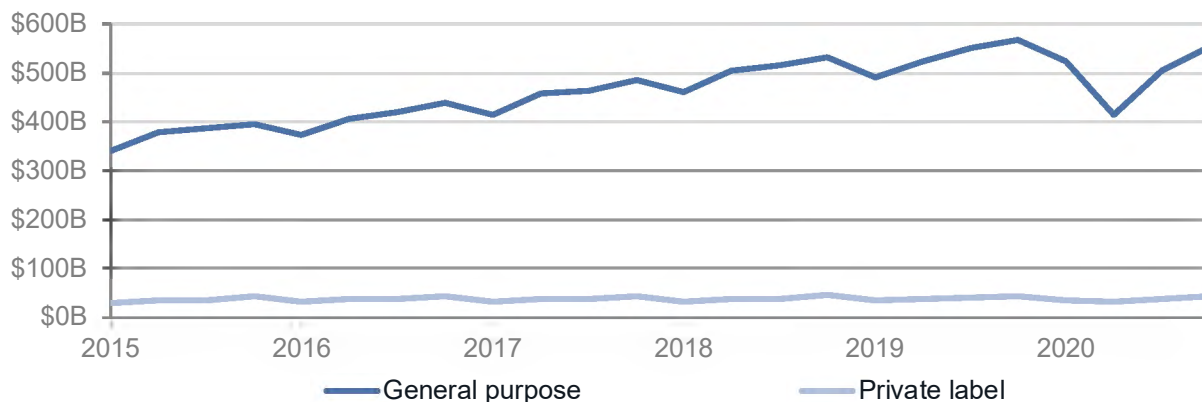
Purchase volume on general purpose cards grew steadily for several years before declining rapidly in the early part of the pandemic, but volumes returned to previous levels by the end of 2020. For all of 2019 and early 2020, general purpose card purchase volumes for card issuers in the Bureau's sample typically exceeded \$500 billion each quarter. Yet, general purchase volumes fell 21 percent in the second quarter of 2020.<sup>58</sup> In contrast, private label card spending is much lower at roughly \$40 billion per quarter and has remained relatively flat since at least 2015. Some of the declines in general purpose purchase volumes can be attributed to reductions in spending on travel, restaurants, and entertainment, categories of activities that became much less common during the pandemic.<sup>59</sup>

<sup>58</sup> The Bureau's 2019 Report relied on Nilson data, which considers a wider range of products and purchases than the Y-14+ data.

<sup>59</sup> For more information on COVID-19, see Section 5.5.

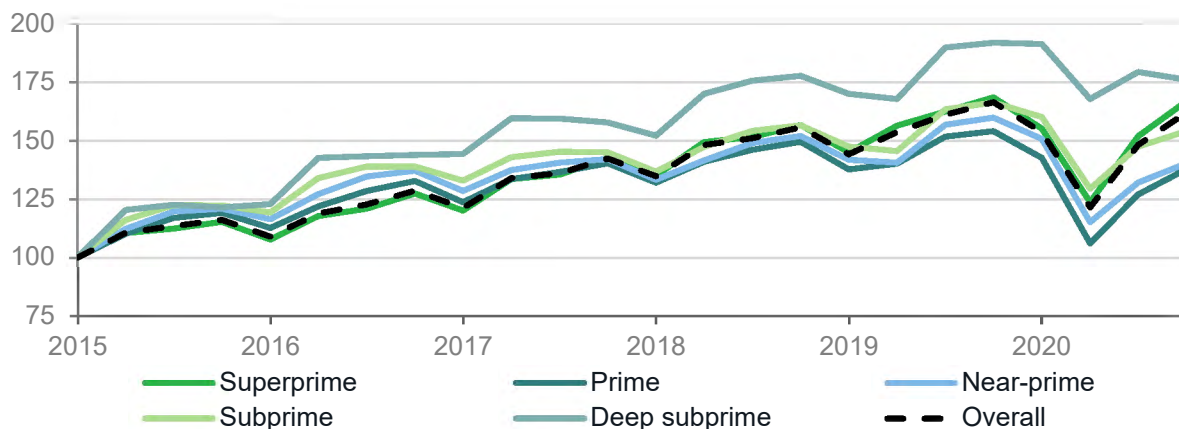


**Figure 6:** CREDIT CARD PURCHASE VOLUME (Y-14+)



Cardholders in all credit score tiers contributed to the decline in purchase volumes in the second quarter of 2020, but most tiers saw purchase volumes rebound to previous highs by the end of the year. Cardholders with superprime scores accounted for 83 percent of all general purpose card purchase volume in 2020, and in the last quarter of the year their spending was 67 percent higher than in the first quarter of 2015. Cardholders with prime scores made up 11 percent of spending in 2020 but saw spending decline in the second quarter of 2020 to only 6 percent higher than in the first quarter of 2015, and volumes have yet to return to where they were prior to the pandemic. While growth in spending since 2015 was greatest for cardholders with deep subprime scores in percentage terms, these cardholders account for less than 1 percent of general purpose purchase volume.

**Figure 7:** CREDIT CARD PURCHASE VOLUME, GENERAL PURPOSE (Y-14+) (INDEXED TO Q1 2015 = 100)





## 2.4 Repayment

### 2.4.1 Revolving rates

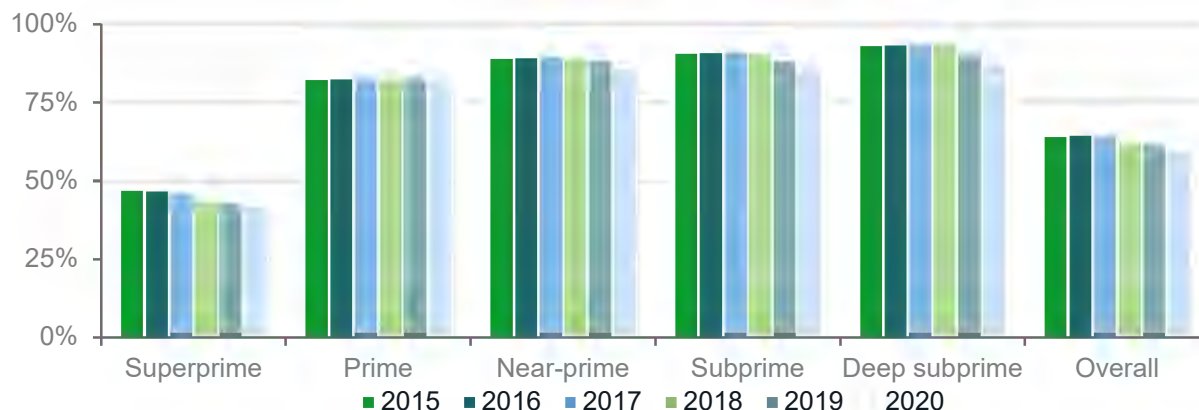
Accounts with balances can be identified as exhibiting one of two basic patterns in any given cycle. “Transacting” accounts pay off the previous cycle’s balance in full before the end of the next cycle. “Revolving” accounts pay some amount less than that.<sup>60</sup> Although an account can move back and forth between transacting and revolving, many accounts reveal persistent payment behavior over time.<sup>61</sup> The Bureau calculates the share of accounts revolving in a given cycle as the number of accounts that revolve divided by the total number of revolving and transacting accounts. The denominator excludes accounts that fail to satisfy either condition and are “neither transacting nor revolving.”

Over the past two years, a decreasing share of general purpose accounts revolved a balance from one month to the next. Figure 8 shows the decline in revolver activity from 2018 to 2020 was true for every credit tier except prime. For cardholders with lower scores, this trend is particularly noteworthy as the share of revolving subprime and deep-subprime general purpose accounts fell 6 and 7 percentage points respectively from 2018 levels. The decrease in revolver activity is a significant shift in payment behavior that predates but may have been accelerated by the pandemic.

<sup>60</sup> The methodology for determining whether an account is revolving has changed from when the Bureau reported on this in 2017 or 2019. In this report, an account is considered “revolving” in a cycle if its beginning balance is larger than the sum of payments received in a cycle. If the sum of payments is equal to or exceeds a non-zero beginning balance, it is considered “transacting.” If an account does not satisfy either condition (for example if the beginning balance is zero) it is “neither transacting nor revolving.” The denominator excludes accounts in a transitioning status. Figures that use Y-14 and Y-14+ data are based only on accounts that are “open and active” in a given month or cycle

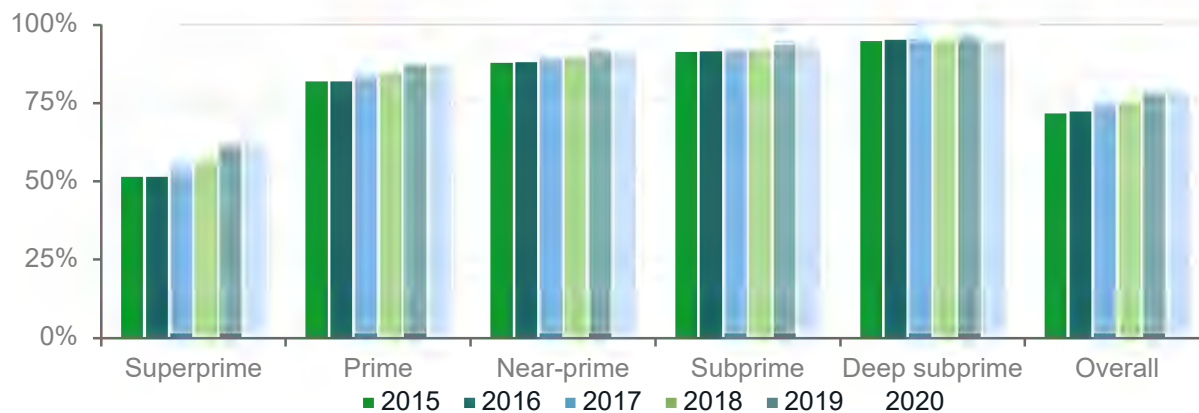
<sup>61</sup> See 2015 Report, *supra* note 6, at 50-52 (citing Benjamin J. Keys & Jialan Wang, *Minimum Payments and Debt Paydown in Consumer Credit Cards* (U. of Chicago Harris Sch. of Pub. Pol’y, Working Paper 2016), <https://www.nber.org/papers/w22742>).

**Figure 8:** SHARE OF ACCOUNTS REVOLVING, GENERAL PURPOSE (Y-14+)



In contrast to general purpose, Figure 9 shows that the overall share of private label accounts that revolve increased in 2019 and remained at an elevated level in 2020. Over three-fourths of private label accounts now pay less than the previous cycle’s balance each cycle. An increase in revolver activity by consumers with near-prime scores or higher drove the expansion in the total share of revolving accounts. There was no significant change in revolving rates for subprime and deep subprime accounts from 2018 levels. For all credit tiers, a greater share of private label accounts revolves a balance each month than general purpose accounts.

**Figure 9:** SHARE OF ACCOUNTS REVOLVING, PRIVATE LABEL (Y-14+)



While the Bureau can only quantify the share of accounts that revolve, recent data from the Survey of Consumer Payment Choice suggests that the share of consumers who revolve is at its lowest point since 2015. At the time of the survey in October 2020, 51.3 percent of consumers with a credit card reported carrying a balance at some point in the last 12 months, down one

percentage point from 2019, while 40.7 percent reported carrying a balance within the last month, down six percentage points from 2019.<sup>62</sup> Federal Reserve Board data from the annual Survey of Household Economics and Decisionmaking (SHED) support this conclusion, with 48 percent of survey cardholders in 2020 reporting that they never carried an unpaid balance during the preceding 12 months, a two percentage point increase from 2019 levels.<sup>63</sup>

## 2.4.2 Payment rates

Payment rates provide an additional measure of consumer reliance on credit cards as a source of consumer credit.<sup>64</sup> The payment rate is the share of total cycle-beginning balances paid that cycle.<sup>65</sup>

General purpose card payment rates continue to grow, driven by steadily increasing payments by cardholders with superprime scores in 2019 and a marginal rise in payments by cardholders with lower scores in 2020. About one-third of total general purpose cycle beginning balances are now paid by cycle's end, but repayment differs by credit score. Superprime accounts pay half of their total balances each cycle. In contrast, all other tiers pay less than one-sixth. Yet, payment rates for subprime and deep subprime accounts slightly increased in 2020. Higher payment amounts coupled with lower purchase volume contributed to a decline in debt starting in the second quarter of 2020. As purchase volumes began to rise in the latter half of the year,

<sup>62</sup> See *supra* note 53 and Fed. Rsrv. Bank of Atlanta, *2020 SCPC Tables* (Jan. 2021), [https://www.atlantafed.org/-/media/documents/banking/consumer-payments/survey-of-consumer-payment-choice/2020/tables\\_scpc2020.pdf](https://www.atlantafed.org/-/media/documents/banking/consumer-payments/survey-of-consumer-payment-choice/2020/tables_scpc2020.pdf).

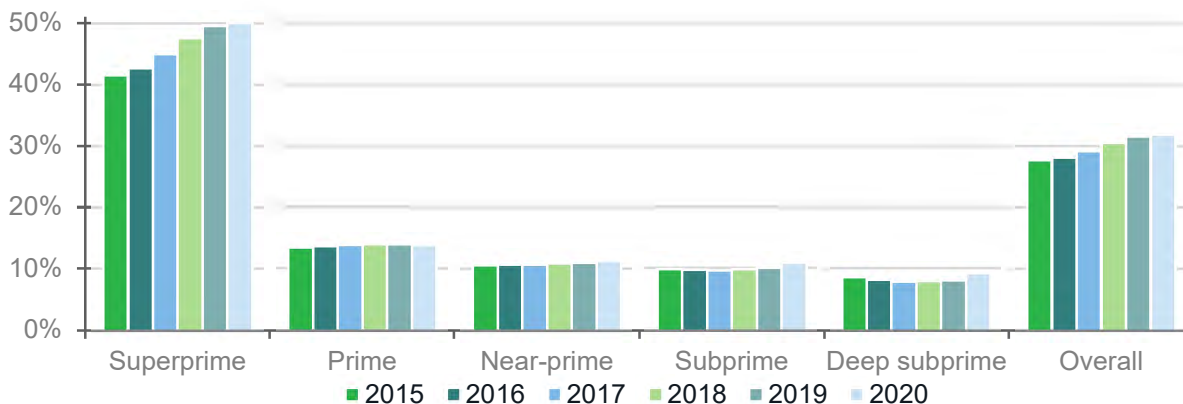
<sup>63</sup> See Bd. Of Governors for the Fed. Rsrv. Sys., *Report on the Economic Well-Being of U.S. Households in 2020*, at 42 (May 2021), <https://www.federalreserve.gov/publications/files/2020-report-economic-well-being-us-households-202105.pdf>. See also Bd. Of Governors for the Fed. Rsrv. Sys., *Report on the Economic Well-Being of U.S. Households in 2019*, at 30 (May 2020), <https://www.federalreserve.gov/publications/files/2019-report-economic-well-being-us-households-202005.pdf>.

<sup>64</sup> Payment measures cannot be shown at the consumer level because the CCP does not contain payment data. The Y-14 is used instead for these views.

<sup>65</sup> Thus, a payment rate of 100 percent corresponds to all account balances being paid in full, and a payment rate of zero percent indicates that no one is paying any credit card bill even in part.

payment rates remained comparatively elevated, explaining the decline in average balances.<sup>66</sup> Economic Impact Payments and the deferral of other debt obligations during the pandemic supported higher payment rates. Payment rates in 2020 were also affected by issuer relief programs like “skip-a-pay.”<sup>67</sup>

**Figure 10:** PAYMENT RATE, GENERAL PURPOSE (Y-14+)



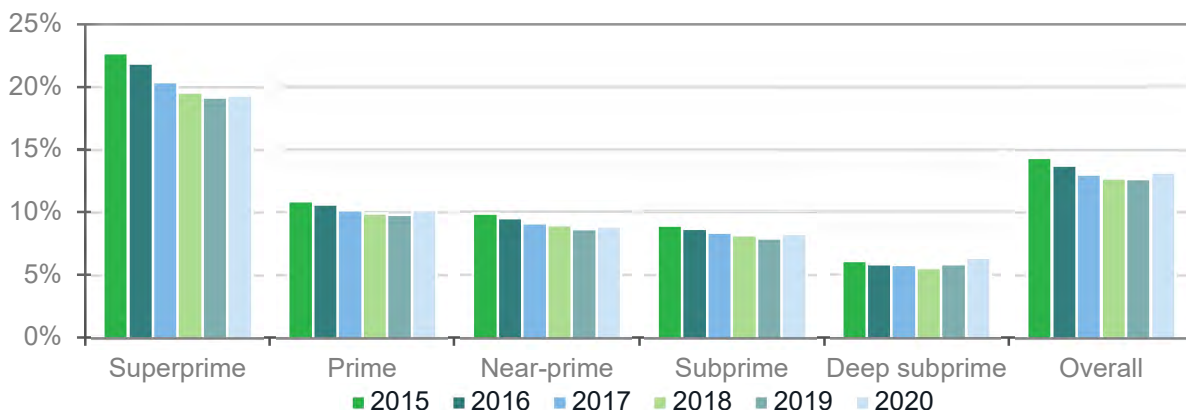
Private label payment rates rose for the first time in five years. While the overall increase was small in magnitude, the trend reversal is significant, as it was driven by consumers with lower credit scores. As the share of subprime and deep subprime revolvers did not substantively change from 2019 to 2020, it is likely these consumers paid down a portion of previously incurred retail card debt less than the total balance. Private label payment rates for consumers with superprime scores continue to be double that of all other tiers. One explanation for lower private label payment rates may be the prevalence of deferred interest promotions, which incentivize consumers to pay less than the full balance prior to promotion expiration.<sup>68</sup>

<sup>66</sup> See Sections 2.2 and 2.3 for further data on average debt and purchase volumes.

<sup>67</sup> See Section 5.5 for further information on short-term payment deferral programs.

<sup>68</sup> See 2017 Report, *supra* note 6, at 58 (finding that deferred interest promotional balances outstanding for consumers with superprime scores were equivalent to over half of private label balances owed by those same consumers). For more information regarding deferred interest promotions, see Section 5.2.

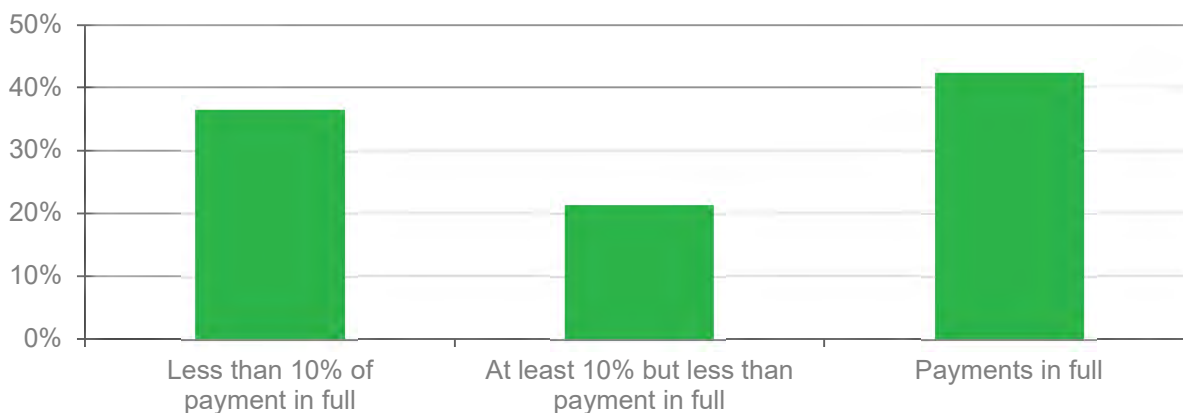
**Figure 11:** PAYMENT RATE, PRIVATE LABEL (Y-14+)



The distribution of payment rates is bimodal. About two-fifths of accounts pay their balances in full. Over one-third pay less than 10 percent of their balances. In comparison, Figure 12 shows a much smaller percentage pay between 10 percent and 100 percent of their balances each month. This is likely driven by persistent transacting and revolving activity over time. Payment amount is used by reporting agencies to calculate credit score, partially explaining the stark difference in payment behaviors among tiers. However, recent research by the Bureau suggests that only about half of the largest credit card issuers furnish actual payment data.<sup>69</sup>

<sup>69</sup> Logan Herman, Jonah Kaplan, & Austin Mueller, *Quarterly Consumer Credit Trends: Payment Amount Furnishing & Consumer Reporting*, Bureau of Consumer Fin. Prot. (Nov. 12, 2020), <https://www.consumerfinance.gov/data-research/research-reports/quarterly-consumer-credit-trends-payment-amount-furnishing-consumer-reporting/>.

**Figure 12:** DISTRIBUTION OF PAYMENT AMOUNTS ACROSS HIGH, LOW, AND INTERMEDIATE PAYMENTS, 2020 (Y-14)



### 2.4.3 Payment methods

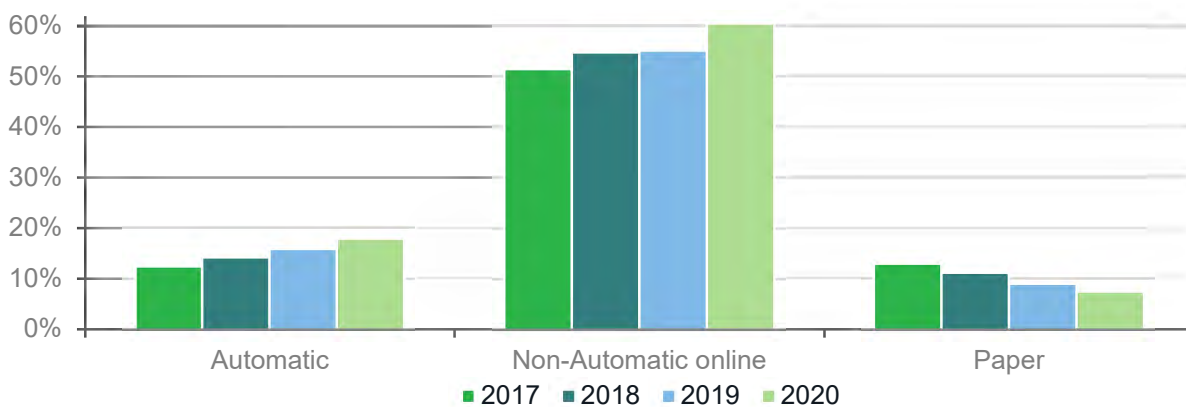
More consumers than ever are paying their credit card bills online or via mobile app. Concurrently, the use of paper-based payments has declined. These trends are true overall and for each age group. Yet adoption of digital payments for older consumers accelerated in 2020 as technological literacy increased during the pandemic. When using an issuer’s online portal or mobile app, consumers can generally authorize non-recurring “one-time” payments or recurring “automatic” payments. For all methods, consumers can choose any payment amount and date but often choose the minimum payment or full statement balance as prominently displayed payment options.

The share of consumers enrolled in automatic payments continues to increase. In 2020, 20 percent of active accounts within the scope of the MMI survey were enrolled in automatic payments at year-end compared to 16 percent in 2018.<sup>70</sup> Automatic payment eliminates late fee

<sup>70</sup> Some studies have reported markedly higher consumer-reported rates of automatic payment. *See, e.g.,* Mercator Advisory Group, *U.S. Consumers and Credit: Rising Usage*, at 38 (Dec. 2018), <https://www.mercatoradvisorygroup.com/Reports/Consumers-and-Credit--Rising-Usage/>. It is possible that consumers who self-report overstate the extent of their use of automatic payment. Consumers may also be including *pre-authorized* one-time payments as automatic payments.

charges which has been reported in surveys as the main benefit of enrollment.<sup>71</sup> However, it could potentially lead to overdraft charges on checking accounts. The Bureau has not attempted to quantify this impact or to determine fee incidence rates associated with automatic payment.

**Figure 13:** SHARE OF ACTIVE ACCOUNTS THAT MADE A PAYMENT IN THE LAST CYCLE OF THE YEAR BY PAYMENT METHOD, GENERAL PURPOSE (MMI)<sup>72</sup>



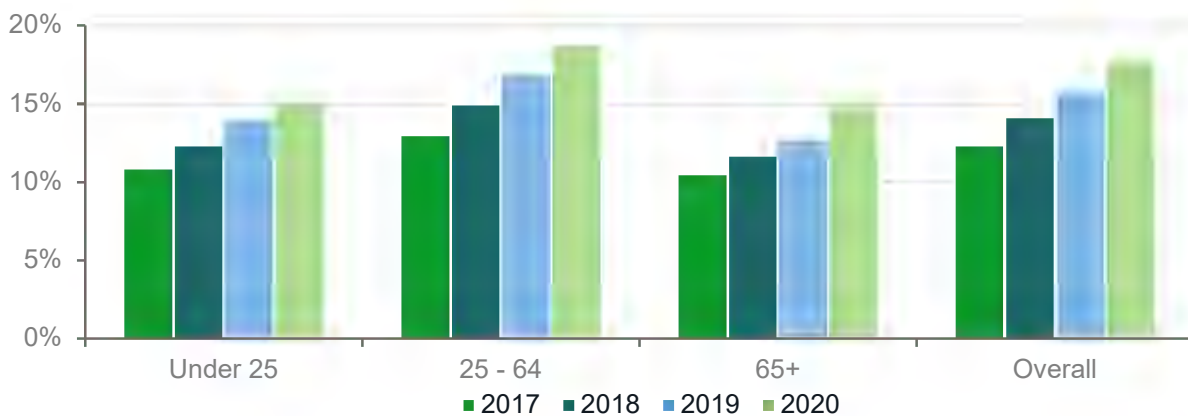
In 2019 and 2020, the use of automatic and non-automatic online payments continued to increase while payment of general purpose card statements by paper fell into single-digits. As shown in Figure 14, the age group with the highest share of accounts making an automatic payment (at 18 percent) are cardholders aged 25 to 64. Consumers under age 25 are about as likely to use automatic payments as those 65 years and older—roughly 15 percent for both groups. Despite increasing adoption of automatic payments for all demographics over the past two years, barriers to adoption remain. Surveys report that those who do not enroll in automatic payments express a desire to maintain manual controls, such as varying payment amount or checking statements first.<sup>73</sup>

<sup>71</sup> See Auriemma Consulting Group, *Buy Now, Pay Later, Instant Issuance and Automatic Payments, The Payments Report*, at 12 (Mar. 2021).

<sup>72</sup> Values do not sum to 100 percent as certain forms of payment, such as telephone and payments from a third-party, are not included.

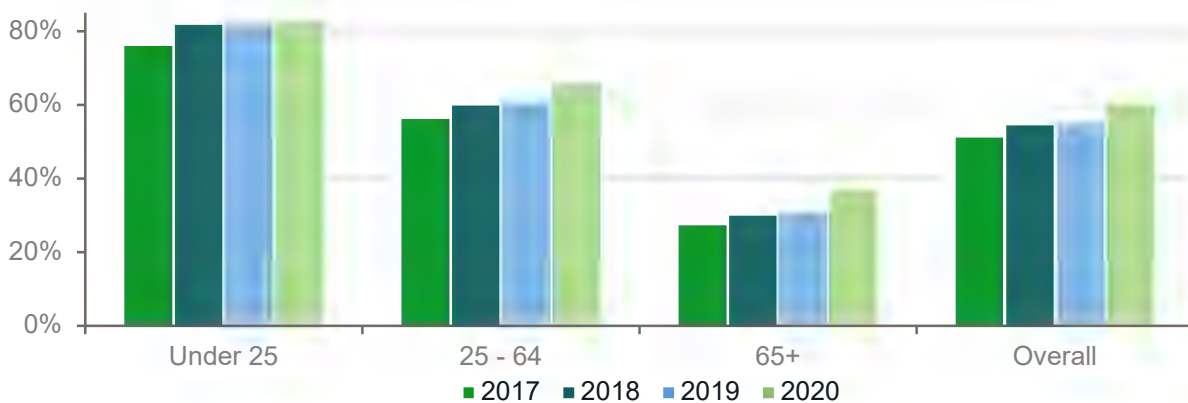
<sup>73</sup> See Auriemma Consulting Group, *supra* note 71.

**Figure 14:** SHARE OF ACTIVE PAYMENT-MAKING ACCOUNTS THAT MADE AT LEAST ONE AUTOMATIC PAYMENT IN THE LAST CYCLE OF THE YEAR VIA ONLINE PORTAL OR MOBILE APP BY AGE, GENERAL PURPOSE (MMI)



There was little change in the use of non-automatic online payments in 2019, yet the total share of accounts utilizing this payment method jumped for consumers over 25 in 2020. Three-fifths of accounts in 2020 made at least one electronic payment via online portal or mobile app. Younger consumers are still significantly more likely to use one-time digital payments, but evidence suggests other age groups may be rapidly enrolling in digital servicing platforms.

**Figure 15:** SHARE OF ACTIVE PAYMENT-MAKING ACCOUNTS THAT MADE AT LEAST ONE “ONE-TIME” ELECTRONIC PAYMENT IN THE LAST CYCLE OF THE YEAR VIA ONLINE PORTAL OR MOBILE APP BY AGE, GENERAL PURPOSE (MMI)

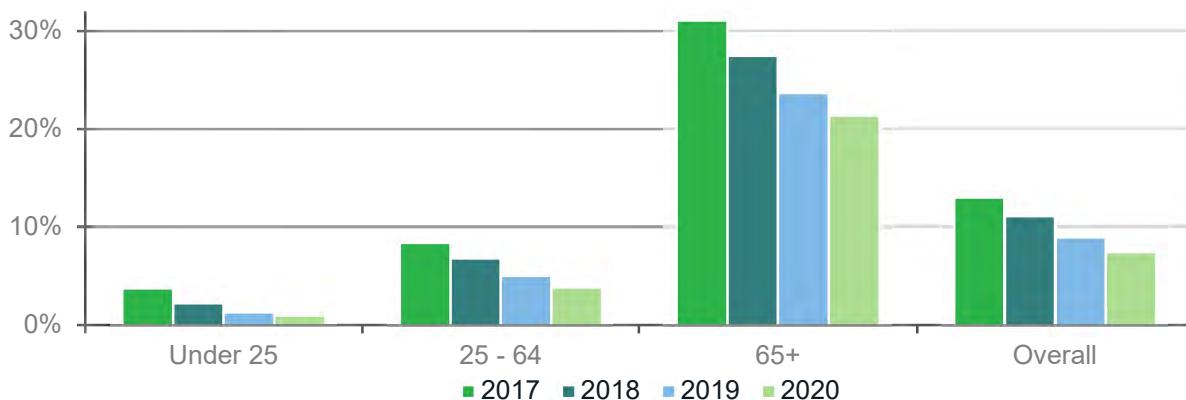


Paper-based payments remain a prominent payment method for older Americans, but that appears to be changing. In 2017, 31 percent of consumers 65 and older that made a payment in the final month of the year used a paper check at least once that cycle. In 2020, that figure had fallen to 21 percent. Yet, the difference between age groups remains stark—only 1 percent of



consumers under 25 and 4 percent of consumers between the ages of 25 and 64 used a paper check to pay their credit card bill in the last payment cycle of 2020. Additionally, one academic researcher has found the use of active choice formats like digital, as opposed to paper, payments may increase the amount consumers pay, which could lead to lower debt levels.<sup>74</sup>

**Figure 16:** SHARE OF ACTIVE PAYMENT-MAKING ACCOUNTS THAT MADE AT LEAST ONE PAPER PAYMENT IN THE LAST CYCLE OF THE YEAR BY AGE, GENERAL PURPOSE (MMI)



## 2.5 Delinquency

General purpose and private label card delinquency rates continued to increase throughout 2019, maintaining their upward trend following the Great Recession and reaching a peak at the end of the year.<sup>75</sup> From the first quarter of 2020 onward, however, both general purpose and

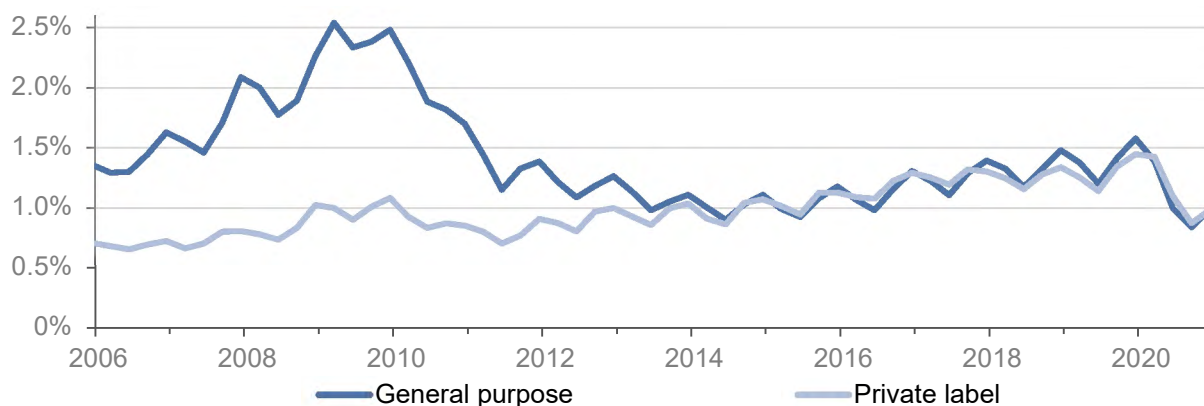
<sup>74</sup> “Our findings that minimum required payment rates, statement balance payoff rates, and average payment amounts are higher in active choice formats typical of credit card account portals (versus traditional open choice formats on credit card paper billing statements) suggest that online repayment may impact debt levels. Downward shifts toward the minimum required amount increase long-term debt, while upward shifts toward the full balance decrease debt, so the relative propensity of each behavior will influence the degree to which aggregated debt levels increase or decrease over time.” See Salisbury Comment Letter, at 2-3.

<sup>75</sup> When a consumer fails to make a required minimum payment by the due date, the credit card account becomes “delinquent.” Because credit scores are heavily influenced by delinquency and charge-offs, these measures are not shown by credit score.

private label delinquency rates started to decline and continued to fall up until the final quarter of the year, erasing six years of increases.

This trend most likely reflects the impact of government financial relief enacted to offset the financial hardship imposed by COVID-19 and the resulting recession.<sup>76</sup> Bureau research utilizing survey data also implies that the falling delinquency rate over the course of the pandemic reflects both private and public relief, including unemployment relief and loan forbearance programs. Additional Bureau research suggests the share of accounts actively receiving assistance increased through the first half of 2020.<sup>77</sup>

**Figure 17:** SHARE OF ACCOUNTS 60 OR MORE DAYS DELINQUENT (CCP)<sup>78</sup>



Convergence in account delinquency rates for general purpose and private label card continued throughout 2019 and 2020, with rates moving in near lockstep throughout 2020. One explanation for the convergence over the past decade may be that private label card issuers are

<sup>76</sup> For more information regarding issuer response to the COVID-19, see Section 5.5. *See also* Scott Fulford, Marie Rush, & Eric Wilson, *Data Point: Changes in consumer financial status during the early months of the pandemic: Evidence from the second wave of the Making Ends Meet survey*, Bureau of Consumer Fin. Prot. (Apr. 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_making-ends-meet-wave-2\\_report\\_2021-04.pdf](https://files.consumerfinance.gov/f/documents/cfpb_making-ends-meet-wave-2_report_2021-04.pdf).

<sup>77</sup> *See* Sandler & Ricks, *supra* note 24, at 24-25.

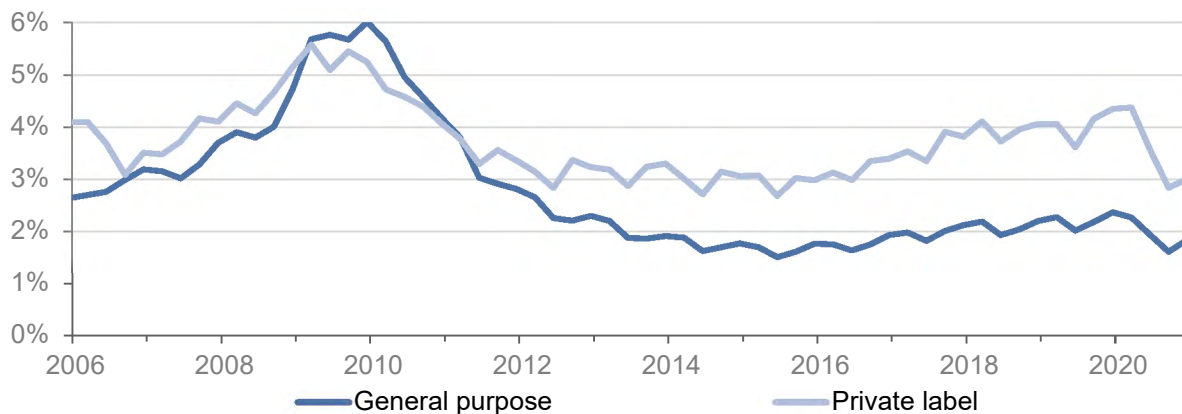
<sup>78</sup> Figures 17 and 18 use the delinquency definition “60 or more days delinquent,” meaning that the account is at least three minimum monthly payments behind on debt repayment. This is considered “severe” delinquency.

increasingly offering cards to consumers with lower credit scores. In addition, COVID-19 related financial relief and interventions may impact accounts uniformly across card type.

The share of balances 60 or more days delinquent also decreased in 2020, although general purpose card balances exhibited a sharper decline than that of private label. Private label balance delinquency rates fell from a peak of 2.4 percent at end of year 2019 to just under 3 percent by third quarter 2020, undoing three years of upward trends. General purpose balance delinquency rates also peaked in 2019, although at a lower rate of 2.4 percent, and then fell to 1.6 percent by third quarter 2020, a low not seen since 2016.

Even as account delinquency rates for general purpose and private label cards converged in the wake of the Great Recession, delinquency rates as shares of balances diverged, as shown in Figure 18. However, throughout 2020, the measured disparity between rates by card type fell from a maximum of 2 percentage points in 2019 to closer to one percentage point in 2020. This slight convergence may reflect uniform impacts of policy interventions and consumer behavior in response to the COVID-19 recession across card types, similarly to the increased convergence of the share of delinquency rates by accounts for both general purpose and private label cards.

**Figure 18:** SHARE OF BALANCES 60 OR MORE DAYS DELINQUENT (CCP)



## 2.6 Charge-off

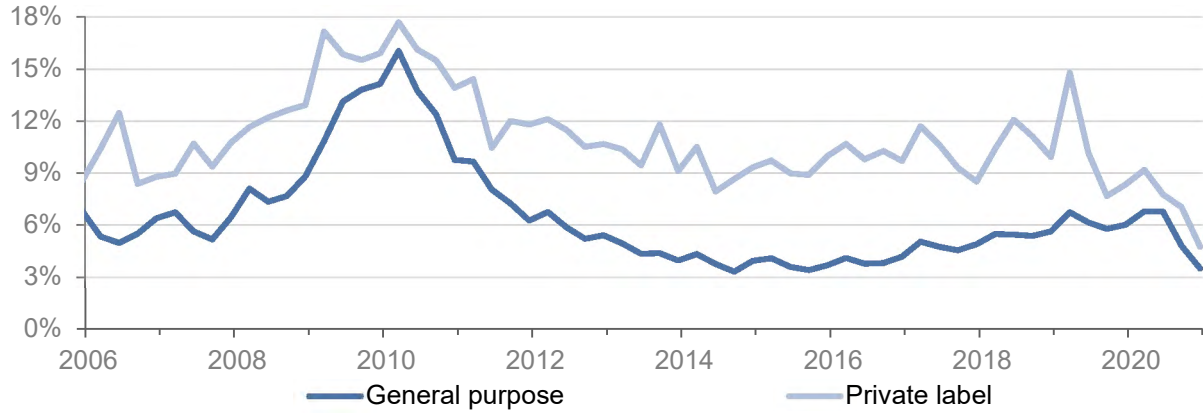
Charged-off balances also declined through the COVID-19 recession, but less uniformly than delinquency rates.<sup>79</sup> Private label charge-offs reached a peak of around 15 percent at the end of 2019 and fell throughout 2020 to around 5 percent. This observed pattern reflects the higher volatility of private label charge-off rates in comparison to general purpose. General purpose charge-offs remained roughly consistent around 6 percent until mid-year 2020, then fell to around 3.5 percent. Private label charge-offs and general purpose charge-offs exhibit a convergence over the period similar to that of delinquency rates.

Declines (or moderation, in the case of general purpose cards) in charged-off balances began before the pandemic and subsequent financial relief, but, over the course of 2020, charge-offs across both card types fell in lockstep. This decline likely reflects the economic impact of government and private interventions in response to COVID-19. Forward-looking statements made by several major issuers suggest issuers expect that charge-offs could return to pre-pandemic levels in the medium term, based on recent increases in delinquency rates.<sup>80</sup>

<sup>79</sup> Accounts that remain delinquent for 180 days must be “charged off,” meaning that the issuer can no longer consider the outstanding balance as an asset on its balance sheet. Delinquent accounts may have to be charged off prior to 180 days in certain circumstances as, for example, with a bankruptcy. *See* Off. of the Comptroller of the Currency, *Policy Implementation – The Guidance Attached to this Bulletin Continues to Apply to Federal Savings Associations*, OCC Bulletin 2000-20 (June 20, 2000), <https://occ.gov/news-issuances/bulletins/2000/bulletin-2000-20.html>.

<sup>80</sup> Issuers note losses have remained low but may rise in the next year or two. “[W]e now expect our card net charge-off rate to be around 250 basis points for the year. ... pre-COVID, we would have thought that our loss rate in card this year would have been 3.3%, 3.5%. So it just gives you a sense there that tailwind on credit is significant.” JPMorgan Chase & Co., *Q1 2021 Results – Earnings Call Transcript*, Seeking Alpha (Apr. 14, 2021), <https://seekingalpha.com/article/4419102-jpmorgan-chase-and-co-ipm-ceo-jamie-dimon-on-q1-2021-results-earnings-call-transcript>; “With respect to credit, delinquencies are expect to increase from the current levels. So, we now believe the peak will occur later than we anticipated, likely in early 2022. While current delinquencies will result in lower net charge-offs in the second quarter, we expect net charge-offs to rise resulting from the increases in delinquencies as we move through 2021.” Synchrony Financial, *Q1 2021 Results – Earnings Call Transcript*, Seeking Alpha (Apr. 27, 2021), <https://seekingalpha.com/article/4421546-synchrony-financial-2021-q1-results-earnings-call-transcript>; “The increase in card net charge-offs from the prior quarter was driven by accounts that had been in Skip-a-Pay and did not gear. ... Looking forward, we expect minimal impact to charge-offs from this population.” Discover Financial Services, *Q1 2021 Results – Earnings Call Transcript*, Seeking Alpha (Apr. 22, 2021), <https://seekingalpha.com/article/4420711-discover-financial-services-dfs-ceo-roger-hochschild-on-q1-2021-results-earnings-call>.

**Figure 19:** ANNUALIZED RATE OF GROSS OUTSTANDING BALANCES CHARGED OFF (CCP)



## 3. Cost of credit

As its predecessors did, this report assesses overall costs to credit card consumers using the Bureau's total cost of credit (TCC) measure. TCC captures the totality of payments by consumers to issuers as an annualized percentage of cycle-ending balances on their accounts.<sup>81</sup> This section also looks separately at the main components of TCC—interest charges and fees.<sup>82</sup> Cardholders revolving debt from one month to the next pay the majority of fees and interest. This analysis focuses primarily (but not exclusively) on costs to revolving cardholders.

### 3.1 Total cost of credit

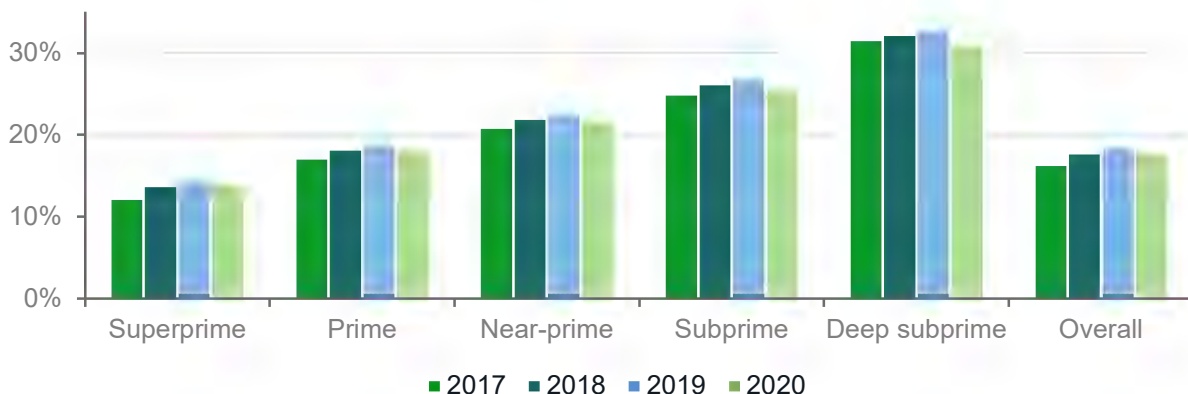
TCC on accounts that carried a balance increased in 2019, but 2020 saw total cost return to 2018 levels. The general purpose card cost of credit increased from 15.3 percent in 2015 to 18.5 percent in 2019, but costs declined to 17.7 percent in 2020. As discussed in more detail below, both the prior-year cost increases and the 2020 decrease were driven by broader shifts in the interest rate environment; fee costs in every credit tier have been flat. Between August 2019 and March 2020, the prime rate decreased a total of 2 percentage points, which drove the decline in TCC, because most consumer credit cards have variable rates that are tied to changes in the prime rate.<sup>83</sup>

<sup>81</sup> Cost data are from the Y-14, augmented by summary data that the Bureau collected from a range of issuers not included in that source. Y-14 data do not permit consumer-level cost reporting. For more detail on Y-14 data, see Section 1.3.1. Although this report uses broader cost data than previous iterations did, the Bureau does not claim that these data are representative of the market not covered by the data. TCC does not include the cash value of any rewards that may have been earned by the cardholder.

<sup>82</sup> The TCC metric was initially introduced in the 2013 Report and has since been used in the 2015 Report, 2017 Report, and 2019 Report. See 2013 Report, *supra* note 6, at 19; 2015 Report, *supra* note 6, at 76; 2017 Report, *supra* note 6, at 72; 2019 Report, *supra* note 6, at 55.

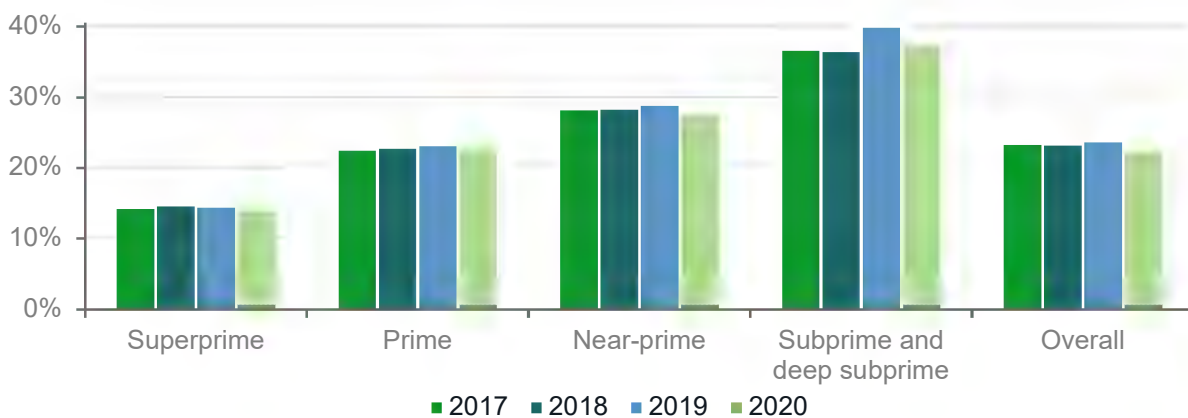
<sup>83</sup> For further discussion of variable rates, see Section 3.2.2.

**Figure 1:** TOTAL COST OF CREDIT, REVOLVING ACCOUNTS, GENERAL PURPOSE (Y-14+)



On the private label side, TCC on revolving accounts similarly rose in 2019 before receding in 2020, both overall and for every credit tier except superprime. Despite some narrowing over the last few years, TCC remains consistently higher, both overall, and within every credit tier, on private label accounts, as compared to general purpose accounts. As with general purpose cards, fee costs on private label cards have also been roughly stable on net or declining between 2017 and 2020. In 2015, the overall gap in TCC was 8.2 percentage points between the two card types. By 2020, this had fallen to 4.6 percentage points.

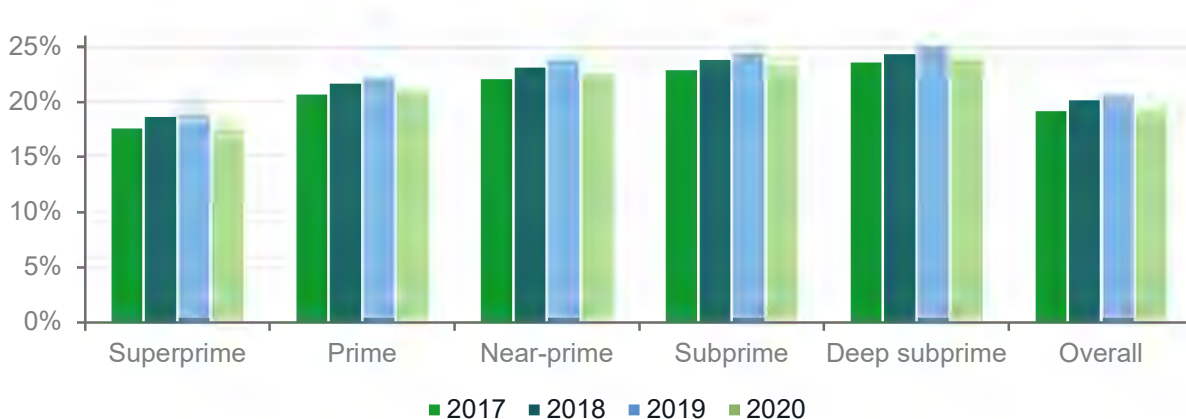
**Figure 2:** TOTAL COST OF CREDIT, REVOLVING ACCOUNTS, PRIVATE LABEL (Y-14+)



## 3.2 Interest charged

Interest charges increased in 2019 before receding in 2020. Both non-promotional retail annual percentage rates (APR)s and effective interest rates (EIR) on consumer credit cards followed this pattern.<sup>84</sup> In 2020 the average APR for general purpose and private label cards fell to 19.2 percent and 25.7 percent, respectively. As with TCC, the fall in interest charges is in part the result of changes in prevailing market interest rates.<sup>85</sup>

**Figure 3:** AVERAGE APR, GENERAL PURPOSE (Y-14+)

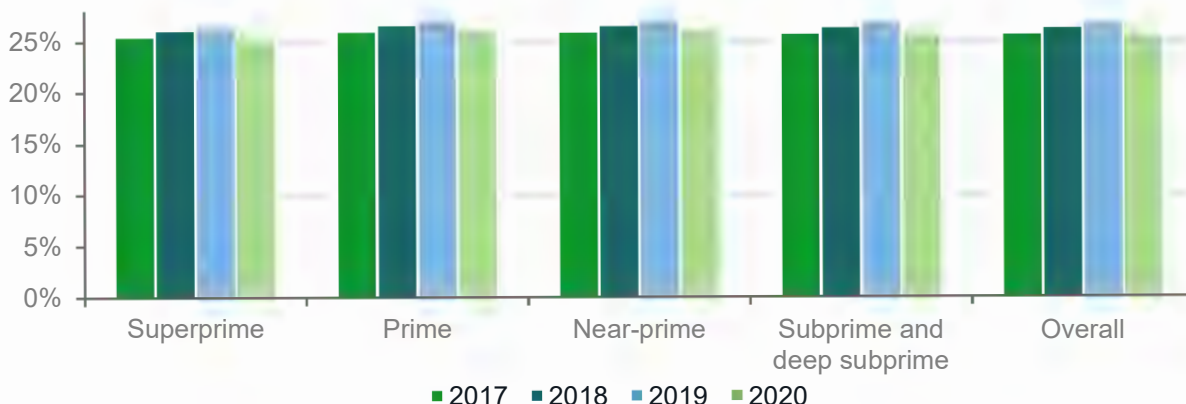


<sup>84</sup> For closed-end loan products, the APR captures certain fees as well as the interest rate. 15 U.S.C. § 1606(a)(1) (2012); 12 CFR 1026.22(b). However, for open-end credit, including credit cards, the APR is calculated using the periodic rate. 15 U.S.C. § 1637 (a)(4), (b)(5) (2012); 12 CFR 1026.2(a)(21), 1026.14.

<sup>85</sup> “Data from form FR 2835a indicate that the average credit card interest rate across all accounts decreased to 14.5 percent during 2020 before inching up to 14.7 percent in the fourth quarter of 2020. At the same time, the two-year Treasury rate—a measure of the baseline, or “risk free,” rate—fell to less than 0.2 percent.” Bd. Of Governors for the Fed. Rsrv. Sys., *Report to the Congress on the Profitability of Credit Card Operations of Depository Institutions - July 2021* (July 2021), <https://www.federalreserve.gov/publications/files/ccprofit2021.pdf>.



**Figure 4:** AVERAGE APR, PRIVATE LABEL (Y-14+)

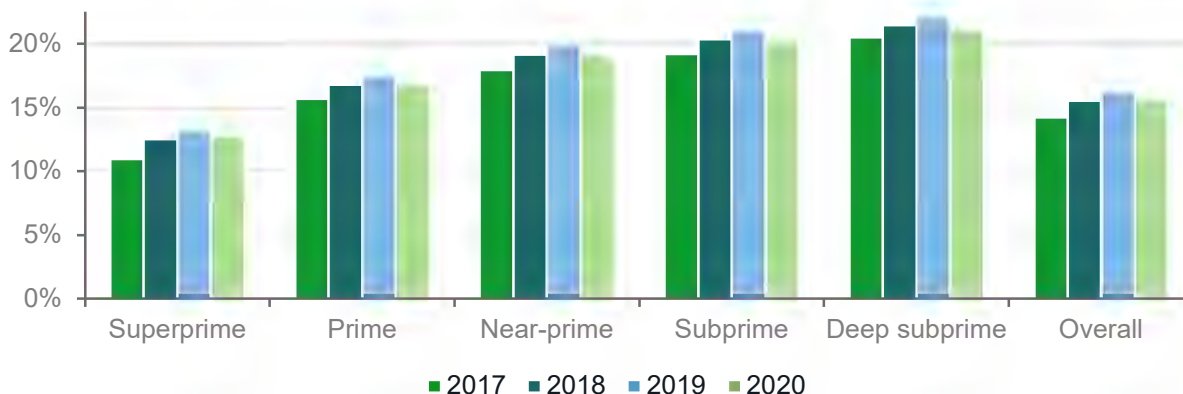


### 3.2.1 Effective interest rates

While APR is a useful barometer of issuer pricing strategies, “effective interest rate” may provide a better measure of the cost of interest to cardholders because EIR incorporates the effect of short-term promotions and cash advances. An EIR is computed by annualizing the total of all interest charges consumers paid divided by those consumers’ cycle-ending balances.<sup>86</sup> Figure 3 shows that EIRs for general purpose cards with revolving balances increased roughly 70 basis points from 15.6 percent in 2018 to 16.3 percent in 2019, before falling 60 basis points to 15.7 percent in 2020. Each credit tier experienced similar movements over that period.

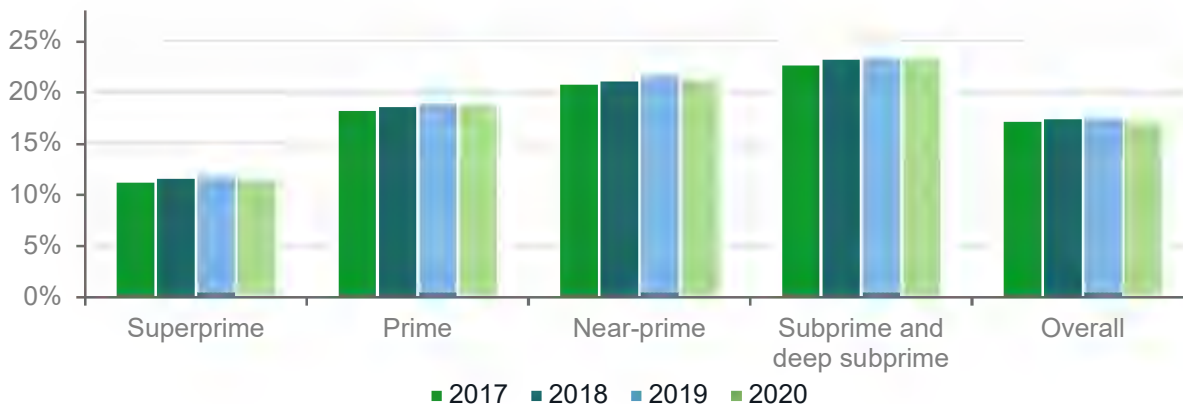
<sup>86</sup> EIRs differ from nominal rates for two reasons. First, consumers may have various balances on a single account (such as cash advances and balance transfers), not all of which are subject to the APR typically applied to purchases on that account. Second, consumers may have different patterns of payment and spending within a cycle. Due to the average daily balance method that most creditcard issuers use to calculate interest charges, this means that two accounts subject to the same retail APR that conclude a cycle with identical balances may nevertheless properly be assessed different interest charges as a result of differences in the composition and fluctuation of those balances over the course of the cycle.

**Figure 5:** EFFECTIVE INTEREST RATE, REVOLVING ACCOUNTS, GENERAL PURPOSE (Y-14+)



The picture for private label is different, with EIRs across the period staying mostly flat from 2015 to 2018 before declining slightly in 2020. As the next subsection shows, this contrast is partly because fewer private label cards are priced with a variable rate, so fewer private label cards benefitted from the index interest rate declines in 2020.

**Figure 6:** EFFECTIVE INTEREST RATE, REVOLVING ACCOUNTS, PRIVATE LABEL (Y-14+)



### 3.2.2 Upward repricing

Upward repricing declined to near-zero in 2019 and 2020, both because index interest rates have declined over this period and the CARD Act continues to restrict upward repricing outside of certain limited exceptions. Bureau data suggests that most account repricing is driven by the variable rate exception, which permits card issuers to increase the APR when the rate varies according to a publicly-available index not under the issuer’s control and there is an increase in

that index.<sup>87</sup> As of the end of 2020, more than 90 percent of general purpose and less than half of private label balances in the Y-14 were carried on “variable rate” cards of this kind.

Unlike in prior years, declines in interest rates have reduced the APRs on many cards in the past two years, reducing the cost of credit card borrowing for many consumers. The Bureau estimates that the five rate decreases by the Federal Reserve from early-2019 through 2020 led to a cumulative roughly \$18 billion that credit card borrowers did not pay over that period.<sup>88</sup>

A second notable exception called the “delinquency exception” permits issuers to increase rates when a consumer does not pay at least the minimum periodic payment within 60 days after it is due.<sup>89</sup> Issuers are also required to provide consumers experiencing repricing due to delinquency a notice including a statement of the reason for the increase, and include notification that the increased rate will cease to apply if the issuer receives six consecutive required minimum periodic payments on or before the payment due date.<sup>90</sup> For consumers that meet the six timely minimum payments requirement, issuers are required to reduce that rate.<sup>91</sup> Issuers must also conduct a periodic review based on certain factors, and reduce the annual percentage rate applicable to the consumer’s account, as appropriate<sup>92</sup>.

<sup>87</sup> 12 CFR 1026.55(b)(2). For more on CARD Act limits on repricing, see the 2013 Report, *supra* note 6, at pages 11, 27-29. Issuers that use variable rate pricing mostly rely on *The Wall Street Journal*’s U.S. prime rate. A small percentage of the accounts, however, are linked to the London interbank offered rate (LIBOR). The status of LIBOR is in flux, which creates certain risks for cards linked to LIBOR. See Appendix A at Figure 1 for a chart showing changes in the federal funds rate and the associated prime rate.

<sup>88</sup> This calculation uses historical quarterly balances multiplied by the cumulative declines in rates from 2019 to 2020, assuming no consumer response to the rate changes. If consumer borrowing patterns changed in response, the actual impact may be different

<sup>89</sup> 12 CFR 1026.55(b)(4).

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> 12 CFR 1026.59. Some issuers have failed to implement this provision and have since provided compensation to impacted cardholders. See Consent Order at 3-9, *In re CITIBANK N.A.*, 2018-CFPB-0003 (Jun. 29, 2018), [https://files.consumerfinance.gov/f/documents/bcfp\\_citibank-na\\_consent-order\\_2018-06.pdf](https://files.consumerfinance.gov/f/documents/bcfp_citibank-na_consent-order_2018-06.pdf)

## 3.3 Fees assessed

Collectively, fees comprise just under one-fifth of total consumer costs and for consumers who exclusively transact, fees are the primary source of direct cost. In 2020, cardholders were assessed \$20.8 billion in fees, down from \$23.6 billion in 2019, due in large part to significant increases in fee waivers during the pandemic.<sup>93</sup> Fees take a variety of forms including annual fees, transactional fees (*e.g.*, for cash advances), and penalty fees (such as late fees or over-limit fees). The CARD Act imposed several substantive pricing controls on both the amounts of penalty fees consumers could be charged and the conditions under which such fees could be imposed.<sup>94</sup>

### 3.3.1 Total fees

Measured as a share of overall account balances, total fees on revolving accounts declined in 2020 on both general purpose and private label accounts but remain higher for private label accounts. Relative to balances, fees incurred on private label accounts that revolve are higher than on general purpose accounts that do so.<sup>95</sup> For private label accounts, fees were equivalent to 5.2 percent of balances as of the end of 2020, down from 6.2 percent in 2019; on general purpose, they were 2.0 percent of balances, down from 2.2 percent.

Within certain credit tiers, however, the fee picture is changing. Figure 7 shows that general purpose accounts held by consumers with deep subprime credit scores saw fee-to-balance ratios fall the most in 2020, from 10.9 to 9.8 percent, continuing a trend observed since 2015 when the ratio was 12.1 percent. Even so, these tiers have fee ratios that are several multiples of those for

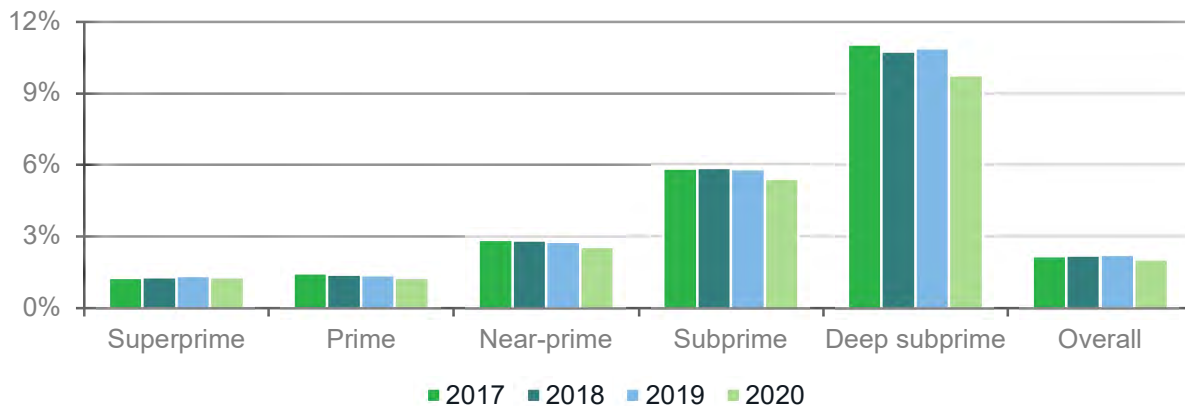
<sup>93</sup> Total fee amount is based on data collected from banks represented by the Y-14+ collection. *See* Section 1.3.1 for more information about the Bureau's data sources.

<sup>94</sup> *See, e.g.*, 15 U.S.C. §§ 1637(k), (n), 1665d (2012). CARD Act pricing restrictions have resulted in a substantial decline in overall fee costs to consumers since the pre-CARD Act period. *See* 2013 Report, *supra* note 6, at 34. CARD Act fee restrictions, of course, may have led to compensating changes in interest rates. For example, one commenter asserts that changes brought about by the CARD Act have resulted in higher interest rate margins "as issuers sought alternative ways to manage portfolio-wide risk." *See* ABA Comment Letter, at 2.

<sup>95</sup> This is in part the product of lower average balances on private label accounts. (Section 2.2.1 contains data on average account balances for different card types, by credit tier.) The Bureau's 2019 Report contains more information on this point. *See* 2019 Report, *supra* note 6, at 32-33.

accounts held by consumers with higher credit scores. Similarly, fee-to-balance ratios for private label accounts dropped in 2020 for all credit score tiers. Total balances decreased in 2020 as discussed in Section 2.2, but fees fell further as a result of, among other pandemic-era effects, fee waivers.<sup>96</sup>

**Figure 7:** TOTAL FEES INCURRED IN THE YEAR AS A PERCENTAGE OF AVERAGE CYCLE-ENDING BALANCES, REVOLVING ACCOUNTS, GENERAL PURPOSE (Y-14+)



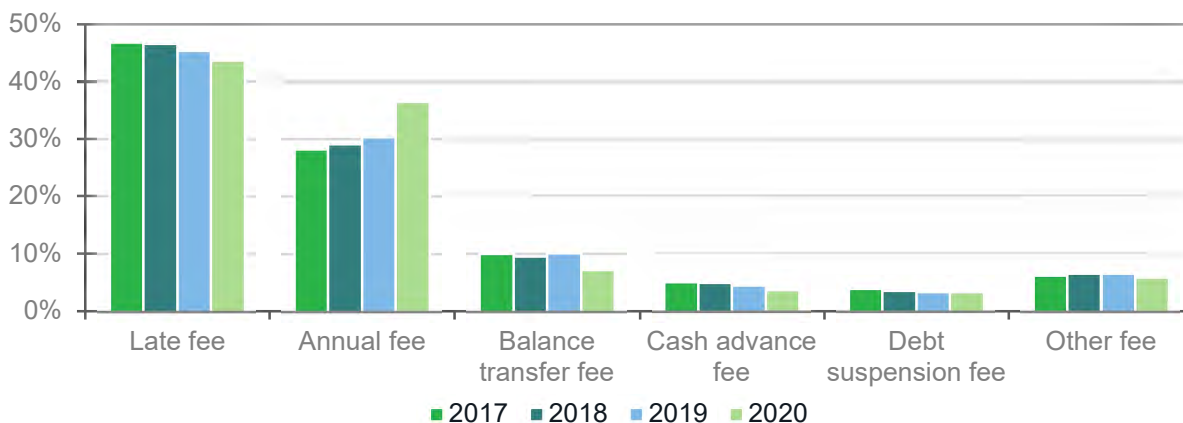
### 3.3.2 Fee composition

Over the last few years, fee composition has changed relatively little. Figure 8 shows trends for general purpose cards over this period. The largest change is the increase in annual fees as a share of total fees. Annual fee trends are covered in more detail in the next subsection below. This increase comes largely at the expense of late fees and balance transfer fees, even as the number and volume of annual fees have increased. Figure 8 also shows that several other fees remain prevalent on general purpose cards, including fees for balance transfers and cash advances.<sup>97</sup>

<sup>96</sup> For more on fee waivers, see Section 5.5.

<sup>97</sup> For more information on cash advance and balance transfer trends, see Sections 5.2 and 5.3.

**Figure 8:** SHARE OF TOTAL FEES COSTS INCURRED BY TYPE OF FEE, GENERAL PURPOSE (Y-14+)



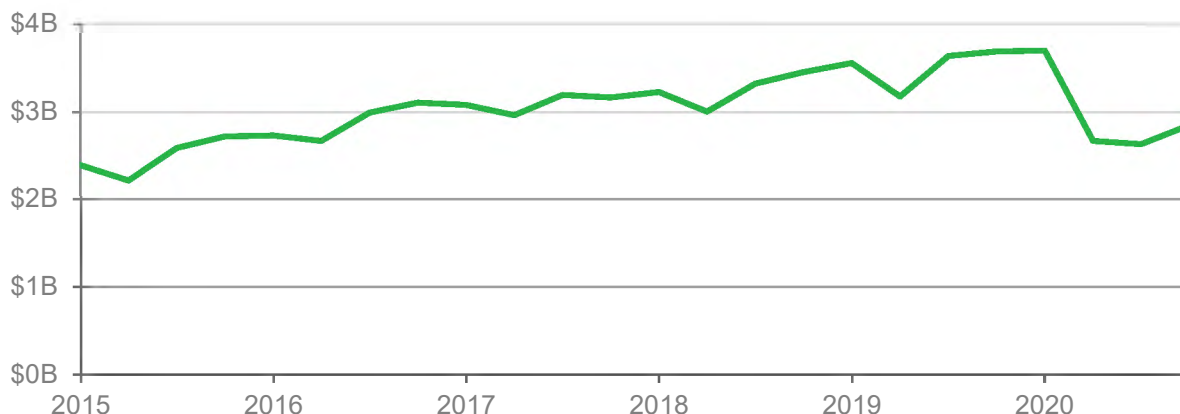
For private label cards, late fees make up the overwhelming majority of all fees assessed—89 percent in 2020. This represents a slight decrease over the last two years, from 91 percent in 2018.

### 3.3.3 Late fees

In a reversal of consistent growth trends, total late fee volume decreased in 2020. Late fee reductions can be attributed to a combination of factors related to the pandemic, such as economic impact payments, shifts in consumer behavior such as spending, saving, and repayment, and late fee reversals and waivers.<sup>98</sup> Issuers in the Y-14+ assessed nearly \$14 billion in late fees in 2019, compared to less than \$12 billion in 2020, as shown in Figure 9. The share of card accounts held by consumers in each credit tier declines steeply with scores, but late fee volumes are relatively similar across these tiers. Consumers with superprime scores hold 59 percent of card accounts but pay only 21 percent of late fee volumes; by contrast, consumers with deep subprime scores hold about 6 percent of card accounts but generate 24 percent of late fee volumes.

<sup>98</sup> For more information on card issuer responses to COVID-19, see Section 5.5.

**Figure 9:** LATE FEE VOLUME (Y-14+)



Issuers generally assess a late fee to consumers who do not make at least their minimum payment by the monthly due date. These and other “penalty” fees were targeted by specific CARD Act provisions, and the dollar amounts of such fees are now subject to CARD Act restrictions.<sup>99</sup> In general, these fees have to be “reasonable and proportional.”<sup>100</sup> There is a regulatory “safe harbor” for specific fee amounts, which the Bureau adjusts for inflation annually.<sup>101</sup> Initially, the safe harbor was set at \$25 for an initial late fee and \$35 for a second late fee within six billing cycles of a prior late fee. In 2021, the safe harbors are \$29 and \$40 respectively.<sup>102</sup>

Since 2018, average late fees have continued to increase, from about \$28 to \$31 in 2020. They nevertheless remain below their nominal pre-CARD Act level of \$33 in 2008, and well below the

<sup>99</sup> 15 U.S.C. § 1665d(a) (2012).

<sup>100</sup> *Id.*; 12 CFR 1026.52(b).

<sup>101</sup> Regulation Z requires the Bureau to annually adjust the safe harbors to reflect changes in the Consumer Price Index. 12 CFR 1026.52(b)(1)(ii)(D). The Bureau has also introduced a tool to promote transparency in this calculation. Bureau of Consumer Fin. Prot., Office of Compliance & Guidance, *Calculating Adjustments to the Safe Harbor Limits on Credit Card Issuer Fees*, <https://www.consumerfinance.gov/compliance/compliance-resources/consumer-cards-resources/truth-lending-annual-threshold-adjustments/> (last visited Jan. 11, 2021). The most recent safe harbor amounts went into effect in January 2021. 83 FR 43503 (Aug. 27, 2018).

<sup>102</sup> 12 CFR 1026.52(b)(1)(ii); Comment 52(b)(1)(ii)-2.i.

\$40 inflation-adjusted figure in 2020 dollars.<sup>103</sup> Since 2014, when the original penalty safe harbors first increased for inflation, most large issuers have taken advantage of the increased safe harbors by increasing their fee amounts. However, issuers appear to vary in the speed and consistency with which they implement increases across their products and portfolios. Additionally, issuers may as a courtesy offer to reverse late fee charges if the cardholder has a history of paying on time, particularly for cardholders with superprime scores. In combination with the two-tier safe harbor (one amount for the first instance, and a different amount for subsequent instances within one of the next six billing cycles), these practices make it challenging to assess what drives changes in average late fee amounts overall.

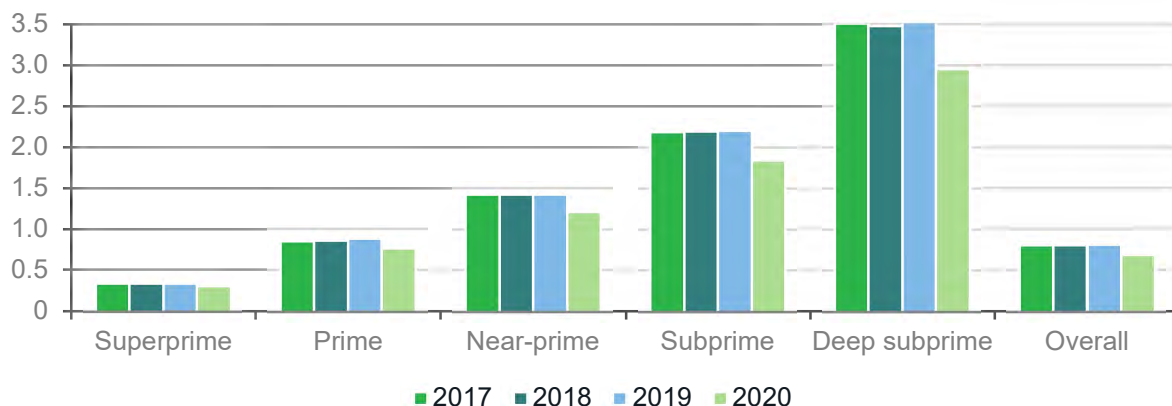
Late fee incidence declined somewhat in 2020 likely due to federal pandemic relief and card issuer fee waivers, but late fees continue to represent the highest share of total fee costs incurred, especially for cardholders with lower credit scores or those who carry balances on private label cards.<sup>104</sup> On average, consumers incur less than one late fee per year per general purpose account. This rate remained steady from 2015 to 2019, before declining in 2020. Accounts held by consumers in lower credit score tiers incur more late fees than those in higher tiers. For example, accounts held by consumers with deep subprime credit scores average more than three late fees a year. Accounts held by consumers with superprime or prime scores average less than one. Late fee incidence rates are higher for private label accounts, both overall and within every credit tier. For example, private label accounts held by consumers with deep subprime scores averaged more than four late fees per year in 2020.

<sup>103</sup> See 2013 Report, *supra* note 6, at 23. The Bureau of Labor Statistics reports the average CPI-U in 2008 was 215.3, compared to 258.8 in 2020. See *supra* note 54.

<sup>104</sup> For more information regarding card issuer responses to COVID-19, see Section 5.5.



**Figure 10:** LATE FEE INCIDENCE, GENERAL PURPOSE (Y-14+)



### 3.3.4 Annual fees

Annual-fee volume has risen significantly over the last few years. For issuers in the data set, annual-fee revenue totaled roughly \$600 million in the first quarter of 2015; annual-fee revenue topped \$1.3 billion in every quarter of 2020.<sup>105</sup> As discussed further below, this is a function of increases in the average annual fee for accounts charged a fee, but is also due to steady quarterly increases in the total number of accounts incurring an annual fee, even while the percentage of accounts with such fees has decreased.

<sup>105</sup> As used in this report, an “annual fee” refers to any participation or maintenance fee assessed to the consumer as a condition of holding the general purpose card account, regardless of any pattern of usage.

**Figure 11:** ANNUAL-FEE VOLUME, GENERAL PURPOSE (Y-14+)

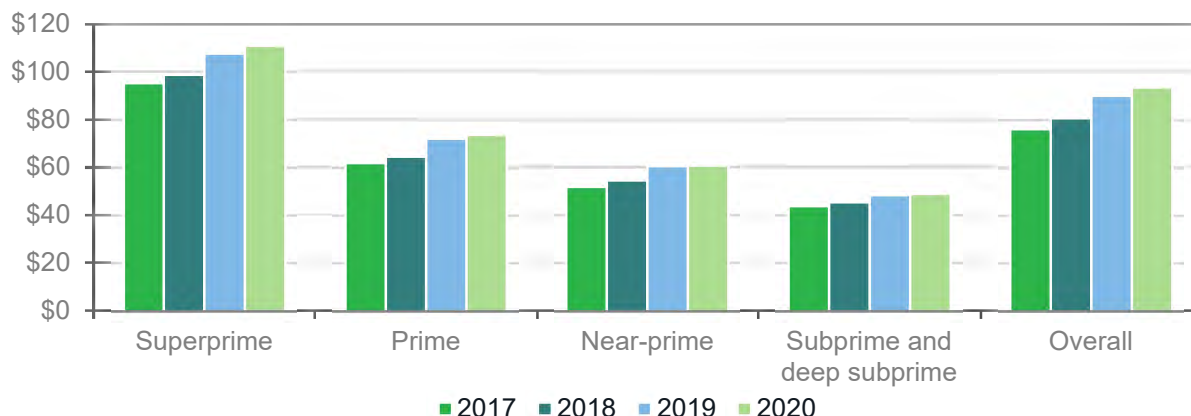


Average annual fees have been rising in all credit tiers, but the products received differ across credit score tiers. As shown in Figure 12, annual fees averaged roughly \$94 per card with a fee in 2020, and that number has been increasing steadily for all credit score tiers. In particular, annual-fee accounts held by consumers with superprime scores averaged nearly \$111 in annual fees in 2020, reflecting the increased prevalence in the past two years of richer rewards credit cards that carry higher annual fees. Revenue from cards held by consumers with prime scores is typically returned to cardholders to varying degrees in the form of rewards.<sup>106</sup> In contrast, cardholders in lower credit tiers may pay annual fees to offset credit risk or higher operating costs relative to lower revolving balances.<sup>107</sup>

<sup>106</sup> For more on rewards, see Section 5.1.

<sup>107</sup> See 2017 Report, *supra* note 6, at 91-92.

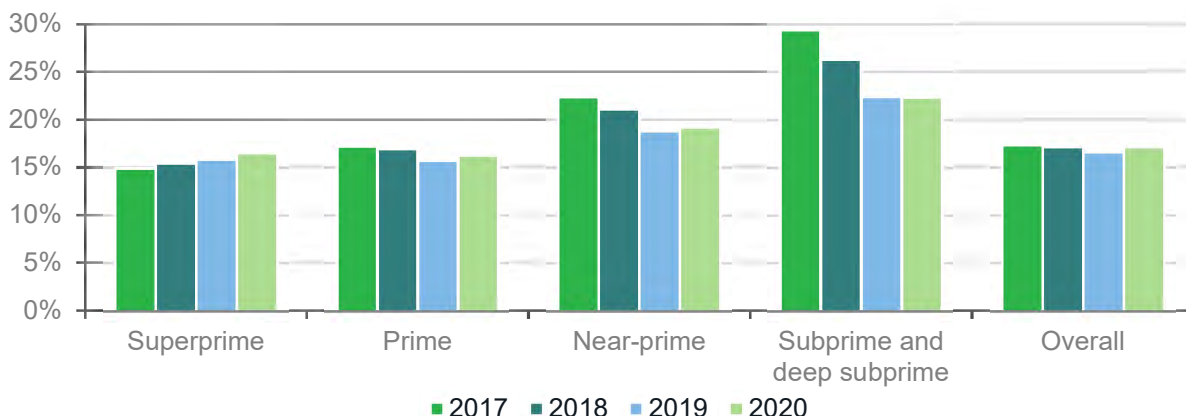
**Figure 12:** AVERAGE ANNUAL FEE, GENERAL PURPOSE ACCOUNTS CHARGED AN ANNUAL FEE (Y-14)<sup>108</sup>



While average annual fees have been rising, annual fees have steadily become less common for general purpose card accounts held by cardholders in every credit tier except superprime since 2015. Roughly 22 percent of subprime and deep subprime card accounts had an annual fee in 2020, compared to nearly 39 percent in 2015. Similarly, 19 percent of near-prime accounts carried an annual fee in 2020, compared to 27 percent in 2015. In part, the reduction in annual-fee prevalence for cardholders with below-prime scores was driven by an increase in the share of no-annual-fee card originations to consumers in these score tiers. Since 2016, however, most of that increase was due to originations of no-annual-fee secured cards which, while they do not charge a fee, still require some money be held as a deposit.

<sup>108</sup> Average annual fee is calculated as the total number of months in each year and credit tier that an account with an observed annual fee is open times the annual fee observed for those accounts divided by the total number of account months in each year and credit tier that those annual fee-paying accounts are open.

**Figure 13:** ANNUAL-FEE PREVALENCE, GENERAL PURPOSE (Y-14)



### 3.3.5 Other fees

The quarterly volume of other fees issuers collect on credit cards has not changed significantly in recent years. This fee category includes fees for payments returned for insufficient funds (NSF fees) or exceeding the credit limit (over-limit fees); debt suspension fees; balance transfer fees; and cash advance fees, among others. The 2015 Report showed that these fees, considered collectively, have steadily declined in prevalence since 2008.<sup>109</sup> Over-limit fees that were common prior to the implementation of the CARD Act remained almost nonexistent in 2019 and 2020.<sup>110</sup>

<sup>109</sup> See 2015 Report, *supra* note 6, at 71-72.

<sup>110</sup> Section 3.3.5 of the 2017 Report notes that many issuers appear to have simply ceased assessing over-limit fees altogether, rather than maintain an opt-in regime. See 2017 Report, *supra* note 6, at 96-97.

## 4. Availability of credit

As in prior reports, this section examines measures relating to credit card availability. It explores two broad areas: first, new account origination; second, credit limits and line changes after origination.<sup>141</sup> To do so, it tracks the credit card account life cycle. It starts with marketing and consumer applications across a range of channels. Next, it addresses issuer approvals as well as new account and line origination. Finally, this section ends with credit lines available to consumers and issuer line management of existing accounts. The interaction between reduced marketing efforts, fewer applications, and lower approval rates caused a dramatic decrease in originations in 2020. While credit line decreases (CLD) increased for consumers with below-prime credit scores, issuers did not substantially deviate from previous line management trends during the pandemic.

### 4.1 New accounts

The analysis below examines patterns of credit card marketing and consumer credit shopping, consumer applications, approval rates for new accounts, and the volume of new account and line origination. Where possible, the analysis reviews how these measures vary by credit score tier as well as by product and marketing channel.

<sup>141</sup> Issuers assign a credit line limit to each new account that determines how much a consumer generally is permitted to borrow on the account, at least initially. In subsequent periods issuers may adjust the credit line, as discussed in more detail in Section 4.2.3.

## 4.1.1 Marketing and comparison shopping

Credit card issuers adjust their marketing and origination practices based on changes in consumer behavior, industry competition, and the economy. Issuers primarily solicit consumer demand for credit cards through broad-based advertising like television commercials, and through targeted marketing. For years, issuers have increased credit card marketing across digital platforms, and credit card advertising on social media is becoming more prominent, as consumers spend more time online.<sup>112</sup> Yet in 2020, issuers reduced marketing across the board in accordance with the increased pandemic-related economic uncertainty.<sup>113</sup>

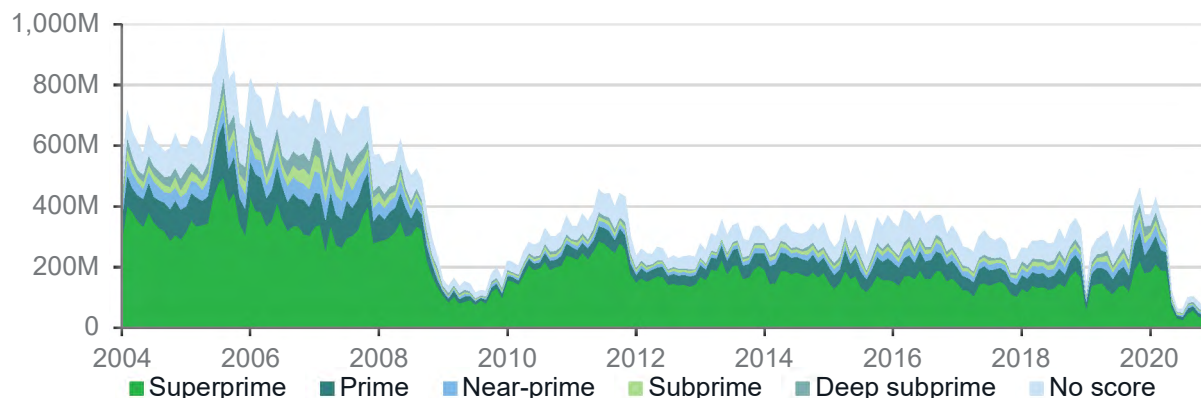
While credit card issuers have generally sent less mail to consumers since the Great Recession, direct mail solicitations fell to new lows after the pandemic's onset and persisted at this reduced level for the remainder of 2020. On average, issuers sent 311 million direct mail solicitations per month in 2019, up 12.2 percent from 2017 levels but still less than half of pre-2009 monthly volumes. However, in May 2020, this metric dropped to 121 million then further plummeted 48 percent in June. Mail volume related to acquisitions reached a low of 61.6 million in July, declining more than 80 percent from its March 2020 level. As shown in Figure 1, direct mail solicitations had yet to recover by the end of 2020 and remained below 100 million.<sup>114</sup>

<sup>112</sup> For more information on digital servicing and adoption of new technologies, see section 7.2. *See also* Michael J. Wolf, *How Covid-19 Has Transformed the Amount of Time We Spend Online*, Wall St. J. (Aug. 7, 2020), <https://www.wsj.com/articles/how-covid-19-has-transformed-the-amount-of-time-we-spend-online-01596818846>.

<sup>113</sup> Issuers note decreasing card acquisition efforts in Q2 2020. "The majority of the expense reduction was in brand marketing and card acquisition costs as we align marketing spend with the impacts of the economic environment and tightened credit criteria." Discover Financial Services, *Q2 2020 Results – Earnings Call Transcript*, Seeking Alpha (July 23, 2020), <https://seekingalpha.com/article/4360233-discover-financial-services-dfs-ceo-roger-hochschild-on-q2-2020-results-earnings-call>; "[W]e dramatically reduced our proactive marketing efforts for new card acquisition and reinvested in value proposition enhancements, resulting in a 16% decline in marketing expenses in the second quarter." American Express, *Q2 2020 Results – Earnings Call Transcript*, Seeking Alpha (July 24, 2020), <https://seekingalpha.com/article/4360706-american-express-axp-ceo-steve-squeri-on-q2-2020-results-earnings-call-transcript>.

<sup>114</sup> Data made available to the Bureau by Mintel Comperemedia and Competiscan.

**Figure 1:** MONTHLY MAIL VOLUME (COMPETISCAN, MINTEL COMPEREMEDIA)<sup>115</sup>



Once a consumer is actively looking for a new credit card, third-party comparison sites (TPC sites) offer information intended to make it easier for consumers to compare credit cards.<sup>116</sup> Some sites let consumers personalize the card offerings shown by using data provided by the consumer or third-party information authorized by the consumer. While that information helps personalize recommendations, some consumers may ultimately find their application does not get approved for a site-listed card for which they apply.

## 4.1.2 Applications

U.S. consumers submitted over 140 million credit card applications in 2020, a significant decline from the over 172 million applications submitted in 2019.<sup>117</sup> To apply for a card, consumers submit an application through one of several channels, such as going online, using a mobile app, calling the issuer, or by walking into a bank branch or retail store to fill out a paper or digital application in-person. The issuer then decides whether to issue a credit card based on

<sup>115</sup> Data following October 2019 were supplied by Competiscan. Data prior to this date were supplied by Mintel Comperemedia.

<sup>116</sup> For more on third-party comparison sites, see 2017 Report, *supra* note 6, at page 265.

<sup>117</sup> Bureau research on credit applications found that, by the spring of 2021, credit card applications were back to pre-pandemic levels. See Nagypál, *supra* note 24, at 3.

its internal underwriting process.<sup>118</sup> Issuers consider economic and market conditions when determining whether to loosen or tighten underwriting standards for approving individual card applicants.

Figure 2 shows that trends in application volume in 2019 differed by credit tier but that the pandemic led to a dramatic and generalizable decrease in demand for general purpose cards.<sup>119</sup> Compared to 2017 levels, application volume remained steady or increased for all tiers but near-prime in 2019, as application volume for consumers with no score and with subprime or deep subprime scores surpassed 2016 highs.<sup>120</sup> Application growth halted for general purpose cards in 2020, as the total volume for mass market issuers was 59 million, falling in every score tier and 26 percent overall. Near-prime, subprime, and deep subprime credit score tiers saw the greatest percent change year-over-year. The previously discussed, industry-wide reduction in marketing expenditure could explain part of this decline. Additionally, decreased household spending and increased government support could reduce the need for credit and partially explain the decline in applications during the pandemic.<sup>121</sup>

<sup>118</sup> In addition to an issuer's internal processes, issuers are required to consider an applicant's ability to pay the minimum monthly payment on an account prior to opening a credit card account under an open-end (not home-secured) consumer credit plan or increasing a credit line on such an account. 12 CFR 1026.51(a)(1)(i) (2019).

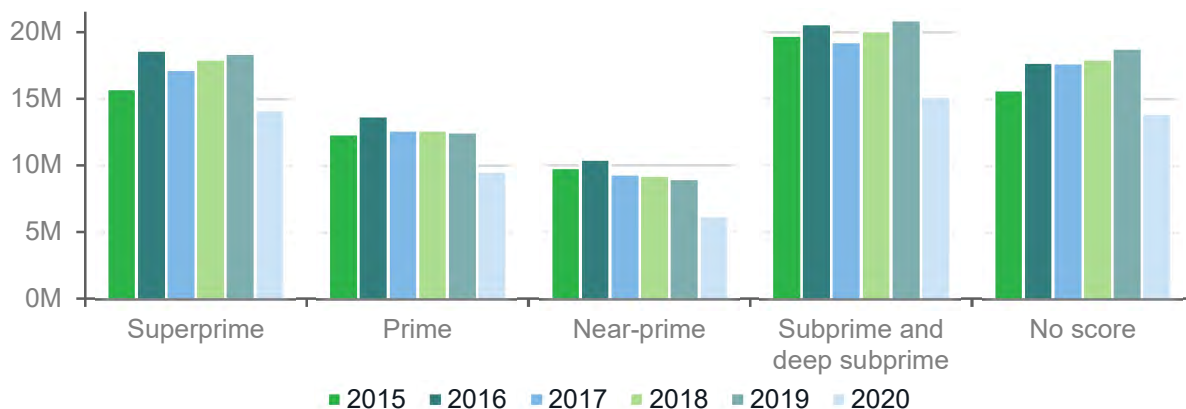
<sup>119</sup> "MMI" data are provided by a set of larger issuers that make up the substantial majority of the credit card market. Even so, these issuers may not be representative of other issuers.

<sup>120</sup> MMI data account for a smaller share of the overall market as they reach deeper into the credit spectrum. Accordingly, approval rate data in the two lowest score tiers has been combined.

<sup>121</sup> See Alison Felix & Samantha Shampine, *Consumer Spending Declines, Shifts in Response to the Pandemic*, Fed. Rsr. Bank of Kansas City (Feb. 17, 2021), <https://www.kansascityfed.org/research/economic-bulletin/consumer-spending-declines-shifts-in-response-to-the-pandemic/>; Survey data suggest that demand for credit cards fell in 2020 and there was no meaningful increase in unmet credit need. See also Jessica Lu & Wilbert van der Klaauw, *Consumer Credit Demand, Supply, and Unmet Need during the Pandemic*, Fed. Rsr. Bank of New York (May 20, 2021), <https://libertystreeteconomics.newyorkfed.org/2021/05/consumer-credit-demand-supply-and-unmet-need-during-the-pandemic.html>.



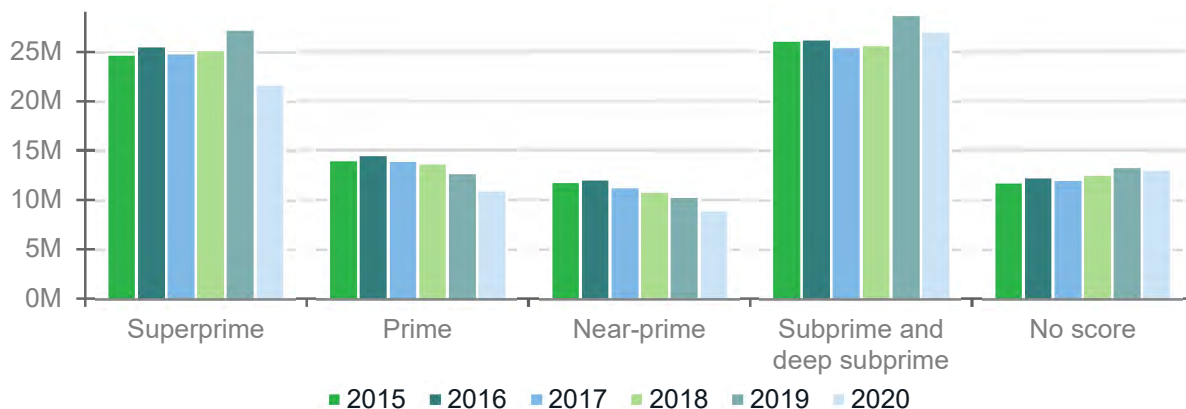
**Figure 2:** APPLICATION VOLUME FOR MASS MARKET ISSUERS, GENERAL PURPOSE (MMI)



The pandemic-related decline in retail application volume was smaller in magnitude than that of general purpose cards and driven by consumers with near-prime or higher credit scores.<sup>122</sup> In 2020, consumers submitted over 81 million applications for retail cards to mass market issuers, down from 92 million retail card applications the year prior. As shown in Figure 3, both 2019 and 2020 application volume increased relative to 2018 levels for consumers with subprime and deep subprime credit scores and consumers with no score. Both overall and in every credit score tier, there were more applications for retail cards than general purpose cards in 2020, as has been historically true.

<sup>122</sup> Sections 4.1.2 and 4.1.3 divide the market into “general purpose” and “retail,” which is slightly different from the “general purpose” and “private label” categorization used elsewhere in the report. See Section 1.3 for more information on these differences.

**Figure 3:** APPLICATION VOLUME FOR MASS MARKET ISSUERS, RETAIL (MMI)



### DIGITAL APPLICATIONS

Applications can be submitted via a number of channels, though importantly there is some overlap (for example, a consumer may apply for a card digitally using a mobile device). In 2020, 88 percent of general purpose card applications were submitted digitally. In stark contrast, 55 percent of 2020 retail card applications were via digital channels. However, digital channel volume grew 34 percent year-over-year for retail applications, as this was the first year less than half of retail applications were submitted in person. This was largely affected by store closures during the pandemic as retail sales plunged.<sup>123</sup>

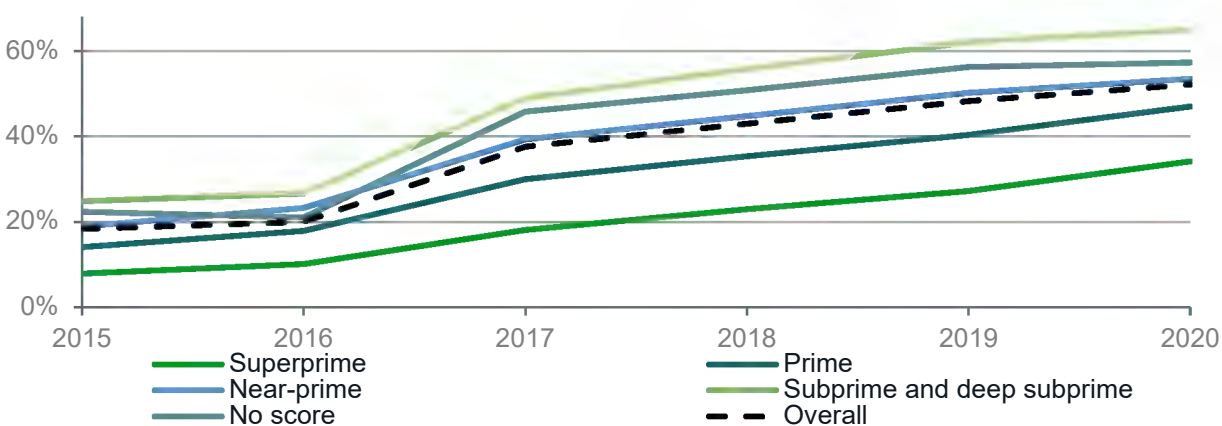
One subset of digital channel that has become increasingly prominent is mobile devices, as the majority of applications for general purpose cards are now submitted via phone or tablet. The mobile channel accounted for 52 percent of new applications in 2020, up from 43 percent in 2018.<sup>124</sup> As shown in Figure 4, the increasing percentage of applications from consumers with higher scores drove growth, as the share for consumers with both prime and superprime credit scores increased 7 percentage points in 2020. Despite this expansion, the share of superprime

<sup>123</sup> See Section 5.5 for more information on the impact of COVID-19. See also Alina Selyukh, *Pandemic Hits Spending Hard; 79% Dive In Clothing Sales Leads A Record Plunge*, Nat'l Pub. Radio (May 15, 2020), <https://www.npr.org/sections/coronavirus-live-updates/2020/05/15/856253115/retail-wipeout-sales-plunge-a-record-16-4-in-april>.

<sup>124</sup> Figures 4 through 11 rely on MMI data. The Bureau's MMI survey grouped mobile phones and tablets as "mobile devices."

applications via mobile device remains about half that of consumers with subprime or deep subprime scores. Meanwhile, the share of mobile applications for consumers with lower or no scores may be plateauing, as two-thirds of subprime and deep subprime applications are now submitted via mobile device. A decline in prescreened offers via mail and fewer applications submitted in person due to bank branch closures could explain the growing share of mobile applications.<sup>125</sup> Additionally, some new credit cards exclusively accepted applications through the mobile channel at their initial launches.<sup>126</sup>

**Figure 4:** SHARE OF CREDIT CARD APPLICATIONS SUBMITTED VIA MOBILE DEVICES, GENERAL PURPOSE (MMI)



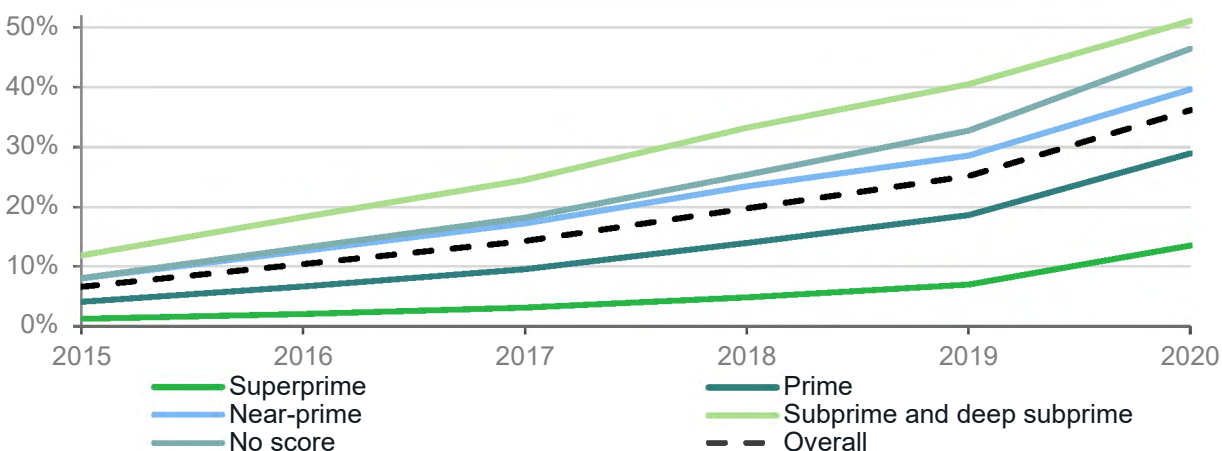
For retail cards, overall levels of mobile penetration remain lower than for general purpose cards, yet the trend toward mobile channels accelerated in 2020 after years of steady growth. Most retail applications by consumers with subprime and deep subprime scores now come from mobile devices. As shown in Figure 5, mobile penetration for applicants with higher scores remained at or below 40 percent. However, these tiers saw an increased share of applications

<sup>125</sup> See Orla McCaffrey, *People Aren't Visiting Branches. Banks Are Wondering How Many They Actually Need*, Wall St. J. (June 7, 2020), <https://www.wsj.com/articles/people-arent-visiting-branches-banks-are-wondering-how-many-they-actually-need-11591531200>.

<sup>126</sup> See Katie Deighton, *Venmo's New Credit Card Puts QR Codes Front and Center*, Wall St. J. (Oct. 7, 2020), <https://www.wsj.com/articles/venmos-new-credit-card-puts-qr-codes-front-and-center-11602064801>; see also Press Release, Apple, *Apple Card launches today for all US customers* (Aug. 20, 2019), <https://www.apple.com/newsroom/2019/08/apple-card-launches-today-for-all-us-customers/>.

submitted via the mobile channel. The year-over-year growth from 2019 to 2020 may reflect the diminished impact of point-of-sale applications due to pandemic-related store closures and an increased adoption of mobile apps by retailers.<sup>127</sup>

**Figure 5:** SHARE OF CREDIT CARD APPLICATIONS SUBMITTED VIA MOBILE DEVICES, RETAIL (MMI)



### TPC SITE APPLICATIONS

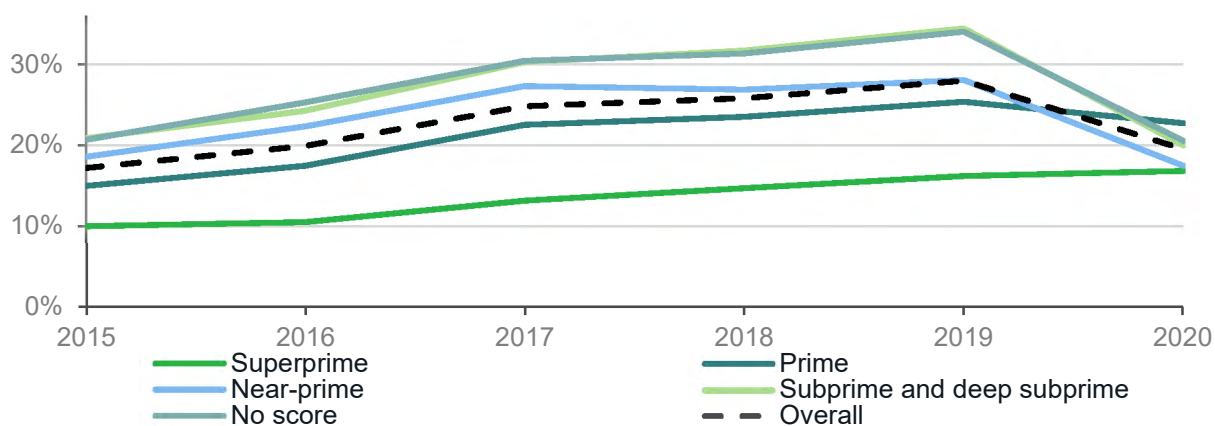
For the first time in 2020, the share of general purpose applications via the TPC site channel decreased.<sup>128</sup> Figure 6 reflects that, previously, consumers with lower scores were more likely to apply via a TPC site than those with higher scores. Now, both overall and for each credit score tier, about one in five consumers apply via TPC sites. Typically, TPC sites assist consumers in finding cards for which they are likely qualified when they seek credit. Additionally, some TPC sites advised consumers it might be more difficult to get approved for a credit card during the

<sup>127</sup> See Press Release, Synchrony, *Synchrony Expands Arsenal of Digital Payment Technology Solutions for Partners; Provides Touchless Shopping Options for Customers* (Sep. 29, 2020), <https://www.prnewswire.com/news-releases/synchrony-expands-arsenal-of-digital-payment-technology-solutions-for-partners-provides-touchless-shopping-options-for-customers-301140043.html>.

<sup>128</sup> An additional number of consumers review TPC sites before applying directly with the issuer. Those applications are not reflected in the TPC data below.

pandemic.<sup>129</sup> Warnings by TPC sites of lower issuer approval rates could partially explain the decrease in applications by consumers with subprime or deep subprime scores beyond a general decline in credit demand. In tandem, the increasing share of consumers with superprime scores applying via TPC site may be partially attributed to the decrease in direct card offers via mail typically aimed at this tier.

**Figure 6:** SHARE OF CREDIT CARD APPLICATIONS SUBMITTED VIA TPC SITES, GENERAL PURPOSE (MMI)



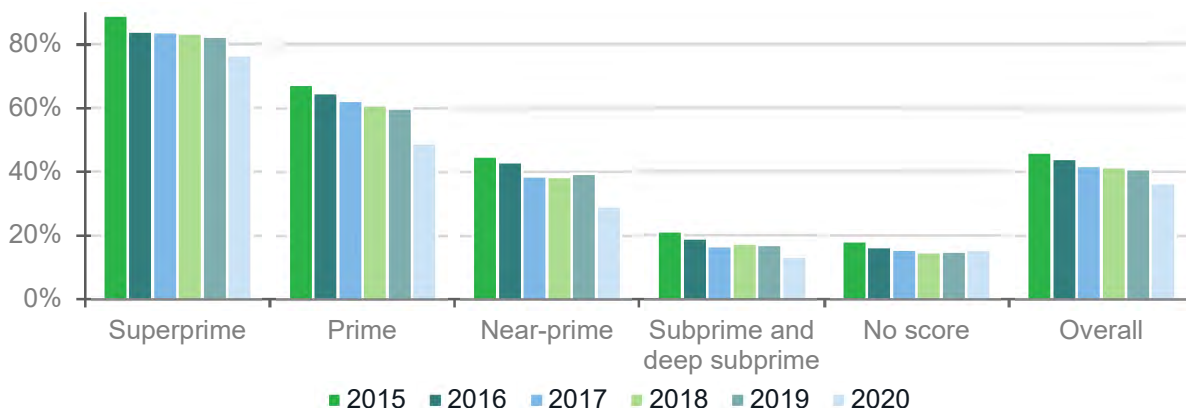
### 4.1.3 Approvals

Since 2015, approval rates on general purpose cards have declined. As shown in Figure 7, the pandemic accelerated this trend. The overall approval rate decreased from 41 percent in 2019 to 36 percent in 2020. Consumers with prime and near-prime credit scores saw the greatest reduction in approval rates of 11 and 10 percentage points respectively as institutions tightened underwriting in response to the pandemic. The Federal Reserve Board's quarterly Senior Loan Officer Survey found that in the third quarter of 2020, 71.7 percent of senior loan officers at

<sup>129</sup> See Kimberly Palmer, *How to Increase Your Chances of Credit Card Approval*, NerdWallet (July 30, 2020), <https://www.nerdwallet.com/article/credit-cards/how-to-increase-your-chances-of-credit-card-approval>; see also Ethan Steinberg, *Why banks are struggling to assess creditworthiness during the coronavirus pandemic*, The Points Guy (July 7, 2020), <https://thepointsguy.com/news/why-banks-are-struggling-to-assess-creditworthiness-during-the-coronavirus-pandemic/>.

domestic banks reported tightening standards on credit card loans—the highest share in the survey’s two-decade history.<sup>130</sup>

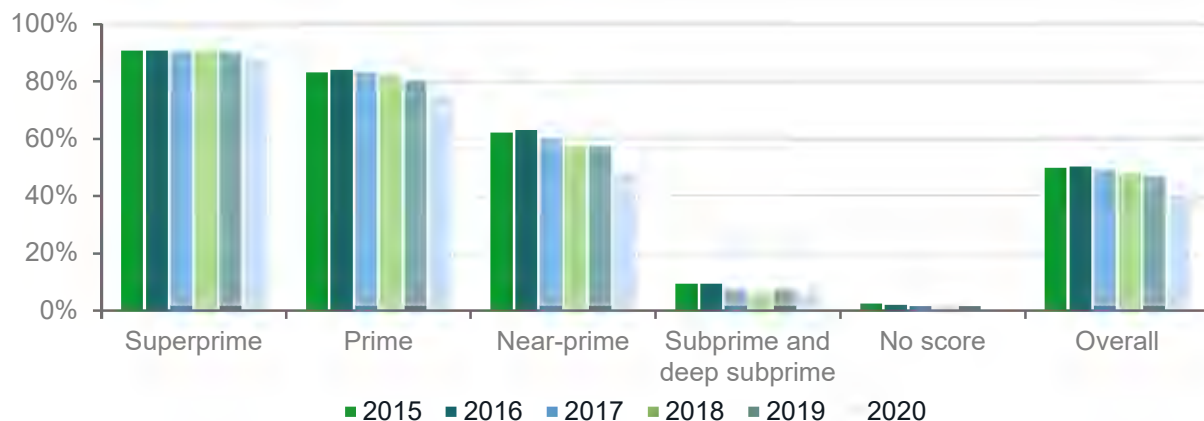
**Figure 7:** APPROVAL RATE, GENERAL PURPOSE (MMI)



Retail card approval rates were stable in 2019 and then dropped overall and in every credit tier in 2020, similar to general purpose. Consumers with near-prime scores experienced the largest decline, dropping from 58 percent in 2019 to 48 percent in 2020. For consumers with superprime scores, the approval rate for retail card applications decreased by 2 percentage points. Approval rates for subprime and deep subprime tiers and consumers dropped year-over-year but were on par with 2018 levels. While issuers tightened underwriting overall, this suggests that consumers with prime and near-prime scores were most affected by increased rejection rates as their applications may have been approved in prior years.

<sup>130</sup> However, the deterioration in credit performance feared early in the pandemic did not materialize, and issuers reported a net loosening of standards in 2021. Bd. Of Governors for the Fed. Rsrv. Sys., *Senior Loan Officer Opinion Survey on Bank Lending Practices* (May 20, 2021), <https://www.federalreserve.gov/data/sloos/sloos-202104-chart-data.htm>.

**Figure 8:** APPROVAL RATE, RETAIL (MMI)

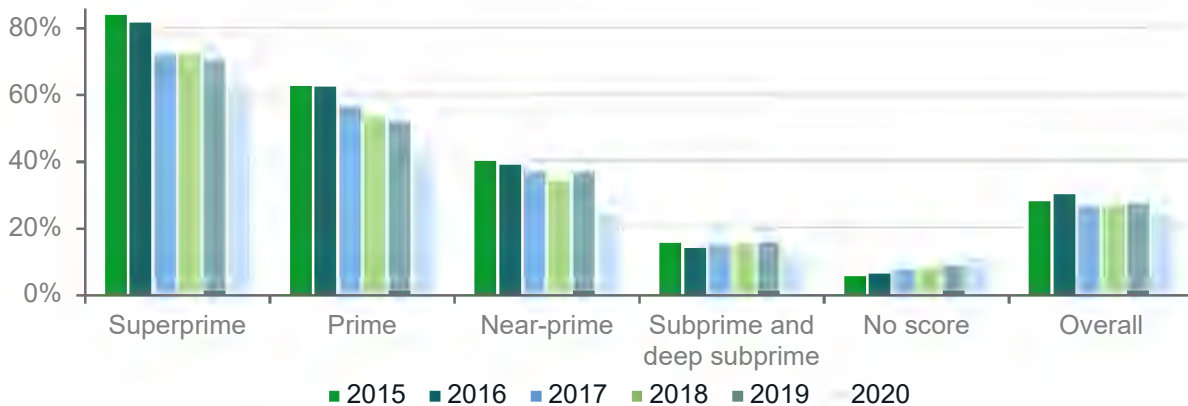


Approval rates vary substantially by application channel. Pre-screened solicitations and mail channels tend to have the highest approval rates. Rates for mobile and digital channels are typically lower but vary by credit tier. TPC site approval rates remain higher than mobile approval rates both overall and in every score tier for general purpose cards.

**MOBILE APPROVALS**

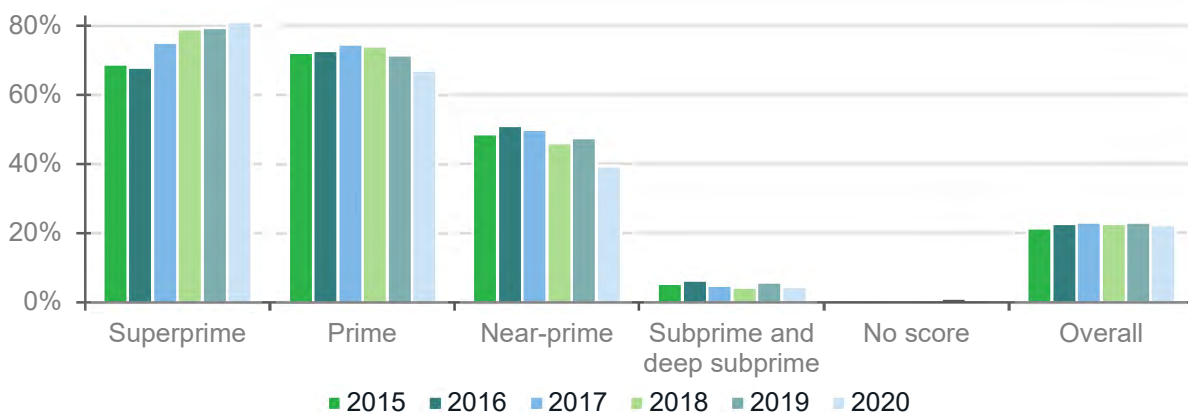
Slightly under one quarter of all consumers applying via mobile device are now approved for both general purpose and retail cards. However, approval trends differ by card type and credit score tier. As shown in Figure 9, higher approval rates of near-prime and lower credit score tiers drove an overall marginal increase in general purpose approvals in 2019. Yet this trend reversed in 2020 as all consumers except those with no score saw a substantial drop in approvals for applications submitted via mobile device.

**Figure 9:** APPROVAL RATE FOR APPLICATIONS SUBMITTED VIA MOBILE DEVICES, GENERAL PURPOSE (MMI)



On the retail side, the overall rate has remained steady since 2015 but its composition by credit score tier has shifted. As shown in Figure 10, the share of superprime approvals increased in 2020 as the approval rate for every other credit score declined. For consumers with near-prime scores and above, mobile approval rates remain higher for retail than for general purpose card applications.

**Figure 10:** APPROVAL RATE FOR APPLICATIONS SUBMITTED VIA MOBILE DEVICES, RETAIL (MMI)

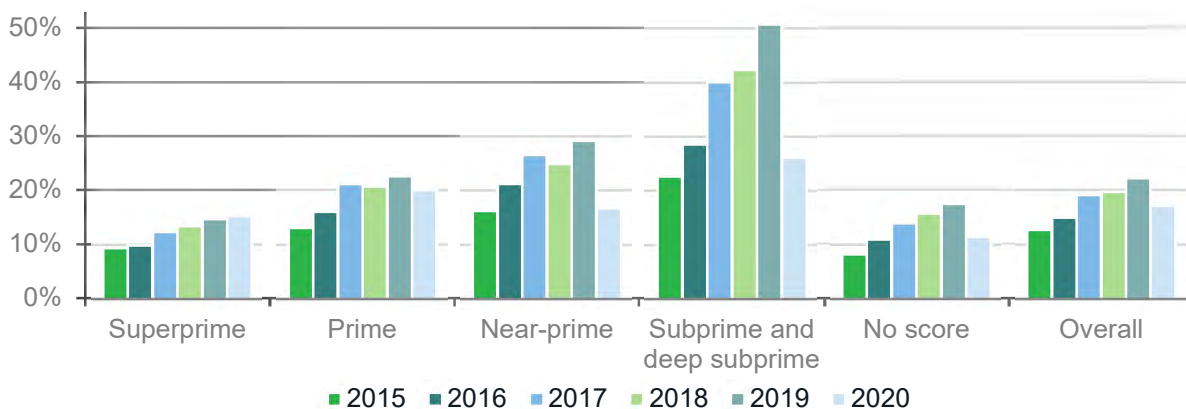


### TPC SITE APPROVALS

TPC sites directly facilitated an all-time high of over 7 million approvals in 2019, but the number of mass market approvals via TPC site decreased 49 percent in 2020. This decline can be almost entirely attributed to the 48 percent reduction in applications via the TPC site channel discussed above. The approval rate via TPC site channel approvals overall is 32 percent, which has been consistent for the past four years. Approval rates declined for every credit tier in 2020 yet consumers with lower scores still had a greater chance of approval via TPC site than overall.



**Figure 11:** SHARE OF CREDIT CARD APPROVALS FACILITATED BY TPC SITES, GENERAL PURPOSE (MMI)



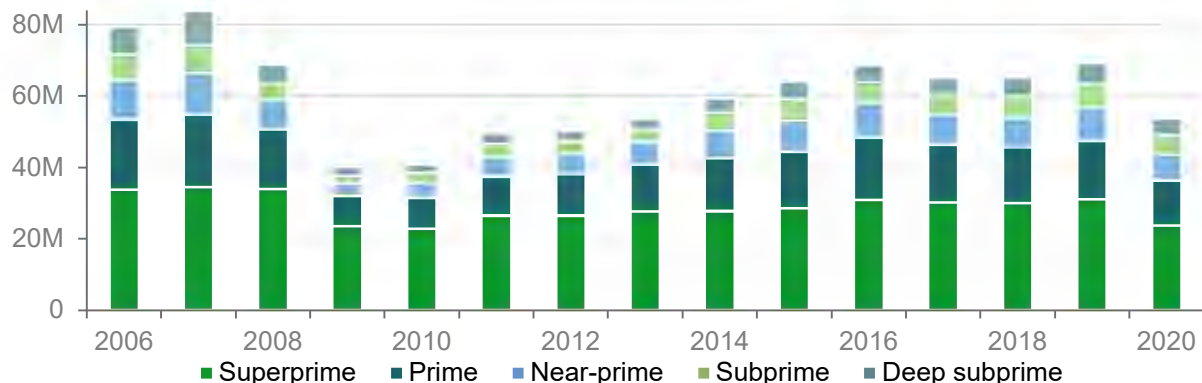
#### 4.1.4 Account origination

A significant drop in new applications by consumers and moderate declines in the percentage of approvals by issuers led to the origination of 21.5 percent fewer new credit cards in 2020 than the year prior. In 2020, consumers opened 84.8 million new credit card accounts: 53.7 million general purpose and 31.1 million private label.<sup>131</sup>

General purpose origination account volume overall reached its lowest point since 2013, as account origination for all credit tiers dropped in 2020. As shown in Figure 12, originations for consumers with superprime scores decreased 25 percent and fell to their Great Recession-era low. Yet, application volumes for consumers with subprime and deep subprime scores remained above 2017 levels. Roughly 24 million cards were issued to consumers with superprime credit scores, 13 million to prime, seven million to near-prime, five million to subprime, and five million to consumers with deep subprime scores.

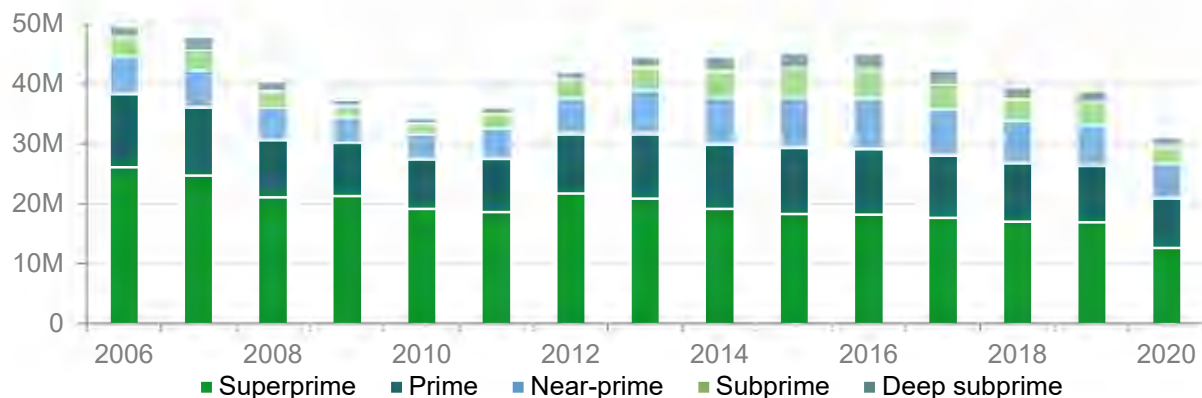
<sup>131</sup> The data source used in this subsection is the CCP, which offers a broad view of the market but does not allow the Bureau to identify all “retail” cards. As a result, this subsection uses “private label” as it does in other sections that reference the CCP. See Section 1.3 for more on the data sources used in this report.

**Figure 12:** ANNUAL NEW ACCOUNT VOLUME, GENERAL PURPOSE (CCP)



Private label origination trends differ as origination volume continued to decrease from 2016 highs in every tier. Figure 13 shows that the overall decrease in 2020 was driven by a drop in superprime volume to twenty-first century lows. Originations to consumers with prime scores fell to lows not seen since the Great Recession while those with near-prime or lower scores remained closer to Great Recession highs.

**Figure 13:** ANNUAL NEW ACCOUNT VOLUME, PRIVATE LABEL (CCP)



The share of consumers opening cards declined in 2020, and for consumers with prime and superprime scores, that share is now below Great Recession lows. In 2020, 20 percent of consumers in the CCP opened a credit card, compared to roughly 25 percent in the three preceding years. For the superprime tier, its 20 percent share is the lowest it has been since at least 2006. The share was highest in 2020 for consumers with prime scores at 25 percent, but even that remains the tier’s lowest share in recent history. In contrast, a greater share of consumers with near-prime and subprime scores opened cards than did consumers with

superprime scores in 2020. Despite the credit tightening indicated in surveys, consumers with below-prime scores were more likely to open a new card in 2020 than they did prior to the CARD Act in 2009.

#### 4.1.5 New account credit line

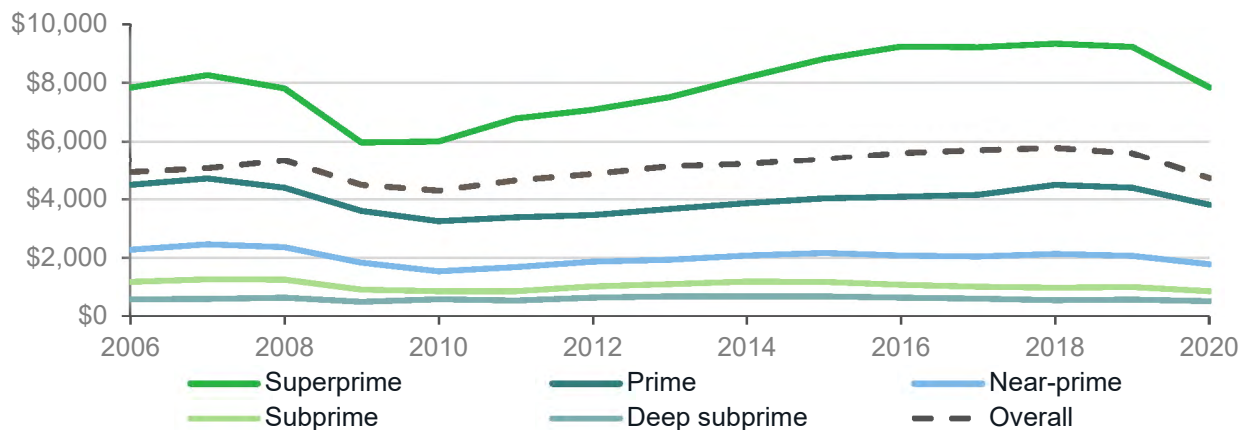
In 2019, the total credit line on new accounts was almost \$500 billion, slightly surpassing 2016 levels but still far below its pre-Great Recession highs; this value dropped over 30 percent in 2020 to \$331 billion. The decline in overall new line is a result of a complex interaction between consumer demand for credit during the pandemic and issuer willingness to supply it.

Superprime credit lines saw the largest decrease in total new line of \$118 billion, a 33 percent change. This accounted for over three-fourths of the total reduction in new account credit line. This appears to be driven by a decrease in credit demand by consumers with superprime scores as applications fell but approval rates remained fairly strong. In comparison, consumers with deep subprime scores saw the second highest percent change as total new account credit line decrease 33 percent or by slightly over one billion dollars, from 2019. However, this change at the extensive margin may not fully explain the pandemic-related decline in credit line volume, as some issuers limited risk by offering smaller credit lines to new applicants in 2020.

In 2020, general purpose cards accounted for over three-fourths of new line volume but represented 86 percent of the year-over-year decline in new line. After reaching a new post-Great Recession high in 2019, total new general purpose line dropped by over 30 percent in 2020. Previously, line growth was driven by superprime accounts; subsequently, one can attribute most of the line reduction to this tier.

The *average* new line for general purpose cards fell by 18 percent in 2020. Figure 14 shows that the average new line for all consumers increased every year from 2010 to 2018 and remained steady in 2019. The average initial line for consumers with superprime scores still exceeded Great Recession levels despite falling from \$9,208 in 2019 to \$7,842 in 2020. For consumers with deep subprime scores, pandemic-related tightening of credit lines was a continuation of a five-year decline for general purpose accounts.

**Figure 14:** AVERAGE CREDIT LINE ON NEW ACCOUNTS, GENERAL PURPOSE (CCP)

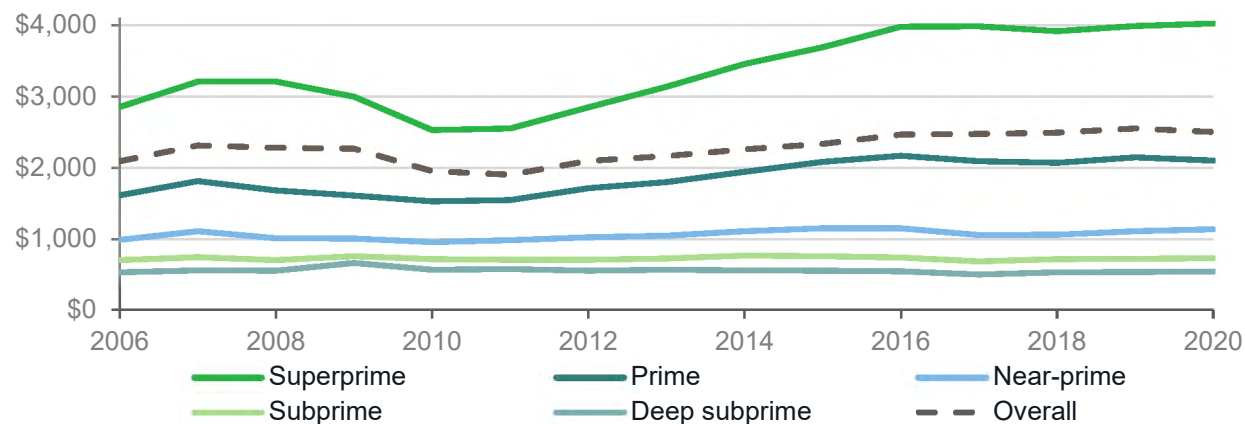


While the interaction between consumer demand and issuer supply was ambiguous for general purpose cards, the 22 percent drop in new private label credit lines can be explained primarily by fewer superprime applications as approval rates and average credit line did not decrease to the same degree. Total new private label credit lines decreased to \$78 billion in 2020 from \$100 billion the year prior. Over \$15 billion of this decrease was a reduction in credit lines for new superprime accounts. Superprime lines also saw the greatest percent change in 2020 with a 25 percent reduction, with deep subprime a close second with a 24 percent decline. New near-prime and subprime lines declined from 2019 levels of \$7.4 and \$2.7 billion to \$6.4 and \$2.2 billion respectively. However, this decrease accounts for a small percentage of the overall decline in new private label credit lines.

Average new private label lines reached their highest nominal value since 2005 of \$2,553 in 2019. In 2020, they remained above 2018 levels despite a two percent reduction overall. As shown in Figure 15, average line by credit tier remained stable in 2020. This contrasts with a decrease in average credit lines for all credit score tiers for general purpose cards. Since new average line for private label cards did not dramatically change in 2020 while the total new line fell by almost a quarter, the change in private label credit line is likely due to fewer new accounts in 2020 as stores closed and discretionary spending dropped during the pandemic.<sup>132</sup>

<sup>132</sup> See Selyukh, *supra* note 123. For more on credit card purchase volumes, see Section 2.3.

**Figure 15:** AVERAGE CREDIT LINE ON NEW ACCOUNTS, PRIVATE LABEL (CCP)



## 4.2 Existing accounts

Total credit line across all consumer credit cards exceeded \$4.5 trillion in 2019. In 2020, it decreased slightly, as driven by a decline in private label lines, but still far exceeded 2018 levels. The total credit line for general purpose was \$3.9 trillion in both 2019 and 2020. Most of this is accounted for by total *unused* line on accounts held by consumers with superprime scores equaling \$3.2 trillion in 2020.<sup>133</sup> In comparison, unused line on accounts held by consumers with subprime and deep subprime scores equaled \$24.4 billion, and total general purpose credit line for each other credit tier except superprime decreased in 2020. Total credit line available for private label cards fell in both 2019 and 2020. The present subsection examines this issue in more detail by looking at a range of account-level and cardholder-level measures on existing accounts for each score tier and card type.

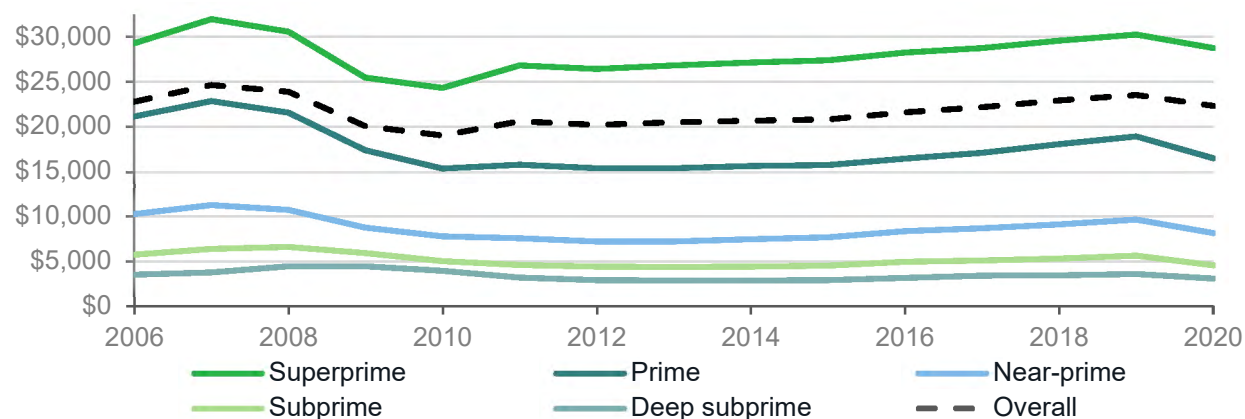
### 4.2.1 Average credit line

Average general purpose credit line *per account* increased slightly in 2019 before finishing lower in 2020 at about \$8,000. These changes were mirrored across all credit score tiers. The average

<sup>133</sup> Unused line on superprime accounts totaled more than \$3.2 trillion in 2020. Almost all of that was on general purpose cards.

general purpose line *per cardholder* increased in 2019 and then decreased in 2020 for all credit scores, as the average value overall returned to 2018 levels. As Figure 16 shows, consumers with mid-range and lower scores were most affected by issuers tightening of credit supply during the COVID-19 national emergency. Average line for consumers with near-prime, subprime, and deep subprime scores across all cards decreased over 10 percent. In comparison, average credit line for superprime cardholders fell by 5 percent.

**Figure 16:** AVERAGE CREDIT LINE PER CARDHOLDER, GENERAL PURPOSE (CCP)



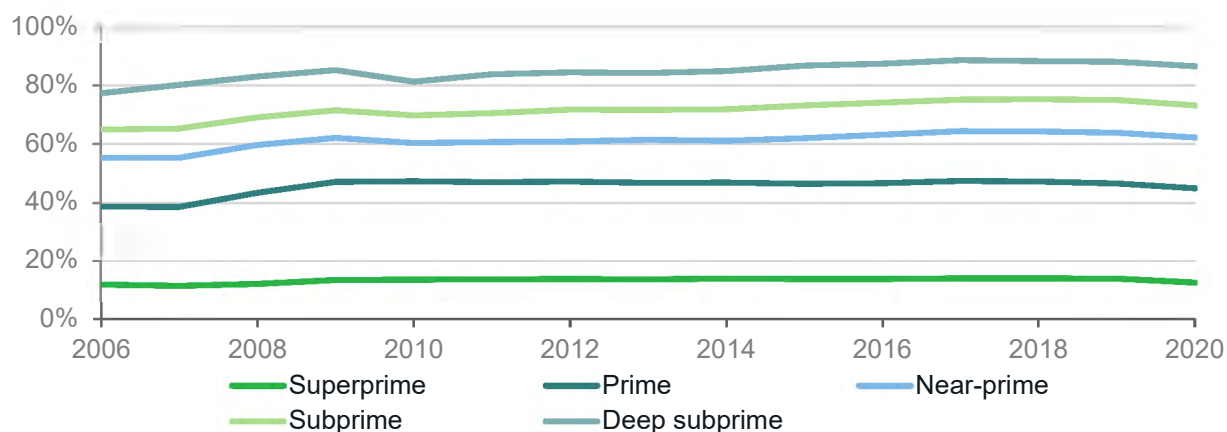
The private label picture is very different, as cardholders in all tiers reached new high average credit lines in 2019 and remain high in 2020. In 2020 average private label credit line per card was almost \$2,700, marking a new high. The average private label card has about one-third more line now than in 2012. Accounts held by consumers in lower credit tiers show slower growth over the same period, but no tier remains below its pre-recession high. At the cardholder level, after reaching new highs in 2019, in 2020 average line declined to 4 percent below where they were on average in 2018. Coupled with higher average lines at the card level, it is likely this represents an increase in account closures.<sup>134</sup>

<sup>134</sup> For more information regarding account closures, see Section 4.2.3.

## 4.2.2 Utilization

Revolving credit for general purpose cards in 2020 amounted to less than one-fifth of total line available for the first time since before the Great Recession. Despite overall increases in the total dollar value of line available over the past decade, utilization has been remarkably stable as *unused* line rose in tandem. Therefore, the overall decrease in the utilization rate to 18.5 percent in 2020 from 21.4 percent the two prior years is a significant deviation from the mean. As shown in Figure 17, general purpose utilization decreased in every credit tier. In 2020, credit limits for general purpose cards stayed relatively constant while total debt fell; this led to a decrease in the utilization rate.<sup>135</sup> As utilization rate is used of credit scoring, it will be interesting to see how the distribution of credit scores shift if credit card debt continues to contract.

**Figure 17:** AVERAGE UTILIZATION RATE BY CREDIT SCORE TIER, GENERAL PURPOSE (CCP)



In addition to an overall decline in total utilization, the share of consumers with below-prime scores who have used 90 percent or more of their general purpose credit line reached record lows in 2020. Since 2015, slightly above three-fifths of consumers with below-prime scores met or exceeded this threshold of limited available credit as shown in Figure 18. This measure dropped to 56.8 percent in the second quarter of 2020. During this time the CARES Act Economic Impact Payments, Pandemic Unemployment Assistance Program, mortgage

<sup>135</sup> See sections 2.2.1, 2.4, and 4.2.3

forbearance, student loan payment suspension and other programs provided consumers with additional cash or lower payments. In addition, consumer spending dropped sharply.

**Figure 18:** QUARTERLY SHARE OF BELOW-PRIME CARDHOLDERS WITH AT LEAST 90 PERCENT UTILIZATION ACROSS ALL CARDS, GENERAL PURPOSE (CCP)



### 4.2.3 Credit line management

Credit lines on existing accounts are not static. Issuers can increase or decrease them without consumer consent. Credit line increases (CLI) are somewhat restricted by the CARD Act's ability-to-pay requirements, but issuers confront a range of more substantial regulatory restrictions on repricing existing balances.<sup>136</sup> Previous research published by the Bureau studied whether issuers may use line management to respond to risk revealed post-origination or changes in nationwide economic conditions.<sup>137</sup>

#### **CREDIT LINE INCREASE**

As shown in Figures 19 and 20, annual CLI incidence in 2020 was around 3 percent for both general purpose and private label cards. Prior to the pandemic, 4 percent of accounts received a

<sup>136</sup> The ability-to-pay rules require that issuers consider an applicant's ability to pay the minimum monthly payment on an account prior to opening a credit card account under an open-end (not home-secured) consumer credit plan or increasing a credit line on such an account. 12 CFR 1026.51(a)(1)(i). *See also* 15 U.S.C. § 1665e (2012). Repricing of existing balance is only allowed under a set of relatively narrow circumstances. *See* 12 CFR 1026.55(b).

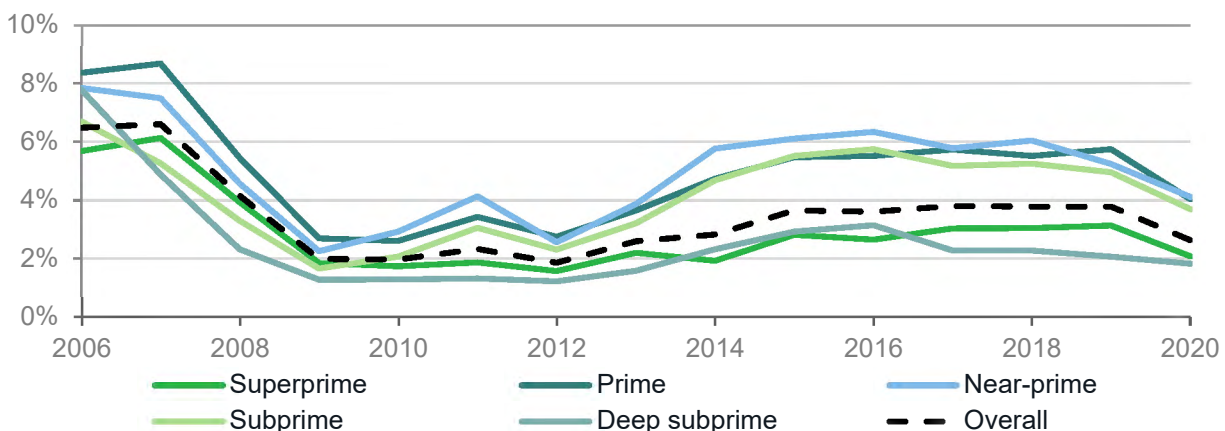
<sup>137</sup> *See* 2017 Report, *supra* note 6, at 158-162.



CLI each year. While this decline may indicate some hesitancy on the part of issuers to initiate new CLIs during the pandemic, yearly incidence remained at or close to post-Great Recession norms for all credit tiers.

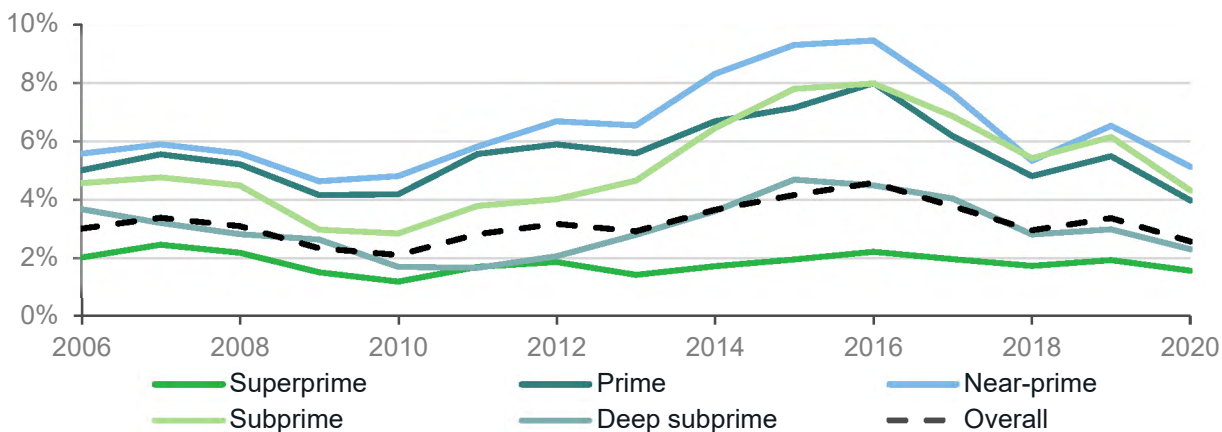
The median general purpose CLI in 2020 was \$1500 compared to \$2000 in 2019. This was the first overall decrease in median value in a decade, as issuers offered every credit tier smaller line increases on par with 2012 levels. Yet this trend masks tier differentials as the median increase for consumers with superprime scores is still ten times that of consumers with deep subprime scores. However, consumers with prime scores saw the greatest change as their median CLI dropped from \$1550 to \$1000 in 2020.

**Figure 19:** ANNUAL CREDIT LINE INCREASE INCIDENCE, GENERAL PURPOSE (CCP)



For private label cards, the median line increase was \$700 in both 2019 and 2020. Consumers with superprime, near-prime, and deep subprime scores saw no change in their median line increases over the past four years while each lower credit score tier was offered a lower median line in 2020 than a year prior.

**Figure 20:** ANNUAL CREDIT LINE INCREASE INCIDENCE, PRIVATE LABEL (CCP)

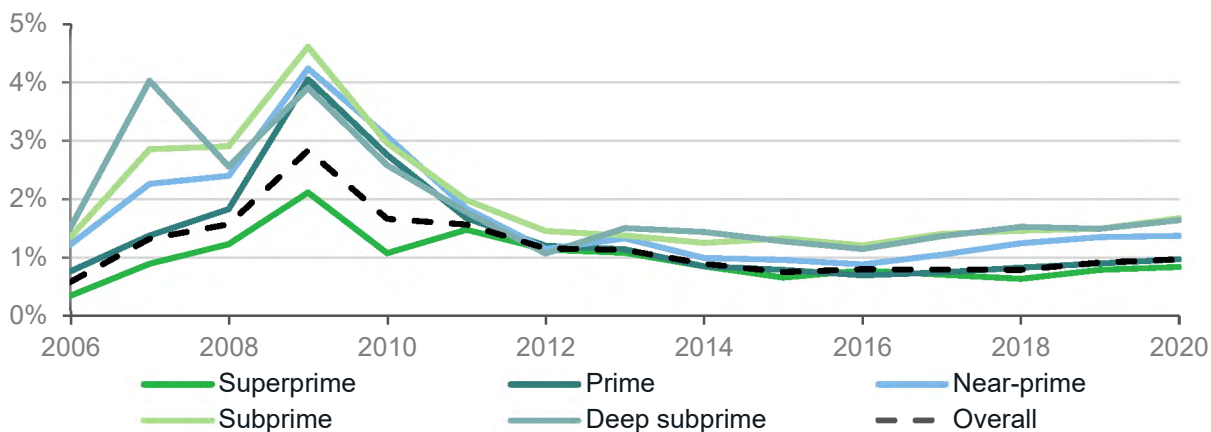


**CREDIT LINE DECREASE**

General purpose card issuers did not meaningfully change their line management of existing accounts in response to economic uncertainty during the pandemic, despite media reports to the contrary. In the second quarter of 2020, 0.9 percent of general purpose accounts saw a decrease in available credit line from issuers. This did not change year over year and remained far below its highest quarterly value of 3.7 percent of general purpose accounts experiencing CLDs at the height of the Great Recession. As has been the norm, a higher percentage of consumers with below-prime scores experienced CLDs while cardholders with superprime and prime scores were less likely to experience a change in their credit lines. All tiers followed a similar trend of a moderate increase in CLDs as shown in Figure 20. Yet, both overall and for all credit tiers, a higher percentage of consumers still saw their general purpose credit lines increased than decreased in 2020. One explanation may be that card issuers resisted reducing credit lines to avoid angering their customers.<sup>138</sup>

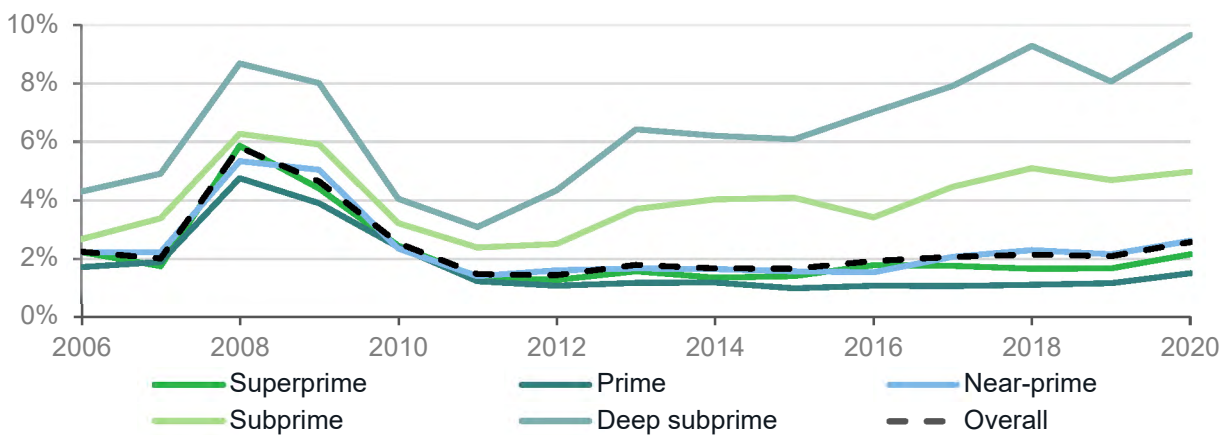
<sup>138</sup> See, e.g., Kevin Wack, *Credit card lenders clamp down to mitigate coronavirus risk*, American Banker (May 29, 2020), <https://www.americanbanker.com/news/credit-card-lenders-clamp-down-to-mitigate-coronavirus-risk>.

**Figure 21:** ANNUAL CREDIT LINE DECREASE INCIDENCE, GENERAL PURPOSE (CCP)



Evidence suggests that private label card issuers may be reacting to heightened risk of below-prime borrowers in their portfolios by using CLDs to limit their exposure. For private label cards, CLDs increased from a quarterly value of 2.1 percent in 2019 to 4.3 percent in the third quarter of 2020 before returning to 2.2 percent in the fourth quarter but were still far below the 2008 peak of 13.4 percent. As shown in Figure 22, consumers with subprime and deep subprime scores have been much more likely to see private label CLDs since the Great Recession than those in higher credit tiers. However, this differential expanded in 2020 as CLD incidence for consumers with deep subprime scores increased by two percentage points to 10 percent annually and exceeded its 2008 peak while that of superprime only saw half a percentage point increase. Continuing previously reported trends, the annual rate of CLDs was only higher than that of CLIs for private label accounts with subprime or lower credit scores.

**Figure 22:** ANNUAL CREDIT LINE DECREASE INCIDENCE, PRIVATE LABEL (CCP)



While the incidence of CLDs marginally increased during the pandemic, the magnitude of these line decreases was on par with or lower than in previous years. Like the median CLI value in 2020, the dollar value of CLDs per account decreased for both card types. The median CLD for general purpose cards is now slightly above \$2500 as driven by an increase in CLDs on prime consumers. For private label cards, this value decreased 13 percent in 2020 and is now about \$1000.

There is little evidence to support an unprecedented, industry-wide slashing of existing credit limits as widely reported during the COVID-19 national emergency.<sup>139</sup> Research on the early effects of the pandemic on consumer credit found borrowers with superprime and prime scores experienced relatively more reductions on existing account limits.<sup>140</sup> This is likely driven primarily by reductions in line for consumers with significant unused credit, such as cardholders with superprime and prime scores. However, for consumers who did experience a CLD during the pandemic, this reduction in credit availability was surprising and often acutely felt, as evidenced by a 65 percent increase in complaints related to CLDs in 2020.<sup>141</sup> CLDs may also have long-term effects on credit scores. FICO estimated that a severe CLD could result in a 9 point reduction of a cardholder's credit score.<sup>142</sup> The Bureau intends to further study the effects of CLD and its impact on credit utilization and credit scores, in particular for those consumers with non-prime credit scores.

## **ACCOUNT CLOSURE**

About 2 percent of both general purpose and private label accounts are closed each year. This has been true for the past decade, and it remained true in 2020. Accounts can be closed by the

<sup>139</sup> See, e.g., Kristopher Brooks, *70 million people just had their credit card limits cut or accounts closed*, CBS News (July 22, 2020), <https://www.cbsnews.com/news/credit-card-limits-reduced-closed-70-million-cardholders/>.

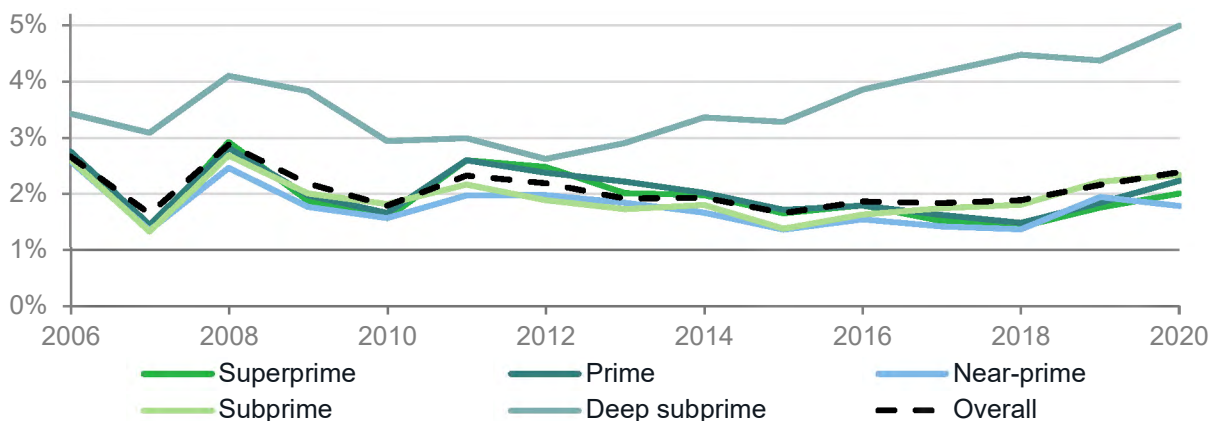
<sup>140</sup> See Sandler & Ricks, *supra* note 24, at 22.

<sup>141</sup> See Cons. Fin. Prot. Bur., *Consumer Response Annual Report*, at 118 (Mar. 2021), <https://www.consumerfinance.gov/data-research/research-reports/2020-consumer-response-annual-report/>.

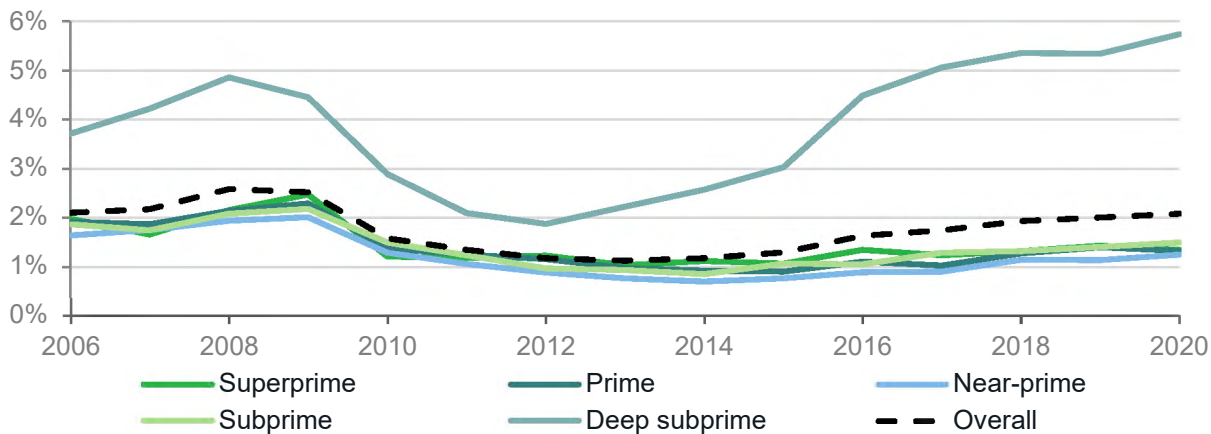
<sup>142</sup> 9 points was the average decline in FICO score for an up to 50 percent decrease in available credit limit based on simulations using data from prior downturns. See FICO, *North America What FICO Score Dynamics from Prior Downturns and Natural Disasters Can Tell Us About the Road Ahead* (Oct. 2020), <https://www.fico.com/en/latest-thinking/demand-webinar/north-america-what-fico-score-dynamics-prior-downturns-and-natural>.

consumer, closed by the creditor, or closed for inactivity. For all card types, the annual account closure incidence for consumers with deep subprime credit scores are two to three times more likely than those in higher credit tiers as shown in Figures 23 and 24. Yet other research suggests that the slight increase in account closures from March to June 2020 primarily affected superprime and prime borrowers.<sup>143</sup> In those months, there were higher account closures by creditors and closures for inactivity.

**Figure 23:** ANNUAL ACCOUNT CLOSURE INCIDENCE, GENERAL PURPOSE (CCP)



**Figure 24:** ANNUAL ACCOUNT CLOSURE INCIDENCE, PRIVATE LABEL (CCP)



<sup>143</sup> See Sandler & Ricks, *supra* note 24, at 22.

## 5. Practices of credit card issuers

In the CARD Act, Congress directs the Bureau to review “the terms of credit card agreements and the practices of credit card issuers” and “the effectiveness of disclosure of terms, fees, and other expenses of credit card plans.”<sup>144</sup> Therefore, this section describes trends and developments in issuer practices related to four common credit card features: credit card rewards, deferred interest promotions, balance transfers, and cash advances. For each feature, it discusses its prevalence in the market, costs associated with utilizing the feature, and any changes issuers or third parties have made in supporting consumers who choose to use them. The section then describes changes in issuer practices made in response to COVID-19, such as the promulgation of consumer relief programs, and adjustments made to operations considering safety concerns. Finally, this section reviews changes to credit card agreements observed over time.

In particular, for the four account features discussed below, the impact of the pandemic on credit card issuers is large and clear. Consequently, the direct issuer response to COVID-19 had a similarly large impact on consumers, primarily through widely available payment deferral.

<sup>144</sup> 15 U.S.C. § 1616(a)(1)-(2).

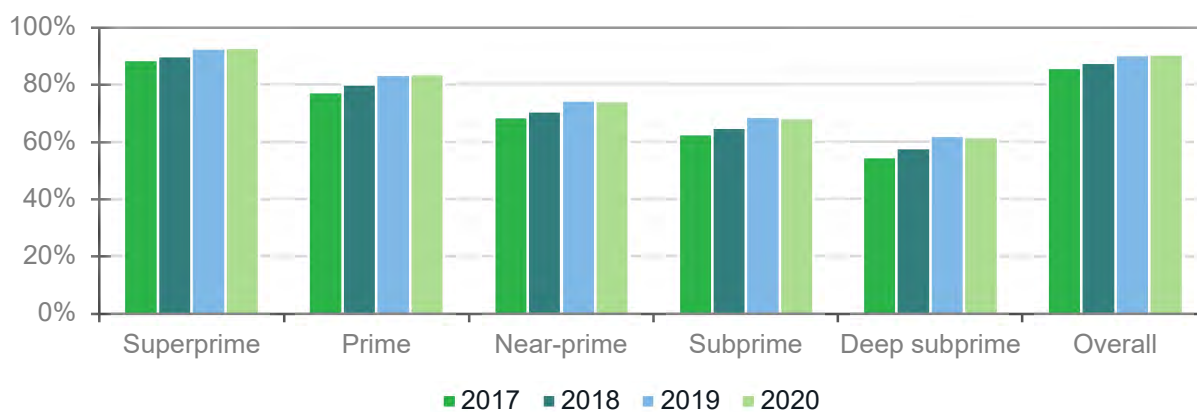
## 5.1 Rewards

Credit cards offering rewards remain popular with cardholders, despite pandemic-related declines in travel that temporarily reduced the utility of some forms of rewards.<sup>145</sup> This section reviews recent rewards trends.

### 5.1.1 Prevalence

The share of credit card spending accounted for by rewards cards has continued to increase since 2018. That is true both overall and for each credit score tier, with growth particularly notable for consumers with lower credit scores. By the end of 2020, even consumers with deep subprime scores put more than 60 percent of their credit card purchase volume on rewards cards, and consumers with near-prime scores put nearly three-fourths of their spending on rewards cards.<sup>146</sup> Trends in reward-card purchase volume as a share of total spending are shown in Figure 1.

**Figure 1:** SHARE OF PURCHASE VOLUME ON A REWARDS CARD, GENERAL PURPOSE (Y-14+)



<sup>145</sup> For a detailed discussion of what aspects are generally shared by those credit card account features commonly denoted as “rewards,” see 2015 Report, *supra* note 6, at 209-212.

<sup>146</sup> J.D. Power reported in 2020 that consumers who self-report as “fully understanding how to earn and redeem points” have an average spend that is \$307 more than the average spend of consumers who self-report as not fully understanding their rewards programs. See J.D. Power Satisfaction Study, *supra* note 2.

Rewards cards remain popular, driven by the higher end of the credit spectrum. Shifting preferences towards rewards cards reflect survey findings that show rewards as the predominant factor in choosing a card.<sup>147</sup> While cardholders with subprime and deep subprime scores are less likely than consumers with superprime scores to originate rewards cards, these cardholders still put more than one-half of their credit card spending on rewards cards, as shown in Figure 2.<sup>148</sup>

Cardholders continue to embrace rewards cards, and increasingly prefer cash rewards to miles.<sup>149</sup> In 2020, cash rewards card spending increased the most of any group, accounting for one third of general purpose card spending. Spending on miles rewards cards fell to 18 percent in 2020, which coincided with a sharp decline in travel spending as a result of pandemic-related travel restrictions.<sup>150</sup> Cards that earn other types of rewards, such as points, special offers, or discounts, remain the most common by purchase volume at 39 percent.

<sup>147</sup> Similarly, J.D. Power's 2018 survey found that 47 percent of credit card customers who switched to a new card within the past 12 months did so for a better rewards program. See J.D. Power, *Credit Card Rewards Battle Continues as Customers Seek Better Programs* (Aug. 16, 2018), <https://www.jdpower.com/business/press-releases/2018-us-credit-card-satisfaction-study>. In its 2013 Report, the Bureau references a 2011 Mercator Customer Monitor Survey showing rewards were the number one reason to apply for a selected card at that time as well. 2013 Report, *supra* note 6, at 82 n.94.

<sup>148</sup> For information on the share of new accounts with rewards by credit tier, see 2015 report, *supra* note 6, at 100.

<sup>149</sup> Issuers' new card offerings post-pandemic recession reflect this shift. See, e.g., Jennifer Surane, *Credit Cards Revive Rewards battle with New Cash-Back Offerings*, Bloomberg (July 19, 2021), <https://www.bloomberg.com/news/articles/2021-07-19/rewards-war-returns-with-a-spate-of-new-cash-back-credit-cards?sref=25rnPxpS>.

<sup>150</sup> Visa reported travel spending fell about 80 percent in March of 2020, with restaurant and entertainment segments down at least 50 percent. Emily Bary, *Visa sees 'significant deterioration' in spending but some areas are showing improvement*, MarketWatch (Apr. 30, 2020), <https://www.marketwatch.com/story/visa-earnings-top-expectations-but-coronavirus-prompts-significant-deterioration-in-spending-2020-04-30>.



**Figure 2:** SHARE OF PURCHASE VOLUME BY REWARD TYPE, GENERAL PURPOSE (Y-14+)



## 5.1.2 Developments

Card issuers altered rewards programs in response to changes in consumer spending and reward redemption behavior during the pandemic, especially those rewards cards that focused on travel, entertainment, and restaurants, and that carry an annual fee. During the pandemic, several issuers made changes to bonus earning by increasing rewards for spending in areas such as grocery and home delivery and by offering statement credits or redemption options for items people were more likely to use while staying home such as video streaming services and cellphone bills.<sup>151</sup> Some issuers also extended the time allowed to meet spend requirements to earn sign-up bonuses.<sup>152</sup> These programmatic changes were likely aimed at keeping customers from moving spending away from their card, downgrading to lower-fee products, or canceling their card altogether. However, at the time of this writing, most restrictions have been lifted, and

<sup>151</sup> See AnnaMaria Andriotis, *Travel Bans Take Shine Off Banks' Premium Rewards Cards*, Wall St. J. (June 28, 2020), <https://www.wsj.com/articles/travel-bans-take-shine-off-banks-premium-rewards-cards-11593336600>. See also Katie Deighton, *Credit-Card Providers Scramble to Update Customer Benefits as International Travel Ban Drags On*, Wall St. J. (Sept. 2, 2020), <https://www.wsj.com/articles/credit-card-providers-scramble-to-update-customer-benefits-as-international-travel-ban-drag-on-11599040800>.

<sup>152</sup> See Alexandria White, *Amex is offering new cardholders 3 more months to earn welcome bonus*, CNBC (Updated May 6, 2021), <https://www.cnbc.com/select/amex-extends-welcome-bonus-for-new-cardholders/>.

issuers are shifting the focus of rewards programs back towards travel and entertainment, suggesting issuers anticipate a return to previous spending behavior.<sup>153</sup>

Rewards remain important to cardholders, but consumer reward preferences have changed significantly since the Bureau's previous report; it remains unclear how much of that change is temporary due to pandemic restrictions.<sup>154</sup> Among cardholders who opened a new card, the three most-cited reasons for doing so were attractive rewards, benefits, and sign-up offers.<sup>155</sup> Cardholders also tend to use rewards cards more – the share of cardholders reporting a non-rewards card as their most frequently used card declined from 23 percent in 2019 to 17 percent in 2020.<sup>156</sup> Consumers continue to favor cash rewards in 2020 – 55 percent of consumers preferred to redeem rewards for charges or a check, compared to 44 percent in 2019 and 26 percent in 2016.<sup>157</sup> However, at least one issuer has also observed increases in reward points levels, indicating many consumers may be accumulating points to use once they resume travel.<sup>158</sup>

New forms of rewards announced since the Bureau's prior report, such as cryptocurrency and student loan repayment, may prove attractive to some consumers. In late 2020 and early 2021, Gemini, BlockFi, and SoFi announced credit cards that offer cash back in the form of

<sup>153</sup> See Kevin Wack, *Card issuers reliant on miles, hotel rewards await travel rebound*, American Banker (Mar. 22, 2021), <https://www.americanbanker.com/payments/news/card-issuers-reliant-on-miles-hotel-rewards-await-travel-rebound>. “As vaccinations continue and more people return to traveling, card issuers are anticipating that rich sign on bonuses and flexibility with rewards will spark new interest with consumers.” Competiscan, *Travel Consumer Cards* (Q1 2021), at 3.

<sup>154</sup> See AnnaMaria Andriotis & Alison Sider, *Airline Cards Lose Luster as Coronavirus Persists*, Wall St. J. (Dec. 3, 2020), <https://www.wsj.com/articles/airline-cards-lose-luster-as-coronavirus-persists-11606991400>.

<sup>155</sup> Auriemma Research, *Impact of Credit Line Changes and Loan Forbearance, Attitudes toward Low or No-APR Cards, and 'Refer a Friend' Programs*, Cardbeat US (Apr. 2021), at 53.

<sup>156</sup> Auriemma Research, *2020 Trend Database, Cardbeat US* (Mar. 2021), at 6.

<sup>157</sup> Auriemma Research, *2020 Trend Database, The Payments Report* (Mar. 2021), at 16.

<sup>158</sup> See Wack, *supra* note 153.

cryptocurrency stored in an affiliated investment account.<sup>159</sup> One survey found that nearly four-in-ten cardholders report they would be likely to redeem points for cryptocurrency.<sup>160</sup> These preferences are inversely correlated with age, as younger consumers expressed greater likelihood to redeem points for cryptocurrency.<sup>161</sup> In addition to its crypto option, SoFi also gives users the option to put cash toward student loan balances.<sup>162</sup> As a reward for card repayment, SoFi states they will lower the APR of the card by one percentage point after 12 timely payments.<sup>163</sup> Laurel Road also introduced a card for students that provides greater cashback redemption if used to pay down student loans.<sup>164</sup> Similar to affinity cards that generate rewards with spending but pass the funds to social causes or affiliated organizations, Aspiration introduced a card that rewards users by planting trees to offset the user's carbon footprint.<sup>165</sup>

## 5.2 Deferred interest

Deferred interest (“DI”) promotions are a large feature of the retail consumer credit card market. Almost always associated with private label and retail co-brand cards, deferred interest

<sup>159</sup> BlockFi Blog, *Join the Waitlist for the World's First-Ever Bitcoin Rewards Credit Card* (Dec. 1, 2020), <https://blockfi.com/bitcoin-card-crypto-rewards>; Gemini Blog, *Gemini to Offer Credit Card with Crypto Rewards* (Jan. 14, 2021), <https://www.gemini.com/blog/gemini-to-offer-credit-card-with-crypto-rewards>; SoFi, *SoFi Credit Card*, <https://www.sofi.com/credit-card/> (last accessed May 26, 2021). In 2014, the Bureau issued a consumer advisory warning to consumers about the risks of virtual currencies such as Bitcoin. *See* Cons. Fin. Prot. Bur., *CFPB Warns Consumers About Bitcoin* (Aug. 11, 2014), <https://www.consumerfinance.gov/about-us/newsroom/cfpb-warns-consumers-about-bitcoin/>.

<sup>160</sup> This statistic is from interviews with 803 credit card users conducted in 2020. *See* Auriemma Research, *Impact of Credit Line Changes and Loan Forbearance, Attitudes toward Low or No-APR Cards, and 'Refer a Friend' Programs*, Cardbeat US (Apr. 2021), at 52.

<sup>161</sup> *Id.*

<sup>162</sup> *See* SoFi *supra* note 159.

<sup>163</sup> Competiscan, *Consumer Credit Cards Overview* (Q4 2020), at 7.

<sup>164</sup> *See* Laurel Road, *Laurel Road Student Loan Cashback Card*, <https://www.laurelroad.com/healthcare-banking/cash-back-credit-card/> (last accessed May 28, 2021).

<sup>165</sup> *See* Aspiration, *Zero*, <https://www.aspiration.com/zero> (last accessed May 27, 2021).

promotions are generally presented to consumers as an option to finance larger purchases. Consumers are given a fixed period of at least six months during which all interest charges are “deferred”—the issuer calculates how much interest the consumer would owe at the account’s retail APR, but does not immediately charge it to the consumer.<sup>166</sup> If the consumer pays down the full promotional balance during the promotional period, the deferred interest is never charged, and the consumer has gained the benefit of low-cost financing—almost always zero percent.<sup>167</sup> Conversely, a consumer who does not pay in full during the promotional period will generally have all the deferred interest capitalized into their balance at the promotion’s conclusion. As noted above, in the case of private label cards, the average retail APR is roughly 24 percent.<sup>168</sup>

This section builds on prior work to identify new and emerging trends in the prevalence and cost of deferred interest programs. The Bureau’s 2015 Report analyzed the legal background and current status of deferred interest promotions. It also reported findings from promotional-level data covering the full portfolios of several large DI issuers over a period of several years. The Bureau’s 2017 Report looked at promotional spending, payoff rates, and amount of deferred interest assessed by merchant category, promotion duration, and credit score. For 2021, the Bureau again solicited information to analyze spending, payoff rates, and deferred interest assessed.

The Bureau also solicited information regarding issuers’ response to COVID-19 with respect to deferred interest programs and found that issuers generally made few-to-no changes to their

<sup>166</sup> Deferred interest promotions of less than six months are effectively prohibited by the CARD Act and Regulation Z. 15 U.S.C. § 1666i-2(b); 12 CFR § 1026.55(b)(1); Comment 55(b)(1)-3.

<sup>167</sup> Generally, minimum payments alone are insufficient to repay the balance within the promotional period. In some cases, promotional balances are subject to an interest rate greater than zero percent during the promotional period, but by far the most common promotional interest rate is zero percent. In some cases issuers may also assess an up-front fee for enrollment in deferred interest programs.

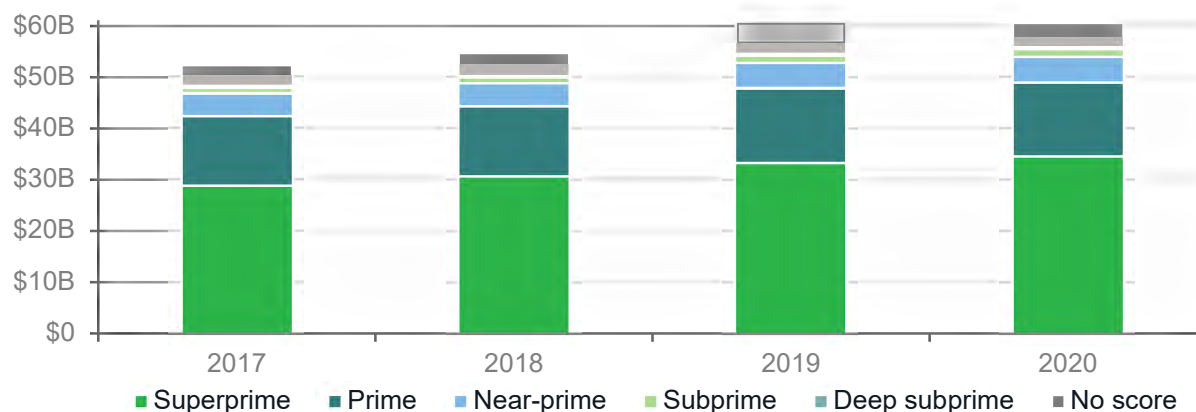
<sup>168</sup> One industry trade group pointed to deferred interest promotions as providing value to consumers. *See* ABA Comment Letter, at 16. Consumer advocates, by contrast, have called for deferred interest to be banned or, barring that, substantially restructured. *See* NCLC Comment Letter, at 12-14. One study by Wallethub found that 74 percent of people think “deferred interest” is unfair, 61 percent think it should be illegal, and 52 percent of people don’t know how it works. Alina Comoreanu, *Deferred Interest Study: Which Retailers Use It?*, Wallethub (Nov. 17, 2020), <https://wallethub.com/edu/cc/deferred-interest-study/25707>.

deferred interest-specific marketing, underwriting, and product structure. This does not account for issuers who made broader changes to how they marketed, underwrote, or otherwise offered retail credit cards; such changes may have had indirect effects on the marketing and availability of deferred interest products. Most issuers reported providing DI-specific relief to consumers impacted by COVID-19, generally on a by-request basis. Such relief generally took the form of extensions of promotional periods, in some cases alongside broader forbearance measures and in some cases as independently offered relief. Extensions were generally two-to-three months in length.

### 5.2.1 Prevalence

Deferred interest promotions remain generally popular with consumers, with purchase volumes relatively high despite pandemic-era disruptions in retail sales. Total purchase volume, as shown in Figure 3, was over \$60 billion in 2020, flat since 2019 but an increase of 16 percent from 2017. Growth since 2017 was driven by consumers with superprime scores, which saw aggregate purchase amounts increase 20 percent from 2017 to 2020. Consistent with the findings of previous Bureau reports, consumers with higher credit scores comprise the bulk of deferred interest purchase activity. In 2020, the number of deferred interest purchases increased more than 50 percent overall from 2018 levels. In 2020, the number of transactions for promotions with a duration of less than a year was twice that of two years prior while the number of purchases with longer term length promotions remained close to previous levels.

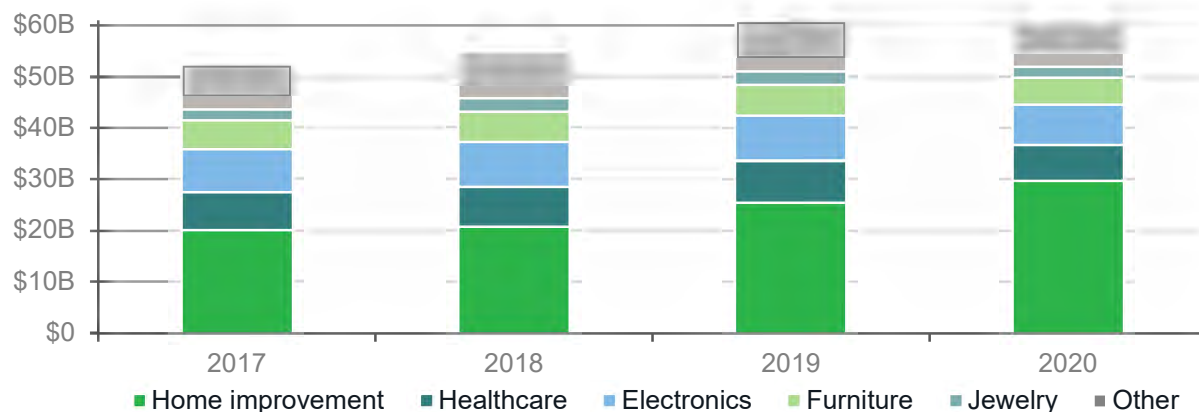
**Figure 3:** TOTAL PURCHASE VOLUME ON DEFERRED INTEREST PROMOTIONS (DI)



Deferred interest promotions are generally used to finance larger purchases. As a result, they tend to be used most at merchants that specialize in offering larger-ticket goods or services. In

2017 the Bureau reported that four-fifths of all deferred interest dollars were spent at merchants that specialize in five specific product or service categories, with the remainder spent either at merchants that specialize in other types of goods or services, or at merchants without a clear specialization.<sup>169</sup> In 2020 that figure has risen to six-sevenths. The largest driver of deferred interest consumer use is spending on home improvement; that sector, in contrast to travel and entertainment spending, saw an increase in spending driven by COVID-19,<sup>170</sup> which may help explain the relative persistence of deferred interest promotion volume in 2020 even as overall credit card purchase volume and indebtedness declined.

**Figure 4:** TOTAL PURCHASE VOLUME ON DEFERRED INTEREST PROMOTIONS BY MERCHANT CATEGORY (DI)



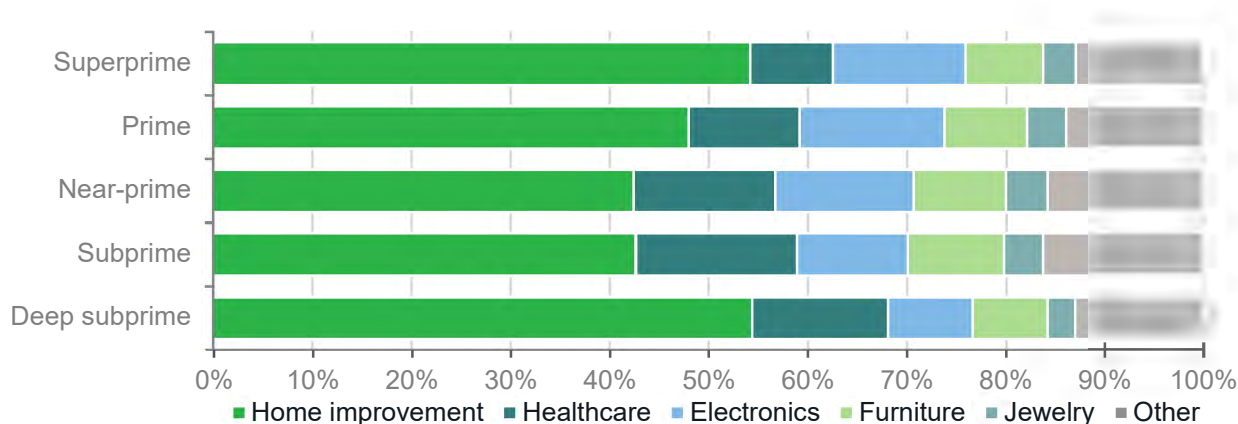
The mix of spending across merchants varies substantially by credit score tier as well as over time. Figure 4 displays the deferred interest promotional spending consumers made at each type of merchant. Figure 5 breaks down that spending by credit score tier in 2020. The Bureau’s 2017 report noted that consumers with superprime scores tend to concentrate their deferred interest

<sup>169</sup>See 2017 Report, *supra* note 6, at 103. “Other” includes department stores and shopping channels, where many of the actual products offered and sold may fall under one or more of the five enumerated categories. The actual share of spending on those types of goods and services, therefore, may be even higher than the merchant share may imply.

<sup>170</sup> See, e.g., Kermit Baker, *Despite Devastating Effects on the Broader Economy, Pandemic has been a Boon for US Home Improvement*, Joint Center for Housing Studies of Harvard University (Mar. 25, 2021), <https://www.jchs.harvard.edu/blog/despite-devastating-effects-broader-economy-pandemic-has-been-boon-us-home-improvement>.

spending at home improvement merchants.<sup>171</sup> That remains the case, but consumers with subprime and deep subprime scores now also concentrate more of their deferred interest purchases on home improvement, rather than healthcare which was a significant category in 2017. In fact, the share of deferred interest promotional spending on home improvement had risen from 38 percent in 2018 to nearly half of all deferred interest spending in 2020, reflecting pandemic-era changes in spending behavior. By contrast, the share of promotional spending on electronics fell in 2020 for consumers in all tiers and now ranks below healthcare.

**Figure 5:** SHARE OF PROMOTIONAL SPENDING BY MERCHANT CATEGORY, 2020 (DI)

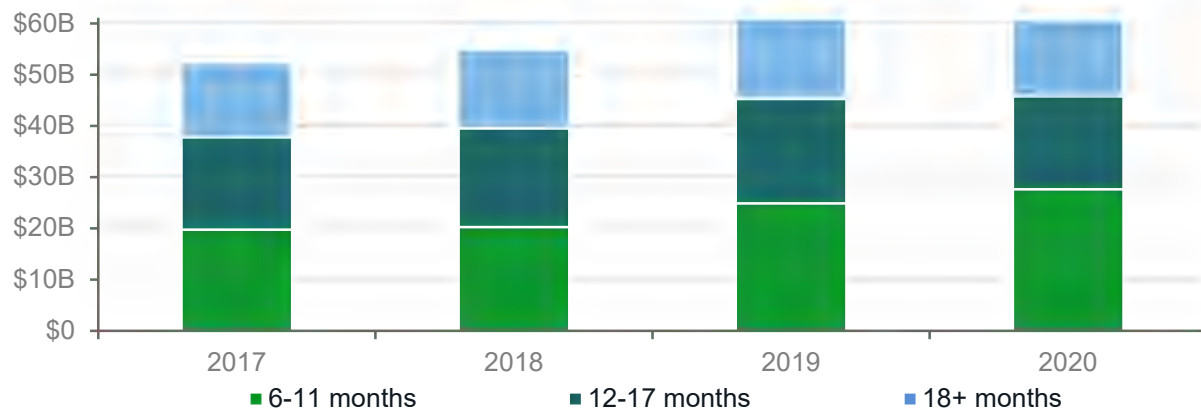


Over the past several years, the Bureau has observed a shift toward shorter promotions, as seen in Figure 6. While purchase volume on promotions of 12 to 17 months and promotions exceeding 18 months have remained consistent at about \$15 billion and \$19 billion per year respectively, purchase volume on promotions of 6 to 11 months has grown from \$20 billion in 2017 to nearly \$28 billion in 2020. In 2020, these shorter duration promotional purchases increased while medium and longer-term duration purchases decreased, possibly due to concerns surrounding the longer-term impact of the pandemic on consumer finances.

<sup>171</sup> See 2017 Report, *supra* note 6, at 104.

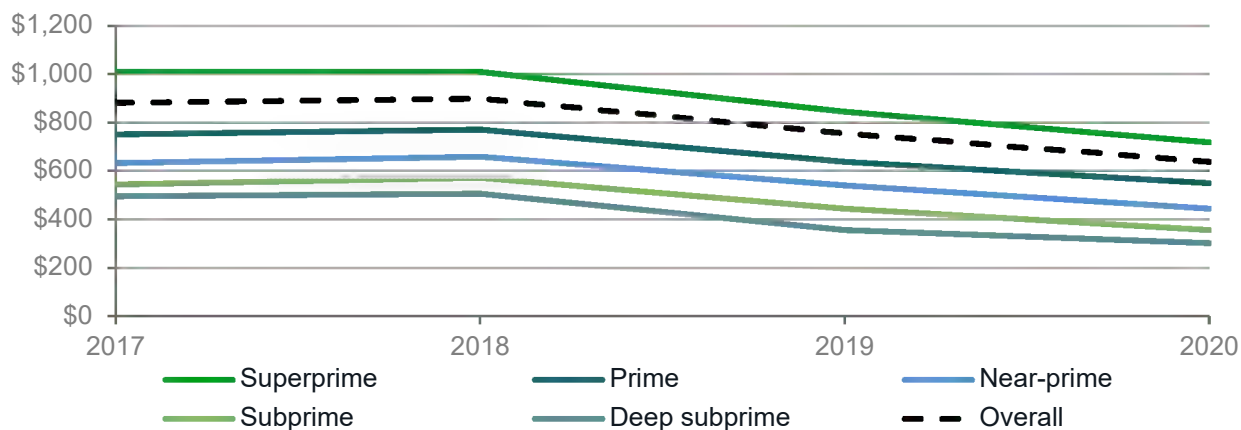


**Figure 6:** TOTAL PURCHASE VOLUME ON DEFERRED INTEREST PROMOTIONS BY DURATION (DI)



Consumers in lower credit score tiers increasingly utilize shorter promotions on average than consumers with higher credit scores. In 2020, 65 percent of promotional purchase volume made by consumers with deep subprime scores had a promotion duration of less than 12 months, compared to 45 percent for superprime. That share has increased from 50 percent in 2017. One explanation may be that promotion length usually increases with the size of the purchase. For example, a \$500 appliance might be six or 12 months, while a \$3,000 furniture purchase could offer a promotional period of several years. The average promotional purchase amount for a consumer with a superprime score is roughly twice that of a cardholder with a deep subprime score. Another reason may be that promotional offers are becoming more common for smaller purchase amounts. The average promotional purchase amount declined from \$899 to \$637 between 2018 and 2020, as shown in Figure 7.

**Figure 7:** AVERAGE PURCHASE AMOUNT ON DEFERRED INTEREST PROMOTIONS (DI)





## 5.2.2 Repayment

Rates of promotion repayment within the promotional period have generally increased since the Bureau last reported this rate.<sup>172</sup> The Bureau's 2015 Report found that overall promotion-level and balance-level payoff rates from 2009 to 2013 lay between 76 and 82 percent.<sup>173</sup> The Bureau's 2017 Report found that promotion payoff rates on six to 17 month promotions originated in 2015 were 72 percent, and balance payoff rates were 74 percent. This report finds promotion payoff rates of 81 percent and balance payoff rates of 82 percent in 2020, a marked increase from previous years.<sup>174</sup>

Cardholders of all credit score tiers increased payoff rates in 2020, but the effect was most notable for consumers with below-prime scores. The Bureau's 2013, 2015, and 2017 Reports found deferred interest payoff rates to be strongly correlated with credit score.<sup>175</sup> The correlation between payoff rates and credit score generally persists into the current observation period, as shown in Figure 8.<sup>176</sup> On one end of the spectrum, 89 percent of superprime balances were paid off in 2020, the same percentage as in 2019. In contrast, 62 percent of subprime and deep subprime balances were paid off during the promotion period in 2020, up from 54 and 51 percent respectively in 2019. In terms of the number of promotions, in 2020 cardholders in all

<sup>172</sup> The methodology the Bureau uses has evolved. Payoff rates on deferred interest products can be expressed in several ways, including: (1) the number of total deferred interest promotions in which the full balance is repaid prior to the end of the deferred interest period divided by the total number of deferred interest products originated; and (2) the dollar volume of promotional balances paid in full during the promotional period divided by the total dollar volume of deferred interest balances originated. The 2013 Report generally used the second measure, referred to here as the "balance payoff rate." The 2015 Report used both the first measure, referred to here as the "promotion payoff rate," and the second measure. This report again uses both measures. The rates reported in this report, however, are not directly comparable to those in prior reports for two reasons. First, the issuer samples are different, with the 2017 Report covering a wider range of DI issuers. Second, the 2017 Report generally split the lowest credit tier from the 2015 Report into two separate tiers, with deep subprime now beginning below 580 rather than below 620.

<sup>173</sup> 2015 Report, *supra* note 6, at 164.

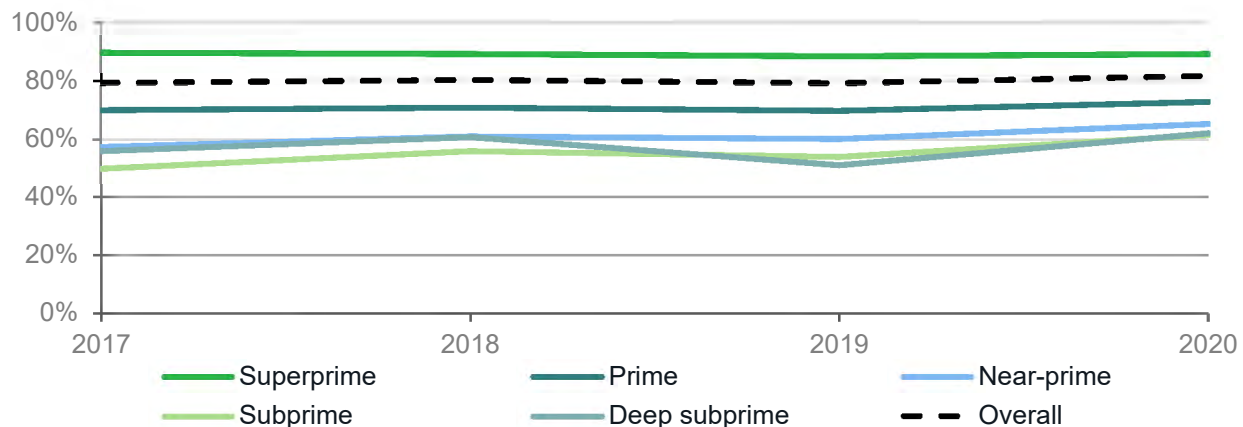
<sup>174</sup> 2017 Report, *supra* note 6, at 108.

<sup>175</sup> 2017 Report, *supra* note 6, at 107-108; 2015 Report, *supra* note 6, at 167-169; 2013 Report, *supra* note 6, at 80.

<sup>176</sup> Consumers with no credit score demonstrated payoff rates in line with the overall averages. They are therefore not shown here.

credit score tiers reached their highest payoff rates since at least 2015, with cardholders with below-prime scores repaying two thirds of their deferred interest promotions within the promotional period, consistent with increased payment rates on credit cards generally as noted in Section 2.4.2.

**Figure 8:** BALANCE PAYOFF RATE ON DEFERRED INTEREST PROMOTIONS (DI)

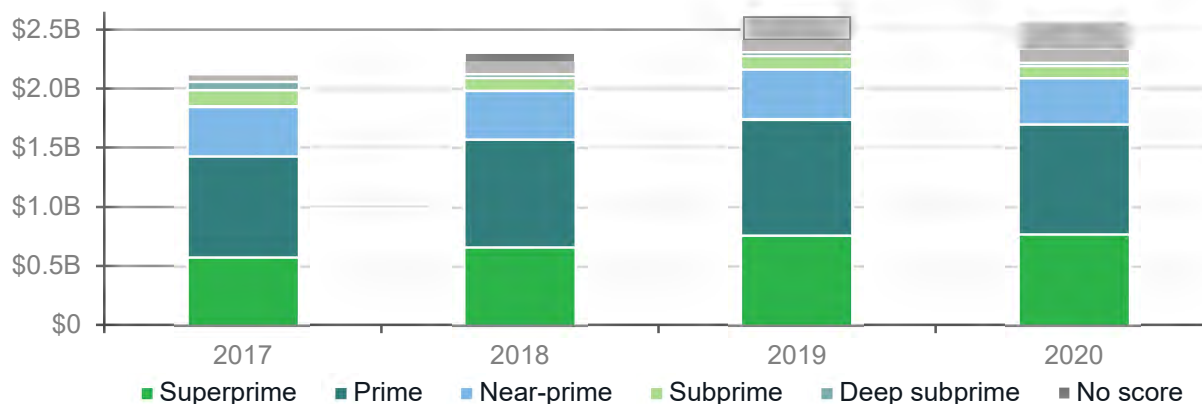


### 5.2.3 Cost

Consumers who pay off the deferred interest promotion prior to expiration do not pay deferred interest. However, consumers who do not repay, generally incur the full amount of the deferred interest, often incurring significant costs. Those costs have generally been rising over the period for which the Bureau has data: the aggregate amount of deferred interest assessed to consumers increased by 45 percent from 2015 to 2020, to just over \$2.5 billion in total.<sup>177</sup>

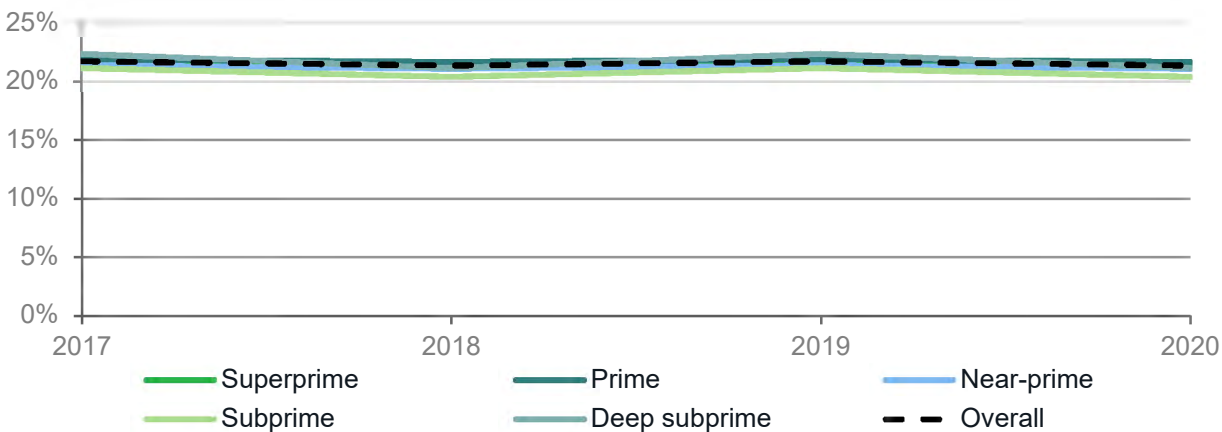
<sup>177</sup> Bureau data do not currently allow for a determination of how much of this growth is driven by volume growth, and how much, if any, is driven by deterioration in payoff rates.

**Figure 9:** TOTAL DEFERRED INTEREST ASSESSED (DI)



Consumers who fail to pay the balance prior to the end of the promotion are assessed deferred interest at roughly the same effective interest rates regardless of credit score, as shown in Figure 10. Deferred interest promotions are typically conducted on private label cards, which carry APRs that do not vary much between credit score tiers. Naturally, longer promotions carry higher deferred interest amounts at expiration, but on an annualized basis the costs are the same for those that fail to repay during the promotional period.

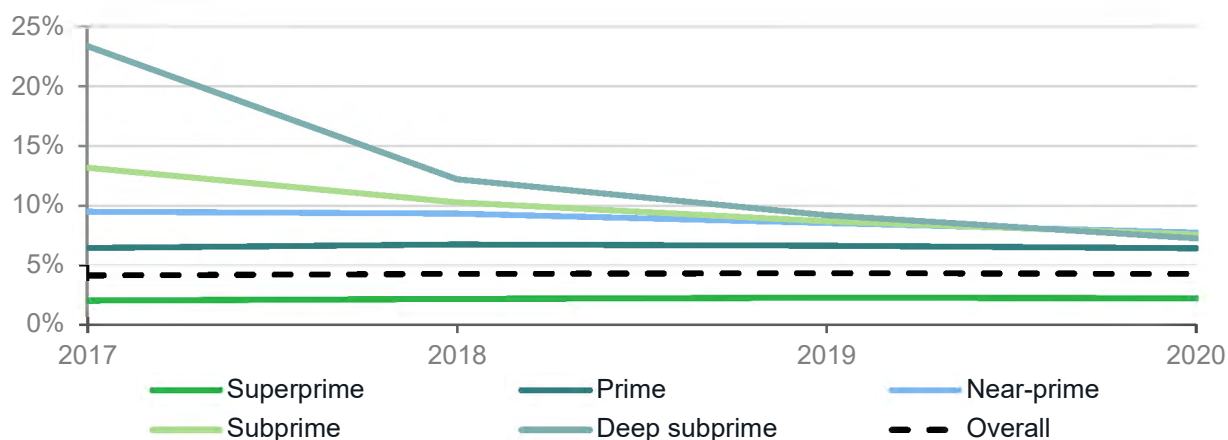
**Figure 10:** DEFERRED INTEREST ASSESSED AS A SHARE OF PROMOTIONAL PURCHASE AMOUNT FOR PROMOTIONS THAT INCURRED DEFERRED INTEREST (DI)



Consumers in lower score tiers pay relatively more to finance purchases with deferred interest than do cardholders with superprime scores because they are less likely to repay within the promotional period. However, effective costs are declining for cardholders with below-prime scores as their repayment rates increase. Figure 11 shows the amount of deferred interest

assessed in a year as a share of the total deferred interest purchase volume for all promotions in that year by consumer credit score tier. This metric serves as a proxy for expected cost at the time the purchase was made for consumers in each credit score tier. Figure 11 shows cardholders with below-prime scores in 2020 have an expected cost of about 8 percent of the purchase price, while cardholders with superprime scores may expect to pay about 3 percent of the deferred interest purchase amount on average. Rising repayment rates among cardholders with below-prime scores increases the probability that these consumers will repay within the promotional window. Concurrently, private label interest rates have remained steady. Together, these trends result in a lower expected cost for consumers in below-prime credit tiers.

**Figure 11:** DEFERRED INTEREST ASSESSED AS A SHARE OF ANNUAL PURCHASE VOLUME FOR ALL DEFERRED INTEREST PROMOTIONS (DI)



Deferred interest promotions continue to provide consumers with complex challenges when they decide how to finance a purchase, as well as in making payments on their balances. The Bureau continues to monitor this area for risks to consumers.

## 5.3 Balance transfers

Balance transfer offers enable the consumer to potentially reduce the cost of carrying their debts. Some credit cards offer promotional balance transfers rates to incentivize consumers to apply for or increase their use of a credit card account. Generally, balance transfers shift existing balances from other cards onto the new one; consumers are typically offered a lower interest rate on the transferred balance (often zero percent) but generally are also required to pay an

upfront fee assessed as a share of the transferred balance. In addition to transfers of debt from another credit card, most balance transfer offers allow consumers to pay off debt related to other loans and bills.<sup>178</sup> By the conclusion of the promotional period, if the consumer does not execute another balance transfer or has not repaid the balance, the remainder of the balance becomes subject to a non-promotional interest rate, which is almost always higher than the balance transfer promotional rate.

### 5.3.1 Prevalence

Balance transfers became significantly less common during the pandemic, though evidence suggests those offers may be returning as the economic outlook stabilizes. Following four years of growth, balance transfer volume fell 36 percent year-over-year to \$35 billion in 2020, and quarterly balance transfer incidence fell from 0.9 percent in 2019 to 0.4 percent at year's end in 2020, as issuers looked to limit exposure to potential future losses given the uncertain economic outlook.<sup>179</sup> In 2019, over half of total acquisition mail volume included promotional balance transfer offers.<sup>180</sup> In 2020, the minority of direct mail offers included promotional rates, in tandem with a rapid decline in mail volume overall.<sup>181</sup> By year-end 2020, balance transfer incidence began to tick back up and appears to be returning to pre-pandemic levels as the economy recovers.<sup>182</sup>

<sup>178</sup> Many transactions effectuated using a “convenience check” may also be treated as balance transfers by issuers. However, not all such transactions are so treated; depending on how it is used, some may be treated similarly to cash advances. The Bureau therefore excludes convenience check transactions from this analysis (and from its analysis of cash advances in Section 5.4), acknowledging that this likely excludes at least some volume that may be identical or near-identical from the consumer perspective.

<sup>179</sup> See AnnaMaria Andriotis & Veronica Dagher, *Credit-Card Balance Transfers Are Harder to Come By*, Wall St. J. (June 6, 2020), <https://www.wsj.com/articles/credit-card-balance-transfers-are-harder-to-come-by-11591435801>.

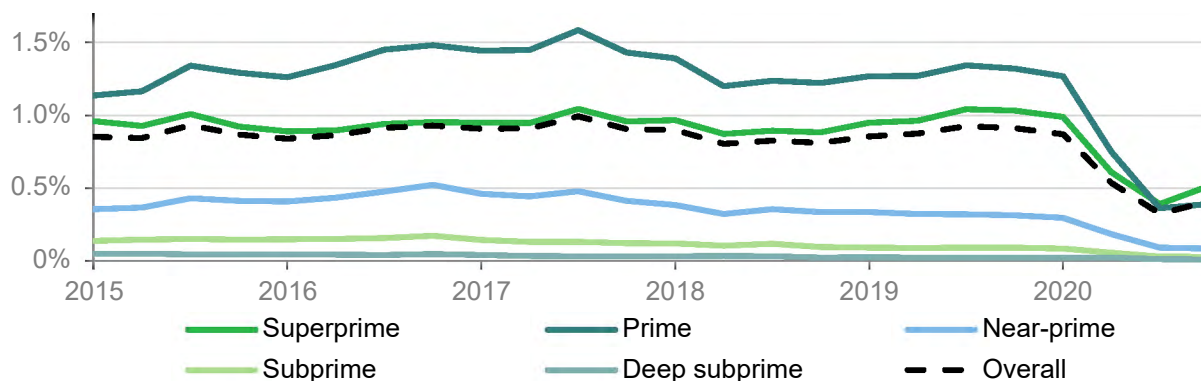
<sup>180</sup> Data provided by Competiscan.

<sup>181</sup> *Id.* See Section 4.1 for further information on direct mail volume in 2020.

<sup>182</sup> See Sara Rathner, *Why Balance Transfer Credit Cards Are Starting to Blossom Again*, Nerdwallet (June 4, 2021), <https://www.nerdwallet.com/article/credit-cards/balance-transfer-credit-cards-starting-to-blossom-again>.

As shown in Figure 12, balance transfers are primarily utilized by consumers with prime and superprime credit scores. This remained the case even as balance transfer incidence declined sharply across all credit score tiers in 2020—as a percentage of total balance transfer volume in 2020, cardholders with prime scores made up 78 percent and 20 percent respectively.

**Figure 12:** QUARTERLY BALANCE TRANSFER INCIDENCE, GENERAL PURPOSE (Y-14+)



The average size of balance transfers has not changed significantly since the Bureau’s last report. Balance transfers for cardholders with superprime scores averaged roughly \$5,600 in the fourth quarters of both 2019 and 2020. Balance transfers by cardholders with prime scores averaged about \$4,300 in the fourth quarter of 2020, down slightly from just under \$4,500 in the same quarter a year prior.

### 5.3.2 Cost

Measured as a percentage of the amount that cardholders transfer, the average fee for balance transfers has increased since 2018. Balance transfers generally charge an initial fee, followed by a low interest rate on the transferred balance for a set period of time or until the balance is repaid.<sup>183</sup> From 2015 to 2018, the average balance transfer fee declined from 3.2 to 2.8 percent. In 2019 and 2020, the average balance transfer fee was 3.0 percent. Consumers use balance transfers to take advantage of low promotional interest rates. In both 2019 and 2020, the vast

<sup>183</sup> Some issuers offer introductory no fee balance transfers for new cards, but this does not appear to be a common practice in the industry.

majority of credit card solicitations sent to new prospects included an introductory 0 percent balance transfer rate.<sup>184</sup> Depending on the duration of the promotion and the degree of interest rate reduction, as well as the consumer's repayment behavior, this cost savings can be significantly higher than the upfront cost of the initial balance transfer fee.

Besides the initial fee and interest, consumers may also incur costs associated with the loss of a grace period on their purchase balances when making a balance transfer, which can result in an increase in interest charges on other purchases. Cardholders who were using the card to transact prior to the balance transfer stand to lose their grace period on new purchases, even if they continue to repay the full amount of new purchases each month. For example, a "transacting" consumer that routinely spends around \$500 on their credit card each month and pays that balance in full, that then transfers a balance to that card and does not pay that balance in full, may begin incurring interest charges on their monthly \$500 spending at the card's retail APR rate, even if the transferred balance is subject to a zero percent interest rate.<sup>185</sup> While transacting accounts represent only a minority of all accounts that effect balance transfers, as noted in a prior report, most of these formerly-transacting cardholders went on to make purchases before the balance transfer was paid, incurring interest charges on those new purchases and increasing the effective cost of the transfer.<sup>186</sup>

<sup>184</sup> Data provided by Competiscan.

<sup>185</sup> Some issuers permit consumers to enjoy a grace period on new purchases while revolving a transferred balance during the promotional period, but the prevailing practice appears to be that revolving balance transfers does eliminate the grace period on regular purchases. Issuers are required to provide certain disclosures to consumers which include information regarding the potential loss of a grace period when balances are not paid in full. 12 C.F.R. § 1026.6(b)(2)(v). Issuer disclosures on balance transfers show that some issuers have revised their applicable grace period policies. These disclosures show that some issuers now allow consumers to retain their grace period while revolving a transferred balance so long as they pay the balance generated by new purchases in full each month. Although issuers lose some interest revenue from this type of change, consumers stand to benefit from balance transfer costs being clearer. In addition, issuers may realize some benefits. The decreased cost of new purchases may cause increased use of the card for such purchases. In addition, the issuer may avoid any customer service costs associated with the prevailing grace period policy on balance transfers. *See* 2017 Report, *supra* note 6, at 193.

<sup>186</sup> *See* 2015 Report, *supra* note 6, at 126; *see also* 2017 Report, *supra* note 6, at 191-193.

## 5.4 Cash advances

The cash advance feature, offered on many general purpose credit cards, allows consumers to obtain cash or cash equivalents using a portion of their card’s credit line (20 percent of the line is common), sometimes called the “cash line.”<sup>187</sup> Unlike balance transfers, cash advances are available to any cardholder with sufficient available cash credit line on a card that has the feature. Consumers can access cash advances through a variety of means; ATM withdrawals may be the most well-known form of cash advance, but they are not the only one. Issuers may treat certain credit card purchases as cash advances; this can include such uses as the purchase of chips at a casino, gold at a bank, foreign currency, traveler’s checks, gift cards, prepaid cards, convenience checks, and virtual currencies;<sup>188</sup> The funding of peer-to-peer transfers may also be treated by some issuers as a cash advance.<sup>189</sup> In some cases, when a consumer links a credit card to a deposit account in order to cover overdrafts on the latter, the credit card issuer will treat that overdraft as a cash advance.

### 5.4.1 Prevalence

Cash advance volumes were mostly flat leading up to the pandemic but fell sharply during the pandemic and remain well below previous levels. Prior to the pandemic, cash advance volume averaged roughly \$3 billion per quarter with some seasonal fluctuations, typically showing slightly higher volumes in the third quarter of each year. As shown in Figure 13 below, the second quarter of 2020 saw cash advance volume decline to less than \$2 billion before rising to roughly \$2.5 billion for the remainder of 2020. One explanation for the decline in cash advance

<sup>187</sup> To the Bureau’s knowledge, some private label cards provide a cash advance feature at the point of sale, but the practice is not common and does not fall within the scope of this section.

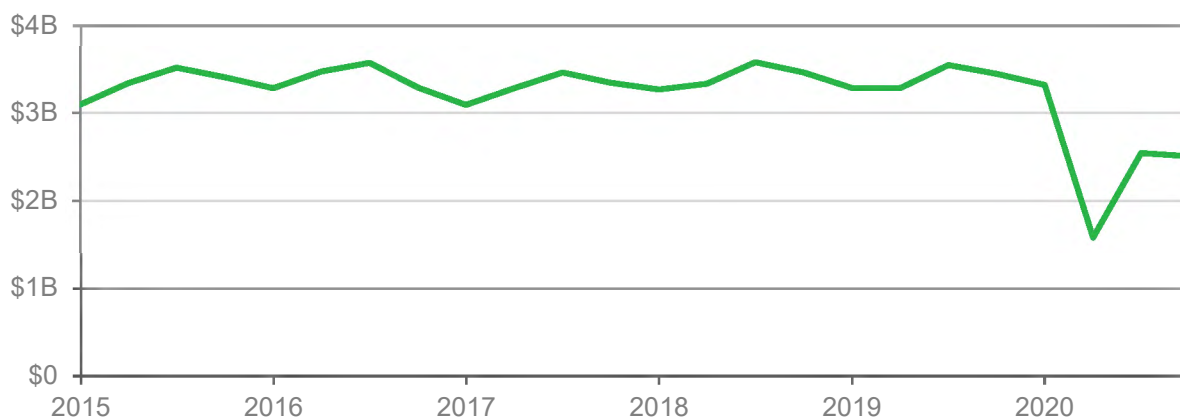
<sup>188</sup> Many transactions effectuated using a “convenience check” may also be treated as cash advances by issuers. However, not all such transactions are so treated; depending on how it is used, some may be treated similarly to balance transfers. The Bureau therefore excludes convenience check transactions from this analysis (and from its analysis of balance transfers in Section 5.2), acknowledging that this likely excludes at least some volume that may be identical or near-identical from the consumer perspective.

<sup>189</sup> See Ann Carrns, *Beware the Fees That Come With Some Money Transfers on Apps*, N.Y. Times (Apr. 24, 2020), <https://www.nytimes.com/2020/04/24/your-money/fees-mobile-app-payments.html>. See also Aaron Hurd & Dia Adams, *Using A Credit Card To Send Money On PayPal—Should You?*, Forbes (June 3, 2021), <https://www.forbes.com/advisor/credit-cards/using-a-credit-card-to-send-money-on-paypal-should-you/>.



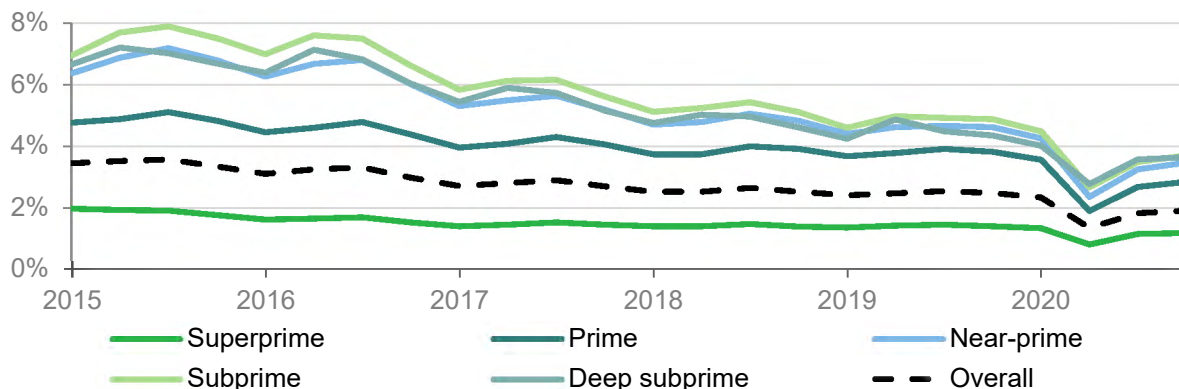
volume may be that measures aimed at mitigating the economic impact of COVID-19, such as economic stimulus payments and enhanced unemployment benefits, met some of the need consumers may otherwise have had for cash during the pandemic. This is generally a positive sign for consumers, as cash advances can be a relatively costly form of credit, as discussed in Section 5.4.2.

**Figure 13:** QUARTERLY CASH ADVANCE VOLUME, GENERAL PURPOSE (Y-14+)



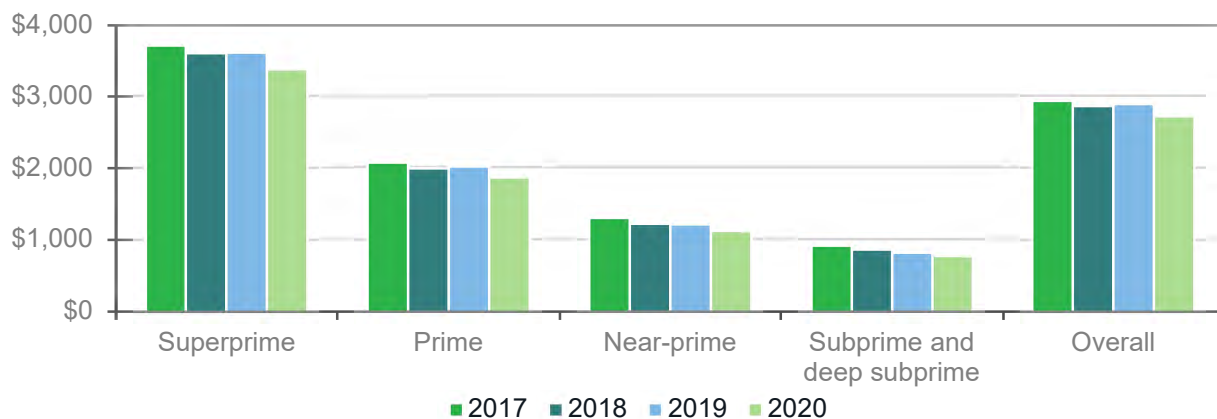
Cash advance usage has continued its decline for consumers in all credit score tiers, even omitting the singular decline in the second quarter of 2020. Cash advance volumes may have been steady prior to the pandemic, but as the number of credit cards has increased, the incidence of cash advance feature usage has declined. Cash advance incidence is relatively uniform across credit score tiers, except for consumers with superprime scores who use cash advances markedly less than all other cardholders. Cash advance incidence has continued to decline over the last few years, particularly in the below-prime market segment, as shown in Figure 14.

**Figure 14:** QUARTERLY CASH ADVANCE INCIDENCE, GENERAL PURPOSE (Y-14+)



Average cash advance line is greater for consumers with higher scores, with superprime cardholders averaging \$3,000 per card, while below-prime score tiers average \$1,000 or less. Most credit cards restrict access to the cash advance feature by stipulating a separate smaller cash advance line that is also part of the cardholder’s overall line. Cardholders may utilize the cash advance feature in an amount that is the smaller of either the remaining available line or the maximum cash advance line on the card. Given the utilization rate for cards held by consumers in below-prime tiers tends to be high, cash advances are likely more limited by the remaining card balance than the cash advance line amount. With minimum per-use fees, this might mean a cash advance may be more expensive as a share of the amount consumers receive, as discussed in Section 5.4.2.

**Figure 15:** AVERAGE CASH ADVANCE LINE, GENERAL PURPOSE (Y-14)



## 5.4.2 Cost

The cash advance cost structure can be complex, and costs depend on the amount advanced, upfront fees, interest rates, and the timing of repayment.<sup>190</sup> Fee structures can be relatively complex, with some card agreements stipulating different cash advance fee percentages and minimum fee amounts for different cash advance transactions, such as lower fees for ATM transactions and higher fees for cash equivalents like casino chips.<sup>191</sup> Cash advance APRs are typically higher than purchase APRs, and these transactions are not usually subject to any kind of grace period, meaning they begin accruing interest at that higher APR at the point that the cash advance is taken, even if the cardholder pays their balance in full every month.<sup>192</sup>

Cash advance fees overall fell in 2020 as a result of decreased usage, while remaining steady as a share of cash advance volume. Fee volumes had been stable prior to the pandemic, totaling just under \$750 million per year for issuers in the Y-14+ data.<sup>193</sup> In 2020, due to declines in usage, cash advance fee volume fell to roughly \$550 million, a decline of nearly 27 percent. As a share of volume, cash advance fees averaged 5.0 percent in 2019 and 2020, slightly lower than the 5.2-5.3 percent seen from 2016 to 2018. Cash advance fee ratios are noticeably higher for cardholders in lower score tiers, as shown in Figure 16. Minimum fixed fee amounts for cash advances in a two-way pricing structure, such as “\$10 or 5%,” can translate to high cash advance fee ratios for cardholders who take a small dollar amount cash advance. This is more often the case for cardholders with little remaining available credit on their cards.

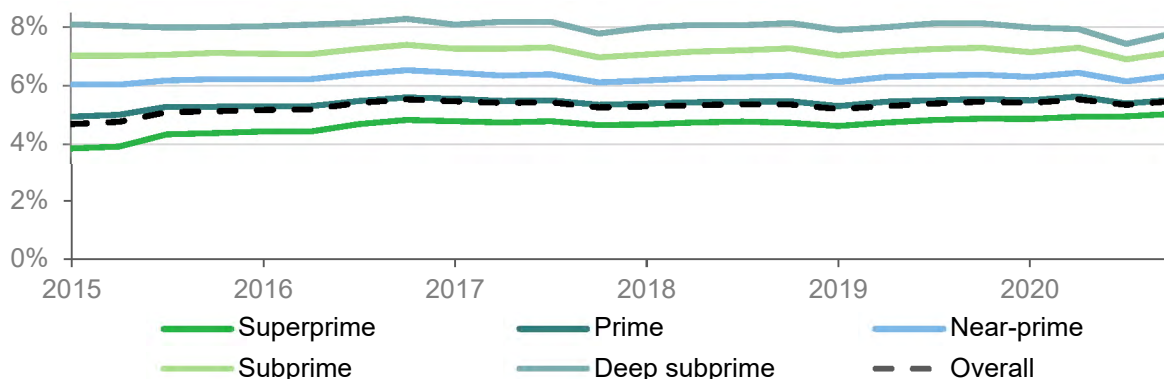
<sup>190</sup> While the vast majority of credit cards charge an upfront fee for cash advances, the Bureau is aware of at least one card that does not.

<sup>191</sup> See, e.g., U.S. Bank, *Cardmember Agreement for U.S. Bank National Association Visa® and Mastercard® Classic, Gold and Platinum Accounts*, [https://applications.usbank.com/oad/teamsite/decisioning/usbank/docs/global\\_default/FRO06213482\\_03\\_USB.pdf](https://applications.usbank.com/oad/teamsite/decisioning/usbank/docs/global_default/FRO06213482_03_USB.pdf).

<sup>192</sup> Indirect costs to cardholders such as interest on balances from purchases that would otherwise be treated as interest free due to a grace period are not included in calculations of cash advance fee costs, but remain an important consideration.

<sup>193</sup> Due to a technical error, the aggregate cash advance fee volume figure was misreported in the 2019 Report and has therefore been restated correctly here.

**Figure 16:** QUARTERLY CASH ADVANCE FEES RELATIVE TO CASH ADVANCE VOLUME, GENERAL PURPOSE (Y-14+)



## 5.5 COVID-19 response

The onset of COVID-19 across the United States in the second half of the first quarter of 2020 triggered a sharp response from consumers, businesses, and government entities. The sum effect of those responses was to abruptly render many ordinary activities prohibited or impracticable, which severely impacted the financial security of many consumers. As described below, individuals were advised to avoid unnecessary travel outside the home, many businesses closed temporarily or permanently, and many workers were laid off or furloughed.

That economic crisis had two significant impacts for credit card issuers. First, as described in more detail below, credit card issuers' operational models suddenly became untenable, necessitating a drastic and rapid shift to new ways of doing business. Second, the widespread cessation of a great deal of in-person activity sparked the swiftest deterioration in economic conditions in modern history, imperiling the ability of millions of consumers to make adequate, timely payments of their debts.

This report generally focuses on the state of the consumer credit card market, and in particular the impact of COVID-19 on consumer cardholders. The pandemic also had a significant effect on the companies that issue credit cards to consumers; how those issuers responded to the crisis was a major factor in the ultimate effects of the pandemic on consumer cardholders. This section therefore summarizes the impact of COVID-19 on the largest credit card issuers, as well as the responses by those issuers to the pandemic. First, this section examines the operational

response of issuers to COVID-19, including actions relating to staffing, risk management, and account servicing. Second, it focuses on issuers' relief efforts.<sup>194</sup>

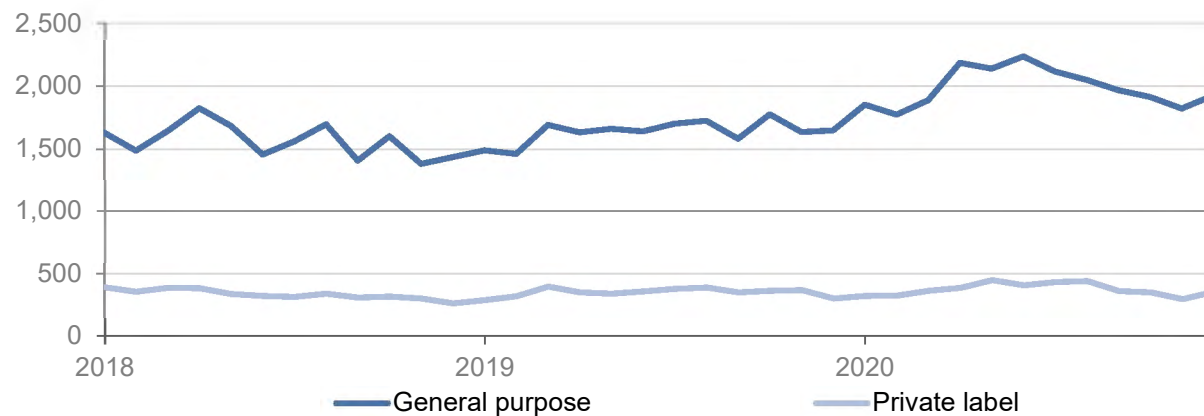
With regard to issuers' operational posture, issuers moved quickly to adjust operations in response to the new conditions precipitated by COVID-19; while issuers generally responded similarly in some ways (e.g., shifting employees to remote work wherever possible), their mitigation attempts varied more in others (e.g., existing credit line management). Issuers struggled to maintain existing levels of account servicing, especially at the onset of the pandemic. Issuers' relief efforts likely resulted in consumers preserving billions of dollars in liquidity following, and especially immediately following, the onset of the pandemic.

Overall, consumers expressed heightened dissatisfaction with their credit cards following the onset of the pandemic; complaints to the Bureau relating to credit cards rose significantly beginning in the first quarter of 2020, and remain at levels elevated relative to the recent pre-pandemic years, as shown below in Figure 17.<sup>195</sup>

<sup>194</sup> Except where noted, data supporting this section come from the Bureau's MMI survey. Therefore, and as noted elsewhere in this report, it only represents the experiences of the largest credit card issuers, with the attendant caveats also noted elsewhere in this report. While out of scope, the Bureau notes significant evidence for operational impacts and relief efforts made by smaller banks and credit unions. *See, e.g.*, Laura Alix, *Small-dollar loans highlight banks' coronavirus relief efforts* (Mar. 25, 2020), <https://www.americanbanker.com/news/small-dollar-loans-highlight-banks-coronavirus-relief-efforts>.

<sup>195</sup> *See supra* note 2.

**Figure 17:** MONTHLY CREDIT CARD COMPLAINTS



However, overall complaints to the Bureau rose significantly; the total volume of complaints received by the Bureau in 2020 exceeded 2019 volumes by over 50 percent, and certain sectors saw much larger increases in complaint volume, either in raw totals, relative to previous volumes, or both.<sup>196</sup>

## 5.5.1 Operational impacts and response

COVID-19 necessitated a sharp adjustment in the operational posture of major credit card issuers. Credit card issuers were faced with a series of challenges in how to address demand for credit, the need for relief, and the servicing of existing accounts. Issuers were forced to contend with all of these challenges simultaneously, in a compressed timeframe, with a high degree of uncertainty regarding the short and long-term impact of the pandemic on the economy. Actions taken by issuers to address these challenges varied significantly, making a comprehensive picture of issuers' response to COVID-19 difficult to assemble, especially in those areas where issuers' responses proved more varied.<sup>197</sup>

<sup>196</sup> See *Consumer Response Annual Report*, *supra* note 1, at 9.

<sup>197</sup> Note that, while drawing on a different source of data representing a different group of issuers, the Bureau's Winter 2021 Supervisory Highlights draws many similar conclusions about issuers' operational challenges and responses in the wake of COVID-19, as well as relating to issuer relief efforts. See *Supervisory Highlights*, *supra* note 13, at 13-14.

## **UNDERWRITING AND CREDIT MANAGEMENT**

All surveyed issuers reduced new credit availability in response to the onset of the pandemic. Among the most common measures were raising underwriting standards on new accounts and pausing or raising underwriting standards on credit line increases (both proactive and reactive).<sup>198</sup> Many issuers also reported limiting or raising underwriting standards on certain secondary features on accounts, such as balance transfers, cash advances, or over limit transactions.

Issuers' approach to the lines of credit already available to their cardholders varied. Some issuers reported decreasing credit lines and closing inactive or high-risk accounts at a higher frequency.<sup>199</sup> However, other issuers reported at least temporarily pausing credit line decreases, certain types of account closures, and certain types of pricing increase activity as well as providing other forms of targeted credit expansion.

## **ACCOUNT SERVICING**

COVID-19 led to a large and sudden increase in consumer servicing needs. This spike was driven by requests for relief (discussed in the following subsection) and by a wave of disputed transactions. While MMI data on disputes are limited and varied, they nonetheless point to a sharp uptick in the volume of consumer disputes around the onset of the pandemic compared to the prior year, with an even sharper increase in dollars at stake in those disputes. These disputes were disproportionately driven, by higher-score consumers disputing transactions on general purpose cards; transactions directly related to travel expenditures experienced an even larger relative spike in transactions and dollar disputed compared to other categories.

<sup>198</sup> See *supra* note 193.

<sup>199</sup> For more on credit line management, see Section 4.2.3. Some issuers also discussed these actions in earnings calls early in the pandemic. See, e.g., Synchrony Financial, *Q1 2020 Results – Earnings Call Transcript*, Seeking Alpha (Apr. 21, 2020), <https://seekingalpha.com/article/4421711-synchrony-financials-syf-ceo-brian-doubles-on-q1-2021-results-earnings-call-transcript>; (“[W]e're continuing to utilize internal and credit bureau triggers to dynamically reevaluate the customers' creditworthiness to manage credit exposure, as well as leveraging the latest technology to passively authenticate customers and more selectively target high risk behavior.”); American Express, *Q2 2020 Results – Earnings Call Transcript*, Seeking Alpha (July 24, 2020), <https://seekingalpha.com/article/4360706-american-express-axp-ceo-steve-squeri-on-q2-2020-results-earnings-call-transcript>. (“[W]e have been very diligent about looking at people who are inactive card members and canceling those cards.”).

At the same time consumer servicing needs were increasing, the pandemic also severely impacted the ability of credit card issuers to process consumer servicing requests. This impact was most sharply felt at call centers both domestic and abroad, which issuers reported were largely closed or extremely restricted in their operations for an extended period following the onset of the pandemic due to safety concerns and public health-driven closure orders. However, similar impacts also reverberated through other aspects of relevant “back office” operations—issuers reported difficulties and delays in processing both inbound and outbound mail, difficulties maintaining digital servicing portals, and inadequate levels of total or appropriately-trained staff to handle certain types of disputes or aspects of the dispute process.

Issuers responded to these servicing constraints by implementing measures to bolster capacity and reduce customer wait times. Some measures included allowing staff to work from home where feasible, adding training to allow more staff to handle disputes, hiring new staff, increasing allowances for staff to work overtime, increasing dollar-amount thresholds for certain forms of expedited dispute resolution, and making adjustments to customer communications across various channels. In many cases issuers reported deploying these measures rapidly, within weeks or even in some cases days of the March 13, 2020 federal emergency declaration.<sup>200</sup>

Consumers who requested to speak with a customer service representative nevertheless experienced much longer wait times around the onset of the pandemic. On average, consumers experienced wait times in the second quarter of 2020 that were many multiples of both the first quarter of 2020 and the second quarter of 2019, and in some cases an order of magnitude longer. These wait times generally fell substantially over the course of the year; by the fourth quarter of 2020, while most issuers reported higher wait times than the comparable quarter of 2019, those wait times were nevertheless much closer to levels observed in 2019 in most cases.

<sup>200</sup> See 85 FR 15337. Notably, issuers almost wholly abstained from availing themselves from the flexibility offered by the Bureau’s May 3, 2020 “Statement on Supervisory and Enforcement Practices Regarding Regulation Z Billing Error Resolution Timeframes in Light of the COVID-19 Pandemic,” which “inform[ed] creditors of the Bureau’s flexible supervisory and enforcement approach during this pandemic regarding the timeframe within which creditors complete their investigations of consumers’ billing error notices.” See Bureau of Consumer Fin. Prot., *Statement on Supervisory and Enforcement Practices Regarding Regulation Z Billing Error Resolution Timeframes in Light of the COVID-19 Pandemic* (May 3, 2020), [https://files.consumerfinance.gov/f/documents/cfpb\\_statement\\_regulation-z-error-resolution-covid-19\\_2020-05.pdf](https://files.consumerfinance.gov/f/documents/cfpb_statement_regulation-z-error-resolution-covid-19_2020-05.pdf).



There was not, however, an apparent spike in the total volume of consumer calls to surveyed issuers following the onset of the pandemic. Most issuers reported a decline in total call volumes in the second quarter of 2020 from the prior quarter, with none reporting more than a slight uptick. This contrasts with 2019, when quarter-over-quarter volumes were much more stable in the first half of the year. This decline persisted into the remainder of the year, with surveyed issuers reporting (in aggregate) receiving only about five-sixths of the total incoming call volume in the second half of 2020 as they did in 2019. This decline was also observable for the subset of calls in which a consumer requested to speak with a customer service representative. Such calls also represented a relatively constant share of all calls over 2019 and 2020. These findings suggest that wait time spikes were largely driven by decreased capacity by issuers to field calls, rather than an increase in such calls, though Bureau data cannot rule out the possibility that the composition of calls made to issuers increased in complexity or difficulty.<sup>201</sup>

In some ways, the consumer impact of the acute destabilization in issuer customer service might have been worse if issuers had not established digital servicing channels prior to the pandemic. As described in more detail in Section 7.2.1 below, increasing numbers of consumer credit card accounts are enrolled in digital servicing portals. While Bureau survey data do not directly allow for measuring this, other information indicates that consumers expanded their use of digital servicing channels for their financial accounts.<sup>202</sup> If consumers increasingly substituted such channels for servicing activity they may have previously done via phone or at a branch location, this could explain why issuers did not report a large spike in consumer calls.

#### **ADDITIONAL OPERATIONAL IMPACTS**

Issuers reported a variety of other operational changes in response to COVID-19 and its effects. For example, many issuers made significant changes to their overall marketing and solicitation posture, reducing, or eliminating solicitations and messaging with themes that may have been seen as dissonant with the moment (e.g., exhortations to spend on travel). Issuers refocused

<sup>201</sup> For example, the Bureau's debt collection-specific data indicates that issuers saw a large influx of calls relating specifically to consumer relief, which may have been more complex or time-consuming to resolve than many common pre-pandemic call subjects. See Section 6.5 *infra*.

<sup>202</sup> See e.g., Ellen Sheng, *Coronavirus crisis mobile banking surge is a shift that's likely to stick*, CNBC (May 27, 2020), <https://www.cnbc.com/2020/05/27/coronavirus-crisis-mobile-banking-surge-is-a-shift-likely-to-stick.html>.

efforts on more consonant themes and on messaging specific to relief. Several issuers reported accelerating existing efforts to transition their portfolios to contactless cards.<sup>203</sup> Several issuers also made significant changes to their rewards programs; for example, several issuers extended the timeframes for earning sign-up bonuses or avoiding rewards expiration, or allowed accumulated rewards to be redeemed in ways perceived as better suited to the moment.

## 5.5.2 Consumer relief

Data show that a large and likely-unprecedented number of consumers received some form of relief on their credit card debts following the onset of COVID-19, all of which was provided voluntarily by issuers. Unlike servicers of federally-backed mortgages, which were mandated by the CARES Act to provide certain types of forbearance to mortgagors, card issuers were not subject to any federal mandate to provide relief on consumers debts. This section discusses first the form of consumer relief offered by major credit card issuers and second the impact of that relief.<sup>204</sup> This section describes only relief provided to consumers by issuers that directly impacted their credit card accounts; other forms of relief which may have been offered and which could have indirectly impacted consumers' ability to manage their credit card debts are not considered here. While this section relies solely on MMI data, other sources of information supplement and generally support reported findings.<sup>205</sup>

<sup>203</sup> Usage of contactless payment methods increased significantly after the onset of COVID-19 (both in the U.S. and in other jurisdictions), likely due to public perceptions that such methods entailed a lower risk of transmission of COVID-19. For more information regarding contactless payment adoption, *see* Section 7.2.2.

<sup>204</sup> Issuers represented by these data represent a large portion of the market but are not necessarily representative of the portion of the market not covered by the data the Bureau receives. Additionally, issuer practices regarding the measurement and tracking of the scope and impact of their relief efforts varied considerably, limiting the Bureau's ability to draw precise conclusions from the data provided. The COVID-19 crisis was unprecedented in severity and swiftness as well as in its impact on issuers' operations, but the Bureau expects this experience will inform the ongoing efforts of credit card issuers and other consumer finance companies to design strategies to both directly address future crises as well as more-robustly track the impacts of those strategies to better allow for their evaluation and improvement.

<sup>205</sup> *See, e.g.,* Auriemma Research, *Impact of Credit Line Changes and Loan Forbearance, Attitudes toward Low or No-APR Cards, and 'Refer a Friend' Programs*, at 34-42 (Apr. 2021). *N.b.* that many credit card issuers are also publicly-traded, and many such issuers provided information regarding the structure, take-up, and impact of their relief efforts in mandatory filings as well as associated materials.

## **FORM OF RELIEF**

Issuers generally reported offering relief programs to consumers affected by natural disasters or other hardships prior to COVID-19. These programs vary widely across a number of key criteria, including eligibility, form of relief and benefit, length, other conditions of receiving the benefits, and terms of exit, with different programs serving different purposes or functions in managing consumer accounts. While some commonalities were prevalent across issuers' programs, no two issuers offered exactly the same suite of relief programs.

Many surveyed issuers offered short- and long-term payment plans, which generally allowed consumers to address outstanding debts by reducing interest rates and payment amounts due for the duration of the program; these programs were structured to allow distressed consumers to escape delinquency and reduce their indebtedness, but also generally restricted a consumer's use of the card during enrollment.

Some issuers also reported offering a variety of short-term relief programs for consumers affected by natural disasters. The most common such type of program generally allowed consumers in areas affected by natural disasters to reduce or skip a required payment, to temporarily suppress certain fees, and/or to forestall certain other activities and events associated with their account (for example, blocking credit line decreases that may have otherwise occurred). Other issuers offered programs with similar benefits, but not explicitly targeted or limited to consumers affected by natural disasters.

All surveyed issuers reported offering relief specific to COVID-19. Issuers reported developing and deploying new relief programs, and/or modifying existing relief programs within weeks of the March 13, 2020 federal emergency declaration. All issuers offered a program which allowed consumers to skip payments, with some issuers also offering COVID-19-specific programs allowing for relief on a longer timescale. No issuer reported freezing access to, discarding, or otherwise substituting COVID-19 relief for existing programs. Issuers generally reported engaging in significant marketing campaigns around their relief programs, especially following the onset of the pandemic, using a variety of channels to inform consumers about the existence of these programs and key details, such as eligibility and impact on account status.

Upon request, all issuer "skip-a-pay" programs allowed consumers to forgo making monthly minimum payments, including any finance charges, without any impact on an account's delinquency status. Issuers generally allowed for broad eligibility, though some issuers restricted access to skip-a-pay programs to accounts that were not already severely delinquent

and/or in certain other statuses (for example, bankruptcy).<sup>206</sup> Issuers generally reported requiring applicants to attest to COVID-19-induced hardship, but did not require consumers to provide documentation or other evidence of such hardship in order to obtain relief.

While issuers generally waived any late or insufficient funds (NSF) fees associated with the account in that cycle, issuers varied more in how they handled interest charges. Some issuers waived finance charges as part of their skip-a-pay programs, while others did not (while still allowing payment of those charges to be deferred while consumers were enrolled); still other issuers handled different types of interest charges differently (for example, waiving monthly finance charges generally while assessing-and-deferring certain promotional interest charges). Most issuers waived payments for a single cycle upon request, though some waived more, and all issuers allowed consumers to re-enroll in skip-a-pay programs for several consecutive cycles.

Some issuers reported modifying or withdrawing certain aspects of their COVID-19 relief approach over the course of 2020. For example, some issuers who initially waived finance charges for skip-a-pay consumers later reinstated them on a deferred basis; some issuers reduced the number of cycles for which a consumer qualified after a single enrollment, or capped the total number of consecutive cycles for which a consumer could be enrolled.

Among the Bureau's statutory objectives is to ensure "outdated, unnecessary, or unduly burdensome regulations are regularly identified and addressed in order to reduce unwarranted regulatory burdens."<sup>207</sup> As part of its MMI survey, the Bureau asked issuers whether any provision of any federal consumer financial law (as defined in 12 U.S.C. § 5481(14)) inhibited, impeded, or prevented them from offering any relief program they considered, or impacted the scope or terms of any relief program they offered. All issuers responded in the negative. The Bureau continues to monitor consumer financial markets for indications that provisions of

<sup>206</sup> While Bureau data does not allow for determining whether consumers who had been struggling previously with their indebtedness had access to relief programs in practice, other data suggest a significant share of such consumers were able to access issuer relief — per Auriemma, "As of Q3-20, 55% of cardholders who had missed a payment in the past 12 months were offered a forbearance option from a credit card issuer. 75% of those individuals took their credit card issuer up on the offer, likely contributing to the lower proportion who missed a payment by Q4-20." See Auriemma Research, *2020 Trend Database, Cardbeat*, at 7.

<sup>207</sup> 12 U.S.C. § 5511(b)(3).

federal consumer financial law or their implementing regulations may cause undue burden or otherwise entail unintended adverse consequences for consumers.<sup>208</sup>

### **IMPACT OF RELIEF**

Large numbers of consumers benefitted from issuers' relief programs in 2020. Bureau data indicate that approximately 25 million consumer credit card accounts entered relief programs in 2020, representing approximately \$68 billion in consumer debt subject to voluntary issuer relief. Entry into relief was concentrated around the onset of the pandemic; the second quarter alone saw over two-fifths of the year's entry into relief by number of accounts (and over half by amount of consumer debt); by the fourth quarter, entry into relief had declined to levels closer to pre-COVID-19 levels, though it was still elevated.

Payment-deferral programs were the major driver of the robust increase in relief, though fee reversals and waivers or interest rate reductions were also more common in 2020.<sup>209</sup> Over 13 million accounts received some form of payment deferral (interest-accruing or non-interest accruing) representing over \$50 billion in consumer indebtedness.<sup>210</sup> These figures were well over an order of magnitude higher than the comparable figures for 2019. The bulk of the remaining relief consisted of fee reversals or waivers, which were also elevated compared to 2019, with accounts and debts receiving such relief in 2020 representing an approximate 20

<sup>208</sup> See e.g., Bureau of Consumer Fin. Prot., *Statement on Supervisory and Enforcement Practices Regarding Electronic Credit Card Disclosures in Light of the COVID-19 Pandemic* (June 3, 2020), [https://files.consumerfinance.gov/f/documents/cfpb\\_e-sign-credit-card\\_statement\\_2020-06.pdf](https://files.consumerfinance.gov/f/documents/cfpb_e-sign-credit-card_statement_2020-06.pdf); see also Bureau of Consumer Fin. Prot., *Open-End (not Home-Secured) Rules FAQs related to the COVID-19 Pandemic* (May 13, 2020), [https://files.consumerfinance.gov/f/documents/cfpb\\_faqs\\_open-end-rules-covid-19\\_2020-05.pdf](https://files.consumerfinance.gov/f/documents/cfpb_faqs_open-end-rules-covid-19_2020-05.pdf).

<sup>209</sup> While payment deferrals were by far the largest overall component of overall relief efforts, that does not mean that other relief efforts were not impactful for consumers. See, e.g., Auriemma, "Among these who were offered and took a temporary interest rate reduction, 19% of them were able to increase the number [or] amount of credit card payments they could make." See *supra* note 205, at 8).

<sup>210</sup> The structure of the MMI survey entailed some potential double-counting (or triple-counting, etc.) of accounts if such accounts received more than one type of relief during a quarter. However, in practice this appears to have been limited, with the sum total of all individual relief types reported representing approximately 29 million accounts and \$78 billion in consumer debt, numbers not much greater than the total reported receiving any relief (a figure which counts each account only once). Therefore, it appears that most accounts only received one type of relief during a quarter, with most of the double-counting likely coming from accounts that received both payment deferrals and fee reversals or waivers.

percent and 50 percent increase over 2019, respectively. Accounts and debt enrolled in interest rate reduction relief or other forms of relief were mostly in line with 2019 levels. General purpose accounts represented roughly six-in-ten accounts granted a payment deferral in 2020, with retail accounts representing the balance, but general-purpose accounts represented nearly four-fifths of the consumer debt subject to a payment deferral in 2020.<sup>211</sup>

Based on those findings and subject to certain assumptions, the Bureau estimates that surveyed issuers' cardholders were able to forgo principal payments of anywhere from \$0.5 billion to \$1.5 billion against their credit card debts in 2020 due to these relief programs. While making similar inferences regarding the interest payments consumers were permitted to forgo is more challenging, it is plausible that the figure may be comparable to the above estimate for principal payments.<sup>212, 213</sup> Especially when incorporating information about the relief utilized by cardholders of other issuers not within the MMI survey, it is likely that all consumer cardholders were able to forgo several billion dollars in otherwise-mandatory payments to credit card companies over the course of 2020. This relief came at a time when many consumers found themselves suddenly facing joblessness or reduced incomes while simultaneously at risk from COVID-19. The scale of this relief and the speed with which it was deployed therefore likely represented substantial benefits to the consumers who received it, allowing them to redeploy their limited and, likely in many cases, interrupted or diminished flow of income and other incoming funds towards other urgent needs.

Entries into payment deferral relief were spread fairly evenly across credit score tiers. In 2020, nearly four million prime accounts held by surveyed issuers received payment deferrals, compared to nearly three million superprime and near-prime accounts and closer to two million

<sup>211</sup> Consumers carry higher balances on average on general purpose accounts. *See* Section 2.2.1.

<sup>212</sup>The Bureau's MMI survey did not indicate how many consumers were presently revolving at the time they entered relief, which means Bureau data cannot determine what share of consumers who were permitted to skip a mandatory payment were skipping payments which included a finance charge as well as a principal payment.

<sup>213</sup> In most cases the interest nonetheless accrued, meaning the benefit to consumers was primarily one of preserved liquidity at a moment of crisis, not a discount on their costs of indebtedness. However, a not-insignificant share of payment deferrals were accompanied by interest waivers, meaning that in those cases issuers permanently forewent that income to the benefit of consumers.

subprime and deep subprime accounts.<sup>214</sup> However, accounts held by consumers with lower scores received payment deferrals at the highest rates of any credit score tier – nearly one-in-six subprime and deep subprime accounts received a payment deferral, compared to roughly one-in-ten among near-prime, one-in-twenty among prime, and just one-in-one-hundred among superprime accounts. As a share of balances, lower-score consumers showed an even greater relative impact from deferral programs. Rates of overall payment deferral peaked in the second quarter of 2020, with about 3 percent of consumer accounts (and nearly 7 percent of consumer credit card debt) receiving such a deferral in that period.

Available data suggest broad-based access to issuers' relief programs generally, but it remains unclear how many consumers were unaware of or unable to take advantage of issuer relief programs. While the Bureau's data provide limited further visibility into whether more-vulnerable consumers were able to fully and equally benefit from relief efforts, other evidence suggests that large numbers of such consumers were indeed able to access relief from their credit card issuers. Data from the August 2020 Survey of Consumer Financial Expectations found that 11 percent of those surveyed reported receiving some assistance from their credit card company.<sup>215</sup> Nonwhite cardholders were much more likely to receive credit card debt relief than white cardholders at 19.7 percent and 9.7 percent respectively.<sup>216</sup> Additionally, a greater share of consumers with incomes less than \$60 thousand per year received relief than those with higher incomes. Cardholders who faced an income drop in 2020 were also more likely to receive relief.<sup>217</sup>

<sup>214</sup> Unsurprisingly given the higher average balances held by consumers with higher credit scores (see Section 2.2 above), this distribution was more skewed toward higher-score accounts when examined through the lens of consumer debt, with prime accounts representing nearly two-fifths of all debt receiving payment deferrals, nearly twice as much as deep subprime and subprime accounts combined.

<sup>215</sup> Beyond payment forbearance, this also includes fee and interest rate reductions and credit card limit increases. See Rajashri Chakrabarti, Jessica Lu, Joelle Scally, and Wilbert van der Klaauw, *Who Received Forbearance Relief?*, Federal Reserve Bank of New York (Aug. 2, 2021), <https://libertystreeteconomics.newyorkfed.org/2021/08/who-received-forbearance-relief/>.

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*

Unlike the Great Recession, cardholders have largely avoided delinquency and charge off, as of the time of this report writing. As noted above in Section 2, overall rates of delinquency and charge-off *declined* significantly following the onset of COVID-19.<sup>218</sup> Several factors likely played a role in this development, such as extensive public aid to consumers (including Economic Impact Payments, increased unemployment insurance payments and expanded unemployment insurance coverage, and the Paycheck Protection Program), government-mandated forbearance on certain types of loans (including some mortgages and student loans), an increase in charitable giving,<sup>219</sup> state and federal moratoria and other limitations on tenant eviction, and other forbearance and relief voluntarily offered by financial institutions, as well as the recovery in employment and income over the latter half of 2020. However, much of that aid may not have made its way to struggling consumers with credit card debts until weeks or months after those consumers experienced a sudden and unexpected loss in income.<sup>220</sup> As noted earlier, surveyed issuers made payment deferral widely and rapidly available after the onset of the pandemic. This may have served to tide many consumers over until they could access those supports and programs outlined above.

<sup>218</sup> See Sections 2.5 and 2.6.

<sup>219</sup> See, e.g., AFP Foundation for Philanthropy, *FEP Reports*, <https://afpglobal.org/fepreports> (last visited Aug. 18, 2021).

<sup>220</sup> To take one such aid program as an example, the IRS reported distributing nearly 90 million Economic Impact Payments totaling over \$160 billion between the passage of the CARES Act on March 27, 2020 and April 17, 2020. See IRS, Treasury, *IRS deliver 89.5 million Economic Impact Payments in first three weeks, release state-by-state Economic Impact Payment figures* (Apr. 28, 2020), <https://www.irs.gov/newsroom/treasury-irs-deliver-89-point-5-million-economic-impact-payments-in-first-three-weeks-release-state-by-state-economic-impact-payment-figures>. Those figures reached approximately 127 million and \$216 billion, respectively, by May 8<sup>th</sup>, and 159 million and \$267 billion by June 3<sup>rd</sup>, 2020, with distribution continuing after that point as well. See IRS, Treasury, *IRS release latest state-by-state Economic Impact Payment figures* (May 8, 2020), <https://www.irs.gov/newsroom/treasury-irs-release-latest-state-by-state-economic-impact-payment-figures> and see also IRS, *159 million Economic Impact Payments processed; Low-income people and others who aren't required to file tax returns can quickly register for payment with IRS Non-Filers tool* (Jun, 3, 2020), <https://www.irs.gov/newsroom/159-million-economic-impact-payments-processed-low-income-people-and-others-who-arent-required-to-file-tax-returns-can-quickly-register-for-payment-with-irs-non-filers-tool>. As noted earlier in this subsection, the economic deterioration brought on by COVID-19 was extremely swift, with 20 million jobs vanishing by the end of April 2020. It is therefore plausible that at least some consumers with credit card debt who experienced a sudden loss of job or other income in late March or early April of 2020 may not have received their Economic Impact Payments until several months later, highlighting the potential impact to those consumers of being able to defer their credit card payments during that intervening period.



## 5.6 Card agreements

Pursuant to the CARD Act and the Bureau's implementing regulations, the Bureau has collected agreements for open-end consumer credit card plans on a quarterly basis since 2011.<sup>221</sup> Recent technological investments in text analysis software allow the Bureau to present some initial findings from more than 10,000 cardholder agreements submitted by credit card issuers pursuant to those CARD Act requirements over the past five years. These documents from the CFPB's Credit Card Agreement Database ("Database") represent most agreements and their associated pricing addenda for general purpose cards based on submissions at year's end from 2016 through 2020.<sup>222</sup> Previous Bureau reports utilized only a sample of documents from the Database to examine agreement length, readability, and late fee terms.<sup>223</sup> This section is broader in scope than those prior efforts and examines agreement length and grade level alongside Spanish-language presence and arbitration-clause incidence, while also showing how credit card agreements change over time.

Relying on text analysis software rather than manual review poses new difficulties. If none of an issuer's agreements for a given quarter could be successfully scanned by optical character recognition (OCR), then the institution is excluded from analysis. Some 11.8 percent of submissions were not possible to transform using OCR. On average each quarter, 21.8 percent of issuers had at least one agreement that did not scan, and 10.6 percent of institutions had zero agreements that successfully scanned. Due to the submission practice of several issuers where an agreement includes pricing information for multiple distinct credit card products, the Bureau cannot currently determine the share of products or consumers impacted by specific agreement provisions. Card issuers are also not required to submit any agreements to the Bureau if that issuer has fewer than 10,000 open card accounts as of the last business day of the calendar

<sup>221</sup> Prior to July 21, 2011, this responsibility belonged to the Board. The Bureau suspended this collection for a one-year period in order to pursue certain process improvements. 80 FR 21153 (Apr. 17, 2015); 12 C.F.R. § 1026.58(g).

<sup>222</sup> The fourth quarter of 2020 may include omissions due to regulatory flexibility due to the Bureau's COVID-19 regulatory flexibility statement. *See supra* note 32.

<sup>223</sup> The 2013 report reviewed a sample of cardholder agreements for large issuers to examine potential CARD Act impacts on agreement length and form, and the 2015 report expanded this analysis by relying on a bigger sample from different classes of issuer. In the 2019 report, the Bureau examined the late fee terms of credit card agreements from banks included in the Y-14+ panel.

quarter.<sup>224</sup> Taken together, while these challenges may limit the representativeness of the results, the Bureau believes the volume of agreements analyzed is sufficient to reliably draw certain conclusions from these data, presented herein.

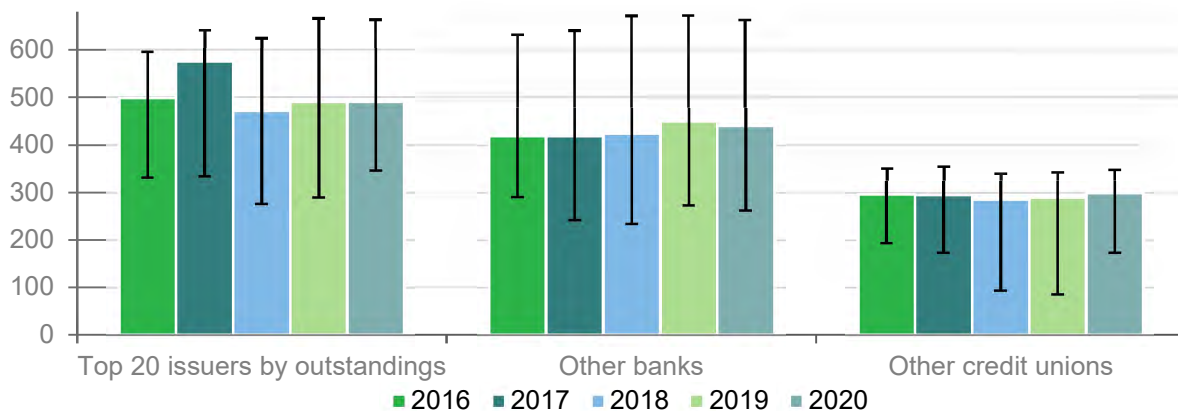
### 5.6.1 Readability

The decisions issuers make when drafting cardholder agreements determine which consumers can be expected to be able to read and understand their credit card's terms and conditions. Three barriers to comprehension of cardholder agreements explored in this section include length, complexity, and English proficiency.

Larger issuers tend to offer longer agreements, as measured by the number of sentences in each document. Figure 18 depicts the length of agreements for different issuer groups over time. The bars illustrate the median number of sentences per document for each credit card issuer group. The black vertical lines for each bar show the 25<sup>th</sup> and 75<sup>th</sup> percentiles. While the median agreement length for smaller banks has increased slightly since 2016, its variance has as well. In contrast, credit unions outside the top 20 issuers by outstandings tend to have shorter cardholder agreements than any other group – the 75<sup>th</sup> percentile sentence length for credit unions is below the median value of all other institutions over the past five years.

<sup>224</sup> 12 CFR § 1026.58(c)(5).

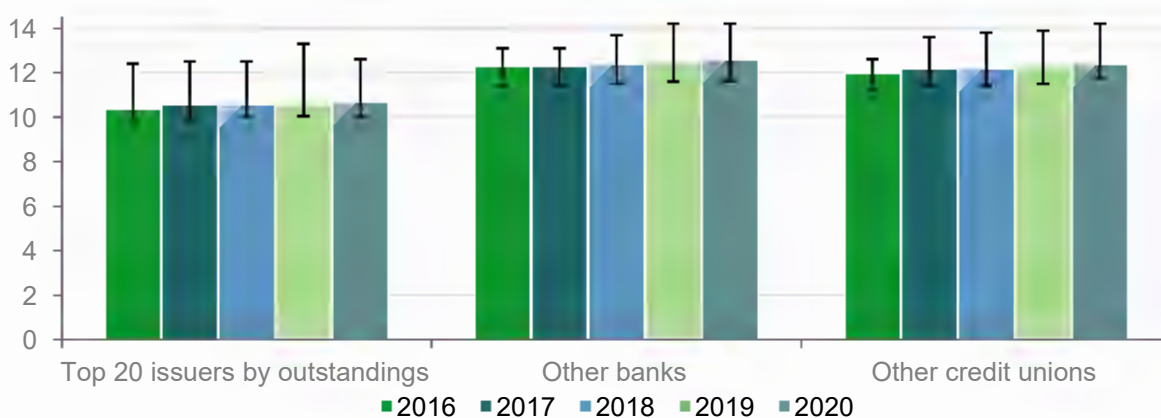
**Figure 18:** MEDIAN SENTENCE COUNT OF GENERAL PURPOSE CARDHOLDER AGREEMENTS



While the top issuers' agreements may be longer on average, they are also easier to read. Figure 19 shows the median Flesch-Kincaid grade level by issuer class. This metric approximates complexity and calculates expected reading level by considering the average number of words per sentence and syllables per word in a document. The median Flesch-Kincaid grade level of 12.4 in the 2020 data indicates fewer than half of all agreements should be readable by a high-school graduate. This has steadily increased from a value of 12.0 in 2016. However, agreements in the top quartile for smaller banks and credit unions now equal or exceed the expected reading level of cardholders who have completed two years of post-secondary education. Previous research found that about half of adults could not read a book at an eighth-grade level; this analysis suggests that most Americans would find the median agreement above their reading level.<sup>225</sup>

<sup>225</sup> These estimates correspond with findings from previous reports, *see generally supra* note 6. *See also* Institute of Education Sciences National Center for Educational Statistics, *The Health Literacy of America's Adults*, U.S. Department of Education (Sep. 2006), <https://nces.ed.gov/pubs2006/2006483.pdf>.

**Figure 19:** MEDIAN FLESCH-KINCAID GRADE LEVEL OF GENERAL PURPOSE CARDHOLDER AGREEMENTS



As over one-fifth of the U.S. population over the age of five speaks a language other than English at home, and more than 26 million people have limited English proficiency (“LEP”), a wide swath of consumers may face difficulties understanding credit card terms and conditions if agreements are only available in English.<sup>226</sup> Since Spanish speakers constitute the largest share of the LEP population, the analysis focused specifically on the availability of agreements in Spanish.

While not required by regulation, about a dozen issuers submitted Spanish-language agreements to the database in 2020. Half of these are banks located in Puerto Rico, two are smaller institutions located in California and New York, and the remainder are major issuers. To explore the larger question of the prevalence of Spanish-translated agreements, the Bureau also examined agreements published on the top 20 issuers’ public websites and found that less than one-third provided easily-accessible Spanish translations of cardholder agreements. This limited analysis does not consider other methods through which institutions may service the LEP population such as interpretation services or Spanish-speaking customer service lines. Additionally, the rise of digital servicing and mobile banking has led to greater access to credit

<sup>226</sup>Chinese, Vietnamese, Korean, and Tagalog speakers sequentially represent the largest LEP populations in the United States after Spanish. See 82 FR 53482.

card services for the LEP population over the past decade as issuers increasingly include functionality that allows consumers to change their language preferences.<sup>227</sup>

## 5.6.2 Arbitration clauses

The use of arbitration clauses in general purpose agreements offered by credit card issuers appears to have increased over the past five years, as measured by the percentage of institutions who included at least one reference to arbitration in their submissions to the database at year's end. As shown in Figure 20, large issuers are more likely than smaller banks and credit unions to include arbitration clauses in cardholder agreements, but credit unions are increasingly adopting this practice. A previous manual review of 423 credit card contracts submitted to the Database in 2013 found that 15.8 percent of issuers included arbitration clauses in their credit card contracts.<sup>228</sup> As of 2013, 75 percent of the 20 largest bank issuers used arbitration clauses while only 3.3 percent of credit unions did so.<sup>229</sup> These values are nearly identical to 2016 levels in a sample of agreements from 535 issuers. Since then, the percentage of the top 20 largest issuers that include arbitration clauses in at least one of their contracts has remained largely static while the percentage of credit unions with at least one arbitration clause at year's end has

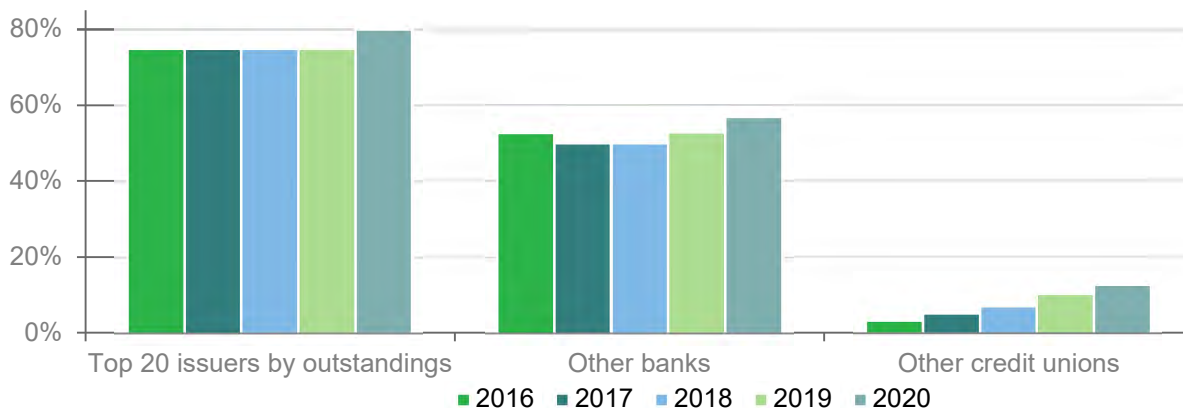
<sup>227</sup> See Payments Dive, *Us Bank adds functionality to mobile app, including Spanish language and account insights* (Aug. 22, 2019), <https://www.paymentsdive.com/ex/mpt/news/us-bank-adds-functionality-to-mobile-app-including-spanish-language-and-account-insights/>; Hilary Burns, *Bank of America redesigns mobile app, adds Spanish-language option*, *Charlotte Business Journal* (July 21, 2016), <https://www.bizjournals.com/charlotte/news/2016/07/21/bank-of-america-redesigns-mobile-app-adds-spanish.html>; Chase, Press Release, *Chase Launches New Spanish Online Banking Experience* (Oct. 4, 2012), <https://www.businesswire.com/news/home/20121004005714/en/Chase-Launches-New-Spanish-Online-Banking-Experience>.

<sup>228</sup> Bureau of Consumer Fin. Prot., *Arbitration Study*, at 10 (Mar. 2015), [https://files.consumerfinance.gov/f/201503\\_cfpb\\_arbitration-study-report-to-congress-2015.pdf](https://files.consumerfinance.gov/f/201503_cfpb_arbitration-study-report-to-congress-2015.pdf).

<sup>229</sup> *Id.*

tripled.<sup>230</sup> While some institutions allow consumers to opt-out of arbitration provisions within a stated period after signing an agreement, the process to do so may be burdensome.<sup>231</sup>

**Figure 20:** ARBITRATION CLAUSE INCIDENCE IN GENERAL PURPOSE CARDHOLDER AGREEMENTS



<sup>230</sup> The change in the percentage of top 20 issuers using arbitration clauses in 2020 is due to the practices of one issuer. See Emily Flitter, *JPMorgan Chase Seeks to Prohibit Card Customers From Suing*, N.Y. Times (June 4, 2019), <https://www.nytimes.com/2019/06/04/business/jpmorgan-chase-credit-card-arbitration.html>.

<sup>231</sup> The communication expressing this intent to reject an arbitration clause often must be printed and physically mailed to the company, although there are reports of at least one issuer allowing consumers to opt-out via text message. See Barbar Krasnoff, *You should opt out of the Apple Card's arbitration clause—here's how*, The Verge (Aug. 20, 2019), <https://www.theverge.com/2019/8/20/20813800/apple-card-pay-arbitration-clause-goldman-sachs-credit-how-to-opt-out>.

## 6. Credit card debt collection

As part of its review of the practices of credit card issuers, the Bureau surveyed several large issuers to better understand practices and trends in credit card debt collection. These same large credit card issuers were also surveyed for the Bureau's reports published in 2015, 2017, and 2019. Findings from the Bureau's current survey (the MMI dataset) are reported in this section.

First, this section provides background information on the overall market for consumer debt collection. Second, this section reviews issuer policies and practices with respect to resolving delinquent debt prior to charge-off, including communication practices, use of first-party and third-party collectors, and loss mitigation programs. Third, this section reports on the recovery of debt following charge-off, including measures of recovery of charged-off debt through various channels, such as third-party agency collections, debt sale, and litigation. Finally, this section highlights COVID-19-pandemic-related developments in credit card debt collections practices.

### 6.1 Debt collection markets

After several years of growth, consumer debt surpassed its 2008 peak in 2017, rising to a new high of \$14.3 trillion in the first quarter of 2020, according to the New York Federal Reserve.<sup>232</sup> Non-housing debt, which comprises most of the debt in third-party collections, rose to a new high of \$4.2 trillion in the first quarter of 2020. During the pandemic, non-housing debt saw a record decline of \$86 billion in the second quarter of 2020, followed by \$15 billion and \$37

<sup>232</sup> These consumer debt figures are in nominal dollars and are unadjusted for inflation and population growth, which have both increased over time. See Fed. Rsv. Bank of New York, *Quarterly Report on Household Debt and Credit 2020: Q4* (Nov. 2020), [https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/hhdc\\_2020q4.pdf](https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/hhdc_2020q4.pdf).

billion increases in the third and fourth quarters of 2020 and an \$18 billion decline in the first quarter of 2021, respectively.<sup>233</sup> This change was primarily driven by a record \$76 billion decline in credit card debt during the second quarter.<sup>234</sup>

#### **DEBT COLLECTION INDUSTRY SIZE**

Most large credit card issuers use their own employees and resources to collect some portion of their delinquent debts. Many creditors also engage third parties to collect debts on their behalf or sell uncollected debts to debt buyers who then collect the debts themselves or through a third party. Third-party debt collection industry revenue has declined in recent years, decreasing from an estimated \$14.1 billion in 2013 to \$12.7 billion in 2019.<sup>235</sup> After years of decline, employment in the third-party debt collection industry has leveled off since 2017 to roughly 141,000 US workers as of 2019.<sup>236</sup> The industry continues to consolidate, with the number of debt collection enterprises declining by 30 percent and the number of debt collection establishments declining by 28 percent from 2011-2019, as can be seen in Figure 1.<sup>237</sup>

<sup>233</sup> See Section 2.2 for further discussion of repayment trends.

<sup>234</sup> Auto loan debt, student loan debt, and other types of non-housing debt have seen relatively modest changes during 2020.

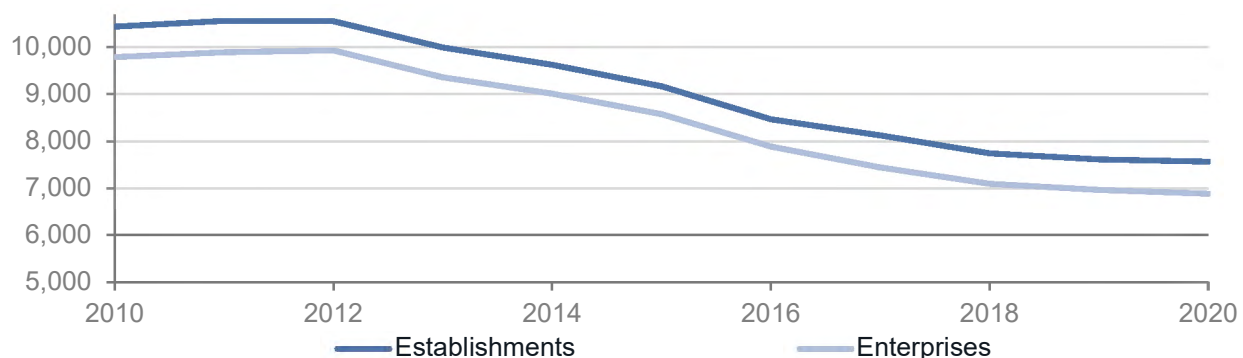
<sup>235</sup> See Gabriel Schulman, *Debt Collection Agencies in the US*, IBISWorld (Dec. 2020).

<sup>236</sup> *Id.*

<sup>237</sup> *Id.*



**Figure 1:** DEBT COLLECTION INDUSTRY SHRINKAGE BY ENTERPRISES AND ESTABLISHMENTS, 2010-2020 (IBISWORLD)<sup>238</sup>



### TYPES OF CONSUMER DEBT

Debt collection affects millions of Americans. About 26 percent of consumers have a third-party collection tradeline furnished to their credit report, according to the Bureau’s Consumer Credit Panel (CCP). A Bureau survey on consumers’ experiences with debt collection found that about one-in-three consumers with a credit file — over 70 million consumers — indicated that they had been contacted by at least one creditor or collector trying to collect one or more debts during the year prior to the survey.<sup>239</sup> Debt collection efforts include phone calls, letters, emails, filing lawsuits, and other methods to collect alleged debts from consumers.

Most consumers with collection tradelines on their credit files have medical, telecommunications, retail, or banking and financial services debt.<sup>240</sup> In 2018, healthcare debt made up 58 percent of third-party collections tradelines in the Bureau’s CCP.<sup>241</sup> However,

<sup>238</sup> “Enterprises” refers to the number of debt collection businesses in operation. Each enterprise may have multiple locations; thus, “establishments” is a larger figure.

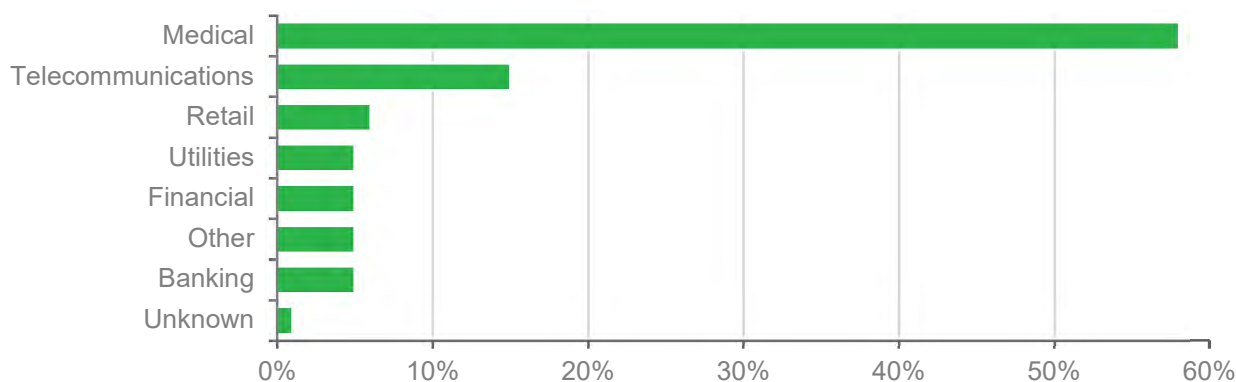
<sup>239</sup> Bureau of Consumer Fin. Prot., *Consumer Experiences with Debt Collections: Findings from the CFPB’s Survey of Consumer Views on Debt* (Jan. 2017), [https://www.consumerfinance.gov/documents/2251/201701\\_cfpb\\_Debt-Collection-Survey-Report.pdf](https://www.consumerfinance.gov/documents/2251/201701_cfpb_Debt-Collection-Survey-Report.pdf).

<sup>240</sup> Bureau of Consumer Fin. Prot., *Consumer Financial Protection Bureau Releases Report on Third-Party Debt Collections* (July 2019), <https://www.consumerfinance.gov/about-us/newsroom/bureau-releases-report-third-party-debt-collections/>.

<sup>241</sup> *Id.*

several debt types may be underreported because they are furnished by the creditor and hence do not appear as collections tradelines. In particular, credit card debt likely accounts for a much larger share of accounts in third-party collections than the below figure suggests.

**Figure 2:** DISTRIBUTION OF ORIGINAL CREDITOR TYPE AMONG THIRD-PARTY COLLECTIONS TRADELINES IN Q2 2018 (CCP)<sup>242</sup>



A large majority of the industry's revenue is generated by firms contracting with creditors and debt buyers to collect their debts on a contingency fee basis. In contingency fee collections, the creditor and the collector each receive a share of the amount collected. A small share of collectors employs fixed fee collections.

The three largest debt buyers' share of total revenue increased by 27 percent from 2015 to 2019.<sup>243</sup> A significant source of industry revenue comes from debt buyers, who purchase accounts (usually contained in portfolios) from the original creditor or other debt buyers and then generally seek to collect on the debt, either by themselves or through third-party debt collectors. Whereas third-party contingency collectors receive only a percentage share of recoveries, debt buyers purchase the debt at a fraction of the account balance, and their revenue consists of the total amount recovered. If debt buyers use third-party debt collectors to recover for them, the debt buyers typically pay a share of the amount collected to the third-party debt collectors. According to the CCP, debt buyers furnished 12.5 percent of third-party collections

<sup>242</sup> *Id.*

<sup>243</sup> *See Schulman, supra* note 235.

tradelines. The Bureau has found that portfolios of charged-off debt may also be available to purchase through online debt marketplaces.<sup>244</sup> During much of 2020, participants in the debt collection industry reported an increase in consumer contacts and payments. Some states instituted pandemic measures that impacted the debt collection industry and consumers, such as include prohibitions on new wage garnishments or bank attachments, and requirements that consumers be offered the option to defer scheduled payments.<sup>245</sup>

## 6.2 Collections prior to charge-off

This section reviews surveyed issuers' policies, procedures, and practices with respect to resolving delinquent debt prior to accounts reaching 180 days of delinquency. In response to the Bureau's survey, issuers provided information regarding restrictions on contacting consumers, use of electronic communications (*e.g.*, email or SMS), technology and software used as part of their collection strategies, use of first- and third-party collectors, and loss mitigation practices for collection activities prior to charge-off.<sup>246</sup>

All respondents reported conducting some pre-charge-off collection activities in-house. An issuer's in-house collection efforts may include such methods as calling, texts, emails, letters, web chat, and social media. Most of the issuers also supplemented the activities of their in-house agents with first-party collectors: outside collectors who work under the name and the direction of the creditor when collecting on delinquent debt. An issuer may also turn to a third-party agency to collect in the agency's own name and not in the name of the original creditor. More than half of the surveyed issuers worked with third-party collectors prior to charge-off.

<sup>244</sup> Bureau of Consumer Fin. Prot., *Market Snapshot: Online Debt Sales* (Jan. 2017), [https://www.consumerfinance.gov/documents/2249/201701\\_cfpb\\_Online-Debt-Sales-Report.pdf/](https://www.consumerfinance.gov/documents/2249/201701_cfpb_Online-Debt-Sales-Report.pdf/).

<sup>245</sup> Bureau of Consumer Fin. Prot., *Supervisory Highlights COVID-19 Prioritized Assessments Special Edition, Issue 23* (Jan. 2021), [https://files.consumerfinance.gov/f/documents/cfpb\\_supervisory-highlights\\_issue-23\\_2021-01.pdf](https://files.consumerfinance.gov/f/documents/cfpb_supervisory-highlights_issue-23_2021-01.pdf).

<sup>246</sup> Most issuers use proprietary case management software for their internal collections. Issuers rely on a small number of vendors for their dialer software and hardware, mainly Avaya and Aspect dialers.

## 6.2.1 Pre-charge-off communications

Issuers reported having policies in place that specify the frequency with which their collectors can call, leave voicemails, email, text, and otherwise contact a consumer regarding a delinquent account. Table 1 below provides the ranges of issuers' policy limits on consumer contact via various media and actual average attempts for each of those media. Issuers reported that their call intensity strategies depended on an account's stage of delinquency and risk level, among other factors.

**TABLE 1:** RANGES OF CONSUMER CONTACT POLICY LIMITS AND ACTUAL AVERAGE ATTEMPTS IN 2020 (MMI)

Policy limit or actual attempts	Phone call attempts per day	Phone calls after right party contact	Voicemails per day	Postal letters per month
Policy limit	3 to 11	No additional calls on contact date	1 to 2	1 to 4
Actual average attempts <sup>247</sup>	1.25 to 2.99	Zero per account on contact date	0.04 to 0.90	0.23 to 1.64

Issuers reported far fewer contact attempts on average per account than allowed by policies. All surveyed issuers reported that their policies included daily caps per account on phone calls. Daily contact attempt policy limits ranged from three calls to 11 calls per account. Noticeably, the ends of this range increased from their previous values of two and nine, respectively, as discussed in the Bureau's 2019 Report.<sup>248</sup> A minority of respondents also set a weekly cap on telephone call attempts at 21 to 77 calls per week per account, and a minority set customer-level caps, which ranged from six to nine attempts per day. While most issuers surveyed allowed no more than one voicemail per account per day, a small minority reported allowing two voicemails

<sup>247</sup> Average attempts via the telephone and voicemail channels were defined as the number of calls made or voicemails left to all accounts that were called divided by the number of unique delinquent accounts that were called in a given period of time. For postal letters sent, average attempts by letter was defined as the number of letters sent to delinquent accounts divided by the number of unique delinquent accounts. The time frames were daily, weekly, or monthly, depending on common practices in that channel.

<sup>248</sup> See 2019 Report, *supra* note 6, at 314.

per account per day. This differs from the findings in the Bureau’s 2019 Report, at which time all respondents reported a policy limit of one voicemail per account per day.<sup>249</sup> The actual average number of voicemails per account per day ranged from 0.04 to 0.90 in 2020. Issuers averaged between 1.3 and 3.0 contact attempts via telephone per day. Even though policy maximums increased since the 2019 report, actual average attempts decreased from the range in the 2019 report of 1.4 to 3.5. However, no issuer allowed calls to continue within a given day once “right party contact” has been made. Right party contact occurs when the issuer or collector can reach and speak with the consumer whom the issuer believes is responsible for the debt via telephone. The majority of respondents reported that they did not track in-house and first-party contact attempts separately for pre-charge-off collections. Quarterly right party contact rates in 2020 averaged between 0.6 percent and 8.1 percent for in-house and first-party collections and between 0.5 percent and 7.0 percent for third-party collections.<sup>250</sup> Issuers who placed pre-charge-off accounts with third-party collection agencies stated that they often assign “high risk,” late-stage delinquent accounts to third-party collectors, reducing right-party contact rates.

All the issuers surveyed also reported using email as part of their credit card collection strategy, but the degree to which they used it varied widely. The reported percentage of email-eligible accounts (defined as accounts for which the consumer provided a valid email address and agreed to be contacted at that address) ranged from 71.5 to 92.6 percent. The monthly average percent of email-eligible accounts increased from 68.3 percent in 2018 to 84.1 percent in 2020. Roughly two-thirds of accounts with eligible email identification received an email related to debt collection.<sup>251</sup> Therefore, the percent of all pre-charge off delinquent accounts that received an email increased from 45.8 percent in 2018 to 52.8 percent, implying greater adoption of the email channel by card issuers. However, survey respondents reported that on average, only 31.9 percent of accounts that received email clicked open their emails.<sup>252</sup> This low click-open rate

<sup>249</sup> *Id.*

<sup>250</sup> The survey defined “right party contact rate” as the number of times live contact with the primary or joint account holder or power of attorney of the debt was made during the quarter divided by the total number of outbound dialer attempts made to delinquent accounts in the quarter.

<sup>251</sup> This figure is similar to the figure in the 2019 Report, *supra* note 6.

<sup>252</sup> The click-open rate was not tracked in the prior report.

could be attributed to consumer concerns about email spam. An average of less than one percent of emails bounced back, potentially indicating that issuers generally have valid emails on their files. Many issuers reported using email proactively for account servicing (*e.g.*, sending reminders about a pending withdrawal from a consumer’s bank account for a recurring payment) as part of their pre-charge-off communication strategy. Fewer issuers stated that they used email only reactively, such as when a consumer initiated a conversation online or requested that documents be sent by email. Issuers who reported using email typically restricted the number of emails that could be sent to 2 or 3 emails per week.

**TABLE 2:** EMAIL, TEXT, AND WEB CHAT ELIGIBILITY AND ENGAGEMENT RATES, MONTHLY AVERAGES 2020 (MMI)

	Email	Text	Web chat
Percent of accounts eligible for the channel <sup>253</sup>	84.1%	60.3%	Not applicable
Percent of eligible accounts engaged <sup>254</sup>	62.8%	36.6%	1.40%
Click-open rate <sup>255</sup>	31.9%	Not applicable	Not applicable
Bounce-back rate <sup>256</sup>	0.9%	Not applicable	Not applicable

The share of issuers using text messages as part of their credit card collection strategy has continued to increase since the Bureau began tracking this figure in its 2017 Report. While in the 2019 Report, less than two-thirds of those surveyed said they sent mobile text messages to

<sup>253</sup> Defined as the total number of unique delinquent accounts with a consented email address or text-consented cellphone number in a month divided by the total number of unique delinquent accounts in that same month.

<sup>254</sup> Defined as the number of unique delinquent accounts that were emailed in a month divided by the total number of unique delinquent accounts with a consented email address in that same month.

<sup>255</sup> Defined as the number of emails sent to delinquent accounts that were clicked open in a month divided by the total number of emails sent to delinquent accounts in that same month.

<sup>256</sup> Defined as the number of emails sent to delinquent accounts returned undeliverable in a month divided by total number of emails sent to delinquent accounts in that same month.

communicate with delinquent consumers, almost all respondents said they used text messages during the latest survey period. Two-thirds of issuers surveyed also reported engaging with delinquent consumers via “web chat,” where a consumer can click a chat button on the issuer’s webpage to communicate about their debt with a collections agent, which remained stable from the last report. In addition to account management, most issuers allowed consumers to handle settlement negotiations and payment arrangements via web chat. Some issuers restricted the use of web chat services to pre-charge off collections only. Surprisingly, the percent of eligible accounts engaged via web chat declined since the 2019 report from 2.5 percent to 1.4 percent, contrary to industry-wide trends towards greater adoption of digital channels. Most issuers did not track data on the use of electronic channels (email, text, and web chat) by their third-party collectors. All respondents reported not utilizing social media communication as a collection tool for obtaining information about or communicating with consumers.

#### **COLLECTING FROM LIMITED ENGLISH PROFICIENCY (LEP) CUSTOMERS**

All surveyed credit card issuers had the capacity, within their collections function, to accommodate consumers with Limited English Proficiency or consumers that express the desire to communicate in a language other than English. A minority of respondents indicated providing web chat services in Spanish. Most issuers had a unit of bilingual collectors to communicate with consumers with a Spanish-language preference. For communicating with consumers with preferences for other foreign languages, all issuers leveraged translation services. In cases where the third-party collectors cannot provide such services, they are required to return the accounts back to the card issuer. For the two-thirds of surveyed issuers that tracked consumer language preferences, the share of pre-charge-off delinquent balances owed by consumers that expressed a preference for a language other than English averaged 3.7 percent in 2020, while it varied from a low of 2.2 percent to a high of 7.6 percent among issuers.

#### **PRE-DELINQUENT COLLECTIONS**

While only some issuers reported having pre-delinquent collections strategies in the 2019 survey, almost all issuers reported having such strategies in place in the current survey. The pre-delinquent collections strategies involved pursuing collections on accounts that were current and past the payment due date (*i.e.*, had not become delinquent yet). These issuers focused on subsets of these accounts that were tagged as high-risk, based on factors such as risk score, high balance, over-limit condition, and past delinquency. While most issuers pursue softer contact strategies on such accounts, such as email and text reminders, a few respondents did not differentiate these accounts from other pre-charge off delinquent accounts in collections.

## 6.2.2 First-party collections

Pre-charge off, two-thirds of issuers used first-party collectors to support in-house collection activities. Those issuers typically reported allocating work randomly between in-house and first-party collectors based on collector availability, requiring that first-party collectors place outbound calls, handle inbound calls, and document their work using issuers' own case management system and dialer technology. Issuers reported that they generally do not track pre-charge-off account placements separately between in-house and first-party collections. Most issuers that used first-party collectors noted that they do not place any specific sub-segments of accounts with first-party agencies. However, a minority of respondents allocated higher-risk accounts to first-party collectors.

First-party collection companies were typically paid on a full-time employee ("FTE") basis, unlike the contingency fee model used to compensate third-party collectors. On average, issuers reported keeping 96 percent of pre-charge-off debt balances to be worked in-house and by first-party collectors, with the remaining 4 percent placed with third-party collectors.<sup>257</sup> The number of unique first-party agencies used across issuers remained relatively stable year-over-year between 2019 and 2020, with 18 unique agencies in 2019 and 17 in 2020. These figures marked a significant increase from the 11 unique agencies reported for 2018. Banks that used first-party agencies reported employing four unique first-party agencies on average in 2020, with a low of one to a high of six. The services of one particular agency were used by half of the respondents.

## 6.2.3 Third-party contingency collections

More than half of the surveyed issuers worked with third-party contingency collectors prior to charge-off, which remained the same compared to the Bureau's 2019 Report.<sup>258</sup> All surveyed issuers reported using a combined total of 62 unique third-party agencies in 2019 and 55 in 2020. For issuers that used third-party collection agencies prior to charge-off, the average share of pre-charge-off debt placed with third-party collectors remained flat at 4 percent between

<sup>257</sup> These figures represent the percentage of pre-charge off balances that each issuer retained for in-house and first-party collections and placed with third-party collectors, averaged across all issuers.

<sup>258</sup> See 2019 Report, *supra* note 6.



2019 and 2020. The share of pre-charge off third-party placements declined significantly from the 11 percent reported in 2018. A minority of respondents placed specialized account types with third-party collectors, such as debt consolidation, deceased, and pending bankruptcy accounts. Issuers that used third-party agencies reported employing 12 unique third-party agencies on average in 2020, with a low of five to a high of 20. The services of five particular agencies were used by half of the respondents in 2020.

#### **AGENCY COMPENSATION**

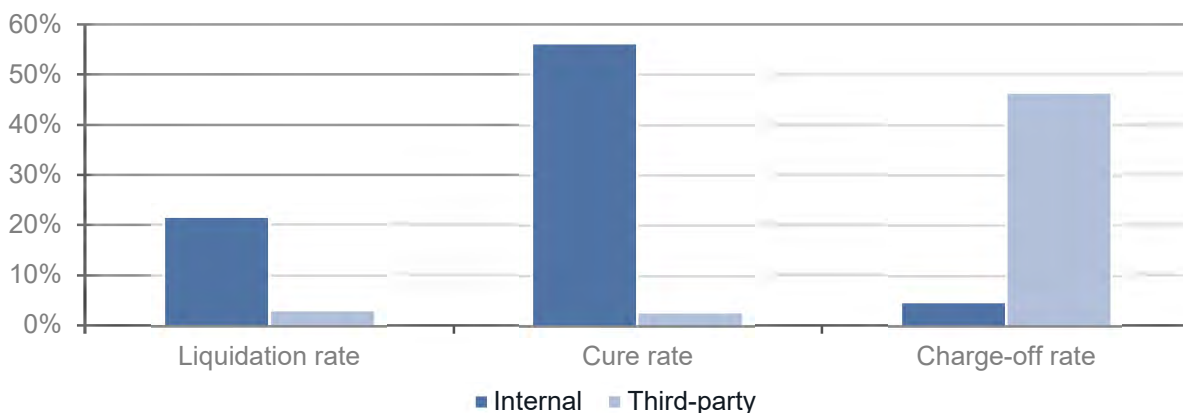
Most issuers that contracted with third-party agencies for pre-charge-off collections paid a contingency fee that was a percentage of the amount collected. These fees ranged from 9.5 percent to 23.0 percent, which is likely attributable to differences in the risk profile of the accounts being placed with third-party collectors. The average third-party pre-charge off contingency fee was 15.7 percent in 2020, which compares to 15.3 percent in 2018. Generally, highly collectible accounts command lower contingency fees compared to those perceived as being more difficult to collect. For instance, some respondents placed specialized account types with third-party collectors, such as debt consolidation, deceased, and pending bankruptcy accounts, thereby impacting the contingency fees offered. Most issuers also provided additional incentives to third-party collectors based on their performance relative to a set financial target or to the performance of other collection agencies.

### **6.2.4 Performance**

Prior to charge-off, issuers generally kept debts that were in an early stage of delinquency or were assessed as having a relatively high likelihood of recovery for in-house collections. Issuers generally placed accounts in the later stages of delinquency, closed accounts, and accounts where no contact had been made with the primary account owner for an extended period of time. Accounts placed with third-party collectors had an average balance 12 percent higher and a FICO score 12 percent lower than accounts kept in-house. Respondents also noted that they may assign accounts with special circumstances to third-party collection agencies with specialized collections expertise in the relevant area, such as those where the consumer was engaged with debt settlement companies, the accountholder was deceased, or bankruptcy applications were pending. As a result, in-house collections generally had higher liquidation and cure rates but lower charge-off-rates, relative to third-party collections, as seen in Figure 3

below.<sup>259</sup> These performance indicators have all remained relatively stable year-over-year since 2017.

**Figure 3:** AVERAGE QUARTERLY PERFORMANCE FOR INTERNAL AND THIRD-PARTY COLLECTIONS, 2020 (MMI)



## 6.2.5 Loss mitigation and re-aging practices

Credit card issuers used re-aging and various loss mitigation practices, including short- and long-term forbearance programs, debt management plans offered by consumer credit counseling agencies, and debt settlement. Issuers reported that they generally structured their loss mitigation practices conforming to guidance issued by the Federal Financial Institutions

<sup>259</sup> The quarterly liquidation rate is defined as total pre-charge-off delinquent dollars collected in a given quarter as a percent of total pre-charge off delinquent dollars in that same quarter. Cure rate is defined as the percent of pre-charge off delinquent dollars in a given quarter that were repaid to current status by the end of the same quarter. Charge-off rate is defined as the percent of pre-charge off delinquent dollars that charged off (representing contractual charge-offs as well as accounts charged off for bankruptcy, notice of decease, etc.) as of the end of the same quarter. These quarterly rates are averaged across all issuers and weighted by issuer's share of total pre-charge-off delinquent dollars. Finally, the 2018 quarterly average was calculated across all four quarters.

Examination Council (“FFIEC”) and the federal banking agencies on the use of these collections tools.<sup>260</sup>

### **RE-AGING**

Re-aging returns a delinquent, open-end credit card account to current status without collecting the total amount of principal, interest, and fees that are contractually due. Issuers’ policies allow re-aging of open-end accounts when a borrower makes at least three consecutive minimum monthly payments or an equivalent amount in a lump-sum payment. The number of re-ages on an account is limited to one in 12 months and two in five years. An account that is enrolled in a long-term internal forbearance or debt management program may be eligible for a third re-age within the five-year period. All surveyed issuers’ re-aging policies aligned with the guidance offered by the FFIEC and federal banking agencies.<sup>261</sup>

According to the current survey, re-aged balances as a percentage of total delinquent dollars have continued to remain below two percent for each quarter since 2017,<sup>262</sup> with the average at 1.6 percent in 2020. However, there was considerable variation among the card issuers in terms of the share of pre-charge-off balances that were re-aged: the 2020 quarterly average ranged from as low as 0.4 percent to a maximum of 5.9 percent. This wide range may reflect variation in each issuer’s underlying portfolio composition.

### **FORBEARANCE PROGRAMS**

Forbearance programs are designed to assist borrowers experiencing financial hardship. These programs can be “temporary” or “short-term,” aimed at assisting borrowers experiencing hardships expected to last 12 or fewer months, or “long-term,” intended to aid borrowers experiencing continued hardships lasting longer than 12 months. Issuers reported that their

<sup>260</sup> See generally FFIEC, *Uniform Retail Credit Classification and Account Management Policy: Policy Implementation*, 65 FR 36903 (June 12, 2000); Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of Thrift Supervision, *Credit Card Lending: Account Management and Loss Allowance Guidance*, OCC Bulletin 2003-1 (Jan. 8, 2003), <https://occ.gov/news-issuances/bulletins/2003/bulletin-2003-1.html>.

<sup>261</sup> *Id.*

<sup>262</sup> See 2017 Report, *supra* note 6, at 318.

long-term programs generally require borrowers to repay their credit card debt within 60 months. In order to meet this amortization timeframe, creditors may need to substantially reduce interest rates, eliminate fees, and lower monthly required payment amount. All issuers surveyed generally reported assessing borrower's willingness and ability to pay as per the terms of the forbearance program including documenting the reason, severity, and duration of the cardholder's financial difficulty. All surveyed issuers' forbearance policies aligned with the guidance offered by the FFIEC and federal banking agencies.<sup>263</sup>

More than half of the survey respondents did not offer short-term forbearance programs over the last several years. Instead, these issuers generally offered long-term programs as an alternative regardless if borrower's hardship is short term or long term in nature. However, all issuers reported accommodating COVID-19 related hardship assistance requests by offering various temporary short-term assistances such as skip-a-pay. Most issuers also reported that they do not allow their third-party collection agencies to offer and enroll borrowers in hardship programs, due to the complexity of managing these programs.

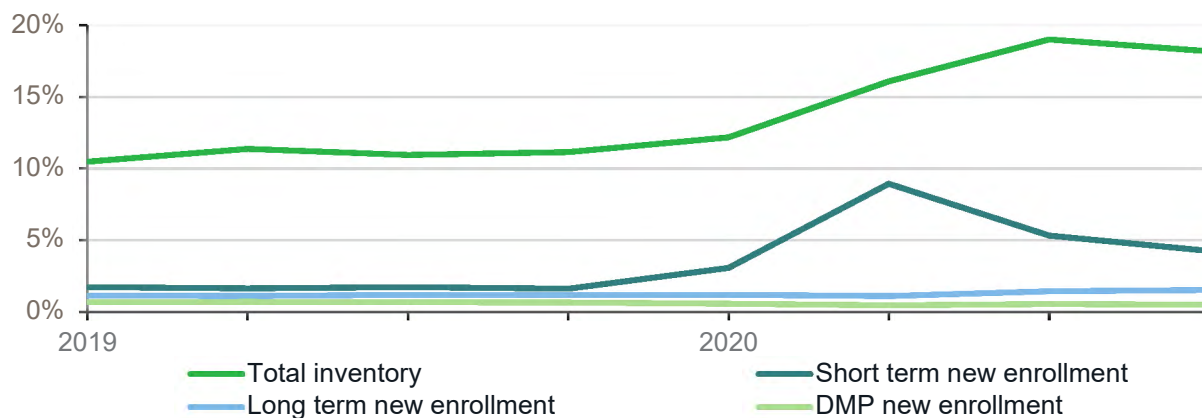
#### **CREDIT COUNSELING AGENCIES**

Issuers work with consumer credit counseling agencies ("CCAs") to help borrowers resolve their financial hardships, as an additional component of their loss mitigation efforts. CCAs work with borrowers to develop a budget and a debt management plan ("DMP") for all the consumer's enrolled debts, which may be owed to multiple creditors. These plans generally involve paying creditors a fixed payment amount at a reduced interest rate.

Most respondents reported funding CCAs through a "fair share" payment, which is a payment based on a percentage of the amount the consumer has paid back to the issuer. However, a few of the respondents fund their CCAs through grant funding. Several issuers reported working with CCAs on debt relief pilot programs such as "less-than-full-balance programs" and DMPs with extended amortization that extend beyond the traditional DMP.

<sup>263</sup> *Id.*

**Figure 4:** QUARTERLY FORBEARANCE NEW ENROLLMENT AND ACTIVE INVENTORY AS A SHARE OF DELINQUENT BALANCES (MMI)<sup>264</sup>



All issuers reported offering one or more types of forbearance or debt management programs with varying interest rates, monthly fixed payment amounts, and amortization periods. The total new enrollment rate, measured as a percent of pre-charge-off delinquent dollars newly enrolled in various forbearance programs and DMPs, increased by 76 percent from 2019 to 2020. Most of this increase came from the significant increase in short-term program enrollment in the second quarter of 2020 as many issuers responded to COVID-19. New enrollment in short-term programs jumped by 240 percent in 2020 compared to 2019: 1.7 percent in 2019 and 5.8 percent in 2020. In contrast, the long-term internal program enrollment rate registered only a modest 14 percent increase during the same period. Interestingly, the enrollment rate in DMPs declined by 20 percent in 2020. The average quarterly new enrollment rate among individual issuers ranged widely from a low of 0.5 percent to a high of 14.2 percent in 2020.

While the total forbearance inventory increased moderately in 2018 and 2019, it increased by almost 50 percent in 2020 compared to 2019 mostly due to the significant increase in short-term program enrollment in 2020 in response to the pandemic.

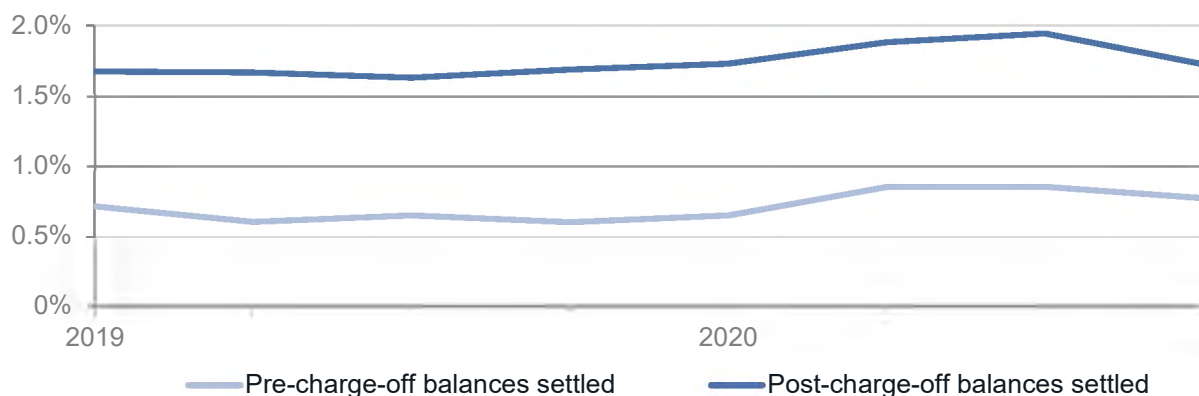
### DEBT SETTLEMENT

Debt settlements occur when an issuer agrees to accept less than the full balance owed by the borrower as full satisfaction of the balance owed. Such settlements can occur either pre- or -

<sup>264</sup> “Inventory” refers to total balances for all accounts that are in active status in a forbearance program as of the end of the quarter.

post-charge off. Most issuers have policies in place to proactively offer settlements directly to consumers who meet the standardized risk criteria set by the creditor. These offers are extended via in-house operations or through third parties. The settlement enrollment rate, the percent of balances enrolled in settlement, increased from 2019 to 2020 by 21 percent and 9 percent for pre- and post-charge off, respectively, with most of the increases occurring in the second and third quarters of 2020. These increases align with reported gains in consumer liquidity from various economic stimulus payments and related debt pay-down by consumers during the pandemic. The settlement enrollment rate was higher for post-charge off balances (1.8 percent in 2020) than pre-charge off balances (0.8 percent in 2020). Among surveyed issuers, the quarterly pre-charge-off settlement enrollment rate ranged from 0.1 percent to 1.6 percent, and quarterly post-charge off settlement enrollment rate ranged from 0.5 percent to 3.4 percent. Pre-charge off settlement enrollment occurs when an account seriously past due – i.e., 130 days past due, on average, while post-charge off settlement occurs at 443 days past the charge-off date, on average.

**Figure 5:** PERCENT OF BALANCES ENROLLED IN SETTLEMENT (MMI)



Pre-charge-off balances are settled with a single lump-sum payment or multiple installments. Installment settlements typically consist of three payments, but pursuant to guidance from the Office of the Comptroller of the Currency for national banks and federal savings associations the

total duration of the payments should not exceed three months.<sup>265</sup> However, post-charge-off settlements can be structured over any length of time. Average account settlement rate—the amount paid as a percent of the of the balance owed by the borrower for accounts that were settled—remained steady between 2019 and 2020 at about 51 percent pre-charge-off and 50 percent post-charge-off in 2020, though there was some variation in the rates among individual respondents.

### **DEBT SETTLEMENT COMPANIES**

Borrowers sometimes work with debt settlement companies (“DSCs”), which are typically for-profit entities with the primary objective of enrolling qualified borrowers in a debt settlement program.<sup>266</sup> These firms do not receive any compensation from issuers. Instead, they typically assess the borrower a fee based on the original debt balance and contingent upon completing a settlement with the creditor. Since enrolled consumers stop making payments to creditors, borrowers who work with the DSCs typically find that their accounts continue to grow in delinquency and are reported to the credit reporting agencies.<sup>267</sup> Issuers may also pursue legal collections on these accounts. DSCs often advise consumers to send a cease and desist communication letter to creditors as part of the program. Those issuers who sell debt often sell charged-off debt with a cease and desist communication order to debt buyers because such orders generally make it more difficult to recover debt.

All the surveyed issuers have established policies and procedures on how to manage accounts enrolled with DSCs. Most issuers maintain a policy of not working directly with DSCs. Some issuers have policies that allow the accounts placement with special third-party agencies for

<sup>265</sup> See Office of the Comptroller of the Currency, *Comptroller’s Handbook: Credit Card Lending, Version 1.2* (Jan. 2017), <https://www.occ.treas.gov/publications/publications-by-type/comptrollers-handbook/credit-card-lending/pub-ch-credit-card.pdf>.

<sup>266</sup> See Greg J. Regan, *Options for Consumers in Crisis: An Updated Economic Analysis of The Debt Settlement Industry* (Data as of Mar. 31, 2017), American Fair Credit Council (Feb. 5, 2018), <https://americanfaircreditcouncil.org/wp-content/uploads/2018.02.05-AFCC-Report-Consumers-in-Crisis.pdf>.

<sup>267</sup> One RFI commenter wrote that consumers have “limited niche choices in debt relief assistance,” while also lacking data necessary to make informed choices about debt relief products and services. The commenter advocated greater disclosure of performance data for non-profit and for-profit debt relief providers, including “success rate, the impact to future retirement savings, credit report/score impact, protection from legal action, and cost of the solution.” See Steve Rhode Comment Letter, at 2.

potential litigation. Most issuers that work with DSCs reported that they offer DSCs the same settlement policies available to consumers who call the creditor directly to request settlements. The share of balances enrolled in settlement by DSCs to the total was 54 percent and 44 percent, respectively, for pre-and post-charge-off balances in 2020. This relative share of balances enrolled in DSCs settlement varied significantly among the issuers. For instance, in 2020, this share ranged from a low of 9 percent to a high of 60 percent for pre-charge-off debt and from 23 percent to 62 percent in post-charge-off debt.<sup>268</sup>

## 6.3 Recovery following charge-off

Once an account charges off, it is placed into one of a variety of channels to facilitate further recovery of the balance owed, such as internal collections, third-party agency placement, litigation, and debt sale. Issuers may also warehouse certain accounts where balances are considered unlikely to be repaid.<sup>269</sup> In 2020, issuers in the sample charged off \$38 billion in debt, a 10 percent decline from 2019. In general, the current survey found that:

- All issuers warehoused a significant portion of their overall post-charge-off inventory;
- All issuers used third-party agencies throughout the entire review period to collect at least a portion of their charged-off debt;
- Most issuers engaged in internal collections, though for a relatively small portion of their charged-off debt;
- Most issuers engaged in post-charge-off litigation to collect debt from consumers;

<sup>268</sup> If the forgiven debt exceeds \$600, issuers may file a 1099-C for “Cancellation of Debt” with the Internal Revenue Service. Most issuers disclose to the consumer, at the time of settlement offer, the potential tax implications of the settlement, either as part of a telephone script or via letter.

<sup>269</sup> Warehoused balances are generally those that issuers do not actively seek to collect and generally include accounts issuers considered to be uncollectible or unlikely to be repaid, including older accounts that may be past the statute of limitations. Some issuers also reported that they may place accounts in warehouse status when transitioning these accounts between placements.



- Most issuers reported holding a sizeable amount of debt past the statute of limitation in their inventory; and
- A minority of issuers, the same ones as reported in Bureau's 2019 Report, sold debt in the current survey period as well.

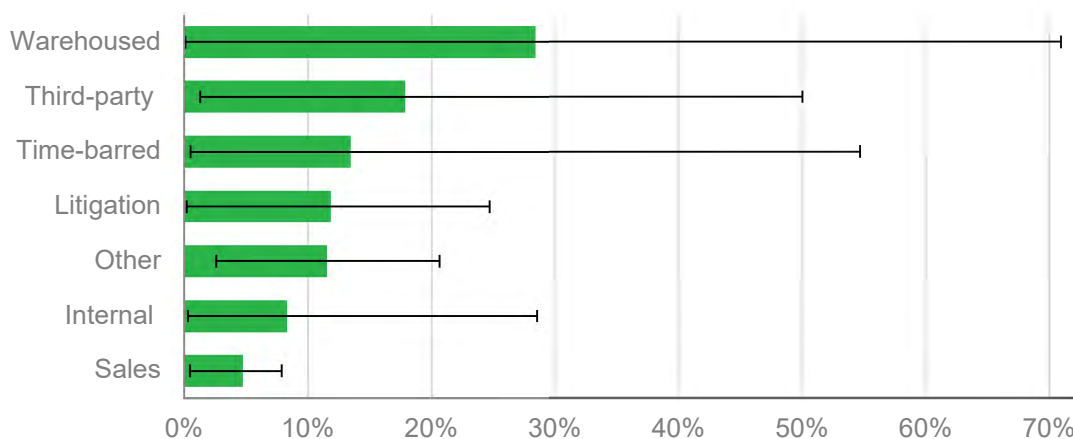
Surveyed issuers reported holding an average of 28 percent of their overall post-charge-off balance inventory in warehouse status, as shown in Figure 6.<sup>270</sup>

Issuers reported placing nearly 18 percent of their post-charge-off inventory with third-party agencies in any given quarter between 2019 and 2020. While there was significant variation in third-party placements between issuers, the percentage of debt that each issuer placed with third-party agencies remained stable during the survey period. Among issuers, third-party placement share ranged from one percent to 50 percent of an issuer's total post-charge-off inventory in 2019 and 2020. This range has narrowed compared to the range of eight percent to 73 percent reported in 2017 and 2018. The range of placement into internal recovery was similarly varied among issuers.

Most issuers sued some consumers to recover unpaid balances after charge-off. On average, issuers litigated almost 12 percent of their post-charge-off balance inventory. Issuers reported holding 13 percent of their inventory in time-barred status. Finally, as noted in the Bureau's 2015, 2017, and 2019 Reports, few issuers reported leveraging debt sales as part of their post-charge-off recovery strategy. Those issuers who sold debt reported selling an average of five percent of their post-charge-off balance inventory.

<sup>270</sup> The warehouse category includes accounts that are considered uncollectible for various reasons (*e.g.*, accounts lacking current contact information for the accountholder despite many attempts to locate them).

**Figure 6:** SHARE OF CHARGE-OFF BALANCE INVENTORY BY RECOVERY CHANNEL IN 2019 AND 2020 (MMI)<sup>271</sup>



### 6.3.1 Internal recovery

Internal recovery is not a significant piece of most issuers' overall recovery strategy for post-charge-off debt. A minority of the issuers used internal recovery as a significant piece of their overall recovery strategy, while the majority generally retained only those accounts that were ineligible for third-party placement or that were awaiting placement in another channel. On average about eight percent of an issuer's post-charge-off inventory was pursued through internal recovery in 2019 and 2020; however, one issuer chose to retain and internally recover 29 percent of its post-charge-off inventory during the survey period.

### 6.3.2 Third-party recovery

All issuers employed third-party agencies to recover post-charge-off debt, all on a contingency-fee basis. Most surveyed issuers placed between one percent and 50 percent of their charged-off

<sup>271</sup> Green bars represent the average share of post charge-off balances inventory. The issuers provided the status of post-charge-off balance inventory as of the end of each quarter in 2019 and 2020. The distributions for 2019 and 2020 were averaged by issuer, and then averaged across issuers. Black lines running through each bar represent the range of the share of post charge-off balances only for issuers that used that channel. In other words, the ranges do not include zero values, since some issuers did not use that channel. "Other" category includes accounts in Probate and Bankruptcy statuses.

balances with third-party collectors during the current survey period. Issuers described a number of reasons for placing charged-off debt with third-party agencies, including improved recovery, internal resource constraints, and the need for specialized expertise in recovering certain “special segments” of debt (*e.g.*, debt owed by deceased consumers, accounts in bankruptcy status and accounts with cease communication requests from the debtor). If an agency cannot recover money or establish contact on an account in the specified period, the creditor will generally recall the account and place with another agency.

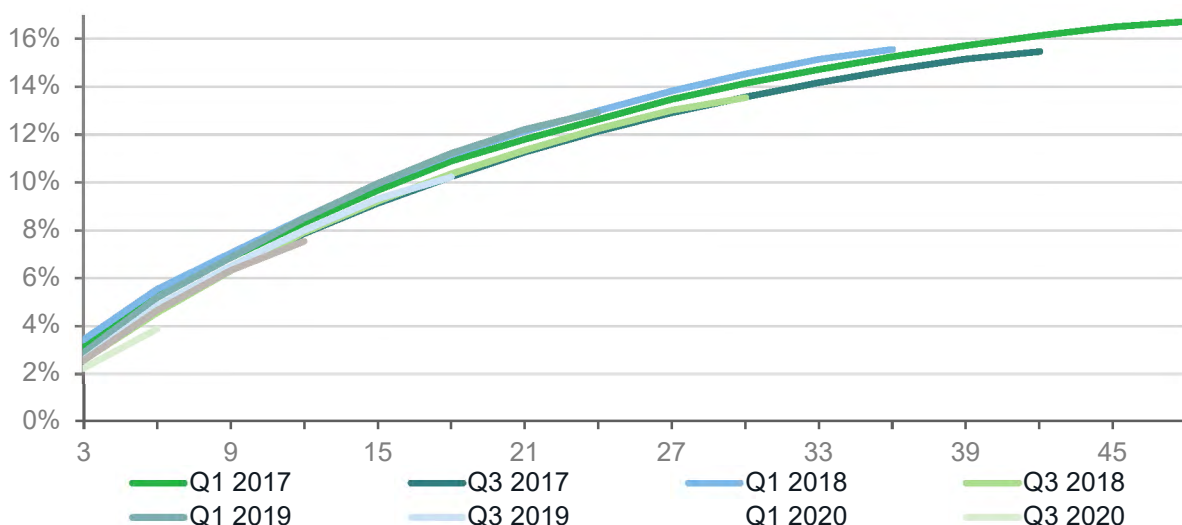
## **PERFORMANCE**

Recovery performance is measured by the “cumulative recovery rate,” which is the share of the charged-off balance that has been recovered over an extended period. Recovery on charged-off debt can occur over several months or years. As the debt ages and the account moves from one placement to another, the incremental share of the charged-off balances that the issuer expects to recover from that account generally decreases.

For debt that charged off in the first quarter of 2017, issuers recovered an average of 17 percent of the charged-off balance within a four-year period. Nearly two-thirds of this recovery occurred within the first two-years following charge-off. Quarterly vintages show stable performance over the review period, although the latest vintage (Q3 2020) appeared to be lagging other vintages. As debt ages, incremental gains in recovery decline. Figure 7 below shows the average cumulative recovery rates for balances that charged off each quarter between the first quarter of 2017 and the fourth quarter of 2020.<sup>272</sup> While issuers recovered 8.3 percent in the first-year post-charge-off for the Q1 2017 vintage, they recovered an additional 4.3 percent, during the second year and recovered only 4.1 percent during the next two years combined.

<sup>272</sup> These rates reflect the cumulative recovery on the debt across all potential placement channels, including internal placement, third-party agency placement, litigation, and any proceeds from debt sales. Longer recovery periods mean that the issuers have had more time to collect on the debt, so the cumulative recovery rate rises over time.

**Figure 7:** CUMULATIVE RECOVERY RATES FOR QUARTERLY VINTAGES BY MONTHS FOLLOWING CHARGE-OFF (MMI)<sup>273</sup>



### AGENCY COMPENSATION

Issuers who used third-party agencies to collect on post-charge-off debt typically paid a contingency fee that was a percentage of the amount of debt collected. Contingency fees are based on the level of placement (*e.g.*, primary, secondary, tertiary, and quaternary), with later placements typically receiving higher contingency fees as the debt ages and recovery becomes more difficult. In 2020, contingency fees ranged from 18 to 25 percent for primary placement, from 22 to 37 percent for secondary placement, from 28 to 45 percent for tertiary placement, and from 23 to 47 percent for quaternary placement. Some issuers reported higher contingency fees for some earlier placement than for later placement. These respondents noted that they engaged third party collectors who leverage digital-only approaches to collections for some older placements which incurred overall lower collection costs and hence lower contingency fees.

<sup>273</sup> Here, each “quarterly vintage” represents balances for all accounts which charged off at any time during the given quarter. Cumulative recovery includes all proceeds collected post-charge-off, including through third-party collections, litigation, and debt sales.

## **VENDOR MANAGEMENT**

Issuers manage their third-party vendors' compliance with the issuers' policies, procedures, applicable regulatory requirements, and financial performance targets using a variety of methods. These included:

- Monitoring of randomly sampled collection calls on a periodic basis;
- Periodic audits, including on-site visits; and
- Complaint intake, tracking, investigation, resolution, and trend analysis. All issuers have limits on consumer contact attempts that they extend to their third-party contingency agencies and monitor through quality assurance testing, routine audits, and call sampling.

Most issuers either prohibit or strictly limit their third-party collectors from using email and text to initiate contact with borrowers in post-charge-off collections, although information may be sent via these channels if a borrower specifically requests it. Only a minority of the surveyed issuers reported that they sent an agency placement notification letter to alert the borrower that their debt had been placed with a third-party agency. These letters informed borrowers that their debt had been transferred and provided the name and contact information of the third-party agency. All surveyed issuers monitored their third-party agencies' collections performance, both relative to the issuer's stated targets and to the performance of other agencies in the network.

### **6.3.3 Debt sales**

As part of their post-charge-off recovery strategy, some credit card issuers may sell credit card debt at a discounted rate to pre-selected debt buyers, receiving a fraction of the outstanding account balances sold. Typically, these sales are structured as "forward-flow" contracts, where a pool of accounts that meet pre-determined criteria (*e.g.*, at charge-off or post-primary placement) are sold to the debt buyer on an ongoing (*e.g.*, monthly) basis. Issuers may also occasionally identify additional segments of accounts and sell them on an ad-hoc basis depending upon market conditions. Finally, issuers may employ specific debt sale strategies for special segments like accounts where the issuer has received a notice of bankruptcy, where specialized expertise may be required to recover the amount owed. Generally, after the sale, creditors update the accounts to credit reporting agencies as "Sold/Transferred" with a \$0 balance.

## **MARKET STRUCTURE**

The debt-buying market for credit card debt remains highly concentrated among a few buyers that purchase debt from many of the same issuers. Most of the surveyed issuers that sold debt reported selling to an average of 10 buyers year-over-year. However, there is a general trend of consolidation among surveyed issuers' debt buyer networks: the Bureau's 2017 Report found that in 2016, 20 unique debt buyers bought debt from the surveyed issuers that sold debt, while the current survey found that there were 17 unique buyers in 2020.<sup>274</sup> Nine buyers purchased debt from two or more issuers, while six buyers bought debt from all the issuers that sold debt.

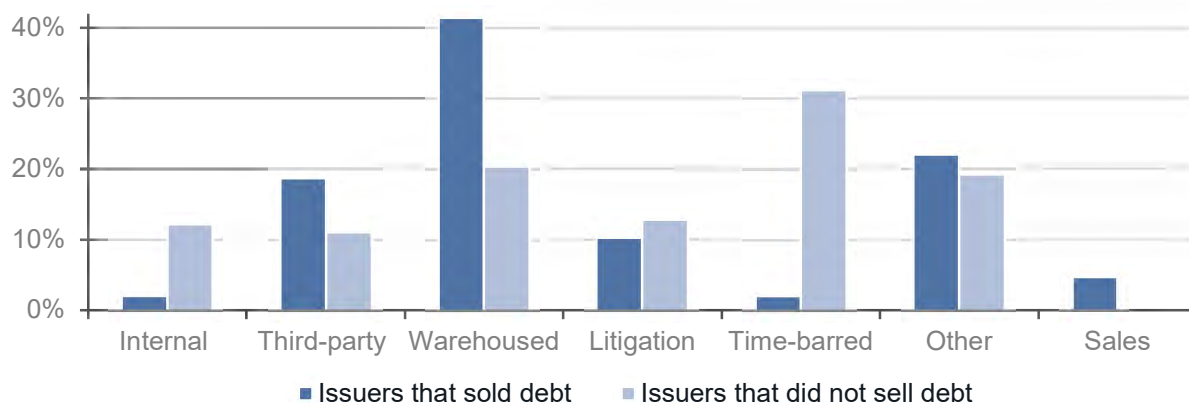
## **DEBT SALE VOLUME**

Fewer than half of issuers surveyed sold debt in 2019 and 2020, and these issuers were the same ones that reported selling debt in the Bureau's 2017 and 2019 Reports. Issuers that reported that they did not sell debt in 2019 and 2020 also indicated that they have no plans to do so in 2021. A majority of issuers that sold debt during 2020 reported that they planned to sell roughly the same amount as in prior years while a minority of the issuers reported planning for a lower percentage of debt to be sold in 2021 compared to 2020. In general, issuers that planned to reduce their debt sale in 2021 are expecting lower delinquencies and losses. The survey respondents that sold debt in 2020 indicated that they planned to sell between 38 percent and 50 percent of their freshly-charged-off debt in 2021 at an expected average price ranging from \$0.10 to \$0.12 per dollar of debt.

Issuers that sold debt in 2019 and 2020 reported that in that period, roughly 5 percent of total post-charge-off inventory was sold to debt buyers. Figure 4 compares the distribution of total post-charge-off inventory by recovery channel for issuers that did and did not sell debt in 2019 and 2020. Issuers that did not sell debt kept a greater portion of their post charge-off balances in the internal recovery channel. All issuers held a significant share of debt in the warehouse category though sellers kept relatively higher percentages at any given time, perhaps, awaiting ad hoc sales decisions. It appears that those issuers who sell debt do so well before accounts reach time-barred status as the share of post charge-off inventory in time-barred status is much lower (2 percent) compared to the share (31 percent) for those who do not sell.

<sup>274</sup> See 2017 Report, *supra* note 6, at 327.

**Figure 8:** SHARE OF CHARGED-OFF BALANCE INVENTORY BY CHANNEL FOR ISSUERS THAT DID AND DID NOT SELL DEBT (MMI)<sup>275</sup>



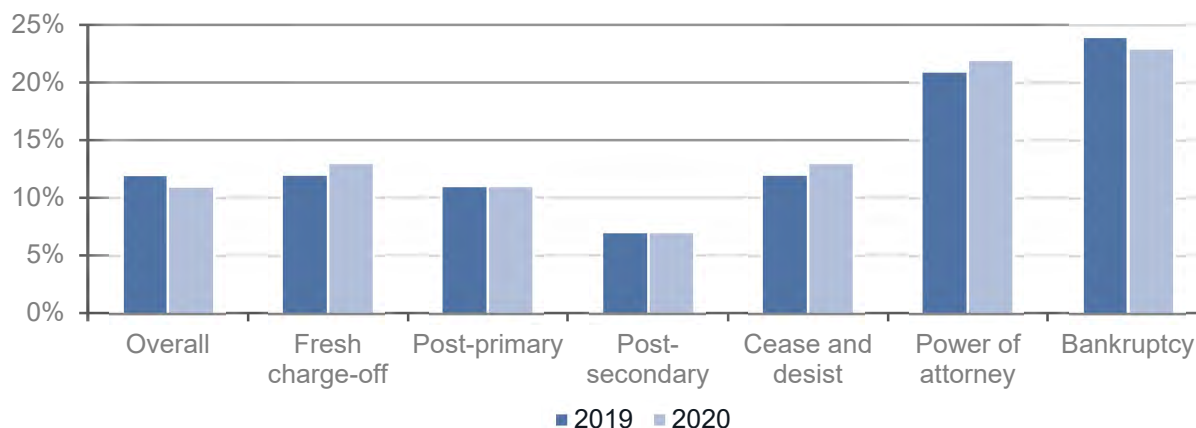
### DEBT PRICE

The overall average price of debt decreased from 12 percent to 11 percent of face value between 2019 and 2020. Figure 9 shows the average price of debt by type. Charged-off debt generally sells for a fraction of the account balance owed or “face value,” at a price largely dependent upon the age of the debt. Additionally, certain special segments of debt, such as accounts for which the issuer has received notice of bankruptcy, may command higher prices. The price of bankruptcy accounts may be above the overall average price of debt sold because the buyer may be able to recover a larger portion of the debt by filing proofs of claim as part of the bankruptcy process. However, the price of freshly-charged-off debt increased from 12 percent to 13 percent of face value over the same period. The price of freshly-charged-off debt is now three percentage points lower than its previous high of 16 percent reported in 2016.<sup>276</sup>

<sup>275</sup> Bars represent the average share of total charged-off balance inventory in each of the five recovery channels. The issuers provided the share of balances placed in each channel by quarter as of the end of the quarter for 2019 and 2020. The distributions for 2019 and 2020 were averaged by issuer, and then averaged across issuers that sold debt and issuers that did not sell debt. “Other” category includes accounts in Probate and Bankruptcy statuses.

<sup>276</sup> See 2017 Report, *supra* note 6, at 329.

**Figure 9:** AVERAGE PRICE OF DEBT SOLD AS A PERCENTAGE OF ACCOUNT BALANCE BY TYPE OF DEBT SOLD (MMI)



Debt sold after one or more placements fetched lower prices (11 percent for post-primary and 7 percent for postsecondary and beyond). Accounts where the collector received a request to cease and desist communications were priced at 13 percent in 2020 while accounts with power of attorney on file sold at much higher price (22 percent in 2020). Accounts in for which there was a chapter 13 bankruptcy notice sold for a significantly higher price of 23 percent in 2020 compared to a 14 percent price received in 2018, suggesting higher expected recoveries from such accounts.

### DEBT SALE CONTRACTS

All survey respondents that sold debt reported that they provide buyers with key documents and account information at the time of sale, including the account's last 12 statements, amount and date of the last account payment, etc. After the debt is sold, issuers reported that they may provide additional documentation at the buyer's request, including cardholder agreements, written applications, affidavits, and earlier account statements. While most issuers who sold debt reported that debt buyers do not pay a fee to access these documents, a minority reported charging a fee to provide additional documentation.

All surveyed issuers that sold debt also stated that they send out "goodbye" letters to the cardholder. These letters inform borrowers of the sale and provide the name and contact information of the buyer.



Contractual restrictions imposed on buyers by all surveyed issuers that sold debt are generally consistent with OCC Bulletin 2014-37, and include:<sup>277</sup>

- Restrictions on resale of the debt, which is limited to special circumstances (*e.g.*, the buyer exiting the market);
- Restrictions on buyers' ability to litigate purchased accounts; and
- Prohibitions on litigation by buyers on debt that is past the statute of limitations.

Debt sale contracts generally do not restrict debt buyers from reporting to credit reporting agencies. Instead, the contracts require that the buyer adhere to all Fair Credit Reporting Act requirements.

## 6.4 Litigation

As of 2020, all surveyed issuers reported using litigation strategies for both pre- and post-charge-off accounts, although only a minority of issuers reported initiating litigation proceedings prior to charge-off. According to the Bureau's current survey, issuers may select accounts for litigation based on factors such as account balance and estimated likelihood of payment (indicated by the presence of assets and employment income). All issuers in the survey that litigated credit card debt reported that they used an external network of attorneys. A minority of issuers also reported that they leverage an internal attorney network to execute their litigation strategies. As observed in the Bureau's 2017 and 2019 Reports, a few issuers noted that they may litigate accounts upon notification that a consumer is working with a debt settlement company.

All issuers that litigated debt reported that the volume of new balances placed in the litigation channel declined significantly during the survey period, with year-over-year decline ranging from nearly 5 to 49 percent across issuers. These declines came mainly in the second and third quarters of 2020 in response to pandemic-related developments including court closures. Since

<sup>277</sup> See Office of the Comptroller of the Currency, *Consumer Debt Sales - Risk Management Guidance*, OCC Bulletin 2014-37 (Aug. 4, 2014), <http://www.occ.gov/news-issuances/bulletins/2014/bulletin-2014-37.html>.

then, issuers have increased litigation volume, though not up to pre-pandemic levels. For issuers that used the litigation channel, litigated balances as a percentage of total post-charge-off inventory ranged from a low of five percent to a high of 24 percent. Survey respondents generally selected higher-balance accounts from their portfolios for litigation, with average litigated account balances ranging from \$2,700 to \$12,300 across issuers during the current survey period, compared to average pre-charge-off balances ranging from \$940 to \$5,800.

### **DEFAULT JUDGMENTS**

A default judgment is a ruling in favor of the plaintiff collector when the defendant consumer has failed to respond to a summons or to appear in court. More than half of the issuers that use litigation as a strategy did not report default judgments separately. However, respondents who do track default judgments separately reported that more than 69 percent of all judgments entered were default judgments. This ratio was consistent with the Bureau's previous reports and remained relatively flat between 2017 and 2020 among issuers who reported default judgments separately.<sup>278</sup>

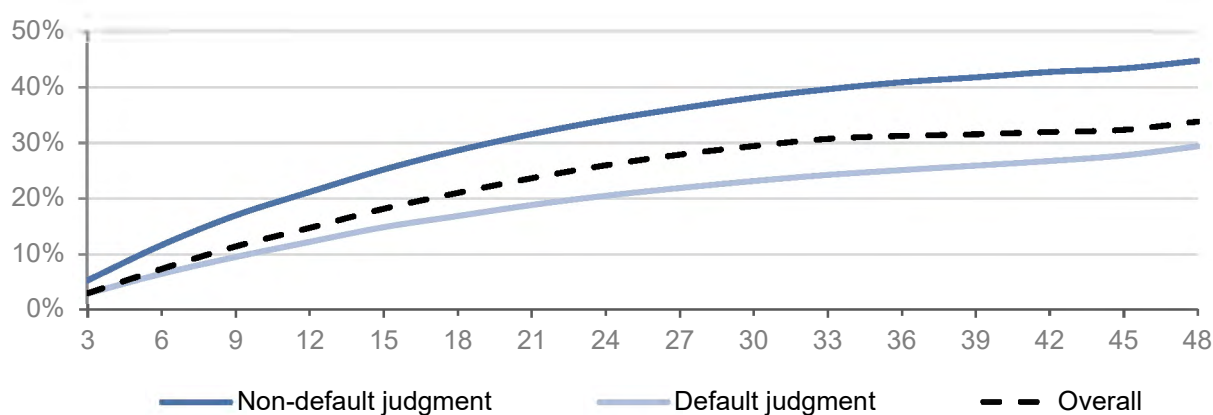
### **LITIGATION RECOVERY**

After a creditor has won a judgment on a litigated account, recovery may occur over a prolonged period. To recover the debt, the issuer may exercise a wage garnishment against the debtor or ask the debtor to enroll in a payment plan. Thus, litigation generally produces a steady stream of recoveries from accounts with judgments against them, spread over a longer time period that may span several years. Figure 10 shows the cumulative recovery rate by months since judgment for vintages of accounts where a judgment was obtained between 2017 and 2020. Issuers recovered an average of 34 percent of all judgment balance at 48 months since the judgment was received, the longest performance window captured in the survey). The average four-year cumulative recovery rate for accounts with judgments was twice the overall four-year cumulative recovery rate for all charged-off accounts (compare with Figure X). Accounts with judgments may have higher cumulative recovery rates because issuers disproportionately litigate more accounts with a higher ability to repay, which depends on borrowers' assets, employment, and other income. Cumulative recoveries from judgment accounts increased steadily over time as

<sup>278</sup> See 2017 Report, *supra* note 6, at 326.

each vintage aged and a consistent flow of payments were applied to the account. Accounts with default judgments generally had lower cumulative recovery rates than those with non-default judgments (29 percent compared to 45 percent at 48 months since judgment).

**Figure 10:** CUMULATIVE RECOVERY RATES BY MONTHS SINCE JUDGMENT WAS RECEIVED (MMI)



## 6.5 Credit card debt collection during COVID-19

COVID-19 brought significant disruption to credit card issuers.<sup>279</sup> Issuers responded to these disruptions and related pressures in varying ways, entailing both operational changes as well as (at least temporary) changes to debt collection policies, procedures, and practices.

In response to various state and federal restrictions including stay-at-home orders and other business restrictions, all card issuers reported migrating from on-site to work-from-home arrangements for their collections operations. Some issuers reported temporarily closing several brick-and-mortar collections operations sites due to state and local restrictions. All issuers adopted remote monitoring of these work-from-home agents, while implementing added information security measures, such as restrictions on printing documents at home from

<sup>279</sup> For a broader discussion of the impact of COVID-19 on credit card issuers and their response to the pandemic, see Section 5.5.

employer-provided computers. While issuers allowed remote work as a temporary response to the pandemic, many issuers indicated that they would continue to provide work-from-home options to at least some employees on a permanent basis. The Bureau's supervisory prioritized assessments also identified similar responses by debt collectors.

Issuers noted an uptick in inbound call volumes, especially in the second quarter 2020, from impacted consumers seeking relief.<sup>280</sup> Issuers deployed several tactics to meet this increased demand, including increasing hiring, reducing outbound calls, further leveraging digital channels, encouraging consumers to use self-servicing options on their interactive voice-response (IVR) platforms, and online enrollment into consumer relief programs. At least some issuers reported that some of these measures may be made permanent.

Pursuant to COVID-19, many issuers suspended placing accounts with third parties in states where there were various state-mandated debt collections restrictions, including making outbound calls. Many issuers also paused legal collection efforts, such as lawsuits, judgments, garnishments, and bank levies, in response to various state restrictions and court-closures. While many issuers reported resuming filing new lawsuits starting in the second half of 2020, some still have not restarted new wage garnishments as of December 2020 and bank levies due to the difficulties in identifying the source of stimulus funds in consumer's bank account.

In addition to offering the existing suite of short-term and long-term hardship programs, all issuers reported offering some version of a skip-a-pay program with varying lengths.<sup>281</sup> Some issuers reported expanding proactive settlement offer campaigns, along with lowering the settlement threshold by five to 10 percent, in order to accommodate pandemic-impacted consumers. All issuers reported modifying their agency-placement recall strategy to accommodate non-payment due to enrollment in pandemic related hardship programs. All issuers reported adhering to CARES Act credit reporting requirements by ensuring that accounts that meet the terms of various accommodation programs did not advance from their current level of delinquency while enrolled in those programs.

<sup>280</sup> For more on call volumes and wait times, *see* Section 5.5.

<sup>281</sup> *See* section 5.5 for more information on issuer relief programs.

Those issuers who used debt sales as part of their recovery strategy reported adjustments to the timing and volume of sales in response to the pandemic. A minority of issuers who sold debt reported temporarily suspending sales in states with various restrictions on debt collections. These issuers also reported receiving generally lower prices for sold debt during initial period of the pandemic. Issuers who sold debt generally report that both sales volume and prices recovered fully to pre-pandemic levels by the end of 2020.

## 7. Innovation

The Bureau's Congressional mandate to review the credit card marketplace specifically instructs the agency to "assess card product innovation."<sup>282</sup> As noted in the 2019 Report, consumer and provider access to digital technology continues to affect the design and offering of consumer credit products and change the ways in which consumers obtain and use credit cards.

This section covers some recent developments in more detail. Section 7.1 reviews new products and developments in the credit card market since the 2019 Report, including the growth of certain point-of-sale lending products. Section 7.2 discusses consumer adoption of innovative technologies, particularly those that have seen rapid growth as a result of COVID-19.

### 7.1 Product innovation

The Bureau's statutory mission includes facilitating innovation in markets for consumer financial products and services.<sup>283</sup> Since issuing the 2019 Report, the Bureau has observed, and in some cases directly facilitated, the development and expansion of new products and features in the credit card market. Some of these innovations implicate a broad array of regulatory

<sup>282</sup> 15 U.S.C. § 1616(a)(4)(D) (2012). Congress established the Bureau's statutory purpose as ensuring that all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive. *See* 12 U.S.C. 5511(a) (2012). The Bureau's objective includes exercising its authorities for the purpose of ensuring that markets for consumer financial products and services operate transparently and efficiently to facilitate access and innovation. *See* 12 U.S.C. 5511(b)(5) (2012).

<sup>283</sup> *See* 12 U.S.C. § 5511(b)(5).

provisions that card issuers working in this space must navigate carefully. In general, recent innovations fall in and into three categories:

- Credit access and availability, particularly for less creditworthy borrowers;
- Fixed-payment features and non-card 'buy-now-pay-later' point-of-sale credit products, and
- Other innovations, including virtual cards and new forms of rewards redemption.

## 7.1.1 Credit access and availability

Recent innovations have opened new options for thin-file or credit invisible borrowers to acquire credit cards and build or repair their credit history.<sup>284</sup> These new offerings leverage a number of innovative approaches, including the use of new types of data to facilitate underwriting as well as new types of product structures and features. In some cases, these new offerings make use of consumer authorized access to account data held at other institutions.<sup>285</sup> Consumer authorized access to account data supports the collection of cash flow information used in underwriting by some creditors.<sup>286</sup>

<sup>284</sup> Kenneth P. Brevoort et al., *Data Point: Credit Invisibles*, Bureau of Consumer Fin. Prot. (May 2015), [http://files.consumerfinance.gov/f/201505\\_cfpb\\_data-point-credit-invisibles.pdf](http://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf). The Bureau estimates 26 million U.S. adults lack sufficient data to generate a typical credit bureau score, either because they do not possess any reported credit history or because their credit history is limited or stale.

<sup>285</sup> The Bureau is considering a rulemaking to implement section 1033 of the Dodd-Frank Act to address the availability of consumer financial account data in electronic form. In November 2020, the Bureau released an Advance Notice of Proposed Rulemaking (ANPRM) concerning consumer data access to implement section 1033, accepting comments until early February 2021. The Bureau is reviewing comments received in response to the ANPRM and considering those comments in assessing potential next steps. Bureau of Consumer Fin. Prot., *Spring 2021 Rulemaking Agenda* (June 11, 2021), <https://www.consumerfinance.gov/about-us/blog/spring-2021-rulemaking-agenda/>.

<sup>286</sup> Consumer authorized access to account data also supports several other provider use cases such as identity verification, authentication, and facilitation of payments and disbursements.

Some providers are offering new types of secured credit cards to consumers lacking credit scores or credit files.<sup>287</sup> For example, issuer Varo Bank introduced a credit card which reserves the amount spent from a linked bank account to ensure users never miss a payment. According to Varo, the card is aimed at consumers seeking to establish or improve their credit score.<sup>288</sup> Similarly, fintech provider Chime offers a secured credit card that features a variable spending limit based on the amount the consumer places in its secured account, without requiring a credit check.<sup>289</sup> Another example is fintech provider Self, which offers a secured credit card to borrowers of its credit builder installment loan who allocate a portion of their secured loan funds to the secured credit card account without requiring a credit check or additional deposit.<sup>290</sup>

As noted above, some recent credit card innovation has occurred at least in part due to Bureau engagement. One such example relates to a proposed design for a secured credit card offered by issuer Synchrony Financial. Pursuant to an application by Synchrony, in 2020 the Bureau issued a compliance assistance sandbox (CAS) approval order to Synchrony Financial regarding their proposal to develop a “dual-feature credit card” (DFCC) designed for consumers with limited or damaged credit history.<sup>291</sup> Synchrony’s application describes a process whereby a card would be provided to consumers as a secured card with a required security deposit but may become eligible to be converted to an unsecured card following 12 months of satisfactory repayment activity. Unlike a typical secured card, the terms of both secured use and unsecured use would

<sup>287</sup> The 2017 Report discusses secured credit cards in more detail, including the potential for secured credit cards to facilitate thin- or no-file consumers’ efforts to build or rebuild their credit profiles. *See* 2017 Report, *supra* note 6, Section 6.

<sup>288</sup> Varo Bank, *Varo Bank Introduces Varo Believe, a New and Better Way for Millions of Americans to Build Credit* (Feb. 25, 2021), [https://www.varomoney.com/press\\_release/varo-bank-introduces-varo-believe-a-new-and-better-way-for-millions-of-americans-to-build-credit/](https://www.varomoney.com/press_release/varo-bank-introduces-varo-believe-a-new-and-better-way-for-millions-of-americans-to-build-credit/).

<sup>289</sup> Chime. *Chime Credit Builder*, <https://www.chime.com/credit-builder/>.

<sup>290</sup> Self, *Introducing the Self Visa Credit Card*, <https://www.self.inc/visa-secured-credit-card>.

<sup>291</sup> Bureau of Consumer Fin. Prot., *Consumer Financial Protection Bureau Issues Approval Order to Facilitate the Use of Dual Usage Credit Cards* (Dec. 30, 2020), <https://www.consumerfinance.gov/about-us/newsroom/consumer-financial-protection-bureau-issues-approval-order-to-facilitate-the-use-of-dual-usage-credit-cards/>. *See also* Bureau of Consumer Fin. Prot., *Policy on the Compliance Assistance Sandbox* (Sept. 10, 2019), [https://www.consumerfinance.gov/documents/7989/cfpb\\_final-policy-on-cas.pdf](https://www.consumerfinance.gov/documents/7989/cfpb_final-policy-on-cas.pdf).



be disclosed at the opening of the “dual-feature credit card” account. The terms would then be redisclosed with the opportunity to ‘opt in’ to unsecured use. Synchrony applied for a CAS approval order because the product structure of the DFCC raised questions about the applicability of existing law both to Synchrony’s disclosure of the two modes of use and to the substance of the envisioned graduation mechanism. The Bureau is monitoring the consumer impact of this product through data Synchrony provides on a quarterly basis.

Other providers have introduced novel structures or features into their credit card offerings for borrowers with limited credit history. For example, in 2020 fintech TomoCredit introduced a credit card that does not require applicants to have a credit score. The card has a mandatory seven-day automatic payment mechanism designed to allow users to build credit without carrying a balance.<sup>292</sup> Further, Acima, a subsidiary of rent-to-own retailer Rent-A-Center, announced a “lease-to-own” payments card for credit constrained customers that can be used to complete lease transactions at participating Acima merchants for certain purchases.<sup>293</sup>

Additionally, Apple announced a feature called “Apple Card Family” that would allow partners and families to build a shared credit history.<sup>294</sup> Apple states that the card can be shared or merged by eligible spouses or partners over age 18 as co-owners. Eligible co-owners must have an Apple device with the latest version of iOS that supports Apple Card and meet all other eligibility requirements for Apple Card. Parents can also share their card with children over 13 years of age with optional spending limits and controls (like ‘authorized users’), but co-owners are responsible for repayment. Payment history is furnished to the credit bureaus for co-owners as well as other users who ‘opt in’ to credit reporting. Existing Apple Card users can also merge their accounts, creating a credit line with a higher shared limit while keeping the lower APR of the two accounts.

<sup>292</sup> See TomoCredit, Frequently Asked Questions, <https://tomocredit.com/faq>.

<sup>293</sup> BusinessWire, *Acima Unveils Industry’s First Lease-to-Own Anywhere Virtual Payments Card* (Apr. 14, 2021), <https://www.businesswire.com/news/home/20210414005272/en/Acima-Unveils-Industry%E2%80%99s-First-Lease-to-Own-Anywhere-Virtual-Payments-Card>.

<sup>294</sup> Apple Inc., Press Release, *Apple introduces Apple Card Family, enabling people to share Apple Card and build credit together* (Apr. 20, 2021), <https://www.apple.com/newsroom/2021/04/apple-introduces-apple-card-family-enabling-people-to-share-apple-card-and-build-credit-together/>.

About 10 of the largest U.S. banks will collaborate to share data on customers' deposit accounts as part of an initiative to extend credit to thin-file or credit invisible borrowers.<sup>295</sup> The banks will use bank account data from other financial institutions to help underwrite credit card applications from borrowers who may have insufficient credit history. The collaboration began through a project launched by the OCC in 2020 called Project REACH, or the Roundtable for Economic Access and Change and is designed to help banks lend to individuals who do not have credit scores but are financially responsible.

Credit access expansion can be positive but should be done responsibly and in a way that is understandable to consumers. In its 2019 Report, the Bureau discussed the potential of new technology in underwriting, such as machine learning and alternative data, to expand credit access.<sup>296</sup> The Bureau's market monitoring indicates use of these technologies has continued to grow since 2019, including in the offering of consumer credit cards.<sup>297</sup> However, published

<sup>295</sup> See Peter Rudegeair et al., JPMorgan, *Others Plan to Issue Credit Cards to People With No Credit Scores*, Wall St. J. (May 13, 2021), <https://www.wsj.com/articles/jpmorgan-others-plan-to-issue-credit-cards-to-people-with-no-credit-scores-11620898206>.

<sup>296</sup> See 2019 Report, *supra* note 6, at 182. The Bureau also issued a joint statement with four other federal financial regulatory agencies on the use of alternative data in underwriting. Bureau of Consumer Fin. Prot., *Federal Regulators Issue Joint Statement on the Use of Alternative Data in Credit Underwriting* (Dec. 2019), <https://www.consumerfinance.gov/about-us/newsroom/federal-regulators-issue-joint-statement-use-alternative-data-credit-underwriting/>.

<sup>297</sup> For example, a fintech startup called Deserve launched a digital-only credit card which uses machine learning and alternative data in its underwriting. Another credit card company called Petal uses alternative data in its underwriting. Petal recently spun off underwriting unit in an effort to market its alternative data underwriting services to other lenders. Zachary Miller, *'Financial providers need actionable insights, not raw data': Credit card company Petal spins off B2B data unit, Prism Data*, Tearsheet (Apr. 27, 2021), <https://tearsheet.co/data/financial-providers-need-actionable-insights-not-raw-data-credit-card-company-petal-spins-off-b2b-data-unit-prism-data/>; Businesswire, *Deserve Launches Digital First Card on Mastercard Network for Mobile-First Experience* (Apr. 28, 2021), <https://www.businesswire.com/news/home/20210428005653/en/>. The Bureau understands that in many cases, data to support such alternative data-powered underwriting is procured via consumer-permissioned data access, a subject of the Bureau's recent Advance Notice of Proposed Rulemaking on "Consumer Access to Financial Records." 85 FR 71003 (Nov. 6, 2020).

findings from a New York Department of Financial Services investigation describe common consumer confusion related to the use of these technologies.<sup>298</sup>

## 7.1.2 Buy now, pay later loans

In recent years, the market and reach of certain point-of-sale lending products — widely referred to as “buy now, pay later” (“BNPL”) loans — have grown significantly and now may compete with credit cards at both the online and the physical point of sale.<sup>299</sup> BNPL lenders such as Affirm, Klarna, and Afterpay offer consumers the opportunity to “split” a purchase into a number of installments at the point-of-sale of merchant partners. Consumers generally repay BNPL loans through debit and credit cards, typically by automatic repayment. In the 2019 Report, the Bureau noted that “[s]ome of these products have shown rapid growth—and attracted calls for more regulatory attention—in foreign markets.”<sup>300</sup> Since that time, the popularity of BNPL has continued to grow, both abroad and in the United States. One market observer estimates that U.S. BNPL lending jumped from \$3 billion in 2019 to \$39 billion in

<sup>298</sup> The NY DFS noted these findings in its investigation of allegations of discrimination against women in the underwriting of the Apple Card, issued by Goldman Sachs. That investigation noted consumer misconceptions regarding credit underwriting for people with shared finances and a lack of transparency in the explanations of credit decisions presented to consumers. The investigation also noted a six-month waiting period on responses to credit decision appeals. New York State Dept. of Fin. Serv., *Report on Apple Card Investigation* (Mar. 2021), [https://www.dfs.ny.gov/reports\\_and\\_publications/202103\\_report\\_apple\\_card\\_investigation](https://www.dfs.ny.gov/reports_and_publications/202103_report_apple_card_investigation). Currently, federal law mandates that lenders explain only credit denials to applicants, not the reasons for the amount and terms of credit granted. In response to the perceived lack of transparency, Goldman introduced new consumer education tools explaining what factors are used in setting credit terms and providing step-by-step instructions that consumers can complete to become eligible for the Apple Card. See Apple Inc., *Designed to support your financial health*, <https://www.apple.com/apple-card/financial-health/>.

<sup>299</sup> Estimates for the size of the entire BNPL market vary. However, some of the largest BNPL lenders saw significant growth in 2020. For example, Afterpay financed over \$9.8B in loans in North America during the second half of 2020, up 106 percent year-over-year. By the end of 2020, Afterpay had 8.1M active North American users, up 127 percent Year-over-year. Similarly, Klarna reached 14M U.S. consumers by the end of 2020, up 115 percent Year-over-year. See *Afterpay*, *ASX Announcements* (2021), <https://corporate.afterpay.com/investors/asx-announcements#>. See also *Klarna*, *Annual financial statement release* (2021), <https://www.klarna.com/assets/2021/02/25062747/Annual-Financial-Statement-Release-Klarna-Bank-AB-publ-2020-Final.pdf>.

<sup>300</sup> 2019 Report, *supra* note 6, at 177.

2020, and will exceed \$100 billion annually within three years.<sup>301</sup> BNPL lending has also continued to attract regulatory attention (as well as calls for further regulatory attention) domestically and internationally.<sup>302</sup> BNPL providers are among the growing number of non-banks that utilize consumer-authorized access to account data to deliver their service. Access to information from consumer accounts at financial institutions is used by BNPL providers for several purposes, including to verify consumer information and to facilitate payments.

The increased pace of adoption of BNPL has been partially attributed to COVID-19, during which many consumers shifted spending online.<sup>303</sup> This shift presented an opportunity for retailers partnering with financial companies to offer BNPL at digital point of sale—the primary channel by which the product is offered.

<sup>301</sup> Brian Riley, *Buy Now, Pay Later: Gaining Scale and the Disrupting Status Quo in Lending*, Mercator Advisory Grp. (May 07, 2021), <https://www.mercatoradvisorygroup.com/Reports/Buy-Now-Pay-Later-Gaining-Scale-and-the-Disrupting-Status-Quo-in-Lending/>.

<sup>302</sup> For example, The U.K. announced that BNPL credit agreements would be regulated by the Financial Conduct Authority, the country's financial regulator. In Sweden, new rules were passed which would discourage online shoppers from paying with credit—including BNPL products. In California, BNPL lenders have come under scrutiny from state regulators for making loans without state lending licenses. Press Release, CA Dep't of Fin. Prot. and Innovation, *Point-of-Sale Lender QuadPay Agrees to Cease Illegal Loans, Pay Refunds in Settlement with the California Department of Business Oversight* (Apr. 22, 2020), <https://dbo.ca.gov/2020/04/22/point-of-sale-lender-quadpay-agrees-to-cease-illegal-loans-pay-refunds-in-settlement-with-the-california-department-of-business-oversight/>; Press Release, CA Dep't of Fin. Prot. and Innovation, *Point-of-Sale Lender Sezzle Agrees to Cease Illegal Loans, Pay Refunds in Settlement with the California Department of Business Oversight* (Jan. 16, 2020), <https://dfpi.ca.gov/2020/01/16/point-of-sale-lender-sezzle-agrees-to-cease-illegal-loans-pay-refunds-in-settlement-with-the-california-department-of-business-oversight/>; Ketharaman Swaminathan, *Sweden bids to steer customers away from installment payments amid fears over mounting debt*, Finextra (July, 02, 2021), <https://www.finextra.com/newsarticle/36141/sweden-bids-to-steer-customers-away-from-installment-payments-amid-fears-over-mounting-debt>.

<sup>303</sup> Peter Rudegeair et al., *Covid-19 Economy Boosts 'Buy Now, Pay Later' Installment Services*, Wall St. J. (Dec. 30, 2020), <https://www.wsj.com/articles/covid-19-economy-boosts-buy-now-pay-later-installment-services-11609340400>; Stuart Condie, *'Buy Now Pay Later' Is Having a Moment as Pandemic Changes Shopping Habits*, Wall St. J. (July 11, 2020), <https://www.wsj.com/articles/buy-now-pay-later-is-having-a-moment-as-pandemic-changes-shopping-habits-11594459800>.

The extent to which BNPL competes directly with credit cards — either as a means of payment for consumers’ purchases or as a means of purchase financing — is unclear.<sup>304</sup> While BNPL loans are offered at the point-of-sale to facilitate quick extensions of credit and likely capture some volume from other payment methods like credit cards, it is possible that a portion of BNPL volume comes from *de novo* sales originating from the availability of BNPL itself.

Certain key differences between BNPL loans and credit cards may present risks to consumers. Unlike credit card providers, BNPL lenders are not required to consider ability to repay before extending credit.<sup>305</sup> Additionally, BNPL loans may not provide the same disclosures as other types of consumer credit.<sup>306</sup> BNPL late fees are not associated with specific regulations like credit card late fees, and BNPL users do not have the same billing error resolution procedures that are available to credit card users.

Traditional credit card issuers are investing in more ways to offer their own “fixed-payment” features, possibly in response to BNPL’s explosive growth. In the 2019 Report, the Bureau discussed fixed-payment features offered on some credit cards which utilize a card’s existing line

<sup>304</sup> A recent consumer survey appeared to indicate that consumers view BNPL as a potential alternative to credit cards. In that survey, 62 percent of respondents said that BNPL could replace their credit cards, but only 27 percent would like for that to happen. See Maurie Backman, *Study: Buy Now, Pay Later Services Continue Explosive Growth*, *Motley Fool* (July 20, 2020), <https://www.fool.com/the-ascent/research/buy-now-pay-later-statistics/>. Furthermore, not all card issuers support BNPL transactions. Capital One blocked its customers from using its credit cards to pay off BNPL loans, citing risks associated with BNPL transactions. See Byron Kaye, *Capital One stops 'risky' buy-now-pay-later credit card transactions*, *Reuters* (Dec. 07, 2020), <https://www.reuters.com/article/us-capital-one-fin-payments-idCAKBN28H0OR>.

<sup>305</sup> BNPL loans that are structured as zero-interest loans of four payments or less typically are not reported to credit bureaus. As a result, users can potentially “stack” BNPL loans across different providers, leading to potential situations in which consumers may face difficulty repaying one or many loans. There is some evidence that BNPL loans pose a risk of overextension. In Australia, a country where the market for BNPL loans is mature and the product is well-established in the consumer financial ecosystem, the country’s financial regulator found that BNPL users with credit cards were much more likely to be revolvers than other credit card users. Additionally, survey data showed that 20% of BNPL users cut back on essentials and 15% took out additional credit to make BNPL payments. Austrl. Sec. & Inv. Comm’n, *REP 672 Buy now pay later: An industry update* (Nov. 16, 2020), <https://asic.gov.au/regulatory-resources/find-a-document/reports/rep-672-buy-now-pay-later-an-industry-update/>.

<sup>306</sup> For BNPL loans that are structured as zero-interest loans of four payments or less, some providers state that they do not meet the TILA definition of “creditor” and therefore do not have to provide TILA disclosures. Some BNPL loans are structured as longer-term installment loans; these loans are subject to TILA and other requirements.

for a repayment plan that is separate from payments made towards the revolving feature in the account.<sup>307</sup> American Express's "Plan It" feature was recently added to the point of sale of American Express's travel website.<sup>308</sup> Alliance Data Systems acquired a BNPL provider and partnered with financial services provider Fiserv to enable point-of-sale lending products for merchants using Fiserv's merchant acquiring services.<sup>309</sup> Synchrony Financial announced plans to offer a short-term installment loan product to its retail partners in late 2021.<sup>310</sup> Barclays also announced a partnership with a BNPL provider to offer "white-label" point-of-sale financing options to merchants.<sup>311</sup>

Two card networks are developing capabilities to facilitate point-of-sale lending options. Visa is piloting 'Visa Installments,' a four-payment installment solution that will allow issuers to streamline merchant integration at the merchant's digital POS.<sup>312</sup> Visa Installments turns already-approved credit lines into installment payment options for Visa cardholders. The pilot program involves TSYS, the first issuer technology partner to offer Visa's new solution enabling participating financial institutions to offer installment plans to their cardholders. Similarly, Mastercard announced it would develop installment capabilities with TSYS to deliver installment capabilities to issuers, who could then offer installment solutions to Mastercard

<sup>307</sup> See 2019 Report, *supra* note 6, at 177-179.

<sup>308</sup> Previously, "Plan It" was only available retroactively for card purchases that were already made.

<sup>309</sup> PR Newswire-Alliance Data, *Alliance Data's Bread To Enable Point-of-Sale Lending for Fiserv Merchant Clients* (Apr. 9, 2021), <https://www.prnewswire.com/news-releases/alliance-datas-bread-to-enable-point-of-sale-lending-for-fiserv-merchant-clients-301279942.html>, PR Newswire-Alliance Data, *Alliance Data Completes Acquisition of Bread* (Dec. 4, 2020), <https://www.prnewswire.com/news-releases/alliance-data-completes-acquisition-of-bread-301186414.html>.

<sup>310</sup> See Polo Rocha, *Synchrony's new 'Pay in 4' loan borrows from buy now/pay later upstarts*, *American Banker* (Sep. 9, 2021), <https://www.americanbanker.com/news/synchronys-new-pay-in-4-loan-borrows-from-buy-now-pay-later-upstarts>.

<sup>311</sup> Barclays, *Barclays US Consumer Bank Expands Point-of-Sale Financing Suite to Include Installment Options Powered by Amount* (Apr. 27, 2021), <https://www.prnewswire.com/news-releases/barclays-us-consumer-bank-expands-point-of-sale-financing-suite-to-include-installment-options-powered-by-amount-301277216.html>.

<sup>312</sup> See PYMNTS, *Visa Launches Visa Installments Pilots in the US* (July 14, 2020), <https://www.pymnts.com/digital-payments/2020/visa-launches-visa-installments-pilots-in-the-us/>.



cardholders.<sup>343</sup> In 2019, Mastercard acquired Vyze, a POS platform that connects merchants with multiple lenders.<sup>344</sup> Through Vyze, merchants can connect with lenders and consumers can access those credit options both in-store and online.

The Bureau continues to monitor the developing market for new forms of point-of-sale financing, both those offered independently from and in conjunction with credit card products, in order to ensure consumers are adequately informed about financial offerings, that consumers are protected from risky practices, and that markets continue to provide consumer-friendly innovation and competition.

### 7.1.3 Other innovations

Card issuers and other financial services companies continue to innovate in ways that aim to attract or serve consumers. For example, several card issuers now offer instant issuance of credit cards upon approval.<sup>345</sup> Some card issuers also offer virtual credit card features which allow users to transact on their main credit card account through a separate, unique credit card number. Generally, users can limit a virtual card number to a specific merchant, transaction, or dollar amount. According to card issuers, virtual cards can help reduce fraud and give users more control over their online spending.<sup>346</sup> In 2019, Mastercard announced its “True Name”

<sup>343</sup> See Mastercard, *Mastercard Expands Installment Offerings Through Global Partnerships, Empowers More Consumers to Choose When to Pay with Pre-Sale, Point of Sale, and Post-Sale Payment Options* (Sept. 2, 2020), <https://investor.mastercard.com/investor-news/investor-news-details/2020/Mastercard-Expands-Installment-Offerings-Through-Global-Partnerships-Empowers-More-Consumers-to-Choose-When-to-Pay-with-Pre-Sale-Point-of-Sale-and-Post-Sale-Payment-Options/default.aspx>.

<sup>344</sup> See PYMNTS, *Mastercard buys POS Financing Provider Vyze* (Apr. 15, 2019), <https://www.pymnts.com/mastercard/2019/acquisition-vyze-pos-financing/>.

<sup>345</sup> After approval, Users can add a new credit card to their digital wallets, access their card number through a bank’s website or mobile app, or—in some cases, for private label cards—receive a scannable barcode to use at the retailer associated with the card. Barclays, *Barclays US Consumer Bank Expands Point-of-Sale Financing Suite to Include Installment Options Powered by Amount* (Apr. 27, 2021), <https://www.prnewswire.com/news-releases/barclays-us-consumer-bank-expands-point-of-sale-financing-suite-to-include-installment-options-powered-by-amount-301277216.html>.

<sup>346</sup> See, e.g., Capital One, *Virtual Numbers*, <https://www.capitalone.com/applications/eno/virtualnumbers> and Citibank, *Virtual Account Numbers*, <https://www.cardbenefits.citi.com/Products/Virtual-Account-Numbers>.

initiative, which permits cardholders to use their preferred name instead of their legal name on credit and debit cards, a common issue for transgender and gender non-binary individuals whose preferred names may differ from their legal ones.<sup>317</sup> Two major card-issuing banks announced they have implemented this feature.<sup>318</sup> Lastly, Venmo, a digital payments platform with a social media component owned by PayPal, introduced a credit card imprinted with a QR code which users can scan to activate their card or allow others to scan to send or request funds through Venmo.<sup>319</sup>

The Bureau continues to note ongoing innovation in rewards programs, which are central to how many credit card products are marketed to consumers. These innovations include delivering rewards value in new forms. For example, at least three providers—SoFi, BlockFi, and Gemini—have announced plans to offer credit card rewards redeemable for virtual currencies.<sup>320</sup> Another provider allows users to pay rent through their card without additional fees and redeem rewards for a down payment on a home.<sup>321</sup> Additionally, SoFi allows credit card rewards to be

<sup>317</sup> See Mastercard, *Who we are*, <https://www.mastercard.us/en-us/vision/who-we-are/pride.html>, last accessed Aug. 23, 2021).

<sup>318</sup> Citigroup, *Citi Launches “True Name” Feature With Mastercard Across the U.S.* (Oct. 19, 2020), <https://www.citigroup.com/citi/news/2020/201019a.htm>; <https://www.bmoharris.com/main/personal/true-name/>.

<sup>319</sup> PYMNTS, *Venmo Launches Credit Card Featuring User QR Codes* (Oct. 5, 2020), <https://www.pymnts.com/news/payment-methods/2020/venmo-launches-credit-card-featuring-user-qr-codes/>.

<sup>320</sup> BlockFi Blog, *Join the Waitlist for the World’s First-Ever Bitcoin Rewards Credit Card*, BlockFi Blog (Dec. 1, 2020), <https://blockfi.com/bitcoin-card-crypto-rewards>. Tyler Winklevoss, Gemini Blog, *Gemini to Offer Credit Card with Crypto Rewards*, Gemini Blog (Jan. 14, 2021), <https://www.gemini.com/blog/gemini-to-offer-credit-card-with-crypto-rewards>. In 2014, the Bureau issued a consumer advisory, warning consumers about the risks of virtual currencies such as Bitcoin. *See supra* note 159.

<sup>321</sup> The provider, Bilt Technologies Inc., says it will mail landlords paper checks on behalf of the tenant (and card user) and then charge the renter’s credit card account with no additional fee. Will Parker, *Renters Could Collect Home Down-Payment Points With Credit Card*, Wall St. J. (Updated June 25, 2021), <https://www.wsj.com/articles/renters-could-collect-home-down-payment-points-with-credit-card-11624356000>.



redeemed for repayment of other non-card debt held by SoFi, including SoFi Student Loan Refinance and SoFi Personal Loans.<sup>322</sup>

## 7.2 Consumer adoption of innovative technologies

Consumer adoption of innovative technologies related to credit card payments and account servicing continued to grow over 2019 and 2020 and was likely accelerated by COVID-19. Pandemic-driven concerns around the use of cash or touching a payment terminal appeared to further the digital evolution at the point of sale, driving enablement and adoption of contactless payment methods such as “tap and pay” and digital wallets.<sup>323</sup>

### 7.2.1 Digital servicing tools

Consumer enrollment in digital account servicing grew at least partially in response to some of the disruptions caused by the pandemic. For example, bank branch closures, shortened hours, postal service delays, or social distancing may have further incentivized consumers to use online or mobile tools to check balances or cash a check more frequently than in pre-pandemic periods. Difficulty reaching customer service representatives by phone due to call center adjustments may have led consumers to try virtual assistants to meet their needs.<sup>324</sup> Data show that despite the pandemic, some cardholders continue to interact with banks via traditional non-digital channels, but the trend toward adoption of digital servicing overall indicates these cardholders

<sup>322</sup> SoFi, *Once my SoFi Points are redeemed into a SoFi Personal Loan payment, when and how can I expect the payment to be applied?* <https://support.sofi.com/hc/en-us/articles/360051403531-Once-my-points-are-redeemed-into-a-SoFi-Student-Loan-Refinance-payment-when-and-how-can-I-expect-the-payment-to-be-applied> (last visited Aug. 17, 2021).

<sup>323</sup> Telis Demos and Dan Gallagher, *Is This the Year You Finally Stop Swiping Your Credit Card? The pandemic has accelerated usage of ‘contactless’ payments in U.S. stores. The ultimate winners from this transition remain far from certain*, Wall St. J. (Aug. 4, 2020), <https://www.wsj.com/articles/is-this-the-year-you-finally-stop-swiping-your-credit-card-11597397428?PostID=18397976>.

<sup>324</sup> For more information regarding call center volume, see Section 5.5.

increasingly represent a minority. This section uses MMI data to examine how consumers use digital account servicing platforms—online account servicing portals (online portals) and mobile apps.

### **ONLINE BANKING AND MOBILE APPS**

Basic account servicing features are found in almost all online banking portals and mobile apps. Cardholders can review transactions (and dispute fraudulent ones), make payments, transfer balances, request cash advance PINs, activate new cards, request replacement cards, download full account statements, receive information about other card benefits, add or remove an authorized user from their accounts, inform their issuer of upcoming travel, report a card lost or stolen, change their account's due date, or send and read messages to and from account servicing professionals or chat with them in real-time.<sup>325</sup>

In recent years, the Bureau has noted additional functionality related to mobile apps, including card freezing, management of recurring card payments, additional card usage controls, and interactive digital interfaces for card balance payments.<sup>326</sup> Many of these service features likely proved particularly useful to some during the pandemic, as many banks closed branches or limited operating hours, and customers experienced longer call wait times. To assist with longer wait times, card companies have introduced AI-powered chatbots to navigate and execute digital account management functions and make transactions.<sup>327</sup> User engagement with these chatbots rose significantly through the pandemic.<sup>328</sup> Chatbots provide an alternative method of accessing the apps' features in addition to providing higher-order functionality, such as responding to questions about spending patterns. Cardholders can use voice or text to direct a chatbot to search for certain transactions, display basic account information, add an authorized user,

<sup>325</sup> See 2019 Report, *supra* note 6, at 173.

<sup>326</sup> See 2019 Report, *supra* note 6, at 172.

<sup>327</sup> Dawn Allcot, *Artificial Intelligence is Changing Credit Cards and Banking*, Bankrate.com (Feb. 4, 2019), <https://www.bankrate.com/credit-cards/artificial-intelligence-banking-credit-card-rewards/>.

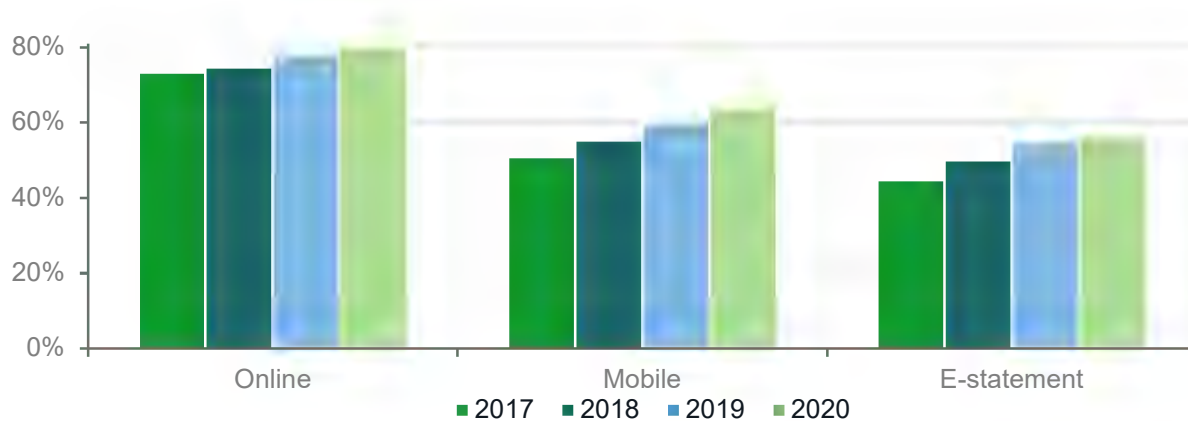
<sup>328</sup> One such chatbot, Bank of America's virtual assistant 'Erica,' saw engagement jump 67 percent year-over-year to 17.2 million users in the fourth quarter of 2020. Rachel Green, *Bank of America ends 2020 with rising digital engagement despite squeezed margins*, Business Insider (Jan. 20, 2021), <https://www.businessinsider.com/bofa-q4-earnings-missed-mark-but-digital-engagement-rose-2021-1>.

summarize and plot monthly spending, or send alerts for upcoming bills, among other options. Many chatbots are responsive to both voice and text, with voice recognition requiring an additional layer of technology.

Digital engagement is growing consistently across all age groups and nearly every platform type. The share of people electing to receive statements digitally (e-statements) rather than by mail is continuing to increase, though the pace of adoption growth tapered in 2020. E-statement adoption has been surpassed by mobile app adoption as a method to engage with banks.

Figure 1 shows the share of active mass market credit card accounts enrolled in issuers' online portals and/or mobile apps.<sup>329</sup> As of 2020, 80 percent of active accounts are enrolled in online portals for general purpose cards, with increases across all age groups. That share is significantly higher than the 55 percent the Bureau reported as of 2014.<sup>330</sup>

**Figure 1:** SHARE OF ACTIVE ACCOUNTS ENROLLED IN ONLINE PORTAL, MOBILE APPS, AND RECEIVING ONLY E-STATEMENTS, GENERAL PURPOSE (MMI)



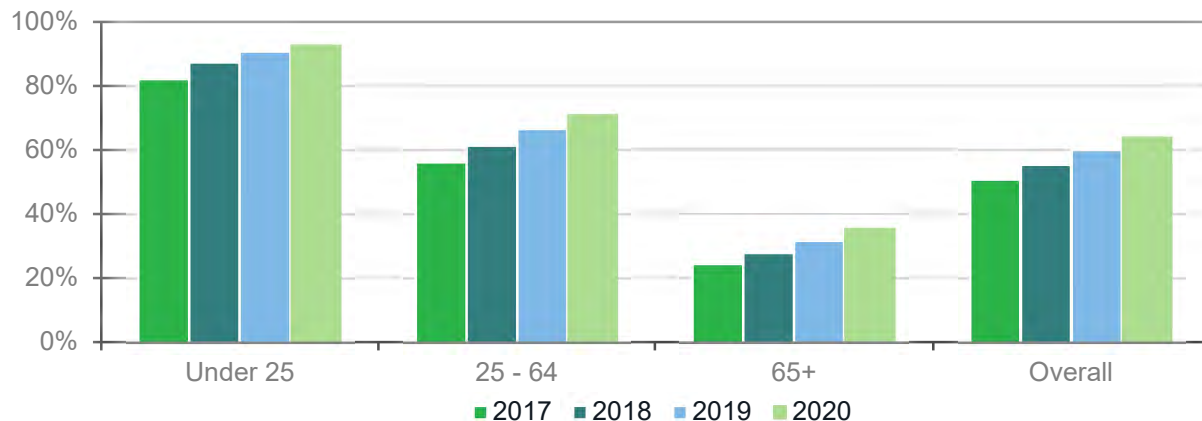
Also noteworthy is the rise in the share of accounts enrolled in mobile apps, which has more than doubled in only five years, from 30 percent in 2015 to 64 percent in 2020. Mobile app adoption is more common among younger consumers but increases in adoption can be seen

<sup>329</sup> A consumer may be enrolled in an online portal and may also have the mobile app. In fact, some issuers require online enrollment before mobile app use can be engaged.

<sup>330</sup> 2015 Report, *supra* note 6, at 133.

across all age groups. In 2020, 93 percent of active accounts held by consumers under age 25 were enrolled in the issuer's mobile app. For consumers between the ages of 25 and 64, and over 65, mobile enrollment share was 71 percent and 36 percent, respectively. Overall, the Bureau expects the trend toward increasing mobile app adoption to continue.

**Figure 2:** SHARE OF ACTIVE ACCOUNTS ENROLLED IN MOBILE APPS BY AGE, GENERAL PURPOSE (MMI)



### ELECTRONIC STATEMENTS

As the Bureau noted in 2019, the share of people electing to receive statements digitally (e-statements) rather than by mail is continuing to increase significantly. The number of mass market accounts that receive only e-statements from their issuer has risen over the last five years and in 2020 was 56 percent. While electronic statements can be a convenient way to access account information, it is important consumers review electronic statements as thoroughly as they would paper statements.

As discussed in Section 2.4.3, a sizeable but declining portion of consumers still rely on paper to manage their accounts. Americans above age 65 tend to rely more on paper, with 21 percent choosing to make a paper payment in the last cycle of 2020, compared to 4 percent for ages 25-64. These findings generally align with the lower adoption rate of digital servicing tools among older Americans discussed earlier. As one commenter noted, paper statements remain an important mechanism to prompt payment for many consumers, particularly lower-income

families, and those without access to broadband internet, which includes 55 percent of Americans 65 years or older.<sup>331</sup>

## 7.2.2 Physical point-of-sale

In the 2019 Report, the Bureau identified three significant developments at the point-of-sale which provided greater speed, security, or convenience for consumers and merchants: elimination of signature requirements for EMV “chip” card transactions; near-field communication (NFC) acceptance at the physical POS, which supports the mobile wallet technologies and applications incorporated into most smartphones used by American consumers; and contactless card issuance and adoption. Since 2019, the popularity of contactless payments (both through contactless cards and NFC mobile wallets) has continued to grow, aided by health concerns about physical contact during COVID-19.

The increasing availability of contactless cards and terminals, coupled with pandemic-driven anxiety around high-touch surfaces, drove consumer adoption of contactless payments during the pandemic.<sup>332</sup> Visa and Mastercard reported approximately 40 percent year-over-year global growth in tap-to-pay or contactless transactions in the first quarter of 2020.<sup>333</sup> By the third quarter of 2020, contactless transactions accounted for over 40 percent of in-person

<sup>331</sup> “[W]e again urge the CFPB to protect the right and ability of consumers who want to keep receiving paper disclosures and billing statements by mail. Credit card issuers and other banks have aggressively pushed consumers to receive these important documents via electronic delivery but, as documented in our report *Paper Statements: An Important Consumer Protection*, these efforts can be harmful to consumers.” See NCLC Comment Letter, at 21. See also Chi Chi Wu and Lauren Saunders, *Paper Statements: An Important Consumer Protection* (Mar. 2016), [http://www.nclc.org/images/pdf/banking\\_and\\_payment\\_systems/paper-statements-banking-protections.pdf](http://www.nclc.org/images/pdf/banking_and_payment_systems/paper-statements-banking-protections.pdf).

<sup>332</sup> A study conducted by Forrester and the National Retail Federation and released in mid-2020 found that 58 percent of surveyed retailers accept contactless card payments, up from 40 percent the prior year. The same survey found that 67 percent of retailers surveyed now accept some form of no-touch payment. See National Retail Federation, *Coronavirus leads to more use of contactless credit cards and mobile payments despite cost and security concerns* (Aug. 6, 2020), <https://nrf.com/media-center/press-releases/coronavirus-leads-more-use-contactless-credit-cards-and-mobile-payments>.

<sup>333</sup> See Telis Demos & John Gallagher, *Is This the Year You Finally Stop Swiping Your Credit Card?*, Wall St. J. (Aug. 14, 2020), <https://www.wsj.com/articles/is-this-the-year-you-finally-stop-swiping-your-credit-card-11597397428?PostID=18397976>.

transactions globally for both Visa and Mastercard.<sup>334</sup> In a survey conducted in the third quarter of 2020, nearly half of respondents said the pandemic prompted them to use contactless payments more often or for the first time.<sup>335</sup> In the last several years, the number of retail locations supporting NFC mobile wallets and contactless cards has grown significantly – over 70 percent of face-to-face transactions in the U.S. now occur at a contactless-enabled merchant location.<sup>336</sup> Card issuers are also accelerating plans for contactless distribution.<sup>337</sup>

In late 2020 and early 2021, both Visa and Mastercard announced services which would allow businesses of any size to turn any Android smartphone or tablet into a contactless payment acceptance device without any additional hardware.<sup>338</sup> The features could allow merchants to more easily accelerate the transition to contactless payments by providing a method for

<sup>334</sup> Chris Reid, Mastercard: “In 2020Q3, contactless transactions represented 41% of in-person purchases globally (up 30% year-over-year)” at Card Forum 2021, Mar. 16, 2021. Visa 2020 10-K, at 8; U.S. Sec. & Exch. Comm’n, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 (Nov. 19, 2020), <https://d18rnop25nwr6d.cloudfront.net/CIK-0001403161/0504ac14-a3a0-4506-9352-aa15cd087268.pdf>.

<sup>335</sup> See S&P Global, *451 Research: 2020 Year-In-Review Infographic*, S&P Market Intelligence Blog (Feb. 17, 2021), <https://www.spglobal.com/marketintelligence/en/news-insights/blog/451-research-2020-year-in-review-infographic>.

<sup>336</sup> For example, in early 2017, several years after its launch, Apple Pay was accepted at 36 percent of retail locations. As of early 2019, Apple reported that Apple Pay is accepted at 65 percent of retail locations. Retailers that support Apple Pay also support other mobile wallets such as Google Pay. See Press Release, Apple, *Apple Pay coming to Target, Taco Bell and more top US retail locations* (Jan. 22, 2019), <https://www.apple.com/newsroom/2019/01/apple-pay-coming-to-target-taco-bell-and-more-top-us-retaillocations>. See also Juli Clover, *Apple Pay Now Supported by 36% of Merchants in the United States*, MacRumors (Feb. 7, 2017), <https://www.macrumors.com/2017/02/07/apple-pay-36-percent-united-states/>. In its 2020 Annual Report, Visa reported that more than 70 percent of face-to-face transactions at checkout in the U.S. occur at a merchant that has the ability to accept contactless payment, and more than 80 of the top 100 merchants by transactions are enabled for tap to pay. (2020 Visa 10-K, at 8)

<sup>337</sup> See Payments Journal, *Card networks have stepped up their contactless distribution* (Jan. 6, 2021), <https://www.paymentsjournal.com/card-networks-have-stepped-up-their-contactless-distribution/>. See also Section 5.5.

<sup>338</sup> See Press Release, Mastercard, *Mastercard Pioneers Cloud Tap on Phone, its First Pilot of Cloud Point of Sale (POS) Acceptance Technology* (Jan. 11, 2021), <https://www.mastercard.com/news/press/2021/january/mastercard-pioneers-cloud-tap-on-phone/>; John Adams, *MOBILE POINT-OF-SALE: Visa debuts in-phone card acceptance as contactless takes off* (Oct. 21, 2020), <https://www.paymentsource.com/news/visa-debuts-in-phone-card-acceptance-as-contactless-takes-off>.

contactless payment acceptance without requiring a terminal. Mastercard's service is in pilot; Visa's service is expected to roll out in the U.S. in 2021.

Challenges to further adoption of contactless payments remain. There are several competing digital wallet networks and some retailers do not accept some major wallets. For a contactless transaction through a digital wallet to work, the retailer needs to accept both the digital wallet and the card stored in the digital wallet.<sup>339</sup> Additionally, many mobile phones utilize facial recognition for authentication, which is hampered by masks, often mandated in store locations.<sup>340</sup> Furthermore, some retailers have not upgraded their POS systems to accept contactless EMV transactions.<sup>341</sup> Finally, some consumers are reluctant to adopt contactless payments. One survey showed that, when asked, only one-third of respondents who reported they have a contactless card said they use tap-and-pay frequently to make purchases.<sup>342</sup>

For consumers who adopt mobile wallets, certain potential risks remain. For example, one commenter suggested that consumers who initiate card-on-file transactions through a mobile

<sup>339</sup> AnnaMaria Andriotis, *Apple Pay Offers Germ-Free Shopping—If Only We Could Figure Out How it Works*, Wall St. J. (Jan. 27, 2021), <https://www.wsj.com/articles/apple-pay-offers-germ-free-shopping-if-only-we-could-figure-out-how-it-works-11611771110>.

<sup>340</sup> An Apple software update (iOS 14.5 beta) provides a potential workaround for the issue of facial recognition with a mask for users who also use an Apple Watch. When a user raises their phone to their face to unlock it and the user is wearing an Apple Watch, the watch will communicate with the phone to unlock it. Lauren Goode, *The iPhone's Face ID Will Soon Work With a Mask—if You Have an Apple Watch* (Feb. 2, 2021), <https://www.wired.com/story/iphone-face-id-mask-ios-beta/>.

<sup>341</sup> A study conducted by Forrester and the National Retail Federation (cited earlier in this report) found that 58% of surveyed retailers accept contactless card payments, indicating some runway for further adoption by merchants. In addition, a survey indicated that a third of gas stations were likely to miss their extended deadline of April 2021 to upgrade EMV-enabled POS systems. *See supra* note 332, and Ted Rossman, *Deadline approaches for gas stations to upgrade to EMV chip technology* (Mar. 22, 2021), <https://nrf.com/media-center/press-releases/coronavirus-leads-more-use-contactless-credit-cards-and-mobile-payments>. The negative impact of COVID-19 on small businesses in particular could reduce the incentive and resources such businesses have to improve their point-of-sale systems.

<sup>342</sup> The authors of the paper which describes the survey's results cite a number of potential reasons for this hesitancy: 1) consumers who have the tool are not adopting it, 2) The conversion of cash may not be as high as hoped, and 3) consumers need a push to break their payment habits. *See* Tom Akana and Wei Ke, *Contactless Payment Cards: Trends and Barriers to Consumer Adoption in the U.S.*, Fed. Rsv. Bank of Philadelphia (May 2020), <https://www.philadelphiafed.org/-/media/frbp/assets/consumer-finance/discussion-papers/dp20-03.pdf>.

wallet may not be aware of the way their data are being collected and used. In this example, a consumer initially “registers” their payment credentials with a merchant. When the consumer uses a mobile wallet instead of a credit card to initiate a card-on-file transaction, the wallet can create a token with the merchant, which is then used to facilitate future transactions. Once established, the token directs all future transactions with that merchant through the mobile wallet—even though the wallet may not appear prominently (or at all) in the transaction flow. Consumers may not realize that the wallets will continue to collect data.<sup>343</sup>

<sup>343</sup> See letter from Akerman to Wei Zhang (Markets) re: *CFPB CARD Act Study of Credit Card Market* (June 10, 2021).



## APPENDIX A: SUPPORTING FIGURES

**Figure 1:** FEDERAL FUNDS RATE COMPARED TO WSJ PRIME RATE (WSJ, FEDERAL RESERVE)<sup>344</sup>



<sup>344</sup> Fed. Rsrv. Bank of Fed. Reserve Bank of St. Louis, *Effective Federal Funds Rate*, <https://fred.stlouisfed.org/series/fedfunds> (last visited July 11, 2021); Wall St. J., *Market Data Center*, <https://www.wsj.com/market-data/bonds/moneyrates> (last visited July 11, 2021).

## CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing *Indiana Office of Utility Consumer Counselor Public's Exhibit No. 4 Testimony of OUCC Witness Brian R. Latham* has been served upon the following counsel of record in the captioned proceeding by electronic service on July 11, 2024.

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