

Skin-in-the-Game: Risk Retention Lessons from Credit Card Securitization

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ABSTRACT

The Dodd-Frank Act's "skin-in-the-game" credit risk retention requirement is the major reform of the securitization market following the housing bubble. Skin-in-the-game mandates that securitizers retain a 5% interest in their securitizations. The premise behind skin-in-the-game is that it will lessen the moral hazard problem endemic to securitization, in which loan originators and securitizers do not bear the risk on the ultimate performance of the loans. Contractual skin-in-the-game requirements have long existed in credit card securitizations. Their impact, however, has not been previously examined.

This Article argues that credit card securitization solves the moral hazard problem not through the limited risk retention of formal skin-in-the-game requirements, but through implicit recourse to the issuer's balance sheet. Absent this implicit recourse, skin-in-the-game actually creates an incentive misalignment between card issuers and investors because card issuers have lopsided upside and downside exposure on their securitized card receivables. Formally, the card issuers bear a small fraction of the downside exposure, but retain 100% of the upside, should the card balance generate more income than is necessary to pay the investors. The risk/reward imbalance should create a distinct problem because the card issuer retains control over the terms of the credit card accounts. Prior to the Credit CARD Act of 2009, the issuer could increase a portfolio's volatility through rate-jacking: when interest rates and fees are increased, some accounts will pay more and some will default. Per the Black-Scholes option-pricing model, the increased volatility benefits the issuer because of the risk-reward imbalance.

Despite the problems posed by the formal risk/reward imbalance, credit card securitization avoided the excesses of mortgage securitization. The explanation for this is that credit card securitization features complete implicit recourse. Implicit recourse exists because credit card securitization is not about risk transfer, but instead is about regulatory capital arbitrage and creating a funding and liquidity source for the issuer. The implication is that formal skin-in-the-game requirements alone may be insufficient to ensure against moral hazard problems in securitization. Skin-in-the-game's effectiveness will instead depend on its interaction with other deal features.

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INTRODUCTION

Securitization provides the financing for the majority of consumer credit,¹ but it has come under great scrutiny in the wake of the

¹ See BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE Z.1, at 96 tbl.L.218 (Mar. 10, 2011) (showing \$5.267 trillion of \$10.859 trillion in home mortgage debt securitized as of Q4, 2009); BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE G.19, at 2 (Mar. 7, 2011) (showing \$402.8 billion of \$894 billion in revolving nonmortgage consumer debt securitized, and \$175.1 billion of \$1,584.9 billion in nonrevolving consumer nonmortgage debt securitized as of Q4, 2009). Figures from 2009 are cited here because an accounting change (the adoption of Statements of Financial Accounting Standards (“SFAS”) 166 and 167) in 2010 resulted in many securitized assets coming back on balance sheets. See Press Release, Fin. Accounting Standards Bd., FASB Issues Statements 166 and 167 Pertaining to Securitizations and Special Purpose Entities (June 12, 2009), available at, http://www.fasb.org/cs/ContentServer?c=FASBContent_C&pagename=FASB/FASBContent_C/NewsPage&cid=1176156240834.

financial crisis of 2008. Unregulated, private-label securitization provided the financing mechanism that fueled the mortgage bubble.² In response, Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank Act”),³ which imposed a requirement that certain firms retain 5% of the risk in the assets they securitize.⁴

This requirement, known as “skin-in-the-game,” is a response to the belief that the housing bubble that preceded the crash was spurred by the “originate-to-distribute” model of mortgage lending.⁵ In the originate-to-distribute model, mortgage loans were made with the objective of “reselling them in the secondary market, generally as part of securitizations.”⁶

The skin-in-the-game requirement reflects an assumption that the originate-to-distribute model contains a moral hazard because loan originators do not hold the credit risk on the loans they make and instead are compensated through upfront fees and the sale of the loans.⁷ The result of this moral hazard was higher volume and lower quality of mortgage lending.⁸ The premise underlying the skin-in-the-

² See FIN. CRISIS INQUIRY COMM’N, THE FINANCIAL CRISIS INQUIRY REPORT 38–51 (2011); Adam J. Levitin & Susan M. Wachter, *Explaining the Housing Bubble*, 100 GEO. L.J. 1177, 1203 (2012); Adam J. Levitin & Susan M. Wachter, *Why Housing?*, 23 HOUSING POL’Y DEBATE 5, 12 (2013).

³ Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

⁴ *Id.* § 941, 124 Stat. at 1890–96 (to be codified at 15 U.S.C. § 780-11). The definition of the 5% risk retention is left up to regulatory implementation. See *id.* There are also to be a number of exceptions to the skin-in-the-game requirement, including a significant one for “qualified residential mortgages,” a phrase left open for further regulatory definition. See *id.*

⁵ See Adam J. Levitin, Andrey D. Pavlov & Susan M. Wachter, *The Dodd-Frank Act and Housing Finance: Can It Restore Private Risk Capital to the Securitization Market?*, 29 YALE J. ON REG. 155, 158–61 (2012).

⁶ *Id.* at 161.

⁷ See *id.* at 161, 167–68.

⁸ See, e.g., Kurt Eggert, *The Great Collapse: How Securitization Caused the Subprime Meltdown*, 41 CONN. L. REV. 1257, 1263–68 (2009). It bears emphasis that securitization can create moral hazards unrelated to credit risk. To illustrate through a personal example, I recently purchased a car. I was prepared to pay in cash, but the dealer offered a lower purchase price if I took out dealer financing instead. When I inquired about upfront fees or prepayment penalties, I was told that there were none.

The only way in which a lower purchase price for a financed car than for a cash-purchased car makes sense is if the dealer anticipated being able to securitize the loan, meaning the asset-backed securities (“ABS”) investors pay for both the sale and the financing. Here, the dealer had the knowledge that I was a significant prepayment risk—I was prepared to pay in cash, and I specifically inquired about whether I could prepay immediately with no penalty. The ABS investors, however, lack that information and would price their purchase of the loan based on me being a standard, rather than an unusual prepayment risk. The dealer was thus looking to sell

game requirement “is that if the parties engaged in securitization are required to retain some credit risk on the securitized loans, they will be incentivized to ensure that the securitized loans are of higher quality.”⁹ Skin-in-the-game is thus meant to serve as a moral hazard mitigant.

This Article questions whether the Dodd-Frank Act’s analysis of skin-in-the-game is correct.¹⁰ It does so through an examination of credit card securitization, a context in which contractual credit risk retentions requirements of 4% to 7% skin-in-the-game have long been in place.¹¹ In so doing, this Article observes that skin-in-the-game should actually have incentivized *riskier* underwriting in the credit card space by encouraging rate-jacking—the phenomenon of a credit card issuer abruptly increasing cardholder account fees or interest rates, including on existing balances.¹²

Rate-jacking makes the returns on credit card loans more volatile; while it can increase the yield, it can also result in a default by the borrower.¹³ For investors in credit card asset-backed securities (“ABS”)—essentially bonds backed by the cash flows from credit card receivables—increased volatility is a negative; for credit card issuers, however, increased volatility is a positive.

Credit card ABS investors are fixed-income investors.¹⁴ This means that their maximum return is capped at the promised yield on the ABS, so they do not benefit from the potentially greater returns due to rate-jacking. Instead, they only receive the downside risk of greater defaults.

what it knew was a high prepayment risk loan at a standard prepayment risk price, demonstrating that securitizers can capitalize on information asymmetries unrelated to credit risk.

⁹ See Levitin, Pavlov & Wachter, *supra* note 5, at 161.

¹⁰ Elsewhere, with economists Andrey Pavlov and Susan Wachter, I have argued that skin-in-the-game is hardly failsafe given the myriad examples, including in 2008, of portfolio lenders failing, not to mention the collapse of Fannie Mae and Freddie Mac, which held 100% of the credit risk on the mortgages they securitized (excluding any private mortgage insurance on loans with loan-to-value ratios (“LTVs”) greater than 80%). See *id.* at 155, 156–60, 167–68.

¹¹ See *infra* notes 96–97.

¹² See, e.g., Kaja Whitehouse, *Credit Cards ‘Rate-Jack’ Users*, N.Y. POST, Feb. 18, 2009, at 39; Drew Griffin & Kathleen Johnston, *Credit Card Holders Livid About ‘Rate-Jacking’*, CNN.COM (Dec. 18, 2008, 12:28 AM), <http://www.cnn.com/2008/US/12/17/credit.card.rates/index.html>. For a detailed treatment of credit card rate-jacking (other than the securitization angle), see Adam J. Levitin, *Rate-Jacking: Risk-Based and Opportunistic Pricing in Credit Cards*, 2011 UTAH L. REV. 339.

¹³ See Levitin, *supra* note 12, at 341, 364.

¹⁴ DIV. OF SUPERVISION & CONSUMER PROT., FDIC, RISK MANAGEMENT CREDIT CARD SECURITIZATION MANUAL 11 (2007) [hereinafter FDIC MANUAL], available at http://www.fdic.gov/regulations/examinations/credit_card_securitization/pdf_version/index.html.

For credit card issuers, however, rate-jacking is quite attractive. Credit card securitization structures transfer most downside credit risk on the card balances to the ABS investors; the card issuer only retains a small portion of the downside.¹⁵ The card issuer, however, retains the entire potential upside—if the card balances generate more income than is necessary to pay the ABS investors, it is all kept by the card issuer.¹⁶ With 100% of the upside, and just a fraction of the downside, card issuers have the economic equivalent of a “collar” of a call option (unlimited upside) and a put option (limited downside) on the card receivables. Per the Black-Scholes option pricing model, all else being equal, an option’s value increases with the price volatility of the reference asset.¹⁷

Rate-jacking is the key to controlling the volatility of credit card receivables, and credit card securitization lets card issuers retain the ability to rate-jack existing balances. Credit card securitization structures transfer card balances to (formerly) off-balance-sheet securitization trusts,¹⁸ but allow the credit card issuers (banks) to retain control over the terms of the card account. This allows card issuers rather than the ABS investors to control rate-jacking. Thus, credit card securitization structures give issuers the ability to manufacture increased volatility of credit card receivables, which in turn increases the value of the issuer’s interests in the securitization, at the expense of ABS investors who do not share in the upside of increased volatility.

Rate-jacking has been generally prohibited for consumer credit cards under the Credit Card Accountability Responsibility and Disclosure Act of 2009 (the “Credit CARD Act”).¹⁹ While rate-jacking was a major factor contributing to the passage of the Credit CARD Act, the real mystery is why there was not *more* rate-jacking given the incentive misalignment between card issuers and ABS investors.

The answer, this Article argues, lies in features of credit card securitization other than its formal contractual skin-in-the-game re-

¹⁵ See *infra* Part I.A.

¹⁶ FDIC MANUAL, *supra* note 13, at 39–40.

¹⁷ See *infra* note 200 and accompanying text.

¹⁸ An accounting change in 2010 brought most credit card securitization trusts back on balance sheet. See Press Release, Fin. Accounting Standards Bd., *supra* note 1.

¹⁹ Credit Card Accountability Responsibility and Disclosure (Credit CARD) Act of 2009, Pub. L. No. 111-24, 123 Stat. 1734 (2009) (codified in scattered sections of 15 U.S.C.). Interest rates may be increased only on 45-days written notice. 15 U.S.C. § 1637(i)(1) (2006). Rates may then only be increased on outstanding balances for specified reasons: expiration of a promotional offer, in conjunction with a public index rate, the completion of a hardship waiver or workout, or after failure to make a minimum payment for 60 days. *Id.* § 1666i-1(b).

quirement. The implication of this is that skin-in-the-game is not in fact the panacea it is held out to be in the Dodd-Frank Act. It can simply create a different kind of moral hazard, depending on the other features involved in a securitization. Requiring skin-in-the-game for all types of securitizations is potentially counterproductive.

Credit card securitization did not produce the same disastrous results as unregulated mortgage securitization because it has never been a true credit risk transfer mechanism. Instead, there has always been strong implied recourse on credit card ABS, meaning that card issuers have implicitly guaranteed 100% payment on credit card ABS.²⁰ Put differently, rather than a very limited amount of skin-in-the-game formally required by contract, credit card securitization functionally involves 100% skin-in-the-game. Credit card securitization eliminates, rather than mitigates moral hazard.

Securitization provides a critical funding source for the largest card issuers. Large card issuers exist in a symbiotic and interdependent relationship with their securitization conduits. Absent their securitization conduit, card issuers would be strapped to find sufficient liquidity to fund their credit card lending, and without the card issuer, the securitization conduits would automatically wind down. Card issuers do not wish to jeopardize their ability to tap capital markets for funding their loans by imposing excessive losses on investors in credit card ABS. As a result, card issuers are careful in monitoring credit quality and are not incentivized to overly exploit information asymmetries between themselves and ABS investors by transferring credit risk. Indeed, this seems to explain why rate-jacking did not become a much more rampant phenomenon.

The result is that card issuers' rate-jacking involves a careful threading of the needle; a small increase in card receivables' volatility from rate-jacking could result in increased profits, but if the volatility increases too much, there is too great a risk of losses that will bring down the securitization conduit. This may explain why card issuers rate-jacked within limits—interest rates were never raised from 13% to 1300% or even 130% or 65% APR, but more commonly from 13% to 30%.²¹

²⁰ See *infra* text accompanying notes 208–09.

²¹ See, e.g., Carl Hulse, *Senate Rejects Limit on Credit-Card Interest Rates*, N.Y. TIMES (May 13, 2009, 5:49 PM), <http://thecaucus.blogs.nytimes.com/2009/05/13/senate-rejects-limit-on-credit-card-interest-rates/> (noting that credit card interest rates were at the highest 41% and that 1/3 of card holders were subject to rates between 20% and 41%).

The experience of credit card securitization suggests that attempts to reform the mortgage securitization market by requiring skin-in-the-game—retention of credit risk by loan originators and/or securitizers—such as that mandated by the Dodd-Frank Act,²² are unlikely to provide a sufficient guarantee of quality in securitized assets.²³ Instead, credit card securitization seems to have avoided the problem of declining underwriting standards because there is implied recourse to card issuers' balance sheets, rather than because of its formal skin-in-the-game requirements.

This Article adds to the legal literature on securitization. While a large body of literature has sprung up about mortgage securitization, the literature on credit card securitization is almost nonexistent. The scant legal literature focuses on its taxation, not on credit risk and underwriting incentives,²⁴ and the equally scant finance literature focuses on the concerns of implicit recourse.²⁵ Credit card securitization shows the variety of structures that can exist in the securitization world and the variety of business uses for securitization. While securitization can be a mechanism primarily to transfer credit risk, it can also function primarily as a liquidity provision mechanism. This Article provides an overview of credit card securitization, its legal framework, and the incentive structures it creates.

The Article proceeds as follows: Part I begins with a brief discussion of securitization in general and its potential to produce either “lemons” or “cherries”—lower- or higher-than-average-quality assets. It then turns to a detailed explanation of how credit card securitization works and how that differs from the securitization of other asset classes. Part II lays out an option volatility explanation for rate-jacking. Part III considers some of the factors that might limit the power of an option volatility explanation of rate-jacking.

²² See *supra* note 5 and accompanying text.

²³ See Levitin, Pavlov & Wachter, *supra* note 10, at 167–68 (discussing limitations of skin-in-the game risk retention as a method of controlling default risk).

²⁴ See Grace Soyoon Lee, *What's in a Name?: The Role of Danielson in the Taxation of Credit Card Securitizations*, 62 BAYLOR L. REV. 110 (2010); Clarissa C. Potter, *A Wrench or a Sledgehammer? Fixing FASITs*, 56 SMU L. REV. 501 (2003). The sole exception, which is not really focused on credit card securitization for its own sake, but rather on illustrating a point about the role of lawyers, is Edward Rubin, *The Citizen Lawyer and the Administrative State*, 50 WM. & MARY L. REV. 1335 (2009).

²⁵ See Charles W. Calomiris & Joseph R. Mason, *Credit Card Securitization and Regulatory Arbitrage* (Fed. Reserve Bank of Phila., Working Paper No. 03-7, 2003), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=569862.

I. CREDIT CARD SECURITIZATION

A. *Securitization in a Nutshell*

Securitization is a financing mechanism based on segregating selected cash flows of a firm from the firm's liabilities.²⁶ This segregation of cash flows from liabilities enables financing based solely on the risks inherent in the selected cashflows, rather than in the risks of the firm overall. This means that firms with high quality cash flows but significant liabilities can raise funds at costs set solely on the quality of the cash flows.²⁷ For example, a petroleum company with excellent cash flows but major environmental liabilities might be able to borrow directly at high cost based on the total picture of its assets and liabilities. It can finance itself at a much lower cost, however, through securitization, where the financing is priced based solely on the strength of securitized assets, separate from the firm's liabilities.²⁸

The segregation of cash flows in a securitization is accomplished by transferring them to a specially created entity, which pays for the cash flows by issuing securities against them.²⁹ The special entity needs to be bankruptcy remote, meaning here that its assets cannot be consolidated with the firm's assets in the event the firm files for bankruptcy or is taken into receivership.³⁰ This process allows investors to invest based solely on the quality of the cash flows and the risks specific to them, rather than the overall risks of the firm.³¹

Securitization transactions are extremely complex and heterogeneous, but they all have a basic common structure.³² A financial institution (the securitization "sponsor") owns a pool of receivables, such as credit card loans, car loans, or mortgages, which it either generated itself ("originated") or purchased.³³ Instead of holding these receiv-

²⁶ FDIC MANUAL, *supra* note 14, at 9–10.

²⁷ *See id.*

²⁸ The experience of BP in 2010 is an example of a company facing such environmental liabilities. *See* Steve Goldstein, *BP Credit Rating Slashed by Fitch Ratings*, MARKETWATCH (June 15, 2010), http://articles.marketwatch.com/2010-06-15/industries/30758440_1_bp-shares-gulf-of-mexico-spill-credit-rating (noting downgrade of BP to BBB-rating in wake of Deepwater Horizon oil spill).

²⁹ *See id.*

³⁰ *See id.* Bankruptcy remoteness has a second, distinct meaning, namely that the specially created entity cannot itself file for bankruptcy. *See* Gary B. Gorton & Nicholas S. Souleles, *Special Purpose Vehicles and Securitization*, in *THE RISKS OF FINANCIAL INSTITUTIONS* 549, 550 (Mark Carey & René M. Stulz eds., 2007).

³¹ *See* FDIC MANUAL, *supra* note 14, at 5.

³² *See* FDIC MANUAL, *supra* note 14, at 9–10.

³³ *See id.* Other types of assets can be securitized, but most securitizations involve receivables.

ables (and the credit risk, interest rate risk, and liquidity risk) on its own books, it sells them as part of an integrated, multi-step transaction.³⁴

First, the loans are sold to a special-purpose subsidiary of the sponsor (the “depositor”) that has no other assets or liabilities.³⁵ The sale is made to isolate the loans from the sponsor’s assets and liabilities, making the assets bankruptcy remote.³⁶ Second, the depositor sells the loans to a passive special-purpose vehicle (“SPV”), usually a trust.³⁷ This is to protect against asset substitution risk, as the sponsor could effectuate a transformation in the subsidiaries’ assets. The SPV must be a stand-alone entity; it cannot be a subsidiary of the sponsor or the depositor, or it would be consolidated with them for accounting and U.S. tax purposes.³⁸

The SPV then issues certificated securities (essentially bonds) to raise the funds to pay the depositor for the loans.³⁹ The depositor uses this money to pay the sponsor for the loans.⁴⁰ Because the certificated securities are collateralized by the assets owned by the trust, they are called asset-backed securities.⁴¹

The SPV must be essentially passive for a variety of reasons—credit risk, accounting, and tax; “it is little more than a shell to hold

³⁴ See *id.*; Anna Gelpern & Adam J. Levitin, *Rewriting Frankenstein Contracts: Workout Prohibitions in Residential Mortgage-Backed Securities*, 82 S. CAL. L. REV. 1075, 1081–82 (2009).

³⁵ See FDIC MANUAL, *supra* note 14, at 9–10; Gelpern & Levitin, *supra* note 34, at 1082–83.

³⁶ See FDIC MANUAL, *supra* note 14, at 9–10; Gelpern & Levitin, *supra* note 34, at 1082–83.

³⁷ See FDIC MANUAL, *supra* note 14, at 9–10; Gelpern & Levitin, *supra* note 34, at 1082–83. The trustee will then typically convey the mortgage notes and security instruments to a “master document custodian,” who manages the loan documentation, while the servicer handles the collection of the loans. See Adam J. Levitin & Tara Twomey, *Mortgage Servicing*, 28 YALE J. ON REG. 1, 14 n.35 (2011). The trust will also often take steps to perfect a security interest in the assets it has purchased in the event that the sale is characterized as a secured loan. See *id.*

³⁸ See FDIC MANUAL, *supra* note 14, at 9–10, 14–15; Gelpern & Levitin, *supra* note 34, at 1085–86. Under SFAS 166 and 167, as of January 1, 2010, the SPV may still be consolidated with the sponsor/depositor if the sponsor/depositor retains either the upside or downside exposure on the SPV’s assets and exercises control over the SPV’s assets. See FIN. ACCOUNTING STANDARDS BD., STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 166 (2009) [hereinafter FASB No. 166]; FIN. ACCOUNTING STANDARDS BD., STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 167 (2009) [hereinafter FASB No. 167].

³⁹ See FDIC MANUAL, *supra* note 14, at 9–10. Often the SPV issues the certificates to the depositor, which then transfers them to an underwriting affiliate.

⁴⁰ See *id.*

⁴¹ See *id.* at 9. If the assets are residential or commercial mortgage loans, they are called, respectively, residential mortgage-backed securities or commercial mortgage-backed securities. Home equity loan securitizations are by industry practice referred to as ABS. See Gelpern & Levitin, *supra* note 34, at 1080 n.13.

the receivables and put them beyond the reach of the creditors of the financial institution.”⁴² Yet receivables need to be managed. Billing statements must be mailed and payments collected. A third party thus must be brought in to manage the loans (the “servicer”).⁴³ The servicer is supposed to manage the loans for the benefit of the ABS holders.⁴⁴

Securitization thus separates the beneficial ownership of the loan from legal title to the loan and from the management of the loans. The SPV (or more specifically its trustee) holds legal title to the loans, passive ABS investors are the beneficial owners of the loans, and the servicers manage the loans as agents of the trust.⁴⁵ The servicer provides the critical link between borrowers and the SPV and ABS investors, and servicing arrangements are an essential part of securitization.⁴⁶

Securitization represents a division of economic interest in a firm (the securitization vehicle) from the governance of the firm (including its initial acquisition of assets and its management thereof). Securitization thus sets up another manifestation of what Professors Henry Hu and Bernard Black term the “empty voting” problem, which can lead to governance decisions that are not in the best interest of the economic owners of a firm.⁴⁷

Securitization can also result in either “lemons” or “cherries” problems. A lemons problem means that there is adverse selection of the assets that are securitized.⁴⁸ The securitization sponsor retains the low-risk assets and securitizes the high-risk ones. Lemons markets

⁴² See Gelpern & Levitin, *supra* note 34, at 1081–86.

⁴³ See Kurt Eggert, *Limiting Abuse and Opportunism by Mortgage Servicers*, 15 HOUSING POL’Y DEBATE 753, 754 (2004).

⁴⁴ See *id.* at 755.

⁴⁵ See FDIC MANUAL, *supra* note 14, at 9–10.

⁴⁶ See Eggert, *supra* note 43, at 754–55. The servicing of nonsecuritized loans may also be outsourced. There is little information about this market because it does not involve publicly available contracts and does not show up in standard data.

⁴⁷ See Henry T. C. Hu & Bernard Black, *Equity and Debt Decoupling and Empty Voting II: Importance and Extensions*, 156 U. PA. L. REV. 625, 633–35, 638, 640 (2008); Henry T. C. Hu & Bernard Black, *The New Vote Buying: Empty Voting and Hidden (Morphable) Ownership*, 79 S. CAL. L. REV. 811, 815, 828–30 (2006).

⁴⁸ See George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 492–99 (1970) (describing the “Lemons Principle” of the bad driving out the good in various contexts); see also Claire A. Hill, *Securitization: A Low-Cost Sweetener for Lemons*, 74 WASH. U. L.Q. 1061, 1086 (1996) (“The borrower . . . knows more about the firm than the lender . . . does, and has an incentive to exaggerate the firm’s quality. The lender knows this, and offers the borrower only a ‘lemons’ price based on her worst-case estimate.”).

should self-implode once buyers recognize that it is a lemons market, but do not necessarily do so immediately, as the mortgage bubble illustrated. A cherries problem is the inverse. The securitization sponsor cherry picks the low-risk, best assets for securitization and retains the high-risk assets, potentially increasing the risks for direct investors in the sponsor.⁴⁹

Whether securitization produces lemons or cherries is fundamentally a matter of market arbitrage between a first-party insurance market (retaining the assets) and a third-party insurance market (selling the assets). I use the term “insurance” here loosely, simply meaning the bearing of risk. For any particular set of receivables, the decision whether to securitize or retain on balance sheet is based on whether the cost of the “insurance” is lower on balance sheet or off balance sheet. This is not simply a matter of whether the securitization market is underpricing or overpricing risk, although that is a factor. It is also a matter of the idiosyncratic costs of retaining the assets on balance sheet.

B. Credit Card Securitization

Credit card receivables have historically been the second largest class of securitized assets behind home mortgages (including home equity loans and lines of credit). From 1989 until 2010, securitized credit card receivables were the largest non-mortgage category of ABS outstanding in what is presently an over \$600 billion market.⁵⁰ (See Figure 1, below.) Since the first credit card ABS deal in 1987, over \$1 trillion in credit card ABS have been issued in more than 1,600 issuances.⁵¹ (See Figure 2, below.)

At their peak level in 2003, over \$400 billion in credit card ABS were outstanding, representing slightly over half of the non-mortgage ABS market at the time.⁵² As of the first quarter of 2011, just over \$190 billion in credit card ABS are outstanding, representing a significant drop off between 2009 and 2011.⁵³

⁴⁹ See Hill, *supra* note 48, at 1092 n.141; Jonathan R. Macey & Geoffrey P. Miller, Review Essay, *Bank Failure: The Politicization of a Social Problem*, 45 STAN. L. REV. 289, 296–97 (1992).

⁵⁰ SEC. INDUS. & FIN. MKTS. ASS'N, US ABS tbl.2.1, (Jan. 8, 2013), available at <http://www.sifma.org/uploadedFiles/Research/Statistics/StatisticsFiles/SF-US-ABS-SIFMA.xls>.

⁵¹ *About the ABS Database*, ASSET-BACKED ALERT, http://www.abalert.com/about_abs.php (last visited Apr. 12, 2011).

⁵² SEC. INDUS. & FIN. MKTS. ASS'N, *supra* note 50 (graph excludes home equity and collateralized debt obligations).

⁵³ *Id.*

FIGURE 1. NON-MORTGAGE ABS OUTSTANDING BY TYPE, 1985-2010⁵⁴

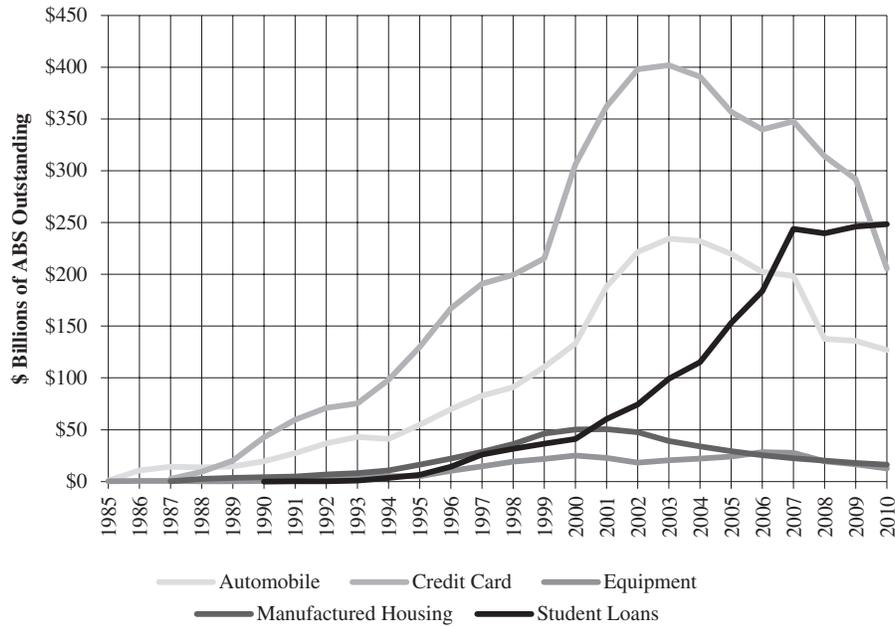
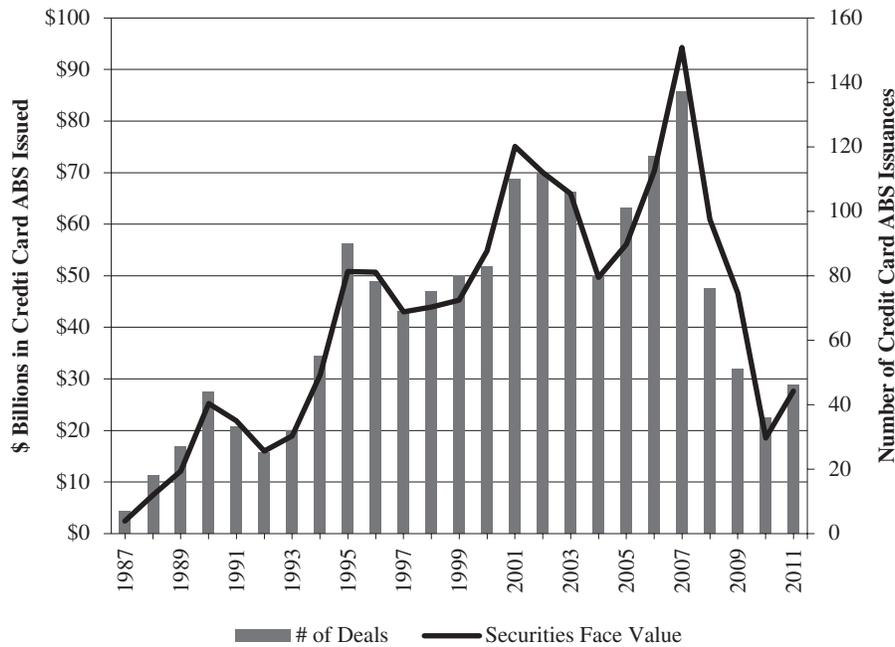


FIGURE 2. CREDIT CARD ABS ISSUANCE, 1987-2011⁵⁵



⁵⁴ *Id.* Beginning in 2011, the Securities Industry and Financial Market Association adopted a different methodology for calculating ABS outstanding.

⁵⁵ *About the ABS Database*, *supra* note 51.

1. *Nature of the Securitized Assets*

Credit card securitization is structured differently than mortgage (or auto loan) securitization because of the differences in the nature of the securitized assets. Credit card receivables have very short lives; they tend to be paid off within less than a year, far more quickly than a mortgage or auto loan.⁵⁶ Moreover, a credit card is a revolving line of credit with relatively little amortization required; minimum payments tend to be around 2% of the outstanding balance.⁵⁷ The cardholder will repeatedly draw down and repay on the line of credit, whereas most mortgages and auto loans are fully amortized installment loans.⁵⁸ Finally, as Fitch Ratings has noted, “Credit cards are unique among consumer loans, in that issuing entities have the ability to change terms on the underlying obligations rapidly and selectively.”⁵⁹ Thus, as Deutsche Bank has observed:

In the world of investing, credit card ABS are unique because credit card lending itself is unique. Unlike virtually any other consumer lender, a credit card company may, unilaterally, change the risk/reward relationship of its business at any time. For the most part a credit card lender can increase yield on its existing portfolio by changing the financing rate charged, as well as by changing late fees, overlimit fees, annual fees, all of which can be quite significant. The lender can reduce risk by closing accounts or preemptively lowering a cardholder’s credit line. Moreover, credit card companies conduct constant and automated surveillance of daily purchase activity (how much, how often, and where individual cardholders are spending money); a borrower’s activity with other lenders can also be monitored through regular updates from the various credit bureaus. Relative to any other type of consumer lender, the credit card lender in many ways has a better and more current understanding of a borrower’s creditworthiness, and greater flexibility to respond to changes as they occur.⁶⁰

⁵⁶ Potter, *supra* note 24, at 524 (“[Credit card] assets tend to have short maturities, but the securitization allows them to be financed with longer-term obligations.”); FITCH IBCA, ABCs OF CREDIT CARD ABS 3 (1998), <http://www.securitization.net/pdf/abcs.pdf>.

⁵⁷ See FITCHRATINGS, U.S. CREDIT CARD ABS RATING CRITERIA 2 (Mar. 10, 2008).

⁵⁸ See *id.* at 13.

⁵⁹ FITCHRATINGS, U.S. CREDIT CARD ABS RATING CRITERIA AND VALIDATION STUDY 2 (Aug. 1, 2006), http://www.securitization.net/pdf/Fitch/CreditCardABS_1Aug06.pdf.

⁶⁰ VINOD KOTHARI, SECURITIZATION: THE FINANCIAL INSTRUMENT OF THE FUTURE 388 (2006) (quoting DEUTSCHE BANK, THE ESSENTIAL GUIDE TO CREDIT CARD AS, BS, AND CS (2001)).

Credit card securitization involves the securitization solely of the receivables, not of the accounts themselves.⁶¹ The card issuer retains the account, which lets it retain the customer relationship and also the ability to change the terms of the account without the trust's permission.⁶² Because credit card securitization is only of the receivables, not the accounts, the servicer is always the card issuer that originated the loans, and which retains the on-going account relationship.

2. *Goals of Credit Card Securitization*

Credit card securitization is mainly done by a handful of very large and sophisticated financial institutions. While there have been securitizations done by dozens of issuers, a handful account for the vast majority of the ABS issuance market.⁶³ Most credit card issuers do not securitize their card receivables. While there are over 300 card issuing banks in the United States, the top ten issuers make up over 85% of the credit card market in terms of receivables outstanding,⁶⁴ and all ten of those issuers securitize at least some of their receivables.⁶⁵ (See Figure 3, below.)

⁶¹ FITCHRATINGS, *supra* note 57, at 18.

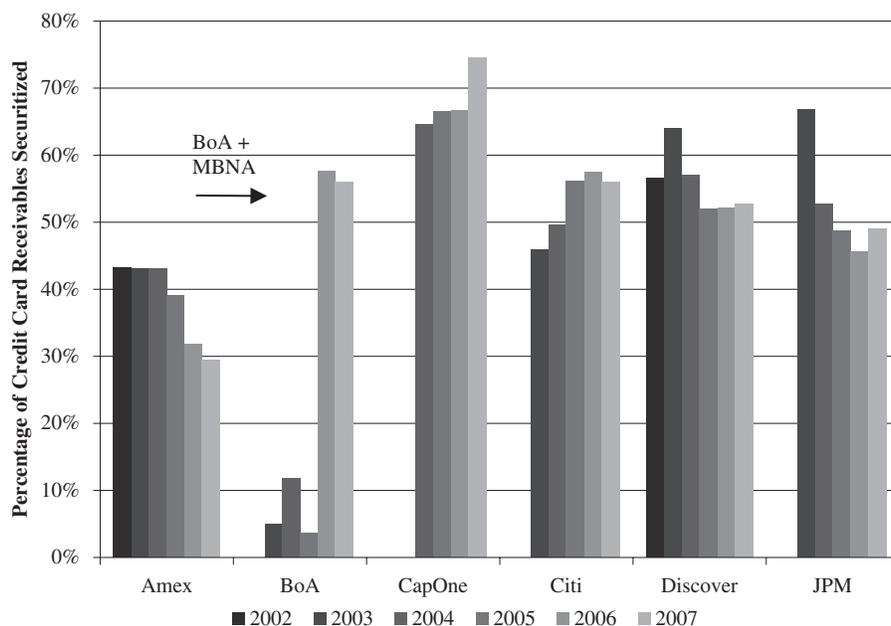
⁶² *See id.*

⁶³ *About the ABS Database*, *supra* note 51.

⁶⁴ *Top U.S. Credit Card Issuers*, 989 NILSON REPORT 1, 8 (2012).

⁶⁵ *See* Calomiris & Mason, *supra* note 25, at 1 (“Some banks financed the vast majority of the credit card receivables they originated with off-balance-sheet finance, while others . . . retained all of the receivables they originated, financing them with bank equity and debt as they would other types of bank loans.”).

FIGURE 3. PERCENTAGE OF CREDIT CARD RECEIVABLES SECURITIZED FOR TOP SIX CARD ISSUERS⁶⁶



Credit card securitization is primarily a funding, liquidity, and regulatory capital arbitrage mechanism for card issuers. While it does effectuate some shifting of credit and interest rate risk, that role is much less pronounced than in mortgage securitization.⁶⁷ Credit card issuers need reliable, inexpensive funding in order to make credit card loans. Securitization fills that need by enabling card issuers to tap capital markets for funding, rather than relying on deposits.⁶⁸ Securitization thus links capital market funders with consumer borrowers. Because structured securities enable ABS deal sponsors to tailor their offering to investor preferences and offer securities with pass-through tax status, financing via ABS may be cheaper than financing through corporate debt, where there is a double level of taxation.⁶⁹

⁶⁶ Bd. of Governors of the Fed. Reserve, Consolidated Financial Statements for Bank Holding Companies—FR Y-9C (Dec. 2007). To compile the data in this chart, the author reviewed each reporting institution's FR Y-9C or Consolidated Financial Statements for Bank Holding Companies, which was submitted to the Board of Governors of the Federal Reserve System. The forms are on file with the author. Because of the tremendous changes in the credit card market related to the financial crisis, the CARD Act, and changes in accounting standards, data in this chart is presented only through 2007.

⁶⁷ Calomiris & Mason, *supra* note 25, at 20–24.

⁶⁸ FDIC MANUAL, *supra* note 14, at 5.

⁶⁹ Credit card ABS can be treated as loans for tax purposes and as sales for accounting

Credit card securitization also provides steady liquidity for card issuers. Under the unique structure of credit card securitization, discussed in more detail *infra*, the principal repayments on receivables are used to purchase more receivables from the card issuer for the securitization trust.⁷⁰ This design means that there is a ready flow of liquidity to the card issuer, similar to a rolling series of securities issuances via shelf registration, rather than a lumpy burst of liquidity from individual securities offerings.⁷¹

Prior to 2010, securitization also moved credit card receivables off the balance sheets of card issuers, thus freeing the issuers from the regulatory requirement of maintaining minimum equity capital in proportion to their risk-weighted assets.⁷² As credit card receivables have 100% risk weighting,⁷³ they are particularly costly assets to keep on a balance sheet. By moving card receivables off their balance sheets, issuers were able to reduce their regulatory capital requirements, which enabled issuers to effectively increase their leverage and thus their return on equity.

A change in GAAP accounting rules that went into effect in 2010 brought most securitized credit card receivables back on banks' balance sheets.⁷⁴ Statements of Financial Accounting Standards 166 and 167 require on-balance-sheet treatment of assets over which a firm maintains control to affect their performance and for which a firm also maintains either (or both) upside and downside exposure.⁷⁵ As regulatory capital requirements key off of accounting rules, this meant that the regulatory capital arbitrage gains from credit card securitization disappeared, and banks had to bring billions of dollars of ABS back onto their balance sheets and hold regulatory capital and loan loss reserves against them.⁷⁶ Citigroup, for example, consolidated assets and liabilities worth about \$137 billion and \$146 billion, respectively, as a result of the accounting change, mostly from credit card securi-

purposes. Lee, *supra* note 24, at 113. This tax treatment allows card issuers "to deduct a portion of the money paid to investors as interest under [26 U.S.C. § 163 (2006)]." *Id.* at 125.

⁷⁰ See FITCH IBCA, *supra* note 56, at 3.

⁷¹ See FITCH RATINGS, *supra* note 57, at 13.

⁷² See FASB No. 166, *supra* note 38, at 1–3.

⁷³ Risk-Based Capital Guidelines, 12 C.F.R. pt. 3 app. A § 3(a)(4) (2012) (100% risk weighting as residual category).

⁷⁴ Matthew Jozoff, *Securitization Outlook*, SECURITIZED PRODUCTS WKLY. (J.P.Morgan, New York), Dec. 11, 2009, at 6.

⁷⁵ See FASB No. 166, *supra* note 38, at 1–3; FASB No. 167, *supra* note 38, at 1; Jozoff, *supra* note 74, at 9–10.

⁷⁶ See Risk-Based Capital Guidelines, 75 Fed. Reg. 4636 (Jan. 28, 2010) (codified in scattered sections of the C.F.R.).

tizations.⁷⁷ This resulted in Citigroup having to hold another \$800 million in regulatory capital and \$13.4 billion in loan loss reserves.⁷⁸ As we will see, the sponsor's liability for credit risk on securitized assets and not simply for representations and warranties is a fundamental feature of credit card securitization (but not mortgage securitization).

3. Master Trust Structure

Credit card securitization began in 1986—fifteen years after the start of modern mortgage securitization and nine years after the first private-label mortgage securitization deal⁷⁹—with a deal by Bank One.⁸⁰ Early credit card securitization deals were relatively similar to mortgage or auto loan securitizations in that a set of receivables were sold to a discrete or stand-alone common law trust that issued securities against them.⁸¹ After the receivables were paid off or charged off, the trust was shut down.

A stand-alone trust could issue securities tranching into a senior-subordinate structure, but every new series of securities required a new, separate pool of assets, and there could be considerable performance variation between trusts based on vintage and market conditions.⁸² These stand-alone, one-shot trusts were supplanted in 1991 with a new structure that was better suited to the short life of credit card receivables—the master trust.⁸³

⁷⁷ Citigroup, Inc. Q1 2010 Earnings Call Transcript, SEEKING ALPHA (Apr. 19, 2011), <http://seekingalpha.com/article/199564-citigroup-inc-q1-2010-earnings-call-transcript?page=2>.

⁷⁸ *Id.* The \$800 million figure is derived by applying the 8% standard regulatory capital requirement to “\$10 billion of additional risk weighted assets” cited in the call transcript. *See id.*

⁷⁹ *See* Bank of Am. Nat'l Trust & Sav. Ass'n, SEC No-Action Letter, 1977 SEC. No-Act. LEXIS 1343 (May 19, 1977) (first private-label mortgage securitization deal by Bank of America).

⁸⁰ Edward DeSear, *The Evolution of Credit Card Structures: Are They Flexible Enough for Today's Challenges?*, J. STRUCTURED FIN., Summer 2004, at 9, 9 [hereinafter DeSear, *The Evolution of Credit Card Structures*] (citing the first credit card securitization deal as a Bank One/Salomon Brothers deal in 1986). Other sources cite 1987 as the date of the first deal. FITCH IBCA, *supra* note 56, at 2. In another article, DeSear cites Bank of America as issuing the first credit card ABS. Edward M. DeSear, *Credit Card Structures and Their Ability to Weather Hard Times*, J. STRUCTURED FIN., Spring 2008, at 23, 23.

⁸¹ *See* DeSear, *The Evolution of Credit Card Structures*, *supra* note 80, at 10.

⁸² *See* FITCH IBCA, *supra* note 56, at 2–3.

⁸³ *Id.* More recent credit card securitization structures involve owner trusts, master owner trusts, or issuance trusts. These structures are used in part to ensure ERISA eligibility for more of their securities, *see infra* note 105, but also because they allow much greater flexibility in securities issuance by enabling the delinkage of seniority and maturity. As discussed below in more detail, credit card securitizations always use a senior-subordinate structure for their securities as a form of credit enhancement. *See infra* note 109 and accompanying text. Seniority, however, is relative. It is only a valuable status as a credit enhancement when there is a junior

The chief advantage of a master trust over a stand-alone owner trust is that the master trust structure enables the issuance of numerous series of securities at different times from one trust using an S-3 shelf registration statement.⁸⁴ All of these series of securities “rely on the same pool of receivables as collateral.”⁸⁵

Because a master trust allows for the repeated issuance of different securities against the same pool of receivables, it enables a cheaper and more efficient source of “evergreen” funding for issuers than stand-alone trusts.⁸⁶ When an issuer seeks more financing, it can convey more receivables to the trust’s pool and issue additional securities rather than having to set up a new securitization.⁸⁷ The cost of “issuing a new series from a master trust is lower than creating a new trust for every issue,” and the sunk costs of setting up the trust are amortized over repeated issuances.⁸⁸

From the investor standpoint, a master trust also has certain advantages. Master trust pools are “larger and not as subject to seasonal or demographic concentrations” in the same way a stand-alone trust is.⁸⁹ Thus, a master trust might have credit card receivables from 2008, 2009, and 2010, whereas stand-alone trusts would only have receivables from one of those years.⁹⁰ There is an accompanying risk, however, for investors—the makeup of a master trust’s assets may change significantly over time as new receivables are added and as the cardholder base for those receivables changes.⁹¹

position. If a junior position tranche matures before a senior tranche, the senior tranche loses its credit support. Yet it might well be advantageous to a sponsor to have a trust issue shorter-term subordinated notes with maturities that do not match the senior tranches.

One solution to the maturity and subordination mismatch is to use what is known as a “TRAP”—a “titanium rapid accumulation of principal.” MARY E. KANE, CITIGROUP INC., CREDIT CARD ABS PRIMER 19 (2004). The reason for the name is unclear, but a TRAP is a defeasance device that permits the substitution of cash collateral for a subordinated tranche. *Id.* If the subordinated tranche pays off before the senior tranches, the trust may substitute a cash account for the subordinate tranche to continue to provide equivalent subordination support for the senior tranches. *See id.* at 19–21. “Trapping” enables the delinked issuance of senior and junior tranches with different maturities, thereby giving the trust (and sponsor) tremendous flexibility regarding issuance so as to capitalize on market demand. *See id.*

⁸⁴ FITCH IBCA, *supra* note 56, at 2–3.

⁸⁵ *Id.* at 2.

⁸⁶ *See id.* at 3.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *See id.* at 2–3.

⁹¹ Typically, rating agencies must approve major changes to the pool. Twenty percent annual and fifteen percent quarterly triggers are common. *See FITCH RATINGS, supra* note 57, at 15, 25–26.

4. *The Seller's Vertical Interest and Excess Spread*

A critical difference between a credit card securitization and an auto loan or mortgage securitization is that all credit card securitizations require what is known as a “seller’s interest,” a “seller’s participation,” a “transferor’s interest,” or the “notional amount.”⁹² The seller’s interest is an untranching, undivided “vertical” slice, or participation, of the securitization trust owned by the card issuer.⁹³ The seller’s interest ranks *pari passu* with the “investors’ interest” vertical slice of the trust.⁹⁴ The seller’s interest, however, “is allocated all dilutions (balances canceled due to returned goods) and fraudulently generated receivables.”⁹⁵ Most credit card ABS deals mandate a minimum 7% seller’s interest,⁹⁶ although sometimes it is as low as 4%.⁹⁷

The seller’s interest is a device designed to align the interests of the card issuer with the ABS investors.⁹⁸ By itself, it would perform that function. The seller’s interest, however, is not the only interest the card issuer has in the securitization trust. It also retains the “excess spread”—essentially the residual interest in the trust.⁹⁹ Excess spread—sometimes referred to as “credit enhancing, interest-only securities” (“CEIOS”)—is the monthly revenue that is left over after all payments to investors (including the seller’s interest) and the servicing fee have been paid.¹⁰⁰ Thus, if a trust has assets that yield 20% but experience a 3% default rate, and the trust has issued ABS with a 10% coupon and pays a 2% servicing fee, the excess spread is 5%.

Credit card ABS require the maintenance of a minimum level of excess spread.¹⁰¹ Mandatory excess spread levels are one of the primary credit enhancements used for credit card securitization.¹⁰² Re-

⁹² See FITCH IBCA, *supra* note 56, at 3; FDIC MANUAL, *supra* note 14, at 11.

⁹³ See FITCH IBCA, *supra* note 56, at 3; FDIC MANUAL, *supra* note 14, at 11.

⁹⁴ See FDIC MANUAL, *supra* note 14, at 11.

⁹⁵ FITCH IBCA, *supra* note 56, at 3.

⁹⁶ See *id.*

⁹⁷ See FITCH RATINGS, *supra* note 57, at 14 (noting that the requirement is “often in the range of 4%–7%”); see also Chase Issuance Trust, Prospectus (Form 424B3) 71, 91 (Feb. 1, 2011), available at <http://www.sec.gov/Archives/edgar/data/869090/000119312511020189/d424b3.htm> (defining early amortization as including the “Transferor Amount” going beneath the “Required Transferor Amount Percentage,” set at 4%).

⁹⁸ FITCH IBCA, *supra* note 56, at 3.

⁹⁹ See FDIC MANUAL, *supra* note 14, at 39–40.

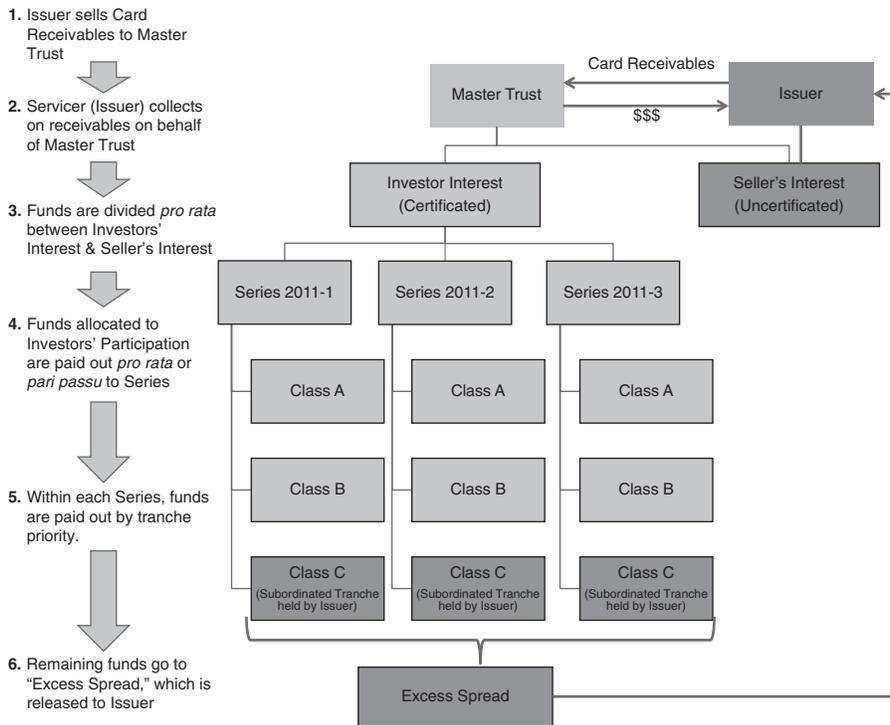
¹⁰⁰ See *id.*

¹⁰¹ See *id.* This requirement is not statutory, but instead seems to derive from rating agency requirements.

¹⁰² See *id.*

quiring excess spread ensures that there is more revenue coming into the trust than is needed to pay its obligations.¹⁰³ As we will see, excess spread and seller's interest interact in ways that reduce the effectiveness of the seller's interest in aligning incentives. Figure 4 shows the master trust securitization structure.

FIGURE 4. CASH FLOWS IN A MASTER TRUST SECURITIZATION STRUCTURE



5. Credit Enhancements

Excess spread is only one of several varieties of credit enhancements, many of which are commonly found in the same credit card ABS trust structure. These credit enhancements are critical for the deal because most credit card ABS investors want to invest only in investment grade (or ideally AAA-rated) securities.¹⁰⁴ Many large institutional investors are restricted to investing only in so-called ER-

¹⁰³ See *id.*

¹⁰⁴ See FITCH IBCA, *supra* note 56, at 6 (explaining that in severe depression scenarios, properly structured "AAA" ratings "should repay investors 100% of their original investment plus interest).

ISA-eligible securities, which means debt securities have received an investment-grade rating.¹⁰⁵

¹⁰⁵ Recent credit card securitization trust structures have increased in complexity. Changes in accounting standards in 1996 enabled credit card securitizations to treat the securities they issued as debt (notes) for tax purposes, but as a sale of receivables for accounting purposes. See DeSear, *The Evolution of Credit Card Structures*, *supra* note 80, at 11 (noting the effect of SFAS 125, replaced in 2000 with SFAS 140). This enabled credit card securitizations to retain favorable, off-balance-sheet accounting treatment, while also expanding their range of potential buyers to include ERISA-qualified pension plans and some foreign buyers. *Id.* The result has been the creation of more elaborate structures such as issuance trusts and master owner trusts. See *id.* at 11–12.

Under the U.S. Department of Labor's Plan Asset Regulations under the Employee Retirement Income Security Act (ERISA) of 1974, 29 U.S.C. ch. 18 (2006), if an ERISA-qualified benefit plan owns 25% or more of the equity in an entity, then all of the assets of the entity are generally deemed to be "plan assets," which subjects it *and other investors in the entity* to ERISA and Internal Revenue Code fiduciary responsibility and prohibited transaction rules. See 29 C.F.R. § 2510.3-101(a), (f), (j) (2012). (Prior to the Pension Protection Act of 2006, the 25% test also included public and foreign benefit plans. See The Pension Protection Act of 2006, Pub. L. No. 109-280, § 611(f), 120 Stat. 780, 972.) ERISA plan fiduciaries that cause a "party in interest" to engage in a "prohibited transaction" with a plan are subject to a punitive excise tax. 29 U.S.C. §§ 1106(a), 4975(a)–(b) (2006). Among these prohibited transactions are the "lending of money or other extension of credit between the plan and a party in interest," *Id.* § 1106(a)(1)(B), with "party in interest" being very broadly defined, see *id.* § 1002(14). These relationships are virtually impossible to determine in the case of an ABS issuance. Because of the risk of ERISA liability, investors do not want ERISA-qualified plans to hold equity in their investments, absent a regulatory exemption. The Department of Labor has issued numerous individual exemptions ("ABS Underwriter Exemptions") to this 25% rule, including three specifically for credit card ABS. See Fleet Bank (R.I.) Nat'l Ass'n (Fleet), 64 Fed. Reg. 53,737, 53,737–38 (Dep't of Labor Oct. 4, 1999); Citibank (SD), N.A., 63 Fed. Reg. 17,027, 17,027–29 (Dep't of Labor Apr. 7, 1998); MBNA Am. Bank, Nat'l Ass'n, 63 Fed. Reg. 17,020, 17,021–22 (Dep't of Labor Apr. 7, 1998).

The ABS Underwriter Exemptions require, *inter alia*, that to be exempt, the certificates acquired by an ERISA plan have one of the two highest generic rating categories from a credit rating agency (AAA or AA); that the certificates not be subordinated to other series issued by the ABS trust; and that the certificates have at least 5% credit support via subordination. See, e.g., Fleet Bank (R.I.) Nat'l Ass'n (Fleet), 64 Fed. Reg. at 53,737–38; Citibank (SD), N.A., 63 Fed. Reg. at 17,027–29; MBNA Am. Bank, Nat'l Ass'n, 63 Fed. Reg. at 17,021–22. This situation complicates efforts to sell the residual tranche of a securitization.

One solution is to use a "note issuance trust" structure. See Lee, *supra* note 24, at 123–24. This structure, enabled by 2001 changes to GAAP that permit sale treatment of securitization transactions where SPVs issue notes rather than "certificates," involves two trusts. *Id.* First, a master trust issues not only its regular series, but also a junior series represented by a collateral certificate (or a "collateral invested amount" ("CIA")) that is equivalent to a series. See FITCH RATINGS, *supra* note 57, at 15–16. That collateral certificate is placed into a second trust that issues notes against the cashflows from the collateral certificate. See *id.* The second trust's notes are not backed by the receivables directly, but by the collateral certificate (a participation in the receivables), so these notes qualify as *debt* for ERISA purposes because they are not a direct, undivided beneficial interest in an underlying pool of receivables. See 29 C.F.R. § 2510.3-101(b) (defining "equity interest" as "any interest in an entity other than an instrument that is treated as indebtedness under applicable local law and which has no substantial equity features"); FITCH RATINGS, *supra* note 57, at 15–16. The notes represent a fixed obligation to pay a fixed amount, rather than a pass-through certificate. The result is that the lowest tranche is fully-

Credit card receivables by themselves would be unlikely to produce an investment grade rating.¹⁰⁶ They are simply unsecured consumer debt.¹⁰⁷ With the various credit enhancements that are common in structured financial products, however, risky, unsecured consumer debt can be transformed into AAA-rated securities.¹⁰⁸ Beyond requiring the maintenance of a minimum level of excess spread, a variety of other credit enhancements are frequently used for credit card ABS.

First and foremost is contractual subordination among investors. This can be subordination between series or subordination of classes via a senior-subordinate tranching.¹⁰⁹ A common structure for credit card trusts is to have an A, a B, and a C tranche, with a seller-retained excess spread (“XS”) tranche junior to them.¹¹⁰

Credit support via subordination can be increased by the issuance of additional junior debt. For example, in 2008–2009, major card issuers had their securitization trusts issue new subordinated debt, which the issuers then purchased in order to provide more credit support to the existing ABS investors, so as to maintain investor confidence in the asset class during the financial crisis as card defaults mounted.¹¹¹

A second common credit enhancement is overcollateralization. The trust can be funded with receivables whose principal balance is greater than that owed on the ABS.¹¹² Overcollateralization provides a cushion against cardholder defaults by ensuring that the post-default collections will be sufficient for the trust to pay on the ABS.¹¹³

Credit card ABS also sometimes use a cash collateral account (“CCA”) as a credit enhancement.¹¹⁴ A CCA is a separate, pre-funded cash account that can cover shortfalls in net yield over coupon and servicing fee.¹¹⁵ The CCA is often funded (for a fee) by a third party bank that only gets paid back once all other certificates are re-

transferrable without ERISA fiduciary liability issues. The issuance trust structure also adds greater overall flexibility, as it can issue additional subordinate series without issuing additional senior series or vice-versa. *See* Lee, *supra* note 24, at 123–24.

¹⁰⁶ FITCH IBCA, *supra* note 56, at 5.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ FITCHRATINGS, *supra* note 57, at 10.

¹¹⁰ *See id.*

¹¹¹ Saskia Scholtes & Francesco Guerrero, *Record US Credit Card Losses Force Banks to Prop Up Loans*, FIN. TIMES, June 25, 2009, at 24.

¹¹² FITCHRATINGS, *supra* note 59, at 10.

¹¹³ *See id.*

¹¹⁴ *Id.* at 11.

¹¹⁵ *See id.*

paid.¹¹⁶ Historically, letters of credit were used for the same purpose, but they did not offer as much protection as a pre-funded account, since they included the credit risk of a third-party.¹¹⁷

Other credit enhancement devices are the “collateral invested amount” (“CIA”) (also known as the “CA investor interest,” the “collateral interest,” the “enhancement invested amount,” or the “C’ tranche”)¹¹⁸ and the triggered diversion of excess spread. The CIA is a subordinated, “uncertificated, privately placed ownership interest in the trust.”¹¹⁹ The CIA is junior to all investor certificates, but senior to the XS tranche, so it has no guaranteed subordination support (as there need not be any excess spread in a particular month), but it is paid before any funds trickle down into the excess spread account.¹²⁰ Should “excess spread drop below [certain] defined levels,” then the trust may be required to “fund a cash reserve account.”¹²¹ This triggered diversion of excess spread allows the CIA tranche to build up some protection when risk levels increase. As excess spread declines, however, it takes more time to fill up the cash reserve.¹²² The CIA is essentially a penultimate, credit-enhancing tranche senior to the excess spread tranche that serves as an additional buffer against loss for the more senior ABS.

Finally, in master trust structures there can be shifting internal credit support between series of securities. A master trust may be, depending on how the trust structure apportions collections and shortfalls, “socialist” or “nonsocialist.”¹²³ In a nonsocialist trust, payments and shortfalls are “allocate[d] based on each series’ pro rata share” of face amount outstanding.¹²⁴ In a socialist master trust, collections and shortfalls are allocated across the securities issued by the trust “based on the combined needs of” the securities.¹²⁵ Thus, in a socialist trust, each security provides some potential credit support for the trust’s other securities.

¹¹⁶ *See id.*

¹¹⁷ FITCH IBCA, *supra* note 56, at 6.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *See id.*

¹²¹ KANE, *supra* note 83, at 17; *see also* FITCH RATINGS, *supra* note 59, at 10.

¹²² KANE, *supra* note 83, at 17.

¹²³ FITCH RATINGS, *supra* note 59, at 11. Sometimes these are referred to as “socialized” and “nonsocialized” trusts.

¹²⁴ *Id.*

¹²⁵ *Id.*

Nonsocialist trusts are the more common form. Some of the largest card issuers, however, use socialist trusts.¹²⁶ A socialist master trust has the benefit of being able to support higher coupon rates because of its ability to shift collections between series, but an early amortization event, —essentially a default by the trust, as discussed below¹²⁷—will apply to all series of securities issued by a socialist trust, whereas early amortization could be limited to one series in a nonsocialist trust.¹²⁸

6. *Structuring for Short-Duration Assets*

Credit enhancements play an important role in credit card ABS, as they do in other classes of structured financial products. What makes credit card ABS unique is that they involve the securitization of extremely short duration assets.¹²⁹ The nature of the assets involved necessitates a peculiar design for credit card ABS that in turn makes the requirement of maintaining sufficient excess spread particularly important to investors.

Credit card securitization master trusts are designed to issue securities that mimic the payment structure of a traditional bond, in which monthly interest payments are followed by a “bullet” payment of principal at the maturity date.¹³⁰ While this structure largely removes prepayment (convexity) risk—aside from that associated with “early amortization,” a prepayment triggered by a credit event—credit card ABS do not have a fixed maturity date; they merely have an “expected” maturity date.¹³¹

The average life of credit card receivables is quite short relative to other assets, but it is also unpredictable within a substantial range (six to twelve months).¹³² If credit card ABS were merely pass-through securities, in which investors would receive payments on their securities as payments were received by the trust on the receivables, the result would be quick, but unpredictable and often lumpy repayments—exactly what fixed-income investors do *not* want.¹³³ Instead, investors want longer and more predictable repayments.¹³⁴

¹²⁶ KANE, *supra* note 83, at 19.

¹²⁷ See *infra* Part I.B.7.

¹²⁸ FITCHRATINGS, *supra* note 59, at 11; KANE, *supra* note 83, at 13.

¹²⁹ See *supra* note 56 and accompanying text.

¹³⁰ FITCH IBCA, *supra* note 56, at 3.

¹³¹ See FITCHRATINGS, *supra* note 59, at 12.

¹³² See FITCH IBCA, *supra* note 56, at 3.

¹³³ See *id.*

¹³⁴ See *id.*

The challenge for credit card ABS structuring is to match the duration of the receivables with that of the ABS. In order to transform short-duration credit card receivables into longer-duration bonds, credit card ABS channel cash flows on the receivables in different ways during different periods of an ABS's lifetime to create artificially delayed amortization.¹³⁵ Credit card ABS initially apply principal payments of receivables to acquire more receivables, while interest payments on the receivables cover interest payments on the ABS.¹³⁶ Then, after a fixed period of time, the ABS are amortized on a fixed schedule.¹³⁷

Credit card ABS begin with a “revolving” period, which covers an initial set period of a credit card ABS's lifetime, typically two to eleven years.¹³⁸ At this stage, only payments of interest are made to investors.¹³⁹ All of the receivables the trust manages to collect are divided into “finance charge income and principal payments.”¹⁴⁰ The portion of the receivables that represents finance charges (interest and fees) is used to cover investors' monthly interest coupons, the issuer's fee for servicing the receivables, and any credit losses from charge-offs.¹⁴¹ Remaining funds from finance charges represent excess spread, which is released to the issuer.¹⁴² The portion of the receivables that represents principal, however, is used by the trust to acquire more card receivables.¹⁴³ Should there be insufficient receivables that can be purchased, the seller's interest is bought down until the funds for reinvestment are exhausted or the seller's interest becomes so low that it trips an early amortization trigger.¹⁴⁴ This early amortization risk “gives the seller adequate incentive to maintain the seller's participation at a level well above the [mandated] minimum [percentage].”¹⁴⁵

Following the revolving period, the master trust enters into either a “controlled amortization” or “controlled accumulation” period.¹⁴⁶

¹³⁵ *See id.*

¹³⁶ *See id.* at 3–4.

¹³⁷ *See id.*

¹³⁸ *Id.*

¹³⁹ *Id.* at 4.

¹⁴⁰ *Id.* at 3.

¹⁴¹ *Id.*

¹⁴² *Id.* Sometimes excess spread is trapped for a few months before being released, as a credit enhancement. *See* FITCH RATINGS, *supra* note 59, at 10.

¹⁴³ *See* FITCH IBCA, *supra* note 56, at 3.

¹⁴⁴ *Id.* at 3–4.

¹⁴⁵ *Id.* at 4.

¹⁴⁶ *Id.*

When controlled amortization is used, the principal balance on the ABS is usually paid off in twelve monthly payments using principal collections from the receivables.¹⁴⁷ Controlled accumulation also amortizes the principal over a relatively short period, but instead of principal repayment being made to investors on a monthly basis, payments are put into a sinking fund (called a principal funding account) until the targeted maturity date is reached, at which point they are released as a balloon payment of principal.¹⁴⁸ In controlled accumulation, interest payments on the ABS remain unchanged during the controlled accumulation period, as the principal has not been paid down; however, for controlled amortization, monthly interest payments are reduced as the principal is reduced.¹⁴⁹ As controlled amortization proceeds, the investors' interest declines and the sellers' interest increases until the investors' interest is paid off.¹⁵⁰

7. *Asset Substitution Risk and Early Amortization*

The short duration of credit card receivables combined with the revolving period structure of credit card ABS provide credit card ABS investors with an ability to limit their risk that is not available to other types of ABS or mortgage-backed securities ("MBS") investors. Other types of ABS and MBS are funded with a set of receivables upon their creation and are stuck with this set of receivables.¹⁵¹ Because the receivables are fixed, there is no risk of asset substitution, but there is also no chance for the investors to bail if there are asset-class-wide problems, other than by selling the ABS or MBS.

Credit card ABS investors, in contrast, face a built-in asset substitution risk, as the trust is buying more card receivables during the revolving period.¹⁵² Thus, the quality of the assets held by the trust can decline over time. The credit card ABS investors, however, are not without protection from degradation in asset quality through asset substitution. If the assets do not perform up to certain defined thresholds or other risk factors emerge, the revolving period terminates and the trust instead moves into an accelerated amortization of the outstanding ABS.¹⁵³ Instead of the "principal" portion of payments on the card receivables being used to buy new receivables, all payments

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *See id.*

¹⁵⁰ *See id.*

¹⁵¹ *See supra* Part I.B.3.

¹⁵² *See* FITCH IBCA, *supra* note 56, at 3.

¹⁵³ *See id.* at 3-5.

received by the trust are directed to the payment of the ABS according to seniority of the investors' classes in the cashflow waterfall, with the seller's interest in the most junior position.¹⁵⁴

This process is called "early amortization," and is perhaps the most critical investor protection in credit card ABS.¹⁵⁵ Early amortization is designed to shield investors from prolonged exposures to declining credit quality, either of the receivables or related to the issuer.¹⁵⁶ In this regard, early amortization rights function somewhat like a put option for the ABS investors.¹⁵⁷

Early amortization triggers can be from breaches of various covenants by the card issuer acting in either in its seller or servicer role. These include the "failure . . . to transfer receivables to the trust" or remit payments received, failure to cure misrepresentations, and assorted insolvency/bankruptcy/cross-default triggers.¹⁵⁸ Early amortization triggers also include the classification of the trust as an "investment company" under the Investment Company Act of 1940" (subjecting the trust to a more intense securities regulation regime).¹⁵⁹

Three early amortization triggers are based on the performance of the trust's assets. First, early amortization occurs if the seller's interest dips below a mandated minimum, which would happen if the seller stopped producing receivables and the trust instead bought down the seller's interest.¹⁶⁰ In such a case, early amortization would reflect the risk to credit card ABS investors from the cessation of the issuer doing new business; credit card debt is hard to collect when cardholders are not looking for future credit from an issuer.¹⁶¹

¹⁵⁴ *See id.*

¹⁵⁵ *See id.* at 4.

¹⁵⁶ *See id.* at 4–5.

¹⁵⁷ Depending on the trigger for the early amortization, it could also shift losses from the investors to the card issuer. Some early amortization events would involve the cessation of the card issuer's business, but in other cases, the card issuer is still doing business, but incurring loss levels that trigger the early amortization. *See id.* at 5. If the early amortization is triggered by an event such that the card issuer is still operating, then the card issuer would still be bound by its contractual obligations to maintain the size of the pool and its seller's interest. Accordingly, with early amortization, the seller's interest in the pool grows as a percentage, while the investors' interest declines, shifting losses to the seller. *See id.* at 4–5. It is not clear how this works in practice, however, as the remedy for failing to maintain the seller's interest or minimum pool size is early amortization. *See id.*

¹⁵⁸ *Id.* at 5.

¹⁵⁹ *Id.*

¹⁶⁰ *See id.* at 3–5.

¹⁶¹ *See id.*

Second, early amortization is triggered if the “principal balance [in the trust] falls below the invested amount.”¹⁶² The requirement of a minimum pool balance is meant to protect investors from being undercollateralized, as receivables are paid off and the pool balance shrinks.¹⁶³

Finally, and most critically, early amortization is triggered if the “[t]hree-month average of excess spread falls below zero,”¹⁶⁴ meaning that credit losses to the trust have been so severe that there has been on average no cash flowing to the residual tranche for three months.¹⁶⁵ Some securitizations permit the trust to count “principal collections as finance charge collections,” however.¹⁶⁶ This “discount option” thus increases the excess spread and reduces the likelihood of early amortization.¹⁶⁷

Likewise, a card issuer can stave off early amortization by selling receivables to the trust at a deeper discount—this brings in more receivables and more spread to the trust, but the cost of the deeper discount is borne by the card issuer. Moreover, too much of a discount puts the true sale in question. In part to protect against this, rating agency approval is often needed for adding accounts beyond a certain level.¹⁶⁸

Not surprisingly, early amortization is rare for credit cards.¹⁶⁹ It has, however, occurred with several banks’ credit card ABS: Advanta,

¹⁶² *Id.* at 5; see, e.g., also Chase Issuance Trust, *supra* note 97.

¹⁶³ See FITCH IBCA, *supra* note 56, at 2–5.

¹⁶⁴ *Id.* at 5.

¹⁶⁵ Excess spread going to the residual holder can fall below zero because of limited contribution requirements in socialist trusts.

¹⁶⁶ FITCH IBCA, *supra* note 56, at 9.

¹⁶⁷ See *id.*; FITCHRATINGS, *supra* note 57, at 11–12.

¹⁶⁸ FITCHRATINGS, *supra* note 57, at 25–26.

¹⁶⁹ See *id.* at 24. But for the accounting change under SFAS 166 and 167, bank regulatory capital rules would create a further disincentive for even approaching early amortization. The Basel II capital accord, implemented in the United States beginning in 2008, subjects banks to increasing regulatory capital requirements for off-balance-sheet securitizations as early amortization triggers approach, ultimately requiring the bank to hold regulatory capital as if the securitized receivables were still on balance sheet. See BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS ¶ 82 (2006) [hereinafter BASEL II] (definition of credit conversion factor); *id.* ¶¶ 548–50 (definitions); *id.* ¶ 567 (credit conversion factors for securitization); *id.* ¶¶ 590–604 (mechanics of early amortization capital requirements). The Basel II risk-weighting and credit conversion factor provisions have been retained as part of Basel III. See BASEL COMM. ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS ¶¶ 162–64 (2011); see also *Int’l Regulatory Framework for Banks (Basel III)*, BANK FOR INT’L SETTLEMENTS, <http://www.bis.org/bcbs/basel3.htm> (last visited Jan. 10, 2013) (noting the “documents that form the global regulatory framework for capital and liquidity (Basel II, Basel

Chevy Chase FSB, Conseco, Spiegel, RepublicBank (Delaware), Southeast Bank, Next Card, Providian National Bank, and First Consumers National Bank.¹⁷⁰ Washington Mutual's Master Note Trust would have incurred an early amortization event in 2008, but for JPMorgan Chase's purchase of Washington Mutual's operating assets and its insertion of its higher quality card receivables to the trust.¹⁷¹ Sometimes the trigger has been a decline in excess spread (e.g., Advanta), but more often it has related to the condition of the card issuer itself, either because of a ratings downgrade (e.g., Providian), bankruptcy (e.g., Conseco), or FDIC receivership (e.g., Next Card).¹⁷²

Early amortization also provides a major protection for investors because it alters the allocation between the seller's interest and the investors' interest. Normally, principal and interest payments are allocated pro rata between the seller's and investors' interests.¹⁷³ When early amortization occurs, the investors' interest, but not the seller's, becomes "fixed" based on the amount of their interest when early amortization began.¹⁷⁴ This has the effect of increasing the percentage of payments allocated to investors even as their actual share of the trust declines.¹⁷⁵

When early amortization happens, however, it can actually increase the risk for ABS investors. Early amortization puts huge liquidity strains on the seller, which must find a new funding source to finance the new purchases on the cards it has issued.¹⁷⁶ If the seller cannot find a new financing source, it will have to cut credit limits and close accounts.¹⁷⁷ The likely result is that the pool balance covenant

2.5 and Basel III)"). Given that most credit card securitizations have come on balance sheet as of January 1, 2010, under SFAS 166 and 167, *see supra* notes 74–76 and accompanying text, it would appear that the Basel II requirements do not apply.

¹⁷⁰ FITCHRATINGS, *supra* note 57, at 24; JPMORGAN, BANK CREDIT CARD ABS 88 (2002), http://www.securitization.net/pdf/jp_bank_092502.pdf (detailing the Providian early amortization); Jeff Blumenthal, *Advanta Puts Credit Cards on Hold*, PHILA. BUS. J., May 12, 2009; Calomiris & Mason, *supra* note 25, at 8–9.

¹⁷¹ *See WaMu's Buyout by JPMorgan Prevents Early Am Event*, ASSET SECURITIZATION REPORT (Sept. 29, 2008), <http://www.structuredfinancenews.com/news/186024-1.html>; Scholtes & Guerrero, *supra* note 111.

¹⁷² *See* FITCHRATINGS, *supra* note 57, at 24; JPMORGAN, *supra* note 170, at 88; Calomiris & Mason, *supra* note 25, at 8–9.

¹⁷³ KANE, *supra* note 83, at 16; Letter from Ronald Reed, Vice President of Treasury Operations, Alliance Data Sys. Corp., to the Dep't of Treasury 7 (July 29, 2011).

¹⁷⁴ KANE, *supra* note 83, at 16; *see* Letter from Ronald Reed, Vice President of Treasury Operations, Alliance Data Sys. Corp., to the Dep't of Treasury, *supra* note 173, at 7.

¹⁷⁵ *See* KANE, *supra* note 83, at 16.

¹⁷⁶ *Id.* at 6.

¹⁷⁷ *See id.*

for the trust will be breached, and those accounts that are transferred will likely be of lower quality, as high quality accounts are likely to switch issuers.¹⁷⁸ Thus, although early amortization is designed as an investor protection, it creates potential adverse selection problems that can undercut its effectiveness.¹⁷⁹

II. AN OPTION-PRICING EXPLANATION OF RATE-JACKING

A. *Rate-Jacking*

Rate-jacking provides a window into the incentives created by skin-in-the-game arrangements in credit card securitization. Rate-jacking occurs when a credit card issuer suddenly raises the interest rates or fees on an account.¹⁸⁰ These new rates and fees are often applied retroactively to existing balances.¹⁸¹

Rate-jacking functions as a re-underwriting of a revolving line of credit without the borrower's concurrent consent to the new terms.¹⁸² It can be triggered by contractually specified conditions, such as a payment default, but typically the ability to increase rates has been simply reserved to the discretion of the card issuer as part of its right to unilaterally change the account terms "at any time, [for] any reason."¹⁸³ Rate-jacking could thus be triggered by perceived changes in a particular cardholder's risk profile or for reasons related to the overall portfolio management and liquidity needs of the card issuer.¹⁸⁴

The Credit CARD Act severely curtailed card issuers' ability to rate-jack consumer cardholders.¹⁸⁵ Rate-jacking may "largely be a

¹⁷⁸ See *id.*

¹⁷⁹ *Id.*; see also *Adverse Selection in Credit Card Master Trusts*, U.S. STRUCTURED FIN. NEWSL. (DBRS/Toronto, Ont.), July 13, 2009, at 7 (discussing the "risk stemming from adverse selection" following early amortization).

¹⁸⁰ See, e.g., Whitehouse, *supra* note 12; Griffin & Johnston, *supra* note 12. On rate-jacking generally, see Levitin, *supra* note 12.

¹⁸¹ Levitin, *supra* note 12, at 339.

¹⁸² *Id.* Rate-jacking has been generally prohibited for consumer credit cards under the Credit CARD Act. For an in-depth discussion of the Act, see *supra* note 19.

¹⁸³ See Griffin & Johnston, *supra* note 12 (quoting U.S. Rep. Carolyn Maloney).

¹⁸⁴ Rate-jacking can also be accomplished by raising minimum payment requirements. See Complaint at 2, *In re Chase Bank USA, N.A. "Check Loan" Contract Litigation*, No. M:09-cv-02032-MMC (N.D. Cal. 2009). An increase of a minimum payment from 2% to 5% on a \$10,000 balance with a 12% APR is equivalent in terms of its initial impact on monthly payments to keeping the minimum payment at 2% and raising the APR to 1,830%. In the Chase Check Loan litigation, it was alleged that Chase increased minimum payments on a subgroup of cardholders that enjoyed very low interest rates under "promotional" balance transfers in order to force the consumers to give up below-market teaser rates. See *id.* at 5-9.

¹⁸⁵ See *supra* note 19. Rate-jacking is still possible for business or professional cards. 15 U.S.C. § 1603(1) (2006) (exempting from coverage "[c]redit transactions involving extensions of

practice of the past for consumers,” but there are still questions about why it became so widespread among credit card issuers.¹⁸⁶ Rate-jacking was clearly profitable for the card industry, as card issuers would not otherwise have used it.¹⁸⁷ Rate-jacking permitted “card issuers to respond to the dynamic nature of consumer credit risk and interest rate risk.”¹⁸⁸ It also allowed them to exploit the lock-in of consumers to cards.¹⁸⁹ Transaction costs arise from switching card accounts, and rate-jacking enabled card issuers to garner supercompensatory profits because of the lock-in.¹⁹⁰ Moreover, rate-jacking enabled card issuers to take advantage of consumers’ underestimations of their own future risk.¹⁹¹ These consumers “might have taken out a card based on the low rate initially offered, only to find themselves rate-jacked to a much higher rate than anticipated after they were locked in[,] . . . thus let[ting] card issuers maximize returns in less-than-perfect markets.”¹⁹²

Rate-jacking had costs, however. Higher interest rates and fees forced some cardholders into default and caused others to pay off and close their accounts.¹⁹³ “Elevated defaults and payoffs offset, at least in part, the gains from rate-jacking.”¹⁹⁴ There were also, at least in theory, reputational costs to aggressive rate-jacking, as well as litigation risk, transaction costs, and as the passage of the Credit CARD Act made clear, severe regulatory costs.¹⁹⁵

In any case, the gains from rate-jacking must have offset the costs (other than the regularly costs) or else it would not have become a near universal practice in the credit card industry.¹⁹⁶ The following Section of this Article presents a theory that securitization of credit card debt may have played a role in incentivizing card issuers to rate-jack. This Article makes no claim to prove the connection between rate-jacking and securitization. Sufficient data are simply not availa-

credit primarily for business, commercial, or agricultural purposes”). Federal law provides a limited exception to this exemption by limiting the liability for unauthorized transactions of employees of businesses that have ten or more business credit cards issued by one card issuer. *Id.* § 1645; 12 C.F.R. § 226.12(b)(5) (2012).

¹⁸⁶ Levitin, *supra* note 12, at 340.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 341.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

ble to test this hypothesis, and there were sufficient reasons for card issuers to engage in rate-jacking even without securitization.¹⁹⁷ Instead, this Article explores an argument that the economic structure of credit card securitization might have encouraged rate-jacking.

B. *Black-Scholes and Rate-Jacking*

The structure of credit card securitizations means that card issuers are exposed to only a fraction of the losses on the receivables. The card issuer bears the full brunt of any initial losses through its retained subordinated tranches, but after that has only a pro rata exposure from its seller's interest.¹⁹⁸ The card issuer's retention of the excess spread (CEIOS), however, means that the issuer gets the full upside of the card receivables' performance.¹⁹⁹ This situation, in which the issuer has 100% of the upside but only a fraction of the downside from the card receivables' performance, is analogous to the issuer holding a collar of options on the receivables with the cost for the options being included in the discount rate applied to the balances securitized. The issuer's 100% upside is equivalent to a call option with a strike price of the securitization discount, while the issuer's limited downside is equivalent to a put option with a strike price of the securitization discount minus the subordinated position minus the pro rata expense share.²⁰⁰

Recognizing that credit card securitization gives the card issuer the economic equivalent to a collar of options points to the incentives that the securitization structure creates for the issuer. Per the Black-Scholes option pricing model, any increase in price volatility of the asset underlying an option increases the value of the option.²⁰¹ Thus, if there is an increase in the volatility in the price of the card receivables—the value at which the receivables would sell, which depends on their yield and their default rate—the value of either a call or a put option on the receivables would increase.

Because credit card issuers retain control of the card account and securitize only the card receivables, they are able to change the terms of the account, which can, in turn, affect the card receivables' volatil-

¹⁹⁷ See generally *id.*

¹⁹⁸ See *supra* Part I.B.

¹⁹⁹ See *supra* Part I.B.

²⁰⁰ See Fischer Black & Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J. POL. ECON. 637, 638–39, 646 (1973) (explaining call and put options); Robert C. Merton, *Theory of Rational Option Pricing*, 4 BELL J. ECON. & MGMT. SCI. 141, 142–43 (1973) (same).

²⁰¹ See Black & Scholes, *supra* note 200, at 638–39; Merton, *supra* note 200, at 148.

ity.²⁰² An increase in interest rates or fees through rate-jacking can increase the yield on the account, as well as the default rate.²⁰³ Increases in the yield must be netted against increases in the default rate, but unless they net out to zero net yield (which is unlikely), then rate-jacking has the effect of increasing or decreasing the net yield, and hence the price of the receivables.

Rate-jacking thus increases the price volatility of the receivables, which in turn increases the value of the issuer's call and put options. Credit card securitization creates an incentive for card issuers to rate-jack, as it gives them a set of options and the lever through which to increase the price volatility of the underlying assets.

Consider how this plays out for an issuer that securitizes \$100 million in credit card receivables with an initial weighted average interest rate of 16% and an initial weighted average default rate of 3%. For simplicity, assume a 100% loss rate on defaults and that the defaults all occur at the end of the year, after having paid interest. These receivables will generate \$16 million in interest, but \$3 million in losses over a year for a total yield of \$13 million. The yield promised to investors is 10%. Posit that the issuer has a 10% seller's interest worth \$10 million and a 5% subordinated position, concentrated solely on the investor's interest (thus worth \$0.45 million), as well as all of the excess spread. We will call this Situation *A*. In Situation *A*, the issuer will make \$1 million from its 10% seller's interest plus \$0.45 million from its subordinated position plus \$1 million in excess spread. This means that the issuer receives \$4.45 million.

Now suppose the issuer engages in rate-jacking for a portion of the securitized receivables. Let us say that the rate-jacking results in the weighted average interest rate increasing to 20%, but that it also causes the weighted average default rate to rise to 4%. We will call this Situation *B*. In Situation *B*, the receivables will generate \$20 million in interest, but \$4 million in losses, for a total yield of \$16 million. This will result in the issuer making \$1 million from its seller's interest plus \$0.45 million from its subordinated position plus \$6 million in excess spread, for a total of \$7.45 million. In Situation *B*, then, rate-jacking produces a gain of \$3 million for the card issuer.

Of course, the issuer might push the rate-jacking too far. Let us see how this plays out in Situation *C*. Say the weighted average interest rate is now 20%, but this time it results in a substantially higher

²⁰² See *supra* Parts I.B.1, II.A.

²⁰³ See *supra* Part II.A.

weighted average default rate of 12% and a total yield of 8%. The total yield is less than the 10% promised (there is no excess spread), so the trust will have a shortfall of \$2 million. The issuer will incur only part of this loss. The issuer will incur a pro rata loss on its 10% seller's interest, so it will lose \$0.2 million. It will also bear the first \$0.3 million loss of the investor interest's \$1.8 million in losses. The investors will themselves incur a loss of \$1.5 million. And for that month, there will be no excess spread. Situation *C* thus produces losses of \$2 million, but only \$0.5 million are borne by the card issuer.

Now let us suppose that there is a 50% chance that rate-jacking results in Situation *B* and a 50% chance it results in Situation *C*. If so, the net present value of rate-jacking is $0.5 * B + 0.5 * C$. With the numbers we are using that would be $0.5 * \$3 \text{ million} + 0.5 * -\0.5 million , so the net present value of the rate-jack would be \$1.25 million, making rate-jacking a net present value positive activity for the card issuer.

Obviously, the profitability of rate-jacking depends on the precise impact the rate-jack has on default rates. With different numbers or different probabilities, rate-jacking might be more or less appealing, and we do not know what sort of interest rate increase will result in what sort of net gain or loss to portfolio yield as a generic matter, much less for any particular portfolio in any particular set of economic conditions.

Instead, the point here is simply to note that credit card securitization can create perverse incentives for the card issuer despite the presence of significant skin-in-the-game through the retention of the seller's interest and subordinated positions. Skin-in-the-game merely lessens the misalignment of interests between the securitizer and investors; it does not eliminate the misalignment if the securitization leaves the securitizer with imbalanced upside and downside risk.

III. POTENTIAL PROBLEMS WITH THE OPTION-PRICING EXPLANATION

There are several potential problems with an option-pricing theory of rate-jacking, reviewed below in turn.

A. *First Loss Positions*

In many securitizations, card issuers retain first loss positions.²⁰⁴ Even if their total exposure is limited, they bear the initial loss caused by defaults. This first loss position operates like a deductible on an insurance policy and is designed to align the incentives of the issuer/servicer with the ABS holders in order to alleviate the principal-agent moral hazard.²⁰⁵ First loss positions thus help correct the risk/reward imbalance by concentrating the risk for the issuer. It is impossible to determine as a general matter card issuers' first loss exposure in securitizations, but the existence of any first-loss exposure is a critical factor limiting the benefits of rate-jacking to the issuer.

B. *Implicit Recourse*

Likewise, even if card issuers formally have limited exposure on their securitizations, there is still implicit recourse, which means the market expects that card issuers will support their securitization trusts, even though they are off balance sheet. Because of the critical liquidity and funding role played by securitization for credit card issuers,²⁰⁶ the relationship between the issuer and its securitization trust is a symbiotic one in which neither can survive without the other. Every card issuer whose securitization trust has collapsed has itself ended up in receivership.²⁰⁷ Because of this close relationship, there has long been a concern about card issuers implicitly guaranteeing their off-

²⁰⁴ See FITCHRATINGS, *supra* note 59, at 10 (describing the seller's first loss position where overcollateralization is used as credit enhancement).

²⁰⁵ There is a wealth of economics literature on moral hazard, which has identified two limited answers for the concerns raised: incomplete loss coverage (through deductibles, copayments, and the like) and "observation" by an insurer of an insured's care. Steven Shavell, *On Moral Hazard and Insurance*, 93 Q.J. ECON. 541, 541 (1979); see also KENNETH J. ARROW, *ESSAYS IN THE THEORY OF RISK-BEARING* 142–43 (Julius Margolis ed., 1971); Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237 (1996); Mark V. Pauly, Comment, *The Economics of Moral Hazard*, 58 AM. ECON. REV. 531, 535–36 (1968); Steven Shavell, *Risk Sharing and Incentives in the Principal and Agent Relationship*, 10 BELL J. ECON. 55 (1979).

²⁰⁶ See *supra* Part I.B.

²⁰⁷ See, e.g., Harry Terris, *Will Advanta Plan Spook Market for Card Paper?*, AM. BANKER, May 13, 2009, at 1 (describing the effect of early amortization of the securitization trust of Advanta, a major small business card issuer).

balance-sheet securitized assets,²⁰⁸ and empirical evidence indicates this concern to be valid.²⁰⁹

If a credit card securitization fails to generate sufficient excess spread (typically negative express spread for three straight months), a negative amortization covenant in the securitization indenture will be triggered, and the trust will have to cease buying new receivables from the card issuer and simply pay down the ABS.²¹⁰ A negative amortization event would cause a severe and possibly fatal liquidity crisis for a card issuer.²¹¹ The card issuer would be left to find new sources to fund the lines of credit it offered or else it would have to start cutting lines and lose customers.²¹² To raise sufficient liquidity to compensate for the loss of a securitization trust would be a tall order for any issuer, and it would likely involve the sale of the company or its liquidation.

Implicit recourse suggests that rate-jacking is a game of threading the needle. Too much rate-jacking is likely to result in excessive defaults and trigger early amortization, but some rate-jacking will increase yield. The three-month early amortization period gives issuers some cushion if they overplay their hand, but they are unlikely to push the envelope.

The experience of auto loan ABS presents a similar story to credit card ABS. Like credit card ABS, auto loan ABS did not experience the disastrous performance of MBS.²¹³ Again, the explanation seems to lie in the indispensability of ABS for auto manufacturer financing. Because of the significant liabilities attached to the auto manufacturers themselves, particularly pension, healthcare, and environmental liabilities, it is far cheaper for auto manufacturers to finance themselves via ABS than via corporate debt. The value of the

²⁰⁸ Calomiris & Mason, *supra* note 25, at 4–9 (noting the concern that credit card securitizations, by placing credit card risk off balance sheet, obviate regulatory capital requirements for the receivables, even while the bank is still liable for credit losses). Implicit recourse has been a serious concern for bank regulators considering credit card securitization. See FDIC MANUAL, *supra* note 14, at 73–81 (noting that “[b]anks have an incentive to provide implicit recourse”).

²⁰⁹ Gorton & Souleles, *supra* note 30, at 565 (showing an implicit recourse arrangement in credit card securitization).

²¹⁰ See *supra* Part I.B.7.

²¹¹ See *supra* Part I.B.7.

²¹² See *supra* Part I.B.7.

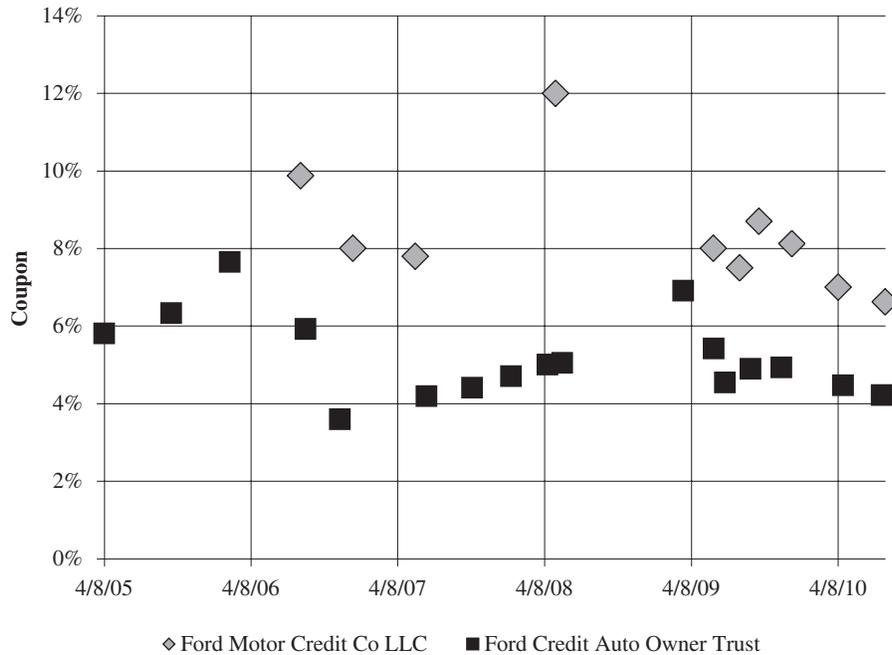
²¹³ See, e.g., Jann Swanson, *Consumer Loan Defaults Hit New Lows While Mortgage Defaults Rise*, MORTG. NEWS DAILY (Dec. 28, 2012, 7:58 AM), http://www.mortgagenewsdaily.com/12282012_loan_defaults.asp.

SPV's bankruptcy remoteness is significant vis-à-vis liability heavy auto manufacturers.

Figure 5 shows a comparison of coupons on Ford auto loan ABS and Ford Motor Credit's bonds from 2005–2010. The bond coupons are consistently a couple of hundred of basis points higher than the ABS coupons. Although Figure 5 is meant to be purely illustrative and makes no attempt to control for various factors that might affect this spread, it does underscore that ABS at least appear to be a significantly cheaper financing method than unsecured bonds for auto manufacturers. Auto manufacturers are thus loathe to soil their ABS market with lemons and thereby lose this much cheaper source of funding.²¹⁴

²¹⁴ Auto loan ABS usually are done as one-shot owner trust issuances. That means that unlike credit card ABS, auto loan ABS sponsors cannot support a deal by adding additional collateral or by causing additional junior, credit-enhancing tranches to be issued, which they then purchase. Instead, auto loan ABS provide *increasing* credit enhancement through sequential pay structures whereby senior tranches are paid off before payments are made on junior tranches. TED GOGOLL, STANDARD & POOR'S, DESPITE RISING DELINQUENCIES AND LOSSES, U.S. AUTO LOAN ABS REMAINS STABLE 3 (2007), http://www2.standardandpoors.com/spf/pdf/media/despote_rising_delinquencies.pdf. As time goes on, the ratio of junior bonds outstanding to senior bonds outstanding increases, meaning that there is increasing credit support. *See id.*; DBRS, *Credit Enhancement Build-Up in Auto Loan Securitizations*, 6 U.S. STRUCTURED FIN. NEWSL. 1, Jul. 6, 2010, <http://www.dbrs.com/research/233764/u-s-structured-finance-newsletter/credit-enhancement-build-up-in-auto-loan-securitizations.pdf>.

FIGURE 5. COMPARISON OF YIELDS ON FORD SENIOR UNSECURED BONDS AND FORD AUTO LOAN ABS²¹⁵



C. Not All Credit Card Debt Is Securitized

If rate-jacking is such an effective tool for issuers, why do card issuers not securitize all of their receivables? Part of the answer is that there is likely a downward sloping demand curve for credit card ABS. If issuers put too much product on the market, the profitability of securitization would decline, and at some point securitization would be less attractive than balance sheet financing.

The other part of the answer might be that while only 45% of card debt may be securitized at any moment, a much higher percentage is eventually securitized.²¹⁶ Often accounts are “seasoned” for several months before the receivables are securitized. This provides a way of weeding out the accounts that will never pay at all, particularly fraudulently opened accounts that issuers are required to purchase out

²¹⁵ The chart compares the coupons on Ford Motor Credit Co. LLC’s Senior Unsecured Bonds with the coupons on Ford Credit Auto Owner Trust’s ABS. No adjustment has been made to the data, which are from Bloomberg.

²¹⁶ See BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE G.19 (Mar. 7, 2011). Accounting changes in the first quarter of 2010 have resulted in most credit card receivables being carried on issuers’ balance sheets, even though they are formally securitized for bankruptcy and tax purposes. See *supra* Part I.B.2. The 45% figure refers to the years preceding this change. See BD. OF GOVERNORS OF THE FED. RESERVE SYS., *supra*.

of securitizations.²¹⁷ (This is analogous to “early payment default” warranties in mortgage securitization, where mortgages that default within the first few months or year after origination must be repurchased by the securitizer.²¹⁸) Although seasoning would seem to work against securitization, investors are well aware of the potential lemons problem in securitization, and seasoning is a way to assuage this concern.

D. ABS Investors Demand a Compensating Premium for Rate-Jacking

It is possible that markets recognize the risk imbalance in credit card securitization and that there is a risk premium for this, either in the form of higher coupons on credit card ABS or lower purchase price on the ABS. There are good reasons, however, to doubt that the principal-agent risk in rate-jacking is properly priced by the market. There is also good reason to believe that even if the market does price for the moral hazard, it will be unlikely to prevent the hazardous behavior.

First, it is difficult to gauge the extent of the imbalance beforehand because ABS purchasers do not know what percentage of a securitization will be retained by the issuer. The issuer’s retention of a deal will vary over time depending on the market for its ABS and its funding needs. Moreover, to the extent that an issuer appears to be retaining risk, investors cannot be sure that this risk is not fully or even overly hedged.

Second, gauging the extent of the risk imbalance is difficult as a general matter; there is a major information asymmetry between ABS holders and the issuer. The issuer knows if it is doing rate-jacking and how frequently, while the ABS holders do not.²¹⁹ Monitoring is basically impossible for investors, as the issuer/servicer controls all of the information. Moreover, monitoring is impractical. The costs of monitoring account-level decisions on small-balance accounts like credit cards greatly outweigh the benefits. Given this situation, it is unlikely that the market prices correctly. It might underprice, but it might also overestimate the risk imbalance and demand too high a premium.²²⁰

²¹⁷ See Calomiris & Mason, *supra* note 25, at 13.

²¹⁸ Allan N. Krinsman, *Subprime Mortgage Meltdown: How Did It Happen and How Will It End?*, 11 J. STRUCTURED FIN. 13, 15–16 (2007) (discussing early payment defaults).

²¹⁹ See Levitin, *supra* note 12, at 341 (noting that “no one necessarily knows [about rate-jacking], other than the card issuer and the consumer”).

²²⁰ Even an excessive risk-premium would not necessarily prevent rate-jacking, as there are other competitive benefits to issuers from rate-jacking, discussed *infra*.

Third, investors might not care about rate-jacking on the margin because they believe they are protected by early amortization and the symbiotic relationship between the trust and the card issuer with its implied recourse.²²¹ Card issuers are keen to avoid early amortization events. The risk of early amortization limits how much volatility card issuers are willing to risk on card receivables, which builds in protections for investors. Given that card issuers can run down excess spread for a couple of months before early amortization begins and increase excess spread through discounted sales of new receivables to the trust, the protection is not foolproof.²²²

If the market properly priced for the agency risk, it would produce equilibrium between the issuer and the ABS holders, in which the issuer would derive no benefit from rate-jacking. This would not prevent rate-jacking from occurring, however, because of a prisoner's dilemma for the ABS holders. The issuer and the ABS holders are in a two-stage game in which the ABS investors must move first with their deal pricing. Because the ABS investors do not know if the issuer will rate-jack or not, they must assume that rate-jacking will occur and demand a premium. The only way the issuer can then afford this premium is to rate-jack. As shown below in Table 1, a risk-averse ABS investor will always demand a risk premium, and a card issuer will always therefore rate-jack.

TABLE 1: ABS INVESTOR-CARD ISSUER GAME
(ABS INVESTOR, CARD ISSUER)

		Card Issuer Rate-Jacks?	
		Yes	No
ABS Investors Demand Risk Imbalance Premium?	Yes	1, 1	2, 0
	No	0, 2	1, 1

To be sure, the ABS investors and issuers are in a continuously iterated prisoners' dilemma; they are all repeat players.²²³ There is significant game theory learning on the degree to which iteration affects the prisoner's dilemma, but in the case of credit card securitization, we know that there is rate-jacking. Therefore, either the market works efficiently and demands a premium or it does not, and issuers capture the surplus.

²²¹ See *supra* Part I.B.7.

²²² See *supra* Part I.B.7.

²²³ The investors will, of course, vary from deal to deal, but there will be substantial overlaps, and in an efficient market they should be interchangeable.

In either case, however, rate-jacking would still hurt consumers; whether the ABS market prices for rate-jacking or not makes no difference. And unlike ABS investors, cardholders cannot protect themselves from rate-jacking by demanding a risk premium in the form of lower interest rates—the whole point of rate-jacking is that the issuer can immediately strip away this risk premium. A consumer could always close the account and switch its business to another issuer (although there are costs to doing so), but it has no guarantee that the other issuer would not do the same thing. As the next Section discusses, rate-jacking and its related phenomenon of high back-end fees appear to be a fairly universal practice among card issuers.

E. Banks that Do Not Securitize Credit Card Debt Also Rate-Jack

A card issuer could hypothetically take advantage of consumer aversion towards rate-jacking by advertising that it does not engage in the practice, but such an issuer has never emerged. The credit card industry has failed to embrace a “Saturn” business model based around “clean” or “consumer friendly” products.²²⁴

Perhaps consumer demand was too weak to allow such a business model to succeed. It may well be that “consumers just do not care enough about their credit card interest rates”²²⁵ and this may even be rational behavior. The political backlash against rate-jacking, however, indicates that consumers do care at some level.²²⁶

An alternative explanation for the lack of a widespread business model that rejects rate-jacking is that rate-jacking facilitates riskier underwriting.²²⁷ As I have explained in prior work:

²²⁴ A former General Motors brand, Saturn, aimed to create a “different kind of car” and be a “different kind of car company.” See Jerry Garrett, *Saturn: A Different Kind of Car Company*, *Indeed*, N.Y. TIMES (Sept. 5, 2007, 12:25 PM), <http://wheels.blogs.nytimes.com/2007/09/05/saturn-a-different-kind-of-car-company-indeed/>. Saturn’s practices included “no haggle” pricing. In the credit card space, one attempt to do something like this was an unnamed “plain vanilla” product by Bank of America. See Dan Geldon, *The Politics of Plain Vanilla Products*, HUFFINGTON POST (Sept. 28, 2009, 5:41 PM), http://www.huffingtonpost.com/dan-geldon/the-politics-of-plain-van_b_302250.html. Attempts like this do not seem to have succeeded on a large scale. Indeed, in 2007, using the motto “A deal is a deal,” Citigroup vowed to end the use of universal default and of the power to “raise interest rates on cards at any time, for any reason.” Eric Dash, *Citigroup Considers Repealing a Pledge and the Slogan with It*, N.Y. TIMES, June 25, 2008, at C4. Citigroup later reestablished the use of these tools under cardholder agreements. See *id.*; Geldon, *supra*.

²²⁵ Levitin, *supra* note 12, at 365.

²²⁶ *Id.*

²²⁷ *Id.*

Rate-jacking allows riskier underwriting in time period 1 because of the ability to correct for it in time period 2. An issuer can take a greater gamble, such as giving a card to a less creditworthy consumer, extending credit at a lower rate, or extending more credit to existing consumers, because if the consumer fails to pay on time (or for any other reason), the issuer can re-underwrite the card account, and charge a higher rate, counting on the lock-in effect to ensure that most of those cardholders will keep paying at the higher rate.

The ability to re-underwrite in time period 2 allows issuers that rate-jack to offer lower rates in time period 1 to begin with, relative to an issuer that does not rate-jack and only offers one consistent rate over time. This would put non-rate-jacking issuers at a competitive disadvantage, as their advertised initial rate would have to be higher than rate-jacking issuers. . . .

The competitive advantage provided by rate-jacking explains why non-rate-jacking never emerged as a viable market strategy for credit cards. Therefore, even banks that did not securitize their card receivables still engaged in rate-jacking.

. . . [R]ate-jacking . . . allows riskier credit card products (from a consumer perspective) to crowd out less risky credit card products, much as nontraditional mortgages that featured low initial teaser rates (and then later reset to much higher rates) started to crowd out traditional fixed-rate mortgages during the housing bubble.²²⁸

This explanation fits with the theory of shrouded pricing proposed by economists Xavier Gabaix and Daniel Laibson.²²⁹ Gabaix and Laibson argue that when it is possible to “shroud” some of the costs of using a product—for instance hiding the true cost of a credit card in the rate-jacked price, rather than the advertised price—firms will be incentivized to do so.²³⁰ In competitive equilibrium, firms will have no incentive to make their prices transparent (here, not engage in rate-jacking) or take other steps to “debias” consumers so that they can detect shrouded pricing.²³¹ While debiasing consumers improves consumer welfare, the benefits cannot be captured or shared by any firm, and debiased consumers are less profitable than biased consum-

²²⁸ *Id.* at 365–66 (internal citations omitted).

²²⁹ Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression In Competitive Markets*, 121 Q. J. ECON. 505, 505 (2006).

²³⁰ *Id.*

²³¹ *Id.* at 509, 519–520, 531.

ers.²³² Therefore, no firm will therefore want to incur the cost of debiasing consumers.²³³ The result, in Gabaix & Laibson's model is that once one card issuer started rate-jacking, others were forced to go along with it. In a market in which shrouded pricing is possible, competition actually harms, rather than helps consumer welfare.

CONCLUSION

This Article aims to expand perspectives on skin-in-the-game risk retention beyond mortgage securitization. In so doing, it has raised the possibility that credit card securitization structures might have encouraged rate-jacking. The existence of implied recourse in credit card ABS, however, seems to have served as a check on the extent of rate-jacking and to have been sufficient to limit the formal incentive misalignment between card issuers/servicers and ABS investors.

If securitization does not encourage rate-jacking because of the existence of implied recourse, skin-in-the-game requirements of either a first-loss position or a vertical position, such as the seller's interest, may themselves be insufficient to ensure that securitization does not produce a lemons problem. Skin-in-the-game lessens, but does not eliminate, the temptation for financial citriculture. It cannot be relied upon to produce a cherry orchard. The effectiveness of skin-in-the-game depends on the other transactional features with which it interacts, and when mixed with the wrong features, it can even be counterproductive.

Ultimately, the Dodd-Frank Act's solution to moral hazard in securitization was crafted too broadly and with the mortgage securitization market, rather than other securitization markets, in mind. Limited skin-in-the-game itself cannot be relied upon to protect investors. Instead, investors—and regulators—must look on a deal-by-deal basis at the total package of mechanisms to control underwriting and servicing risk in the presence of securitization's inherent information asymmetries.

²³² *Id.*

²³³ *Id.*