

Implicit Recourse and Credit Card Securitizations: What do Fraud Losses Reveal?

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Abstract

In this paper, we develop and test a model of implicit recourse in asset-backed securitizations. Fraud losses on securitized assets are generally taken by the bank and do not affect the performance of securitization trusts, while credit losses do affect the trust's performance and are potentially borne by the owner of the securitized assets. Thus, the classification of losses as either fraud or credit losses provides a potential avenue of implicit recourse to manipulate the performance of securitization trusts. Using annual data from 2001 to 2005, we find that the performance of the credit card securitization portfolio is negatively related to fraud losses reported by the bank. We examine these results in light of the proposed Basel II capital rules and argue that a bank's incentive to provide implicit recourse will increase under the anticipated regime.

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1. Introduction and Motivation^ψ

In order to remove assets from the balance sheet through securitization, accounting rules state that the assets must be a “true sale” to a third party. The implication of a true sale is that the asset risk is transferred from the bank to the third party. However, it may be in the issuer’s interest to ensure the performance of securitized assets since securitization can provide a substantial source of funding to the bank. A burgeoning issue in the securitization market, and the motivation for this study, is that banks may provide recourse by exceeding their contractual obligations to ensure that their asset-backed securities effectively perform.¹ This notion of providing recourse is common in the industry. In response to low excess spreads reported on the Chase Credit Card Master Trust in August 2002, a Barclays Capital analyst said, “It would behoove them to do whatever they have to do to keep the deals going.”²

Explicit recourse is established through contracts that obligate the bank to support the ABS portfolio. Recourse can also be implicit when the bank provides credit support beyond contractual obligations. Under both accounting and bank regulatory rules, a bank that provides implicit recourse should bring securitized assets back onto its balance sheet.

In this paper, we address the issue of implicit recourse in asset-backed securitizations. By nature, implicit recourse is difficult to see and quantify. However, by developing empirical tests using a unique dataset, we are able to examine whether banks

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¹ Issuers of credit card asset-backed securities need not be banks, but in this paper we are concerned with banks, and we use these terms “banks” and “issuers” interchangeably.

² Asset Securitization Report, August 5, 2002.

use a particular type of implicit recourse to protect securitized credit card receivables. Specifically, we analyze for the classification of credit losses and fraud losses in the U.S. credit card ABS market. Fraud losses can occur in all types of lending, but they are much more common in credit card lending than in other types. Therefore, we focus on credit card securitizations in this paper. Generally, credit card asset-backed security contracts specify that fraud losses on securitized assets are passed to the bank and therefore do not affect the performance of securitization trusts, while credit losses do affect the trust's performance and are potentially borne by a third party—the owner of the securitized assets. Thus, the classification (or misclassification) of losses as either fraud or credit losses, coupled with the imprecise classification process, provides an avenue to manipulate the performance of securitization trusts.

Using annual data on all publicly issued and rated credit card securitizations between 2001 and 2005, we find a direct relationship between the extent to which a bank securitizes credit card receivables and the reporting of fraud losses. This result provides initial evidence that banks that securitize credit card receivables claim higher fraud losses than banks that do not. We then test for implicit recourse directly and find that the performance of the credit card securitization portfolio is related to fraud losses reported by the bank. This result provides evidence that banks use implicit recourse in an attempt to support securitized credit card receivables.

Our contribution to the academic literature is twofold. First, we develop a hypothesis and specify a model through which implicit recourse could occur, testing this model empirically. Although indirect tests for recourse exist in the literature, no other study specifies a process and tests for recourse directly. Second, at a practical level, the

paper contributes to the understanding of the use of implicit recourse by banks in an effort to keep assets off-balance sheet. The paper also highlights an important policy issue. We examine the proposed treatment of securitized assets under the proposed Basel II bank capital rules. We argue that a bank's incentive to provide implicit recourse will be greater under Basel II capital rules than the current regulatory regime.

The rest of the paper is organized as follows: Section 2 provides an overview of the mechanics of securitization, with a focus on the details of securitizing credit card receivables, and introduces a discussion of recourse. Section 3 follows with a description of the academic literature on securitization, centering on the use of explicit and implicit recourse in securitization transactions. We develop our testable hypothesis and models in Section 4. In Section 5 we provide details on our data. Section 6 summarizes the empirical estimations and results of the statistical analyses. We describe possible implications of Basel II to the frequency and use of implicit recourse in CC-ABS in Section 7. Section 8 concludes.

2. Securitization Mechanics

2.1. Mechanics of Securitizing Credit Card Receivables

Since the focus of the paper is on securitized credit card receivables, here we describe the complex mechanics of that particular transaction. The market for credit card securitizations has expanded and developed in banks and other lending institutions since the first deals were introduced in the early 1980s. As of September 2005, there was \$342 billion in securitized credit card receivables outstanding. This compares to \$351 billion in on-balance sheet credit card loans in banks during the same time period.

Consider a bank that makes a loan in the form of issuing a credit card to a customer. The bank earns income from the credit card customer when the customer pays interest and fees on the card. The length of time the bank profits from the card is equal to the length of time the customer owns and uses the credit card. However, through securitization, the bank has another option. Instead of collecting small payments over a potentially long period of time, the bank could sell the receivables associated with the card to a third party investor (also called a trust). In this way, the bank gives up the right to the receivables over the life of the credit card, but profits today from the sale of the asset. Now the bank has the opportunity to increase revenues by using proceeds of the sale to generate more credit card loans. Further, since the bank no longer owns the credit card receivable, the bank can remove this asset from its balance sheet (the bank does maintain, however, a portion of the sold receivables on its balance sheet and continues to service the credit cards sold to the third party). The third party pools this credit card receivable with other receivables, provides credit enhancement to the assets to increase marketability, and then sells this “package” of securitized receivables to other investors in the market.

The basic elements in the preceding scenario involve four steps: (1) setting up the special purpose entity (this is the third party investor or trust) and selling the card receivables, (2) enhancing the credit of the packaged receivables, (3) selling the packaged credit card receivables to investors, and (4) servicing the credit cards underlying the packaged assets.

In the first step, the credit card originator (the bank or other credit provider) sets up a special purpose entity (hereafter referred to as the trust). The trust’s sole purpose is

purchasing credit card receivables and issuing asset-backed securities based on the collateral from these receivables. A trustee performs administrative functions of the trust and makes no substantive decisions, relying only on rules and instructions set forth in advance.³ Credit card receivables that are sold to the trust are removed from the bank's balance sheet since at this point the assets are legally separated from the originating bank.

Once the trust purchases credit card receivables from the originating bank, it then groups the assets into portfolios and sells pieces of the portfolios to outside investors. In order to make the securitized assets more attractive to investors, the bank generally provides some form of credit enhancement to the portfolio of receivables. The degree and extent of the credit enhancements is often determined by rating agencies, which ultimately assign a credit rating to the securitized asset. Examples of credit enhancers include over-collateralizing the assets, using a senior-subordinate cash flow priority structure, and setting up reserve accounts (see Gangwani [1998]). These enhancements work toward insulating credit card ABS investors from charge-offs or from fluctuating payments on the underlying cards and reduce the investment's overall credit risk.

When the desired credit rating is attained, an investment bank, working with the issuer, is responsible for pricing and marketing the securities. Pricing asset-backed securities mimics corporate bond pricing—the more risk present in the issue, the higher the bond's yield (the lower the price). Generally, multiple classes, or tranches, are created from a pool of receivables in a master trust securitization. For instance, Class C bonds and notes will be subject to losses on the underlying securities before the Class B tranche, and Class B is subject to losses before Class A. This structure increases the credit

³ Under the Sarbanes-Oxley Act, the trustee has the additional obligation to comply with the SEC's Division of Corporate Finance's ABS Certification Statement, which outlines certification procedures regarding the trust's financial activities.

protection for Class A investors. For this reason, Class A tranche securities typically exhibit very high credit ratings (AA or above) since this tranche maintains the least credit risk.

After structuring the deal and marketing the securities, the securitized receivables are sold to investors. Despite the fact that the underlying receivables pass through to the ABS investors, the originating bank continues to service the cards serving as collateral for the new securities. In fact, the bank usually maintains ownership interest in the trust (minimum ownership, or seller's interest, for credit card ABS is typically around 7%). The yield on the underlying portfolio of receivables is used for coupon payments on the asset-backed securities, servicing fees (typically 1.5 to 2% of the securitized asset balance paid to the bank), and to cover defaults (charge-offs) on the receivables. The remaining yield, or excess spread, is returned to the originating bank. Excess spread has to be depleted before there would be an insufficiency of cash to pay the ABS investors. Excess spread therefore acts as a form of credit enhancement (for all tranches) and is often used as a metric for ABS performance. By retaining ownership rights to the excess spread, the bank is in the first loss position.

2.3. Cash Flows on Revolving ABS Structures

Once credit card-backed securities are sold to investors, the trust relies on a cash flow arrangement to service the securities. The arrangement commonly involves two distinct phases: a revolving phase and an amortization phase.⁴ During the revolving phase, which generally lasts 2–11 years, the trust uses collections of principal on the securitized assets to purchase new receivables or to purchase portions of the seller's

⁴ See Fitch's "ABCs of Credit Card ABS," July 17, 1998.

interest. The controlled amortization or accumulation phase typically lasts for twelve months. Here, ABS investors receive principal payments either in twelve equal installments or as a lump sum. During this stage, the pool size (sum of outstanding credit card accounts) remains constant, but the proportion of seller's interest to investors' interest increases.

When the trust purchases new securities in the revolving stage, the issuer is responsible for ensuring that receivables transferred into the SPE are "qualified assets." The definition of a "qualified asset" is deal-specific and can include restrictions on credit quality, seasoning, or other attributes. A provision that specifically excludes receivables that are the result of fraudulent activity is common. Thus, when a fraudulent asset is discovered, the issuer takes back the asset and replaces it with a bona fide qualifying asset. By contrast, credit losses are taken at the trust level. To maintain an adequate pool of receivables, the trust replenishes credit losses by purchasing new receivables from the issuer. Thus, credit losses that occur within the SPE's pool of assets are taken by the trust (and these losses could potentially be passed to investors in CC-ABS), while fraud losses that occur within the SPE's pool of assets are taken by the issuer. Thus, the classification of losses as either fraud losses or credit losses directly affects the performance of the trust.

Another risk faced by investors is that of early amortization. In early amortization, investors' bonds are paid back earlier than expected. This can occur when a predefined trigger is set, which forces the trust to repay ABS principal ahead of scheduled maturity in the event of deteriorating asset quality of the underlying receivables. Triggers are typically tied to minimum levels of excess spread or

delinquency levels of the underlying receivables.⁵ A trapping point, on the other hand, is a predefined level of excess spread below which excess spread is no longer paid to the issuer but is instead held (i.e., “trapped”) in escrow as a form of credit enhancement. Early amortization provisions are intended to protect investors in ABS from credit risk, but these provisions expose investors to repayment risk.

No new receivables are added to the trust during the early amortization stage. Avoiding early amortization is a priority for securitizing banks, as its occurrence may lead to a decreased ability to raise capital, restrictions on assets being placed off-balance sheet, and subsequent increases in minimum capital requirements. Although early amortization arrangements benefit ABS investors in the event of a deteriorating securitization portfolio, banks have an incentive to avoid triggering early amortization provisions since early amortization could force the bank to obtain funding for both the assets moving to the balance sheet and the additional capital required to support these assets. In fact, according to Calomiris and Mason (2004), only when bank failure is imminent will banks allow the deal to enter early amortization.

2.4. Implicit and Explicit Recourse

2.4.1 True Sale and Explicit Recourse

Securitized assets may be removed from the bank’s balance sheet only when a “true sale” has taken place. According to Financial Accounting Standard Board Statement 140 (FASB 140), to constitute a true sale, the assets must be sold to a legally remote third party (typically the special purpose entity or trust), and the originating bank

⁵ Trigger normally set to when three-month average excess spread falls below zero. See Fitch’s “ABCs of Credit Card ABS,” July 17, 1998.

cannot retain the benefits and risks of owning the assets. Essentially, the bank relinquishes control over the assets in order to remove the assets from the books. However, in the event that the sale agreement provides recourse to the buyer, to some extent risk remains with the seller. Recourse refers to guarantees promised to ABS investors allowing the transfer of losses to the bank if the performance of the underlying portfolio of receivables deteriorates. Therefore, if explicit recourse terms are present, FASB 140 would prohibit the transaction from being labeled a “true sale,” and the protected assets would then remain on the bank’s balance sheet. Bank regulators have affirmed these rules by including a definition of a true sale in the Call Report instructions based on the bank holding company risk-based capital guidelines (see Federal Reserve SR 96-30). The Call Report instructions state that a true sale only exists if the bank retains no risk of loss and has no obligation to any party on the transferred assets.

As stated earlier, recourse on ABS issues can be explicit or implicit in nature. Explicit recourse refers to cases where the recourse action is specifically defined in the legal documentation associated with the ABS issue. For example, on August 18, 2005, MBNA issued a prospectus promoting a new series of Class A notes from their Credit Card Master Note Trust.⁶ The notes carry several enhancements including principal and interest funding accounts, the accumulation reserve account, and the Class C reserve account. These accounts are generally on-balance sheet items to which the trust has a claim.

⁶ Specifics of the issue: Interest rate = 4.50% per year; Maturity date = January 15, 2013; Price = 99.90% of par.

2.4.2. Implicit Recourse and the NextBank Case

On the other hand, recourse may not be stated explicitly, but it is implicit when banks maintain subtle credit support beyond contractual obligations to the securitized assets. Sometimes referred to as moral recourse, the originator may feel obligated to provide support to distressed asset pools. In fact, there is some evidence to suggest that investors have come to expect banks to prevent rating downgrades or early amortization through implicit recourse.⁷ According to Section 567.1 of the OTS Regulations [2002-19], "...recourse may also exist implicitly if an [originator] provides credit enhancement beyond any contractual obligation to support assets it has sold."

The FFIEC released a document in 2002 (see SR 02-15 for the Federal Reserve version of this release) in an effort to assist regulators in identifying cases of implicit recourse. The guidance lists four major actions that signal possible implicit recourse, including (1) selling assets to a trust at a discount, (2) purchasing assets from a trust at a premium, (3) exchanging performing assets for nonperforming assets in a trust, and (4) funding credit enhancements beyond what is explicitly contracted. Implicit recourse may be distinct events, such as the cases described above, or they may be a non-distinct (continuous) occurrence. One example of a non-distinct implicit recourse occurrence is labeling credit losses as fraud losses.

In 2002, regulators found that NextBank had classified certain credit losses as fraud losses. According to the OCC, by classifying the losses as fraud, NextBank was able to protect the trust, since, as already discussed, fraud losses are taken by the bank,

⁷ See the OCC's "Asset Securitization Comptroller's Handbook," November 1997.

while credit losses to the securitized pool are borne by the trust.⁸ In effect, credit losses reduce excess spread, which, as reported earlier, can trigger early amortization. Fraud losses, on the other hand, reduce the bank's net income but do not affect the trust. In the NextBank case, the bank had supported the trust by providing implicit recourse, and regulators determined that the securitized assets had to be brought back on the balance sheet because the "true sale" definition had been violated. As a result, NextBank was under-capitalized and closed by the OCC soon after. This situation did not end the practice of classifying credit losses as fraud losses, however. Indeed, First Consumers National Bank (a subsidiary of Spiegel Inc.) also reported misleading fraud losses in 2002, but in this case regulators did not require the assets to be placed back on the bank's balance sheet.⁹

Banks must report recourse arrangements and are technically required to include these as risk-weighted assets for purposes of risk-based capital calculations. More discussion on fraud loss reporting and the technicalities of fraud losses are documented in Section 5 (Data).

The complex nature of credit card securitizations (and securitization in general) and the increased reliance on this structured finance technique for bank funding have given rise to a growing body of research on the topic. In the next section, we review the academic literature on securitizations and introduce hypotheses for the current study.

⁸ See <http://www.occ.treas.gov/ftp/release/2002-09.doc>. "OCC Closes NextBank and Appoints FDIC Receiver" February 7, 2002 for a discussion of the NextBank case.

⁹ See, for instance, Calomiris and Mason (2004) and the Philadelphia FRB's Payment Cards Center Update, Winter 2004.

3. Literature Review

3.1. The Effect of Securitization on the Market

Several studies have found positive shareholder reaction to securitization events. For example, Gasbarro, et al. (2005) find that securitization announcements in multibank holding companies are met with favorable market response from bank shareholders. In particular, they find that banks with high bond ratings, high leverage, low noninterest expense, and high issue frequency tend to have significantly positive market reactions to the securitization announcement. The results are consistent with earlier studies on the wealth effects of securitization, including Lockwood, Rutherford, and Herrera (1996) and Thomas (1999).

Lockwood, et al. (1996) find that the positive response to securitization is industry-specific; banks and finance companies exhibit positive returns, while automobile and other industrial companies see no abnormal shareholder response. Thomas (1999) uses a sample of 236 securitizations by five banks and finds significant positive excess returns surrounding the announcement date.

Thomas and Wang (2004) provide a different view of securitization effects. They find that banks use securitization in response to prior period liquidity shocks and that securitization is a useful liquidity management technique in such cases. Further, Ambrose, et al. (2005) find that securitized mortgage loans experience lower defaults than those retained by the bank. They suggest that this provides evidence of capital arbitrage or the reputation explanation (also noted by Higgins and Mason [2004]) for securitization. In essence, Ambrose et al. (2005) find that banks transfer the least risky assets (in this case mortgage loans) off-balance sheet.

3.2. Explicit and Implicit Recourse

Banks may use recourse as a means of protecting future access to the ABS market. According to Higgins and Mason (2004), without providing support to current asset-backed securities, banks may be compromising their reputation, thus decreasing the likelihood of selling additional loans economically. However, recourse, both explicit and implicit, changes the risk allocation between the bank and the trust, thus putting into question whether or not a “true sale” ever existed. In fact, Klee and Butler (1997) state that “if the parties had intended a sale, then the buyer would have retained the risk of default, not the seller. The greater the recourse the [SPE] has against the originator...the more the transfer resembles a disguised loan rather than a sale,” (p.52).

Gorton and Souleles (2005) indirectly test for implicit recourse commitments. Using credit card ABS bonds issued between 1988 and 1999, the authors test whether the strength of the originating bank matters in the pricing of the credit card asset-backed securities. They find that the originating bank’s bond rating has a strong effect on the ABS market spread and contend that the result is evidence that a bank’s ability to provide implicit recourse is embedded in the price of ABS securities. However, the paper does not explicitly test for recourse.

In a study on the market response to distinct implicit recourse events by credit card banks, Higgins and Mason (2004) identify 17 recourse actions by 10 banks from 1987 to 2001. Instances of distinct implicit recourse in their sample include (1) “cherry picking,” or adding new, higher quality accounts to the trust’s securitized pool; (2) selling assets to the trust at a discount; (3) increasing credit enhancement; and (4) reducing the

bank's service fees. Despite the fact that these actions violate the true sale provision as outlined by FASB 140, none resulted in having to put the assets back on the bank's balance sheet. However, the authors find that banks providing implicit recourse, while weaker than non-recourse counterparts, are not extreme default risks and that recourse actions are met with improved stock and financial performance in both the short- and long-term. Gasbarro et al. (2005) also argue that implicit recourse is necessary for firms to ensure continued market access by protecting firm reputation.

Further, Calomiris and Mason (2004) find that implicit recourse within credit card banks is actually more in line with an efficient contracting view of securitization rather than an attempt to reduce regulatory capital requirements and avoid early amortization. They argue that implicit recourse is efficient due to a combination of high bank capital requirements, adverse selection costs in valuing credit card receivables, and other restrictions prohibiting nonbank credit card intermediation. In addition, they contend that implicit recourse may provide a signal to the market that the securitized pool is worth preserving, as recourse would not otherwise be extended. The authors use 103 credit card bank observations between 1996 and 2000 to provide support for the hypotheses.

4. Hypothesis Development

In this paper, we intend to build off of the results of these earlier studies on implicit recourse. While Higgins and Mason (2004) test the market effects of distinct implicit recourse events, we intend to directly test for non-distinct (continuous) implicit recourse. Claiming credit losses as fraud losses is a form of continuous implicit recourse and is the focus of this study. Given the gray area inherent in the classification of losses

as either fraud or credit related, and given the incentives for banks to provide recourse, we expect that banks that securitize credit card receivables will, on average, report higher fraud losses than other banks.

If this expectation holds true, this would provide evidence that is consistent with implicit recourse. However, there could be alternative explanations for such a finding. Among banks that do not securitize, a dollar of fraud losses has the same impact on net income as a dollar of credit losses. However, for banks that securitize, this need not always be true since there is at least some chance that credit losses occurring within the trust could be taken by the investors in ABS bonds. Therefore, banks that securitize may have a greater incentive to differentiate fraud losses from credit losses compared to banks that do not securitize. This could lead to systematic differences between reported fraud losses, depending on a bank's securitizing activities. We do not find this alternative explanation particularly compelling since banks have a strong incentive to invest in risk management systems designed to minimize losses. These risk management systems depend upon a bank's ability to identify and differentiate sources of risk. Furthermore, nearly all banks with significant credit card portfolios have separate internal departments to manage fraud losses and credit losses. Nevertheless, because a finding in support of this expectation could be explained by mechanisms other than the use of fraud losses to manipulate the performance of credit card securitization trusts, we propose a more direct hypothesis.

Among banks that securitize credit cards, banks with poorly performing securitizations will, on average, report higher fraud losses than other banks.

Support of this hypothesis would provide stronger evidence consistent with implicit recourse. An issuer's incentive to provide implicit recourse is greater as the performance

of the trust deteriorates (due to the existence of deal specific excess spread trapping points and early amortization triggers discussed earlier).

5. Data

We estimate statistical models of fraud losses using bank financial data and data on the performance of a bank's credit card securitization trusts. Bank financial data are taken from the institutions' Call Report. Call Reports provide a wealth of data on the financial performance of banks, and these reports are prepared in accordance with regulatory guidelines that should ensure consistency in measurement across institutions. An item of particular concern to us in this paper is a measure of fraud losses. Fraud losses are not identified as a standard item in Call Reports. However, the Call Reports do include "other noninterest expense." Furthermore, banks are required to list any components of "other non-interest expense" that exceed one percent of the sum of total interest income and total noninterest income (excluding special items, this is one percent of revenue)¹⁰. Banks list "other expense" items that exceed one percent of revenue on Schedule RI-E (explanations) of the Call Report where banks are provided both text and dollar amount fields.

We performed a word search of the text fields for the word "fraud." Among all banks in our sample, there were only 15 separate reports of fraud losses from 1996 through 2000. Comparatively, fraud was reported in 15 instances in 2001 alone and 78

¹⁰ See the FDIC's "Reports of Condition and Income Forms and Users Guide," September 2005, Schedule RI-E—Explanations (<http://www.fdic.gov/regulations/resources/call/crinst/302ri-e.pdf>)

instances total since 2000.¹¹ Further, Schedule RC-S on the Call Report, which requires banks to report information on servicing, securitization, and asset sale activities, was not added until 2001. Because of this dichotomy in reporting and in the data itself, we elected for consistency to investigate fraud loss reporting from 2001 forward.

Income statement items are reported on a year-to-date basis in bank Call Reports. Typically, researchers convert these data to a quarterly annualized basis by subtracting the previous quarter's result and multiplying by four (except for the first quarter). Because specific items under "other noninterest expense," including fraud losses, are censored (as noted above they are only reported if a specific item exceeds one percent of revenue), converting year-to-date to quarterly-annualized data is problematic. To properly use the fraud data available on the Call Reports, one must be able to identify the censoring threshold. This is trivial in the first quarter, or the year if using annual data, based on the one percent of revenue rule, or if the bank reported fraud losses in the previous quarter. However, the censoring threshold is ambiguous for quarterly annualized data in cases where the bank did not report fraud losses in the previous quarter. For that reason, we use annual data rather than quarterly data in our analysis.

For consistency, federal credit unions, state credit unions, and savings and loan associations were excluded from our analysis because these institutions have different reporting requirements. We also excluded outlier banks that had less than \$10,000 in managed loans or managed assets and institutions with a managed loan to managed asset ratio of less than 25%.

¹¹ We also constructed an expansive definition of fraud based on a word search using possible synonyms for fraud including "kiting," "forgery," "theft," and "robbery." Results going forward are robust when using this expanded definition, therefore we only report results using restrictive fraud definition.

Comprehensive measures of the performance of a bank's securitization deals are not available on the Call Reports. However, excess spreads for publicly traded and rated CC-ABS deals are available from several sources. Our data come from ABSNet, which provides monthly measures of excess spread and its components from 1996 to the present.

To match a specific institution's Call Report data to data on the performance of securitization trusts, we identified the servicer of the trust. An institution was also only matched to a specific deal during the years in which it was truly the servicer. For example, People's Bank is only matched to deals related to People's Bank Credit Card Master Trust through 2003, because in 2004 the Royal Bank of Scotland purchased the credit card portfolio of People's Bank. We also compared data from ABSNet on the size of the entire trust to the size of the matched institution's credit card securitizations, as reported in the Call Report, as a check for the authenticity of the match. Table 1 lists the names of each bank that was successfully matched with at least one deal and the number of years that a match could be made.

In some instances, a bank's Call Report data are consolidated into a parent institution's financial results. For example, Citibank, SD, NA issues its own Call Report results, but since 2002 it has also consolidated those results into the Call Report figures reported by Citibank, N.A. This double-counting could lead to a case in which a subsidiary bank reports fraud losses on its Call Report, but the fraud losses are not reported at the consolidated parent because they no longer meet the 1% threshold requirement. To address this possibility, we attempted, where appropriate, to match each deal to the proper subsidiary credit card securitizing bank in a consolidated organization.

To harmonize the frequency of our two datasets, annual averages of the monthly ABSNet data were constructed for each deal. In the case in which a trust was purchased mid-year by another bank, only data for the months in which the acquiring bank was in fact the servicer were used to calculate the annual average. For example, JPMorgan Chase's purchase of Bank One was only completed in the final quarter of 2004. Since the merger took place in 2004, each Bank One deal is matched to either of JPMorgan Chase's two securitizing banks for that year, Chase Manhattan Bank USA N.A. or JP Morgan Chase Bank N.A. However, when finding the annual average of the performance statistics for each deal, only the final three months of 2004 are used since those are the only months when either Chase Manhattan Bank USA N.A. or JP Morgan Chase Bank N.A. was the actual servicer for those trusts.

In most cases, a matched institution was the servicer for more than one deal in a given year. Indeed, in 2001, MBNA America Bank NA was the servicer for 48 separate deals. When an institution was matched to more than one deal in a given year, a minimum and average value for each deal performance variable was tabulated. In total, the sample consists of 75 bank-ABSNet matched deals from 20 unique institutions from 2001 to 2005.

Tables 2a and 2b offer some descriptive statistics on virtually all banks in existence in 2001-2005, and on the sample of banks that were matched to deals. For both tables, we separate each sample into banks that report fraud and banks that do not. In Table 2a, the key insight is that banks that do not report fraud (the vast majority of the sample of all banks) tend to be smaller, have lower charge-off rates, and securitize less than the fraud reporters. In Table 2b we show that, in the smaller sample of banks

matched to ABSNet data, banks that do not report fraud are smaller in terms of on- and off-balance sheet credit card portfolios than the fraud reporting banks. Further, (although not shown in the tables), our data on all credit card banks (i.e., credit card loans as a percent of total loans is greater than 50%) shows that, relative to the broader banking industry, credit card banks tend to be larger, have a much higher charge-off rate, and report greater fraud losses.

6. Empirical Estimation and Results

6.1. Credit Card Securitization and Fraud Losses

We begin with a regression of fraud losses as a function of credit card securitization activity, as well as several control variables. Using annual data on all banks from 2001 to 2005, for a total sample size of 39,994 bank observations, we use an indicator variable for whether the bank claimed any fraud losses on its Call Report. The variable “percent securitized” equals credit card loans that have been securitized and sold divided by total managed loans. Important control variables include the net charge-off rate and a measure of the importance of credit cards to the bank. We measure the importance of credit cards to the bank in two ways: credit card loans as a percent of managed loans and an indicator variable for whether a bank is a credit card specialty bank.

As our data has both cross-sectional and time series elements, we use random effects probit regressions for our models involving the fraud loss indicator variable. We present the results from probit regressions in Models 1 and 2 of Table 3. In both specifications, chi-square tests for overall significance are supported at the 1% level. In

Model 1, the coefficient on “percent securitized” is positive and significant at the 1% level. Coefficients in probit models are more difficult to interpret than logistic model coefficients, but essentially imply how much difference a unit change in the independent variable makes in terms of the cumulative normal probability of the dependent variable. So, a one-unit increase in the predictor variable (with coefficient b) leads to increasing the predicted probit index by b standard deviations (using the cumulative normal probability curve). In this sense, a reference point needs to be created in order to determine the marginal effect of the regressor. Generally, this reference point is calculated using the sample means of each independent variable in the model.

The variable of interest here is “percent securitized” (coefficient equals 1.2) since we are testing whether credit card securitization extent is related to fraud losses. The interpretation of this is that a 1% increase in the percent of securitized credit card loans relative to total managed loans is associated with an increased likelihood of reporting fraud losses by 1.2 standard deviations. Put another way, there appear to be systematic differences in how fraud losses are claimed between banks that securitize large portions of their credit card loans and banks that do not.

The coefficient on the variable “on balance-sheet net charge-offs” is 7.4, which means that, conditional on other variables remaining the same, a \$1000 increase in charge-offs is associated with an increased likelihood of reporting fraud on the bank’s Call Report by 7.4 standard deviations. Further, increasing credit card loans as a percent of total managed loans also increases the likelihood of fraud losses. The coefficient on “credit card loans as a share of managed loans” is positive and significant. This indicates that banks specializing in credit cards tend to be more likely to report fraud.

Alternatively, banks focused on other forms of lending (non-credit card banks) are less likely to report fraud losses on the Call Report. The negative coefficient on their interaction variable (“credit card exposure/charge-off interaction”) indicates that higher charge-offs reported at credit card banks are associated with a lower likelihood of reporting fraud losses. Said another way, lower charge-offs reported at credit card banks increase the likelihood of reporting fraud losses. Coupled with the earlier result regarding charge-offs, this implies that for most banks higher charge-offs are associated with higher fraud losses. This could imply that if a bank has weak control systems in one area (credit losses) it will also have weak control systems in another area (fraud losses). However, for banks that specialize in credit card lending, this relationship is reversed: higher credit losses are associated with lower fraud losses. This suggests that in banks that specialize in credit card lending, credit and fraud losses substitute for each other.

In Model 2, we replace the continuous credit card exposure variables with a dummy variable set equal to “1” if the bank is a credit card specialty bank and “0” otherwise. The first two variables in the model, securitization extent and charge-offs, are again positive and significant in the model (coefficients equal 1.3 and 7.5, respectively, and both are significant at the 1% level). Consistent with Model 1, this suggests that banks that securitize credit card receivables are more likely to report fraud than non-securitizing banks. Additionally, higher charge-offs are associated with a greater likelihood of reporting fraud losses, all else being equal. Further, we see that the coefficient on the credit card bank indicator variable is positive and significant (2.1), again implying that banks specializing in credit cards are more likely to report fraud than non-credit card banks when charge-offs increase. The interaction term is also negative

and significant, again suggesting a possible substitution effect of fraud losses for charge-offs at credit card banks.

6.2. CC-ABS Performance and Fraud Losses

While these results demonstrate that credit card securitization and fraud losses are positively correlated, and offer some evidence consistent with the idea that fraud losses are used to provide recourse, the results may be imprecise since fraud losses are more common in credit card lending than in other types of lending. Therefore, we turn to an analysis of trust performance and fraud losses in credit card banks to test the hypothesis that securitization performance and fraud losses are inversely related. If trust performance is deteriorating, we expect that credit card banks use fraud losses as a form of implicit recourse in order to support the trust. We use Tobit models to study the relation between excess spread (ABS performance) and fraud losses while controlling for securitization extent at the bank. Our sample now consists of matched bank-ABSNet observations from banks that securitize credit card loans since we are interested in the performance of the trust. This results in a sample size of 75 observations spread over 20 banks from 2001 to 2005.

The independent variable of interest is the “ABS performance,” which is equal to the yield on the underlying receivables minus coupon payments and servicing fees. We take a weighted average of this variable so that larger deals are weighted more heavily than smaller deals from the same bank. Essentially, this variable is equal to the excess spread before subtracting charge-offs.¹² We use this revised measurement since charge-offs may be endogenously related to fraud losses –i.e, if fraud losses are used to

¹² Excess spread is calculated as yield – coupon – service fees – charge-offs.

manipulate the performance of the trust then fraud losses would directly effect excess spread by reducing charge-offs. By using a measure of trust performance that excludes charge-offs we avoid this potential endogeneity problem.

Due to the relatively small sample size, a parsimonious model is desirable. This model is presented as Model 1 in Table 4. Here, the coefficient on “ABS performance” is negative and significant at the 5% level. This indicates that as performance deteriorates, fraud losses as a proportion of managed loans increases. This supports our hypothesis. We add a control variable for the extent of credit card loans on the balance sheet in Model 2. ABS performance is again negative and statistically significant. Further the coefficient on credit cards as a share of total loans is positive and significant at the 1% level. In Model 3 we add an additional control variable: percent securitized. While this variable is not statistically significant in the model, the variable of interest, ABS performance, is negative and significant. The results demonstrate the robust inverse relationship between credit card ABS performance and fraud losses and supports our hypothesis.

To summarize, our empirical examination illustrates that (1) banks that securitize credit card receivables are more likely to report fraud losses than other banks, and (2) banks with poorly performing CC-ABS trusts tend to report higher fraud losses than other banks. These results are based on data collected under the current regulatory capital regime. We next discuss how the proposed treatment of securitized assets under the proposed Basel II capital rules may afford banks more incentives to provide implicit recourse to securitized assets and CC-ABS in particular.

7. Basel II Treatment of CC-ABS and the Incentives for Recourse

The current proposal of the U.S. banking agencies states that banks with over \$250 billion in total assets or \$10 billion in on-balance-sheet foreign exposures are required to adopt the advanced internal ratings-based (A-IRB) approach of Basel II beginning in January 2008. Other U.S. banking organizations could opt in to the A-IRB approach if they meet regulatory standards. While those qualifications mean that only a handful of U.S. banking organizations will likely be governed by Basel II at the outset, those first-adopters will include several credit card operators that account for a significant share of the CC-ABS market. The changes in the treatment of credit card asset-backed securities under Basel I and Basel II could thus alter the market incentives for implicit recourse.

Under Basel I, the investor's interest in credit card asset-backed securities (CC-ABS) is treated as a loan that has been sold. Therefore, this account has zero risk-based capital and leverage ratio requirements.¹³ The "seller's interest" in CC-ABS, however, is typically on the bank's balance sheet. Thus, seller's interest has the same risk-based capital and leverage requirements as other on-balance-sheet loans (i.e., requirements are 4 percent tier 1 capital and 8 percent total capital).¹⁴ The bank will also have a variety of other residual interests in the securitization, which effectively are subject to dollar-for-dollar capital requirements. If rated BB or higher, spread accounts and cash collateral accounts would not be assessed a dollar-for-dollar risk-based capital requirement.

¹³ In some cases, the seller may also own a portion of the investor securities, and these security holdings will have an associated capital charge.

¹⁴ The seller's interest is occasionally booked as securities, but these have the same capital requirements under the current Basel I-based regime.

Under Basel II, A-IRB banks would be subject to a potential capital requirement for the investor's interest; whereas under Basel I, there is no such capital requirement. This potential capital requirement equals the product of the A-IRB charge had the loans been held on-balance sheet (against both drawn and open-to-buy amounts) and a credit conversion factor (CCF). The CCF depends on the trust's three-month average excess spread relative to trapping points. As long as the trust's excess spread is greater than 133% of the trapping point, the CCF is zero. As excess spread declines, the CCF gradually increases. When the excess spread drops below 50% of the trapping point, the assets are treated as if they were on-balance sheet.

Currently, banks that securitize have a strong incentive to engage in implicit recourse to avoid hitting early amortization triggers that would result in assets coming back onto the balance sheet. Under Basel II, A-IRB banks will be motivated to engage in implicit recourse long before early amortization triggers are hit in order to avoid regulatory capital charges. Furthermore, U.S. bank regulators have adopted policies that banks which are caught engaging in implicit recourse must bring their securitization deal back on balance sheet. This policy would remain in effect under Basel II. However, so long as a bank is not found to be engaged in recourse, the capital requirement for investor's interest remains zero. Under Basel II, banks must progressively bring CC-ABS deals back on balance sheet as performance deteriorates. This implies that A-IRB banks will face lower de facto penalties for engaging in implicit recourse to support their CC-ABS than banks facing Basel I-based capital rules.

8. Conclusions

We have argued that banks face strong incentives to support the performance of their securitization deals. Previous papers have documented cases of distinct implicit recourse. Others have indirectly tested for non-distinct cases. We are the first to specify a mechanism and empirically test for a specific recourse mechanism across banks. Our empirical results show that (1) across all banks, banks that securitize credit card receivables are more likely to claim fraud losses than other banks, and that these banks claim higher fraud losses than other banks; and (2) among banks that securitize credit card receivables, banks with poorly performing trusts are more likely to claim fraud losses and on average claim higher fraud losses than banks with healthy trusts.

From a regulatory point of view, implicit recourse is difficult to detect at any given institution. Deals are complicated. Ambiguities and gray areas make it difficult to prove a case against a particular bank. By statically evaluating data across banks, we are able to find patterns that are consistent with implicit recourse across the industry. A weakness of our approach is that we cannot document implicit recourse actively at any particular bank.

We also highlight an important policy issue in light of the proposed Basel II A-IRB capital rules. Basel II increases incentives to provide implicit recourse earlier and lowers to de facto penalties for engaging in this action relative to Basel I. So, while we find that banks currently have incentives to use implicit recourse to protect their securitization portfolios, A-IRB banks may be even more likely to use implicit recourse under the new regulatory regime relative to Basel I-based rules.

If a bank engages in implicit recourse, then the bank is retaining the risk associated with assets transferred off balance sheet. This is clearly a violation of FASB 140, which states what constitutes a “true sale.” However, this violation is rarely detected (or enforced). Bank regulators need to better enforce rules by scrutinizing individual bank behavior. Further, policymakers should consider rules that reduce banks’ incentives for implicit recourse. Alternatively, in the face of evidence that implicit recourse exists, it should be recognized that current rules encourage this behavior and that essentially little risk transfer is occurring.

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Table 1: List of institutions successfully matched with specific ABSNet securitization deals.

Bank	2001	2002	2003	2004	2005
Advanta Bank Corp.	X	X	X	X	X
American Express Centurion Bank	X	X	X	X	X
Bank Of America NA USA	X	X	X	X	X
Bank One Corp.	X	X	X		
Capital One Bank	X	X	X	X	X
Chase Bank USA NA	X	X	X	X	X
Citibank NA	X	X	X		
Citibank SD NA	X	X	X	X	X
Dillard National Bank	X				
Discover Bank	X	X	X	X	X
First Consumers National Bank	X	X			
First National Bank Of Omaha	X	X	X	X	X
Fleet Bank RI NA	X	X	X	X	
HSBC Bank USA NA				X	X
MBNA America Bank NA	X	X	X	X	X
National City Bank	X	X	X	X	X
People's Bank	X	X	X		
Providian National Bank	X				
Universal Bank NA	X				
World Financial Network National Bank	X	X	X	X	X

Note: X denotes a successful match in a given year

Table 2a: Descriptive Statistics for All Banks in Sample, 2001–2005

Variable	Statistic	Banks reporting no fraud	Banks reporting fraud	Difference in means (no fraud-fraud)
Fraud to managed loans	Mean	0.000	0.006	-0.006***
	Median	0.000	0.002	
	Min	0.000	0.000	
	Max	0.000	0.068	
On-balance sheet net charge-offs ¹	Mean	0.003	0.025	-0.022***
	Median	0.001	0.019	
	Min	-0.083	0.000	
	Max	1.440	0.092	
Credit card loans as share of managed loans	Mean	0.006	0.464	-0.458***
	Median	0.000	0.223	
	Min	0.000	0.000	
	Max	1.057	1.000	
Percent of credit card loans securitized	Mean	0.001	0.248	-0.247***
	Median	0.000	0.000	
	Min	0.000	0.000	
	Max	1.000	0.967	
Threshold to managed loans	Mean	0.001	0.002	-0.001*
	Median	0.001	0.001	
	Min	0.000	0.000	
	Max	0.049	0.028	
Total assets (\$000)	Mean	946,644	7,459,714	-6,513,070***
	Median	103,359	368,082	
	Min	1,203	5,099	
	Max	1,082,242,862	58,516,899	
On-balance sheet credit card loans (\$000)	Mean	30,739	4,255,397	-4,224,658***
	Median	0	2625	
	Min	0	0	
	Max	62,850,000	24,714,259	
Off-balance sheet credit card loans (\$000)	Mean	30,696	9,432,074	-9,401,378***
	Median	0	0	
	Min	0	0	
	Max	65,680,000	82,865,461	
Number of banks		39,917	78	

¹ On-balance sheet net charge-offs can be negative if recoveries exceed charge-offs in a given period. *Fraud to managed loans* is equal to the dollar amount of ‘fraud’ reported on Schedule RI-E divided by total managed loans. *On balance sheet net charge-offs* is equal to the difference between total losses and total recoveries divided by total loans. *Credit card loans as share of managed loans* is equal to managed credit card loans divided by managed total loans. *Percent of credit card loans securitized* equals zero if the bank has no securitized credit card loans. Otherwise, this variable is equal to securitized credit card loans divided by total managed loans. *Threshold to managed loans* equals 1% of total interest and noninterest income divided by total managed loans.

Table 2b: Descriptive Statistics for Banks Matched to ABSNet Data, 2001–2005

Variable	Statistic	Banks reporting no fraud	Banks reporting fraud	Difference in means (no fraud-fraud)
Fraud to managed loans	Mean	0.000	0.002	-0.002***
	Median	0.000	0.002	
	Min	0.000	0.000	
	Max	0.000	0.003	
On-balance sheet net charge-offs ¹	Mean	0.039	0.040	-0.001
	Median	0.039	0.042	
	Min	-0.074	0.015	
	Max	0.241	0.065	
Credit card loans as share of managed loans	Mean	0.707	0.875	-0.168**
	Median	0.937	0.990	
	Min	0.040	0.308	
	Max	1.010	1.000	
Percent of credit card loans securitized	Mean	0.466	0.517	-0.051
	Median	0.505	0.567	
	Min	0.011	0.153	
	Max	1.000	0.739	
Threshold to managed loans	Mean	0.001	0.001	0.000
	Median	0.001	0.001	
	Min	0.000	0.000	
	Max	0.002	0.002	
Total assets (\$000)	Mean	55,603,929	26,107,489	29,496,440*
	Median	19,585,769	21,858,206	
	Min	18,323	6,758,180	
	Max	582,123,000	58,516,899	
On-balance sheet credit card loans (\$000)	Mean	14,051,856	15,531,455	-1,479,599
	Median	7,777,261	16,970,548	
	Min	0	5,588,340	
	Max	62,850,000	24,714,259	
Off-balance sheet credit card loans (\$000)	Mean	14,586,976	34,643,481	-20,056,505*
	Median	2,953,175	29,156,737	
	Min	500,000	4,731,000	
	Max	64,282,673	82,865,461	
Number of banks		54	21	

¹ On-balance sheet net charge-offs can be negative if recoveries exceed charge-offs in a given period. *Fraud to managed loans* is equal to the dollar amount of ‘fraud’ reported on Schedule RI-E divided by total managed loans. *On balance sheet net charge-offs* is equal to the difference between total losses and total recoveries divided by total loans. *Credit card loans as share of managed loans* is equal to managed credit card loans divided by managed total loans. *Percent of credit card loans securitized* equals zero if the bank has no securitized credit card loans. Otherwise, this variable is equal to securitized credit card loans divided by total managed loans. *Threshold to managed loans* equals 1% of total interest and noninterest income divided by total managed loans.

Table 3: Determinants of Reporting Fraud Losses

	Model 1	Model 2
	Fraud indicator	Fraud indicator
Intercept	-3.6527 (-47.83)***	-3.6508 (-48.06)***
Percent securitized	1.2068 (2.81)***	1.3325 (3.18)***
On balance-sheet net charge-offs	7.3738 (3.10)***	7.5012 (3.19)***
Credit card loans as share of managed loans	2.2068 (7.45)***	
Credit card exposure/charge-off interaction	-11.6696 (-2.85)***	
Threshold to managed loans	34.2725 (1.35)	37.4533 (1.51)
Credit card bank indicator		2.1115 (7.43)***
Credit card indicator/charge-off interaction		-11.3939 (-2.85)***
Number of Observations (number of groups)	39,991 (8912)	39,991 (8912)
Chi-square	246.63***	247.00***

This table presents results of random effects probit models. Coefficients reported above Z-statistics (in parentheses). *, **, *** indicates significance at the .01, .05, and .01 level, respectively. *Fraud indicator* is equal to 1 if the bank reported an incident of “fraud” on its Call Report. It is only mandatory to report these events if the financial cost exceeds 1% of the sum of total interest and noninterest income for the given quarter. Otherwise, the fraud indicator equals 0. *Percent securitized* equals zero if the bank has no securitized credit card loans. Otherwise, this variable is equal to credit card loans that have been securitized and sold divided by total managed loans. *On balance sheet net charge-offs* is equal to the difference between total losses and total recoveries divided by total loans. *Credit card loans as share of managed loans* is equal to managed credit card loans divided by managed total loans. *Credit card exposure/charge-off interaction* is equal to the multiplication of the *credit card loans as share of managed loans* variable and the *on balance sheet net charge-offs* variable. *Threshold to managed loans* equals 1% of total interest and noninterest income divided by total managed loans. *Credit card bank indicator* is equal to 1 if the bank is a credit card specialty bank or 0 otherwise. In the above sample, there were 58 credit card specialty banks accounting for 204 observations over the five-year period. *Credit card indicator/charge-off interaction* is equal to the multiplication of the *credit card bank indicator* variable and the *on balance sheet net charge-offs* variable.

Table 4: Effect of Credit Card ABS Performance on Fraud Loss Extent

	Model 1	Model 2	Model 3
	Fraud to managed loans	Fraud to managed loans	Fraud to managed loans
Intercept	0.0019 (2.67) ^{***}	-0.0010 (-0.70)	-0.0008 (-0.56)
ABS performance	-0.0134 (-2.50) ^{**}	-0.0134 (-2.71) ^{***}	-0.0126 (-2.52) ^{**}
Credit card loans as a share of total loans		0.0040 (3.09) ^{***}	0.0039 (2.98) ^{***}
Percent securitized			-0.0003 (-0.56)
Number of Observations (number of groups)	75 (20)	75 (20)	75 (20)
Chi-square	6.27 ^{**}	15.23 ^{***}	16.23 ^{***}

This table presents results from random effects Tobit models. Coefficients reported above Z-statistics (in parentheses). *, **, *** indicates significance at the .01, .05, and .01 level, respectively. A special censoring variable is used in the Tobit models. This variable equals 1% of total interest and noninterest income divided by total managed loans. *Fraud to managed loans* is equal to the dollar amount of any reported incident of “fraud” on a bank’s Call Report divided by total managed loans. It is only mandatory to report these incidents if the financial cost exceeds 1% of the sum of total interest and noninterest income for the given quarter. *ABS performance* is the weighted average excess spread (with charge-offs added back in) for all deals related to that bank for a particular year. *Credit card loans as share of total loans* is equal to managed credit card loans divided by total loans. *Percent securitized* equals zero if the bank has no securitized credit card loans. Otherwise, this variable is equal to credit card loans that have been securitized and sold divided by total managed loans.