

# Data Point: Overdraft/NSF Fee Reliance Since 2015 – Evidence from Bank Call Reports

Data Point No. 2021-12

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# 1. Introduction

Consumers using deposit accounts sometimes engage in debit transactions in amounts that exceed their accounts' balances. An overdraft occurs if their financial institution chooses to cover such a transaction, and this often carries a fee depending on the circumstances of the transaction and the financial institution's policies. A non-sufficient fund (NSF) fee may be charged if the consumer's financial institution returns certain types of transactions unpaid. Overdraft and NSF fees have been an important source of fee revenue from deposit accounts for financial institutions for some time. In a 2014 study using data from 2011-2012, the Consumer Financial Protection Bureau's ("CFPB" or "the Bureau") Office of Research found that, at a collection of large banks, overdraft and NSF fees made up over half of all checking account fees.<sup>1</sup>

In this report, we study the evolution of banks' reliance on overdraft and NSF fees using data from 2015 to 2021 from the Consolidated Reports of Condition and Income, or "Call Reports," made available through the Federal Financial Institutions Examination Council. Starting in 2015, for each bank with assets over \$1 billion, the Call Reports contain information on the three largest categories of fees on consumer deposit accounts: 1) overdraft and NSF fees, 2) periodic maintenance fees, and 3) automated teller machine (ATM) fees (which we refer to collectively as "listed fees"). The 2014 study cited above found that these listed fees made up around 83 percent of all checking account fees.

The picture that emerges is one of a market that is quite stable and persistent, especially before the COVID-19 pandemic of 2020. Specifically, the key findings of this study are as follows:

- Aggregate overdraft/NSF fee revenues reported in the Call Reports saw a small steady increase of around 1.7 percent per year to \$11.97 billion in 2019. Aggregate maintenance fee revenues grew more slowly at 0.6 percent, reaching \$4.14 billion in 2019. Aggregate ATM fee revenues started slowly declining in 2016, reaching \$1.85 billion in 2019. All three types of aggregate fee revenues declined in 2020 with overdraft/NSF fee revenues seeing the largest decline at 26.2 percent.

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<sup>1</sup> See Trevor Bakker, Nicole Kelly, Jesse Leary, Éva Nagypál. 2014. "[Checking Account Overdraft](#)." CFPB Data Point, pp. 9.

- Complementing the Call Report data with data on small institutions, we estimate that the overall market revenue from overdraft and NSF fees was \$15.47 billion in 2019.
- Reflecting the relative growth of the three types of fees, aggregate “overdraft/NSF fee reliance” (or simply “reliance,” defined as the share of the three types of listed fees made up by overdraft/NSF fees) remained fairly steady at a little over 65 percent between 2015 and 2018, increased to 66.5 percent in 2019 and declined to 62.4 percent in 2020.
- Across individual banks, overdraft/NSF reliance varies widely with most banks’ reliance exceeding 50 percent. Despite this cross-institutional variation, the overdraft/NSF fee reliance of individual banks is very persistent. The correlation between a bank’s reliance in 2015 and that in 2019 is 0.90, pointing to persistent bank practices and customer bases and use with regards to overdraft/NSF fees. There are few banks that saw their overdraft/NSF fee reliance systematically increase or decrease between 2015 and 2019 and those that did experienced relatively small changes in their reliance, providing further evidence of a stable and persistent market.
- During 2020, most banks experienced a decline in their overdraft/NSF fee reliance with the extent of the change varying considerably across banks. The only correlates studied that show a statistically significant relationship with the change in overdraft/NSF fee reliance during the pandemic is a bank’s pre-pandemic reliance and charter type, with banks with higher pre-pandemic reliance and a state charter showing a smaller decline in reliance during the pandemic.
- We also document that aggregate consumer deposit balances at the reporting banks, and average checking account balances in particular, experienced a marked rise during the pandemic in large part due to the stimulus payments received by consumers. Together with the fall in debit card transactions during the first quarter of the pandemic, these changes likely contributed to the observed changes in overdraft/NSF fee reliance.

## 2. Data

Banks are required to file detailed quarterly public financial statements with their regulatory supervisors. These Consolidated Reports of Condition and Income, or “Call Reports,” are made available through the Federal Financial Institutions Examination Council. Before 2015, banks did not break out information about their consumer overdraft and NSF fee revenues. Instead, banks reported that information within a broader measure of fees called service charges on deposit accounts or “deposit service charge revenue” earned on both consumer and commercial deposit accounts. Beginning in 2015, banks with assets over \$1 billion that offered consumer deposit accounts were required to report three categories of fees earned on consumer deposit accounts separately from other deposit service charges.<sup>2,3</sup> These three categories of fees are 1) overdraft and NSF fees, 2) periodic maintenance fees (most often charged as monthly service fees) and 3) automated teller machine (ATM) fees.<sup>4</sup> According to earlier CFPB research, for checking accounts at large banks, these three types of fees make up around 83 percent of all checking account fees.<sup>5</sup> Moreover, these three types of fees assessed on consumer deposit accounts accounted for 54.0 percent of total deposit service charges in 2015, emphasizing the importance of the breakout of these fees from those that banks earn on commercial deposit products.

In this report, we consider how these three types of fees (which we refer to collectively as “listed fees”) have evolved since banks with assets over \$1 billion started reporting on them in 2015. In addition, we introduce the concept of “overdraft/NSF fee reliance” (or at times simply “reliance”), which we define as the share of overdraft and NSF fees among the listed fees at a given institution.

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<sup>2</sup> See an earlier discussion of these requirements in [“Variation in Bank overdraft Revenues and Contribution,”](#) CFPB, 2016.

<sup>3</sup> Specifically, deposit accounts fall into three categories: 1) transaction accounts (such as checking or negotiable order of withdrawal (NOW) accounts), 2) non-transaction savings accounts (including money market deposit accounts), and 3) non-transaction time deposit accounts. The affected banks were required to report fees earned on “those transaction account and non-transaction savings account deposit products intended primarily for individuals for personal, household, or family use.”

<sup>4</sup> Credit unions file reports with the National Credit Union Administration and are not required to report separately on overdraft and NSF fees.

<sup>5</sup> See Trevor Bakker, Nicole Kelly, Jesse Leary, Éva Nagypál. 2014. [“Checking Account overdraft.”](#) CFPB Data Point, pp. 9.

It is important to keep in mind that overdraft/NSF fee reliance can vary for several reasons across institutions. First, it can vary due to different fee structures used by various institutions for consumer deposit accounts. Second, it can vary due to the mix of consumers served by the institution. Third, and equally importantly, it can vary because the reported fee volumes contain both consumer transaction deposit accounts (which are primarily checking accounts) and consumer non-transaction savings accounts (including money market deposit accounts). Checking and savings accounts have different fee structures with savings accounts usually being subject to significantly fewer overdraft/NSF fees (if such fees are assessed at all) due to their lower average number of transactions.<sup>6</sup> This means that differences across banks in overdraft/NSF fee reliance could also be due to their different mix of checking and savings accounts. We discuss the relevant data included in the Call Reports and our choice to use overdraft/NSF fee reliance as our primary measure for this study in the Methodological Appendix.<sup>7</sup>

After accounting for mergers and acquisitions over the relevant period,<sup>8</sup> there are 719 banks that reported some listed fees since the start of reporting in 2015. In several of our analyses we restrict our attention to the subset of 425 banks that reported overdraft/NSF fee revenues for all six years considered and where the overdraft/NSF fee reliance did not change abruptly between any two years.<sup>9</sup> We refer to these 425 banks as the annual balanced panel.<sup>10</sup> The annual balanced panel accounts for over 97.2 percent of all overdraft/NSF fees reported in all years considered since the banks excluded from the annual balanced panel are mostly small and fluctuate in size around the reporting cutoff of \$1 billion in assets. When reporting quarterly figures, we restrict our attention to the quarterly balanced panel of 238 banks that are members of the annual balanced panel and

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<sup>6</sup> Prior to April 2020, Regulation D had a monthly limit of six convenient transactions (such as ACH, check, or debit card transactions) for non-transaction savings accounts. This limit was removed in April 2020 as part of the [Federal Reserve Board's pandemic response](#).

<sup>7</sup> Other recent studies relying on Call Report data on overdraft and NSF fees include a [2021 March Brookings opinion piece](#) and a [2021 August S&P Global Market Intelligence report](#).

<sup>8</sup> In order to construct a consistent set of banks over time, all institutions in this report are merged to the entity that was listed as the owner as of June 30, 2021 after mergers and acquisitions. See [“Merger Adjusting Bank Data: A Primer.”](#) FDIC Quarterly 2018 Volume 13, Number 1.

<sup>9</sup> There are 454 banks that reported overdraft/NSF fee revenues for all six years considered. Of these, 29 banks had a year-to-year change in overdraft/NSF fee reliance of over 25 percentage points. Upon examining the underlying data, it is likely that these large abrupt changes were due to changes in the categorization under which fees were reported (with significant changes in fees <sup>attributed</sup> to the “other” category containing non-listed deposit service charges).

<sup>10</sup> A “balanced” panel is a technical term denoting a panel data set where all entities have observations for all periods considered.

reported positive overdraft/NSF fee revenues and non-negative listed fees for all 26 quarters between the first quarter of 2015 and the second quarter of 2021.<sup>11</sup> The quarterly balanced panel accounts for over 90.7 percent of all overdraft/NSF fees reported in all years considered.

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<sup>11</sup> A new streamlined call report form for banks with assets under \$5 billion was introduced in 2017 that allowed for semi-annual as opposed to quarterly reporting of the listed fees for banks using these forms. See [Final Federal Register Notice for Proposed New FFIEC 051 Call Report and Proposed Revisions to the FFIEC 031 and FFIEC 041 Call Reports](#) - published January 9, 2017. In addition, listed fees are reported each quarter cumulatively as beginning of year to end of quarter figures. After differencing the cumulative figures, for some smaller reporters the implied quarterly listed fees are either negative or zero. We interpret these as either lack of updating of listed fee revenue figures or corrections of these figures and exclude these reporters from the quarterly balance panel.

# 3. Results

## 3.1 Aggregate Fees Since 2015

In this section, we start by depicting the time trends in the three listed fees of interest. In Section 3.2, we examine the evolution and persistence of overdraft/NSF fee reliance before the pandemic. In Section 3.3, we turn our attention to changes during the pandemic, including changes in consumer use that may be partly explaining the observed changes in the listed fees.

Figure 1 reports aggregate overdraft/NSF fee revenues by year. The green bars represent all banks that report any overdraft/NSF fee revenue while the orange and blue bars represent the annual and quarterly balanced panels, which make up the bulk of the fees reported. Between 2015 and 2019 overdraft/NSF fee revenues have seen a small steady increase of around 1.7 percent per year to \$11.97 billion in 2019. In 2020 during the COVID-19 pandemic, overdraft/NSF fee revenues declined significantly to \$8.84 billion, a 26.2 percent decline compared to their volume in 2019.

We complement the Call Report data with data on small institutions to estimate the overall market revenue from overdraft and NSF fees. Our small institution data on the number of accounts by asset size category and revenue per account by asset size category and by overdraft policy for 2014 comes from our companion report<sup>12</sup> while the distribution of small institutions by asset size category comes from 2014 credit union and bank Call Report data. We assume that small institution overdraft and NSF revenues saw the same growth at small institutions as at large banks to arrive at our estimate for 2019. Overall, we estimate that credit unions generated \$2.37 billion in overdraft and NSF fee revenue in 2019 while banks with assets of less than \$1 billion generated \$1.13 billion in such revenues. Our estimate then for the overall market revenue from overdraft and NSF fees is \$15.47 billion for 2019.<sup>13</sup>

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<sup>12</sup> See Éva Nagypál. 2021. [“Data Point: Checking Account Overdraft at Financial Institutions Served by Core Processors.”](#) CFPB Data Point.

<sup>13</sup> Notice that this estimate is significantly lower than widely cited [estimates from Moebis services](#) which reported \$32.9 billion in overdraft revenues for 2019. Given that 77 percent of our estimate comes from Call Report data for banks with assets over \$1 billion that provide a large share of checking accounts, we are confident that our lower estimate is more accurate.

**FIGURE 1: AGGREGATE OVERDRAFT/NSF FEE REVENUES BY YEAR IN THE CALL REPORTS**

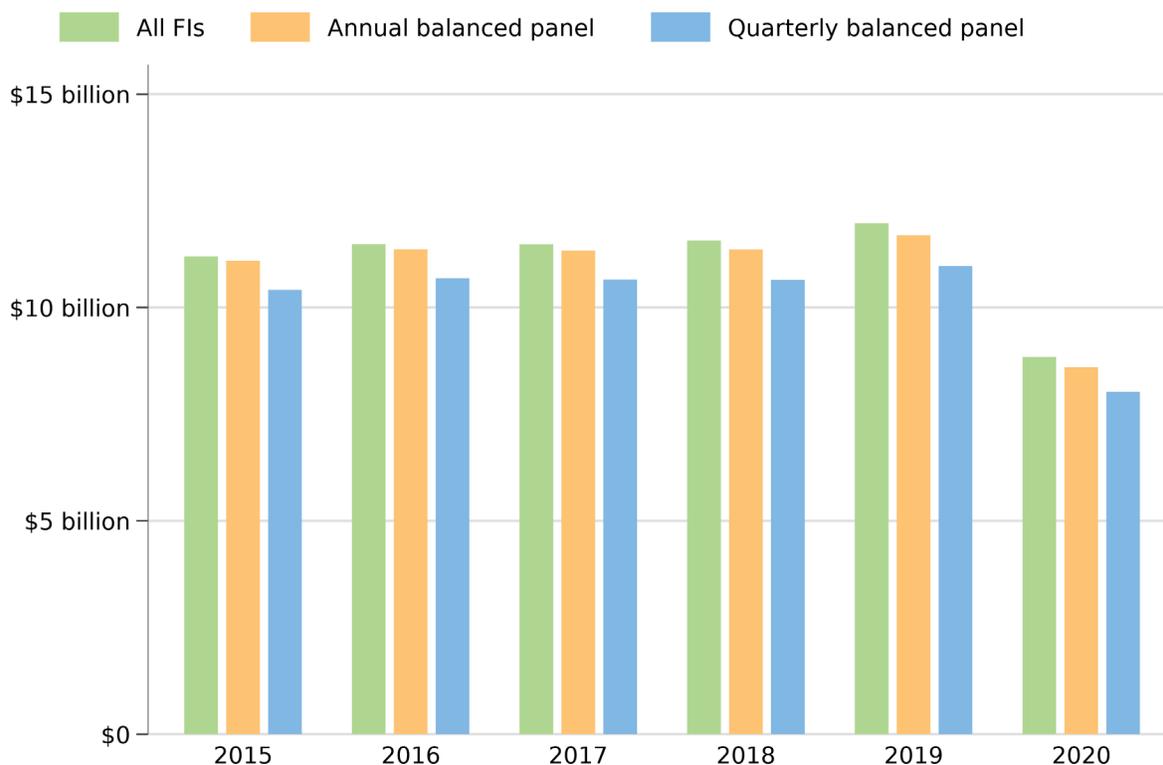


Figure 2 reports aggregate overdraft/NSF fee revenues by quarter for the quarterly balanced panel. It is apparent that overdraft/NSF fee revenues have a seasonal pattern with the first two quarters showing somewhat lower figures. During the pandemic, the drop in overdraft/NSF fee revenues was the most pronounced during the second quarter of 2020, with a year-over-year decline of 50.4 percent. In subsequent quarters, declines compared to the pre-pandemic were somewhat lower, though even in the second quarter of 2021 overdraft/NSF fee revenues were 30.2 percent their volume in the second quarter of 2019.

**FIGURE 2:** AGGREGATE OVERDRAFT/NSF FEE REVENUES IN THE QUARTERLY BALANCED PANEL IN THE CALL REPORTS



Figure 3 reports aggregate maintenance fee revenues by year. Between 2015 and 2019 these revenues were fairly steady, averaging a growth rate of 0.6 percent reaching \$4.14 billion in 2019. In 2020 maintenance fee revenues declined to \$3.79 billion, an 8.6 percent decline compared to their volume in 2019.

**FIGURE 3:** AGGREGATE MAINTENANCE FEE REVENUES BY YEAR IN THE CALL REPORTS

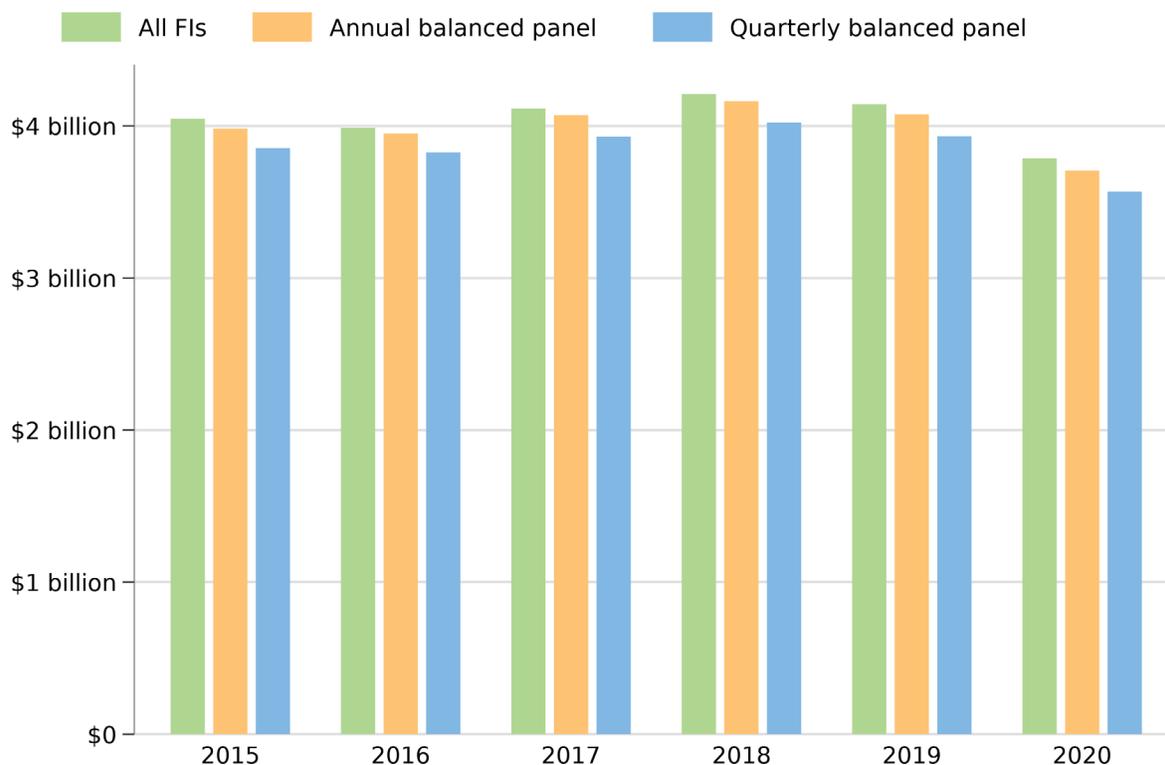


Figure 4 reports aggregate maintenance fee revenues by quarter for the quarterly balanced panel. Less of a seasonal pattern is apparent than with overdraft/NSF fee revenues, especially in later years. The pandemic-induced drop was more evenly distributed across the quarters starting with the second quarter of 2020, with declines of 11.3 to 13.4 percent compared to the appropriate pre-pandemic quarter.

**FIGURE 4:** AGGREGATE MAINTENANCE FEE REVENUES IN THE QUARTERLY BALANCED PANEL IN THE CALL REPORTS



Figure 5 reports aggregate ATM fee revenues by year. These revenues have been smaller in overall volume than revenues from the other listed fees and they declined between 2016 and 2019 reaching \$1.85 billion in 2019.<sup>14</sup> In 2020 during the COVID-19 pandemic, ATM fee revenues declined to \$1.50 billion, an 18.9 percent decline compared to their volume in 2019.<sup>15</sup>

<sup>14</sup> This decline may be attributable to consumers’ shrinking reliance on cash as a payment instrument over this period, as documented in the [2020 Survey of Consumer Payment Choice](#).

<sup>15</sup> It is notable that while all listed fees on consumer deposit accounts declined between 2019 and 2020, deposit services charges not made up by these listed fees (which are made up of fees charged on commercial deposit accounts and, to a lesser extent, by non-listed consumer deposit account fees) increased from \$15.4 billion to \$15.7 billion between the two years.

**FIGURE 5: AGGREGATE ATM FEE REVENUES BY YEAR IN THE CALL REPORTS**

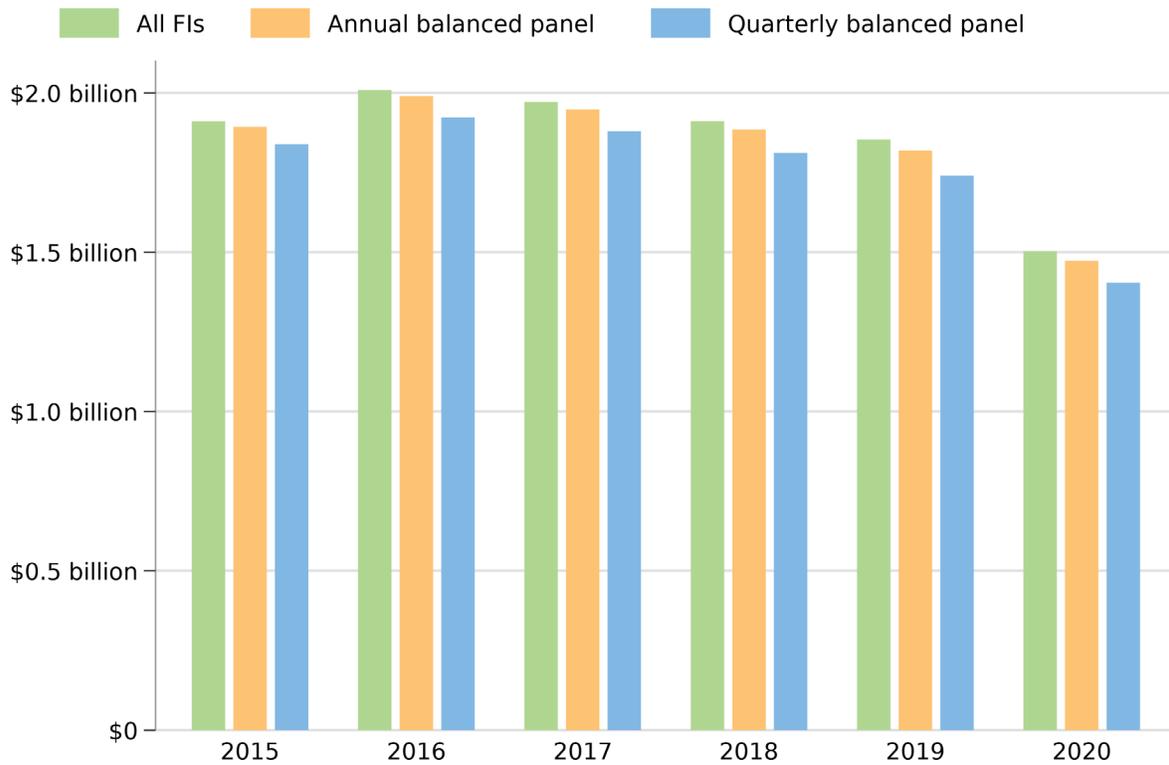


Figure 6 reports aggregate ATM fee revenues by quarter for the quarterly balanced panel. The seasonal pattern is different here than above with the first and last quarter of the year showing somewhat lower revenues. Like with overdraft/NSF fee revenues, the pandemic-induced drop was the largest during the second quarter of 2020 with a year-over-year decline of 37.2 percent. ATM fees recovered faster than overdraft/NSF fee revenues with their volume in the second quarter of 2021 just 3.9 percent below that in the second quarter of 2019.

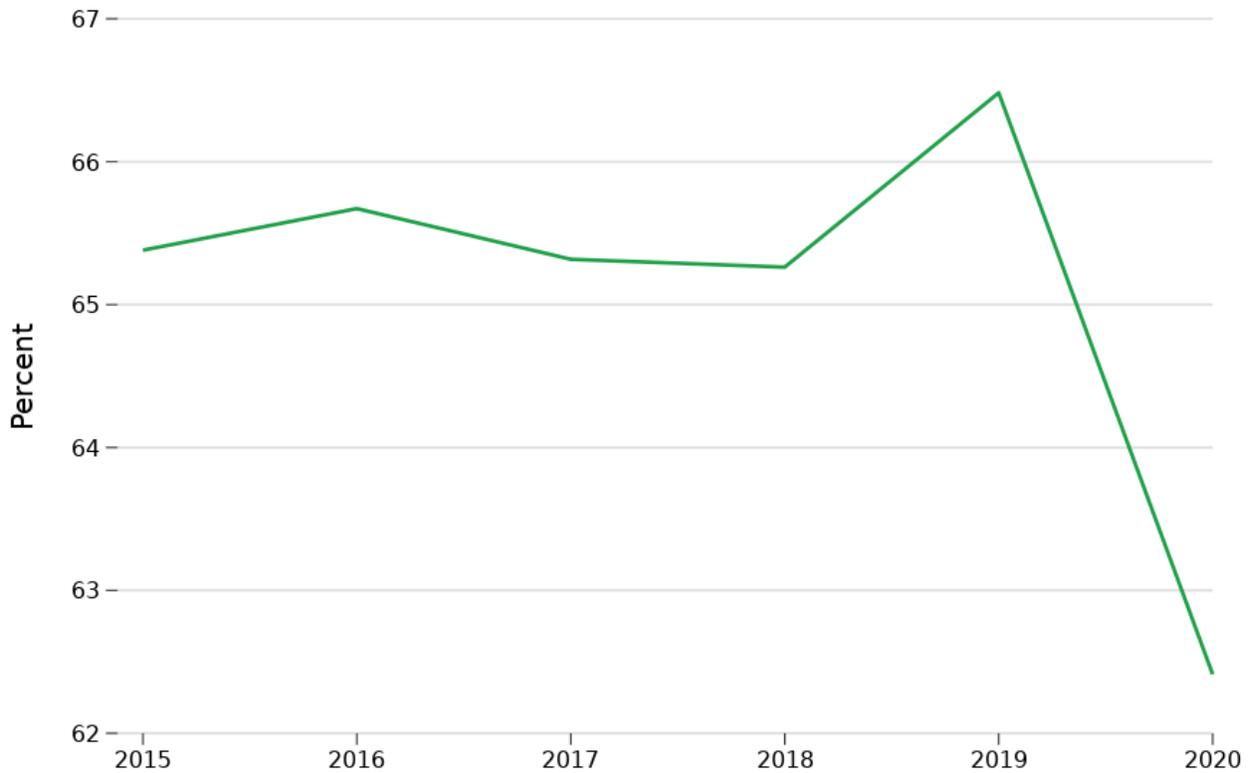
**FIGURE 6:** AGGREGATE ATM FEE REVENUES IN THE QUARTERLY BALANCED PANEL IN THE CALL REPORTS



## 3.2 Overdraft/NSF Fee Reliance and Its Persistence

Next, we turn to examining overdraft/NSF fee reliance, which again is defined as the share of overdraft/NSF fees among the three listed fees in the Call Reports. Figure 7 plots aggregate overdraft/NSF fee reliance by year in the annual balanced panel. We can see that overdraft/NSF reliance has been fairly constant between 2015 and 2018 between 65 and 66 percent, increased by over a percentage point to 66.5 percent in 2019, and then declined to 62.4 percent in 2020. The latter decline is a reflection of the fact that annual overdraft/NSF fee revenues declined more during the pandemic than maintenance fees and ATM fees as seen in Figures 1, 3, and 5.

**FIGURE 7:** OVERDRAFT/NSF FEE RELIANCE IN THE ANNUAL BALANCED PANEL IN THE CALL REPORTS



To highlight more changes during the pandemic, Figure 8 plots aggregate overdraft/NSF fee reliance by quarter in the quarterly balanced panel. After peaking at 67.2 percent in the last quarter of 2019, overdraft/NSF fee reliance dropped to 53.9 percent in the second quarter of 2020. Afterwards, overdraft/NSF fee reliance recovered to around 60 percent in subsequent quarters with a higher reliance of 63.8 percent in the last quarter of 2020 likely partly reflecting seasonal variation. The lower reliance extending into 2021 is notable and reflects the relatively larger continued shortfall of overdraft and NSF fees in relation to their pre-pandemic volumes compared to the shortfall in maintenance and ATM fees documented in Figures 2, 4, and 6.

**FIGURE 8:** OVERDRAFT/NSF FEE RELIANCE IN THE QUARTERLY BALANCED PANEL IN THE CALL REPORTS

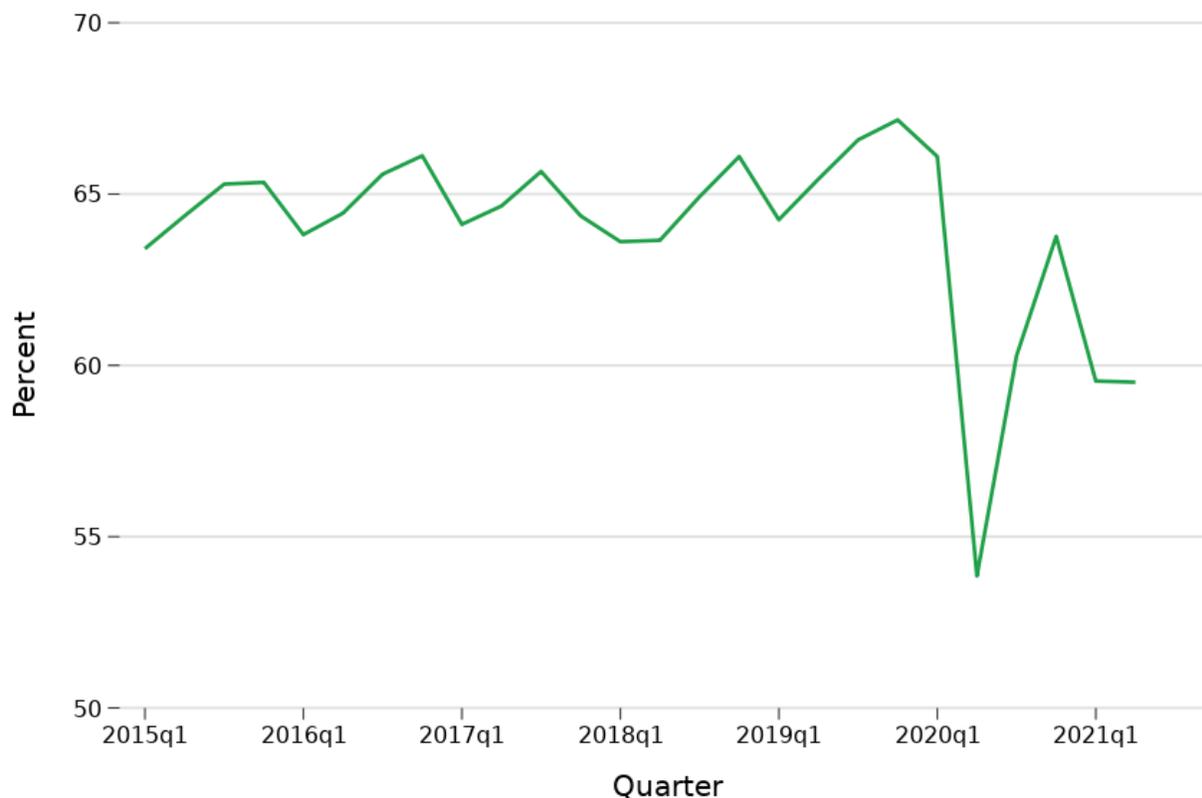
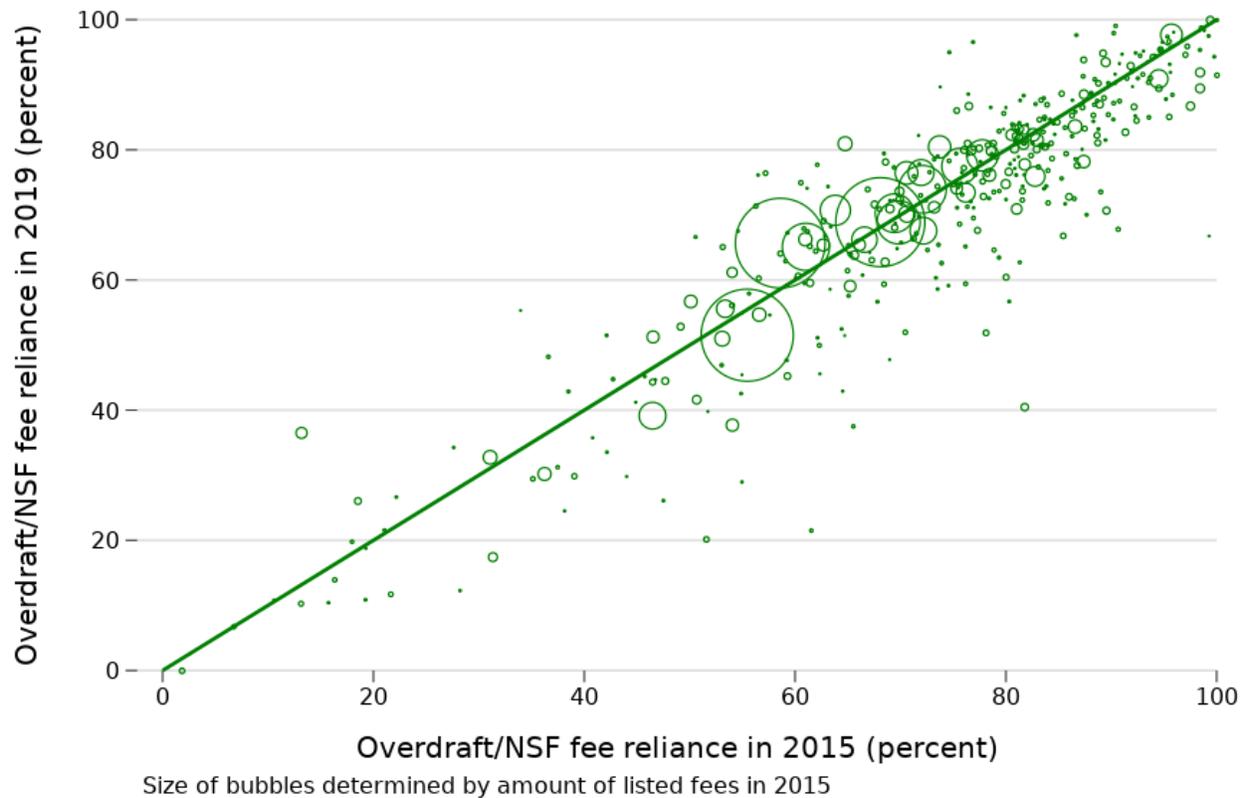


Figure 9 plots overdraft/NSF reliance of each bank in the annual balanced panel in 2015 against the value in 2019. The size of the bubbles is determined by the overall 2015 listed fee revenue of the bank (which is the denominator in overdraft/NSF reliance), with banks collecting more in fees having larger bubbles. This figure demonstrates several findings. First, overdraft/NSF reliance varies widely across banks, though for the vast majority of banks it is over 50 percent. Second, banks with low overdraft/NSF fee reliance tend not to collect a large amount of listed fees in general. Third, overdraft/NSF fee reliance is very persistent as there is a very high correlation between a bank's reliance in 2015 and that in 2019 (with a fee-weighted correlation of 0.90). It is worth noting that there is some variation in overdraft/NSF fee reliance among the top three fee-collecting banks corresponding to the three largest bubbles in the figure (which, between the three of them, accounted for 44.4 percent of all overdraft/NSF fees reported in the Call Reports in 2019). Of the three, Bank of America had the lowest reliance at 55.4 percent in 2015 which reduced to 51.6 percent in 2019, JPMorgan Chase had the highest reliance (at 68.1 percent in 2015

and 69.0 percent in 2019), while Wells Fargo stayed second moving from 58.6 percent in 2015 to 65.7 percent in 2019.

**FIGURE 9:** OVERDRAFT/NSF FEE RELIANCE IN 2015 AND IN 2019 FOR EACH BANK IN THE ANNUAL BALANCED PANEL IN THE CALL REPORTS



These overall aggregate and institution-level persistent patterns may be masking some institutions that are systematically expanding and contracting their overdraft/NSF fee reliance. We now turn to the examination of such banks. “Overdraft/NSF fee reliance expanding banks” are defined as those banks whose overdraft/NSF fee reliance is consistently increasing over time between 2015 and 2019.<sup>16</sup> There are 36 such banks in our panel (representing 8.5 percent of the panel) and they represent 5.9 percent of listed fees charged in 2015. “Overdraft/NSF fee reliance contracting banks” are defined as those banks whose overdraft/NSF fee reliance is consistently decreasing

<sup>16</sup> We exclude 2020 from the definition of expanding banks due to the significant aggregate drop in overdraft/NSF fee reliance documented in Figure 7 between 2019 and 2020.

over time between 2015 and 2019. There are 45 such banks in our panel (representing 10.6 percent of the panel) and they represent 3.0 percent of listed fees charged in 2015. Table 1 lists the share of expanding, contracting, and stable banks (where the latter are defined as neither expanding nor contracting) and their (fee-weighted) average overdraft/NSF fee reliance by year.

**Table 1:** SHARE OF EXPANDING, CONTRACTING, AND STABLE BANKS AND THEIR AVERAGE OVERDRAFT/NSF FEE RELIANCE BY YEAR

		Expanding banks	Contracting banks	Stable banks
Share of annual balanced panel		8.47%	10.59%	80.94%
Share of listed fees in 2015		5.93%	3.01%	91.06%
Overdraft/NSF fee reliance	2015	72.39%	73.25%	64.66%
	2016	74.58%	70.56%	64.94%
	2017	76.13%	69.03%	64.50%
	2018	78.37%	67.18%	64.36%
	2019	80.95%	64.33%	65.62%
	2020	81.55%	60.45%	61.38%

Overall, Table 1 shows that there are relatively few expanding or contracting banks, both groups have higher than average overdraft/NSF reliance in 2015 and experience a less than 9 percentage point change in overdraft/NSF reliance between 2015 and 2019.<sup>17</sup> This means that even these groups that are selected on exhibiting systematic change in overdraft/NSF reliance show relatively muted changes in their reliance. Together with the small size of these groups of banks, this is further evidence of marked overall stability in overdraft/NSF reliance both at the market and at the institution level prior to 2019.

<sup>17</sup> It is notable that expanding banks see an increase in overdraft/NSF fee reliance between 2019 and 2020 despite the decline in the aggregate trend. (This is not by construction, since the definition of an expanding bank relies on overdraft/NSF fee reliance only between 2015 and 2019.)

Using several metrics, this section documented stable and persistent overdraft/NSF fee reliance both at the aggregate level and at the level of individual institutions prior to the pandemic. In the next section we turn to the evolution of overdraft/NSF fee reliance during the pandemic.

## 3.3 Changes During the Pandemic

### 3.3.1 Annual Balanced Panel

Section 3.2 documented that in the annual balanced panel aggregate overdraft/NSF fee reliance dropped significantly between 2019 and 2020. Here we examine this drop at the individual bank level and determine what correlates with the extent of this drop. We examine several possible correlates: the size of the institution (both in terms of assets, consumer deposit balances, and listed fees charged), its location (whether chartered or headquartered in a state that imposed requirements or encouraged banks to adopt overdraft relief policies), its charter type (federally or state chartered), and its pre-pandemic overdraft/NSF fee reliance.<sup>18</sup> We find that the only statistically significant correlates of the bank-level change in overdraft/NSF fee reliance between 2019 and 2020 is the bank's pre-pandemic overdraft/NSF fee reliance and its charter type. On average, the higher the 2018 overdraft/NSF fee reliance of a bank, the smaller is the drop in its reliance during the pandemic. Also, on average, federally chartered banks had a 1.6 percentage point larger drop in their overdraft/NSF fee reliance than state chartered banks. No other covariate examined is statistically significantly related to the change in overdraft/NSF fee reliance using a regression framework. Figure 10 plots the relationship predicted by our regression framework between pre-pandemic overdraft/NSF fee reliance and charter type and the change in overdraft/NSF fee reliance together with the actual change in overdraft/NSF fee reliance between 2019 and 2020 (with the bubbles representing the amount of listed fees collected by the bank in 2019 and green bubbles corresponding to federally chartered banks and red bubbles corresponding to state chartered banks).

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<sup>18</sup> Here we consider a bank's overdraft/NSF fee reliance in 2018 so as to consider a variable that is independently reported from the variables determining the change between 2019 and 2020.

**FIGURE 10:** OVERDRAFT/NSF FEE RELIANCE IN 2018 AND THE CHANGE IN THIS RELIANCE BETWEEN 2019 AND 2020 FOR EACH BANK IN THE BALANCED PANEL IN THE CALL REPORTS AND THE REGRESSION RELATIONSHIP BETWEEN THE TWO PLOTTED VARIABLES BY CHARTER TYPE

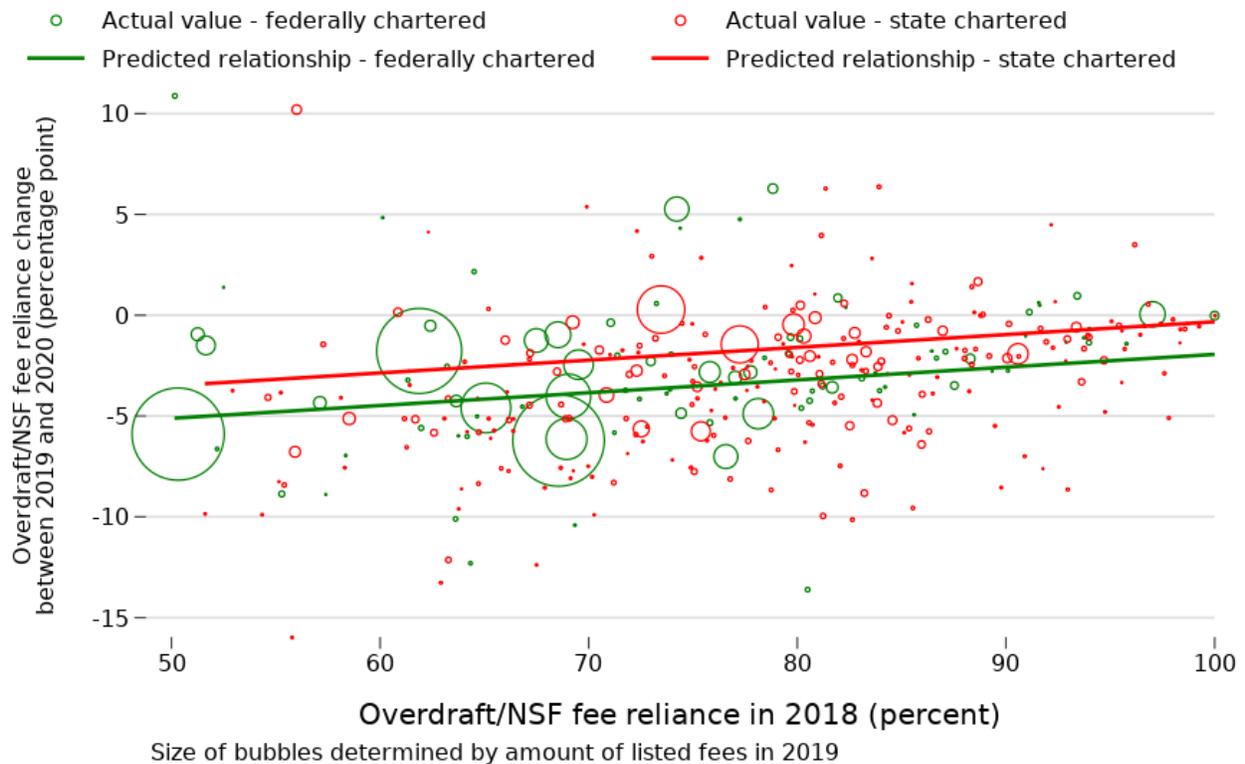


Figure 10 demonstrates two findings. First, while most banks experienced a decline in actual overdraft/NSF fee reliance, there is considerable variability in the change in reliance, with a few banks even experiencing an increase in reliance. Second, while there is a statistically significant relationship between past overdraft/NSF fee reliance and charter type and the change in reliance, past reliance and charter type explain a small amount of the variation in the change in reliance (in fact, the underlying regression explains just 17.4 percent of the variation in the change in reliance). Without further evidence it is difficult to decipher the reasons for the statistically significant relationship between the pre-pandemic overdraft/NSF fee reliance or charter type and the change in this reliance during the pandemic. It is possible that banks with high pre-pandemic overdraft/NSF fee reliance or with state charters have overdraft program settings that did not result in as much automatic relief in these fees resulting from changing consumer behavior as banks with lower pre-pandemic overdraft/NSF fee reliance of a federal charter. Or it is possible that differences in the characteristics of the various banks' consumer base accounts for this

relationship. Or it is possible that banks' implementation of relief policies varied with their pre-pandemic fee reliance and charter type.<sup>19</sup> Regardless, the relationship is notable since it implies that banks that were relying less on overdraft and NSF fees before the pandemic and that were federally chartered were more prone to seeing a reduction in their fee reliance.

### 3.3.2 Quarterly Balanced Panel

Next, we examine the pandemic-induced drop in overdraft/NSF reliance in more detail using the smaller quarterly balanced panel. Table 2 shows the regression results in the quarterly data using the two statistically significant correlates identified in the annual panel: pre-pandemic overdraft/NSF fee reliance or charter type.

**Table 2:** REGRESSION RESULTS IN THE QUARTERLY BALANCED PANEL

	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2
Average overdraft/NSF reliance	55.54%	61.65%	65.25%	61.08%	60.75%
Average percentage point change	-11.25%	-5.45%	-1.85%	-6.01%	-6.35%
Coefficient on pre-pandemic reliance	0.135***	0.082***	0.030	-0.005	-0.024
Coefficient on federally chartered	-4.881***	-1.960***	-0.872	-1.285	-0.450

We see that both pre-pandemic reliance and charter type are statistically significant correlates of the extent of the drop in reliance during the first two quarters of the pandemic but not in the subsequent three quarters. This is notable and hints at possibly different explanations underlying the early and later pandemic changes.

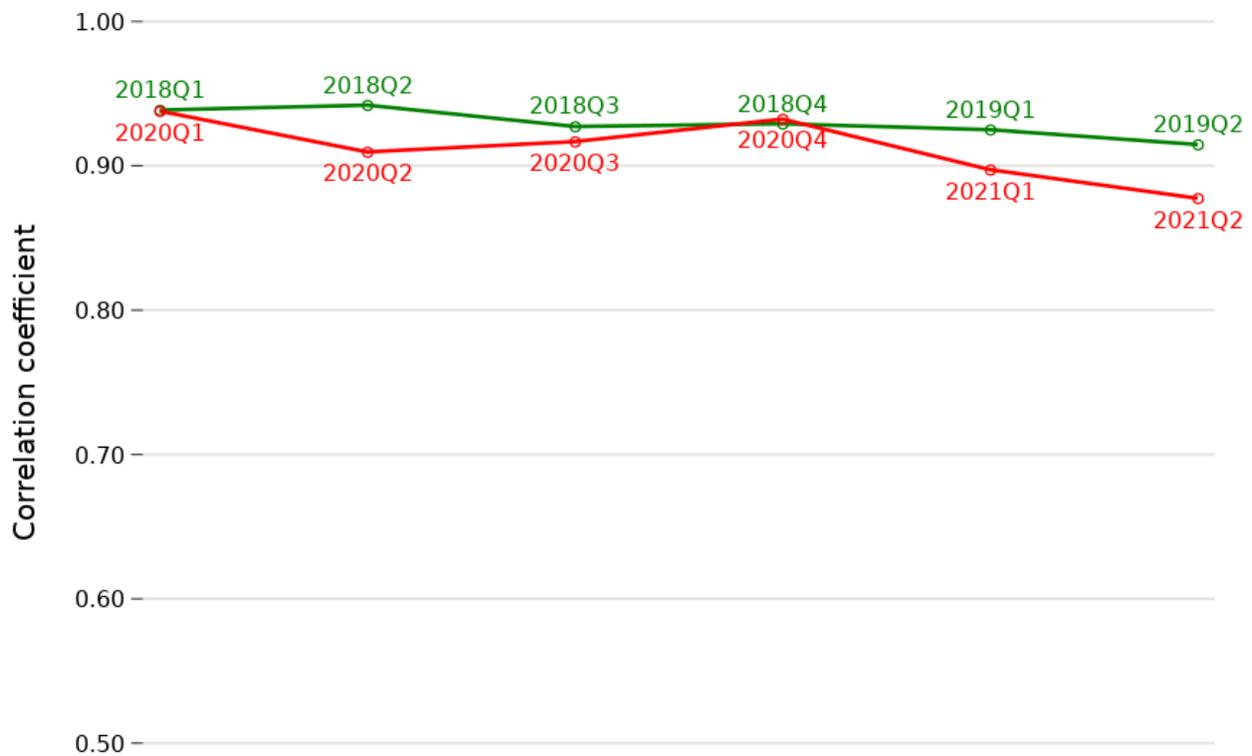
Finally, we examine whether the pandemic induced drops in reliance changed the persistence of overdraft/NSF fee reliance documented earlier with a lower persistence possibly indicating that the disruption caused by the pandemic is not just temporary. Figure 11 plots the weighted correlation between quarterly reliance measures and their observed value three years earlier for

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<sup>19</sup> It is notable that early in the pandemic the OCC published a [bulletin](#) encouraging its banks to work with customers in a number of ways including waiving overdraft fees.

the pandemic quarters.<sup>20</sup> As a baseline, we also plot the same correlations using data from before the pandemic (from two years earlier) to see if the pandemic led to a shift in the pattern of correlations. We see that these three-year correlations were high in pre-pandemic data, between 0.92 and 0.94. The correlations declined by a few points in the second quarter of 2020 and the first two quarters of 2021. This measure is thus indicative of at most a minor disruption of bank overdraft/NSF fee reliance during these quarters.

**FIGURE 11:** CORRELATION BETWEEN QUARTERLY OVERDRAFT/NSF FEE RELIANCE AND ITS VALUE THREE YEARS EARLIER FOR SELECTED PRE-PANDEMIC QUARTERS AND PANDEMIC QUARTERS



<sup>20</sup> Specifically, the dot labeled 2018Q1 shows the weighted correlation between an institution’s overdraft/NSF fee reliance in the first quarter of 2018 with the same institution’s reliance in the first quarter of 2015 using each institution’s 2018 listed consumer fees as weights.

### 3.3.3 Changes in Consumer Use

Changes in overdraft/NSF fee reliance can come from two distinct sources. Reliance can change in response to shifts in financial institutions' practices and policies. In the short term, this can mean implementing relief policies in the form of fee waivers, for example. In the longer term, it can mean shifting fee structures or expanding products with particular fee structures (such as checking accounts that do not allow overdraft). There is no systematic evidence in the Call Reports or in other sources on shifts in financial institutions' practices and policies as fee waivers and refunds are not reported, though some financial institutions have emphasized their pandemic fee waiver response.

Equally importantly, even in the absence of changes in a financial institution's policies and practices, changes in consumer use can influence the amount of overdraft/NSF and other fees collected and an institution's overdraft/NSF fee reliance. There are two important such pandemic-related changes: 1) increased balances in consumer checking accounts resulting from the fiscal stimulus and reduced spending opportunities and 2) temporarily decreased frequency of use of debit cards.

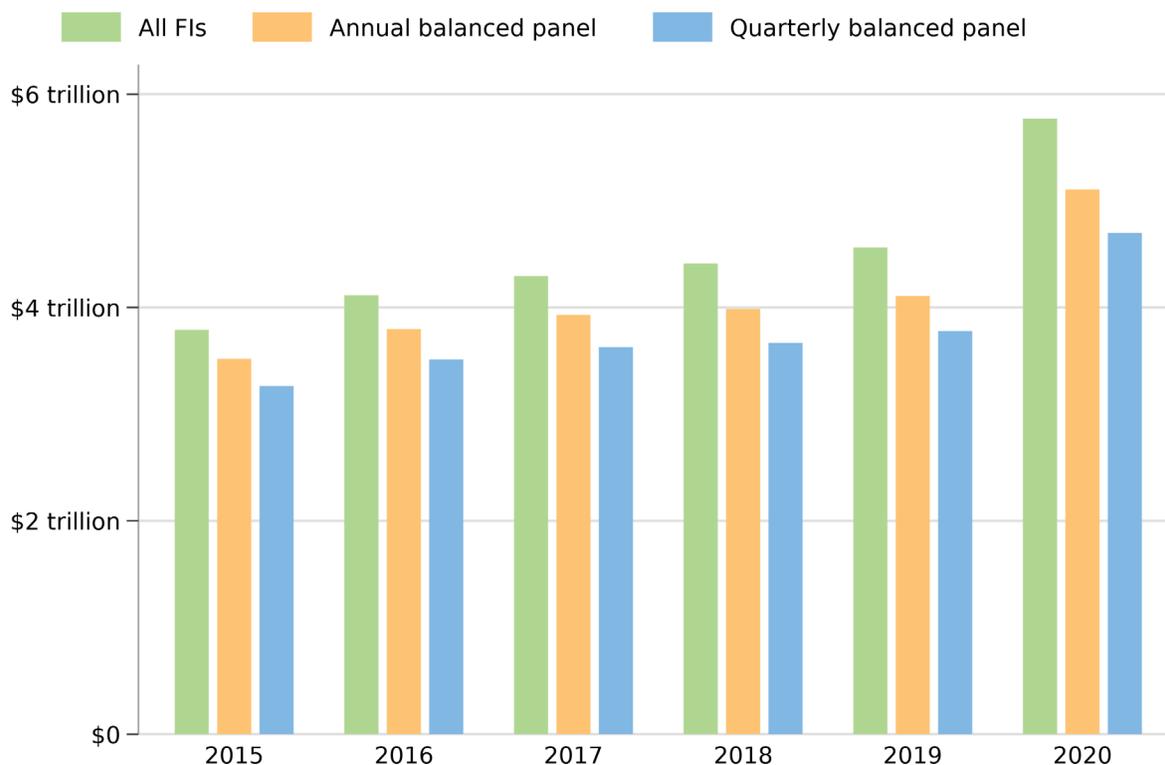
While the Call Reports do not directly report balances in consumer checking accounts, they report consumer deposit balances in transaction- and non-transaction savings accounts.<sup>21</sup> Figure 12 shows end-of-year aggregate consumer deposit balances by year. As before, the green bars represent all banks that report any overdraft/NSF fee revenue while the orange and blue bars represent the annual and quarterly balanced panels.<sup>22</sup> Between 2015 and 2019 consumer deposit balances saw a fairly steady increase of around 4.7 percent per year. They then jumped by 26.5 percent between 2019 and 2020. Figure 13 reports end-of-quarter aggregate consumer deposit balances by quarter for the quarterly balanced panel. It is apparent that consumer deposit balances grew during 2020 and continued doing so in 2021.

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<sup>21</sup> Due to certain bank sweep practices, not all consumer checking account balances are reported under consumer transaction account deposit balances in the Call Reports. This is evidenced by the low share of consumer transaction account deposit balances in all consumer deposit balances, which stood around 7 percent in 2016 in the Call Reports. The comparable share is a much higher at 25 percent in the [Survey of Consumer Finances in 2016](#).

<sup>22</sup> Here we drop 3 FIs from both the annual and the quarterly panel due lack of consistent reporting of consumer deposit balances.

**FIGURE 12: AGGREGATE CONSUMER DEPOSIT BALANCES BY YEAR IN THE CALL REPORTS**



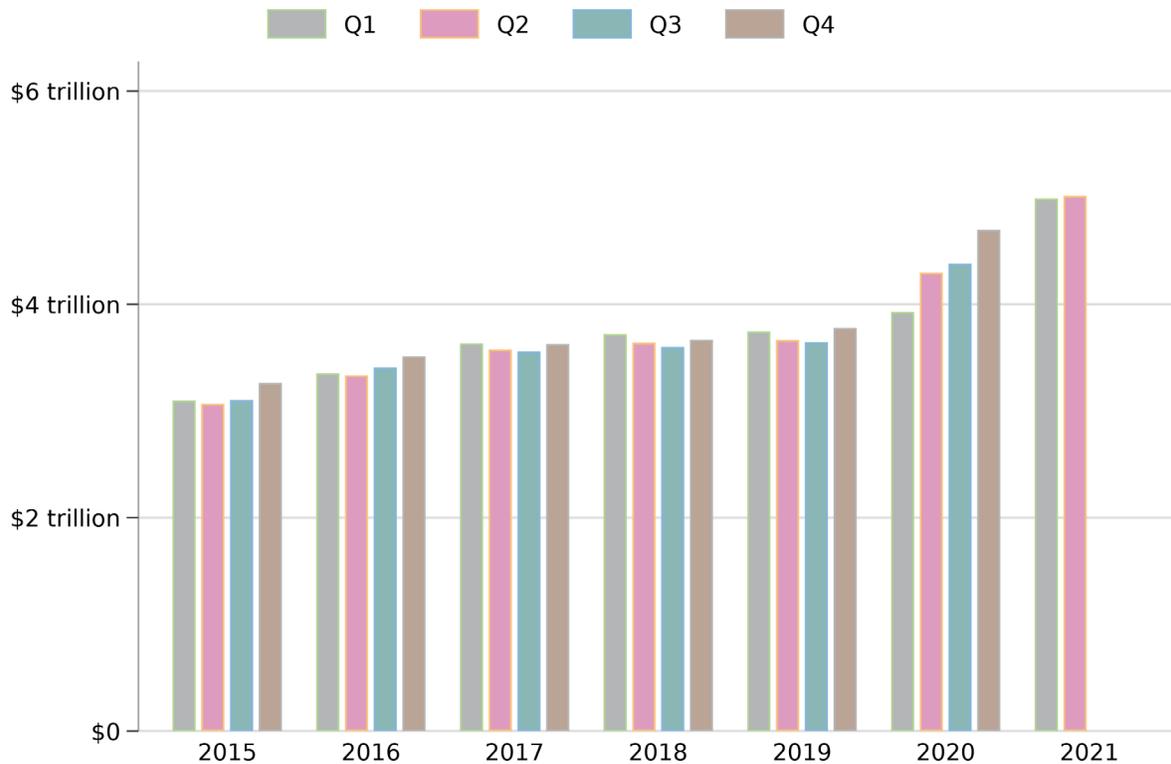
The Call Report measure of consumer deposit balances is significantly broader than just consumer checking account balances since it contains balances in non-transaction savings accounts (including money market deposit accounts). A recent report by the JPMorgan Chase Institute shows that the percentage increase in checking account balances were even higher than the percentage increases in consumer deposit balances documented in Figures 12 and 13 and were largely accounted for by the stimulus payments consumers received.<sup>23</sup> Year-over-year changes in the weekly median checking account balance stayed positive throughout the pandemic period, between 20 percent and 60 percent for almost its entirety.<sup>24</sup> Moreover, year-over-year changes in checking account balances were consistently higher the lower the starting balances and the lower the household’s income.<sup>25</sup>

<sup>23</sup> See JPMorgan Chase Institute, [“Household Finances Pulse: Cash Balances during COVID-19,”](#) September 2021.

<sup>24</sup> Ibid, Figure 2.

<sup>25</sup> Ibid, Figures 2 and 4.

**FIGURE 13:** AGGREGATE CONSUMER DEPOSIT BALANCES IN THE QUARTERLY BALANCED PANEL IN THE CALL REPORTS



A second change in consumer behavior is related to debit card use. According to the 2021 Debit Issuer Study, the total number of debit card transactions declined by 7 percent between the first and second quarter of 2020,<sup>26</sup> which was all the more striking given the strong growth experienced by debit card transactions prior to the pandemic (showing an average annual growth rate of 8.4 percent between 2015 and 2019).<sup>27</sup> This large drop in debit card transactions was followed by a rebound in the third and fourth quarters.<sup>28</sup> At the same time, average transaction size increased from \$40.50 in 2019 to \$44.80 in 2020, which resulted in an 8 percent increase debit card spending in 2020.<sup>29</sup>

<sup>26</sup> Pulse, "[2021 Debit Issuer Study](#)," Figure 1.

<sup>27</sup> Ibid, Figure 2.

<sup>28</sup> It is notable that, at the same time, the [2020 Diary of Consumer Payment Choice](#) documented a statistically significant drops in the number of debit card and in the number of cash payments between October of 2019 and October of 2020.

<sup>29</sup> Ibid, Figure 3.

Qualitatively, the above changes may have contributed to the trends observed in the listed fees during the pandemic. Often the charging of maintenance fees is tied to maintaining a minimum balance in a consumer's account, so higher balances could have contributed to lower maintenance fee revenues. Higher balances, especially among consumers with typically low balances, may have contributed to fewer transactions overdrawing consumers' accounts. The large drop in the number of debit card transactions may have contributed to the unusually low overdraft/NSF fee revenues collected in the second quarter of 2020. Less frequent use of cash may have meant fewer ATM fees. While it is not possible to further quantify how much the above changes in consumer checking account use contributed to the decline in overdraft/NSF and other listed fee revenues, it is important to keep these changes in mind when considering the evolution of checking account fee revenues during the pandemic.<sup>30</sup>

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<sup>30</sup> When including changes in consumer deposit balances in the annual regression reported in Section 3.3.1, it has the expected negative sign implying that higher growth in consumer deposit balances is correlated with a larger drop in overdraft/NSF fee reliance across institutions, but the statistical significance of this result is just below 90 percent. When including the quarterly changes in consumer deposit balances in the quarterly regressions reported in Section 3.3.2, the coefficient is statistically significant only in the fourth quarter of 2020. The reason for this low statistical significance could be that checking account deposits make up just 25 percent of all consumer deposit balances and consumer deposit balances are reported as of the end of the reporting period as opposed to as an average over the period, which is the more relevant measure for the amount of fees collected over the period.

# 4. Conclusions

In this report, we use Call Reports data since 2015 to study the evolution of banks' reliance on overdraft and NSF fees. Despite drops in overdraft/NSF fee reliance experienced by most banks during the pandemic, we find that the market for overdraft and NSF has been quite stable.

Aggregate and institution-level overdraft/NSF fee reliance has been remarkably persistent before the pandemic and this persistence was mostly maintained even during the pandemic. It is not possible to determine how much of the drop in overdraft/NSF fee reliance during the pandemic was due to changing institution policies and practices and how much was due to changing consumer use patterns. That said, we document important changes in consumer use of checking accounts, the most important of which is the increase in checking account balances, that likely contributed to the observed decline in overdraft/NSF fee reliance. Whether these changes are temporary in nature or reflect longer-term shifts in consumer behavior is an open question. Correspondingly, it is an open question whether overdraft/NSF fee reliance will return to pre-pandemic levels or the shifts experienced in this market during the pandemic are preludes to further market-wide changes.

# 5. Methodological Appendix

Financial institutions report overdraft/NSF fee revenue on Call Reports as a memo item, specifically they report “consumer overdraft-related service charges levied on those transaction account and non-transaction savings account deposit products intended primarily for individuals for personal, household, or family use.” To put the reported revenue figures into context and make them more comparable over time and across institutions, it is useful to normalize these reported figures with a base variable capturing some broader measure of activity.

**Table 3:** SOURCES OF VARIATION IN THE NORMALIZED VARIABLE USING VARIOUS BASE VARIABLES

Base variable	Source of variation in normalized variable
Listed consumer fees	<ul style="list-style-type: none"> <li>* Variation in bank consumer deposit account fee policies</li> <li>* Variation in customer base characteristics and use patterns</li> <li>* Variation in deposit account type distribution (checking vs. MMDA/savings accounts)</li> <li>* Reporting and categorization variation in listed consumer fees</li> </ul>
Consumer deposit balances	<ul style="list-style-type: none"> <li>* Same as for listed consumer fees</li> <li>* Reporting and categorization variation in consumer deposit balances</li> </ul>
Net income	<ul style="list-style-type: none"> <li>* Same as for consumer deposit balances</li> <li>* Variation in the presence of lines of business other than consumer deposit accounts</li> <li>* Variation in the profitability of lines of business other than consumer deposit accounts</li> <li>* Reporting variation in income items other than listed consumer fees</li> </ul>

There are three types of broader measures that are often used to normalize the reported overdraft/NSF fee revenues.<sup>31</sup> These are 1) listed consumer fees,<sup>32</sup> 2) consumer deposit account balances, and 3) net income<sup>33</sup> of the institution. Table 3 summarizes the sources of variation in the normalized variables when each of these broader measures is used as the base variable. As mentioned above, variation in overdraft/NSF fee reliance (defined as overdraft/NSF fee revenues normalized by listed consumer fee revenues) cannot be solely interpreted as representing variation in bank consumer deposit account fee policies because this measure also captures variation in customer base characteristics and use patterns, variation in deposit account type distribution (primarily checking vs. MMDA/savings accounts) and reporting and categorization variation in listed consumer fees. Nonetheless, the use of the other base variables offers even less precise comparisons over time and across institutions. We rule out the use of net profits as the base variable because it is greatly impacted by variation in the presence and profitability of lines of business other than consumer deposit accounts. Even if there is persistence over time in the presence and profitability of these other lines of business, such variation makes comparisons across institutions especially inappropriate. Some reporters in the Call Reports have no or few lines of business other than consumer deposit accounts. Some banks, including the large national banks, have many other lines of business beyond consumer deposit accounts that determine their net income.

When it comes to selecting between listed consumer fees and consumer deposit balances as a base variable, we rely on inspecting the observed variability in the resulting normalized variables. Table 4 shows variability in the annual balance panel<sup>34</sup> in the normalized variables using the two alternative base variables, both unweighted and weighted by the base variable. We show both across institution variability for 2019 and within institution variability using pre-pandemic data

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<sup>31</sup> See [“Variation in Bank Overdraft Revenues and Contribution.”](#) CFPB, 2016.

<sup>32</sup> An alternative to using listed consumer fees is to use all deposit service charges, but this adds variability coming from fee revenues on commercial deposit service charges without adding benefits, so we do not list this alternative as a separate type.

<sup>33</sup> These are also known as profits and may be reported net of some items, such as taxes and extraordinary items.

<sup>34</sup> Here we drop 4 FIs from the annual balanced panel that do not have consumer deposit balances reported at each end of the year.

from 2015 to 2019.<sup>35</sup> Clearly, there is significantly more variation in relative terms using consumer deposit balances as the base variable.<sup>36</sup> This points to variation in the reporting and categorization of consumer deposit balances being an important confounder and leads us to use listed consumer fees as the base variable (resulting in the overdraft/NSF fee reliance measure) in main body of the report.

**Table 4:** ACROSS AND WITHIN INSTITUTION VARIABILITY IN OVERDRAFT/NSF FEES USING TWO ALTERNATIVE BASE VARIABLES, UNWEIGHTED AND WEIGHTED BY THE BASE VARIABLE

	2019 percentile (N=421)					Within FI relative variation over time
	1st	10th	50th	90th	99th	
Overdraft/NSF fees as share of listed consumer fees (Overdraft/NSF fee reliance), unweighted	6.64%	38.34%	75.20%	91.95%	100.00%	5.20%
Overdraft/NSF fees as share of listed consumer fees (Overdraft/NSF fee reliance), weighted by listed consumer fees	32.81%	51.58%	68.92%	79.21%	97.73%	2.82%
Overdraft/NSF fees as share of consumer deposit balances, unweighted	0.001%	0.027%	0.220%	0.639%	2.086%	13.67%
Overdraft/NSF fees as share of consumer deposit balances, weighted by consumer deposit balances	0.002%	0.090%	0.297%	0.404%	0.754%	6.24%

<sup>35</sup> We calculate the within-institution variability as the average of the absolute value of the relative (percentage) deviation of the observed values from institution-specific trends. Since this is a relative measure, it is unit free, unlike the values in the percentile distribution.

<sup>36</sup> Here we use consumer deposit balances as of the end of the year. For the subset of 234 quarterly reporters who have consumer deposit balances reported each quarter, we can also use average end-of-quarter consumer deposit balances, but this does not make an appreciable difference in the variability of the resulting normalized variable.