

Data Point: Checking Account Overdraft at Financial Institutions Served by Core Processors

Data Point No. 2021-11

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1. Introduction and Summary

This Data Point describes practices and outcomes at several thousand credit unions and banks in 2014 regarding the payment of debit transactions¹ that exceed a consumer’s account balance (commonly known as “overdraft”).² While the data underlying the report are from a few years ago and may not always reflect current practices and outcomes, to our knowledge, these are the most detailed and wide-ranging quantitative data the Bureau or others have collected on overdraft practices at small institutions.

This publication complements earlier publications produced by the Consumer Financial Protection Bureau (“Bureau”) about consumer checking account overdraft programs. A large part of our 2013 White Paper³ and our 2014 and 2017 Data Points⁴ focused on overdraft practices and outcomes at a number of large banks (“large study banks”) under the Bureau’s supervisory authority.⁵ Those publications summarized aggregated and anonymized transaction-level data from the large study banks.⁶ In contrast, the vast majority of financial institutions (FIs) covered in this Data Point have assets under \$10 billion.

In order to understand and assess risks and benefits to consumers from overdraft programs, the Bureau studied how the policies that influence consumer outcomes related to overdraft vary across the broader market, including at FIs with assets under \$10 billion. Given the large number of smaller institutions (of the over 12,000 FIs in the United States, more than 99% had

¹ A debit transaction is any transaction that, if paid, decreases a checking account’s balance.

² Alternatively, a financial institution may decline the debit transaction or return it unpaid due to non-sufficient funds.

³ CFPB, 2013, [“CFPB Study of Overdraft Programs: A White Paper of Initial Data Findings.”](#)

⁴ Trevor Bakker, Nicole Kelly, Jesse Leary, Éva Nagypál, 2014, [“Checking Account Overdraft.”](#) CFPB Data Point; and David Low, Éva Nagypál, Leslie Parrish, Akaki Skhirtladze, Corey Stone, 2017, [“Frequent Overdrafters.”](#) CFPB Data Point.

⁵ The Bureau has supervisory authority over large banks and credit unions with assets over \$10 billion, as well as their affiliates. See 12 U.S.C. § 5515(a).

⁶ Those data cover the January 2011 through June 2012 time period. Note when comparing the findings of those publications to this Data Point that the data in this report cover a later time period. Also, there are differences between the findings using the aggregated data in the 2013 White Paper and the transaction-level data in the 2014 and 2017 Data Points, partly due to methodological differences, such as the exclusion of inactive accounts.

assets under \$10 billion during the period covered⁷), “core processors”⁸ who offer deposit, payment, and data processing services to these FIs were viewed to be uniquely positioned to provide information efficiently and effectively on the overdraft programs of smaller FIs. In 2015, the Bureau collected anonymous institution-level information from several core processors about overdraft program configurations, fee revenue, and consumer overdraft use across credit unions and banks of various asset sizes for a 12-month time period predominantly covering 2014. The data obtained informed us about overdraft at 3,904 FIs maintaining 30 million consumer checking accounts. We generally refer to these FIs as the “core processor sample” and the data collected about these FIs as “the dataset.” This report contains findings derived from the core processor sample.

It should be noted that the findings presented in this Data Point are limited to the FIs whose data were obtained in 2015 through our request to the core processors who used these processors on an outsourced basis. While the sample represents 25.4% of credit unions and 58.0% of banks offering checking account services, it may not be representative of small institutions overall. Moreover, the findings are based on information provided by the core processors on how their services were configured at the direction of their client FIs. Thus, we are not reporting information directly obtained from the FIs themselves.

Overall, we document substantial variation in the policies reported for the FIs in the core processor sample. This variation notwithstanding, it is notable that on average FIs with an overdraft program in the dataset derived similar amounts in annual overdraft revenue per account as the large study banks examined in our earlier reports. Specific key findings from our analysis are as follows:⁹

Findings for the core processor sample:

- In the dataset, nearly all (92.9%) of the banks had an overdraft program, while such programs were less common among credit unions, with 60.9% of them having one.

⁷ National Credit Union Administration (NCUA) and Federal Financial Institutions Examination Council (FFIEC) Call Reports, 2014 quarter 4.

⁸ Core processor companies provide operations and accounting systems to banks and credit unions. Among other services, these systems generally perform deposit and payments processing and maintain account balances. Smaller FIs generally find it more economical to use platforms developed by third parties, such as core processor companies, bankers’ banks, correspondent banks, or corporate credit unions, than to develop their own systems.

⁹ Some of the terms used in this section may not be familiar to readers not acquainted with overdraft and transaction processing. Definitions of all terms used and sources are provided in the main text.

Among FIs with an overdraft program, overdraft decisions were predominantly automated.

- FIs with an overdraft program often had policies in place to waive fees in certain circumstances. For the observed banks, this was typically done by waiving fees when an account was overdrawn by a small amount or the transaction overdrawing the account was small (*de minimis* policies) or by having a daily cap on the number of fees that could be incurred. For the observed credit unions, fee waivers were more commonly offered through forgiveness periods during which consumers could deposit funds after an overdraft transaction to avoid an overdraft fee.
- Credit unions and banks in the dataset had a variety of decisioning policies that affected overdraft. Specifically:
 - When deciding whether to authorize or decline an ATM or debit card transaction, virtually all FIs in the dataset considered an account's available balance. To determine whether to pay or return a debit transaction that was not already authorized, observed credit unions nearly uniformly (99.5%) used an account's available balance, while observed banks were somewhat split between using available and ledger balance (45.2% vs. 54.8%). Correspondingly, virtually all observed credit unions used available balance to determine whether to charge an overdraft or non-sufficient funds (NSF) fee, while observed banks were split between using available and ledger balance.
 - About a third of observed FIs made funds received through electronic direct deposit available for a consumer's use generally before the settlement date, with the share of banks that did so increasing with asset size.
 - Over 90% of observed credit unions and over 60% of observed banks limited the amount by which an account could be overdrawn, either with a common limit for any eligible account or with a specific limit set for each account individually. The prevalence of individualized limits increased with asset size.
- Observed credit unions and banks also had a range of practices regarding the order in which they posted transactions. This ordering may have impacted the number of overdraft fees incurred if an account became overdrawn. Specifically,
 - Banks in the dataset predominantly processed a day's transactions grouped by transaction type after the close of business each day ("nightly batch processing"),

while credit unions in the dataset most often used a combination of intraday posting and nightly batch processing. Correspondingly, credit unions in the dataset were more likely to charge intraday overdraft fees.

- While the posting of credits before debits was the prevalent practice among all observed FIs, it was more common at banks than at credit unions in the dataset.
- Almost two-thirds of observed credit unions but less than a quarter of observed banks posted debits chronologically when transaction timestamps were available.
- Ordering transactions by size was more common among banks in the dataset than among credit unions. Observed banks that ordered transactions by size were nearly evenly split between those that ordered largest to smallest and those that ordered smallest to largest.
- Most observed FIs with an overdraft program offered consumers the option to link their checking account to a savings or credit account to cover transactions that would otherwise result in a negative balance. The data received from the core processors indicate that the share of consumers linking their checking account to either a savings or a credit account at the observed banks and the share of consumers linking to a credit account at the observed credit unions was generally under 10%. However, about 70% of checking accounts at the credit unions in the sample were linked to savings accounts.

Findings with comparison to large bank practices and outcomes:

- Consumers could opt in per Regulation E to accept overdraft fees on automated teller machine (ATM) and one-time debit card transactions at about two-thirds of observed FIs with an overdraft program. The share of consumer checking accounts in our dataset identified to have opted in at the FIs with this option was 29.9% at credit unions and 20.2% at banks. In comparison, the share of checking accounts opted in at the large study banks offering this option was 19.4%.¹⁰
- Per-item overdraft fees at the FIs in the dataset were lower than the average overdraft fee among 44 of the nation's 50 largest banks during the same time period (\$34.05), with an average fee of \$27.64 at observed credit unions and \$29.55 at observed banks.

¹⁰ As noted in Footnote 6, the data for the large study banks and for the core processor sample cover different time periods, so they are not exactly comparable.

- The distribution of the annual number of overdraft fees across consumers at the FIs served by the core processors was similar to that at the large study banks: overdraft fees were concentrated among a relatively small share of accounts that incur over 10 fees in a year (3.2% and 2.4% at the observed credit unions and banks versus 2.9% at the large study banks).
- Credit unions with an overdraft program in the dataset earned \$42.33 in annual overdraft revenue per account on average, while the average annual overdraft revenue per account earned by banks with an overdraft program in the dataset was \$40.37. By comparison, annual overdraft revenue per account at the large study banks (that all have overdraft programs) before and after the application of manual waivers was \$45.21 and \$41.47, respectively.
- Both the incidence of overdraft and overdraft revenues per account largely varied by whether the FI had opt-in, with those that had opt-in charging a higher number of overdraft fees and collecting more in overdraft revenues per account.
- Nearly all FIs in the dataset charged per-item NSF fees if they returned transactions due to non-sufficient funds in a consumer's bank account. Typically, these fees were reported to be the same as the per-item overdraft fee charged at a given FI. Annual NSF revenue per account was reported in the dataset as \$17.05 for credit unions with an overdraft program and \$9.73 for banks with an overdraft program, compared to \$13.27 at the large study banks.
- Nearly three-fifths of banks and about one-fifth of credit unions in the dataset charged sustained negative balance fees when an account remained overdrawn for a specified period of time. Annual revenue per account from these fees across FIs with an overdraft program that charge such fees in the dataset was \$1.77 at observed credit unions and \$4.30 at observed banks, compared to \$6.30 at the large study banks.

The following section provides a description of the data used to derive these results, and the remaining sections outline these findings in greater detail.

2. Data

Core processors provide deposit, payment, and data processing services to FIs. FIs that use core processors can generally configure the core processor software to reflect their policy and processing preferences. Thus, the settings reported by the core processors in our surveys indicate FI processing choices and generally provide an indication of the FI's policies.

In 2015 the Bureau obtained information from core processors regarding these software settings for 4,091 FIs. These data provide insights regarding the overdraft practices and consumer outcomes at these FIs for a 12-month period predominantly covering 2014.¹¹ The data collection consisted of an information request, included as Appendix A to this Data Point, comprising multiple-choice and numeric questions to core processing companies.¹² The survey asked how individual FIs using core processors on an outsourced, online basis (also known as an “application service provider” or ASP model) directed the processors to set configurations to administer their checking accounts and their overdraft program, if any.¹³ In addition, the core processors were asked certain questions related to individual FI's overdraft-related outcomes. The core processors were not asked for and did not provide information that could be used to identify individual FIs using publicly-available data. As a result, the data represent an anonymous survey of the FI clients of the participating core processors.

It is important to note that the core processors in this study did not offer a single product; rather, they each offered a collection of platforms. Combined, the core processors provided data to the Bureau from a total of 26 platforms. These platforms varied significantly in size, with the smallest serving very few FIs and the largest serving hundreds of FIs. Most platforms were specialized by institution charter type: over two-thirds of the platforms served either just credit unions or just banks. Functionality and capabilities varied across platforms. For example, a few platforms didn't have the functionality to offer Regulation E opt-in; however, this limitation did

¹¹ The Bureau requested 12 full calendar months of data, if available. The earliest end of observation period was October 2014 and the latest was June 2015.

¹² The data for this report were obtained from core processors through a request pursuant to Section 1022(c)(1) & (4)(B)(ii) of the Dodd Frank Wall Street Reform and Consumer Protection Act of 2010. For information about privacy protections for these data, see the Bureau's "[Market Analysis of Administrative Data Under Research Authorities Privacy Impact Assessment](#)." Consistent with the Bureau's rules, the data findings presented in this report do not directly or indirectly identify the institutions or consumers involved. See 12 C.F.R. § 1070.41(c).

¹³ The core processors also sell their software to FIs that install and run it on the FI's own systems. The core processors could not provide any information about overdraft in these cases.

not preclude an individual FI from implementing an opt-in program through a separate third-party arrangement or software. Readers should keep such differences in mind when looking at the results.

Of the 4,091 FIs for which we received information, we excluded 187 due to a variety of issues with the data we received.¹⁴ Thus, this report analyzes the remaining 3,904 FIs. We refer to these FIs as the “core processor sample” and the data collected about these FIs as “the dataset” throughout this publication. Table 1 compares the distribution by asset tier of credit unions in the core processor sample (which reports asset tier at a date at or very close to the end of 2014) and those in the National Credit Union Administration (NCUA) Call Reports at the end of 2014 (restricting to credit unions reporting share drafts, *i.e.*, those offering checking account services).¹⁵ The core processor sample has a higher representation of credit unions with assets under \$100 million and does not include many of the larger credit unions with over \$550 million in assets,¹⁶ because, as we show in Appendix B, these larger credit unions were more likely to license and run a core processor’s or other vendor’s software in house or use proprietary solutions for their processing needs. Overall, the core processor sample captures 1,266 of the 4,979 credit unions offering checking account services at the end of 2014, 25.4% of the total.

¹⁴ Twenty-six FIs were excluded for not satisfying the inclusion criteria of being sizable, consumer-facing institutions outsourcing to core processors (*i.e.*, institutions with fewer than 10 consumer deposit accounts, brokerage or asset management institutions, or institutions not receiving services on an outsourced basis were excluded). In addition, 89 FIs were excluded for having been in transition (converting to/from their respective platform, opening/closing, or rapidly expanding or shrinking) since our questions were not designed to capture the dynamics of such transitioning FIs, and 72 FIs were excluded due to the lack of information on critical variables (asset size or number of accounts).

¹⁵ We used the public NCUA and FFIEC Call Report data files provided to us by SNL (www.snl.com). For both credit unions and banks, the asset sizes (and later, revenue figures) in the core processor sample do not necessarily correspond precisely to NCUA and FFIEC Call Report filings. This is for a number of reasons. First, the systems that the core processors pull these measurements from are not necessarily the same ones used for filing Call Reports and differences can exist due to accounting adjustments, differences in accounting periods, etc. Second, the core processors’ relationships with FIs is at times at the individual institution level and at other times at the holding company level so they may be reporting institution-level or holding company-level assets. The asset size from the Call Report is institution-level asset size.

¹⁶ The size standards of the U.S. Small Business Administration indicate that banks and other depository institutions may qualify as small businesses if they have \$550 million or less in assets. See https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf.

TABLE 1: DISTRIBUTION BY ASSET TIER OF CREDIT UNIONS IN THE CORE PROCESSOR SAMPLE AND OF CREDIT UNIONS WITH SHARE DRAFTS IN THE 2014 CALL REPORT DATA

Asset tier	Core processor sample	NCUA Call Report (credit unions with share drafts)
\$100M or less	80.4%	69.7%
\$100M< to \$550M	18.2%	22.0%
\$550M< to \$1B	0.9%	3.8%
\$1B< to \$2B	0.5%	2.8%
\$2B< to \$10B	0.0%	1.7%
More than \$10B	0.0%	0.1%
Total	1,266	4,979

Table 2 compares the distribution by asset tier of banks in the core processor sample and in the Federal Financial Institutions Examination Council (FFIEC) Call Reports at the end of 2014 (restricting to banks with consumer deposit accounts to approximate for banks offering checking account services). The two distributions line up with each other more closely than for credit unions, though once again, larger institutions are underrepresented in the core processor sample. Banks with over \$2 billion in assets made up 7.3% of all banks with consumer deposit accounts but only 3.9%¹⁷ of the core processor sample. Overall, the core processor sample captures 2,638 of the 4,550 banks offering checking account services, 58.0% of the total.

Comparing the asset tier distributions across institution types in the core processor sample, the smallest asset tier (\$100 million or less) contains just under a quarter of all of the banks in the dataset while slightly more than four fifths of observed credit unions belong to this asset tier. Institutions with assets over \$550 million make up 20.1% of the bank sample but only 1.3% of the credit union sample. Only 0.6% of the banks in the dataset had over \$10 billion in assets. The higher representation of banks in the core processor sample means that more than two-thirds of the institutions in the sample are banks, even though there were more credit unions offering consumer checking accounts in the U.S. than banks reporting consumer deposit accounts in 2014.

¹⁷ Numbers reported in the text may not equal the sum of the individual components reported in the tables due to rounding.

TABLE 2: DISTRIBUTION BY ASSET TIER OF BANKS IN THE CORE PROCESSOR SAMPLE AND OF BANKS WITH CONSUMER DEPOSIT ACCOUNTS IN THE 2014 CALL REPORT DATA

Asset tier	Core processor sample	FFIEC Call Report (banks with consumer deposits)
\$100M or less	23.8%	23.3%
\$100M< to \$550M	56.1%	54.0%
\$550M< to \$1B	10.0%	9.7%
\$1B< to \$2B	6.1%	5.8%
\$2B< to \$10B	3.4%	5.2%
More than \$10B	0.6%	2.1%
Total	2,638	4,550

Table 3 shows the number of FIs and accounts in the core processor sample by institution type and asset tier. Overall, the sample consists of about 30 million accounts at over 3,900 institutions. While most FIs in the dataset had \$550 million or less in assets, a majority of accounts were at institutions with assets over \$550 million.

TABLE 3: NUMBER OF INSTITUTIONS AND ACCOUNTS WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union FIs	Credit Union accounts	Bank FIs	Bank accounts
\$100M or less	1,018	2,598,884	627	1,788,796
\$100M< to \$550M	231	2,368,157	1,481	6,318,839
\$550M< to \$1B	11	323,340	264	3,155,608
\$1B< to \$2B	6	169,191	162	5,534,392
\$2B< to \$10B	-	-	89	5,599,730
More than \$10B	-	-	15	2,150,455
Total	1,266	5,459,572	2,638	24,547,820

As can be seen in Table 3 above, there were only 11 credit unions in the \$550 million to \$1 billion asset tier and six credit unions in the \$1 billion to \$2 billion asset tier in the dataset. There were also only 15 banks with more than \$10 billion in assets. These were also the categories for which the share of FIs offering checking accounts that appear in the core processor sample was the lowest. The core processor sample institutions were likely not representative of all credit unions and banks that comprise these asset tiers (*i.e.*, outside of this study). For example, the 15 banks in the dataset with more than \$10 billion in assets had 143,000 accounts on average. This figure

suggests that the banks in the dataset with \$10 billion or more in assets were substantially smaller, on average, than the nation’s very largest banks. Due to the small sample sizes and shares represented, we do not report findings for these categories in subsequent sections of this report, but they are included when calculating overall statistics by FI type.

Table 4 shows the median number of consumer accounts at the end of the observation period at the banks and credit unions in the dataset for each asset tier. Generally, credit unions in the dataset had more consumer accounts than did banks in the dataset of the same asset tier.

TABLE 4: MEDIAN NUMBER OF ACCOUNTS AMONG INSTITUTIONS WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	1,524	1,292
\$100M< to \$550M	8,015	3,330
\$550M< to \$1B	*	9,651
\$1B< to \$2B	*	19,707
\$2B< to \$10B		29,763
More than \$10B		*
Total	2,066	3,143

Note: * indicates small sample size.

There are several caveats to consider about the statistics reported using the core processor sample. First, the sample of credit unions and banks is not necessarily representative of the universe of credit unions and banks, even after controlling for asset tier. This is most obvious in the case of the three categories with a small number of observations identified above, but it may also be true for the other categories. The sample is non-random by construction since the choice of core processor, the choice of whether to use the core processor on an online or in-house basis, and the choice of settings that influence whether a core processor had enough information on an FI to report data were all systematic and were influenced by an institution’s underlying characteristics. For example, the demographic characteristics of a credit union’s membership could vary with the population served by the credit union and correspondingly members may have had varying demand for online and mobile services. This, in turn, could have impacted the credit union’s decision to use a core processor and, if doing so, which core processor to employ. However, as discussed in more detail in Appendix B, the credit unions in the core processor sample were very similar in critical aspects (number of checking accounts, median balances in checking accounts, share providing an overdraft program) to credit unions generally that used

online services from core processors or other vendors. In addition, credit unions using online services were generally similar to credit unions using a core processor's or other vendor's software in-house, although the latter were somewhat larger in terms of assets and membership. These findings suggest that there is not a significant issue with the representativeness of the core processor sample in terms of the observable characteristics examined.

Second, the Bureau neither requested nor obtained direct reports from individual FIs about their overdraft policies, practices, and consumer outcomes. Rather, we have indirect information on these items that we obtained from reports on software configurations at core processors providing services to the FIs. For ease of exposition, we often talk about FI policies and outcomes for consumers with checking accounts, but it should always be kept in mind that these are inferred indirectly through the core processors.

Finally, the data provided by the core processors in response to our information request were extensively reviewed to minimize problems related to inaccurate or inconsistent reporting of FI configurations and outcomes. In some cases, a platform may have provided certain features for client FIs that were not used by those institutions. For example, there are instances where it was reported that a feature, such as linked savings accounts, was used by just a few accounts. As the core processors explained, this often happened when the FI was testing functionality and created test accounts, but the feature was then not actually provided to the FI's customers. When questions were identified as part of this review with respect to the accuracy of the data (for example, where information provided in different fields seemed internally inconsistent or when a particular value provided seemed implausible), Bureau staff consulted with the core processors providing the data and made revisions where appropriate.¹⁸ In addition, we have dropped outliers when calculating certain statistics in circumstances where a small number of

¹⁸ For example, data received by the Bureau could have simple coding errors such as reporting \$0 in overdraft revenue when an institution did not have an overdraft program. In that circumstance, the overdraft revenue would be recoded as N/A (no overdraft program) rather than \$0, which could otherwise be used to calculate an inaccurate average overdraft revenue per account. Some data may also be internally inconsistent. An example of internal inconsistency would be a core processor reporting that a particular FI did not provide opt-in while also reporting a positive number for accounts at that FI that are opted-in.

outliers would otherwise skew our results.¹⁹ Findings that exclude outliers are noted in the relevant sections of this publication.

¹⁹ For example, when reporting annual overdraft revenue per account for banks with opt-in, dropping 5% of outlying observations (2.5% on each side of the distribution) results in observations with less than \$3.47 or more than \$112.44 in annual overdraft revenue per account being dropped. The presence of such outliers is most prevalent when we calculate statistics based on multiple data fields provided by the core processors, such as when we combine total overdraft revenues and total number of accounts to calculate overdraft revenue per account. If the two fields are not comparable (in accounts covered or in time coverage, for example), this could lead to erroneous values. We minimize the influence of such erroneous values by trimming outliers.

3. Overdraft policies

Consumers with checking accounts sometimes initiate debit transactions in amounts that exceed their account balances. When that occurs, FIs may respond in a number of different ways. Many FIs provide consumers with the option to link a savings or credit account to the consumer's checking account. When a consumer has linked an account this way, if there are available funds in the linked savings account or available credit in the credit account, the FI pulls funds from the savings or credit account to cover the debit transaction, often charging a fee for doing so. Alternatively, if the transaction cannot be covered via a linked account, an FI can choose to pay an overdraft when the consumer has insufficient or unavailable funds in the checking account.²⁰ FIs often charge an overdraft fee for paying such a transaction, subject to regulatory constraints. The overdraft fee is typically a fixed amount per transaction. If the institution does not pay the transaction, the transaction is declined or returned, and depending on the type of the transaction and institution policies, the institution may charge an NSF fee. Generally, FIs charge NSF fees for returned checks or ACH transactions but not for declined ATM or debit card transactions.²¹

²⁰ There is no uniform terminology for various overdraft programs, especially since many FIs have branded their overdraft programs with unique names. Regulation E defines an "overdraft service" to mean "a service under which a financial institution assesses a fee or charge on a consumer's account held by the institution for paying a transaction (including a check or other item) when the consumer has insufficient or unavailable funds in the account." 12 CFR 1005.17(a). Broadly, the term "overdraft" is understood to mean any program designed to allow consumers to draw funds or credit from other sources to cover items that otherwise would not clear against a designated checking account. The source could be the institution's discretionary funds or the consumer's own funds in a linked savings account or available credit in a linked credit account. The primary focus of this report is the overdraft program typically provided by FIs for a fixed, per-transaction fee, that draw on the institution's discretionary funds, which we often simply refer to as "overdraft." We will discuss linked accounts in more detail in Section 5.

²¹ Most debit transactions can be categorized as ATM, debit card, check, or ACH transactions. While there are other, less frequent, transaction types (such as cash withdrawals from a teller, wire or online transfers, etc.), for the sake of simplicity, we will refer to these four major types in our discussion when talking about debit transactions.

3.1 Overdraft programs

While overdraft is a common feature of checking accounts, it is not provided by all institutions. In the core processor sample, 60.9% of credit unions and 92.9% of banks had an overdraft program.²² Table 5 shows the share of institutions that had an overdraft program by institution type and asset tier. Overdraft programs appear less prevalent at the smallest institutions in the dataset, especially at credit unions with assets of \$100 million or less.

TABLE 5: SHARE OF INSTITUTIONS WITH AN OVERDRAFT PROGRAM WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	56.5%	89.1%
\$100M< to \$550M	79.2%	92.7%
\$550M< to \$1B	*	96.6%
\$1B< to \$2B	*	98.8%
\$2B< to \$10B		100.0%
More than \$10B		*
Total	60.9%	92.9%

Note: There are 1,266 credit unions and 2,638 banks in the sample, of which 1,265 credit unions and 2,637 banks have information on whether an overdraft program was provided.

* indicates small sample size.

Among institutions in the sample that had an overdraft program, most made overdraft-related decisions (discussed further in Section 3.4) using an automated system. At all observed institutions using automated overdraft, some or all decisions were reviewed and could be overturned manually. As shown in Table 6, only a handful of institutions were reported to perform all overdraft decisioning manually, and these institutions were primarily small.²³

²² Data from the NCUA Call Report profiles at the end of 2014 show that, among all credit unions offering checking account services, 61.1% had an overdraft program.

²³ The information request relied upon the core processors to identify institutions with overdraft programs that only use manual decisioning. However, certain FIs in the data that were reported to use manual decisioning were also reported to provide overdraft on debit card transactions. Debit card network rules require that transaction authorization/declination decisions are made in a near real-time manner, indicating that debit card transaction authorizations, which then may result in an overdraft, are made in an automated fashion. These findings may indicate that the core processors applied a broad definition of “manual decisioning” when providing responses.

TABLE 6: SHARE OF INSTITUTIONS USING EXCLUSIVELY MANUAL OVERDRAFT DECISIONING AMONG THOSE WITH AN OVERDRAFT PROGRAM WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	5.4%	3.6%
\$100M< to \$550M	1.1%	0.8%
\$550M< to \$1B	*	0.0%
\$1B< to \$2B	*	0.0%
\$2B< to \$10B		0.0%
More than \$10B		*
Total	4.2%	1.3%

Note: There are 771 credit unions and 2,450 banks with an overdraft program in the sample, of which 755 credit unions and 2,450 banks have information on overdraft automation.

* indicates small sample size.

3.2 Opt-in

In 2009, the Federal Reserve Board amended Regulation E to regulate the practice of charging overdraft fees on some transactions. Effective July 1, 2010,²⁴ institutions wishing to charge a fee for overdrafts on ATM or one-time debit card transactions are required to obtain affirmative consent; a consumer who does not provide affirmative consent is deemed to have not opted in. While an institution may authorize ATM and one-time debit card transactions that result in a negative balance on accounts that have not opted in, the institution may not assess fees for paying these transactions.²⁵ Consequently, institutions typically decline ATM and one-time debit card transactions on accounts not opted in that have an insufficient balance at the time of authorization.

Table 7 displays the share of institutions with an overdraft program by institution type and asset tier where consumers had the ability to opt in. Consumers had the ability to opt in at close to three-quarters (73.2%) of observed credit unions and at three-fifths (60.7%) of observed banks that had an overdraft program. Among both observed credit unions and banks, larger FIs were more likely to have opt-in than those with smaller asset sizes. While there were institutions that had opt-in on just ATM or one-time debit card transactions (but not both), 99.0% of observed institutions' opt-in regimes covered both ATM and one-time debit card transactions.

²⁴ The amendment was effective August 15, 2010 for existing customers.

²⁵ See 12 CFR 1005.17(b)(1).

TABLE 7: SHARE OF INSTITUTIONS WITH OPT-IN AMONG THOSE WITH AN OVERDRAFT PROGRAM WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	68.5%	48.7%
\$100M< to \$550M	88.2%	59.9%
\$550M< to \$1B	*	71.8%
\$1B< to \$2B	*	80.0%
\$2B< to \$10B		83.0%
More than \$10B		*
Total	73.2%	60.7%

Note: There are 771 credit unions and 2,450 banks with an overdraft program in the sample, of which 564 credit unions and 2,445 banks have information on whether they provided opt-in.

* indicates small sample size.

As Table 8 demonstrates, the share of consumer accounts opted in (“the opt-in rate”) in the dataset was generally higher at credit unions (29.9%) than at banks (20.2%) with opt-in.²⁶ However, the opt-in rate at the smallest banks (with assets of \$100 million or less) in the dataset was similar to the opt-in rate at credit unions. The overall bank opt-in rate in the dataset was quite similar to that for the large study banks that provided the ability to opt in, which stood at 19.4% in 2011-2012.²⁷

²⁶ Note that these are portfolio opt-in rates, *i.e.*, they reflect the share of all accounts that were opted in at the end of the observation period. The core processors did not report information on the opt-in rate of new accounts.

²⁷ This latter number is derived from the monthly account-level data described in the 2014 Data Point but restricted to institutions with opt-in.

TABLE 8: SHARE OF ACCOUNTS OPTED-IN AT INSTITUTIONS WITH OPT-IN WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset Tier	Credit Union	Bank
\$100M or less	30.3%	31.7%
\$100M< to \$550M	32.2%	19.3%
\$550M< to \$1B	*	23.9%
\$1B< to \$2B	*	21.7%
\$2B< to \$10B		14.4%
More than \$10B		*
Total	29.9%	20.2%

Note: There are 413 credit unions and 1,483 banks with opt-in in the sample, of which 413 credit unions and 1,483 banks have information on the share of accounts opted in.

* indicates small sample size.

The opt-in rate among credit unions with opt-in in the core processor sample varied considerably, with a quarter of these credit unions having had opt-in rates of 13.2% or less and a quarter having had opt-in rates of 38.4% or more. Similarly, a quarter of the banks with opt-in in the core processor sample had opt-in rates of 7.8% or less and a quarter had opt-in rates of 28.8% or more.

3.3 Fee waiver policies

Many FIs have policies to waive overdraft and NSF fees under certain circumstances. One example is a *de minimis* policy in which overdraft or NSF transactions are not assessed fees if the transaction amount is below a certain size (a “per-transaction *de minimis* policy”) or if the transaction would result in a negative balance that is less than a specified threshold (a “balance-based *de minimis* policy”). Some institutions also have caps on the number of overdraft and NSF fees that can be assessed in a business day. In addition, some institutions offer a forgiveness period, a time period after the day an overdraft transaction posts during which the consumer may deposit sufficient funds to return the account to a positive balance and avoid being charged an overdraft fee.²⁸

***De minimis* policies**

About one-fifth (20.1%) of credit unions in the core processor sample had some type of *de minimis* policy, although it should be noted that less than 40% of credit unions with an overdraft program had any information on such policies. As detailed further in Table 9, observed credit unions more commonly employed a per-transaction *de minimis* policy rather than a balance-based one. About two-thirds (67.3%) of banks in the dataset were reported to have some type of *de minimis* policy. If offering any *de minimis* policy, banks in the dataset were most likely to employ a combined per-transaction and balance-based *de minimis* policy.

TABLE 9: SHARE OF CREDIT UNIONS AND BANKS BY TYPE OF DE MINIMIS POLICY, IF ANY, AMONG THOSE WITH AN OVERDRAFT PROGRAM

Institution type	Per transaction	Balance-based	Both	None
Credit Union	17.7%	1.0%	1.3%	79.9%
Bank	5.5%	22.4%	39.4%	32.7%

Note: There are 771 credit unions and 2,450 banks with an overdraft program in the sample, of which 299 credit unions and 2,266 banks have information on *de minimis* policies.

²⁸ FIs may also waive or refund fees occasionally on an ad hoc basis. This section does not capture such waivers or refunds, only systematic policies.

The average per-transaction *de minimis* threshold was \$9.45 among observed credit unions and \$8.80 among observed banks. The average balance-based *de minimis* threshold was \$9.31 among observed banks.²⁹

Daily fee caps

Table 10 shows the share of observed FIs that imposed a daily cap on the overdraft and NSF fees that an account could be charged. A higher share of observed banks appeared to have a daily fee cap than observed credit unions, with the share increasing with asset size. Overall, 62.4% of banks and 18.5% of credit unions in the dataset were reported to have a daily fee cap.

TABLE 10: SHARE OF INSTITUTIONS WITH A DAILY FEE CAP AMONG THOSE THAT CHARGED OVERDRAFT AND/OR NSF FEES WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	16.5%	50.4%
\$100M< to \$550M	21.2%	63.5%
\$550M< to \$1B	*	68.4%
\$1B< to \$2B	*	70.4%
\$2B< to \$10B		83.9%
More than \$10B		*
Total	18.5%	62.4%

Note: There are 1,217 credit unions and 2,630 banks that charged overdraft and/or NSF fees in the sample, of which 745 credit unions and 2,267 banks have information on fee caps.

* indicates small sample size.

While different configurations of fee caps are possible (for example, FIs may cap the combined number of overdraft and NSF fees per day or cap each type of fee individually), for sake of comparability, the cap amount is expressed as the maximum dollar amount of overdraft and NSF fees that a consumer could be charged in one business day. Table 11 depicts the average fee cap across observed institutions offering a cap, by institution type and asset tier. For banks, the average daily fee cap was over \$166, ranging from approximately \$150 for banks in the smallest asset tier to over \$200 for the largest banks analyzed. The credit unions in the core processor sample had an average daily fee cap of about \$151. As we find in a subsequent section, the

²⁹ As shown in Table 9, very few observed credit unions had a balance-based *de minimis* policy. Of those that did, no dollar values were reported for the threshold.

average overdraft fee at these institutions was just under \$30, implying that the number of fees was capped at about five to six per day on average.

TABLE 11: FEE CAP AMOUNT AVERAGED ACROSS INSTITUTIONS WITH A CAP WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	\$163.65	\$149.61
\$100M< to \$550M	\$119.12	\$165.89
\$550M< to \$1B	*	\$173.76
\$1B< to \$2B	*	\$171.80
\$2B< to \$10B		\$201.01
More than \$10B		*
Total	\$151.18	\$166.63

Note: There are 138 credit unions and 1,415 banks that had a fee cap in the sample, of which 88 credit unions and 1,127 banks have information on the amount of the fee cap.

* indicates small sample size.

Forgiveness periods

Finally, forgiveness periods appeared more common at credit unions than at banks with the core processors identifying 63.0% of credit unions as having provided these periods, compared to 1.2% of banks. Most commonly, a forgiveness period allowed a consumer to deposit funds to cure a posted overdraft until a cutoff time that occurred at or before the end of the next business day (71.2% among credit unions and 85.1% among banks that were reported to have a forgiveness period), though some institutions were reported to offer longer or other forgiveness periods.

3.4 Decisioning policies

In general, FIs face two discrete decisions when faced with a transaction that would exceed an account's balance: first, whether to authorize/pay the transaction or decline/return the transaction and second, whether to assess a fee with respect to the transaction. For ATM and debit card transactions, these decisions can occur at separate points in time. The reason for this is that an FI might not make a decision as to whether to charge an overdraft fee until the transaction is posted to the consumer's account, which can be one or more days after the transaction was authorized.³⁰ For checks and ACH transactions, in contrast, the decisions of whether to pay the transaction and charge a fee are generally made at the same time.

In this section we discuss the decisioning policies that the core processors reported for the FIs in the sample. We also report results on whether and how institutions set an explicit amount by which an account can be overdrawn (the "overdraft coverage limit") that determined their authorize/pay decision. We also discuss policies related to how quickly an FI made funds deposited through electronic direct deposit available for consumers' use as those policies could affect whether a particular transaction was deemed to overdraw an account.

³⁰ ATM and debit card transactions, once authorized, must be paid so that a decision to authorize is a commitment to pay. Thus, these pre-authorized transactions are often described as "force-pay." Checks and ACH transactions, in contrast, generally are not authorized in advance and generally can be returned unpaid.

What is the difference between an available balance and a ledger balance?

Debits and credits to an account can take place before they settle (*i.e.*, before funds are disbursed between institutions) and post (*i.e.*, the FI records the transaction on the account). A consumer's ledger balance is the net sum of all posted debit and credit transactions against an account. The account's available balance, in contrast, generally keeps track of outstanding debits not yet settled and credits that have been posted but are not yet cleared and thus fully available for withdrawal. Institutions' information and accounting systems use a set of rules to calculate the available balance by determining when newly deposited items are deemed to increase the available funds in an account and when a debit transaction is deemed to reduce the available funds in the account.

ATM and debit card transactions generally require an authorization at the time the consumer initiates the debit. When a consumer's FI provides an authorization, the FI often reduces the consumer account's available balance by the authorized amount. Settlement and posting of ATM and debit card transactions can take place one or more days after authorization, in part depending on the type of transaction (generally, signature debit card transactions take longer to settle and post than ATM and PIN debit card transactions). FIs are obligated to settle (pay the merchant's FI) all ATM and debit card transactions authorized up to the amount authorized. (For debit card transactions, the authorization amount may differ from the actual amount of the transaction. For example, at a restaurant the consumer typically authorizes the transaction for the pre-tip amount while the actual amount of the transaction submitted for settlement contains the tip.) Upon settlement, the transaction posts to the consumer's account and funds are deducted from the account's ledger balance.

Most check and ACH transactions are not pre-authorized in the above manner. Generally, an FI decides whether to pay or return these transactions when the transaction is presented for posting. Rejected check and ACH transactions received are returned, and FIs may assess an NSF fee in these instances. If the FI decides to pay a check or ACH debit, the FI generally deducts the transaction amount from the account's available and ledger balance.

For a more detailed explanation, see the 2013 White Paper cited in footnote 3.

First, we requested information from the core processors on how their FIs determined whether to authorize an electronic debit requiring authorization at the time of the transaction (ATM withdrawals and debit card transactions) or decline it due to non-sufficient funds. As shown in Table 12, we find that all banks and nearly all credit unions used available balance (reflecting the funds immediately available for use) to decide whether to authorize these transaction types.³¹

TABLE 12: SHARE OF CREDIT UNIONS AND BANKS BY BALANCE USED FOR AUTHORIZATION/DECLINE DECISION FOR ATM AND DEBIT CARD TRANSACTIONS

Institution type	Available balance	Ledger balance
Credit Union	99.6%	0.4%
Bank	100.0%	0.0%

Note: There are 1,266 credit unions and 2,638 banks in the sample, of which 1,240 credit unions and 1,393 banks have information on the type of balance used.

With regard to debits not already authorized (primarily checks and ACH transactions), FIs usually determined whether to pay or return such transactions during posting, which occurs after the consumer initiates the transaction. For such transactions, over 99% of credit unions in the dataset were reported to use consumers' available balance to determine whether to pay items into overdraft or return them unpaid. In contrast, just under half of observed banks (45.2%) relied on consumers' available balance, as opposed to the ledger balance (balance of posted transactions), to make this determination. These findings are summarized in Table 13.

³¹ In all instances in this section, we have combined the "available balance" (ledger balance adjusted for all outstanding authorizations and holds on deposits) and the "adjusted available balance" (ledger balance adjusted for certain outstanding authorizations and holds on deposits) responses under "available balance".

TABLE 13: SHARE OF CREDIT UNIONS AND BANKS BY BALANCE USED FOR PAY/RETURN DECISION ON DEBITS NOT ALREADY AUTHORIZED

Institution type	Available balance	Ledger balance
Credit Union	99.5%	0.5%
Bank	45.2%	54.8%

Note: There are 1,266 credit unions and 2,638 banks in the sample, of which 1,261 credit unions and 1,743 banks have information on the type of balance used.

As can be seen in Table 14, nearly all credit unions (99.5%) in the dataset reportedly used available balance to determine whether to charge an overdraft fee, while 44.4% of the banks in the dataset did so. Among FIs for which the core processors reported an answer to both balance questions, all but one was reported to use the same balance to decide whether to pay or return a debit not already authorized, and — if the item was paid — whether to charge an overdraft fee.

TABLE 14: SHARE OF CREDIT UNIONS AND BANKS BY BALANCE USED FOR FEE DECISIONING

Institution type	Available balance	Ledger balance
Credit Union	99.5%	0.5%
Bank	44.4%	55.6%

Note: There are 1,217 credit unions and 2,630 banks that charged overdraft and/or NSF fees in the sample, of which 1,201 credit unions and 1,483 banks have information on the type of balance used.

FIs that allow consumers to opt in per Regulation E must decide whether to charge overdraft fees on ATM and one-time debit card transactions that result in an overdraft. As Table 15 demonstrates, 68.3% of the observed credit unions with opt-in decided whether to charge such overdraft fees during posting after the transaction was presented for settlement. Among the remainder of credit unions with opt-in, 6.8% reportedly determined whether to assess fees at the time of authorization, while 24.9% reportedly did so at some other time (including during posting at the end of the day on which the transaction had been authorized but before it was presented for settlement). Less variability was present among the banks in the dataset with opt-in, with 97.4% reportedly deciding whether to charge a fee during posting after a transaction was presented for settlement, and the remainder doing so at the time of authorization.

TABLE 15: SHARE OF CREDIT UNIONS AND BANKS WITH OPT-IN BY TIMING OF FEE CHARGING DECISION FOR ATM AND DEBIT CARD TRANSACTIONS

Institution type	During posting, after transaction settled	At authorization	Other
Credit Union	68.3%	6.8%	24.9%
Bank	97.4%	2.6%	0.0%

Note: There are 413 credit unions and 1,483 banks that provided opt-in in the sample, all of which have information on the timing of the charge/no-charge decision.

As implied in Table 16, 91.5% of credit unions and 60.8% of banks in the dataset with an automated overdraft program employed an overdraft coverage limit. FIs could either assign this limit to each account individually (“individual overdraft limit”) or set a common limit for all accounts (“common overdraft limit”). Within the dataset, the use of an overdraft limit overall and the use of an individual overdraft limit specifically became more common as the FI became larger.

TABLE 16: SHARE OF INSTITUTIONS BY TYPE OF OVERDRAFT COVERAGE LIMIT USED, IF ANY, AMONG THOSE WITH AN AUTOMATED OVERDRAFT PROGRAM WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type/Asset tier	Individual overdraft limit	Common overdraft limit	OD limit used, but type unknown	No overdraft limit used
Credit Union - \$100M or less	14.8%	29.8%	44.5%	10.9%
Credit Union - \$100M< to \$550M	24.1%	30.6%	44.1%	1.2%
Credit Union - \$550M< to \$1B	*	*	*	*
Credit Union - \$1B< to \$2B	*	*	*	*
Credit Union - Overall	17.0%	30.1%	44.5%	8.5%
Bank - \$100M or less	11.4%	10.0%	18.7%	59.9%
Bank - \$100M< to \$550M	15.8%	15.3%	30.9%	38.0%
Bank - \$550M< to \$1B	23.8%	15.7%	34.3%	26.2%
Bank - \$1B< to \$2B	41.8%	16.4%	24.6%	17.2%
Bank - \$2B< to \$10B	46.8%	7.8%	28.6%	16.9%
Bank - More than \$10B	*	*	*	*
Bank - Overall	18.9%	14.0%	27.9%	39.2%

Note: There are 739 credit unions and 2,419 banks with an automated overdraft program in the sample, of which 684 credit unions and 1,972 banks have information on overdraft limits.

* indicates small sample size.

While not strictly part of overdraft decisioning policies, an institution’s funds availability policy determines how quickly a deposit is made available for the consumer’s use. Thus, funds availability can affect whether or not an ensuing debit transaction overdraws an account. In this regard, credit unions and banks appeared similar in the dataset as shown in Table 17, with about a third of each generally making funds deposited through electronic direct deposit available before the day of settlement and the remainder making funds available on the day of settlement.³²

TABLE 17: SHARE OF INSTITUTIONS THAT MADE FUNDS DEPOSITED THROUGH ELECTRONIC DIRECT DEPOSIT AVAILABLE BEFORE THE SETTLEMENT DATE WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	34.9%	30.1%
\$100M< to \$550M	48.9%	32.9%
\$550M< to \$1B	*	28.0%
\$1B< to \$2B	*	46.9%
\$2B< to \$10B		44.9%
More than \$10B		*
Overall	37.5%	33.2%

Note: There are 1,266 credit unions and 2,638 banks in the sample, all of which have information on funds availability.

* indicates small sample size.

³² Specifically, our question asked about funds-availability practices regarding corporate to consumer (PPD) ACH credits and was intended to capture an FI’s prevailing practice. Regulation CC ties funds availability for electronic direct deposit to settlement, although it does not use that term. Specifically, 229.10(b)(1) states that an FI shall make funds received by electronic deposit available for withdrawal “not later than the business day after the banking day on which the bank received the electronic payment.” And, 229.10(b)(2), states that an FI is considered to have received an electronic deposit when it has received (i) “Payment in actually and finally collected funds” [*i.e.*, settlement]; and (ii) Information on the account and amount to be credited. In other words, Regulation CC requires that funds from these deposits be made available on the day after the settlement date. In addition, in certain cases the rules of NACHA, which govern the ACH network, require that funds from these deposits be available on the settlement date.

Where the consumer does not use direct deposit, the law permits the FI to wait until the second business day after the deposit to make the funds available. This information request did not include a question on how often FIs imposed a waiting time, or the full waiting time, for such deposits.

3.5 Transaction posting order

FIs make many decisions regarding how transactions are processed. During the course of a business day, an FI may have any number of transactions presented for settlement. FIs generally receive checking account transactions in batch files. FIs may post these to the consumer’s account as they are received in batches during the day (“intraday posting”), post these transactions after the close of each business day (“nightly batch processing”), or use a combination of these two options. FIs must also decide the order in which to post transactions, such as whether to process credits before debits and whether to order transactions for posting by type, size, timestamp, or a combination of these approaches. Although we did not ask the core processors to provide comprehensive details, our information request asked several questions related to how client FIs processed transactions.

First, Table 18 reports when FIs in the dataset processed transactions. Most banks in the dataset (86.2%) used nightly batch processing, while most credit unions (82.4%) used a combination of intraday and nightly batch processing. Among those observed institutions that used intraday posting, nearly all (99.8% of credit unions and 100% of banks) assessed fees as those postings occurred throughout the day.

TABLE 18: SHARE OF CREDIT UNIONS AND BANKS BY TYPE OF TRANSACTION PROCESSING SYSTEM USED

Institution type	Nightly batch	Intraday	Combination
Credit Union	7.3%	10.4%	82.4%
Bank	86.2%	1.5%	12.3%

Note: There are 1,266 credit unions and 2,638 banks in the sample, all of which have information on the type of transaction processing system used.

As noted previously, decisions must be made with respect to the order in which transactions are posted to a consumer’s account. This ordering can affect the rate at which consumers incur overdraft fees. Among FIs that were reported to engage in nightly batch processing (either exclusively or in combination with some intraday processing), over two-thirds (67.6%) of credit unions and 89.0% of banks processed all credits before any debits, as shown in Table 19.³³ Such

³³ Intraday batches also must be ordered, but we did not collect information on the ordering of transactions within batches that were posted intraday.

ordering lowers the likelihood of an account becoming overdrawn or a debit transaction being returned due to non-sufficient funds. Of the remainder, nearly all processed only select debits before credits according to their individual FI policy.

TABLE 19: SHARE OF CREDIT UNIONS AND BANKS BY THE ORDERING OF CREDITS AND DEBITS AMONG THOSE USING SOME NIGHTLY BATCH PROCESSING

Institution type	Credits before debits	Some debits before credits	Debits before credits
Credit Union	67.6%	32.4%	0.0%
Bank	89.0%	10.0%	1.0%

Note: There are 1,135 credit unions and 2,598 banks that used some nightly batch processing in the sample, of which 1,115 credit unions and 2,527 banks have information on the ordering of credits and debits.

FIs using nightly batch processing may opt to post debits in the order in which they occurred (chronological order) if those debits include a timestamp to make this possible (such as for many teller and most ATM and debit card transactions). As Table 20 indicates, 64.7% of the credit unions in the dataset employed timestamps to order debits chronologically, while 22.1% of banks did so. The use of chronological ordering was somewhat more common among larger institutions in the dataset.

TABLE 20: SHARE OF INSTITUTIONS THAT USED CHRONOLOGICAL ORDERING OF TRANSACTIONS, IF POSSIBLE, AMONG THOSE THAT USED SOME NIGHTLY BATCH PROCESSING WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	63.6%	20.5%
\$100M< to \$550M	69.9%	20.3%
\$550M< to \$1B	*	20.5%
\$1B< to \$2B	*	33.1%
\$2B< to \$10B		46.1%
More than \$10B		*
Overall	64.7%	22.1%

Note: There are 1,135 credit unions and 2,598 banks that used some nightly batch processing in the sample, all of which have information on the use of chronological ordering.

* indicates small sample size.

FIs are obligated to pay “force-pay” transactions, *i.e.*, ATM and debit card transactions that the FI has previously authorized, when they are presented for settlement. Of the banks in the

dataset that were reported to use nightly batch processing, 85.6% ordered transactions so that force-pay debits were posted before those that were discretionary, *i.e.*, not previously authorized. The prevalence of this practice was reportedly lower among observed larger banks as can be seen from Table 21. Credit unions in the dataset engaged in this practice less often than observed banks, with 14.5% of observed credit unions having posted all force-pay transactions ahead of other transactions which the credit union was not obligated to pay.³⁴

TABLE 21: SHARE OF INSTITUTIONS BY ORDERING OF FORCE-PAY DEBITS AMONG THOSE THAT USED SOME NIGHTLY BATCH PROCESSING WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type/Asset tier	Force-pay debits posted before discretionary debits	Some force-pay debits posted before some discretionary debits
Credit Union - Overall	14.5%	85.6%
Bank - \$100M or less	93.4%	6.6%
Bank - \$100M< to \$550M	88.3%	11.6%
Bank - \$550M< to \$1B	80.6%	19.4%
Bank - \$1B< to \$2B	61.4%	38.6%
Bank - \$2B< to \$10B	57.1%	42.9%
Bank - More than \$10B	*	*
Bank - Overall	85.6%	14.4%

Note: There are 1,135 credit unions and 2,598 banks that used some nightly batch processing in the sample, of which 1,135 credit unions and 2,084 banks have information on the ordering of force-pay debits.

* indicates small sample size.

When an FI uses nightly batch processing, it may group or “bucket” debits by transaction type (*e.g.*, debit card transactions vs. check), and then employ ordering rules within these groups (“bucketed processing”). FIs may also commingle all debit transactions and apply rules affecting the processing order to this single batch (“commingled processing”). Most of the FIs in the dataset (80.8% of credit unions and 99.9% of banks) that used nightly batch processing were reported to use bucketed processing as opposed to commingled processing, as can be seen from

³⁴ Here and in some subsequent tables, credit unions are not broken out by asset tier due to small sample sizes in some asset tiers and a lack of significant variation among the results across asset tiers with larger sample sizes.

Table 22.³⁵ Of those credit unions that commingled all debit transactions, 27.0% ordered these transactions from smallest to largest for posting (by the size, or absolute value, of transaction amount) with the remainder not using size as an ordering criterion, including not using largest to smallest ordering.³⁶

TABLE 22: SHARE OF CREDIT UNIONS AND BANKS BY TYPE OF NIGHTLY BATCH PROCESSING USED AMONG THOSE THAT USED SOME SUCH PROCESSING

Institution type	Commingled	Bucketed
Credit Union	19.3%	80.8%
Bank	0.1%	99.9%

Note: There are 1,135 credit unions and 2,598 banks that used some nightly batch processing in the sample, of which 1,060 credit unions and 2,460 banks have information on the type of nightly batch processing used.

An FI that uses bucketed processing must determine which types of transactions (*e.g.*, ATM, debit card, check, ACH, etc.) to put in which bucket, in what order to post the buckets, and how to order the transactions within each individual bucket.

To elicit information about these choices, we first asked the core processors to report how the transactions in the bucket containing debit card transactions were ordered. Table 23 reports these results for FIs that used bucketed nightly batch processing. Among credit unions reported to use bucketed processing, 89.5% did not use size as an ordering criterion and another 9.7% ordered transactions from smallest to largest. In contrast, 15.2% of banks reported to use bucketed processing did not use size as an ordering criterion, with the remainder being roughly evenly split between banks ordering transactions from smallest to largest (44.5%) and largest to smallest (40.3%).

³⁵ While 19.3% of the credit unions in the data commingled debit transaction for nightly batch processing, this approach was concentrated among the smallest credit unions. 22.1% of credit unions with assets of \$100 million or less commingled debits, while just 3.4% of credit unions in the next asset tier (more than \$100 million and up to \$550 million) did so.

³⁶ Due to the very small share of banks that commingled debit transactions for nightly batch processing, we do not report a similar statistic for these institutions.

TABLE 23: SHARE OF CREDIT UNIONS AND BANKS BY TYPE OF ORDERING USED WITHIN THE DEBIT CARD BUCKET AMONG THOSE THAT USED BUCKETED PROCESSING

Institution type	Largest to smallest	Smallest to largest	No size ordering
Credit Union	0.8%	9.7%	89.5%
Bank	40.3%	44.5%	15.2%

Note: There are 856 credit unions and 2,458 banks that used bucketed nightly batch processing in the sample, of which 836 credit unions and 2,386 banks have information on the ordering inside the debit card bucket.

Next, we inquired about the buckets that did not include debit card transactions, with the possible answers being: (1) transactions in at least one of these buckets were ordered from largest to smallest; (2) transactions in at least one of these buckets were ordered by size, but none are ordered from largest to smallest; or (3) none of these buckets were ordered by size. As can be observed in Table 24, most banks reported to use bucketed processing employed some type of ordering by the size of transaction within the non-debit card buckets, with 37.9% ordering at least one bucket largest to smallest and an additional 58.8% ordering at least one bucket by size in some other way. Credit unions reported to use bucketed processing were far less likely to use size as an ordering criterion, with 66.8% not using size for ordering any of the non-debit card buckets.

TABLE 24: SHARE OF CREDIT UNIONS AND BANKS BY TYPE OF ORDERING USED WITHIN THE NON-DEBIT CARD BUCKETS AMONG THOSE THAT USED BUCKETED PROCESSING

Institution type	Some largest to smallest	Size ordering, but no largest to smallest	No size ordering
Credit Union	27.6%	5.6%	66.8%
Bank	37.9%	58.8%	3.3%

Note: There are 856 credit unions and 2,458 banks that used bucketed nightly batch processing in the sample, of which 500 credit unions and 2,386 banks have information on the ordering inside non-debit card buckets.

Finally, we asked how the bucket containing debit card transactions was sequenced relative to the buckets containing check and ACH transactions. Possible answers included: (1) the debit card bucket was processed before any check or ACH buckets; (2) the bucket containing debit card transactions also included check or ACH transactions; or (3) at least one bucket containing checks and/or ACH transactions was processed before the bucket containing debit card

transactions. Most banks reported to use bucketed processing ordered the debit card bucket before the check/ACH buckets (61.3%) or had the same bucket contain debit card and check or ACH transactions (30.4%). Credit unions reported to use bucketed processing were less likely to separate debit card and check or ACH transactions: 74.5% were reported to have the same bucket contain debit card and check or ACH transactions as reported in Table 25.

TABLE 25: SHARE OF CREDIT UNIONS AND BANKS BY ORDERING OF THE DEBIT CARD BUCKET AMONG THOSE THAT USED BUCKETED PROCESSING

Institution type	Debit-card bucket processed before check/ACH buckets	Debit-card bucket includes check/ACH transactions	Some check/ACH buckets processed before debit-card bucket
Credit Union	1.4%	74.5%	24.1%
Bank	61.3%	30.4%	8.3%

Note: There are 856 credit unions and 2,458 banks that used bucketed nightly batch processing in the sample, of which 572 credit unions and 1,521 banks have information on the ordering of the debit-card bucket.

4. Overdraft and NSF revenue

To better understand the revenues that FIs in the dataset derived from the various fees related to debit transactions that exceeded an account's balance, we look at revenues and the components of revenues, including fee amounts and the incidence with which these fees were charged. For overdrafts, we report information both on fees and incidence, while for NSFs we have just fee information. We also report on the share of FIs in the dataset that charged additional fees when an account balance remains negative for a specified period of time ("sustained negative balance fees") and the revenue per account derived from these charges.

4.1 Overdraft fees, incidence, and revenue

Table 26 displays the per-item overdraft fee averaged across institutions with an overdraft program within institution type and asset tier categories.³⁷ Across the sample, the average per-item overdraft fee was \$27.64 at credit unions while it was \$29.55 at banks. The average overdraft fee increased with asset size among observed banks: those with assets between \$2 billion and \$10 billion charged \$32.22 on average, 15.9% higher than the \$27.80 charged by banks with assets of \$100 million or less.

TABLE 26: PER-TRANSACTION OVERDRAFT FEE AVERAGED ACROSS INSTITUTIONS WITH AN OVERDRAFT PROGRAM WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	\$27.53	\$27.80
\$100M< to \$550M	\$27.86	\$29.52
\$550M< to \$1B	*	\$31.25
\$1B< to \$2B	*	\$31.51
\$2B< to \$10B		\$32.22
More than \$10B		*
Overall	\$27.64	\$29.55
FIs under \$10B (Informa)	\$28.39	\$31.89
Large banks (Pew)		\$34.05

Note: There are 771 credit unions and 2,450 banks with an overdraft program in the sample, of which 751 credit unions and 2,432 banks have information on overdraft fees.

* indicates small sample size.

To provide context for these observations, we calculated the overdraft fee averaged across comparable groups of institutions for the same time period from data provided by Informa, a

³⁷ In our information request, we asked the core processors to indicate the amount of overdraft fee that client FIs charged, if any. Some FIs varied the amount of the fee they charged, such as when fee amounts were tiered based on the number of overdraft incidents in a business day. In cases of an institution charging a variety of overdraft fees, we asked the core processors to provide the fee that was most frequently charged. While we allowed for reporting fees that were not assessed on a per-transaction basis, no FI was reported to charge overdraft and NSF fees on a different basis.

financial services market research company.³⁸ While the universe of institutions covered by the data in this report and by Informa are different, the average overdraft fee statistics reported in Table 26 are similar. We also compare these average overdraft fees to that reported for large banks in 2014 by the Pew Charitable Trusts. The banks in the core processor sample charged an overdraft fee that is about 13.2% lower on average than that charged by large banks in 2014 (\$34.05), based on data from 44 of the nation's 50 largest banks.³⁹

Next, we examine the frequency with which consumers incurred overdraft fees at the FIs in the dataset. The Bureau has found in previous studies that most overdrafts are incurred by a small portion of customers. For example, in our 2014 Data Point, we reported that 69.8% of accounts at the large study banks had no overdrafts, while 8.3% of accounts had over ten overdrafts in a 12-month period.⁴⁰ Correspondingly, in our information request we asked about the distribution of accounts by the annual number of overdraft fees assessed. Specifically, we asked the core processors to break down each institution's number of accounts into (1) accounts with no overdraft fee assessed, (2) accounts with 1–3 overdraft fees assessed, (3) accounts with 4–10 overdraft fees assessed, and (4) accounts with more than 10 overdraft fees assessed during the year. Table 27 provides the distribution of accounts by the number of overdraft fees charged in a year, if any, within institution type and asset tier categories and by whether the institution provided opt-in for ATM and one-time debit card transactions.⁴¹

³⁸ Informa Research Services, Inc. Calabasas, CA. www.informars.com. Although the information has been obtained from various financial institutions by Informa, its accuracy cannot be guaranteed. The Bureau receives periodic updates from Informa. Our calculation for this report was based on 2014 data and included 118 credit unions and 444 banks with assets under \$10 billion.

³⁹ Pew Charitable Trusts, [“Checks and Balances, 2014 Update.”](#) (April 2014). We have calculated the average overdraft fee from the data reported in Figure 7 of that report, excluding the one bank that does not charge an overdraft fee for sake of comparability.

⁴⁰ Trevor Bakker, Nicole Kelly, Jesse Leary, Éva Nagypál, 2014, [“Checking Account Overdraft.”](#) CFPB Data Point, p. 12.

⁴¹ The core processors reported overdraft frequency data for 41.3% of banks and 92.9% of credit unions reported to have an overdraft program. The low reporting rate for banks was primarily driven by the fact that three large platforms serving predominantly banks could not provide this information. We do not break out institutions for which we lack opt-in policy information. As can be seen from the note to Table 7, there are 212 such institutions and they are primarily credit unions.

TABLE 27: DISTRIBUTION OF ACCOUNTS BY ANNUAL NUMBER OF OVERDRAFT FEES INCURRED AT INSTITUTIONS WITH AN OVERDRAFT PROGRAM BY OPT-IN POLICY AND OVERALL WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type/Asset tier	No Fees	1-3 Fees	4 to 10 Fees	Over 10 Fees
A. Institutions without opt-in				
Credit Union - Overall	84.0%	8.6%	4.3%	3.2%
Bank - \$100M or less	90.3%	5.9%	2.2%	1.7%
Bank - \$100M< to \$550M	85.6%	8.3%	3.5%	2.6%
Bank - \$550M< to \$1B	86.7%	8.0%	3.4%	1.9%
Bank - \$1B< to \$2B	95.7%	3.1%	0.8%	0.3%
Bank - \$2B< to \$10B	95.4%	3.1%	1.0%	0.4%
Bank - More than \$10B	*	*	*	*
Bank - Overall	91.5%	5.4%	1.9%	1.2%
B. Institutions with opt-in				
Credit Union - Overall	82.9%	8.3%	4.3%	4.5%
Bank - \$100M or less	83.5%	9.9%	4.0%	2.6%
Bank - \$100M< to \$550M	83.8%	9.7%	3.8%	2.7%
Bank - \$550M< to \$1B	83.4%	10.0%	4.0%	2.7%
Bank - \$1B< to \$2B	82.0%	10.5%	4.4%	3.2%
Bank - \$2B< to \$10B	83.2%	9.8%	4.1%	2.8%
Bank - More than \$10B	*	*	*	*
Bank - Overall	83.0%	10.1%	4.1%	2.8%
C. All institutions with an overdraft program				
Credit unions in core processor sample	87.2%	6.3%	3.2%	3.2%
Banks in core processor sample	84.9%	9.1%	3.6%	2.4%
Large study banks	80.8%	12.0%	4.3%	2.9%

Note: Panel A: There are 151 credit unions and 962 banks with an overdraft program without opt-in in the sample, of which 131 credit unions and 360 banks have information on the frequency of overdraft fees. Panel B: There are 413 credit unions and 1,483 banks with an overdraft program with opt-in in the sample, of which 379 credit unions and 646 banks have information on the frequency of overdraft fees. Panel C: There are 771 credit unions and 2,450 banks with an overdraft program, of which 716 credit unions and 1,011 banks have information on the frequency of overdraft fees. In each panel, 5% in each institution type/opt-in category are dropped due to being outliers.

* indicates small sample size.

Banks in the core processor sample with opt-in had a higher share of accounts with more than 10 overdraft fees in a year (2.8%) than those without opt-in (1.2%). There was also a higher percentage of accounts in the other overdraft fee categories at banks with opt-in. Overall, at banks with opt-in, 17.0% of accounts were assessed an overdraft fee in any given year, while at institutions without opt-in, 8.5% of accounts incurred at least one overdraft fee. Within the core processor sample with opt-in policy information (which consists of 564 of the 1,266 credit unions and 2,445 of the 2,638 banks), credit unions had a higher incidence of fees than banks, especially when comparing credit unions and banks without opt-in. There was some variability in these shares within each group. The interquartile range of the share of accounts with more than 10 overdraft fees in a year was 1.4%-4.9% for credit unions without opt-in, 2.8%-6.0% for credit unions with opt-in, 0.1%-1.5% for banks without opt-in, and 1.4%-3.7% for banks with opt-in. The interquartile range of the share of accounts with at least one overdraft fee in a year

was 12.1%-21.0% for credit unions without opt-in, 13.1%-21.3% for credit unions with opt-in, 4.5%-13.1% for banks without opt-in, and 14.3%-19.8% for banks with opt-in.

For sake of comparison, the last panel of Table 27 provides the distribution of overdraft fees for all institutions with an overdraft program among the credit unions and banks in the core processor sample⁴² to the large study banks.⁴³ As these statistics demonstrate, a lower share of accounts were assessed overdraft fees at the core processor credit unions and banks than at the large study banks; however, the share of accounts with more than 10 overdraft fees was the highest at the core processor credit unions. It is important to keep in mind that the statistics in Panel C are conditional on an FI having an overdraft program and that the 39.1% of credit unions and 7.1% of banks in the core processor sample that did not have an overdraft program had no accounts with overdraft fees, by definition.

Overdraft revenue per account, as reported in Table 28, amounted to \$27.36 per year on average among observed credit unions with an overdraft program without opt-in and \$52.78 among those with opt-in, underscoring that whether an institution had opt-in is an important correlate of overdraft revenue per account.⁴⁴ Within the dataset, per-account revenues were lower among banks with an overdraft program, on average, than at credit unions, at least among institutions for which we have opt-in policy information. In the dataset, banks without opt-in averaged \$22.80 in overdraft revenue per account per year while banks with opt-in averaged \$44.42.

⁴² Note that when calculating these overall statistics in Panel C, we include institutions for which we lack opt-in policy information, so these statistics are not simply weighted averages of the statistics in Panels A and B. This is especially relevant for credit unions since 207 credit unions lack opt-in policy information, while only five banks lack this information. Institutions in the dataset for which we lack opt-in policy information appear to have had a substantially lower share of accounts with overdraft fees – 4.8% of accounts at such institutions were assessed an overdraft fee in a given year. It is possible that the core processor sample is not truly indicative of the policies and performance of these institutions. Or, these institutions could have had a very limited overdraft program either through their policies or by setting low overdraft coverage limits. We have no way of testing whether either of these scenarios explains the reported results. Institutions for which we lack opt-in policy information also appear to have substantially lower overdraft revenue per account which is consistent with the low incidence of fees.

⁴³ Recall that the study bank data are from 2011-2012 while the core processor sample data are from 2014. The calculations using the study bank data have been performed for this report to ensure comparability to the core processor data and are different from the calculations in the 2014 Data Point. In the 2014 Data Point, we reported annualized numbers for active accounts and focused on all overdrafts regardless of whether they incurred a fee. The statistics reported by the core processors in this report are not annualized, do not use active accounts as the base, and count only overdrafts for which a fee was assessed. For these reasons, the study bank statistics reported here are not directly comparable to those published in the 2014 Data Point.

⁴⁴ Revenue per account for an FI is calculated by taking total revenues of a given type and dividing by the total number of accounts, here and subsequently. This means that all accounts are in the denominator, including those that did not incur a fee of a given type.

Recall, however that only 564 of the 1,266 credit unions in the core processor sample (or 44.5%) fall into the category of having had an overdraft program with opt-in policy information, while 2,445 of the 2,638 banks (or 92.7%) do so. This is both because the share of credit unions without an overdraft program was higher than that of banks (39.1% vs. 7.1%) and the share of credit unions lacking opt-in policy information among those with an overdraft program was higher than that of banks (26.8% vs. 0.2%).

Again, similarly to incidence, there was substantial variability in per-account overdraft revenues within the groups. The interquartile range of annual overdraft revenue per account was \$12.79-\$38.41 for credit unions without opt-in, \$28.57-\$73.70 for credit unions with opt-in, \$6.14-\$31.44 for banks without opt-in, and \$26.68-\$60.47 for banks with opt-in.

In the last panel, we again perform a comparison with the large study banks for all institutions with an overdraft program (irrespective of whether they have opt-in policy information). Overall, core processor sample credit unions and banks with an overdraft program collected \$42.33 and \$40.37 per account per year in overdraft fees, respectively.⁴⁵ The large study banks, in turn, collected \$45.21 per account per year in overdraft revenues and \$41.47 in overdraft revenues net of manual waivers in 2011-2012. Given that average fees were lower at the core processor sample institutions than at the large study banks and the annual distribution of fees was similar though somewhat lower, these findings are broadly consistent with those reported above.

⁴⁵ We requested information about gross overdraft fee revenues from the core processors (*i.e.*, fee revenues after the application of automatic waivers, such as fee caps, but without netting out manual reversals and refunds), but some platforms provided revenues that netted out some manual reversals and refunds due to accounting system constraints.

TABLE 28: ANNUAL OVERDRAFT REVENUE PER ACCOUNT AVERAGED ACROSS ACCOUNTS AT INSTITUTIONS WITH AN OVERDRAFT PROGRAM BY OPT-IN POLICY AND OVERALL, WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type/Asset tier	
<i>A. Institutions without opt-in</i>	
Credit Union - Overall	\$27.36
Bank - \$100M or less	\$32.04
Bank - \$100M< to \$550M	\$29.75
Bank - \$550M< to \$1B	\$22.33
Bank - \$1B< to \$2B	\$15.43
Bank - \$2B< to \$10B	\$9.82
Bank - More than \$10B	*
Bank - Overall	\$22.80
<i>B. Institutions with opt-in</i>	
Credit Union - Overall	\$52.78
Bank - \$100M or less	\$47.70
Bank - \$100M< to \$550M	\$45.08
Bank - \$550M< to \$1B	\$49.62
Bank - \$1B< to \$2B	\$47.87
Bank - \$2B< to \$10B	\$36.29
Bank - More than \$10B	*
Bank - Overall	\$44.42
<i>C. All institutions with an overdraft program</i>	
Credit unions in core processor sample	\$42.33
Banks in core processor sample	\$40.37
Large study banks - gross revenues	\$45.21
Large study banks - net revenues	\$41.47

Note: Panel A: There are 151 credit unions and 962 banks with an overdraft program without opt-in in the sample, of which 140 credit unions and 928 banks have information on overdraft revenues. Panel B: There are 413 credit unions and 1,483 banks with an overdraft program with opt-in in the sample, of which 402 credit unions and 1,463 banks have information on overdraft revenues. Panel C: There are 771 credit unions and 2,450 banks with an overdraft program, of which 695 credit unions and 2,396 banks have information on overdraft revenues. In each panel, 5% in each institution type/opt-in category are dropped due to being outliers.

* indicates small sample size.

4.2 NSF fees and revenue

Nearly all credit unions and banks in the dataset (94.5% and 99.4%, respectively) were reported to charge NSF fees. Table 29 displays the NSF fee averaged across institutions charging such a fee within institution type and asset tier categories. Within the dataset, average NSF fees were very similar to average overdraft fees, which is not surprising given that 76.7% of credit unions and 96.3% of banks that charged both fees set them at the same level. In the cases where NSF and overdraft fees were different, there was no prevailing pattern of one being higher than the other.

TABLE 29: PER-TRANSACTION NSF FEE AVERAGED ACROSS INSTITUTIONS THAT CHARGED SUCH FEES WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Asset tier	Credit Union	Bank
\$100M or less	\$27.48	\$27.80
\$100M< to \$550M	\$27.46	\$29.64
\$550M< to \$1B	*	\$31.01
\$1B< to \$2B	*	\$31.76
\$2B< to \$10B		\$32.51
More than \$10B		*
Overall	\$27.51	\$29.59
FIs under \$10B (Informa)	\$28.09	\$31.62
Large banks (Pew/Informa)		\$33.90

Note: There are 1,196 credit unions and 2,622 banks that charged NSF fees in the sample, 1,095 credit unions and 2,606 banks have information on the amount of NSF fees.

* indicates small sample size.

We compared these observations using data from Informa, the results of which are also displayed in Table 29. The average NSF fees across comparable groups of institutions were again similar. Moreover, the banks in the core processor sample charged an NSF fee that was about 12.7% lower on average than those charged by 44 of the nation's 50 largest banks (\$33.90).⁴⁶

⁴⁶ Since the Pew report referenced in footnote 39 does not report on NSF fees, we calculated NSF fees using the Informa data for the same set of large banks as covered in the Pew report.

TABLE 30: ANNUAL NSF REVENUE PER ACCOUNT AVERAGED ACROSS ACCOUNTS AT INSTITUTIONS THAT CHARGED SUCH FEES BY OVERDRAFT AND OPT-IN POLICY AND OVERALL, WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type	
<i>A. Institutions with no overdraft program</i>	
Credit Union - Overall	\$12.24
Bank - Overall	\$19.18
<i>B. Institutions with overdraft program and without opt-in</i>	
Credit Union - Overall	\$16.82
Bank - Overall	\$6.53
<i>C. Institutions with overdraft program and with opt-in</i>	
Credit Union - Overall	\$19.87
Bank - Overall	\$10.51
<i>D. All institutions with an overdraft program</i>	
Credit unions in core processor sample	\$17.05
Banks in core processor sample	\$9.73
Large study banks - gross revenues	\$13.27
Large study banks - net revenues	\$12.66

Note: Panel A: There are 495 credit unions and 188 banks that charged NSF fees and that had no overdraft program in the sample, of which 393 credit unions and 165 banks have information on NSF revenues. Panel B: There are 151 credit unions and 962 banks that charged NSF fees and that had an overdraft program without opt-in in the sample, of which 137 credit unions and 916 banks have information on NSF revenues. Panel C: There are 413 credit unions and 1,483 banks that charged NSF fees and that had an overdraft program with opt-in in the sample, of which 409 credit unions and 1,460 banks have information on NSF revenues. Panel D: There are 771 credit unions and 2,450 banks with an overdraft program, of which 695 credit unions and 2,380 banks have information on NSF revenues. In each panel, 5% in each institution type/opt-in category are dropped due to being outliers.

While we did not collect information about the frequency with which NSF fees were charged, we did collect information about annual NSF revenues which allows us to calculate annual NSF revenue per account.⁴⁷ Table 30 displays these results. Annual NSF revenue per account varied with, among other factors, whether the FI had an overdraft program, and if so, whether opt-in was available. Credit unions in the dataset that did not have an overdraft program had lower

⁴⁷ One bank platform reported unusually high NSF revenues per account for client FIs. We could not correlate such high NSF revenues per account with any observable characteristics of the client FIs. The platform in question could not provide an explanation for these high revenues per account or update the revenue numbers. In our calculations, we exclude this platform. The result most affected by this exclusion is NSF revenue per account at banks not providing overdraft, which would be \$51.20 without this exclusion.

annual NSF revenue per account (\$12.24) than those that had an overdraft program but not opt in (\$16.82) and than those that had opt-in (\$19.87). In contrast, banks in the dataset without an overdraft program had annual NSF revenue per account of \$19.18, higher than annual NSF revenue per account at banks with an overdraft program but no opt-in (\$6.53) or at banks with opt-in (\$10.51).⁴⁸ When comparing institutions with an overdraft program to the large study banks (that all had an overdraft program) in the last panel of Table 30, we see that in the core processor sample the credit unions had higher and the banks had lower annual NSF revenues per account than the large study banks did in 2011-2012. Again, the observation made earlier when discussing overdraft revenues per account regarding the number of credit unions and banks that these statistics are based on applies here, too, and is an important qualifier to these characterizations.

⁴⁸ While NSF revenue per account was higher at banks without an overdraft program, it should be kept in mind that that those banks (by definition) did not have any overdraft revenue and combined overdraft and NSF revenue per account was higher at banks with an overdraft program.

4.3 Sustained negative balance fee revenue

Finally, we turn to sustained negative balance (SNB) fees, which are charged by some institutions when a consumer's account balance remains negative after a specified period of time. Over half (57.1%) of the observed banks, representing 62.7% of bank accounts in the dataset, charged an SNB fee. In contrast, 15.8% of the observed credit unions, representing 24.2% of credit union accounts in the dataset, charged an SNB fee. By comparison, 73.8% of accounts at the large study banks were subject to SNB fees in 2011-2012.

Given the wide variety in (1) the SNB fee amounts charged, (2) the period after which such a fee was assessed, (3) the recurrence of the fee after the initial period, and (4) the fee day definition (business or calendar day), it is not possible to report a single fee or frequency number. Instead, we report annual revenue per account generated by SNB fees among those FIs that charged such fees, as depicted in Table 31, breaking out banks by opt-in policy.⁴⁹

⁴⁹ We can only do this breakout for banks in the dataset, since only 30 credit unions were reported to have an overdraft program and charged an SNB fee, and of those, revenue numbers were only reported for 13.

TABLE 31: ANNUAL SUSTAINED NEGATIVE BALANCE FEE REVENUE PER ACCOUNT AVERAGED ACROSS ACCOUNTS AT INSTITUTIONS THAT CHARGED SUCH FEES BY OPT-IN POLICY AND OVERALL, WITHIN INSTITUTION TYPE AND ASSET TIER CATEGORIES

Institution type/Asset tier	
A. Institutions without opt-in	
Bank - \$100M or less	\$2.73
Bank - \$100M< to \$550M	\$2.71
Bank - \$550M< to \$1B	\$2.57
Bank - \$1B< to \$2B	\$1.99
Bank - \$2B< to \$10B	\$1.06
Bank - More than \$10B	\$1.66
Bank - Overall	\$2.30
B. Institutions with opt-in	
Bank - \$100M or less	\$6.42
Bank - \$100M< to \$550M	\$3.56
Bank - \$550M< to \$1B	\$5.29
Bank - \$1B< to \$2B	\$4.88
Bank - \$2B< to \$10B	\$4.01
Bank - More than \$10B	\$5.08
Bank - Overall	\$4.61
C. All institutions with an overdraft program	
Credit unions in core processor sample	\$1.77
Banks in core processor sample	\$4.30
Study banks - gross revenues	\$6.30
Study banks - net revenues	\$6.17

Note: Panel A: There are 524 banks with an overdraft program without opt-in that charged SNB fees in the sample, of which 323 banks have information on SNB revenues. Panel B: There are 905 banks with an overdraft program with opt-in that charged SNB fees in the sample, of which 618 banks have information on SNB revenues. Panel C: There are 30 credit unions and 1,429 banks with an overdraft program that charged SNB fees, of which 13 credit unions and 941 banks have information on SNB revenues. In each panel, 5% in each institution type/opt-in category are dropped due to being outliers.

* indicates small sample size.

There was significant variation in revenues from SNB fees when broken down by whether a bank had opt-in. Among banks reportedly charging SNB fees, those that had opt-in collected twice as much revenue per account (\$4.61) than those that did not have opt-in (\$2.30). When comparing institutions with an overdraft program to the large study banks that charged SNB fees in the last panel of Table 31, we see both credit unions and banks in the core processor sample that charged SNB fees had lower SNB revenues per account than the large study banks did in 2011-2012.

5. Linked accounts

As mentioned in the beginning, some FIs offer consumers the option to link their checking account to another (deposit or credit) account at the institution to enable the automatic transfer of funds to cover transactions that would otherwise result in a negative balance.⁵⁰ Depending on the specifics, covering an overdraft using such a linked account can be a less costly alternative to the overdraft programs described in previous sections.

The great majority of FIs in the dataset (88.1% of credit unions and 74.6% of banks) reportedly offered the option to link a savings account to a checking account. The share of consumers in the dataset who used this option appears to differ across institution types. At credit unions in the dataset that offered linked savings accounts, 69.8% of checking accounts were linked to a savings account. At banks in the dataset that offered linked savings accounts, 6.4% of checking accounts were linked to a savings account.

The percentage of FIs that reportedly offered the option to link a credit product is substantial but somewhat lower than the percentage that offered linked savings accounts: 61.1% of credit unions and 57.8% of banks offered this option. The share of consumers with linked credit accounts was lower than the share of consumers with linked savings accounts, particularly for credit unions: 9.0% of accounts at credit unions and 4.8% of accounts at banks that offered this option reportedly had linked credit accounts.

⁵⁰ Credit products that can be used for this purpose include dedicated overdraft lines of credit, general unsecured personal lines of credit, credit card accounts, and home equity lines of credit.

6. Appendix A: Information Request

1. Definitions

In responding to this Request, terms are defined as follows:⁵¹

- **Financial Institution:** An institution defined in section 19(b)(1)(A)(i) through (vi) of the Federal Reserve Act (12 U.S.C. 461). Where a financial institution is a top-tier holding company of multiple depositories that have the same overdraft program settings listed in section *d* below, you may aggregate the information reported to the holding company level.
- **Covered Time Period:** The most recent 12 full calendar months that are available.
- **Covered Date:** The last day of the Covered Time Period as defined above.
- **Consumer Account:** A checking or transaction deposit account intended primarily for personal, household, or family use as defined by the Financial Institution based on the type of account. Do not include prepaid card accounts, savings accounts, or money market accounts.
- **Overdraft Service:** A program in which a financial institution retains and utilizes its discretion to determine whether to pay a presented item when the accountholder has insufficient or unavailable funds in his/her account. The financial institution may make this determination via an automated or manual decisioning process. The financial institution generally assesses fees for such transactions but may or may not charge a fee for each overdraft transaction. This service should not include automatic account transfers or advances from linked deposit or credit accounts or overdraft lines of credit that are underwritten as contractual credit agreements.

2. Instructions

For each Financial Institution for whom you provided deposit processing services or software as of the Covered Date and where responsive data are available, provide information for each of the specifications listed below. Where responsive data are not available, please note “NA” for each such field. For specifications requesting information on the Covered Date that are not available as of the Covered Date, please respond with information from the nearest date on which data are

⁵¹ If these terms are inconsistent with your use of terms in the ordinary course of business and would increase burden or decrease the timeliness of your response, please contact us to discuss potential modifications.

available. We may seek further information where data are not currently available or not available for the full Covered Time Period in follow up requests.

Responsive information must not include any personally identifiable information relating to any consumer, including but not limited to: name, social security number, address, telephone number, or account number. Responsive information also must not include information that could identify a particular client financial institution, such as name, location, or exact asset size.

3. Specifications

a. Institution Information

Note: questions 1 – 4 below are as of the Covered Date.

1. Asset Tier: The total assets, in dollars, held by the Financial Institution, denoted only by category.
 - a. \$100 million or less
 - b. More than \$100 million to \$550 million
 - c. More than \$550 million to \$1 billion
 - d. More than \$1 billion to \$2 billion
 - e. More than \$2 billion to \$10 billion
 - f. More than \$10 billion

2. Institution Type: The categorization of the Financial Institution's structure.
 - a. NCUA-insured credit union
 - b. FDIC-insured bank

3. Services Provided: The nature of the services you provide to the Financial Institution.
 - a. ASP/Outsourced
 - b. In-House
 - c. Other (please describe)

4. Covered Date: The date that defines the end of the Covered Time Period as described above, in YYYYMMDD format.

b. Consumer Account Information

Note: questions 5 – 7 below are as of the Covered Date; questions 8 – 11 are as of the dates noted in the questions.

5. Total Consumer Accounts: The number of Consumer Accounts at the Financial Institution. The term "Consumer Account" is defined above.

6. Total Consumer Active Accounts: The number of Consumer Accounts reported in question 5 that had at least one consumer-initiated debit transaction (e.g., purchase, cash withdrawal, bill payment, check, ATM transaction) or deposit during the month preceding the Covered Date. Exclude those accounts where the only debit activity is fees.
7. Total Consumer Account Balance: The total balance, in dollars, of all Consumer Accounts at the Financial Institution.
8. Total Consumer Accounts at Beginning of Covered Time Period: The number of Consumer Accounts open at the Financial Institution as of the start of the Covered Time Period.
9. Total Consumer Accounts Opened: The number of Consumer Accounts opened during the Covered Time Period.
10. Total Consumer Accounts Closed: The number of Consumer Accounts closed during the Covered Time Period. Include customer-initiated account closures as well as bank-initiated account closures.
11. Total Involuntary Closures: The number of Consumer Accounts at the Financial Institution that were closed by the Financial Institution during the Covered Time Period due to negative balances and not related to suspected fraud.

c. Consumer Account Services

Note: questions 12 – 19 below are for Consumer Accounts open as of the Covered Date.

12. Accounts with Debit Cards: The number of Consumer Accounts at the Financial Institution that have at least one activated debit card associated with the account.
13. Accounts with Debit Card Activity: The number of Consumer Accounts at the Financial Institution that have at least one settled debit card transaction per month open during the Covered Time Period.
14. Accounts with Online Banking: The number of accounts at the Financial Institution that have at least one associated online banking login. If the Financial Institution does not use your services for online banking, this entry should read “NA.”
15. Accounts with Mobile Banking: The number of accounts at the Financial Institution that have downloaded a mobile banking application. If the Financial Institution does not offer a mobile banking application or use your services for mobile banking, this entry should read “NA.”
16. Overdraft Line of Credit: If the Financial Institution offers any Consumer Account an overdraft line of credit subject to Regulation Z (12 CFR 1026 *et seq.*), such as transfers from a credit card account, home equity line of credit, or dedicated overdraft line of credit, this entry

should read “Yes.” If the Financial Institution does not offer these products, this entry should read “No.”

17. Accounts with Line of Credit: The number of Consumer Accounts at the Financial Institution that are linked to an overdraft line of credit, as defined directly above. If the Financial Institution does not offer these products, this entry should be 0.

18. Linked Savings Account: If the Financial Institution offers any Consumer Account an option to link a savings account for purposes of covering transactions that might otherwise result in a negative balance, this entry should read “Yes.” If the Financial Institution does not offer this product, this entry should read “No.”

19. Accounts with Linked Savings: The number of Consumer Accounts at the Financial Institution that are linked to a savings account as defined directly above. If the Financial Institution does not offer this product, this entry should be 0.

d. Overdraft Program

Note: questions 20 – 53 below are as of the Covered Date. Please respond with information about the overdraft program that is most commonly offered at each institution, i.e., the overdraft program available with the most common consumer checking account at each institution. Where you are not able to determine how a Financial Institution uses the systems or software that you provide, please respond with information about the services that are available with the configuration of the systems as you have provided them.

20. Automated Overdraft Service: Whether the Financial Institution makes overdraft-related decisions via automated processing. This entry should be “c” if the institution has automated capabilities as well as the ability to make manual decisions and if you cannot observe whether the institution utilizes the option for manual review.
 - a. All decisioning is automated
 - b. No decisioning is automated/all decisioning is performed manually
 - c. Initial decisions are automated, but some or all decisions are reviewed and may be overturned manually
 - d. Other (please specify)

21. Blanket Opt-In Offered: If the Financial Institution has the ability to offer Overdraft Services for ATM and/or one-time debit card transactions for which consumer opt-in is required under 12 CFR 1005.17(b) before the institution may charge a fee.
 - a. Yes, accountholders may opt in for all future point of sale (POS) and ATM transactions
 - b. Yes, accountholders may opt in for all future POS transactions
 - c. Yes, accountholders may opt in for all future ATM transactions
 - d. No, accountholders are not permitted to opt in on a blanket basis for fee-based overdraft coverage of all future POS or ATM transactions

- e. Other (please specify)
22. Per-Transaction Opt-In at ATM Offered: If the Financial Institution offers Overdraft Service for ATM transactions for which consumer opt-in is required under 12 CFR 1005.17(b) before the institution may charge a fee, and invites its customers to opt in to this coverage on a per-transaction basis at proprietary ATMs.
- Yes, accountholders may opt in per-transaction at proprietary ATMs for fee-based overdraft coverage of the ATM transaction
 - No, accountholders are not permitted to opt in per-transaction at proprietary ATMs for fee-based overdraft coverage of the ATM transaction
23. Accounts Opted In: For Financial Institutions for which the answer to question 21 is “a”, “b”, or “c”, the number of Consumer Accounts at the Financial Institution where the consumer has opted in to overdraft services for all future transactions under 12 CFR 1005.17(b). If the response to “Blanket Opt-In Offered” above is neither “a”, “b”, nor “c”, this entry should be 0.
24. Overdraft Fee: The fee, in dollars, most frequently charged per transaction by the Financial Institution for transactions covered by its Overdraft Service. Do not consider other fees related to the institution’s Overdraft Service such as extended overdraft fees or linked account transfer fees. If the institution assesses overdraft fees in a manner other than per-transaction, indicate “other.” If the institution charges different per-transaction overdraft fees (*e.g.*, tiered by the size of the item or the number of overdraft items), this entry should be the size of the most common fee by volume.
25. NSF Fee: The fee, in dollars, most frequently charged by the Financial Institution for each transaction returned on a consumer’s account for lack of funds. If the institution assesses NSF fees in a manner other than per-transaction, indicate “other.” If the institution charges different per-transaction NSF fees (*e.g.*, tiered by the size of the item or the number of NSF items), this entry should be the size of the most common fee by volume.
26. NSF/Overdraft Fee Cap: The maximum dollar amount of overdraft or NSF fees that a consumer can be charged in one business day. If the institution has separate fee caps for overdraft and NSF fees, please add the two caps for a combined total. If the institution does not cap fees, this entry should be blank.
27. Time Coverage of Fee Cap: The time period during which NSF and/or overdraft fees are added to be evaluated against a cap. If the institution does not cap fees, this entry should be blank.
- Daily
 - Other (please specify)
 - [Blank]
28. De Minimis Measurement: The dimension(s) on which any *de minimis* policy (setting a value below which the consumer will not be charged an overdraft fee) of the Financial Institution is applied. If the Financial Institution has no *de minimis* policy, this entry should be blank.
- Per Transaction

- b. End of day balance
 - c. Both
 - d. Other
 - e. [Blank]
29. Per-Transaction De Minimis Amount: The dollar value of any per-transaction de minimis measurement below which the consumer will not be charged an overdraft fee. If the Financial Institution has no per-transaction de minimis policy, this amount should be \$0.
30. End of Day Balance De Minimis Amount: The dollar value of any end of day balance de minimis measurement, defined herein, below which the consumer will not be charged an overdraft fee. Report the negative balance threshold as a positive number, *e.g.*, if an institution does not charge an overdraft fee for transactions that take the account's end of day balance negative by less than \$10, this entry should be \$10. If the Financial Institution has no end of day balance de minimis policy, this amount should be \$0.
31. Forgiveness Period: If the Financial Institution offers a time period after the day of an overdraft transaction that results in a negative account balance, during which the consumer may deposit funds and avoid being charged an overdraft fee. For the purposes of this question, the business day is defined as ending at the cutoff time for receiving deposits for posting that day. If the Financial Institution does not offer such a forgiveness period, this entry should be blank.
- a. After the end of the business day of the overdraft and before the end of the next business day
 - b. Later than the end of the next business day
 - c. Other
 - d. [Blank]
32. Overdraft Service Pay/Return Balance: The definition of account balance used by the Financial Institution to determine whether to pay or return most or all items (other than pre-authorized items) presented for posting.
- a. Ledger Balance
 - b. Available Balance (ledger balance adjusted for all outstanding authorizations and holds on deposit)
 - c. Adjusted Available Balance (ledger balance adjusted for certain outstanding authorizations—*e.g.*, all except those coded to travel and entertainment merchants—and holds on deposits)
 - d. Other
33. Authorize/Decline Balance for Debit Card and ATM Transactions: The balance used to authorize or decline debit card and ATM transactions as they arrive to the Financial Institution throughout the day.
- a. Ledger Balance
 - b. Available Balance (ledger balance adjusted for all outstanding authorizations and holds on deposit)

- c. Adjusted Available Balance (ledger balance adjusted for certain outstanding authorizations—*e.g.*, all except those coded to travel and entertainment merchants—and holds on deposits)
 - d. Other
34. Overdraft Service Charge/No Charge Balance: The definition of account balance used by the Financial Institution to determine whether to charge a fee for most or all NSF or overdraft transactions.
- a. Ledger Balance
 - b. Available Balance (ledger balance adjusted for all outstanding authorizations and holds on deposit)
 - c. Adjusted Available Balance (ledger balance adjusted for certain outstanding authorizations—*e.g.*, all except those coded to travel and entertainment merchants—and holds on deposits)
 - d. Other
35. Overdraft Service Charge/No Charge Timing for Debit Card and ATM Transactions: The time at which the Financial Institution determines whether to charge a fee for overdraft transactions made with a debit card or at the ATM for customers opted in to this service under 12 CFR 1005.17(b)(1).
- a. During posting, after the transaction has settled
 - b. During posting, after the transaction has been authorized but before it has settled
 - c. At the time of authorization
 - d. Other
36. Funds Availability Timing: The time at which the Financial Institution provides funds availability a PPD ACH credit that is received before its date of settlement.
- a. On the day received or another date before the settlement date
 - b. On the day of settlement
37. Overdraft Limits: Whether the amount of overdraft coverage that a Financial Institution provides to an accountholder in an Overdraft Service is calculated on a per-account (individual) basis using a matrix, or assigned an overdraft limit that is identical for all accounts of a certain product type or across an institution's portfolio of Consumer Accounts. If the institution does not use an overdraft limit associated with the account to make pay or return decisions for transactions that would bring an account's balance negative or further negative if posted, this entry should be blank.
- a. Individual overdraft limits set for each account
 - b. Common overdraft limit assigned to all eligible accounts or based on product type
 - c. Financial Institution uses a third party to assign overdraft limits
 - d. [Blank]

38. Accounts with Overdraft Limit: The number of Consumer Accounts with an overdraft limit of more than \$0, if the Financial Institution uses an overdraft limit as described in question 37.
39. Transaction Processing: The primary transaction processing system used by the bank to post consumer-initiated transactions to the account. This entry should only reflect the process by which the Financial Institution makes changes to an account's ledger balance, not including processes such as memo-posting during the day; this does not include processing of outstanding authorizations or holds on deposits.
- Nightly batch processing (posting at night all transactions that have arrived at the bank during the day before a cutoff time)
 - Intraday processing (intraday posting and settlement of transactions as they are executed or in batches throughout the day for transactions that arrive to the bank in batches for settlement)
 - A combination of nightly batch processing and intraday processing, with some transactions posted to the account intraday and others posted during a nightly batch processing
 - Other (please specify)

Note: questions 40 – 45 below refer to the methods used to post transactions to the consumer's account in nightly batch processing only, as defined in question 39. Exclude information about methods used to process transactions in any intraday processing used by the Financial Institution. Also exclude information about the methods used to process adjustments to a previous day's processing in responding to these questions.

40. Order of Credits and Debits: The sequencing of credits to the account and consumer-initiated debits when posting transactions to the consumer's account in nightly batch processing. If the response to question 39 above is "b" and the institution does not engage in nightly batch processing, this entry should be blank.
- All credits posted before customer-initiated debits
 - Some customer-initiated debits can be posted before credits
 - All customer-initiated debits posted before credits
 - [Blank]
41. Nightly Batch Processing: How consumer-initiated debits are posted to the consumer's account during nightly batch processing. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, this entry should be blank.
- All consumer-initiated debits are commingled for posting
 - Consumer-initiated debits are grouped by transaction type(s), or other criteria, into buckets that are sequenced for posting
 - [Blank]

42. Transaction Size Ordering, Commingled Debits: The sequencing of consumer-initiated debits in posting to the consumer's account by the size of the transaction, if the entry to question 41 is "a" and the Financial Institution commingles all consumer-initiated debits for posting. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, or the response to question 41 is not "a," this entry should be blank.
- All debit transactions are ordered for posting from largest to smallest
 - All transactions are ordered for posting from smallest to largest
 - No transactions are ordered for posting according to their size
 - [Blank]
43. Transaction Size Ordering of Debit Card Transactions: The sequencing of debit card transactions in posting to the consumer's account, if the Financial Institution groups transactions into buckets for posting as described in question 41. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, or the response to question 41 is not "b," this entry should be blank.
- Transactions in the bucket containing debit card transactions are ordered for posting from largest to smallest
 - Transactions in the bucket containing debit card transactions are ordered for posting from smallest to largest
 - Transactions in the bucket containing debit card transactions are not ordered for posting according to their size
 - [Blank]
44. Transaction Size Ordering of Non-Debit Card Transactions: The sequencing of non-debit card consumer-initiated debits in posting to the consumer's account, if the Financial Institution groups transactions into buckets for posting as described in question 41. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, or the response to question 41 is not "b," this entry should be blank.
- Transactions in any of the buckets that do not contain debit card transactions are ordered for posting from largest to smallest
 - Transactions in any of the buckets that do not contain debit card transactions are ordered for posting by size, but none are ordered from largest to smallest
 - None of the buckets that do not contain debit card transactions are ordered for posting by size
 - [Blank]
45. Sequencing of Debit Card Transactions: The sequencing of buckets containing debit card transactions in nightly batch processing, relative to buckets containing checks and ACH transactions, if the response to question 41 is "b" and the institution groups transactions into buckets for posting. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, or the response to question 41 is "a" and the institution commingles all transactions for posting, this entry should be blank.
- The bucket of transactions containing debit card transactions is processed before any buckets containing checks and before any buckets containing ACH transactions are processed.
 - The bucket of transactions including debit card transactions also includes either checks or ACH transactions.

- c. The bucket of transactions containing checks and/or the bucket of transactions containing ACH transactions are processed before the bucket containing debit card transactions.
 - d. [Blank]
46. Sequencing of Must-Pay and Discretionary Transactions: The sequencing of consumer-initiated debit transactions in nightly batch processing that are force-pay and discretionary. Must-pay transactions are transactions that have been authorized by the institution or have already been paid from a consumer's account before being posted to the account (for example, ATM or teller cash withdrawals). Discretionary transactions are the consumer-initiated debits that an institution will decide to pay or return if posting against a negative balance (for example, a check that has arrived to the bank for payment). If an institution's entry for question 41 is "a" and the institution does not use the force-pay or discretionary payment status of a transaction to sequence the posting of consumer-initiated debits, this entry should be "b". If the response to question 39 is "b" and the institution does not engage in nightly batch processing, this entry should be blank.
- a. Must-pay transactions are always posted before discretionary debits
 - b. Some force-pay transactions are posted before some discretionary debits
 - c. Discretionary debits are always posted before force-pay transactions.
 - d. [Blank]
47. Chronological Transaction Ordering: The ordering of consumer-initiated electronic debit transactions in posting to a consumer's account where the transaction includes an electronic indication of the timing of the consumer's authorization or execution of the transaction. For example, the authorization timestamp of a debit card purchase at the point of sale or the timestamp of an ATM cash withdrawal. If the response to question 39 is "b" and the institution does not engage in nightly batch processing, this entry should be blank.
- a. Transactions are ordered sequentially by their authorization and/or execution timestamp when available.
 - b. Neither authorization nor execution timestamps are used to sequence the posting of transactions.
 - c. [Blank]
48. Fees and Intraday Processing: If engaging in any intraday processing (*i.e.*, if the response to question 39 above is "b" or "c"), the timing of the Financial Institution's decision to charge overdraft fees, as defined above. If the response to question 39 above is "a" and the institution only processes transactions by nightly batch processing, this entry should be blank.
- a. Overdraft fees may be charged if a debit posts to the consumer's account against a negative balance during the day.
 - b. Overdraft fees may only be charged if a consumer's account is negative at the end of the day after all credits received during the day have been posted to the consumer's account.
 - c. [Blank]
49. Extended Overdraft Fee: Also commonly called "sustained negative balance" fee. The fee, in dollars, charged by the Financial Institution for a negative balance that has remained negative

past a set time threshold, a sustained overdraft, or similar condition. If the Financial Institution does not charge such a fee, this entry should be \$0.

50. Extended Overdraft Fee Day Definition: Whether the time after the first day of an account's balance being negative before an extended overdraft fee is charged is measured in business or calendar days. For example, if an institution charges a \$10 one-time fee on the 7th calendar day after an account's balance becomes negative, the entry for question 49 should be "\$10", the entry for question 50 should be "b", the entry for question 51 should be "7", and the entry for question 52 should be "a". If the Financial Institution does not charge such a fee, this entry should be blank.
- Business days
 - Calendar days
 - [Blank]
51. Extended Overdraft Fee Period: The number of consecutive days (either business or calendar days, as indicated above) with a negative account balance after which the Financial Institution charges an extended overdraft fee defined above. If the Financial Institution does not charge such a fee, this entry should be left blank.
52. Extended Overdraft Fee Recurrence: Whether the extended overdraft fee is charged on a one-time, daily, weekly, or other basis. For example, if an institution charges a weekly fee of \$10 on the 7th calendar day after an account's balance becomes negative, the entries for questions 49, 50, and 51 should be the same as for the example described in question 50, and the entry for question 52 should be "c". If the Financial Institution does not charge such a fee, this entry should be blank.
- One-time
 - Daily
 - Weekly
 - Other
 - [Blank]
53. Extended Overdraft Fee Causes: The type of transaction causing a negative balance that can result in an extended overdraft fee being charged. If the Financial Institution does not charge such a fee, this entry should be blank.
- Overdraft transactions only
 - Overdraft transactions or other transactions leading to a negative balance such as any bank fee charged against an insufficient balance
 - Other (please specify)

e. Fee Revenue

Note: questions 54 – 58 below are for the Covered Time Period, for all Consumer Accounts open at any point during the Covered Time Period. Count fees charged after application of

automatic waivers—e.g., de minimis policies or fee caps—but before application of manual waivers or refunds.

54. Overdraft Fee Revenue: The total gross revenue, in dollars, charged by the Financial Institution for overdraft fees in connection with its Overdraft Service (excluding Extended Overdraft Fee Revenue and Linked Account Transfer Fee Revenue, below).
55. NSF Fee Revenue: The total gross revenue, in dollars, charged by the Financial Institution for NSF fees.
56. Extended Overdraft Fee Revenue: The total gross revenue, in dollars, charged by the Financial Institution for extended overdraft fees.
57. Linked Account Transfer Fee Revenue: The total gross revenue, in dollars, charged by the Financial Institution for the service to transfer funds from a linked account to cover transactions that might otherwise result in a negative balance. Include revenue charged for the service of a linked line of credit as defined in question 16 or linked savings account as defined in question 18.
58. Other Consumer Deposit Account Fee Revenue: The total gross revenue, in dollars, charged by the Financial Institution for all other service charges on consumer deposit accounts.

f. Consumer Overdraft Activity

Note: questions 59 – 63 below are for Consumer Accounts open as of the Covered Date and refer to overdraft activity for these accounts during the Covered Time Period. Count fees charged after application of automatic waivers—e.g., de minimis policies or fee caps—but before application of manual waivers or refunds.

59. Accounts with No Overdraft Fee Assessed: The number of Consumer Accounts at the Financial Institution that were not charged an overdraft fee.
60. Accounts with 1–3 Overdraft Fees Assessed: The number of Consumer Accounts at the Financial Institution that were charged at least one, and no more than three overdraft fees.
61. Accounts with 4–10 Overdraft Fees Assessed: The number of Consumer Accounts at the Financial Institution that were charged at least four, and no more than ten overdraft fees.
62. Accounts with More than 10 Overdraft Fees Assessed: The number of Consumer Accounts at the Financial Institution that were charged more than ten overdraft fees.

63. Accounts with One or More Extended Overdraft Fees Assessed: The number of Consumer Accounts at the Financial Institution that were charged at least one “Extended Overdraft Fee,” as defined above.

7. Appendix B: Comparing credit unions using varying processing solutions

To determine the extent to which the population of credit unions (CUs) for whom information was reported by the core processors for this Data Point was similar to that of all credit unions using these types of vendors and to credit unions using other methods to process transactions in 2014, we take advantage of the fact that at the time the NCUA asked about the type of data processing system used to maintain a credit union's records on the credit union profile form. The possible answers differentiate between (1) credit unions using a vendor's online service bureau; (2) credit unions using vendor-supplied services in-house; (3) credit unions using an in-house system developed by the institution; and (4) credit unions using some other system that does not fit into the previous three categories. This information and several other policy fields from the profile form are matched to 2014 NCUA Call Report data containing a wide range of institution characteristics and performance measures which allows us to compare how credit unions using the various types of data processing systems compared in terms of their characteristics, policies, and outcomes.

Table 32 reports the results of this exercise together with comparable statistics from the core processor sample. All credit unions in the public NCUA Call Report data had information on the type of data processing system used. The universe of potentially observable credit unions in the core processor sample is in Category 1—credit unions using a vendor's online service bureau. We observe 1,266, or 60.4%, of the 2,097 credit unions in this category. By construction, none of the remaining categories contain credit unions that could be part of the core processor sample, since the sample consists only of credit unions using online services from core processors.

In comparing all Category 1 credit unions to the subset in the core processor sample, we observe similarities between these groups of institutions along those dimensions that can be compared for the sample credit unions that are the subject of this Data Point. Specifically, we observe similarities for the median number of checking accounts held at the institution, the median balances in those accounts, and the share of credit unions providing certain features (debit card, online banking, mobile banking, overdraft program, and overdraft lines of credit). This suggests

that the credit unions in the core processor sample were similar to the broader universe of credit unions that used online processing systems from a vendor at the time.

TABLE 32: COMPARISON OF CALL REPORT DATA FOR CREDIT UNIONS THAT USED DIFFERENT PROCESSING SOLUTIONS AND CREDIT UNIONS IN THE CORE PROCESSOR SAMPLE

Statistic	Category 1	Category 2	Category 3	Category 4	Core Processor Sample
	CUs using Vendor's Online Service Bureau	CUs using Vendor Supplied In-House System	CUs using CU Developed In-House System	CUs using Other System	
Count	2,097	2,826	7	49	1,266
Median assets (\$1000s)	\$39,263	\$44,863	\$5,007,423	\$25,732	N/A
Median number of members	4,531	5,846	306,337	4,032	N/A
Median number of checking accounts	1,914	2,399	136,668	1,731	2,066
Median share of checking accounts	25.0%	25.2%	29.4%	25.0%	N/A
Median balances in checking accounts	\$2,421	\$2,233	\$2,497	\$2,722	\$2,601
Share of CUs providing debit card	97.8%	96.2%	100.0%	89.8%	96.0%
Share of CUs providing ATM	95.3%	91.8%	85.7%	85.7%	N/A
Share of CUs providing free checking	93.3%	94.8%	85.7%	93.9%	N/A
Share of CUs providing online banking	96.1%	92.3%	100.0%	89.8%	94.7%
Share of accounts using online banking	21.6%	25.7%	25.2%	21.7%	N/A
Share of CUs providing mobile banking	55.9%	57.1%	85.7%	34.7%	47.4%
Share of CUs providing an overdraft program	60.0%	62.1%	57.1%	51.0%	60.9%
Share of CUs providing overdraft line of credit	58.6%	59.7%	42.9%	55.1%	61.1%
Median fee income per member	\$63.86	\$66.20	\$33.77	\$69.99	N/A

Note: sample restricted to CUs with at least 10 checking accounts

To further examine how our sample and credit unions using online services more generally differed from credit unions overall, we also compare Call Report statistics across all categories. Not surprisingly, the few credit unions using a credit-union-developed in-house system were orders of magnitude larger than those that use either vendor system. Category 2 credit unions were 15%-30% larger than Category 1 credit unions when comparing on median asset size, membership, or number of checking accounts. Median balances in checking accounts, which could influence the risk that an account becomes overdrawn, were 8% lower at Category 2 compared to Category 1 credit unions. The share of credit unions providing an overdraft program was also slightly higher among Category 2 than Category 1 credit unions (62.1% versus 60.0%). Correspondingly, fee income per member, was almost 4% higher at Category 2 than Category 1 credit unions, though it should be noted that the Call Report fee income measure is much broader than the overdraft, NSF, and SNB fee income reported in the core processor

sample.⁵² There are no narrower fee income measures in the credit union Call Report data. These results are suggestive that Category 1 and 2 credit unions, which make up the bulk of credit unions, were comparable with regard to important determinants of overdraft outcomes.

⁵² Fee income reported in the Call Report data includes a diverse set of fees, such as those related to credit card accounts, loan products, and business accounts.