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The Long-Run Effects of Losing Failed Bank Auctions

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Abstract

Using a proprietary database of failed bank auction participants, I examine whether acquiring a failed bank creates shareholder value by using the losers' post-acquisition performance as a counterfactual. While the market responds favorably to all failed bank acquisition announcements, in the three years post-acquisition, acquirers with Shared-Loss Agreements (SLAs), where the FDIC absorbs approximately 80% of losses, realize abnormal returns that are 19.8% lower than auction losers. Inconsistent with the effects of a winner's curse, abnormal returns are not related to bidder competition. However, acquirers with SLAs have less lending risk than both failed bank auction losers and winners without SLAs, suggesting that the reduction in risk stemming from SLAs plays a role in explaining the divergence in long-run abnormal returns.

Keywords: financial institutions, regulation, market efficiency
JEL-Classification: G01, G14, G21, G28, D44

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1 Introduction

The financial crisis brought about a wave of bank failures, threatening the stability of the banking system and economy at large. From 2007-2015, a total of 518 banks, holding over $500 billion in deposits and over $700 billion in assets, failed. These failed banks were taken into receivership by the Federal Deposit Insurance Corporation (FDIC) and commonly sold to other institutions. This process was conducted through a first-price sealed-bid auction, and the acquiring entity was determined based on the bid that minimized losses to the Deposit Insurance Fund (DIF). These industry-wide shocks of the financial crisis also affected potential acquirers, and there was considerable uncertainty surrounding the future performance of failed bank assets. In an attempt to make acquiring a failed bank more attractive and less risky, the FDIC gave acquirers the choice to include Shared-Loss coverage in their bids. For assets covered under a standard Shared-Loss Agreement (SLA), the FDIC agreed to absorb a portion of future losses and recoveries (often 80%) over the next five to ten years.[1]

All else equal, acquirers purchasing a given failed bank with SLA coverage would receive a smaller upfront payment from the FDIC's DIF at the time of resolution in exchange for a stream of future payments corresponding to the realized losses of the associated assets. The addition of SLAs offered potential benefits for both the acquirers and the FDIC. For acquirers, SLAs could reduce their exposure to the losses of the covered assets. For the FDIC, instead of paying out all losses upfront and drawing down the declining DIF, SLAs enabled the FDIC to push some of these payments to the future, after the DIF had been stabilized.[2]

There is substantial literature debating whether acquisitions create value for acquiring firms. While existing studies focus primarily on corporate acquisitions, this question is especially important within the failed bank setting where orderly transitions of bank assets back to the private

[1]For example, for Single-family Residential (SFR) SLAs, the Agreements last ten years and cover both downside losses and recoveries. However, for commercial assets covered under Non-Single-Family (NSF) agreements, the first five years cover losses and recoveries, but final three years only covers recoveries.

[2]The DIF reserve ratio dropped below the statutory minimum of 1.15% of estimated insured deposits, which was when the FDIC started allowing bidders to include Shared-Loss coverage. Under the Federal Deposit Insurance Company Improvement Act (FDICIA) of 1991, the FDIC is required to resolve bank failures in the manner that is least costly to the Deposit Insurance Fund, regardless of the presence of SLAs. https://www.fdic.gov/bank/historical/crisis/overview.pdf

sector is important for borrowers, communities, and overall financial stability. In this paper, I address two central questions within the literature. First, do failed bank acquisitions create long-run value for shareholders? Second, do bidders fully account for the possibility of a winner's curse?

In comparison to corporate acquisitions, failed bank auctions are unique along several dimensions. They are completed on a very short timeline (within a matter of days from failure), and acquirers are traditionally given limited information about the failed bank and due to the short time frame, potential acquirers are traditionally only able to pursue limited due diligence. During the financial crisis, there was also considerable uncertainty surrounding the future performance of these potentially troublesome assets, and nearly two-thirds of failed bank acquisitions included SLA coverage. These agreements essentially act as acquirer insurance and have the potential to meaningfully impact acquirer outcomes. Furthermore, the winner's curse (Capen et al., 1971) implies that winning bidders fail to adapt their strategies to the level of competition and overpay. This overpayment increases in the amount of competition (Kagel and Levin, 1986) and uncertainty surrounding the value of the assets being sold (Bazerman and Samuelson, 1983), ultimately leading to a deterioration in shareholder value. To the extent that markets are efficient, overpayment in the form of a winner's curse should be reflected in negative short-run returns.

To the best of my knowledge, this is the first paper that focuses on the implications of Shared-Loss coverage for acquiring banks. Despite providing potential benefits to the acquirer by way of limited losses, there are two primary reasons that SLAs may reduce acquirer returns: over-payment for SLAs and a reduction in risk of the combined entity. In practice, valuing the benefits of SLA coverage can be difficult for both the market and auction participants, since there is considerable uncertainty surrounding default (and recovery) rates of the covered assets. Acquirers may also underestimate the administrative costs associated with SLA coverage, which primarily consist of FDIC interactions and oversight. To actively monitor acquirers with SLA coverage, the FDIC mandates monthly loan-level reporting, which can be burdensome.[3] Banks must also thoroughly document their efforts to work through any issues with troubled loans and must convince

[3]Describing this process, David Provost, the CEO of First Michigan Bank in Troy, said, "It is a long process and it takes a long time to understand the procedures and what the FDIC expected...It is not something for the faint of heart. We spent seven figures on getting the systems right," as cited in Barba (2011).

the FDIC to allow sales of covered assets.[4]" Over 80% of SLA agreements are terminated early, and the administrative burden is a commonly cited reason in press releases.[5] Taken together, the uncertainty surrounding the valuation on both the costs and benefits on SLAs suggest noisier signals on the value of acquisition and inflate acquirers' bids with SLAs. Furthermore, SLAs directly affected the risk profile of the newly combined entity. All else equal, for a given failed bank, an acquisition with SLA coverage will result in a lower risk profile for the new entity than the same acquisition without shared losses since both the downside losses and upside potential of the covered assets are reduced. The new entity's lower risk may be reflected in lower long-term returns.

This paper uses a proprietary regulatory FDIC database that includes information pertaining to all failed bank auction participants and bids, including successful acquirers, all banks that submitted unsuccessful bids, and all banks that were solicited for failed bank auctions occurring between November 12, 2009, and January 1, 2016. The granularity of this data allows me to circumvent two primary obstacles in existing acquisition studies.

First, existing studies have difficulty estimating the value that acquisitions create, since researchers are unable to observe the performance of the acquiring firm in the absence of acquisition. Comparing an acquirer to a control firm based on observable characteristics may be problematic because differences in long-run abnormal returns may be biased due to unobserved differences between firms that pursue acquisitions and those that do not (Loughran and Vijh, 1997; Rau and Vermaelen, 1998). Within the failed bank auction setting, I observe both failed bank acquirers (auction winners) as well as the bidding banks that submitted bids, yet lost the auction (auction losers). This is advantageous over existing studies to the extent that auction winners are more similar to losers than to the average firm in the market. Hence, within a given failed bank auction, these credible counterfactuals allow for a causal interpretation of the outcome of auction winners.

[4]Chris Myers, President and Chief Executive of CVB, spoke about his frustrations negotiating a sale of assets covered under the SLA and said, "We, for the past year, have been pressing hard on the FDIC to allow us to sell these [Louisiana church] loans as opposed to have to go foreclose on these loans. You may not get to the finish line when you're going into Louisiana to foreclose on some local church," as cited in Barba (2012).

[5]For example, BBT paid the FDIC $230 million to terminate its SLA associated with the failed Colonial Bank. "The acquisition of Colonial was a tremendously successful transaction and has far outperformed our initial expectations," said BBT's Chief Financial Officer Daryl N. Bible. "The early termination of these agreements is beneficial for both BBT and the FDIC, including the reduction of costs and accounting, reporting, and complexity and increased future earnings, " as cited in BBT.

Second, studies examining the winner's curse have difficulty quantifying the degree of competition for the target firm. Moeller et al. (2004) point out that the number of public bidders in corporate takeovers is a noisy and incomplete measure for takeover competition, which they attribute to their lack of significance on bidder returns. As a result of a Freedom of Information Act (FOIA) request, starting on November 12, 2009, the FDIC began publicly releasing a subset of failed bank auction bid and bidder data at the date of the resolution of the failed bank, though a portion of both bids and bidders remains confidential. The completeness of the FDIC's database allows me to better quantify the level of competition within each failed bank auction at all stages of the auction process, similar to Boone and Mulherin (2008)

Within a traditional buy-and-hold abnormal return (BHAR) framework, failed bank acquirers realize five-day Fama French-adjusted (FF-adjusted) returns of 3.10% surrounding acquisition announcements and 19.5% over the subsequent three years. However, banks that bid on failed banks, yet lost, realize no abnormal announcement day returns, but their BHARs are 32.0% three years post-acquisition. The 12.5% divergence between failed auction winners and losers is driven by acquirers with SLA coverage. When separately examining the difference between SLA acquirers and auction losers, the divergence grows to 19.8%. The results are similar within an event-time portfolio framework, and they are not driven by failed bank auction losers that become subsequent winners.

In subsequent analysis, I implement an alternative empirical strategy to explore the cross-sectional variation in failed bank auctions. I construct long-run buy-and-hold returns for each type of failed bank auction participant and implement a winner-loser strategy. Using an OLS framework with an auction-level fixed effect, the matched sample between auction-level winners and losers allows me to causally identify the difference between banks that acquired failed institutions and those that did not. The auction fixed effect controls for the direct effect of all auction-level variables that are consistent between winners and losers, such as all failed bank observable characteristics, and all macroeconomic conditions occurring on the day that the auction takes place. Consistent with the event-time portfolio framework, I find that returns to auction winners and losers closely track prior to the failed bank auction, demonstrating no statistically significant differences. However,

failed bank auction losers continue to outperform winners after the auction.

I use the winner-loser buy-and-hold strategy, including an auction-level fixed effect, to identify the long-term consequences of SLAs for acquirers. The auction-level fixed effect holds all failed bank auction characteristics constant, isolating the long-run impact the SLA has on the acquirer of a failed bank. Within this framework, I find that Shared-Loss coverage does not meaningfully impact announcement-day returns, indicating that the market believes that SLAs are accurately priced at the time of the acquisition. However, over time, failed bank acquirers with SLAs realize a decline in FF-adjusted returns that is nearly 30% in the three years post-acquisition, relative to both other winners without SLAs and losers. By including an auction-level fixed effect, I hold all auction-level characteristics constant (e.g., the quality of the failed bank), thereby eliminating the possibility that this divergence in abnormal returns is driven by lower quality failed banks being acquired with SLA coverage.

Using the same winner-loser empirical framework to search for evidence on the winner's curse, I employ tests that relate bidder returns to the degree of competition during the entire auction process. According to Kagel and Levin (1986), returns to successful acquirers should be lower in the presence of stronger competition. Studies examining the winner's curse have acknowledged the difficulty and incomplete nature in quantifying the degree of competition for the target firm, since public bidders is an incomplete measure of actual competition (Moeller et al., 2004). My winner's curse analysis is closely related to Boone and Mulherin (2007, 2008) who can quantify levels of bidder competition using non-public measures of takeover competition. The granularity of the FDIC's database allows me to quantify complete levels of bidder competition at all stages of the auction process, including stages that are unobservable to the public. After controlling for the presence of a SLA, I find that there is no measure of bidder competition at any stage of the auction process that has a meaningful impact on either short-run or long-run returns. In sum, I do not find evidence of overpayment consistent with theories of the winner's curse.

At first, it may seem puzzling that failed bank auction winners realize three-year returns that are considerably lower than their losing counterparts, especially without evidence consistent with the winner's curse. However, these results are concentrated in acquisitions with SLAs, which

could be indicative of either acquirers overpaying for this type of benefit or the reduced returns reflecting a lower risk profile of the bank consisting of both the acquirer and the failed bank that was absorbed. Subsequently, I augment my analysis using quarterly data extracted from the Consolidated Reports of Condition and Income (Call Reports) to isolate the risk reflecting the loan portfolio of failed bank auction winners and losers. I find that post-acquisition, failed bank auction winners with SLA coverage exhibit lower charge-offs and loan-loss reserves, indicating that their loan portfolios are safer. Taken together, these results present evidence that failed bank acquirers with SLAs have less lending risk than both auction losers and acquirers without SLAs. This evidence suggests that the reduction in risk stemming from SLAs play a role in explaining the lower long-run abnormal returns.

2 Background and Literature

2.1 The Resolution Process

Drafted in response to the Savings and Loan Crisis, the FDIC Improvement Act (FDICIA) of 1991 revised the guidelines for the FDIC to resolve failed institutions. FDICIA establishes that once a given bank's tangible equity falls below the regulatory minimum (2% of assets), the primary Federal regulator issues the Prompt Corrective Action (PCA), and the resolution must be complete within 90 days. This law was intended to incentivize banks to address problems when they are still small enough to be manageable, yet requires the FDIC to resolve failed banks quickly in an attempt to minimize long-term losses. FDICIA also mandated that the FDIC resolve the failed institution in the least costly manner, ideally taking away any subjectivity the FDIC had in selecting failed bank acquirers.[6]

In the event of a bank failure, the FDIC acts as the receiver of the failed bank and assumes the task of collecting and selling the failed bank assets in addition to settling its debts. James (1991) estimates that the *direct* expenses associated with bank closures average about 10% of failed bank assets. For all bank failures between 2007-2015, the FDIC *total* realized losses of approximately 24%

[6]For more information on the resolution process, see the FDIC's Resolution Handbook https://www.fdic.gov/bank/historical/reshandbook/

of failed bank assets.[7] These resolution costs are magnified when acquirers are further away from their failed bank targets (Granja et al., 2017) but attenuated when the failed banks are subject to more comprehensive disclosure requirements (Granja, 2013). During the financial crisis, the most common way to obtain the lowest cost for the FDIC was to choose the purchase and assumption (PA) transaction method to resolve the troubled bank by selling some (or all) of the failing bank's assets and liabilities. This process closely resembles a sealed-bid first-price auction.

In order to prevent a potential run on the bank, there is no formal announcement that the resolution process has begun, so the general public does not know of these failed bank auctions. Once the process begins, the FDIC's Division of Resolutions and Receivership (DRR) determines the marketing strategy, prepares the necessary marketing materials, and values the assets. From there, they solicit eligible bidders[8] that meet the following criteria:

- Total risk-based capital ratio of 10% or greater,
- Tier 1 risk-based capital ratio of 6% or greater,
- Tier 1 leverage capital ratio of 4% or greater,
- CAMELS composite rating of 1 or 2,
- CAMELS management rating of 1 or 2,
- Compliance rating of 1 or 2,
- Bank holding company composite (RFI/C) rating of 1 or 2,
- Community Reinvestment Act (CRA) rating that is at least satisfactory,
- Satisfactory anti-money laundering record, and
- A size threshold, which increases in the distance from the failed bank.

If a solicited bank expresses interest, the bank must first execute a confidentiality agreement before learning any details about the failed institution, including its name. Once the agreement is formalized, the potential bidder gains access to a secured website that markets the specific failed institution with limited information. Further information is available to potential bidders that formally declare their interest by notifying a marketing specialist. At this stage, interested bidders gain access to more information pertaining to the terms offered, and in most cases, interested bidders can schedule two days to perform due diligence on site with a small team of three to five people.

Approximately two weeks before the target bank is scheduled to close, the bidding process

[7]For failed bank asset estimates and FDIC most recent cost estimates, see: https://banks.data.fdic.gov/explore/failures

[8]Eligible bidders were not necessarily banks. For example, see (Johnston-Ross et al., 2021) for a discussion on the process that private investors can pursue to become eligible to participate in failed bank auctions.

begins. The FDIC conducts a sealed process based on standard transaction terms, and bidders submit their bids through a secure website to ensure confidentiality. Each bid consists of three parts, and bidders submit bids consisting of their desired level of 1) asset discount (or premium) over the book value of the bank's failed assets, 2) any deposit premium, indicating the amount that the bidder is willing to pay to assume the deposits of the failed bank, and 3) Shared-Loss coverage between the bidder and FDIC (not required). It's also possible for bids to be considered if they are "non-conforming," indicating that a bid does not confirm to the FDIC's offered transaction, if they can be priced. For example, an acquirer may elect to not acquire assets under litigation. Bidders typically submit bids on a Monday or a Tuesday and are notified of their status within 48 hours of submitting their bid(s).

The FDIC uses its proprietary models to value all bids, including those where acquirers chose to include SLA coverage. Under FDICIA, the FDIC is mandated to select the bid associated with the lowest resolution cost that exceeds the FDIC's reservation value, which is the estimated cost of liquidation, regardless of the inclusion of a SLA. Given that there is considerable uncertainty pertaining to the value of the failed institutions, along with the expected payments from SLAs, it can even be difficult for potential acquirers to value their own bids. As a result, it is not uncommon for a bidder to submit multiple bids, varying the inputs of the three bidding components.

Once the FDIC selects the bid that consistent with the least costly resolution, the Agency notifies the bidders of their status. Typically, the resolution process begins on a Friday. After the close of business hours, the identity of the winning bank, as well as the terms of the bid, is disclosed to the general public. On the following Monday, the bank reopens for business as usual, under the name of the acquirer. For bank failures in 2007, 2008, and those before November 12, 2009, the FDIC only released the identity of the winning bidder in real-time. However, as a result of a Freedom of Information Act (FOIA) request, starting on November 12, 2009, the FDIC started to publicly release an incomplete list of failed bank auction bid and bidder data at the date of the resolution of the failed bank.

Table 1 shows a breakdown of the number of failed banks per year. Before 2007, bank failures were relatively infrequent events. While there were no failures in 2005 or 2006, there were

518 failures between 2007 and 2015 totaling over $700 billion in assets and $500 billion in deposits. The far-right column indicates the number of auctions in my final sample by year, which began on November 12, 2009 (post-FOIA). Figure 1 gives a breakdown of failure resolution types each year.[9] A DINB (Deposit Insurance National Bank)transaction is a payout where the failed bank comes under receivership and remains open under the supervision of the FDIC with a new title. Customers are given a time period to transfer out deposits under a specified threshold, while assets of the failed institution remain in the possession of the FDIC until they are later dispersed. S Pay Out is a standard depositor payout. PI (Purchase of Insured Deposits) transactions are acquisitions of insured deposits only. Purchase and Assumption transactions with Loss Share or without Loss Share are the most common type of resolution type. Purchase and Assumption (P&A) transactions with Loss Share become the most common type of Loss Share resolution type from 2009-2013, accounting for nearly two-thirds of all failed bank resolutions, though they were discontinued after 2013. A PI transaction is similar to a P&A transaction, but it represents an acquisition of insured deposits only. Annual amounts of failed bank assets and deposits are shown in Figure 2 Subfigure A. In 2007, failed banks held assets (deposits) of $2.6 ($2.4) billion, though in 2009, that number jumped to $373.5 ($234.5) billion. As shown in Figure 2 Subfigure B, the costs realized by the FDIC for bank failures in 2007 were nominal, though the Agency realized costs of approximately $18 billion in 2008, $26 billion in 2009, and $16 billion in 2010 before losses started steadily declining. For banks failing from 2007-2015, the FDIC realized losses amounting to approximately 24% of failed bank assets.

2.2 Loss Share Agreements

The implementation of SLAs was a crucial component for failed bank resolutions, and the FDIC claims that their estimated savings from loss share exceeded $41 billion, or 19% of covered assets, as compared to the outright cash sale of those assets.[10] From 2008-2013, 304 failed bank

[9]For more information regarding the different types of resolution types, see Chapter 4 of the FDIC's Resolutions Handbook: https://www.fdic.gov/bank/historical/reshandbook/resolutions-handbook.pdfpage=7

[10]For further information on Loss Share, see the FDIC's Loss Share Questions and Answers https://www.fdic.gov/resources/resolutions/bank-failures/failed-bank-list/lossshare/

acquisitions included SLAs, and the assets under such arrangements totaled over $216 billion. Figure 3 gives a breakdown of the assets under SLAs associated with bank failures in each year along with the FDIC's anticipated cost at the time of the resolution.

While SLAs can vary by failed bank auction, in a typical Loss Share arrangement, both the losses and recoveries have an 80/20 split between the FDIC and the acquiring bank.[11] Thus, the FDIC reimburses the acquirer for 80% of the losses associated with the covered assets over the specified period and any recoveries that that were previously charged off by either the failed or acquiring bank. SLAs can cover commercial assets, single-family mortgages, or both. For commercial assets, the arrangements cover an eight-year period with the first five years for losses and recoveries and the final three years for recoveries only. For single-family mortgages, the agreements are for ten years and have the same 80/20 split as the commercial assets.

While the benefits of risk mitigation are incontestable, acquiring banks with Shared-Loss coverage are subject to a number of rules and reporting requirements, which can be both time-consuming and costly for acquiring banks. In fact, standard language in a P&A Agreement that contains SLA coverage includes nearly three pages of rules and reporting requirements within the Dispute Resolution Section that the acquirer needs to follow.

In spirit, this section essentially requires the acquiring bank to treat the assets covered under the SLA as they would treat their own assets, despite the fact that the gains and losses from these assets are substantially reduced. Pamela Farwig, a deputy director in the FDIC's division of resolutions and receiverships, explains in Barba (2012), "The purpose of loss share is to keep assets in the banking sector, which is more seamless for failed bank customers, and also enables the FDIC to realize the intrinsic value of the assets." To align the incentives of the failed bank acquirer and the FDIC, standard contract language requires the acquiring institution to implement "usual and prudent business and banking practices," "customary servicing practices," and to use its "best efforts to maximize collections." For the case of single family loans, the bank must undertake reasonable and customary loss-mitigation efforts when default is reasonably foreseeable. These efforts must

[11] Until March 26, 2010, the FDIC shared losses with assuming banks on an 80/20 basis until the losses exceeded an established threshold defined in the agreement, after which the basis for sharing losses shifted to a 95/5 basis. Sharing losses on a 95/5 basis was eliminated for all SLAs executed after March 26, 2010.

comply with the FDIC mortgage loan modification program, the U.S. Treasury's Home Affordable Modification Program (HAMP) Guidelines, or any other modification program approved by the FDIC.

In practice, many of these factors, such as what is "customary" and what constitutes a "best effort", are subjective. These subjective factors, coupled with the fact that acquirers are only exposed to minimal down-side losses and upside gains, may indicate that acquirers with SLAs are subject to a moral hazard problem. Despite potentially following the minimum requirements outlined in the P&A agreement, acquirers with Shared-Loss Agreements may not have the financial incentives to design as many creative resolution strategies as acquirers without them. As a result, the acquiring bank may actually end up worse off with the presence of a SLA.[12]

Furthermore, the reporting requirements for SLAs can be burdensome for acquiring banks, which are required to file monthly reports on each loan with the FDIC. These reporting requirements are more demanding for SLAs that include single-family homes, and the FDIC makes it clear that examiners will review the assuming bank's effort to implement the home-ownership preservation initiatives reflected in the single-family SLAs. The FDIC also conducts regular on-site reviews and off-site monitoring of records of covered losses and overall compliance with the SLAs. If the assuming bank is not in compliance with the agreement, the FDIC has the right to stop payments until the problem findings are resolved, and in extreme cases, sell the assets through a bid process. Pamela Farwig also explained in Barba (2011), "I would agree that the process is arduous. We are picking up 80% of the losses, we want to make sure that the buying banks are appropriately recognizing the losses...It is a burdensome process, but we have an oversight responsibility."

The majority of SLAs were terminated prior to their expiration, and acquirers often cite relief from administrative burden as a meaningful component of their decision in their press releases.[13]

[12]For example, in reference to the difficulties CVB faced in working out a set of Louisiana church loans covered under a SLA, Chris Myers, President and CEO of CVB, explains, "That's the negative side of these FDIC-assisted acquisitions...you're killing yourself to work these things out. And at the end of the day, there's just just not that big of a differential between if we lose a little or gain a little." (Barba, 2012)

[13]"We are pleased to have successfully negotiated the early termination of our shared-loss agreements with the FDIC," said Ignacio Alvarez, President and Chief Executive Officer of Popular Inc. "We are now focused on realizing the expected benefits of this transaction, which include lower operating expenses, greater flexibility to manage these assets and simpler financial reporting." (Davis, 2018)

To terminate a SLA, acquirers must approach the FDIC with a written termination offer. If the FDIC believes that the terms of the offer are less costly than the estimated cost of continuation, the FDIC can accept the offer subject to approval by the primary federal regulator of the acquirer. This offer could result in a payment from the acquirer to the FDIC or the other way around. Table 2 shows the termination status for all terminated SLAs through 2020. A single failed bank typically has two different types of covered assets (commercial assets and single-family residential), and each type can be terminated early. Column 2 reports the number of failed bank SLAs realizing some form of early termination, and this number is broken down into agreements that were terminated entirely and those with one-sided terminations. Of the 304 failed banks that were acquired with a SLA, 247 (81.25%) experienced some form of early termination, and the bulk of these early terminations were for the entire agreement. Columns 5 and 7 show a breakdown of the number of terminations where the acquirer paid the FDIC and vice versa; the number of terminations without payment is shown in Column 9. The aggregate amount of the payments by type are shown in Columns 6 and 8. While it is more frequent for the FDIC to pay the acquirer to terminate coverage (159 cases), it is still common for the acquirer to pay the FDIC to terminate coverage (71 cases), allowing the acquirer to realize more recoveries and free them from the reporting burden of Shared-Loss Agreements.[14]

Figure 4 shows the total number of Loss Share early terminations and fourth quarter single-family residential delinquency rates each year. Between the fourth quarter of 2007 and 2009, delinquency rates of single-family homes rose from 3.10% to 10.33%. They remained over 10% through the fourth quarter of 2012, when they started declining.[15] As both single-family and commercial real estate delinquency rates dropped to pre-crisis levels, Loss Share terminations dramatically increased in 2015 and 2016. While Loss Share coverage is especially valuable when default rates are high, it hinders a bank's ability to capitalize on recoveries. These correlations suggest that acquirers may be opportunistic in the timing of their Loss Share terminations by maintaining cover-

[14]Walt Moelling, an attorney specializing in assisting banks with Shared-Loss terminations, explains, "Aside from considerations of profit and loss, ending the loss-shares could reduce a headache for management. Dealing with the complexity of loss sharing eats up a lot of banker's energy...The cost of maintaining the relationship with the FDIC is so great that, even if you have to come out a little bit behind on the financial terms of the exchange, you can win just by freeing up management's time." (Cumming, 2015)

[15]For a time-series of quarterly single-family residential rates, see https://fred.stlouisfed.org/series/DRSFRMACBS. For data pertaining to commercial real estate delinquency rates, see https://fred.stlouisfed.org/series/DRCRELEXFACBS

age when default rates are relatively high (2010-2014), yet terminating such agreements when rates of recovery are likely to be higher, post-2014.[16] By terminating the Shared-Loss Agreement, the acquirer is also released from the reporting burden, additional monitoring, and any rules pertaining to the treatment of the loans outlined in the P&A agreements.

2.3 Related Literature

There is a large literature focusing on a longstanding debate regarding whether mergers and acquisitions create value. Jensen and Ruback (1983), Roll (1986), Andrade et al. (2001), and Betton et al. (2008) all review empirical evidence. One of the most common benchmarks for value creation is acquirer announcement returns, which have generally been found to be small, yet statistically significant (Moeller et al., 2004; Betton et al., 2008). Pre-crisis, failed bank auctions were relatively infrequent, though studies examining these infrequent events found evidence of positive announcement returns for acquirers (James and Wier, 1987b; Cochran et al., 1995; Christoffersen et al., 2012; Baibirer et al., 1992) and conclude that this is indicative of a wealth transfer from the FDIC to the failed bank acquirer (James and Wier, 1987a).

However, for studies examining long-run acquirer abnormal returns, it is difficult to determine a benchmark for what would have happened to the acquirer without the acquisition. To address this problem, a smaller group of more recent papers have implemented a winner-loser empirical strategy to understand implications for long-run value. The underlying assumption behind this strategy is that within an auction setting, auction winners are more similar to losers than non-participants, and even comparing participants across auctions can provide a better counterfactual than non-participants. For example, Savor and Lu (2009) compare the long-run performance of successful acquirers to those participating in a different set of failed acquisitions and find that successful acquirers outperform by 25.2% over the three-year horizon within a portfolio setting (buy-and-hold are 31.2%). However, Malmendier et al. (2018) examine participants in close bidding contests and also find that losers outperform winners by 24% in the three-years post-merger. Both studies cau-

[16]"A lot of these agreements were written when the economy was still in a recession and we hadn't come into a recovery yet...The economy has recovered and a lot of these loans are performing. Banks are more comfortable with them now." said David Giesen, a managing director in Navigant Consulting's valuation and financial risk management practice, as cited by Stewart (2011).

tion readers about the generalizability of their findings. Greenstone et al. (2010); Allen et al. (2014); Gowrisankaran et al. (2015); Vij (2019) also implement winner-loser strategies, though their studies focus primarily on implications for consumer welfare.

The second group of studies examines the winner's curse. Capen et al. (1971) first formalized the concept of the winner's curse, which essentially states that auction winners fail to adapt their strategies to the level of competition and therefore overpay. Theoretical models indicate that the winner's curse is more severe when there is greater competition (Kagel and Levin, 1986) and uncertainty surrounding the value of the assets being sold (Bazerman and Samuelson, 1983). In his "hubris hypothesis," Roll (1986) suggests that overconfident managers fall prey to the winner's curse and overbid when acquiring other corporations. A number of studies have examined the relationship between the number of public bidders and acquirer returns outside the failed bank setting (Bradley et al., 1988; Varaiya, 1988; Morck et al., 1990; Franks and Harris, 1989; Servaes, 1991; Schwert, 2000; Kale et al., 2003; Moeller et al., 2004; Boone and Mulherin, 2008). Only Morck et al. (1990) and select sub-samples presented in Schwert (2000) find a negative relationship between bidder returns and the number of public bidders, and Moeller et al. (2004) and Varaiya (1988) both attribute their lack of significance to public bidders being a noisy and incomplete measure of takeover competition. Two papers, Boone and Mulherin (2007, 2008), use Securities and Exchange Commission documents to quantify takeover competition by identifying the number of bidders in the private process prior to the announcement of the deal, though Boone and Mulherin (2007) also finds no evidence of a winner's curse.

My paper contributes to both strands of literature. From a data standpoint, I am able to build on the winner's curse literature by using a proprietary regulatory dataset that allows me to observe all auction participants. I can accurately quantify bidder competition at all points during the failed bank auction process, including stages that are unobservable to the public, as opposed to assuming public bidder competition is representative of auction competition. Methodologically, implementing a winner-loser empirical strategy helps me contribute to the literature in two ways. First, by implementing this design within a given auction and including auction-level fixed effects, I can identify the causal impact that acquiring a failed bank has on auction winners, as compared

to auction losers, allowing me to contribute to the debate regarding whether acquisitions create long-run shareholder value. Second, my empirical strategy helps identify the winner's curse. By employing an auction-level fixed effect, I control for all auction-level characteristics, allowing me to isolate the impact an increase in bidder competition would have on acquirer returns within a given failed bank auction.

3 Sample Construction

3.1 Sample Construction

This study combines data from an FDIC proprietary regulatory database, henceforth referred to as FDIC AuctionData, a linking table produced by the New York Federal Reserve to link bank certificate identities to PERMCOS, daily equity prices and market values from the Center for Research in Security Prices (CRSP), and quarterly items from the FFIEC Reports of Condition and Income (Call Report). The proprietary regulatory database is an internal database that is used for both marketing and managing failed bank auctions and was intended for use by FDIC employees to aid in the resolution of failed banks. It contains complete information pertaining to each step in the auction process discussed in Section 2.1: bank solicitation, interest designation, due diligence, and auction bid. My sample contains all failed bank auctions in the 50 United States and starts on November 12, 2009, when the database becomes complete, and ends on December 31, 2015. For each sample auction, I calculate the number of solicited banks, individual banks that made bids, and the bids themselves. Subsequently, within a given auction, I remove duplicate bids for a given bank, retaining the bid with the highest place. For example, if a given bank wins a specific failed bank auction, yet placed two losing bids, I retain the winning bid in my sample. Then, I merge each bidder's entity identifiers contained to the entity's PERMCO using the New York Federal Reserve's PERMCO-RSSD linking table.[17]

While the majority of failed bank auctions receive bids, only a small subset of bidders are public entities, which dramatically reduces my sample size. My final sample consists of 254

[17]Federal Reserve Bank of New York. 2017. CRSP-FRB Link:
https://www.newyorkfed.org/research/banking$_r esearch/datasets.html$

auctions, where 485 bids were made by publicly traded banks. Of these 485 bids, 134 pertain to auction winners, and 351 pertain to public banks that bid for auctions, yet lost. Table 3 Panel A shows the breakdown of these auction-level characteristics. Approximately two-thirds (172) of sample auctions included Shared-Loss arrangements, and on average (at the median), the FDIC solicited 372 (373) institutions to participate in the failed-bank auction. Of the solicited banks, an average (median) of 6.05 (6) banks expressed interest, 5.03 (5) banks conducted due diligence, and 3.12 (3) banks eventually bid. As previously stated, due to the uncertainty surrounding how failed bank bids are calculated, it's common for bidders to submit multiple bids. The average auction in my sample has 6.47 bids, yet 3.12 bidders.

For each publicly traded bidder, I obtain data on stock returns and market value of equity from CRSP, and Factor returns come from Kenneth French's website. I implement the three factor Fama-French model, accounting for the market, size, and book-to-market factors. I compute both weekly and daily Fama-French-adjusted three-factor returns for each observation over a given holding period. For bidders that disappear from CRSP in the three years following the failed bank auction due to delisting, I include its delisted return. Next, I merge the final sample to quarterly Call Report data and construct a variety of variables to quantify the bank's size (ASSET and LNASSET), the relative size and type of the deposits compared to assets (DEPOSITS, BROKERED, and NONCORE). I also construct measures for the risk stemming from the loan portfolio, as indicated by reserves (RESERVE) and net charge-offs (CHARGEOFF), non-performing loans (NONPERF), and securities (SECURITIES) all relative to total assets. Measures of overall bank risk include the ratio of risk-weighted assets (RWA) and equity capital (EQUITY) relative to total assets. I also examine the composition of the loan portfolio by taking the ratio of consumer loans (CONSUMER), commercial and industrial loans (CANDI), construction and development loans (CANDD), commercial real estate loans (CRE), real estate loans (REALESTATE), and other real estate (OREO) scaled by total assets. Granja et al. (2017) show similarity of loan portfolios is a meaningful determinant of bids, and subsequent acquisitions, of failed banks. I create an overall measure of loan portfolio similarity (LOANDISTANCE) between the bidder and failed bank target by computing the sum of the differences in CONSUMER, CANDI, CANDD, CRE, REALESTATE,

and OREO. Variables with a "B_" prefix pertain to bidding banks, while variables with an "F_" prefix are indicative of failed bank variables. Table 3 Panel B shows summary statistics for quarterly bidder characteristics for the quarter prior to making the bid, and Table 3 Panel C shows the same characteristics for the failed banks. Bidding banks are noticeably larger. On average, bidders have $9.6 billion in assets (with a lot of skew), and on average, failed banks have approximately $450 million in assets. Bidders are also more profitable, and exhibit lower lending risk. More details pertaining to the construction of each variable can be found in Appendix A.

Next, I examine the comparability between my sample of publicly-traded failed bank auction winners and losers. In Table 4, I partition my sample into winners and losers and report summary statistics for 22 variables of interest for the quarter prior to failure. Within the table, for each variable, I provide test statistics for the differences in means and associated p-values. On average, winners and losers are similarly sized, and exhibit comparable levels of charge-offs and reserves, and have comparable levels of risk-weighted assets and equity capital. For the most part, their loan portfolios have similar compositions, though there are slight differences in the amount of commercial and industrial (B_CANDI) and construction and development (B_CANDD) loans for auction winners and losers. However, these differences are economically small and are less than 2% of total assets. By themselves, these differences are unlikely to drive the findings within this analysis. Furthermore, for a significance level of 5%, this is the expected amount of type I error. There is no meaningful differences in target loan portfolio similarity (LOANDISTANCE) between the two groups. This finding is consistent with Granja et al. (2017), who highlight that acquiring banks have similar asset business lines to failed banks.

3.2 Comparison Between the FDIC's AuctionData Database and Publicly Available Bid Summary Data

The regulatory database, FDIC AuctionData, contains a superset of failed bank auction bid data compared to any publicly available information. For each failed bank auction, the FDIC posts a summary of auction bids on its website, and the information posted there varies over time. As discussed in Section 2.1, prior to November 12, 2009, the FDIC only posted the identities of the

winning bidders. However, starting on November 12, 2009, as a result of a Freedom of Information Act (FOIA) request, the FDIC started making select bidder and bid data public in real-time. For all bids surpassing the liquidation value, the FDIC releases information pertaining to the bidder's identities and bid characteristics. The details of the winning bid are matched to the identity of the auction winner. The details of the second-place bid, referred to as the cover bid, are also designated, though the identity of the cover bidder is only released one year later. All other disclosed bids are unlinked to bidder identities, and any bids and bidder identities that are below the reservation (liquidation) value remain undisclosed.

Figure 5 includes an example of the public Bid Summary for North Houston Bank. Both the identity, U.S. Bank, N.A., and bid characteristics of the winning bid are presented at the top of the bid summary. Details pertaining to the other bids and bidders are also presented, though they are unlinked to the bidder identities, which are included at the bottom of the summary. It's important to note that there are more bids than bidders, indicating that some bidders made multiple bids. In the Bid Summary footnotes, it also says, "If any bids were received that would have been more costly than liquidation they have been excluded from this summary." This highlights the incomplete nature of the public data.

4 Empirical Strategy

The primary goal of my study is to understand the long-run implications failed bank acquisitions have for acquirers. However, the literature has debated the proper methodology for calculating these returns. Barber and Lyon (1997) and Lyon et al. (1999) propose the use of buy-and-hold abnormal returns, arguing that they are the most accurate representation of the returns realized by investors. Campbell et al. (1997) caution researchers that if event windows overlap in calendar time, the covariances between the abnormal returns may differ from zero, and the distributional results presented for the aggregated abnormal returns are not applicable. They suggest an event-time portfolio approach, which allows for cross-correlation of the abnormal returns. Since failed bank auctions cluster in time and are especially prevalent during the financial crisis, I implement both buy-and-hold abnormal returns as well as an event-time portfolio approach.

4.1 Establishing a Benchmark

The quintessential question plaguing the extant acquisition literature is how to measure the long-run hypothetical performance of an acquirer in the absence of an acquisition. Since the performance of an acquiring bank in the absence of an acquisition is not directly observable, Barber and Lyon (1997) suggest a comparison of acquirer buy-and-hold returns to the return of a) a reference portfolio, b) a matched sample of firms based on no specified firm characteristics, or c) the three factor model from Fama and French (1993).

One potential concern with implementing a matched sample based on observable characteristics is that there still may be unobservable differences between the acquiring firm and the matched sample (Loughran and Vijh, 1997; Rau and Vermaelen, 1998). Within the failed bank auction setting, this selection issue may be especially severe. For example, failed bank acquirers may have a better understanding of their risk exposure to real estate than can be inferred from observable Call Report data. As a result, banks participating in failed bank auctions may be better banks than those who do not, which may result in longer long-run abnormal returns, even in the absence of the acquisition itself. Comparing the abnormal returns of the acquiring bank to a sample of matched banks would overstate the value of the acquisition.

The failed bank auction setting allows me an opportunity to overcome this selection effect. I implement a winner-loser strategy where I compare the three-factor abnormal returns of failed bank auction winners to failed bank auction losers. To the extent that all banks bidding on the failed bank were willing to acquire it, the winner-loser strategy alleviates this selection problem. However, the winner-loser comparison is not perfect, since it does not preclude the possibility that unobserved factors could drive the differences in the bids themselves.

For each bidder b, I compute abnormal returns (ARs) over a given interval starting at date m and ending at date n by taking the difference between the cumulated bidder stock return, $RET^{b}_{m,n}$ and the cumulated benchmark return, $Ret^{benchmark}_{m,n}$. For the benchmark, I implement the Fama and French (1993) three-factor mode, which controls for the return of the market, size, and book-to-market ratios. Since my sample only contains banks, I do not have to make any subsequent

industry-adjustments. Equation 1 formalizes the abnormal return calculation for each bidder b:

$$AR^{b}_{m,n} = RET^{b}_{m,n} - Ret^{benchmark}_{m,n} \tag{1}$$

As previously explained, given that there were many failed bank auctions each week during the crisis, I first implement the event-time portfolio framework suggested by Campbell et al. (1997). Each week, I create event-time portfolios that consist of the equally weighted FF-adjusted returns to failed bank auction winners and losers. Subsequently, I also show the standard buy-and-hold returns to failed bank auction winners and losers, since these most closely relate to the returns realized to investors.

5 Results

5.1 Baseline Results

To understand whether failed bank auction winners realize long-run abnormal returns, I first present my results using the event-time portfolio advocated for by Campbell et al. (1997), since failed bank auctions cluster by week. In Table 5, I implement an event time framework. Each week, I compute an equally weighted portfolio of failed bank auction winners and losers. Panel A of Table 5 shows the returns for the one week, three-months, six months, one year, and two years prior to the failed bank auction. While failed bank auction winners and losers both experience positive abnormal FF-adjusted returns over these varying horizons, the difference between them is not statistically significant for any period analyzed. Coupled with the results of Tables 4, these results suggest that prior to the failed bank auction, winners and losers are similar prior to failure.

I plot the cumulative FF-adjusted returns to the winning and losing portfolios in Figure 8 sub-figure a. Following Savor and Lu (2009) and Malmendier et al. (2018), I focus on a three-year horizon post-acquisition. At first glance, the magnitude of the FF-adjusted returns for losing banks may be surprising, since approximately three years after the failed bank acquisition, the graph indicates that failed bank losers have FF-adjusted returns that are over 40%. It's important to note that in order to even be solicited for a failed bank auction, a bank must meet all criteria outlined

in Section 2.1, certifying that it is of the highest quality. In comparison to a standard acquisition, FDICIA requires a failed bank acquisition to be completed within 90 days, often leaving potential acquirers with only a few days to decide whether to submit a bid for the troubled assets contained within the failed bank. Due to the heightened uncertainty surrounding these types of auctions, a potential acquirer may be especially confident in its own stability and solvency before participating in the failed bank auction. Thus, all banks participating in failed bank auctions are of especially high quality, as evidenced by their positive abnormal FF-adjusted returns, even during the financial crisis.

Table 5 Panel B shows the abnormal returns to the winning and losing portfolios over varying forward-looking horizons. I define week 1 to be the week of the acquisition announcement. However, as discussed in Section 2.1, these auctions typically come on Fridays after business hours, though in select circumstances, the results are announced on different days (for example, IndyMac was announced on a Thursday). Thus, it should not be concerning that the weekly returns to the winner's portfolio are not positive and statistically significant on the event week (week 1), since for many auctions, the market will fully incorporate this information on the following Monday. However, in the two weeks following the failed bank acquisition, the equally-weighted portfolio of auction winners realizes an FF-adjusted return of 1.96%, while the losing portfolio realizes no statistically significant abnormal return.

Figure 7 graphically depicts the hedged portfolio, consisting of the difference between the portfolios consisting of failed bank winners and losers. As can be seen by Figure 7 sub-figure a, after five weeks, the difference between winners and losers is not statistically different from zero. Figure 7 sub-figure b shows the 95% confidence intervals between 75 and 100 weeks, when the returns to the hedged portfolio become negative. This difference persists throughout the duration of the three-year investment horizon.

In Table 6, I quantify these results. In the one-, two-, and three-years following, the winning portfolio realizes FF-adjusted returns of 7.61%, 14.5%, and 22.6%. However, the portfolios of losing banks realize corresponding FF-adjusted returns of 8.91%, 24.1%, and 42.9%. Thus, these results indicate that on average, the differences in FF-adjusted returns between banks winning and

losing failed bank auctions over the two- and three-year horizons are -9.63% and -20.3%, and it is statistically significant at the 1% level.

For the event-time portfolios shown in Table 5, I partition the full sample of failed bank auction winners with and without SLAs. For all horizons longer than one year, the winners without SLA coverage realize higher returns. In the three years post-acquisition, winners with SLAs realize FF-adjusted returns of 17.9%, while those without SLAs experience FF-adjusted returns of 49.3%. These results indicate that winners with SLA coverage underperform both failed bank auction losers and winners without SLA coverage.

In Figure 8 sub-figure b, I plot the cumulative abnormal FF-adjusted returns for failed bank auction winners and losers starting from the day of the auction announcement. These buy-and-hold returns are the closest realizations of the returns to a hypothetical investor (Barber and Lyon, 1997; Lyon et al., 1999). Figure 8 sub-figure b shows that while failed bank auction winners initially have higher returns, auction losers have higher long-run returns. In Table 6, I show the average buy-and-hold cumulative abnormal returns for auction winners, separated into auctions that included Loss Share provisions and those excluding it, and losers over various horizons that are calculated at the daily level. Since FDICIA requires failed bank auctions to be resolved within 90 days (approximately 63 trading days), in Column 1, I show that over the previous 63 trading days (the approximate time of the PCA), there is no statistically significant differences between any type of failed bank auction winner and loser.

In the five trading days surrounding the acquisition announcement, $AR_{(-2,2)}$, auction winners have FF-adjusted returns of 3.10%, while losers exhibit no statistically significantly returns. In the one-, two-, and three-years following the announcement dates, winners have BHAR of 4.90%, 12.0%, and 19.5%. Meanwhile, losers experience BHAR of 5.30%, 17.3%, and 32.0%. Over the three-years post acquisition, the sub-sample of acquirers with (without) SLAs earn BHAR of 12.2% (41.6%), while failed bank auction losers realize 32.0%.

Within the BHAR framework, over the two years post-acquisition, failed bank acquirers underperform losers by -5.30%, and this underperformance grows to -12.5% over three years. In Rows 3 and 4, I break acquirers into those with and without SLAs. In the five-days surrounding the

acquisition announcement, returns are positive for both groups of acquirers, but in the three years following the auction, winners without SLAs realize higher FF-adjusted returns than those without loss share (41.6% vs. 12.2%). In rows 6 and 7, I show that acquirer underperformance is driven by acquirers with SLAs, while there is no difference in the returns to acquirers without SLAs and failed bank losers, which is conssitent with the event-time analysis. Row 6 shows that in the two- and three-years following acquisitions, as compared to auction losers, winners with SLAs realize returns that are -8.58% and -19.8% lower.

The FDIC claims that their estimated savings from Loss Share exceeded $41 billion, or 19% of covered assets, as compared to the outright cash sale of those assets.[18] As discussed in Section 2.1, acquirers with Loss Share Agreements receive 20% of the recoveries from loans that were previously charged off, and they pay the other 80% to the FDIC under the SLA. In comparison to sharing in the downside losses, which typically happen over a five-year horizon, the upside potential from the recoveries is truncated for eight years. They are also subject to burdensome reporting and FDIC monitoring requirements discussed in Section 2.2, which is one reason why the majority of SLAs are terminated early. Managing the assets of the failed bank, coupled with the additional administrative and reporting burdens, may hinder the bank's ability to make more profitable loans post-acquisition. Furthermore, because of the downside loss protection and limited upside potential, adverse selection problems may cause the bank to perform worse in the presence of Loss Share than it would have without acquiring a failed bank. In subsequent tests, I will explore whether this deviation in long-run performance is consistent with the winner's curse.

5.2 Winner's Curse

The winner's curse hypothesis suggests that auction winners fail to adapt their strategies to the level of competition and the amount of uncertainty within the auction environment. The winner's curse is an empirical possibility within a common value environment in which, and if full information was available, all bidders would assign the same value to the asset. However, each bidder receives an imperfect signal as to the actual value of the asset. Even though the average

[18] https://www.fdic.gov/resources/resolutions/bank-failures/failed-bank-list/lossshare/index.html

value across bidders could be correct, the winner's curse could still apply if the winning bidder is the one who most overvalued the asset.

A failed bank auction has many attributes of the common value environment that may give rise to the winner's curse. The FDIC invites potential bidders to participate in these auctions, suggesting that they are comparable, and there are secondary markets for resale of these loans (Bajari and Hortaçsu, 2003; Kagel et al., 1995). A possible criticism of the failed bank setting is participating banks may have different valuations for the targets due to unobservable synergies. However, synergies could also have a common value element (Varaiya, 1988), as two different bidders could both be able to reap equivalent benefits from acquiring a particular target. Empirically, the standard interpretation of data on the gains in mergers is that the sources of synergies are unique to targets and imply no special synergies, on average, to bidders (Asquith, 1983).

Even relaxing the assumption of a common value environment does not preclude the possibility for a winner's curse in failed bank auctions. Klemperer (1998); Bulow and Klemperer (2002) state that some bidder asymmetry, such as differential synergies, can magnify the potential winner's curse. Given the assumption of a common value element in failed bank auctions, I offer several direct tests of the winner's curse. A central prediction is that any overvaluation of the auctioned asset is a function of the number of participants in a given auction. Hence, if the winner's curse applies to the failed bank settings, theory predicts that the returns to the winning bidder are inversely related to the magnitude of bid competition Kagel and Levin (1986).

In order to search for evidence of the winner's curse, I implement an alternative empirical framework that allows me to directly compare the path of failed bank auction winners and losers, holding all failed bank auction-level variables constant, as formalized in Equation 2:

$$AR^{b}_{m,n} = \beta_1 WIN_{b,a} + \beta_2 WIN_{b,a} \times LOSSSHARE_a + \beta_3 WIN_{b,a} \times COMPETITION_a + \beta_4 \gamma_a + \epsilon_{b,a} \tag{2}$$

where bidder b abnormal returns over the interval (m, n) as a function of whether the bidder won the auction a, won the auction with Loss Share (LOSS SHARE), and the level of competition within the given auction. The variable WIN is a dummy variable that takes the value of 1 if bank b wins

auction a. The variable γ_a is an auction-level fixed effect, which controls for all time-invariant auction-level characteristics, such as all observable failed bank characteristics and time fixed effects, including the day of the auction. The auction fixed effect absorbs the direct effect of all auction-level variables, including the LOSS SHARE dummy variable and COMPETITION count variable. I also control for the interaction between WIN and LOSS SHARE because Tables 5 and 6 indicate that Loss Share is a meaningful determinant of bidder returns. By implementing an auction-level fixed effect, I am able to draw comparisons within a given auction, isolating the impact of the variables of interest, such as Loss Share and bidder competition. The auction-level fixed effect also absorbs any time-varying effects, since an auction is fixed for a given day. Since there can be multiple failed bank auctions announced on a given day, the auction-level fixed effect is an even finer classification than incorporation of a daily (time) fixed effect. The results presented in Section 5.1 pertained to the average long-run effects of mergers. By implementing this alternative framework with the inclusion of the auction fixed effect, I am comparing failed bank auction winners to losers within a given auction. While my effect is better identified within this framework, the auction-level fixed effect completely absorbs the effect of auctions where there are only winning or losing banks. In the presence of the winner's curse, I would expect the coefficient on β_3 to be negative and significant.

This framework affords me two primary benefits over existing studies which directly relate acquirer abnormal returns to bidder competition. First, instead of examining whether acquirer returns are higher or lower in the presence of competition, I can compare the returns of auction winners to that of losers within the same auction by implementing the auction-level fixed effect. While it has been shown that observable characteristics are unrelated to short-run return windows (Brown and Warner, 1980, 1985), this distinction becomes important when looking at long-run returns. Second, existing studies discussed in Section 2.3 attribute a lack of significance to public bidders being a noisy and incomplete measure of takeover competition. The FDIC regulatory data that I examine allows me to quantify bidder competition at all stages of the failed bank auction discussed in Section 2.1: solicitation, interest, due diligence, and bidding, regardless of whether the bids become public.

In Table 7 Panel A, I show the daily return results surrounding the auction announcement

date 0 within the framework presented in Equation 2. Compared to auction losers, auction winners realize positive abnormal returns of approximately 54 and 41 basis points on the day before and day of the announcement, though failed bank auction announcements are typically made on Fridays after the close of the business day. Correspondingly, announcement returns are 176 basis points on the day following the auction announcement.

In Panel B, the dependent variable is the bidder's abnormal returns in the five-day window surrounding the auction announcement. To the extent that this announcement incorporates all information pertaining to costs and benefits of acquiring a failed bank, this is the window that is most likely to indicate over-payment. In Column 1, I show that over the five-day window surrounding the auction announcement, winners realize FF-adjusted returns that are 3.48% higher than auction losers. In Column 2, I interact the WIN dummy variable with the dummy variable indicating LOSS SHARE and find that the interaction term is not significant, indicating that the market does not believe that auction winners overpay for SLAs.

Subsequently, I add interaction terms between WIN and the number of auction bids (BIDS), bidders (BIDDERS), banks performing due diligence (DUE DILIGENCE), and solicited banks (SOLICITATIONS). The results in Columns 3-7 Panel B suggest that there is no evidence of a winner's curse when examining five-day FF-adjusted returns surrounding the acquisition announcement, and the positive acquisition announcement returns indicate that the market does not believe that the acquirers overpaid for the failed banks. Furthermore, the coefficient on LOSS SHARE is never significant, indicating that upon the announcement, there is no difference in five-day returns for acquisitions with and without Loss Share arrangements. The lack of significance on the LOSS SHARE indicator variable across all specifications further highlights that the market does not believe that acquirers making acquisitions overpay for Loss Share coverage.

In Table 7 Panel C, I implement the framework in Equation 2 but this time examining the post-acquisition window from date 3 to 750. In Panel C, when the interaction between WIN and LOSS SHARE is included in the regressions, the coefficient on WIN is positive, yet never significant at the 5% level. Consistent with the findings from Tables 5 and 6, this shows that acquirers with Loss Share realize returns that are lower than winners without Loss Share (WIN) and losing

banks. Compared to both acquirers without Loss Share and failed bank auction losers, Columns 2-7 indicate that FF-adjusted returns to acquirers with Loss Share are approximately 30% lower, a magnitude that is both economically and statistically meaningful. Essentially, by implementing this framework, the auction-level fixed effect allows me to compare an auction to "itself," only changing the interacted variable of interest. For example, in Column 2, I show that for a given failed bank, an acquirer with a Loss Share Agreement would realize 28.0% less from day 3 to day 750, as compared to an acquirer of the same bank without Loss Share. This result alleviates the concern that acquirer underperformance with SLAs is due to acquiring failed banks with poorer quality assets, since this framework controls for all failed bank characteristics.

When analyzing either short- or long-run returns, the interaction term between WIN and any measure of bidder competition is negative, though not statistically significant. Results are also quantitatively similar to Panel C if I implement long-run abnormal returns that range from date 0 to 750. The results from Table 7 indicate that Loss Share is an important determinant of long-run acquirer returns, though no measure of competition meaningfully determines announcement-day or long-run returns. Taken together, the results presented in Table 7 suggest that despite acquirers realizing substantially lower abnormal returns than losers, there is no evidence of overpayment consistent with the winner's curse.

6 Additional Analysis

6.1 Subsequent Accounting Performance

In Section 5.2, I showed that the lower long-run effect failed bank acquisitions have on shareholder wealth is not the result of over-payment in the form of a winner's curse, though I have shown that the presence of SLAs negatively impacts long-run shareholder wealth. In this section, I use accounting data to disentangle two other potential explanations for the lower long-run abnormal returns to acquirers with SLA coverage. One potential reason is that failed banks sold with SLAs are of poorer quality. Adding a portfolio of troubled assets to its existing loan portfolio may still make an acquirer worse off than pre-acquisition. In other words, even absorbing 20% of the losses from

the failed bank may make still acquirers worse off than if they had not acquired the bank. Another potential reason for these lower returns is that they reflect a reduction in overall bank risk. Under a typical SLA discussed in Section 2.1, the FDIC reduced the acquirer's risk exposure to these assets by realizing 80% of both losses and gains, occurring in the form of recoveries, for the first five years of the transaction. For an additional three years, the FDIC realizes 80% of the recoveries. From the acquirer's perspective, both the downside losses, as well as the upside potential, of the assets under Loss Share were reduced. To the extent that the FDIC was guaranteeing these acquired assets, it's possible that overall, acquiring banks actually were made safer by acquiring failed bank assets under Loss Share, relative to banks losing failed bank auctions.

If the presence of a SLA accompanies poorer quality failed banks that negatively impact overall acquirer performance within the loan portfolio, post-acquisition, one would expect to see greater levels of charge-offs and loan-loss reserves, indicating poorer performance in the loan portfolio. Alternatively, if the net effect of the SLA was that it made loan portfolios safer, one would expect to see lower levels of charge-offs and loan-loss reserves for acquirers with such arrangements. To disentangle these explanations, I perform a bank-level analysis using Call Report data for all banks taking part in failed bank auctions that implements the alternative bank-level framework presented in Equation 3:

$$Dependent_{b,q} = \beta_1 POST \times WIN_b + \beta_2 POST \times WIN_b \times LOSSSHARE_b + \beta_3 BankControls_{b,q} + \beta_4 \nu_q + \beta_5 \psi_b + \epsilon_{b,q} \quad (3)$$

Where $Dependent_{b,q}$ is the quarterly bank-level dependent variable of interest, WIN is a dummy variable indicating whether the bank won a failed bank auction, and LOSS SHARE takes a value of 1 if the acquiring bank has a SLA. I control for fixed effects at the year-quarter (ν_q) and bank-level (ψ_b). The bank and year-quarter fixed effects absorb the direct effect of WIN and POST respectively. *BankControls* is a vector of quarterly control variables that include size (LNASSET) as well as nonperforming loans (NONPERF), deposits (DEPOSITS), securities, consumer loans (CONSUMER), commercial and industrial loans (CANDI), construction and development loans

(CANDD), commercial real estate loans (CRE), and real estate loans (REALESTATE) all scaled by total assets. The details pertaining to the construction of these variables are in Appendix A. I find that LOSS SHARE is sticky over time for a given acquirer. Even though there are multiple repeat acquirers in my sample, banks that make one failed bank acquisition with Loss Share make subsequent acquisitions with Loss Share. One reason for this is because in order to comply with the SLA requirements, acquirers often have to form a dedicated team.[19] Once that team and compliance processes are established, the marginal cost of acquiring an additional failed bank with an accompanying SLA is lower.

Within this framework, I compare banks that lost failed banks auctions to those that won and became acquirers, with and without Loss Share. I only allow each bank to enter the sample once as a winner or a loser, and losers never become subsequent winners. Losers become losers the first time they bid on a failed bank, and auction winners become winners the first time they win a failed bank. If they win subsequent auctions, they remain winners in the sample but are not double-counted, since this panel analysis is conducted at the quarterly level. In the rare event where an acquirer acquirers two banks within the same quarter, they are assigned a value of one for LOSS SHARE if at least one acquisition included a Loss Share Agreement.

I examine quarterly loan-loss reserves and charge-offs in Table 8. In Column 1, the coefficient on POST x WIN is negative and statistically significant, indicating that loan-loss reserves decrease for failed bank auction winners post-acquisition. However, when I break up auction winners into those with and without Loss Share in Column 2, I find that the coefficient on POST x WIN is no longer negative, but the coefficient on POST x WIN x LOSS SHARE is negative and statistically significant, indicating that auction winners with Loss Share realize a decrease in loan-loss reserves, driving the aggregate results shown in Column 1. Charge-offs realize a similar pattern in Columns 3 and 4. These results suggest that the loan portfolios of banks acquiring failed banks with Loss Share are becoming safer, as opposed to riskier.[20]

[19] "Depending on the agreement, acquirers must submit certificates for payment to the FDIC either monthly or quarterly to get paid for losses. Most, if not all, buyers have dedicated entire teams to the task," as cited in Barba (2011).

[20] Another possible reason behind this finding is that the management acquiring banks that had Loss Share Agreements in their bids are especially risk-averse. This risk-aversion may manifest itself through the Loss Share contracts

In contrast to the analysis presented in Tables 4 and 7 that includes an auction-level fixed effect, this analysis is conducted within a quarterly panel setting. If an acquirer acquires two failed banks within a given quarter, the acquirer only appears in this framework once. Thus, because auction-level fixed effects are not included in this analysis, the negative coefficient on POST x WIN x LOSS SHARE is not mechanical (ie. indicative of the fact that all else equal, for a given failed bank, an acquisition with Loss Share will lead to lower charge-offs than one without Loss Share). For example, despite the fact that Loss Share may have an 80/20 split between the FDIC and acquirer, acquirers could still realize higher rates of charge-offs and reserves than acquisition losers (or winners without Loss Share). Table 3 Panel B indicates that the average bidder has a charge-off rate of 0.2%. If an acquirer in an 80/20 Loss Share arrangement needs to charge off more than 1% of the failed bank's assets, the acquirer's charge-off rate could increase post-acquisition. Thus, it is possible that the coefficient on POST x WIN x LOSS SHARE could have been positive, though empirically, the coefficient on this triple interaction term is negative.

7 Robustness

7.1 Intensive Margin Analysis

In this section, I focus on the differential effects of failed bank size and Loss Share assets. In my primary analysis, I separately examine failed bank auction winners with and without Loss Share by implementing a simple dummy variable. However, greater amounts of assets covered under SLAs may be associated with greater administrative burden or a greater reduction in risk of the combined entity. I augment my data with a second proprietary database from the FDIC that contains data on both Loss Share assets as well as the failed bank assets that are transferred to the acquirer.[21] I add three new variables to my analysis. The variable ASSET RATIO represents the ratio of failed bank assets to acquiring bank assets (B_ASSET), and LOSS SHARE RATIO is the ratio of Loss Share assets to acquirer assets. From there, I decompose LOSS SHARE RATIO

as well as the reduction in the overall risk. However, to the extent that management does not change over my sample period, the bank-level fixed effect will absorb that effect.

[21] Acquirers often do not take all failed bank assets. For example, acquirers may elect to forego assets undergoing litigation.

in the ratio of Single-Family Residential (SFR) and Non-Single Family (NSF) Loss Share assets to acquirer assets. I present my results in Table 9. Consistent with previous analysis, I find that auction winners experience positive abnormal returns in the short-run, though this effect is unrelated to the relative size of the failed bank. Columns 2 and 3 indicate that the market believes that total Loss Share assets, SFR assets, and NSF assets are all priced appropriately, as evidenced by the lack of significance on all of the interaction terms. However, the coefficient on WIN is negative and significant in Columns 4-6, indicating that post-announcement, auction winners realize abnormal returns that are lower than failed bank auction losers. However, the positive effect of WIN x ASSET RATIO suggests that this effect is attenuated for banks that are larger relative to the failed bank. However, in Column 5, the interaction term WIN x LOSS SHARE RATIO is negative and significant, indicating that when the combined entity has greater amounts of assets covered by SLA's, long-run returns are even lower. In Column 6, I show that this negative effect is primarily driven by Single-Family Residential Loans. This intensive margin analysis adds credibility to my previous findings by showing that my baseline results are not driven by the overall size of the acquirer but in the size of the assets covered under SLAs. That is, holding the size of the failed bank assets acquired, higher amounts of assets covered under SLAs are associated with lower long-run abnormal returns.

7.2 Removing Losers that Become Winners

Thus far, I have shown that banks that participate in failed bank auctions yet lose outperform acquirers with SLAs in the long-run, though the result is opposite in the short-run. A natural question to ask is whether failed bank auction losers become subsequent winners. Since I have shown winners realize positive announcement day returns, it is possible that losers that become winners later may realize these positive announcement-day returns, which could potentially drive the outperformance in the long run.

Within the sample, occasionally failed bank auction losers do become subsequent winners. In this section, I repeat the analysis in Section 5.1 but I remove any losing bank that subsequently becomes a winner within three years. Upon removing these banks, the baseline results become even stronger. In Table 10, I show both the event-time portfolios and buy-and-hold returns for all failed

bank auction winners, along with winners with and without SLAs (as shown in Tables 5 and 6), but here, I show the FF-adjusted cumulative abnormal returns for Losers that Never Win (Row 4). Compared to the full sample of failed bank auction losers shown in Tables 5 and 6, losers that never win realize even higher abnormal return, making the difference between all groups of auction winners and losers even more dramatic when the sub-sample of failed bank auction losers that later win are dropped. This analysis indicates that failed bank auction losers that later win do not drive the original findings presented in Tables 5 and 6.

7.3 Comparison to Solicited Banks

As discussed at length in Section 4.1, there is considerable debate on how to measure acquirer abnormal performance, since it is difficult to establish how the acquirer would have performed in the absence of an acquisition. Some studies suggest using observable characteristics to match each acquiring firm to one (or more) firms that did not participate in the acquisition. However, other studies caution researchers that unobservable differences may drive the decision to bid (Loughran and Vijh, 1997; Rau and Vermaelen, 1998). For example, failed bank auction participants may have superior knowledge of (and confidence in) their customers and loan portfolios that cannot be inferred from Call Report data. Thus, it is possible that the group of banks that bid on failed banks have better unobservable characteristics than those who did not participate. While I have shown that failed bank auction winners and losers have similar *observable* characteristics, an underlying assumption of my previous analysis has been that they also have similar *unobservable* characteristics that drive their decision to bid. In this section, I attempt to quantify the relationship these unobservable characteristics have on future performance by augmenting my previous analysis by adding a third group: solicited banks.

The FDIC's AuctionData allow me to identify all bidders that the FDIC solicited but did not take part in the failed bank auction. Post-auction, neither failed bank auction losers or solicited banks acquired the failed bank. Both the solicited and losing banks meet all of the FDIC's eligibility criteria discussed in Section 2.1 that include characteristics observable to the public (such as Tier 1 risk-based capital) and only observable to regulators (CAMELS ratings). However, they may differ

on the unobservable characteristics that drive the bidders' decision to bid.

In Table 11, I compare failed bank auction winners and losers to solicited banks that did not participate in failed bank auctions using the event-time methodologies presented in Tables 5 and 6. I graphically depict the trajectories of failed bank auction winners, losers, and solicited banks using event-time portfolios and buy-and-hold returns in Figure 8 sub-figures a and b. A visual inspection of both sub-figures shows that while failed bank auction losers and solicited banks tracking closely at first, their paths diverge over time. Despite the fact that failed bank auction winners outperform both groups in the short-term, the trajectories of failed bank auction winners and solicited banks come together over longer horizons, and failed bank auction losers outperform both groups.

I formally test the differences in returns between solicited banks and all groups of failed bank auction participants in Table 11. Both the event-time and but-and-hold framework suggest that the difference between auction losers and solicited banks is positive, economically meaningful, and statistically significant. Within an event-time (buy-and-hold) framework, failed bank auction losers outperform solicited banks by 23.5% (15.3%) over the three years post-acquisition. While by nature, the unobservable characteristics that could be driving the decision to bid are not able to be measured, this analysis suggests that unobservable characteristics associated with failed bank auction losers decision to bid are positively associated with future returns. By assuming that the unobservable characteristics that drive the decision to bid are similar for all bidding banks, regardless of whether they win or lose, this analysis suggests that winning banks may have continued along the same trajectory as the failed bank auction losers had they not acquired the failed bank.

Within the event-time and buy-and-hold framework, I also compare the trajectories of solicited banks to those of all failed bank auction winners, winners with SLA coverage, and winners without SLA coverage. Within the event-time framework, in the three-years post acquisition, there are no differences between any group of auction winners and the solicited banks. However, the buy-and-hold analysis in Panel B suggests that failed bank acquirers without Loss Share have FF-adjusted abnormal returns that are 24.9% higher than solicited banks.

Taken together, these results highlight the importance of comparing failed bank auction

winners to losers, as opposed to a matched sample, since comparing failed bank auction winners to losers yields different results than comparing winners to solicited banks. Despite the fact that winners, losers, and solicited banks all meet the FDIC's eligibility criteria, bidding and solicited banks may differ along unobservable dimensions. I find that in the three years post-acquisition, banks that lose failed bank auctions have long-term performance that exceeds other solicited banks. Since neither group acquires a failed bank, this analysis suggests in the absence of an acquisition, failed bank auction winners may have had return trajectories that were more positive.

8 Conclusion

Using a proprietary set of data from FDIC failed bank auctions, I examine whether acquiring a failed bank creates long-run value for acquirer shareholders. This data set allows me to observe all failed bank auction participants at every stage of the auction process, including those only observable to the regulator. Thus, I am able to use the loser's post-acquisition performance to construct the counterfactual performance of the winners, had they not acquired the failed bank.

I find that the market responds favorably to failed bank acquisitions, yielding abnormal five-day announcement returns of nearly 3.10% for acquirers. There are no significant differences in five-day returns surrounding failed bank acquisition announcements for auction winners with and without Loss Share, where the FDIC absorbs approximately 80% of both the losses and gains from the covered assets. This indicates that the market does not believe that acquirers overpaid for Loss Share coverage.

However, in the three years post-acquisition, failed bank auction winners realize FF-adjusted returns of 22.6%, while auction losers realize 42.9% These lower abnormal returns are driven by banks that have Shared-Loss Agreements. In the three years post-acquisition, acquirers with SLAs realize FF-adjusted returns that are only 17.9%. The 25.0% underperformance relative to auction losers is both statistically and economically meaningful, and it is not driven by failed bank auction losers that become subsequent winners.

Furthermore, I find no evidence that abnormal returns are meaningfully related to bidder competition at any stage of the auction process, including those only observable to the regulator, in-

dicating that these lower returns are not consistent with a winner's curse. However, post-acquisition, acquirers with Shared-Loss coverage have less lending risk, as evidenced by lower charge-offs and reserves, compared to both auction losers and acquirers without Loss Share. This suggests that the reduction in risk stemming from SLAs plays an important role in explaining the divergence in long-run abnormal returns.

This study has meaningful implications for academics, policymakers, and regulators, especially the FDIC. Academics have long debated whether acquisitions create long-run shareholder value and whether auction winners are subject to the winner's curse. These questions are especially important within the failed bank setting, where efficient resolution is of paramount importance to financial system stability and has a ripple effect throughout the broader economy.

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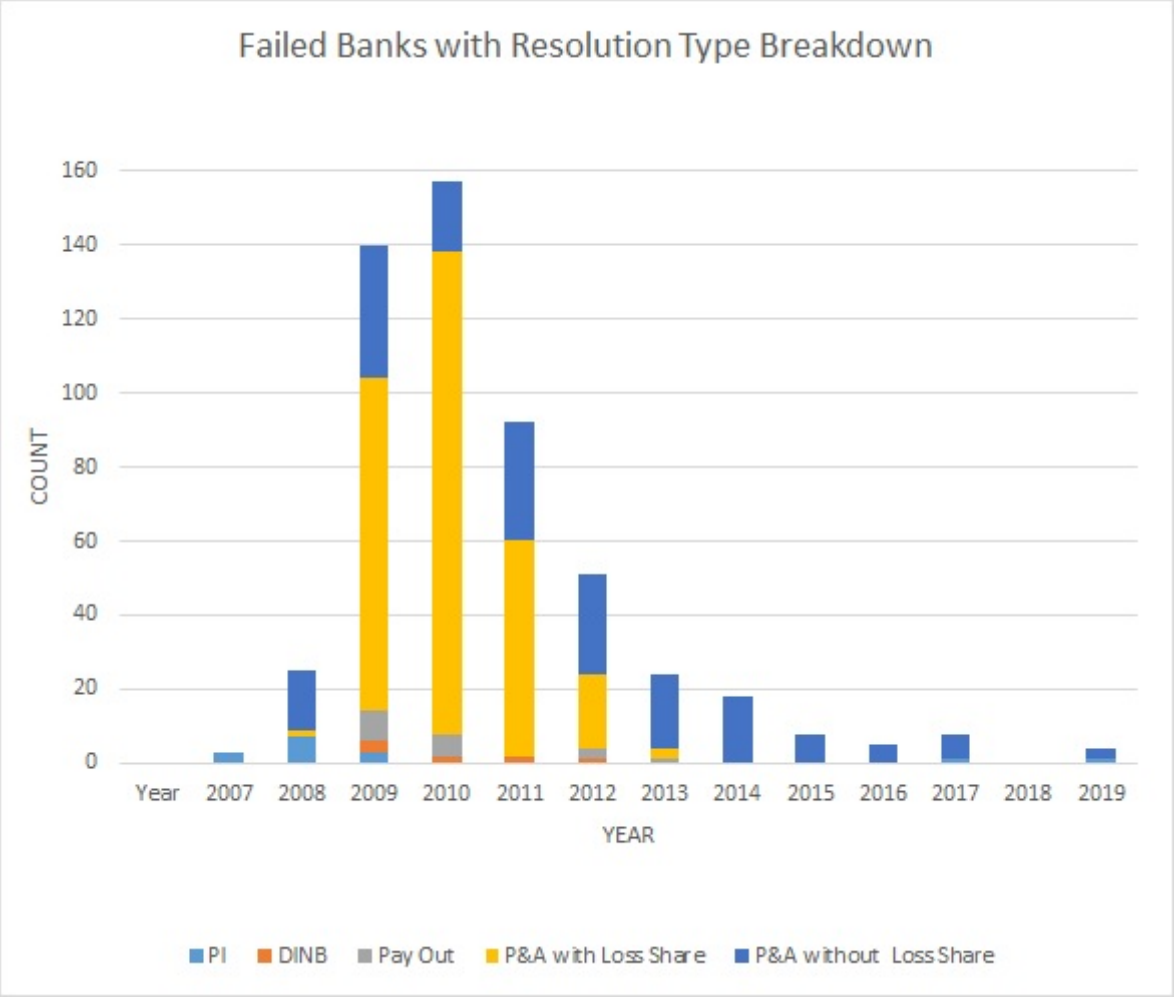
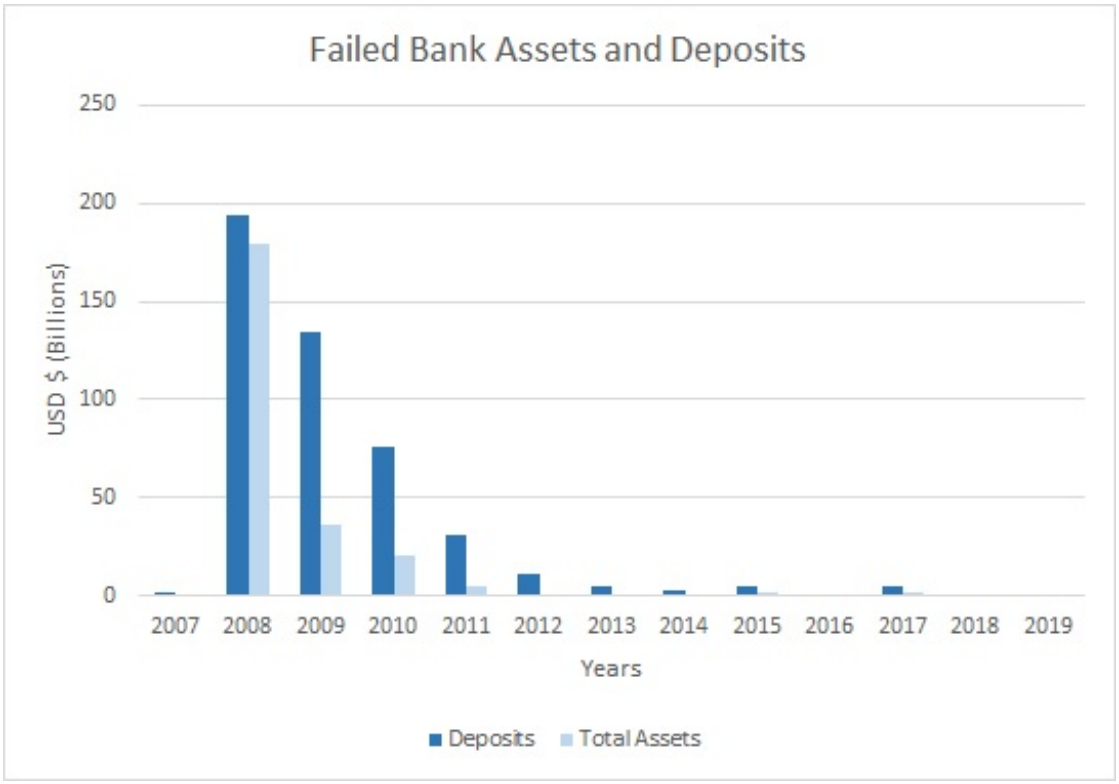
Figure 1. Failed Bank Resolution Types. This figure displays a breakdown of the total bank failures each year broken down by failure type. PI (Purchase of Insured Deposits) transactions are acquisitions of insured deposits only, Deposit Insurance National Bank (DINB) is a payout where the failed bank comes under receivership and remains open under the supervision of the FDIC with a new title. Customers are given a time period to transfer out deposits under a specified threshold, while assets of the failed institution remain in the possession of the FDIC until they are later dispersed. A Pay Out occurs when the insurer paid the deposits directly and placed the assets in a liquidating receivership. A Purchase and Assumption with Loss Share (PA with Loss Share) or without Loss Share (PA without Loss Share) is a resolution where deposits, certain other liabilities and a portion (or all) of the assets were sold to an acquirer.

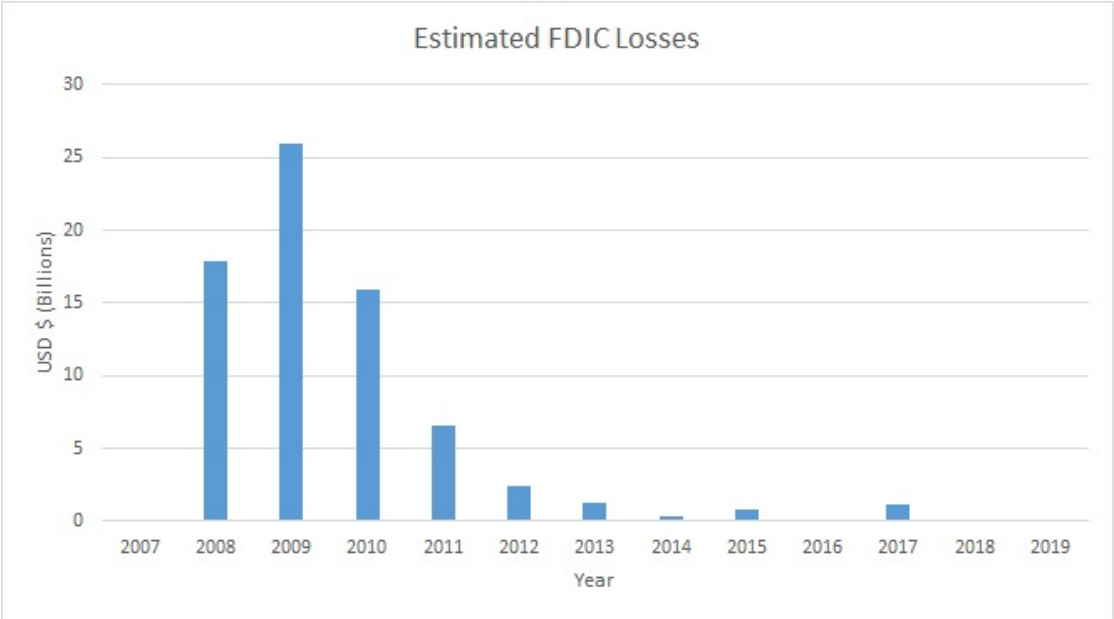


(a)

Figure 2. Failed Bank Assets, Deposits, and FDIC losses. Subfigure A shows the total number of failed bank assets and deposits for all bank failures in a given year. Subfigure B shows the most recent FDIC cost estimates associated with failed banks in a given year.

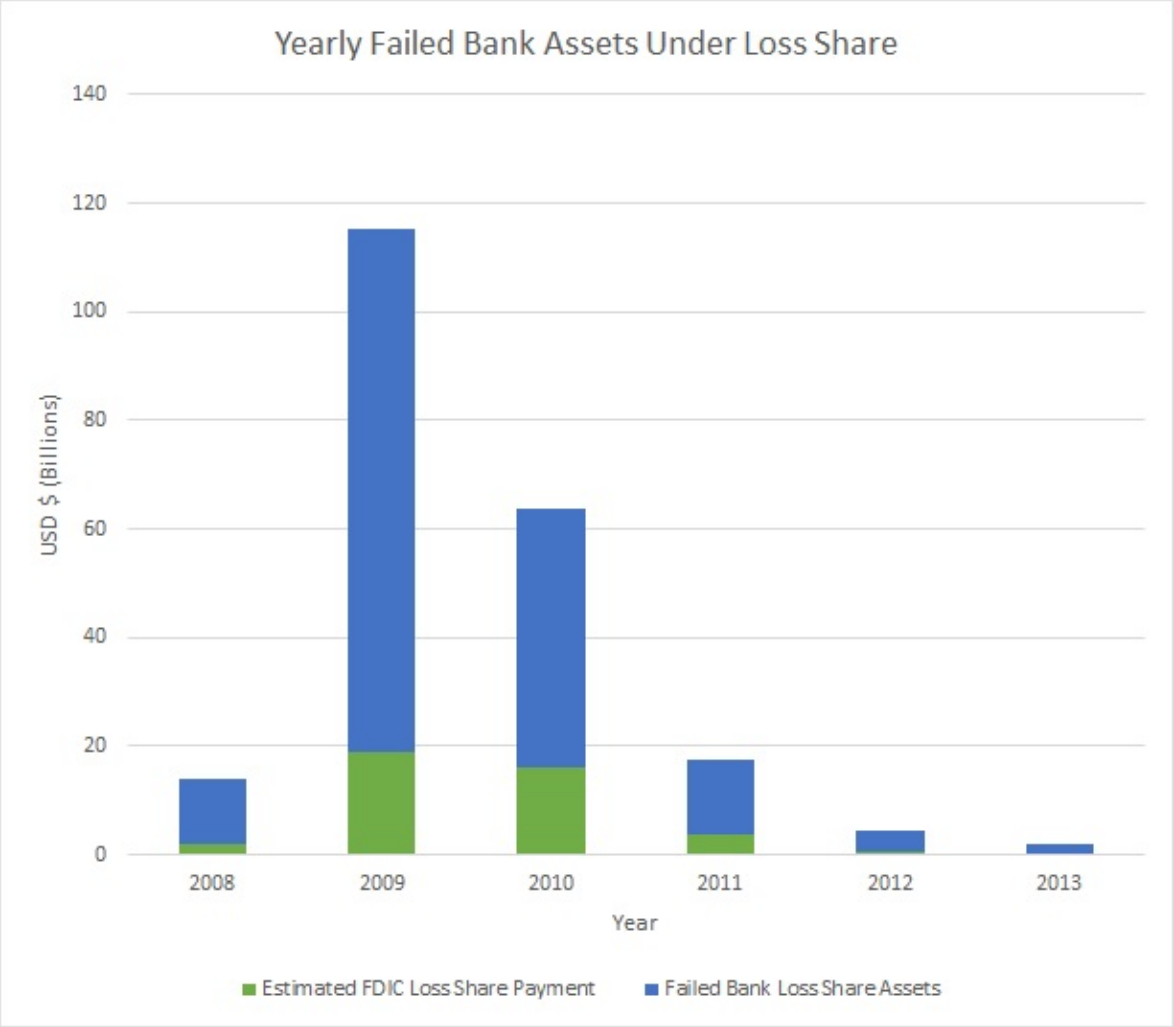


(a)



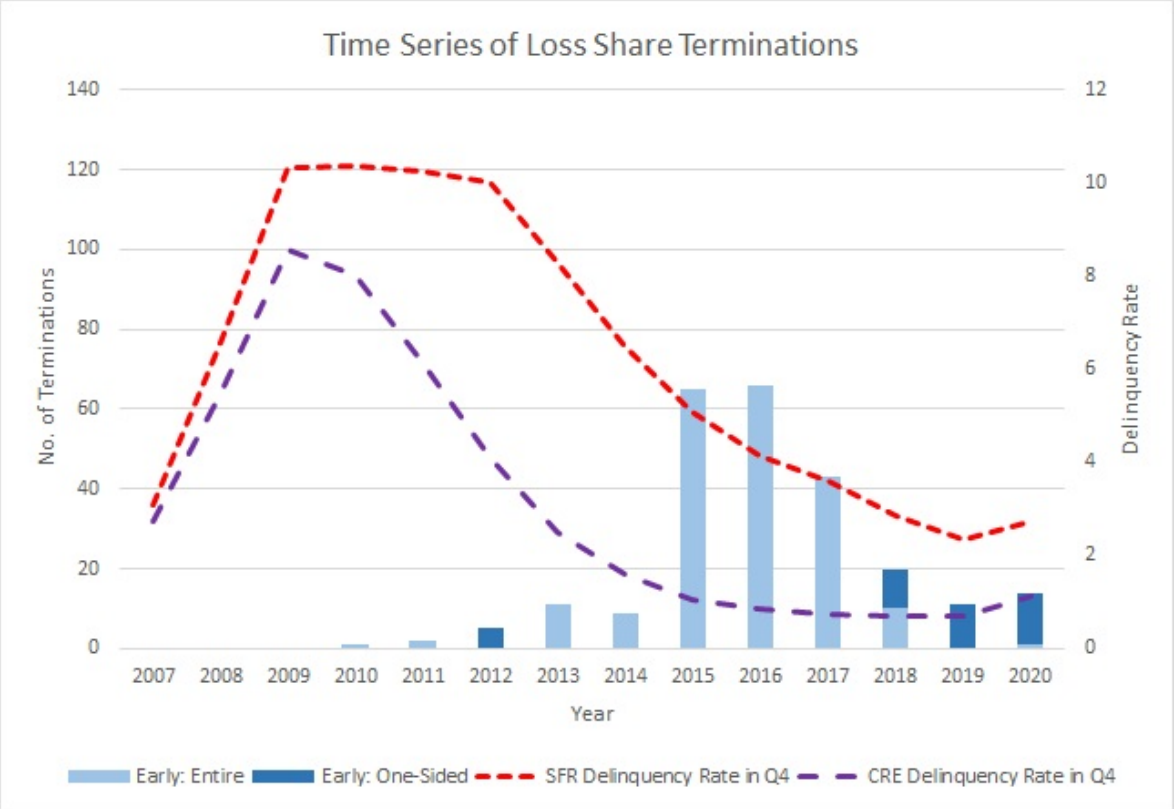
(b)

Figure 3. Failed Bank Assets under Loss Share. This Figure shows the total number of assets under Loss Share for bank failures in a given year. The FDIC's estimated Loss Share Payment is also shown.



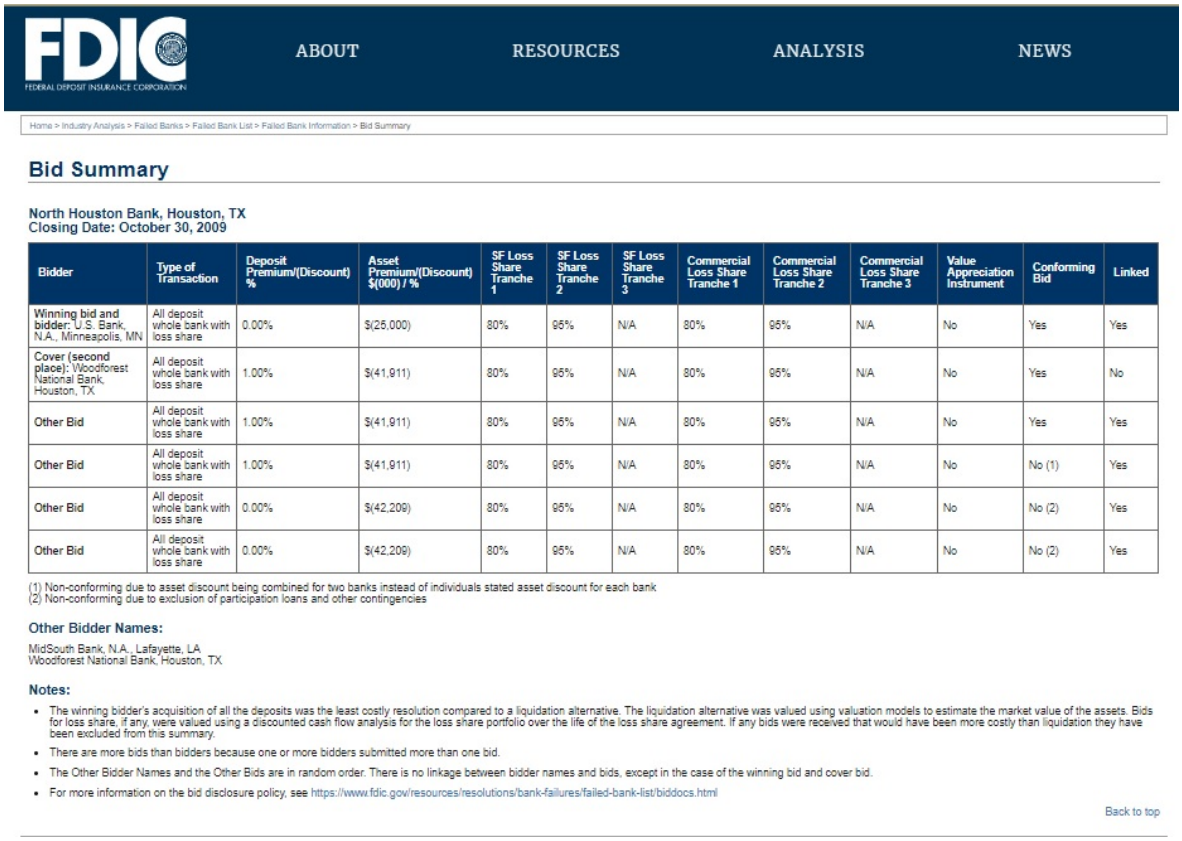
(a)

Figure 4. Loss Share Terminations. This figure depicts the time series of bank failure terminations along side sing-family residential and commercial real estate delinquency rates. The bars represent the yearly number of early Loss Share termination. The early terminations are separated into terminations of the entire agreement and terminations that are one-sided (either Single-Family Residential or Non Single-Family Residential). The fourth fourth quarter single family residential and commercial real estate delinquency rates in each year are also shown.



(a)

Figure 5. Failed Bank Bid Summary Example. This figure displays an example of a public Failed Bank Bid Summary for North Houston Bank, which closed on October 30, 2009.



FDIC FEDERAL DEPOSIT INSURANCE CORPORATION

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Bid Summary

North Houston Bank, Houston, TX
Closing Date: October 30, 2009

Bidder	Type of Transaction	Deposit Premium/(Discount) %	Asset Premium/(Discount) $(000) / %	SF Loss Share Tranche 1	SF Loss Share Tranche 2	SF Loss Share Tranche 3	Commercial Loss Share Tranche 1	Commercial Loss Share Tranche 2	Commercial Loss Share Tranche 3	Value Appreciation Instrument	Conforming Bid	Linked
Winning bid and bidder: U.S. Bank, N.A., Minneapolis, MN	All deposit whole bank with loss share	0.00%	$(25,000)	80%	95%	N/A	80%	95%	N/A	No	Yes	Yes
Cover (second place): Woodforest National Bank, Houston, TX	All deposit whole bank with loss share	1.00%	$(41,911)	80%	95%	N/A	80%	95%	N/A	No	Yes	No
Other Bid	All deposit whole bank with loss share	1.00%	$(41,911)	80%	95%	N/A	80%	95%	N/A	No	Yes	Yes
Other Bid	All deposit whole bank with loss share	1.00%	$(41,911)	80%	95%	N/A	80%	95%	N/A	No	No (1)	Yes
Other Bid	All deposit whole bank with loss share	0.00%	$(42,209)	80%	95%	N/A	80%	95%	N/A	No	No (2)	Yes
Other Bid	All deposit whole bank with loss share	0.00%	$(42,209)	80%	95%	N/A	80%	95%	N/A	No	No (2)	Yes

(1) Non-conforming due to asset discount being combined for two banks instead of individuals stated asset discount for each bank
(2) Non-conforming due to exclusion of participation loans and other contingencies

Other Bidder Names:

MidSouth Bank, N.A., Lafayette, LA
Woodforest National Bank, Houston, TX

Notes:

- The winning bidder's acquisition of all the deposits was the least costly resolution compared to a liquidation alternative. The liquidation alternative was valued using valuation models to estimate the market value of the assets. Bids for loss share, if any, were valued using a discounted cash flow analysis for the loss share portfolio over the life of the loss share agreement. If any bids were received that would have been more costly than liquidation they have been excluded from this summary.
- There are more bids than bidders because one or more bidders submitted more than one bid.
- The Other Bidder Names and the Other Bids are in random order. There is no linkage between bidder names and bids, except in the case of the winning bid and cover bid.
- For more information on the bid disclosure policy, see https://www.fdic.gov/resources/resolutions/bank-failures/failed-bank-list/biddocs.html

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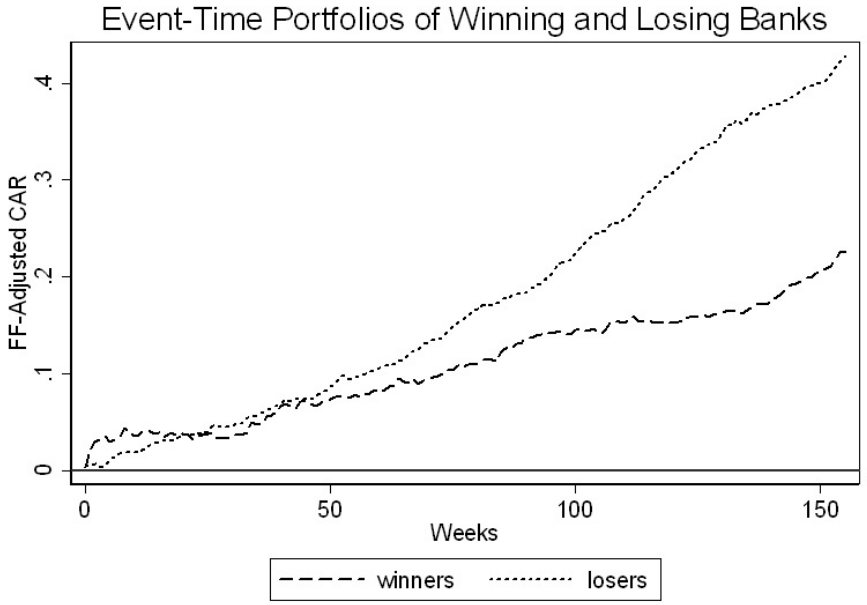
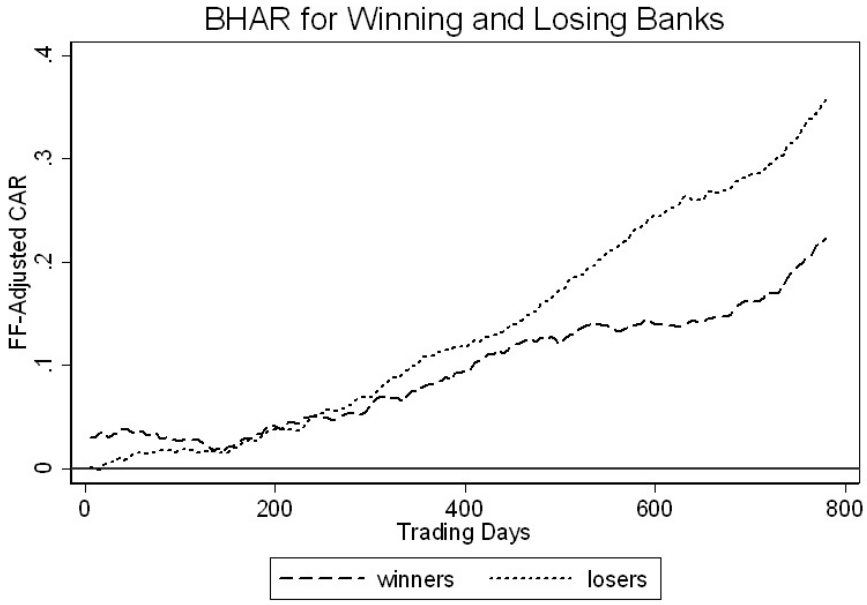
(a)

Figure 6. Cumulative Abnormal Returns for Failed Bank Auction Winners and Losers. Subfigure A shows the Fama-French adjusted cumulative abnormal returns to weekly event time portfolios that consist of failed bank auction winners (winners) and banks that bid for failed banks, yet lose the failed bank auctions (losers) where time is measured in weeks. Subfigure B shows the Fama-French adjusted cumulative buy-and-hold abnormal returns for failed bank auction winners (winners) and banks that bid for failed banks, yet lose the failed bank auctions (losers) where time is measured in trading days.

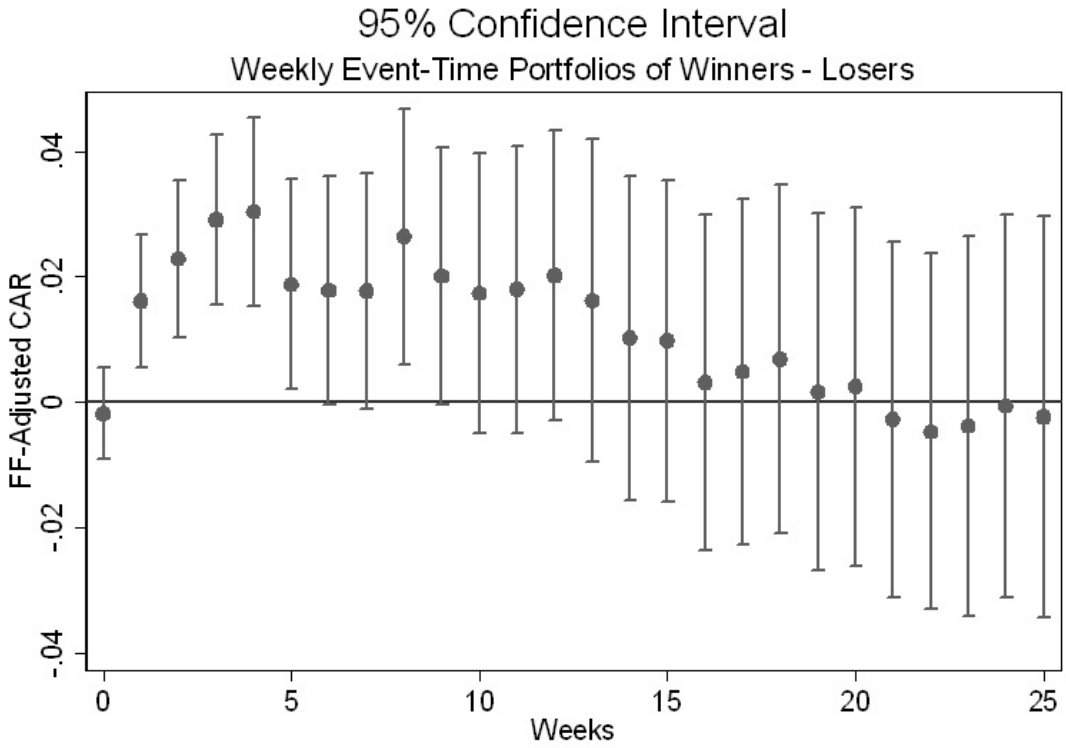


(a)

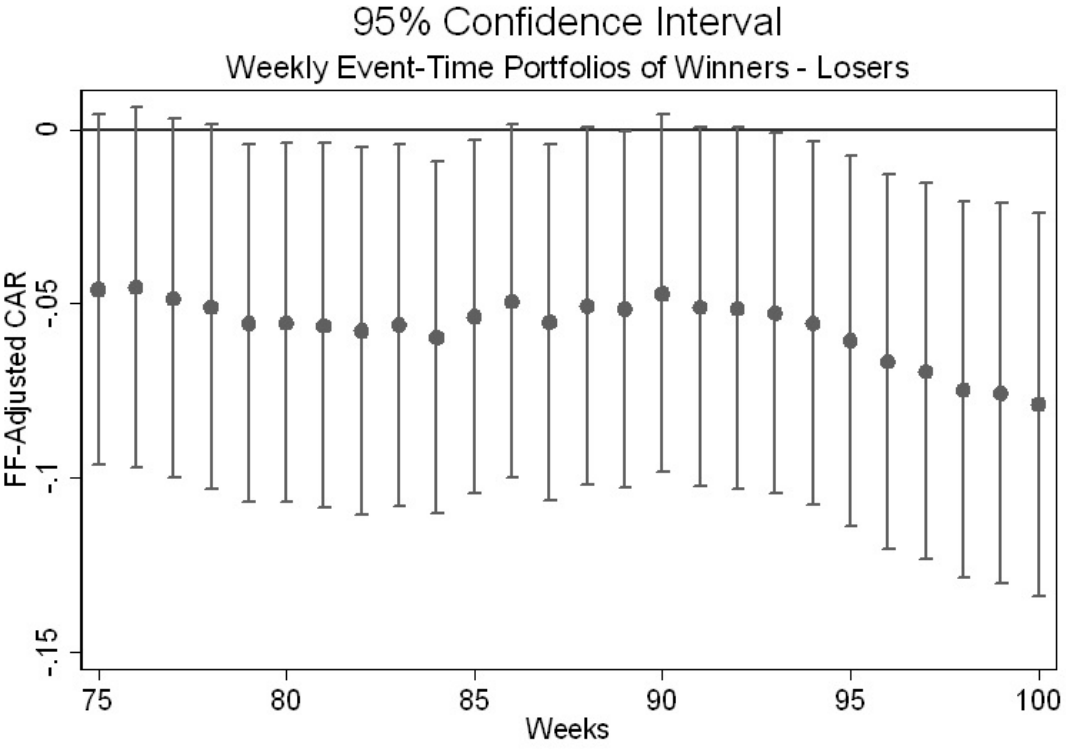


(b)

Figure 7. Weekly Hedged Portfolios. These subfigures plot the difference between the equally-weighted event-time portfolio of failed bank auction winners (winners) and banks that bid for failed banks, yet lose the failed bank auctions (losers). Error bars are representative of the the 95% confidence interval.

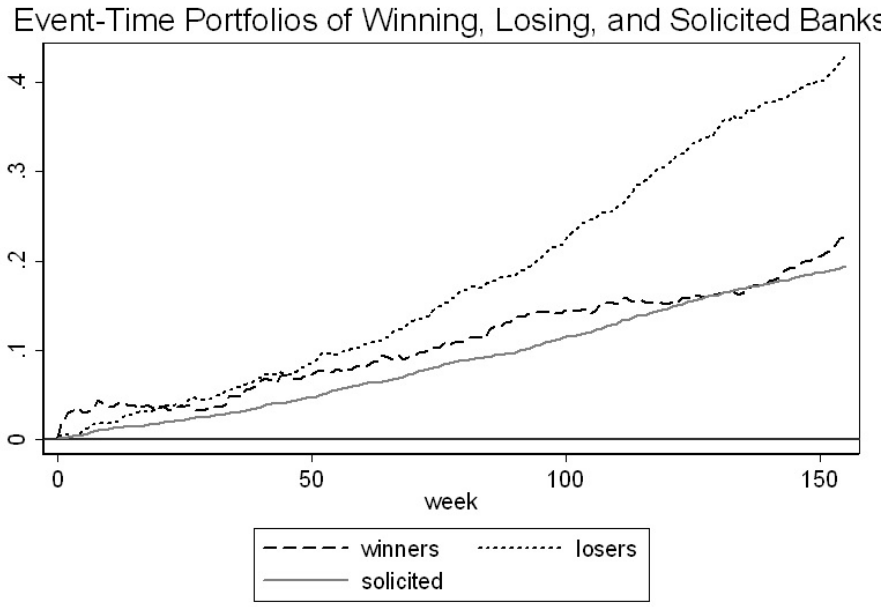


(a)

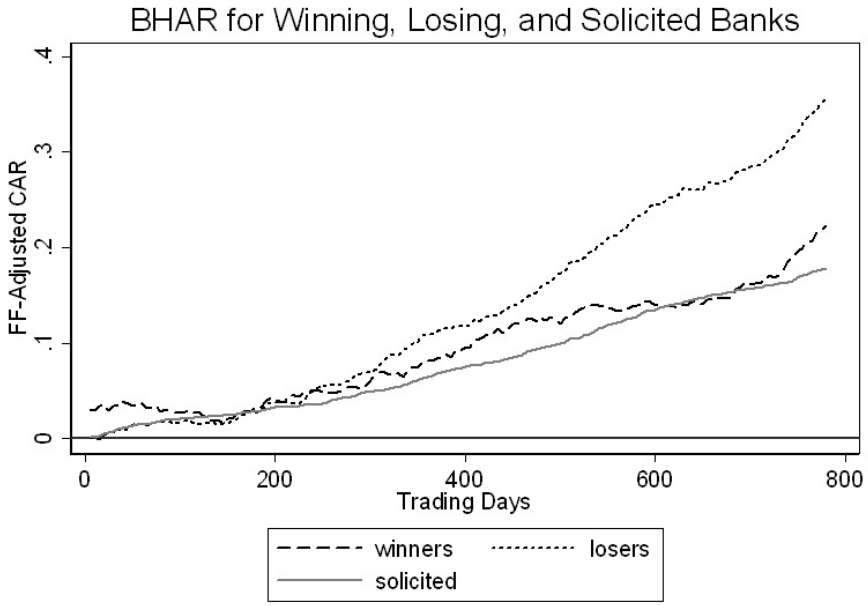


(b)

Figure 8. Cumulative Abnormal Returns for Failed Bank Auction Winners, Losers, and Solicited Banks. Subfigure A shows the Fama-French adjusted cumulative abnormal returns to weekly event time portfolios that consist of failed bank auction winners (winners), banks that bid for failed banks, yet lose the failed bank auctions (losers), and banks that are solicited to take part in failed bank auctions but do not bid (solicited), where time is measured in weeks. Subfigure B shows the Fama-French adjusted cumulative buy-and-hold abnormal returns for failed bank auction winners (winners), banks that bid for failed banks, yet lose the failed bank auctions (losers), and banks that are solicited to take part in failed bank auctions but do not bid (solicited), where time is measured in trading days.



(a)



(b)

Table 1. Failed Bank Statistics. For each year indicated in Column 1, this table shows the total number of failed banks, the total failed bank assets in millions, the total failed bank deposits in millions, the total number auctions used in the paper's analysis, and the total number of sample auctions with Loss Share Agreements. After November 12, 2009, as the result of a Freedom of Information (FOIA) request, information pertaining to failed bank auction winners and losers were made public. Prior to November 12, 2009, only failed bank auction winners were made public in real time.

Year	Failed Banks	Resolved with LS	Failed Bank Assets ($ millions)	Failed Bank Deposits ($ millions)	Sample Auctions	Sample Auctions with LS
2000	2					
2001	4		2,358.60	1,652.00		
2002	11		2,705.40	2,328.20		
2003	3		1,045.20	902.90		
2004	4		163.10	149.90		
2005	0		0.00	0.00		
2006	0		0.00	0.00		
2007	3		2,602.50	2,388.00		
2008	25	4	373,588.80	234,160.60		
2009	140	90	170,909.40	137,351.70	13	11
2010	157	130	96,514.00	81,121.80	99	91
2011	92	57	36,012.20	32,058.20	69	50
2012	51	20	12,055.80	11,303.20	41	19
2013	24	3	6,101.70	5,119.30	15	1
2014	18		3,088.40	2,853.00	11	
2015	8		6,727.50	4,899.80	6	
2016	5		278.80	268.60		
2017	8		6,530.70	5,243.50		
2019	4		214.10	195.20		
2020	4		458.00	434.80		
Total	563	304	721,354.20	522,430.70	254	172

Table 2. Loss Share Terminations. This Table summarizes Loss Share Agreement terminations by year. The total count of Loss Share terminations are in Column 2, and they are broken down between early terminations of the entire agreement (Column 3) or one side of the agreement (Column 4). Natural terminations are shown in Column 5. Columns 6 and 7 indicate the count and amount of terminations that had payments from the acquirer to the FDIC. Columns 8 and 9 indicate the count and amount of terminations that had payments from the FDIC to the acquirer. Column 10 reports the number of terminations without payments.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All Early	Early Termination		Pmt from Acquirer to FDIC		Pmt from FDIC to Acquirer		No Pmt
Year	Terminations	Entire	One Side	Count	Amount ($ million)	Count	Amount ($ million)	Count
2010	1	1				1	13.30	
2011	2	2				2	15.10	
2012	5		5			5	5.13	
2013	11	11				11	23.10	
2014	9	9				8	51.80	1
2015	65	65		20	26.10	42	80.20	3
2016	66	66		24	58.40	41	76.40	1
2017	43	43		21	9.63	20	41.30	2
2018	20	10	10	4	1.70	12	160.00	4
2019	11	0	11	1	0.01	7	78.00	3
2020	14	1	13	1	0.19	10	23.50	3
Total	247	208	39	71	96.03	159	567.83	17

Table 3. Summary Statistics. Panel A displays summary statistics for the auction-level variables within my sample. Panel B contains information pertaining to quarterly bidder-level variables, and Panel C contains summary statistics for the failed banks pertaining to the auctions in my sample. For all variables, I display the variable name (Column 1), variable mean (Column 2), variable standard deviation (Column 3), and values at the 25th, 50th, and 75th percentiles (Columns 4-6). The number of observations is presented in Column 7. All variables are defined in Appendix A.

Panel A: Auction-Level Characteristics						
(1) Variable	(2) Mean	(3) SD	(4) p25	(5) p50	(6) p75	(7) N
LOSS SHARE	0.6772	0.4685	0	1	1	254
BIDS	6.4724	4.4006	3	6	8	254
BIDDERS	3.1063	1.7379	2	3	4	254
DUE DILLIGENCE	5.0276	2.1272	3	5	7	254
INTERESTED	6.0551	2.8846	4	6	8	254
SOLICITATIONS	373.2362	120.8009	302	372	440	254
Panel B: Bidder Characteristics						
B_ASSET (thousands)	9,679,470	32,800,000	2,127,462	3,315,244	5,141,858	485
B_LNASSET (thousands)	15.1130	1.0913	14.5704	15.0140	15.4529	485
B_DEPOSIT	0.7938	0.0657	0.7692	0.8060	0.8391	485
B_BROKERED	0.0421	0.0826	0.0091	0.0208	0.0450	485
B_NONCORE	0.2459	0.0875	0.1964	0.2333	0.2999	485
B_RESERVE	0.0114	0.0043	0.0086	0.0107	0.0140	485
B_CHARGEOFF	0.0019	0.0024	0.0007	0.0012	0.0026	485
B_PD30	0.0089	0.0062	0.0047	0.0078	0.0126	485
B_PD90	0.0053	0.0115	0.0000	0.0008	0.0046	485
B_NCL	0.0274	0.0207	0.0108	0.0214	0.0377	485
B_NALOANS	0.0221	0.0193	0.0084	0.0150	0.0320	485
B_NONPERF	0.0476	0.0307	0.0248	0.0397	0.0675	485
B_RWA	0.6916	0.1063	0.6259	0.6951	0.7628	485
B_EQUITY	0.1130	0.0220	0.0950	0.1139	0.1274	485
B_EMPLOYEE	1,909	6,393	471	774	1,124	485
B_SECURITIES	0.1656	0.0781	0.1136	0.1500	0.1950	485
B_CONSUMER	0.0440	0.0716	0.0095	0.0186	0.0425	485
B_CANDI	0.0884	0.0653	0.0420	0.0629	0.1179	485
B_CANDD	0.0799	0.0545	0.0406	0.0604	0.1215	485
B_CRE	0.0021	0.0055	0.0000	0.0000	0.0010	485
B_REALESTATE	0.5116	0.1225	0.4336	0.5287	0.6141	485
B_OREO	0.0113	0.0099	0.0039	0.0085	0.0177	485
B_LIQUID	0.2342	0.0943	0.1738	0.2196	0.2737	485
B_LOANDISTANCE	0.3726	0.2110	0.2184	0.3155	0.4704	485
Panel C: Failed Bank Characteristics						
F_ASSET (thousands)	449,513	618,560	135,688	240,084	489,019	254
F_LNASSET (thousands)	12.4662	1.0225	11.8181	12.3887	13.1002	254
F_DEPOSIT	0.9186	0.0732	0.8787	0.9370	0.9710	254
F_BROKERED	0.0564	0.0923	0.0000	0.0201	0.0761	254
F_NONCORE	0.3383	0.1420	0.2318	0.3429	0.4333	254
F_RESERVE	0.0325	0.0170	0.0207	0.0301	0.0401	254
F_CHARGEOFF	0.0092	0.0115	0.0017	0.0050	0.0130	254
F_PD30	0.0287	0.0207	0.0141	0.0246	0.0401	254
F_PD90	0.0040	0.0096	0.0000	0.0000	0.0035	254
F_NCL	0.1185	0.0698	0.0738	0.1085	0.1515	254
F_NALOANS	0.1145	0.0689	0.0688	0.1056	0.1413	254
F_NONPERF	0.2049	0.0920	0.1397	0.1876	0.2631	254
F_RWA	0.7720	0.0961	0.7133	0.7757	0.8271	254
F_EQUITY	0.0090	0.0228	0.0026	0.0107	0.0199	254
F_EMPLOYEE	91	130	26	52	98	254
F_SECURITIES	0.0902	0.0742	0.0269	0.0786	0.1291	254
F_CONSUMER	0.0106	0.0119	0.0025	0.0067	0.0140	254
F_CANDI	0.0738	0.0649	0.0311	0.0550	0.0948	254
F_CANDD	0.1208	0.0824	0.0641	0.1033	0.1663	254
F_CRE	0.0026	0.0081	0.0000	0.0000	0.0000	254
F_REALESTATE	0.6087	0.1104	0.5343	0.6161	0.6843	254
F_OREO	0.0577	0.0515	0.0212	0.0451	0.0774	254
F_LIQUID	0.2230	0.0815	0.1587	0.2125	0.2657	254

Table 4. Comparison of Failed Bank Auction Winners and Losers. In this table, failed bank auction participants are separated into winners and losers, and summary statistics for each characteristic are displayed. Columns 2-4 present the means, standard deviations, and number of observations associated with the auction winners in my sample. Columns 5-7 provide corresponding summary statistics for failed bank auction losers. The difference in means between the two groups (Column 8), the two-tailed test-statistic (Column 9), and associated p-value (Column 10), are also shown. Aside from B_LNASSET, B_EMPLOYEE, and B_LOANDISTANCE, all other variables are normalized by total assets, and all variables are defined in more depth in Appendix A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Auction Winner			Auction Loser			Difference		
	Mean	SD	N	Mean	SD	N	in Means	t-stat	p-value
B_LNASSET	15.0496	1.2260	134	15.1372	1.0362	351	-0.0876	-0.7904	0.4297
B_DEPOSIT	0.8015	0.0660	134	0.7908	0.0654	351	0.0106	1.5978	0.1107
B_BROKERED	0.0437	0.0595	134	0.0415	0.0900	351	0.0022	0.2634	0.7924
B_NONCORE	0.2446	0.0894	134	0.2464	0.0868	351	-0.0018	-0.1989	0.8424
B_RESERVE	0.0119	0.0044	134	0.0113	0.0042	351	0.0006	1.4973	0.1350
B_CHARGEOFF	0.0020	0.0015	134	0.0019	0.0026	351	0.0001	0.5532	0.5804
B_PD30	0.0081	0.0055	134	0.0093	0.0064	351	-0.0011	-1.7641	0.0783
B_PD90	0.0054	0.0125	134	0.0053	0.0111	351	0.0001	0.1190	0.9054
B_NCL	0.0252	0.0184	134	0.0283	0.0215	351	-0.0031	-1.4554	0.1462
B_NALOANS	0.0198	0.0158	134	0.0230	0.0205	351	-0.0032	-1.6314	0.1035
B_RWA	0.6977	0.1085	134	0.6893	0.1055	351	0.0084	0.7787	0.4365
B_EQUITY	0.1116	0.0244	134	0.1135	0.0210	351	-0.0019	-0.8560	0.3924
B_EMPLOYEE	2,060	7,299	134	1,851	6,023	351	208	0.3210	0.7484
B_SECURITIES	0.1646	0.0742	134	0.1660	0.0797	351	-0.0014	-0.1736	0.8622
B_LIQUID	0.2398	0.0837	134	0.2320	0.0981	351	0.0078	0.8158	0.4150
B_LOANDISTANCE	0.3872	0.2007	134	0.3670	0.2148	351	0.0202	0.9428	0.3463
B_CONSUMER	0.0434	0.0684	134	0.0442	0.0728	351	-0.0008	-0.1123	0.9106
B_CANDI	0.1021	0.0664	134	0.0832	0.0642	351	0.0189	2.8634	0.0044
B_CANDD	0.0695	0.0459	134	0.0839	0.0569	351	-0.0145	-2.6289	0.0088
B_CRE	0.0027	0.0073	134	0.0018	0.0046	351	0.0009	1.5732	0.1163
B_REALESTATE	0.5024	0.1101	134	0.5152	0.1269	351	-0.0128	-1.0255	0.3056
B_OREO	0.0101	0.0103	134	0.0117	0.0097	351	-0.0016	-1.6072	0.1087

Table 5. Event-Time Portfolios. This table shows the cumulative Fama and French (1993) returns to equally-weighted event-time portfolios of failed bank auction winners, winners with Loss Share, winners without Loss Share, and losers over various horizons. Panel A shows the FF-adjusted returns over windows prior to the failed bank announcement date, and Panel B shows the cumulative FF-adjusted returns to weekly portfolios over various horizons post-acquisition announcement. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

Panel A: Pre-Acquisition Weekly Event-Time Portfolios					
	(1) Two Weeks Prior	(2) 3 Months Prior	(3) 6 Months Prior	(4) One Year Prior	(5) Two Years Prior
Auction Winners (1)	0.00245	0.0195*	0.0487***	0.0604***	0.0797**
	(0.52)	(1.71)	(2.98)	(2.65)	(2.13)
Auction Winners With Loss Share (2)	0.00380	0.0134	0.0419**	0.0249	0.0444
	(0.64)	(1.01)	(2.35)	(1.08)	(0.99)
Auction Winners Without Loss Share (3)	-0.00344	0.0352	0.0673	0.169**	0.186**
	(-0.45)	(1.46)	(1.63)	(2.75)	(2.77)
Auction Losers (4)	0.00635	0.0199**	0.0232**	0.0221	0.112***
	(1.63)	(2.34)	(2.02)	(1.22)	(4.77)
(1) - (4)	-0.00389	-0.000436	0.0255	0.0384	-0.0342
	(-0.64)	(-0.03)	(1.28)	(1.32)	(-0.77)
(2) - (4)	-0.00254	-0.00654	0.0187	0.00286	-0.0620
	(-0.36)	(-0.41)	(0.88)	(0.10)	(-1.20)
(3) - (4)	-0.00978	0.0153	0.0441	0.147**	0.0502
	(-1.16)	(0.60)	(1.05)	(2.33)	(0.74)
Panel B: Post-Acquisition Weekly Event-Time Portfolios					
	Week 1	Two Weeks	One Year	Two Years	Three Years
Auction Winners (1)	0.00293	0.0196***	0.0807***	0.154***	0.254***
	(0.90)	(3.66)	(3.64)	(5.46)	(5.77)
Auction Winners With Loss Share (2)	0.00463	0.0226***	0.0660***	0.129***	0.179***
	(1.17)	(3.46)	(2.66)	(4.75)	(4.08)
Auction Winners Without Loss Share (3)	-0.00408	0.00831	0.129**	0.235***	0.493***
	(-0.58)	(0.95)	(2.49)	(2.86)	(4.53)
Auction Losers (4)	0.00480*	0.00431	0.0891***	0.241***	0.429***
	(1.79)	(1.25)	(6.05)	(11.60)	(11.73)
(1) - (4)	-0.00188	0.0152**	-0.00843	-0.0880**	-0.176***
	(-0.44)	(2.40)	(-0.32)	(-2.52)	(-3.07)
(2) - (4)	-0.000175	0.0183**	-0.0232	-0.113***	-0.250***
	(-0.04)	(2.48)	(-0.81)	(-3.31)	(-4.38)
(3) - (4)	-0.00888	0.00400	0.0399	-0.00680	0.0640
	(-1.20)	(0.43)	(0.75)	(-0.08)	(0.57)

Table 6. Buy-and-Hold Abnormal Returns. This table reports announcement and long-term buy-and-hold abnormal returns to failed bank auction winners and losers (Rows 1 and 2). Subsequently, winners are partitioned into winners with Loss Share (Row 3) and without Loss Share (Row 4). Abnormal returns over an (m, n) event window around the announcement date ($AR_{(m,n)}$) are defined in Appendix A. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

	(1) $AR_{(-63,-1)}$	(2) $AR_{(-2,2)}$	(3) $AR_{(0,250)}$	(4) $AR_{(0,500)}$	(5) $AR_{(0,750)}$
Auction Winners (1)	0.0124	0.0310***	0.0490**	0.120***	0.195***
	(1.16)	(5.98)	(2.26)	(4.40)	(4.82)
Auction Winners With Loss Share (2)	0.0101	0.0350***	0.0284	0.0874***	0.122***
	(0.79)	(5.38)	(1.15)	(3.07)	(2.89)
Auction Winners Without Loss Share (3)	0.0196	0.0186***	0.112**	0.221***	0.416***
	(0.99)	(2.88)	(2.50)	(3.31)	(4.55)
Auction Losers (4)	0.0203***	-0.000708	0.0530***	0.173***	0.320***
	(3.37)	(-0.32)	(4.27)	(9.96)	(12.23)
(1) - (4)	-0.00789	0.0317***	-0.00404	-0.0530	-0.125**
	(-0.67)	(6.61)	(-0.17)	(-1.61)	(-2.55)
(2) - (4)	-0.0102	0.0357***	-0.0246	-0.0858**	-0.198***
	(-0.78)	(6.63)	(-0.92)	(-2.39)	(-3.68)
(3) - (4)	-0.000687	0.0193***	0.0590	0.0477	0.0961
	(-0.03)	(2.59)	(1.38)	(0.79)	(1.07)

Table 7. Winner-Loser Strategy and Bidder Competition. This table reports the OLS results for the abnormal returns over an (m, n) event window surrounding the failed bank acquisition announcement date ($AR_{(m,n)}$). The variable WIN is an indicator variable that takes the value of one if a given bank wins the failed bank auction. LOSS SHARE is an indicator variable that takes a value of one if an acquisition is made with a Loss Share arrangement. BIDS is a count variable representing the number of bids within a failed bank auction. BIDDERS, DUE DILIGENCE, INTERESTED, and SOLICITATIONS are count variables that represent the number of banks submitting bids, formally declaring interest, performing due diligence, and being solicited. All other variables are defined in Appendix A. Failed bank auction fixed effects are included in all regressions. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

Panel A: Daily Returns Surrounding Acquisition Announcement							
	(1) $AR_{(-2)}$	(2) $AR_{(-1)}$	(3) $AR_{(0)}$	(4) $AR_{(1)}$	(5) $AR_{(2)}$	(6) $AR_{(3)}$	(7) $AR_{(-1,1)}$
WIN	0.00269	0.00536*	0.00414*	0.0176***	0.00479*	.000593	.0269***
	(0.93)	(1.84)	(1.87)	(3.48)	(1.80)	(0.26)	(4.96)
Auction FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	485	485	485	485	485	485	485
R-squared	0.686	0.605	0.647	0.691	0.544	0.650	0.671
Panel B: Short-Run Windows							
	$AR_{(-2,2)}$	$AR_{(-2,2)}$	$AR_{(-2,2)}$	$AR_{(-2,2)}$	$AR_{(-2,2)}$	$AR_{(-2,2)}$	$AR_{(-2,2)}$
WIN	0.0348***	0.0279**	0.0387**	0.0593**	0.0590**	0.0350*	0.0594*
	(4.97)	(2.57)	(2.16)	(2.47)	(2.44)	(1.74)	(1.90)
WIN x LOSS SHARE		0.00988	0.00681	0.00389	0.00580	0.0103	0.00663
		(0.71)	(0.46)	(0.27)	(0.41)	(0.75)	(0.52)
WIN x BIDS			-0.00120				
			(-0.93)				
WIN x BIDDERS				-0.00680			
				(-1.62)			
WIN x Due DILLIGENCE					-0.00501		
					(-1.59)		
WIN x INTERESTED						-0.00109	
						(-0.46)	
WIN x SOLICITATIONS							-0.0000837
							(-1.00)
Auction FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	485	485	485	485	485	485	485
R-squared	0.638	0.639	0.641	0.644	0.644	0.640	0.643
Panel C: Long-Run Windows							
	$AR_{(3,750)}$	$AR_{(3,750)}$	$AR_{(3,750)}$	$AR_{(3,750)}$	$AR_{(3,750)}$	$AR_{(3,750)}$	$AR_{(3,750)}$
WIN	-0.143**	0.0538	0.127	0.187	0.286	0.198	0.0335
	(-2.34)	(0.52)	(0.91)	(0.97)	(1.44)	(1.27)	(0.15)
WIN x LOSS SHARE		-0.280**	-0.301**	-0.305**	-0.310**	-0.272**	-0.278**
		(-2.20)	(-2.34)	(-2.33)	(-2.49)	(-2.13)	(-2.13)
WIN x BIDS			-0.00812				
			(-0.83)				
WIN x BIDDERS				-0.0288			
				(-0.81)			
WIN x DUE DILIGENCE					-0.0372		
					(-1.30)		
WIN x INTERESTED						-0.0222	
						(-1.14)	
WIN x SOLICATIONS							0.0000537
							(0.10)
Auction FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	485	485	485	485	485	485	485
R-squared	0.648	0.655	0.656	0.656	0.657	0.657	0.655

Table 8. Risk in Lending. This table reports the OLS results examining either Loan-Loss Reserves (RESERVE) or charge-offs (CHARGEOFF) as a ratio to total assets. The variables WIN is an indicator variables that take a value of one if the bank wins a failed bank auction. The variable POST is an indicator variable that that takes a value of one post-acquisition. LOSS SHARE is an indicator variable that takes a value of one if an acquisition is made with a Loss Share arrangement. All other variable definitions are defined in Appendix A. Year-quarter and bank fixed effects are included in all regressions, and standard errors are adjusted for cluster effects at the bank level. Robust t-statistics are in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

	(1) RESERVE	(2) RESERVE	(3) CHARGEOFF	(4) CHARGEOFF
POST x WIN	-0.00102***	-0.000348	-0.000261**	-0.0000180
	(-2.98)	(-0.90)	(-2.39)	(-0.15)
POST x WIN x LOSS SHARE		-0.00146***		-0.000528***
		(-2.82)		(-3.00)
LNASSET	-0.00165***	-0.00159***	-0.000139	-0.000116
	(-3.12)	(-3.02)	(-0.92)	(-0.76)
NONPERF	0.0670***	0.0705***	0.0235***	0.0248***
	(7.91)	(8.13)	(9.40)	(9.86)
DEPOSITS	0.00387	0.00390	0.00272***	0.00274***
	(1.57)	(1.59)	(3.23)	(3.24)
SECURITIES	0.00138	0.00116	0.000736	0.000656
	(0.47)	(0.39)	(1.02)	(0.93)
CONSUMER	0.00450	0.00319	0.00200	0.00153
	(0.66)	(0.47)	(0.87)	(0.67)
CANDI	0.00837*	0.00745*	0.000118	-0.000216
	(1.90)	(1.71)	(0.10)	(-0.18)
CANDD	-0.00844	-0.00889	-0.00106	-0.00122
	(-1.30)	(-1.37)	(-0.49)	(-0.57)
CRE	-0.0455*	-0.0455*	-0.00498	-0.00497
	(-1.81)	(-1.81)	(-0.61)	(-0.62)
REALESTATE	0.00850***	0.00802***	0.00138**	0.00121*
	(3.04)	(2.90)	(2.10)	(1.87)
Year-Quarter Fixed Effect	Yes	Yes	Yes	Yes
Bank Fixed Effect	Yes	Yes	Yes	Yes
Observations	8286	8286	8286	8286
R-squared	0.737	0.739	0.446	0.448

Table 9. Intensive Margin Analysis. This table reports the OLS results for the abnormal returns over an (m, n) event window surrounding the failed bank acquisition announcement date ($AR_{(m,n)}$). The variable WIN is an indicator variable that takes the value of one if a given bank wins the failed bank auction. ASSET RATIO is the ratio of failed bank assets to acquiring bank assets, LOSS SHARE RATIO is the ratio of failed bank Loss Share assets to acquirer assets. SFR RATIO and NSF RATIO is the ratio of Single-Family Residential (SFR) and Non-Single Family Residential (NSF) Loss Share assets to acquirer assets. All other variables are defined in Appendix A. Failed bank auction fixed effects are included in all regressions. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

	(1) $AR_{(-2,2)}$	(2) $AR_{(-2,2)}$	(3) $AR_{(-2,2)}$	(4) $AR_{(3,750)}$	(5) $AR_{(3,750)}$	(6) $AR_{(3,750)}$
WIN	0.0196**	0.0200**	0.0173*	-0.159*	-0.186**	-0.164*
	(2.11)	(2.21)	(1.95)	(-1.94)	(-2.03)	(-1.86)
WIN x ASSET RATIO	0.0889	0.0574	0.0712	0.128	1.896*	1.734*
	(1.05)	(0.44)	(0.54)	(0.26)	(1.83)	(1.76)
WIN x LOSS SHARE RATIO		0.0495			-2.782**	
		(0.25)			(-2.36)	
WIN x SFR RATIO			0.816			-8.905***
			(1.45)			(-2.84)
WIN x NSF RATIO			-0.125			-1.315
			(-0.62)			(-1.14)
Constant	-0.000617	-0.000718	-0.00104	0.314***	0.320***	0.323***
	(-0.25)	(-0.28)	(-0.41)	(11.69)	(12.05)	(12.27)
Observations	485	485	485	485	485	485
R-squared	0.735	0.735	0.742	0.648	0.657	0.661

Table 10. Auction Losers that Never Win. Panel A shows the cumulative Fama and French (1993) returns to equally-weighted event-time portfolios of failed bank auction winners, winners with Loss Share, winners without Loss Share, and losing banks over various horizons. All banks that lose failed bank auctions, yet win another auction within the next three yeras are removed. Panel B reports announcement and long-term buy-and-hold abnormal returns for the same sample presented in Panel A. Abnormal returns over an (m, n) event window around the announcement date ($AR_{(m,n)}$) are defined in Appendix A. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. t-statistics are in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

Panel A: Post-Acquisition Weekly Event-Time Portfolios					
	(1) Week 1	(2) Two Weeks	(3) One Year	(4) Two Years	(5) Three Years
Auction Winners (1)	0.00293	0.0204***	0.0761***	0.145***	0.226***
	(1.14)	(4.92)	(4.53)	(7.20)	(7.09)
Auction Winners With Loss Share (2)	0.00463	0.0226***	0.0660***	0.129***	0.179***
	(1.17)	(3.46)	(2.66)	(4.75)	(4.08)
Auction Winners Without Loss Share (3)	0.00164	0.0188***	0.0838***	0.158***	0.261***
	(0.48)	(3.48)	(3.66)	(5.44)	(5.83)
Losers that Never Win (4)	0.00250	0.00284	0.0979***	0.249***	0.440***
	(0.97)	(0.83)	(6.27)	(10.98)	(10.70)
(1) - (4)	0.000424	0.0176***	-0.0217	-0.104***	-0.214***
	(0.12)	(3.27)	(-0.95)	(-3.41)	(-4.12)
(2) - (4)	0.00212	0.0198***	-0.0319	-0.120***	-0.261***
	(0.45)	(2.68)	(-1.09)	(-3.40)	(-4.34)
(3) - (4)	-0.000860	0.0159**	-0.0140	-0.0911**	-0.179***
	(-0.20)	(2.50)	(-0.51)	(-2.48)	(-2.94)
Panel B: Buy-and-Hold Abnormal Returns					
	$AR_{(-63,-1)}$	$AR_{(-2,2)}$	$AR_{(0,250)}$	$AR_{(0,500)}$	$AR_{(0,750)}$
Auction Winners (1)	0.0124	0.0310***	0.0490**	0.120***	0.195***
	(1.16)	(5.98)	(2.26)	(4.40)	(4.82)
Auction Winners With Loss Share (2)	0.0101	0.0350***	0.0284	0.0874***	0.122***
	(0.79)	(5.38)	(1.15)	(3.07)	(2.89)
Auction Winners Without Loss Share (3)	0.0196	0.0186***	0.112**	0.221***	0.416***
	(0.99)	(2.88)	(2.50)	(3.31)	(4.55)
Losers that Never Win (4)	0.0191**	-0.000180	0.0590***	0.171***	0.335***
	(2.42)	(-0.07)	(3.98)	(8.39)	(10.32)
(1) - (4)	-0.00666	0.0312***	-0.0100	-0.0502	-0.140***
	(-0.51)	(6.00)	(-0.39)	(-1.49)	(-2.67)
(2) - (4)	-0.00901	0.0352***	-0.0306	-0.0831**	-0.212***
	(-0.62)	(6.08)	(-1.11)	(-2.32)	(-3.78)
(3) - (4)	0.000537	0.0188***	0.0530	0.0504	0.0818
	(0.02)	(2.64)	(1.25)	(0.86)	(0.89)

Table 11. Comparison of Failed Bank Auction Winners, Losers, and Solicited Banks. Panel A shows the cumulative Fama and French (1993) returns to equally-weighted event-time portfolios of failed bank auction winners, winners with Loss Share, winners without Loss Share, losers, and solicited banks over various horizons. Panel B reports announcement and long-term buy-and-hold abnormal returns to failed bank auction winners and losers (Rows 1 and 2). Abnormal returns over an (m, n) event window around the announcement date ($AR_{(m,n)}$) are defined in Appendix A. t-statistics are in parentheses. Heteroscedasticity-consistent standard errors are utilized, and t-statistics are presented in parentheses. Significance is denoted by * p <0.10, ** p < 0.05, and *** p<0.01.

Panel A: Post-Acquisition Weekly Event-Time Portfolios					
	(1) Week 1	(2) Two Weeks	(3) One Year	(4) Two Years	(5) Three Years
Auction Winners (1)	0.00293	0.0196***	0.0807***	0.154***	0.254***
	(0.90)	(3.66)	(3.64)	(5.46)	(5.77)
Auction Winners With Loss Share (2)	0.00463	0.0226***	0.0660***	0.129***	0.179***
	(1.17)	(3.46)	(2.66)	(4.75)	(4.08)
Auction Winners Without Loss Share (3)	-0.00408	0.00831	0.129**	0.235***	0.493***
	(-0.58)	(0.95)	(2.49)	(2.86)	(4.53)
Auction Losers (4)	0.00480*	0.00431	0.0891***	0.241***	0.429***
	(1.79)	(1.25)	(6.05)	(11.60)	(11.73)
Solicited without Bid (5)	0.00127	0.00207	0.0486***	0.118***	0.194***
	(1.28)	(1.43)	(7.30)	(14.36)	(15.75)
(1) - (5)	0.00166	0.0175***	0.0321	0.0358	0.0594
	(0.49)	(3.16)	(1.39)	(1.23)	(1.30)
(2) - (5)	0.00336	0.0205***	0.0173	0.0110	-0.0150
	(0.83)	(3.08)	(0.68)	(0.39)	(-0.33)
(3) - (5)	-0.00535	0.00624	0.0804	0.117	0.299***
	(-0.77)	(0.72)	(1.56)	(1.45)	(2.78)
(4) - (5)	0.00354	0.00224	0.0405**	0.124***	0.235***
	(1.24)	(0.60)	(2.51)	(5.53)	(6.09)
Panel B: Buy-and-Hold Abnormal Returns					
	$AR_{(-63,-1)}$	$AR_{(-2,2)}$	$AR_{(0,250)}$	$AR_{(0,500)}$	$AR_{(0,750)}$
Auction Winners (1)	0.0124	0.0310***	0.0490**	0.120***	0.195***
	(1.16)	(5.98)	(2.26)	(4.40)	(4.82)
Auction Winners With Loss Share (2)	0.0101	0.0350***	0.0284	0.0874***	0.122***
	(0.79)	(5.38)	(1.15)	(3.07)	(2.89)
Auction Winners Without Loss Share (3)	0.0196	0.0186***	0.112**	0.221***	0.416***
	(0.99)	(2.88)	(2.50)	(3.31)	(4.55)
Auction Losers (4)	0.0203***	-0.000708	0.0530***	0.173***	0.320***
	(3.37)	(-0.32)	(4.27)	(9.96)	(12.23)
Solicited without Bid (5)	0.0146***	0.00206***	0.0366***	0.0993***	0.168***
	(16.70)	(6.87)	(23.35)	(44.43)	(58.64)
(1) - (5)	-0.00218	0.0289***	0.0124	0.0210	0.0272
	(-0.20)	(7.60)	(0.62)	(0.74)	(0.75)
(2) - (5)	-0.00453	0.0330***	-0.00819	-0.0118	-0.0452
	(-0.35)	(7.52)	(-0.36)	(-0.36)	(-1.08)
(3) - (5)	0.00502	0.0166**	0.0754*	0.122**	0.249***
	(0.22)	(2.17)	(1.89)	(2.13)	(3.41)
(4) - (5)	0.00571	-0.00276	0.0164	0.0740***	0.153***
	(0.83)	(-1.17)	(1.33)	(4.20)	(6.77)

A Variable Descriptions

Variable	Definition	Source
$AR_{(m,n)}$	$AR_{(m,n)}$ represents the Fama-French-adjusted abnormal returns obtained as the difference between the realized delisting-adjusted return and the predicted return from a rolling Fama-French three-factor model over the holding period that starts at day m and goes to day n	CRSP
ASSET	*ASSET* Total bank assets measured in thousands	Call Reports
ASSET RATIO	*ASSET RATIO* is the ratio of total failed bank assets passed to the acquirer to acquirer assets at the end of the previous quarter	FDIC and Call Reports
BIDDERS	*BIDDERS* is a count variable that indicates the number of bidders within a given failed bank auction	FDIC AuctionData
BIDS	*BIDS* is a count variable that indicates the number of bids within a given failed bank auction	FDIC AuctionData
BROKERED	*BROKERED* is the ratio of quarterly brokered deposits to total assets	FDIC AuctionData
CANDD	*CANDD* is the portion of total quarterly bank assets that consist of real estate construction and land development loans	Call Reports
CANDI	*CANDI* is the portion of total quarterly bank assets that consist of commercial and industrial loans	Call Reports
CHARGEOFF	*CHARGEOFF* is the ratio of quarterly net charge-offs to bank assets	Call Reports
CRE	*CRE* is the ratio of quarterly loans to finance commercial real estate, construction, and land development to bank assets	Call Reports
CONSUMER	*CONSUMER* is the ratio of quarterly consumer loans to bank assets	Call Reports
DEPOSITS	*DEPOSITS* is the ratio of total quarterly bank deposits to total bank assets	Call Reports
DUE DILIGENCE	*DUE DILIGENCE* is the total number of banks that performed due diligence on the bank	FDIC AuctionData
EQUITY	*EQUITY* is the ratio of total quarterly equity capital to total bank assets	Call Reports
EMPLOYEE	*EMPLOYEE* is the count of quarterly employees	Call Reports
INTERESTED	*INTERESTED* is the total number of banks that declared formal interest in acquiring the failed bank	FDIC AuctionData
LNASSET	*LNASSET* is the natural log of total bank assets measured in thousands	Call Reports
LOANDISTANCE	*LOANDISTANCE* is the sum of the differences between the composition of CONSUMER, CANDI, CANDD, CRE, REALESTATE, and OREO between bidders and failed bank. LOANDISTANCE = |B_CONSUMER - F_CONSUMER| + |B_CANDI - F_CANDI| + |B_CANDD - F_CANDD| + |B_CRE - F_CRE| + |B_REALESTATE - F_REALESTATE| + |B_OREO - F_OREO|	Call Reports
LOSS SHARE	*LOSS SHARE* is an indicator variable that takes a value of 1 for failed bank acquisitions that have Loss Share protection	FDIC AuctionData
LOSS SHARE RATIO	*LOSS SHARE RATIO* is the ratio of total failed bank assets covered under Loss Share Agreements to acquirer assets at the end of the previous quarter	FDIC and Call Reports

ME	*ME* is the end of the week market value of equity, calculated by the product of shares outstanding and price	CRSP
NALOANS	*NALOANS* is the ratio of total quarterly non-accrual loans to total bank assets.	Call Reports
NCL	*NCL* is the ratio of total quarterly non-current liabilities to total bank assets.	Call Reports
NONCORE	*NONCORE* is the ratio of total quarterly non-core deposits to total bank assets.	Call Reports
NONPERF	*NONPERF* is the ratio of total quarterly bank non-performing loans to total bank assets. Quarterly non-performing loans are computed as the sum of loans 30-89 days past due, loans 90 days or more past due, and non-accrual loans.	Call Reports
NSF RATIO	*NSF RATIO* is the ratio of failed bank non-single family residential assets covered under Shared-Loss Agreements to acquirer assets at the end of the previous quarter	FDIC and Call Reports
OREO	*OREO* is the ratio of other real estate loans to total bank assets.	Call Reports
PD30	*PD30* is the ratio of quarterly loans 30-89 days past due to total assets.	Call Reports
PD90	*PD90* is the ratio of quarterly loans 90 days or more past due to total assets.	Call Reports
POST	*POST* is an indicator variable that takes a value of 1 after a given failed bank acquisition takes place	
REALESTATE	*REALESTATE* is the ratio of total quarterly real estate loans to total bank assets.	Call Reports
RESERVE	*RESERVE* is the sum of total quarterly allowances for loan and leases and allocated transfer risk reserves scaled by total assets	Call Reports
RWA	*RWA* is the ratio of tier-one equity capital to total bank assets	Call Reports
SECURITIES	*SECURITIES* is the ratio of total quarterly total securities to total bank assets	Call Reports
SFR RATIO	*SFR RATIO* is the ratio of failed bank single family residential assets covered under Shared-Loss Agreements to acquirer assets at the end of the previous quarter	FDIC and Call Reports
SOLICITATIONS	*SOLICITATIONS* is a count variable that indicates the number of banks within a given failed bank auction that were solicited by the FDIC	FDIC AuctionData
WIN	*WIN* is an indicator variable that takes a value of 1 for banks that acquire failed banks	FDIC AuctionData