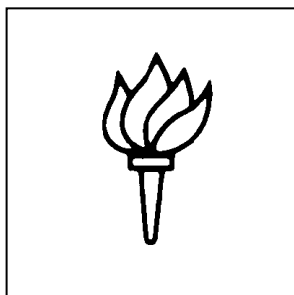


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**REGULATORY BANKRUPTCY: HOW BANK
REGULATION CAUSES FIRESALES**

Sarah P. Woo

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REGULATORY BANKRUPTCY: HOW BANK REGULATION CAUSES FIRESALES

Sarah P. Woo^{*}

Bankruptcy policy has long been founded upon the assumption that creditors seek to maximize the value of their assets. The radical changes that have swept over the banking sector over the last two decades, however, have rendered this assumption unreliable. Banks, which are responsible for the majority of the outstanding credit in the United States, are no longer necessarily driven by the goal of value-maximization. Instead, their behavior is increasingly influenced by financial regulation and regulatory policy in ways that lead them to drive their own borrowers into liquidation - a phenomenon that richly deserves to be called regulatory bankruptcy.

This Article offers the first-ever empirical account of regulatory bankruptcy—the ultimate result of pervasive regulatory pressure on issues of concentration risk and capital adequacy at banks during the recent financial crisis, which in turn induced banks to press excessively for liquidation of commercial real estate in bankruptcy proceedings. The analysis of an original dataset that encompasses bankruptcy filings as well as bank portfolio data confirms the significant relationship between a bank’s concentration risk and its choice to pursue liquidation. This bias toward over-liquidation engendered by micro-prudential financial regulatory policy was a source of unnecessary downward pressure on the value of assets throughout the banking system, leading to potentially catastrophic increases in systemic risk and financial contagion.

Proposed and recently instituted legal reforms in the financial regulatory framework such as the Dodd-Frank Act need to recognize the existence of regulatory bankruptcy and its serious externalities. Although this Article also argues that bankruptcy contagion can be contained, specifically in commercial real estate cases, by re-examining provisions relating to Single Asset Real Estate in the Bankruptcy Code, a general response from the direction of systemic risk regulation is required to deal with the source of systemic risk emerging from regulatory bankruptcy.

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INTRODUCTION

A foundational assumption underlying bankruptcy policy is that creditors aim to maximize value in bankruptcy cases. Some recent literature has begun to question the validity of this assumption in the context of bankruptcies involving hedge funds and holders of credit derivatives, where the incentives of these non-traditional creditors are less clear-cut.¹ However,

¹See, e.g., Douglas G. Baird & Robert K. Rasmussen, *Anti-Bankruptcy*, 119 YALE L.J. 648, 651 (2010) [hereinafter Baird & Rasmussen, *Anti-Bankruptcy*] (citing that the concerns of parties in bankruptcy, “such as whether a particular action will be a ‘credit event’ in a credit default swap—often have nothing to do with preserving the business or maximizing the value of its assets. Indeed, failure of the business can mean large returns to some creditors.”); Richard A. Booth, *The New Shareholder and the Current Financial Crisis: Things Happen*, 55 VILL. L. REV. 57, 68 (2010) (arguing that credit default swaps create strange incentives to induce bankruptcy and obstruct reorganization); Harvey R. Miller, *Chapter 11 Reorganization Cases and the Delaware Myth*, 55 VAND. L. REV. 1987, 1988-90

this conventional wisdom has not been challenged by legal scholars in relation to the traditional account of a Chapter 11 bankruptcy involving banks as senior secured lenders in the creditor-debtor relationship.

This Article demonstrates empirically that this assumption is inaccurate: the actions of banks in bankruptcy proceedings are not necessarily driven by value maximization. The findings in this Article have groundbreaking implications for bankruptcy policy which focuses on the debtor and overlooks exogenous creditor-specific factors. Where banks, which extend the bulk of the outstanding credit in the United States, are driven by financial regulatory policy to over-liquidation of their own borrowers, these actions lead to fire sales which potentially amplify liquidity shocks and systemic risk.² To use the language of regulatory takings law, this phenomenon richly deserves to be termed *regulatory bankruptcy*.³

Over the past decade, the banking sector has undergone major changes, including increases in leverage at most banks and consolidation at a national level, driving banks to seek higher returns by increasing bank portfolio exposure to commercial real estate.⁴ Such changes lead to

(2002) (arguing that distressed debt traders may sacrifice the long-term viability of a debtor for the ability to realize substantial and quick returns on their investments); Frederick Tung, *Leverage in the Board Room: The Unsung Influence of Private Lenders in Corporate Governance*, 57 UCLA L. REV. 115, 167 (2009) (discussing that credit derivatives may facilitate voting against value).

² The definitions of systemic risk generally include a common factor which is a trigger event, such as an economic shock or institutional failure which causes a chain of bad economic consequences. See generally Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193 (offering a conceptual framework for examining what risks are truly “systemic,” what causes these risks, and how these risks should be regulated). Fire sales are forced sales in which high-valuation bidders are sidelined, typically due to debt overhang problems afflicting the system simultaneously, and can lead to downward spirals or cascades in asset prices—see definition provided in Andrei Shleifer & Robert W. Vishny, *Fire Sales in Finance and Macroeconomics* (NBER Working Paper No. 16642, 2010), available at <http://www.nber.org/papers/w16642> e. See also LoPucki, Lynn M. and Joseph W. Doherty, *Bankruptcy Fire Sales*, 106 MICH. L. REV. 58 (2007). Andrei Shleifer & Robert W. Vishny, *Liquidation Values and Debt Capacity: A Market Equilibrium Approach*, 47 J. FIN. 1343, 1344-45 (1992); Hernán Ortiz-Molina & Gordon M. Phillips, *Asset Liquidity and the Cost of Capital* (NBER Working Paper 15992, 2010), available at <http://www.rhsmith.umd.edu/faculty/gphillips/Papers/AssetLiquidity.pdf>

³ For a discussion of regulatory takings law, see RICHARD A. EPSTEIN, *TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN* 3-5 (1985). See also *Penn Central Transportation Company v. New York City*, 438 U.S. 104 (1978), the landmark Supreme Court decision setting out the tests to determine what constitutes regulatory takings.

⁴ See, e.g., *The End of Excess (Part One): Reversing Our Addiction to Debt and Leverage: Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. On Fin. Servs.*, 111th Cong. (2010) (statement of Thomas M. Hoenig, President, Fed. Reserve Bank of Kan. City); Kenneth D. Jones & Tim Critchfield, *Consolidation in the U.S.*

dangerous levels of concentration risk, which significantly affects the capital adequacy of banks. For example, prior to its failure in 2008, IndyMac Bank's construction and development loan portfolio grew to \$2.3 billion of its loan portfolio, which accounted for 128% of the bank's Tier 1 capital at the end of 2007, but this concentration risk was concealed by the bank's financial success during favorable economic conditions.⁵ This level of over-exposure across many banks eventually attracted intense regulatory scrutiny at the onset of the recent financial crisis and then drastic regulatory measures pressuring these banks to reduce concentration risk.

As with many episodes of financial instability which can be traced to misguided attempts to use regulatory power,⁶ pervasive regulatory pressure with capital adequacy as a centerpiece affected bank behavior in bankruptcy, interfering with investment expectations and diminishing asset values. In the case of IndyMac Bank, the bank shed more than a billion dollars of construction and development loans in the first six months of 2008 under regulatory pressure, partly through liquidations in bankruptcy.⁷ The actions of bank regulators thus had unintended but dire consequences of rendering the standard assumption of value maximization in bankruptcy policy obsolete by creating a different set of incentives dependent on the bank creditor's own health. The phenomenon of regulatory bankruptcy thus demands a comprehensive reevaluation of current bankruptcy policy which has not kept up with these developments in the banking industry.

This Article offers original empirical evidence that capital adequacy constraints, imposed on banks by the financial regulatory regime, have affected the behavior of banks as secured creditors in bankruptcies. A database merging Chapter 11 bankruptcy cases between 2007 and 2008 with data from the Federal Deposit Insurance Corporation (FDIC) yielded findings that the higher the concentration risk of a bank creditor, the higher

Banking Industry: Is the "Long, Strange Trip" About to End?, 17 FDIC BANKING REV. 31, 32 (2005).

⁵OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF INDYMAC BANK, FSB 28, Audit Rep. No. 09-032 (2009). Note that Tier 1 capital is a core measure of a bank's capital adequacy, used by bank regulators to assist in the assessment of the financial stability of banks. See 12 C.F.R. pt. 200-19 (refer to app. B to pt. 208 on Capital Adequacy Guidelines).

⁶See, e.g., Sheila C. Dow, *Why the Banking System Should be Regulated*, 106 ECON. J. 698, 703 (1996).

⁷See generally Fed. Deposit Ins. Corp., Institutional Directory, at <http://www2.fdic.gov/idasp/main.asp> (under "Institutional Name," enter "IndyMac Bank;" then select "Report Date" of "June 30, 2008;" followed by "Generate Report"). Note that the dataset developed by the author (see details in Part III) provides evidence that IndyMac Bank pursued a course of action culminating in liquidation in Chapter 11 proceedings approximately 75 percent of the time in 2008.

the probability that the bank will favor a course of action culminating in liquidation. Controlling for the characteristics of the debtors, asset quality indicators and economic conditions, the results support the conclusion that this regulation-driven factor helps explain why banks choose to use the Chapter 11 process for asset fire sales instead of reorganizations during periods of market illiquidity, when asset prices would be relatively low.

Part I of this Article reviews the standard assumption in prior literature and examines the position of banks as secured creditors, with capital adequacy constraints, in Chapter 11 proceedings. The relevant parts of the micro-prudential financial regulatory regime which significantly shape the economic incentives of banks are briefly outlined.⁸ This Part concludes by documenting the recent regulatory pressure exerted on banks during the current financial crisis, particularly regarding concentrations in real estate lending. The intense regulatory focus on real estate provides a natural focus for this Article.

Part II develops a theoretical framework showing that banks seek to minimize risk on a portfolio basis, and that such risk aversion is closely linked to financial regulation. The economic model illustrates the dynamics of a bank's capital adequacy requirements, showing how a bank can experience capital shortfall when it has high concentration levels of debtors in the same industry sector in its portfolio.⁹ This model also demonstrates that a bank can more effectively manage its capital adequacy constraints by reducing portfolio-level concentrations, compared to improving recoveries from bankrupt debtors on a loan-by-loan basis. Put differently, banks can reduce risk, and thus capital adequacy requirements, by reducing concentration levels, even if they are liquidating firms of relatively higher quality in their portfolio—a thesis that directly contradicts the standard assumption.

Part III discusses the large-scale data collection effort, the methodology employed and the empirical findings that support the thesis of this Article.

⁸ Micro-prudential financial regulation consists of measures such as certification of professionals working in the financial sector and rules on how financial institutions operate, while macro-prudential regulation concerns itself with the stability of the financial system as a whole. See, e.g., Avinash Persaud, *Macro-Prudential Regulation: Fixing Fundamental Market (and Regulatory) Failures*, CRISIS RESPONSE 6 (July 2009), available at <http://rru.worldbank.org/documents/CrisisResponse/Note6.pdf>.

⁹ See, e.g., Basel Comm. on Banking Supervision, *Studies on Credit Risk Concentration: An Overview of the Issues and a Synopsis of the Results from the Research Task Force Project* (Basel Comm. on Banking Supervision, Working Paper No. 15, 2006) (discussing the impact of concentration on bank capital). The theoretical framework in this Article takes a different angle from such studies, in order to show that banks can reduce unexpected losses more easily by reducing concentration risk, rather than improving credit quality.

These findings include regression analyses demonstrating that a bank's choice to obtain relief from a bankruptcy stay to pursue liquidation and foreclosure is significantly associated with the bank's own concentration risk profile. The central finding is that an exogenous factor, associated with a bank's capital adequacy, can affect a traditional bank creditor's decision-making in Chapter 11 bankruptcy cases. Put broadly, the introduction of a new factor driving bank behavior re-conceptualizes the bankruptcy debate, as creditor actions can no longer be explained simply by the economics within the four corners of each standalone case. This strikes a blow at the classical paradigm, with profound implications across bankruptcy policy issues ranging from the merits of secured creditor control to creditor bargaining dynamics.

Finally, Part IV further explains the phenomenon documented in this study. Considering the scale of regulatory bankruptcy in construction and development loans alone, the policy implications are vast: banks in the United States own \$481 billion in construction and development loans and, according to the Congressional Oversight Panel, the approximately 50 percent recovery rate of invested capital from defaulted construction loans suggests that the ultimate losses from these loans could be enormous.¹⁰ As such, where many banks are involved in regulatory bankruptcy of their debtors amidst a falling market for their collateral, troubled banks have to sell similar assets as quickly as possible, lest they be the last to sell out and face the lowest price. Other banks are then enveloped in this downward price spiral, leading to further liquidations and losses in asset values, with capital shortfalls spreading to more banks.¹¹

From a "macro" perspective, regulatory bankruptcy and the accompanying contagious fire sales can have costly spillover effects on the economy and contribute to systemic risk, via a process which deserves the term *bankruptcy contagion*. While the collective action problem of debt collection by multiple, dispersed creditors are meant to be resolved through the Bankruptcy Code, bankruptcy contagion presents us with a collective action problem playing out on a larger scale across numerous cases. Part IV thus considers policy reforms relating to the Bankruptcy Code as well as systemic risk regulation promulgated by the recently-enacted Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act").

In conclusion, this Article re-conceptualizes bankruptcy policy, which

¹⁰See CONGRESSIONAL OVERSIGHT PANEL, FEBRUARY OVERSIGHT REPORT: COMMERCIAL REAL ESTATE LOSSES AND THE RISK TO FINANCIAL STABILITY 94 (2010), available at <http://cop.senate.gov/documents/cop-021110-report.pdf> [hereinafter Oversight Report].

¹¹See *infra* Part IV.B.

has assumed a stylized fact about creditors' choices that do not correspond to reality. The core findings in this Article emphasize that the incentives driving bank creditors' choices in Chapter 11 bankruptcy can be distorted by exogenous factors, shifting the traditional focus on the condition of the debtor to that of the creditor.

I. PRIOR LITERATURE AND BACKGROUND

A. *The Myth of Value Maximization*

The classical paradigm generally posits value maximization as the overarching objective of a bankruptcy regime. More specifically, the traditional goals of Chapter 11 are often considered to be the maximization of creditors' recoveries and the reorganization of viable companies.¹² References to such goals, direct and otherwise, are sprinkled throughout the legislative history of the Bankruptcy Code, which Congress envisioned as rehabilitating businesses or, at least, preventing forced liquidations accompanied by unnecessary losses in property values.¹³

This standard assumption is also implicit in the literature, as legal scholars participate in the *great normative bankruptcy debate* as to whether the Chapter 11 regime has failed, and whether liquidation, reorganization, or a going-concern sale best preserves value.¹⁴ On one side of the debate lie arguments that the bankruptcy regime should focus on avoiding premature

¹²See, e.g., Bernard S. Black & Henry T.C. Hu, *Equity and Debt Decoupling and Empty Voting II: Importance and Extensions*, 156 PENN. L. REV. 625 (2008) at 732 ("Empty crediting can also affect creditor actions under the Bankruptcy Code...The Code assumes that creditors will act to further their apparent economic interest and will favor a bankruptcy filing only if they expect to receive more in bankruptcy..."); Brian A. Blum, *The Goals and Process of Reorganizing Small Businesses in Bankruptcy*, 4 J. SMALL & EMERGING BUS. L. 181, 226-27 (2000); Thomas H. Jackson and Robert E. Scott, *On the Nature of Bankruptcy: An Essay on Bankruptcy Sharing and the Creditors' Bargain*, 75 VA. L. REV. 155, 155 (1989) ("The cornerstone of the creditors' bargain is the normative claim that prebankruptcy entitlements should be impaired in bankruptcy only when necessary to maximize net asset distributions to the creditors as a group"); Elizabeth Warren, *Bankruptcy Policymaking in an Imperfect World*, 92 MICH. L. REV. 336, 387 (1993).

¹³See, e.g., H.R. REP. NO. 95-595, at 220 (1977), reprinted in 1978 U.S.C.C.A.N. 5963, 6179 ("The purpose of a business reorganization case [under chapter 11] . . . is to restructure a business's finances so that it may continue to operate, provide its employees with jobs, pay its creditors, and produce a return for its stockholders."); 124 CONG. REC. 32, 392 (daily ed. Sep. 28, 1978) (statement of Rep. Edwards).

¹⁴The term "Great Normative Bankruptcy Debate" was coined by Adam J. Levitin in his paper, *Bankruptcy Markets: Making Sense of Claims Trading*, 4 BROOK. J. CORP. FIN. & COM. L. 67, 71-72 (2009).

liquidation owing to creditors' uncoordinated actions, and maximizing the value of creditors' claims while preserving the absolute priority rule.¹⁵ For this camp, the standard assumption is that a creditor exercising a control right granted by a financial instrument is acting so as to maximize the value of that instrument.¹⁶ In the words of Professors Baird and Rasmussen:¹⁷

Private lenders are not charitable institutions. They will act to maximize their rate of return when they engineer the appointment of a CRO or otherwise exercise their influence. The crucial question is the extent to which private lenders' self-interest is aligned with the interests of all the investors in the corporation . . . To be sure, there is room for slippage. Lenders, in some cases, may pass on projects that offer positive returns. But financially distressed businesses are unlikely to have such projects come its way. Even if they do, the senior lender is likely to be as eager as anyone else to take advantage of them.

From the other perspective, Chapter 11 was enacted to afford distressed firms an opportunity to reorganize and preserve their going-concern value, and intended to address societal concerns beyond the creditor-debtor relationship.¹⁸ In arguing that reorganization remains important for dealing

¹⁵See, e.g., Douglas G. Baird & Robert K. Rasmussen, *The End of Bankruptcy*, 55 STAN. L. REV. 751, 781-82 (2002) [hereinafter Baird & Rasmussen, *End of Bankruptcy*]; Douglas G. Baird & Robert K. Rasmussen, *Chapter 11 at Twilight*, 56 STAN. L. REV. 673, 691-92 (2003) [hereinafter Baird & Rasmussen, *Twilight*]; Thomas H. Jackson, *Bankruptcy, Non-Bankruptcy Entitlements, and the Creditors' Bargain*, 91 YALE L.J. 857, 857 (1982); Alan Schwartz, *A Contract Theory Approach to Business Bankruptcy*, 107 YALE L.J. 1807, 1828 (1998); James J. White, *Death and Resurrection of Secured Credit*, 12 AM. BANKR. INST. L. REV. 139, 149-50 (2004).

¹⁶See Baird & Rasmussen, *Anti-Bankruptcy*, *supra* note 1, at 679-80; Patrick D. Fleming, *Credit Derivatives can Create a Financial Incentive for Creditors to Destroy a Chapter 11 Debtor: Section 1126(E) and Section 105(A) Provide a Solution*, 17 AM. BANKR. INST. L. REV. 189, 189 (2009) ("One of the basic presumptions supporting chapter 11 of the Bankruptcy Code is that creditors have a desire to maximize the distribution they receive on account of their claims"); Stephen J. Lubben, *Credit Derivatives and the Future of Chapter 11*, 81 AM. BANKR. L.J. 405, 422 ("In all cases we assume that creditors are motivated to take all available steps to maximize their recoveries in bankruptcy, at least when those steps have a positive net value").

¹⁷ Douglas G. Baird & Robert K. Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 U. PA. L. REV. 1209, 1245 (2006). Professors Baird & Rasmussen also argued that "creditors' self-interest must lead them to exercise control in a way that maximizes the value of the business" and that lenders will "act to maximize their rate of return when they engineer the appointment of a [Chief Risk Officer] or otherwise exercise their influence", at 1243-47.

¹⁸See e.g., Lynn M. LoPucki, *The Nature of the Bankrupt Firm: a Response to Baird*

with financially-distressed companies, a key argument is that secured creditors want to “liquidate a debtor quickly to maximize the value of their security interests, even if delayed liquidation or reorganization might be in the best interests of other stakeholders.”¹⁹ This implies that scholars in this camp do agree that value maximization drives the behavior of creditors,²⁰ although they adopt the view that such self-interested behavior can lead to socially suboptimal results.

There is thus a general consensus in the great normative bankruptcy debate as to this standard assumption. This is not surprising as a theory of value maximization at least has the virtue of being accepted dogma in neoclassical economic theory.²¹ As Judge Frank Easterbrook suggested, the real goal of business bankruptcy is to tilt towards neither debt nor equity, but rather towards any strategy that will maximize the value of the asset.²² Indeed, there is no shortage of papers premised upon the proposition that valuation is at the heart of Chapter 11 bankruptcy.²³ This notion also pervades the bankruptcy literature, including papers addressing issues outside this debate.²⁴

and Rasmussen's the End of Bankruptcy, 56 STAN. L. REV. 645, 663-64 (2003); Stephen J. Lubben, *Credit Derivatives and the Future of Chapter 11*, 81 AM. BANKR. L.J. 405, 409 (2007); Harvey R. Miller & Shai Y. Waisman, *Does Chapter 11 Reorganization Remain a Viable Option for Distressed Businesses For the Twenty First Century?*, 78 AM. BANKR. L.J. 153, 164 (2004); Elizabeth Warren, *Bankruptcy Policy*, 54 U. CHI. L. REV. 775, 788 (1987); Jay L. Westbrook, *The Control of Wealth in Bankruptcy*, 82 TEX. L. REV. 795, 798 (2004).

¹⁹ See, e.g., Westbrook, *supra* note 18, at 844.

²⁰ See, e.g., A. Mechele Dickerson, *The Many Faces of Chapter 11: A Reply to Professor Baird*, 12 AM. BANKR. INST. L. REV. 109, 115 (2004) (“The goal has always been to maximize value, which may be accomplished either through reorganization or orderly liquidation”).

²¹ See, e.g., CARLO C. JAEGER ET AL., RISK, UNCERTAINTY AND RATIONAL ACTION 147-48 (2001) (explaining that, in neoclassical economics, rational actors always maximize the utility of their decisions, that is, the economic value of their actions).

²² See *In re Cent. Ice Cream Co.*, 836 F.2d 1068, 1072 (7th Cir. 1987).

²³ See, e.g., Mark J. Roe, *Bankruptcy and Debt: A New Model for Corporate Reorganization*, in CORPORATE BANKRUPTCY, ECONOMIC AND LEGAL PERSPECTIVE 351 (Jagdeep S. Bhandari & Lawrence A. Weiss eds., 1996); David Gray Carlson, *Secured Creditors and the Eely Character of Valuations in Bankruptcy*, 41 AM. U. L. REV. 63, 64 (1991); Chaim Fortgang & Thomas Moers Mayer, *Valuation in Bankruptcy*, 32 UCLA L. REV. 1061, 1063 (1985).

²⁴ See, e.g., Derek J. Kaufman, *How Skilled Use of Abandonment Preserves the Reorganizing Entity's Enterprise Value*, 28-4 AM. BANKR. INST. J. 36, 36 (2009) (“[C]reditors seek to maximize the value of the estate in order to improve their pro rata recoveries as the residual stakeholders of the reorganizing entity.”); George W. Kuney, *Hijacking Chapter 11*, 21 EMORY BANKR. DEV. J. 19, 27 (2004) (“These developments enable knowledgeable and well counseled secured creditors to . . . use [Chapter 11] as an effective, taxpayer-supported, unified federal foreclosure mechanism to maximize the

B. The Demise of the Standard Assumption

In recent years, some papers have discussed how the standard assumption of value maximization is increasingly being chipped away at the edges by the advent of professional distressed debt investors, claims trading, multiple conflicting positions (e.g., both long and short positions on the same entity) and credit derivatives.²⁵ For example, lenders, where they are also holders of credit default swaps or conflicting positions, may have seemingly perverse incentives to pursue courses of action that reduce the value of one of their claims.²⁶

Though this line of research is important in dissecting recent developments undermining the negotiation dynamics central to Chapter 11, the scope of their critique is naturally limited to the very largest corporate bankruptcies, and leaves out the rest of the market for credit. The literature has thus failed to explore a more serious problem—the standard assumption is under threat even in the traditional account of a Chapter 11 bankruptcy involving banks as prototypical senior, secured lenders. This traditional lending relationship is not dead but, on the contrary, very much alive in the United States, and therefore cannot be ignored. A quick glimpse into the numbers shows that this claim is not controversial—loans extended by all FDIC-insured institutions in the United States totaled \$7.1 trillion dollars as of December 2009, dwarfing global hedge fund assets, which ended the year of 2009 at \$1.6 trillion dollars.²⁷ Furthermore, financial derivatives such as credit default swaps are typically written on larger firms, not the middle-market companies which account for the bulk of commercial lending.²⁸

value that they derive from their collateral.”); Joseph Mullin, *Bridging the Gap: Defining the Debtor's Status during the Involuntary Gap Period*, 61 U. CHI. L. REV. 1091, 1102 (1994) (“Creditors may thus prefer to postpone filing an involuntary petition in order to maximize the value of the estate and perhaps avoid a significant loss.”).

²⁵See sources cited *supra* note 1. See also Kevin J. Coco, *Empty Manipulation: Bankruptcy Procedure Rule 2019 and Ownership Disclosure in Chapter 11 Cases*, 2008 COLUM. BUS. L. REV. 610, 619-22 (2008) (discussing scenarios where a creditor's net economic interest is in conflict with its position as a creditor in the bankruptcy case).

²⁶See Baird & Rasmussen, *Anti-Bankruptcy*, *supra* note 1, at 686.

²⁷See *Quarterly Banking Profile*, FDIC QUARTERLY, at 5 (Dec. 2009), available at <http://www2.fdic.gov/qbp/2009dec/qbp.pdf> [hereinafter *Quarterly Banking Profile 2009*]; Press Release, Hedge Fund Research, Inc., *Investors Return To Hedge Fund Industry as a New Model Emerges* (Jan. 20, 2010), available at http://www.hedgefundresearch.com/pdf/pr_20100120.pdf.

²⁸See generally Bernadette A. Minton, Rene M. Stulz & Rohan Williamson, *How Much Do Banks Use Credit Derivatives to Hedge Loans?* (Fisher Coll. of Bus., Working Paper No. 03-001, 2008), available at <http://ssrn.com/abstract=1084058> (documenting that the

This Article seeks to address the following set of questions. How is the classical paradigm being undermined? What agenda is the prototypical commercial bank lender pursuing, if not the maximization of value in relation to a distressed debtor? The starting point for considering these issues is that banks, which must obtain a banking charter from government agencies to operate, are supervised by both state and federal regulators. One of the most prominent planks of bank regulation is capital adequacy supervision—the requirement of minimum risk-based capital standards by banks as part of micro-prudential regulatory policy.²⁹ In its simplest form, capital represents the portion of a bank’s assets with no associated contractual commitment for repayment and is thus available as a cushion against losses.³⁰ From another angle, the risks arising in a bank’s portfolio need to be covered by a corresponding amount of capital. For every loan extended by a bank, capital has to be allocated to “support” this risky exposure.³¹

More importantly, the marginal contribution of each loan facility to a bank’s capital is not solely dependent on the risk of this individual facility. The contribution can be larger or smaller, depending on the composition of the overall portfolio.³² A conceptual framework illustrating the dynamics between capital requirements and a bank’s decision-making in bankruptcy is presented in Part II. Suffice it to say at this juncture that such capital adequacy requirements can destabilize the classical paradigm by shifting a bank’s economic incentive from the maximization of value within a case to the minimization of “risk” in the bank’s overall portfolio.

What does this insight mean for bankruptcy law and policy? Simply put, this strikes a blow at traditional conceptions of the Chapter 11 bankruptcy regime. As with the financial innovations which allows creditors to be incentivized by “returns from different decisions that are dramatically different”,³³ the consideration of capital adequacy requirements results in

use of credit derivatives is not widespread among banks, though the amount of credit derivatives held by the banks that use credit derivatives is extremely large, and these derivatives typically reference larger investment grade firms in the United States, foreign banks and multinational firms).

²⁹ U.S. bank regulators first began enforcing explicit capital adequacy requirements in 1982. See Risk-Based Capital Standards: Trust Preferred Securities and the Definition of Capital, 12 C.F.R. pts. 208, 225 (2005), which establishes the minimum ratios of capital to assets that state member banks and bank holding companies must maintain.

³⁰ See Douglas J. Elliott, *The Importance of Capital*, BROOKINGS (Jan. 28, 2010), available at http://www.brookings.edu/papers/2010/0129_capital_elliott.aspx.

³¹ *Id.*

³² See generally Harry M. Markowitz, *Foundations of Portfolio Theory*, 46J. FIN. 469 (1991) (establishing the classic “Modern Portfolio Theory,” which states that portfolio risk is a function of the correlations of the component assets).

³³ Baird & Rasmussen, *Anti-Bankruptcy*, *supra* note 1, at 689.

economic incentives of bank creditors which are dramatically different from those posited by the classical paradigm. As such, the introduction of this exogenous factor originating from the financial regulatory framework, which is driven by a bank's own portfolio composition and compliance issues, leads to a re-conceptualization of the landscape of bankruptcy law and policy.

The following illustrates the grave implications of such risk minimization by banks. The traditional account of Chapter 11 bankruptcy recognizes that secured creditors are biased towards liquidation in cases where they can be repaid in full through an immediate sale.³⁴ Since a traditional lender does not share in the upside of a debtor's firm, there is no incentive to pursue a course of action that realizes greater value for the estate.³⁵ However, if the secured creditor is substantially under-secured, it has incentives which are better aligned with maximizing the value of the estate, since the creditor can benefit from the upside of a successful reorganization.³⁶ Put simply, a secured creditor's choices and strategy in bankruptcy cases are mainly driven by its expectations of the recovery rate on its claim.

The dynamics will play out differently, if we include the exogenous factor of bank regulation into the equation. Consider a simple hypothetical where two banks are involved in the bankruptcy of debtors with similar economic profiles. Neither bank can expect to be repaid in full through an immediate sale. Both debtors are considered to have long-term viability. One bank holds a portfolio with a concentration in the industry sector to which the debtor belongs. It can reduce its concentration risk and relieve itself of a chunk of its capital requirements by getting rid of loans in this sector. The other bank has a diversified portfolio and allocates much less capital to cover the risk of loss on its loan exposure to this debtor. Accordingly, the second bank is inclined to pursue negotiations for reorganization and restructuring of its claim. The first bank, however, will be incentivized to seek an immediate liquidation, even if the sale occurs at "fire sale" prices and results in a lower recovery rate – a conclusion which turns orthodoxy on its head.

The law should not penalize a bank for pursuing, within legal boundaries, what is in its best interest, but the law must account for this

³⁴*Id.*, at 667.

³⁵See, e.g., Ronald J. Silverman & Jeffrey T. Kirshner, *Making a Dual U.S./Dutch Insolvency Process Work: Lessons from the Derby Cycle Corp. Insolvency Proceedings*, 21-3 AM. BANKR. INST. J. 26, 26 (2002) (discussing over-secured bank creditors' push for immediate liquidation of valuable assets, despite the risk of loss of going concern value).

³⁶See Kenneth M. Ayotte & Edward R. Morrison, *Creditor Control and Conflict in Chapter 11*, 1 J. LEGAL ANALYSIS 511, 523 (2009).

reality in the Chapter 11 bankruptcy regime. As it stands, the bankruptcy process is largely controlled by secured creditors, and Chapter 11 is increasingly viewed as “the legal vehicle by which secured creditors decide the course of action—be it a sale, pre-arranged deal or conversion of debt to a controlling equity stake—will maximize their return.”³⁷ Though the rise in secured creditor control is often seen as a positive development,³⁸ this new driver of bank behavior as secured creditors in bankruptcy proceedings forces us to re-evaluate the implications of a pro-creditor regime and view bankruptcy policy in new light.

C. *How the Financial Regulation Regime Affects Bank Incentives*

Bank regulation in the United States typically takes the form of specific capital adequacy requirements, activity limits, certification requirements and various types of risk controls. Such regulation is generally referred to as micro-prudential financial regulation which is designed to ensure the “safety and soundness” of each individual bank and the minimization of potential losses to their depositors.³⁹ Enforcement of such regulation is generally undertaken through extensive monitoring by bank supervisors. Elucidating the ways by which supervisory action circumscribes bank behavior is a necessary first step in advancing an analysis of how regulation affects banks’ economic incentives in bankruptcy proceedings.

Supervisory monitoring of banks is primarily conducted using both on-site and off-site examinations.⁴⁰ At the end of these examinations, banks receive a set of findings from their supervisors and a numerical rating known as the CAMELS rating ranging from one (strongest) to five (weakest).⁴¹ The CAMELS acronym represents six key areas of supervisory

³⁷ Baird & Rasmussen, *Twilight*, *supra* note 15, at 675.

³⁸ See, e.g., Douglas G. Baird & Robert K. Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 U. PA. L. REV. 1209, 1211-12 (2006) (arguing that one justification for rising secured creditor control is that secured debt is the “missing lever of corporate governance” which works in situations where other levers have little effect). It is harder to make this argument if a bank is more concerned with risks affecting its overall portfolio, rather than the individual debtor firm.

³⁹ See, e.g., U.S. DEP’T OF THE TREASURY, THE DEPARTMENT OF THE TREASURY BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE (2008), available at <http://www.ustreas.gov/press/releases/reports/Blueprint.pdf>.

⁴⁰ Banks are subject to on-site examinations every twelve to eighteen months using the Uniform Financial Institutions Rating System, supplemented by off-site examinations using the Statistical CAMELS Off-site Rating System. See FEDERAL DEPOSIT INSURANCE CORPORATION, RISK MANAGEMENT MANUAL OF EXAMINATION POLICIES, available at <http://www.fdic.gov/regulations/safety/manual/index.html>.

⁴¹ See generally Marcelo Rezende, *How Do Joint Supervisors Examine Financial Institutions? The Case of State Banks* (Paolo Baffi Cent., Research Paper No. 68, 2009),

concern: *capital, asset quality, management, earnings, liquidity, and sensitivity to market risk*, of which adequate capitalization against large unexpected losses is typically the most important to the regulators.⁴²

The supervisors provide comments and recommendations for improvements and, if necessary, obtain a commitment from the bank to solve deficiencies identified in the bank's portfolio.⁴³ Depending on the bank's condition, supervisors can require a compliance plan from institutions when they identify problems.⁴⁴ Also, prompt corrective action, including cease-and-desist orders, prohibition orders and suspension orders, can be initiated even for a non-problem bank, if supervisors find that there are practices which can result in a material loss to the bank.⁴⁵

Such regulatory devices, together with market reactions to supervisory concerns, typically put pressure on banks to act preemptively to correct potential deficiencies in order to avoid the potential receipt of a public cease-and-desist order which would tarnish their reputation and crush their stock price. There is also a "self-regulatory" dimension as banks aim to perform well in their CAMELS ratings. To illustrate, if supervisors find that banks' risk management processes are "severely deficient" with "little or no perception of risk relative to the size, complexity, and risk profile of the entity", a bank will receive the lowest CAMELS rating of five.⁴⁶ Empirical studies on the impact of these examinations and ratings on banks conclude that banks' business lending patterns are sensitive to changes in CAMELS ratings and the intensity of supervisory reviews.⁴⁷

More generally, prior research has shown that micro-prudential financial

available at <http://ssrn.com/abstract=1635750> (providing an overview of the bank supervision process).

⁴²COMPTROLLER OF THE CURRENCY, *BANK SUPERVISION PROCESS: COMPTROLLER'S HANDBOOK 25* (2007), *available at* <http://www.occ.treas.gov/handbook/banksup.pdf>.

⁴³Rezende, *supra* note 41.

⁴⁴12 U.S.C. §§ 1831o, 1831p (2006).

⁴⁵*Id.* Note that insolvency is not required for Prompt Corrective Action by regulators, if they find that a bank is likely to fail. *See* 12 U.S.C. § 1831o.

⁴⁶COMPTROLLER OF THE CURRENCY, *supra* note 42, at 70.

⁴⁷*See, e.g.,* Timothy J. Curry, Gary S. Fissela & Carlos D. Ramirez, *The Effect of Bank Supervision on Loan Growth*, 19 N. AM. J. ECON. FIN. 113, 114-15 (2008) (quantifying the short-term and long-term impact of bank supervision of the CAMEL composite and component ratings on different categories of loan growth); Jeffery W. Gunther & Robert R. Moore, *Loss Underreporting and the Auditing Role of Bank Exams*, 12 J. FIN. INTERMEDIATION 153, 157 (2003) (pointing to the relationship between supervisory reviews and revisions to financial statements); Joe Peek, Eric Rosengren & Geoffrey M.B. Tootell, *Identifying the Macroeconomic Effect of Loan Supply Shocks*, 35 J. MONEY CREDIT & BANKING 931, 931-32 (2003) (finding that banks that received a weak CAMEL rating changed their lending behavior considerably).

regulation can affect banks' lending behavior.⁴⁸ For example, Peek and Rosengren found an empirical relationship between capital adequacy ratios and shrinkage in bank lending, showing that under-capitalized banks have historically shrunk funding for real estate loans, exacerbating economic downturns.⁴⁹ Shrieves and Dahl also found evidence that changes in the supervisory climate contributed to a substantial part of the credit contraction in 1990-1991.⁵⁰

The above discussion summarizes the regulatory environment in which banks function and operate their lending business—an area which has received little scholarly attention in law reviews. Legal academics, however, can no longer afford to overlook how financial regulation shapes banks' incentives as creditors, as the recent financial crisis has led to a surge in bank supervisory actions. As a result of the high number of banks failing during the crisis, supervisory review of banks' capital adequacy and risk management processes would naturally intensify.⁵¹ At the same time, there is a lack of research in legal academia on what scrutiny by financial regulators means for the creditor-debtor relationship after default occurs. This Article is the first attempt to fill this gap.

D. Intense Regulatory Scrutiny of Commercial Real Estate Exposures

This Article focuses on a specific segment in bank lending to provide a robust empirical basis for the analysis of how financial regulation drives bank behavior in bankruptcy: the residential development lending segment. This sector was and still is a large and distinct proportion of banks' lending portfolios, and as the following discussion will show, also one of the most important sources of the bad debts which brought down many

⁴⁸See, e.g., Xavier Freixas, *Corporate Finance and the Monetary Transmission Mechanism*, 19 REV. FIN. STUD. 829, 831 (2006); Leonardo Gambacorta & Paolo Emilio Mistrulli, *Does Bank Capital Affect Lending Behavior*, 13 J. FIN. INTERMEDIATION 436, 438 (2004); Jeremy C. Stein, *An Adverse-Selection Model of Bank Asset and Liability Management with Implications for the Transmission of Monetary Policy*, 29 RAND J. ECON. 466, 467 (1998). The conclusion from these studies is that policymakers and supervisors should consider the potential effects of capital requirements on financial stability and lending activity.

⁴⁹See generally Joe Peek & Eric S. Rosengren, *Bank Real Estate Lending and the New England Capital Crunch*, 22 REAL EST. ECON. 33 (1994) (finding that poorly capitalized banks have made less funds available for real estate loans compared to better capitalized banks).

⁵⁰See Ronald E. Shrieves & Drew Dahl, *Regulation, Recession, and Bank Lending Behavior: The 1990 Credit Crunch*, 9 J. FIN. SERVS. RES. 5, 26 (1995).

⁵¹See, e.g., Thomas Bernauer & Vally Koubi, *Banking Regulation in Hard Times: Business Cycles, Bank Capital, and the Bank Failure—Credit Crunch Dilemma*, 22 J. PUB. POL'Y 61, 61-62 (2009).

banks and threatened the economy with systemic risk.⁵² Not co-incidentally, construction and development lending by banks provided much of the capital that fueled the housing boom which preceded that the current crisis, and for that reason alone is worth considering closely.

As of 2010, this sector absorbed nearly a trillion dollars in debt, equivalent to a seventh of all bank lending, with banks, not peripheral actors, owning the majority of this debt as secured creditors.⁵³ The build-up of such loan concentrations in the banking sector was mentioned as early as 2004 when then Federal Reserve Chairman Alan Greenspan stated the following:⁵⁴

Particularly noteworthy is the longer-term trend at community banks that seems to have accelerated in the past three years—the increasing share of asset growth accounted for by nonresidential real estate finance, particularly construction and land development loans and commercial and industrial real estate financing. Last year these categories accounted for more than 90 percent of the net asset growth of banks with less than \$1 billion in assets; multifamily real estate and farmland finance would bring the total to more than 100 percent, offsetting the declines in other categories.

With the onset of the current financial crisis, construction and development loans constitute by far one of the most significant drivers of commercial bank failures.⁵⁵ By the end of 2008, the FDIC reported that bank write-offs for these loans increased by 450.9 percent.⁵⁶ This lending segment is thus large, important, and clearly a focus of regulatory scrutiny.

⁵² The arguments made here can be extrapolated to any concentration of exposures to other kinds of borrowers, as it is their concentration rather than nature as individual exposures that matter most. That being said, Section IV.A later in this Article explains why Construction and Development lending, of the various kinds of bank lending, presents the strongest challenge to the argument of this Article, as liquidation in this kind of lending ought to be a very last resort, and in answering it, this Article makes the case that other kinds of lending, being less extreme cases, follow.

⁵³ Oversight Report, *supra* note 10, at 36-37.

⁵⁴ Alan Greenspan, Chairman, Fed. Reserve Bd., Remarks before the Independent Community Bankers of America Convention, San Diego, California (Mar. 17, 2004), *available*

at <http://www.federalreserve.gov/Boarddocs/Speeches/2004/20040317/default.htm>.

⁵⁵ *Examining the State of the Banking Industry: Hearing Before the Subcomm. on Fin. Insts. of the S. Comm. on Banking, Hous., & Urban Affairs*, 111th Cong. (2009) (statement of John C. Dugan, Comptroller of the Currency).

⁵⁶ *Quarterly Banking Profile*, FDIC QUARTERLY, at 3 (Dec. 2008), *available at* <http://www2.fdic.gov/qbp/2008dec/qbp.pdf> [hereinafter Quarterly Banking Profile 2008].

To understand the context for this Article's arguments, it is critical to be aware of specific regulatory measures which shaped the reactions of banks in dealing with their portfolios of loans and thereby their position as secured creditors vis-à-vis debtors. These measures primarily consisted of policy guidance issued to banks, followed by intensive monitoring, and these centered on capital adequacy as well as a key component—concentration risk.

A landmark regulatory measure was promulgated in 2006 in the form of a joint policy statement by all the bank regulators in the United States. This statement provided the supervisory criteria for identifying institutions with significant concentrations of commercial real estate loans (including construction and development loans) and stated that such institutions warranted greater supervisory scrutiny.⁵⁷ In February 2008, the Office of the Inspector General released a report concluding that commercial real estate concentrations had “reached record levels that could create safety and soundness concerns.”⁵⁸ In response, the FDIC issued a Financial Institutions Letter titled “Managing Commercial Real Estate Concentrations in a Challenging Environment”, strongly recommending that banks with such concentrations should *increase capital* to provide ample protection from unexpected losses, if market conditions were to deteriorate further.⁵⁹ This letter was more strongly worded than the 2006 interagency guidance had been.⁶⁰

Throughout 2008, banks were subject to extensive on-site supervision to monitor credit concentrations and establish internal concentration limits and reporting. This scrutiny was even extended to situations where individual loans were considered prudently underwritten.⁶¹ In August of 2008, the Division of Supervision and Consumer Protection issued revised instructions to collect more information from banks exposed to significant commercial real estate concentration risk.⁶² Furthermore, bank examiners went on active lookout for banks with high concentration levels, demanding

⁵⁷ Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices, 71 Fed. Reg. 74,580-84 (proposed Dec. 12, 2006).

⁵⁸ OFFICE OF INSPECTOR GEN., FED. DEPOSIT INS. CORP., FDIC'S CONSIDERATION OF COMMERCIAL REAL ESTATE CONCENTRATION RISK IN FDIC-SUPERVISED INSTITUTIONS 2 (2008), available at <http://www.fdicigo.gov/reports08/08-005.pdf>.

⁵⁹ See FED. DEPOSIT INS. CORP., MANAGING COMMERCIAL REAL ESTATE CONCENTRATIONS IN A CHALLENGING ENVIRONMENT 1, Fin. Inst. Letter FIL-22-2008, Mar. 17, 2008. See also Interagency Guidelines for Real Estate Lending Policies, 12 C.F.R. § 365 app. A (2009).

⁶⁰ Oversight Report, *supra* note 10, at 108.

⁶¹ FED. DEPOSIT INS. CORP., *supra* note 59, at 2.

⁶² OFFICE OF INSPECTOR GEN., *supra* note 58, at 17.

justifications and taking supervisory actions.⁶³ Such actions ranged from downgrading a bank's regulatory ratings to Cease-and-Desist Orders. To illustrate, when Freedom Bank of Georgia was flagged for review, the primary concern noted was its concentration in construction and development loans.⁶⁴ To cite another example, Pinnacle Bank received a Cease-and-Desist Order which expressly required the bank to develop a plan involving, *inter alia*, the systematic reduction of construction and development loans.⁶⁵ These actions were, in effect, precursors to the occurrence of regulatory bankruptcy.

As the situation escalated in 2008, Senator Ron Wyden wrote a letter to a bank regulator, citing that a regulatory directive relating to construction and development loans may, in fact, be forcing financially stable borrowers into default.⁶⁶ He decried the regulatory practice where debtors, whose loans failed to meet certain newly-imposed loan-to-valuation ratios, were being forced to make payment to the banks to bring the loans into compliance. He argued that the debtors, which were unable to meet these regulatory requirements and whose collateral has suffered significant devaluation owing to the severe recession, would be forced into insolvency, in which event the lending banks would then assume ownership of the collateral.⁶⁷

Together, these series of regulatory actions provide a basis for the hypothesis that banks trying to shed concentration risk in construction and development loans would have strong economic incentives to seek immediate liquidation of such debtors in bankruptcy. Aside from anecdotal evidence, it is hard to collect a systematic dataset reflecting supervisory actions in the act of being exerted on banks, owing to the confidentiality surrounding CAMELS ratings and discussions between examiners and bank management.⁶⁸ However, in light of the strong regulatory mandate that

⁶³*New Regulatory Crack Down on CRE Lending; Up to 2,000 Banks in Examiners' Cross-Hairs*, FINCR1ADVISOR, Sep. 27, 2009 (on file with author) (finding that FDIC examiners cited CRE lending in 15% of Cease-and-Desist Orders in the last nine months of 2009, compared to just 2.8% in 2008). Note that regulators were also taking informal actions such as Bank Board Resolutions or Memorandums of Understanding.

⁶⁴See OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF FREEDOM BANK OF GEORGIA 2, Audit Rep. No. 09-028 (2009).

⁶⁵Fed. Deposit Ins. Corp., *In re Pinnacle Bank*, Beaverton, Or., Order to Cease & Desist, May 27, 2008 (FDIC-08-126b).

⁶⁶See Letter from Sen. Ron Wyden to Sheila Bair, Chairman, Fed. Deposit Ins. Corp., (Aug. 27, 2008) (on file with the author) (addressing the potential consequences of certain regulatory policies on Oregon's homebuilding industry and banks).

⁶⁷*Id.*

⁶⁸See generally OFFICE OF THE COMPTROLLER OF THE CURRENCY, FED. DEPOSIT INS. CORP., BD. OF GOVERNORS OF THE FED. RESERVE SYS., & OFFICE OF THRIFT SUPERVISION, INTERAGENCY ADVISORY ON THE CONFIDENTIALITY OF THE SUPERVISORY RATING AND

banks with concentration risk “implement processes to increase or maintain strong capital levels”,⁶⁹ it can be inferred that banks are under regulatory pressure to reduce concentrations in their portfolios for capital adequacy purposes.

It is worth specifically noting that regulators would be (or ought to be) averse to concentrations of any kind, not just construction and development lending, for, as the next section will show, concentration risk is a key cause of extreme unexpected losses that might exhaust the capital of a bank. It would not matter what the concentration consisted of, it is merely enough that the concentration represents a block of credits that might simultaneously start to default at very high rates, given stressed market conditions. The limited upside of credit instruments means that, unlike for equity portfolios, banks cannot rely on gains in their loan portfolios to offset losses. Instead, they must keep sufficient capital against their own unique level of concentration risk. The arguments of this Article, therefore, can be extrapolated to other kinds of bank lending.

To overcome the challenge of not having direct evidence of banks' motivations, a theoretical framework is constructed to link capital adequacy levels and the creditor-debtor relationship, and explore the significance of regulatory scrutiny of concentration risk in affecting the economic incentives of banks. The hypothesis put forth as a result of the theoretical framework in this Article is then empirically tested by examining the relationship between a bank's concentration risk and its choice of action in Chapter 11 bankruptcy proceedings.

II. THE ECONOMICS OF REGULATORY BANKRUPTCY

A. *A Theoretical Framework: Portfolio Concentration Risk versus Individual Loan Value Maximization*

This Part presents the theoretical framework providing an alternative to the standard assumption of value maximization, by borrowing elements from finance, and the emerging inter-disciplinary field of risk management. Two ideas are central to this framework: firstly, that of risk aversion;⁷⁰ secondly, regulatory intervention. This Part demonstrates, using a model, that banks seek to minimize risk on a portfolio basis, and that the way a bank chooses to minimize risk is shaped by financial regulation.

OTHER NONPUBLIC SUPERVISORY INFORMATION (2005) (an advisory reminding all banks that they are prohibited by law from disclosing their CAMELS rating).

⁶⁹FED. DEPOSIT INS. CORP., *supra* note 59, at 3.

⁷⁰See, e.g., Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision under Risk*, 47 *ECONOMETRICA* 263, 264 (1979).

More specifically, model simulations in various scenarios are used to explain why risk aversion in a portfolio context can be a greater motivator for banks than value maximization in a loan-by-loan context.

The question of risk to the creditor's claims in bankruptcy in isolation is not new and is not part of this framework.⁷¹ Rather, the "risk" in question is the more general risk management problem that a bank, as a whole, faces. Banks maintain a portfolio of loans and assets whose value and risk profile is not simply the sum of its parts. The assessment of a loan set in a portfolio is different from that undertaken in isolation, due to portfolio composition effects such as diversification of risk.⁷² Of particular interest to regulators is whether banks' choice of portfolio composition will cause, over the short or long term, uncompensated losses to the bank to the extent that it will be inadequately capitalized and require outside intervention to protect depositors or the economy.⁷³ The objective of the theoretical framework is to unravel the complex inter-linkages between capital adequacy, portfolio composition, and the debtor-creditor relationship.

This theoretical framework goes beyond analyses centered on bank capital adequacy ratios, which are the traditional mainstay of the finance-centric literature.⁷⁴ Capital adequacy ratios have been considered a lagging indicator of an institution's financial health. A bank's capital can remain in the "well to adequate" range long after its operations have begun to deteriorate.⁷⁵ Instead, the model builds on a key finding in financial risk management literature that concentration risk is a primary leading driver of unexpected losses in banks, against which capital is supposed to

⁷¹ This concept of a creditor seeking to maximize its risk-adjusted return in its Chapter 11 strategy is occasionally discussed, but this metric is typically confined to the specific claim within the boundaries of the case. *See, e.g.,* Patrick Halligan, *Cramdown Interest, Contract Damages, and Classical Economic Theory*, 11 AM.BANKR. INST. L. REV. 131, 136-37 (2003); Michelle M. Harner, *Trends in Distressed Debt Investing: An Empirical Study of Investors' Objectives*, 16 AM. BANKR. INST. L. REV. 69, 104 (2008).

⁷² The concept of "Markowitz diversification" is used in this Article, being commonly used in portfolio risk management in the United States by banks and regulators. A key contribution of Markowitz diversification is the formulation of an asset's risk in terms of a portfolio, rather than in isolation. *See* FRANK J. FABOZZI & HARRY M. MARKOWITZ, *THE THEORY AND PRACTICE OF INVESTMENT MANAGEMENT* 29 (2002).

⁷³ Sources cited *supra* note 36.

⁷⁴ *See generally* FED. RESERVE BD., *COMMERCIAL BANK EXAMINATION MANUAL* (2010), available at <http://www.federalreserve.gov/boarddocs/supmanual> (stating, among others, that banks are expected to meet a minimum ratio of capital to risk-weighted assets).

⁷⁵ OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., *THE ROLE OF PROMPT CORRECTIVE ACTION AS PART OF THE ENFORCEMENT PROCESS* 3, OIG Audit Rep. No. 03-038 (2003).

protect.⁷⁶ The model shows that banks may need to keep more capital associated even with "good" debtors if, together, they constitute concentration risk. Such results would contradict the classical paradigm that banks choose to liquidate only the debtors which were not good candidates for re-organization. Rather, an alternative explanation is that these debtors were not good sources of diversification and were thus contributors of portfolio-level credit risk and thus regulatory pressure.

On this basis, the next section presents a model which illustrates how concentration levels can translate into different ranges of portfolio losses for a bank and how a bank can reduce unexpected losses more easily by reducing concentration levels, rather than selectively eliminating loans of lower quality. Put broadly, the implications of this conceptual framework is that bank lenders are incentivized to liquidate debtors in sectors where banks face high concentrations, in order to reduce unexpected losses and capital adequacy requirements, regardless of their individual value proposition.

B. A Model of Bank Portfolio Risk

This model is established using a variant of the popular single-factor Merton-inspired model for correlated defaults, which is relatively parsimonious to parameterize and illustrate the dynamics for bank lenders.⁷⁷ The model employs three basic elements for estimating the possible distribution of credit portfolio losses: a Probability of Default (hereinafter, "PD") for debtors, the loss to the bank if the debtor does default (Loss Given Default, and hereinafter, "LGD"), and a correlation parameter to incorporate the fact that defaults tend to occur contemporaneously, especially during a recession. Together, these inputs constitute the basis for a series of Monte Carlo simulations to calculate credit losses in a bank's portfolio under varying market conditions.⁷⁸

A formal model and its technical details are provided in Appendix 1. An

⁷⁶ Basel Comm. on Banking Supervision, Basel II Accords, Rule 770, available at <http://www.basel-ii-accord.com/BaselText/Basel761to777.htm> (opining that "risk concentrations are arguably the single most important cause of major problems in banks.")

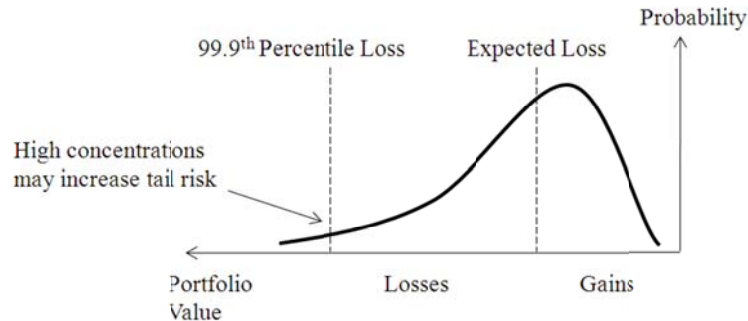
⁷⁷ In constructing the simulation model in this Article, I relied primarily on the formulations in Douglas W. Dwyer, *The Distribution of Defaults and Bayesian Model Validation*, 1 J. RISK MODEL VALIDATION 23, 27-29 (2007), and Robert Schwartz, *Default Correlation: An Empirical Approach* (2006) (unpublished manuscript), available at <http://basel2.fh-vie.at/files/0067413946.pdf>.

⁷⁸ Monte Carlo simulation techniques are useful for studying systems with significant uncertainty in inputs, such as the estimation of credit risk. These techniques involve generating a larger number of probable scenarios, based on available economic data and assumptions, to characterize the probability distribution of the outcomes.

intuitive sketch of how the model is applied in this Article is presented below. For simplicity, consider two different banks, each with a portfolio containing \$10 million in loan exposure amounts, but with different concentrations of commercial and industrial exposures, and construction and development exposures.⁷⁹ Suppose the portfolio of one of the banks to have an average concentration in construction and development Loans (hereinafter, “Portfolio A”) which is set at 16.0%, based on the average concentration of such exposures in the wholesale portfolio of commercial banks in the United States as of December 31, 2007.⁸⁰ Now suppose the portfolio of the other bank has a high concentration in construction and development Loans of 50.0% (hereinafter, “Portfolio B”).⁸¹

A series of model simulations are run on these two portfolios to compare the distribution of credit losses for the two banks in different scenarios. As Figure 1 below illustrates, the theoretical distribution of the portfolio value for a bank is asymmetric towards losses. This is because credit losses as a result of defaults are much larger than potential gains, and the size of the tail is linked to concentration risk.

FIGURE 1
THEORETICAL DISTRIBUTION OF BANK PORTFOLIO VALUE



The metric by which these results are evaluated is the likelihood of portfolio loss at each cumulative level of probability. The micro-prudential

⁷⁹ For the purposes of this Article, the focus is on the wholesale commercial portfolio, which is typically distinguished from a bank’s retail portfolio (e.g., home mortgages and loans to small businesses).

⁸⁰ See *Quarterly Banking Profile*, FDIC QUARTERLY, at 10 (Dec. 2007), available at <http://www2.fdic.gov/qbp/2007dec/qbp.pdf> [hereinafter *Quarterly Banking Profile 2007*].

⁸¹ The concentration of 50% selected for Portfolio B is based on the realistic range of concentration levels of institutions flagged by regulators to have high concentration risk in construction and development loans, such as Colonial Bank and Corus Bank (statistics from the author’s data sample—see details in Part IV.A).

regulatory framework requires banks to hold capital at levels designed to withstand tail risk events at the 99.9th percentile.⁸²In the terminology of bank lenders engaging in risk management: if the 99.9th percentile loss is \$2 million, there is a 0.1% probability that the portfolio's loss exceeds \$2 million. Since tail risk is of most interest to banks and their regulators, the results from these simulations are expressed in loss rates at the 99.9th percentile. The higher the estimated tail risk for a portfolio, the clearer the signal to regulators that a bank may face capital adequacy problems, thereby warranting greater regulatory scrutiny.

C. Stress-Testing of the Portfolios

Based on the model simulations in various scenarios for Portfolios A and B, Table 1 below presents a comparison of the respective portfolio-level credit loss rate at the 99.9th percentile. The parameters used in each scenario, and how they are determined, are detailed in Appendix 1.

TABLE 1
COMPARISON OF LOSS RATES ACROSS SCENARIOS

	<i>Portfolio A</i>	<i>Portfolio B</i>
Base Case Scenario	2.53%	2.43%
Correlation Stress Scenarios for Construction and Development Loans only		
30% Correlation	2.87%	2.69%
40% Correlation	2.86%	3.12%
50% Correlation	2.77%	5.48%
Baseline Adverse Scenario	18.15%	30.36%
More Adverse Scenario	21.14%	35.55%

The first row in Figure 2 presents the results in the base case scenario where both banks are operating in a benign economic environment. It should be noted the tail losses of the two portfolios are quite close, with Portfolio B having slightly lower loss rates. These results are expected because a high concentration of such exposures in Portfolio B (carry low

⁸²See, e.g., Risk-Based Capital Standards: Advanced Capital Adequacy Framework—Basel II, 72 Fed. Reg. 69, 288 (Dec. 7, 2007). The rationale is: if capital is available to cover losses up to and including this percentile level, then the bank should remain solvent in the face of actual losses of that magnitude.

risk in a benign environment) contributes to a better performance. In fact, these results reflect a problem which regulators faced before the collapse of residential real estate prices.

An illustration can be found in the audit report of FirstBank in Georgia where the FDIC explained why, although had they identified the bank's concentration risk prior to the recession, they did not provide timelier supervisory action in relation to the bank.⁸³ The officials stated that it was a challenge to determine an appropriate action when a financial institution had a high level of commercial real estate concentrations but no negative financial impact.⁸⁴ This is consistent with our simulation results showing that concentration risk per se does not result in higher loss rates.

A set of scenarios is then constructed to illustrate the impact on Portfolios A and B as a result of rising correlations. Correlations typically increase during recessionary periods and financial crises.⁸⁵ The rows under the heading of "Correlation Stress Scenarios for Construction and Development Loans only" in Figure 2 thus present the loss rates, based on increasing construction and development correlations of 30%, 40% and 50%, assuming a constant 18% correlation for commercial and industrial loans.

The loss rates at the 99.9th percentile for Portfolio A remain at a low level across varying correlations within construction and development exposures. On the other hand, the loss rates at the 99.9th percentile for Portfolio B, which has a high concentration of construction and development exposures, doubled as a result of increasing the correlation parameter. These results are explained as follows: when correlations are high, unconditionally unlikely events begin to happen together. As such, Portfolio B has a higher concentration of correlated defaults which causes the portfolio to suffer larger losses at the extremes. These results thus demonstrate the likelihood of higher loss rates for a portfolio with high concentrations, even where the parameters of the loan exposures are specified to be at levels of high credit quality.

The next set of scenarios illustrates how these results change when the credit quality of loan exposures deteriorates during the recessionary period. Relying in part on indicative loss rates provided by regulators in the U.S. Supervisory Capital Assessment Program (SCAP),⁸⁶ the model is run on

⁸³OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF FIRSTBANK FINANCIAL SERVICES, MCDONOUGH, GEORGIA 18-19, OIG Audit Rep. No. 09-024 (2009).

⁸⁴*Id.*

⁸⁵See generally François Longin & Bruno Solnik Longin, *Extreme Correlation of International Equity Markets*, 56 J. FIN. 649, 650 (2001).

⁸⁶See generally BD. OF GOVERNORS OF THE FED. RESERVE SYS., THE SUPERVISORY CAPITAL ASSESSMENT PROGRAM: DESIGN AND IMPLEMENTATION (2009), *available at*

scenarios similar to those used in SCAP: a “Baseline Stress Scenario” and a “More Adverse Scenario”. The results, presented in the last two rows of Figure 2, demonstrate a very important point: at the 99.9th percentile, the loss rate for Portfolio B greatly exceeds that of Portfolio A in adverse economic conditions.⁸⁷ Most importantly, these results demonstrate that two portfolios with the same assumed level of credit quality and default risk can have vastly different unexpected losses in the tail region depending on the level of diversification. Kernel density graphs in Appendix 2 further illustrate how the tails of the loss distribution can become dramatically fatter for Portfolio B in these adverse scenarios.

Next, since it is typically assumed in bankruptcy literature that a secured creditor’s choice of liquidation versus re-organization depends on valuation (or rather, the recovery rate on the defaulted loan),⁸⁸ it is necessary to emphasize how concentration risk can overshadow loan-specific credit quality as a driver of risk in downturn conditions. To such end, an additional set of simulations is modeled using Portfolio A such that it is a portfolio with low concentration but extremely poor borrowers (hereinafter known as Portfolio C). Based on the More Adverse Scenario, the PD and LGD levels of the construction and development exposures used in this scenario are increased by 50.0%. The resulting tail loss in this Portfolio C is estimated to be 26.53%, reported in Table 2, which is still lower than that of Portfolio B.

TABLE 2
COMPARISON OF LOSS RATES AFTER INCREASING LOAN-LEVEL RISK

	<i>Portfolio A</i>	<i>Portfolio B</i>	<i>Portfolio C</i>
More Adverse Scenario	21.14%	35.55%	26.53%

These results imply that, all else being equal, the capital required to protect a bank with a high concentration level against insolvency is extremely high during stress periods, compared to one with a diversified portfolio, even if the latter has a sub-standard asset base. According to this

www.federalreserve.gov/bankinfo/bcreg20090424a1.pdf (documenting the regulatory stress-testing exercise of nineteen banks in the United States).

⁸⁷ As high as these numbers are, it is worth remembering that this default/no default model does not incorporate the effects of credit risk migration, which would make portfolio losses even worse. In a model that incorporates a valuation framework (rather than the pure default loss framework employed here), a worsening of credit quality ought to result in mark-to-market losses in the value of the loans, even if the loan did not default.

⁸⁸ See, e.g., Baird & Rasmussen, *Anti-Bankruptcy*, *supra* note 1, at 655 (“A central issue in most reorganization cases was valuation—the amount the company would be worth if liquidated and the amount if kept together.”)

theoretical framework, a bank has a stronger incentive to minimize concentration risk than to maximize asset quality. In other words, in choosing to liquidate a borrower and remove it from the portfolio, a bank can be heeding concentration risk aversion, rather than making a statement about the viability of a borrower.

Furthermore, the following analysis confirms that the pursuit by a bank of a strategy to increase recoveries on a loan-by-loan basis has less significant impact on the overall portfolio, compared to a strategy to actively reduce concentration risk. This point is demonstrated by the construction of a new set of scenarios to analyze how these options, of either increasing recoveries on loans or reducing concentration levels, if pursued by a bank with Portfolio B, will play out in terms of mitigating tail risk. In the first set of scenarios, the recovery rates of the obligors are improved between 30.0% and 50.0%; and in the second set of scenarios, the concentration levels are reduced to a range between 20.0% and 40.0%.

Table 3 presents the results of the respective loss rates of Portfolio B, assuming the bank succeeds in pursuing these options. It is clear that decreasing concentration would be a bank's preferred strategy. In the Baseline Adverse Scenario, improving the average recovery rate across loans in Portfolio B by 50.0% did not bring the tail loss rate close to that of the more diversified Portfolio A, unlike reductions in concentration levels. As the results for the More Adverse Scenario demonstrate, a bank can more effectively manage portfolio-level risk by reducing concentration levels to 30.0% (with an expected tail loss of 27.18%), compared to dramatically improving its recovery rate on loans by 50.0% (with an expected tail loss of 28.99%).

TABLE 3
CHANGING LOSS RATES IN PORTFOLIO B THROUGH BANK ACTIONS

	Baseline Adverse Scenario	More Adverse Scenario
Increase Recovery Rate of Obligors		
30% Higher Recovery Rate	26.04%	31.45%
40% Higher Recovery Rate	24.84%	29.22%
50% Higher Recovery Rate	24.01%	28.99%
Decrease Concentration Levels		
Concentration of 40%	25.66%	30.16%
Concentration of 30%	21.80%	27.18%
Concentration of 20%	18.79%	22.45%

To summarize, this alternative theoretical framework leads to the following propositions:

1. Portfolios with high concentrations are more likely to incur higher tail loss rates as correlations rise.
2. High concentrations amplify the effect of increasing default risk in adverse environments.
3. Concentration risk can exponentially magnify unexpected losses in a portfolio, to the extent that they exceed those in a diversified portfolio comprising of loans with worse credit quality.

This theoretical framework thus shows that banks can reduce tail loss rates, and thereby capital adequacy requirements, by reducing concentration risk, even if in so doing they are indiscriminate in terms of whether they remove firms with better credit quality. As such, banks with high concentration risk are much more likely to come under regulatory scrutiny for capital inadequacy during the downturn. In summary, this framework supports the existence of banks' incentives to pursue regulatory bankruptcy.

III. METHODOLOGY AND FINDINGS

To establish empirical support for the theoretical framework presented in Part III, this Part focuses on the choice faced by a bank as to whether to file for relief from the automatic stay in the bankruptcy proceedings to pursue foreclosure of the assets in Chapter 11. The filing of a bankruptcy petition triggers an automatic stay under section 362 of the Bankruptcy Code.⁸⁹ The automatic stay is meant to provide debtors with breathing space during which they can attempt a debt restructuring with the creditor body, and is fundamental to the rationale behind Chapter 11.⁹⁰ Creditors, however, can obtain relief from this automatic stay to pursue foreclosure by showing that there is “cause” (this includes showing that the creditor’s interest is not “adequately protected”) or that the debtor lacks equity in the property and that such property is not necessary to an effective reorganization.⁹¹

The decision to seek a lift of the automatic stay demonstrates the intent on the part of a creditor bank to go down the path leading to liquidation and

⁸⁹See 11 U.S.C. § 362(d) (2006) (“[A] petition filed under [Chapter 11] operates as a stay. . . [of] any act to obtain possession of property of the estate or of property from the estate or to exercise control over property of the estate”).

⁹⁰ See the legislative history discussing the policy underlying the imposition of the automatic stay in H.R. REP. NO. 95-595, at 340 (1977), *reprinted in* 1978 U.S.C.C.A.N. 5963, 6298.

⁹¹11 U.S.C. § 362(d).

is a fundamentally important one. Once such relief is granted, creditors can pursue debt collection based on state law remedies outside the bankruptcy regime, and this typically means foreclosure of the collateral. The automatic stay is one of the key procedural mechanisms designed to remedy the collective action problem in bankruptcy and prohibits unilateral creditor action that may lead to inefficient liquidation of the debtor.⁹² Also, foreclosure after obtaining relief from stay is typically viewed as a forced sale, which Congress has recognized to be the scenario resulting in a liquidation value which will be a minimum.⁹³

This outcome stands in marked contrast to other forms of liquidation such as going concern sales or orderly liquidations under Chapter 11 plans.⁹⁴ This course of action represents the fastest method by which the bank can quickly remove the debtor from its portfolio without the supervision of a bankruptcy court, since Chapter 11 bankruptcy proceedings would be effectively terminated with respect to the bank's claim. As such, the choice concerning this course of action provides a good empirical basis to test the theoretical model presented in Part II.

A. Sample Selection and Research Design

The data collection is threefold. First, to overcome any case selection bias, many sources are utilized to collect a comprehensive list of Chapter 11 bankruptcy cases of residential developers filed between November 2007 and December 2008. This effort drew upon news articles, The Troubled Company Reporter, Bankruptcy DataSource, Lexis-Nexis, Bloomberg, government agency databases, industry publications and other archives.⁹⁵ Second, once cases have been identified, a search is done in the PACER system to gather information about the case.

The key variables coded include information on the bank exposures in each of these cases and whether any of these banks filed a lift-stay motion

⁹²Jackson, *supra* note 15, at 893-96.

⁹³ Report of the Commission on the Bankruptcy Laws of the United States, H.R. Doc. No. 93-137, at 237 (1973).

⁹⁴ See, e.g., LoPucki & Doherty, *supra* note 19, at 5 ("Bankruptcy offers three alternatives for addressing the problems of a large public company in financial distress. The debtor may reorganize the business, sell it as a going concern, or close the business and sell the assets piecemeal.").

⁹⁵ Relevant cases are identified by searching the various databases for the terms "residential developer", "residential development", "home builder", "homebuilder", and "real estate developer," paired with "bankrupt!", "default!", and "Chapter 11". The information from these searches is cross-checked against bankruptcy filings in the PACER system.

pursuant to foreclosure.⁹⁶ The cases were also coded for variables relating to the bankruptcy filing date, geographic location, total assets and liabilities of the bankruptcy developer, its capital structure, the size of the respective bank loans and asset quality indicators of the creditor bank.⁹⁷ Cases are excluded where no banks are involved and where the financial information is unavailable. Third, based on the list of banks identified in these Chapter 11 cases, this database is augmented with financial information for these banks from the FDIC/FFIEC Central Data Repository.⁹⁸ This data collection effort yielded 285 exposures, with 175 unique developers, and 159 unique banks that are consolidated at the level of bank holding companies.

Specifically, the following data is extracted in relation to the position of banks: Total Amount of Construction and Development Loans (abbreviated *Inrecons* in the Central Data Repository), 1-4 Family Residential Loans (*Inreres*), Loans to Individuals (*Incon*) and Total Loans (*Inlgr*). The concentration level of construction and development loans in the wholesale portfolio (hereinafter, the “Concentration Ratio”) is calculated, in the same way that banks and regulators do in risk assessment examinations, as follows:

$$\text{Concentration Ratio: } Inrecons / (Inlgr - Inreres - Incon)$$

Furthermore, this study excludes cases designated as “Complex Cases” in bankruptcy proceedings, owing to multiple subsidiaries and affiliates. The creditors in such cases, typically where total assets exceed \$250 million, are often loan syndication agents, thereby making it difficult to analyze outcomes in relation to any individual bank’s portfolio risk. The cases in this study are thus middle-market companies, which are the prototypical debtors in the traditional account of Chapter 11 bankruptcy. This is confirmed by the level of assets and capital structure summarized in Table 4.

TABLE 4
CHARACTERISTICS OF DEVELOPER DEBTORS

⁹⁶ These variables are collected from the bankruptcy court dockets (through PACER). The list of bank creditors is first determined from the docket and a search is performed to determine whether any of the banks filed a lift-stay motion by searching for terms like “relief from automatic stay” and “lift stay”.

⁹⁷ These variables are collected from the bankruptcy petition, the schedules of assets and liabilities and the statement of financial affairs, using the PACER system.

⁹⁸ See generally Fed. Deposit Ins. Corp., Central Data Repository, at [https://cdr.ffiec.gov/public\(select “Download Bulk Data;” then select “Call Reports–Balance Sheet, Income Statement, Past Due;” and select Year of “2007;” in order to generate the dataset\).](https://cdr.ffiec.gov/public(select%20Download%20Bulk%20Data;then%20select%20Call%20Reports-Balance%20Sheet,%20Income%20Statement,%20Past%20Due;and%20select%20Year%20of%202007;in%20order%20to%20generate%20the%20dataset).)

	Mean (s.d.)	Minimum	Median	Maximum
Total Assets	18,250,339 (31,823,035)	85,214	8,387,285	242,025,000
Total Liabilities	18,253,998 (28,718,954)	697,600	8,787,723	194,200,000
Secured Liabilities	13,893,248 (23,015,040)	640,800	6,896,967	182,800,000

Table 5 reports the regional distribution of the residential real estate owned by the developers. They are relatively well-distributed geographically, with natural concentrations in states worst hit by the housing crisis such as the Mountain and Southeast regions.⁹⁹

TABLE 5
REGIONAL DISTRIBUTION OF DEVELOPER DEBTORS

Region	% of Developers
Mid-Atlantic	14.90
Midwest	6.30
Mountain	19.40
Northeast	2.30
Pacific	10.30
South	16.60
Southeast	30.30

Table 6 below provides some descriptive statistics about the banks present in the data sample, as of December 31, 2007. It should be noted that the mean Concentration Ratio of the banks in the sample is relatively high at more than 35.1%, compared to the 16.0% average of commercial banks in the United States for the same time period. It is worth highlighting that Tier 1 Capital and Total Risk-Based Capital ratios showed that the average bank was still in compliance with the capitalization thresholds in Prompt

⁹⁹*Id.*

Corrective Action directives at that time.¹⁰⁰ These statistics suggest that the investigations in this Article may be picking up bank behavioral patterns prior to the actual occurrence of capital inadequacy and accompanying financial distress.

TABLE 6
BANK CHARACTERISTICS

	Mean (s.d.)	Minimum	Median	Maximum
Total Assets (\$, in thousands)	67,864,991 (24,714,2078)	67,568	2,639,374	1,667,392,017
Concentration Ratio (%)	35.1% (20.2%)	7.6%	32.8%	98.1%
Tier 1 Capital (%)	8.6% (2.8%)	5.4%	8.1%	24.8%
Total Risk-Based Capital (%)	12.4% (3.7%)	9.1%	11.4%	45.8%

Finally, the data reveals that, between December 2007 and December 2009, more than 72% of these cases involved at least one bank filing a lift-stay motion in the bankruptcy proceedings of residential development debtors, resulting in a reorganization rate lower than 5%. In contrast, data gathered on similar bankruptcies between 2004 and 2006 showed lift-stay filings as occurring in less than 50% of such cases.¹⁰¹

B. Univariate Analysis

The first critical question is whether there is a univariate relationship between a bank's choice to file a lift-stay motion pursuant to foreclosure and its Concentration Ratio. To take into account cross-state differences in housing prices which may potentially affect a bank's decision to foreclose, the House Price Index for the state in which the real estate development is located (hereinafter, the "State House Price Index") is analyzed as well. For

¹⁰⁰ Under the PCA directives, a bank is under-capitalized when its total risk-based capital ratio is less than 8%, its Tier 1 risk-based capital ratio is less than 4%, or its Tier 1 leverage ratio is less than 4%. *See* 12 U.S.C. § 93(a) (2006).

¹⁰¹ Though the sample size is small during the latter time period (where there were relatively fewer defaults in the industry), the 95.0% confidence interval is calculated to be between 33.0% to 64.4%, considerably lower than the 72% level experienced in cases occurring during the current crisis.

each case, the State House Price Index is coded using the Federal Housing Finance Agency house price indices (seasonally-adjusted) for the respective state as of the quarter of the bankruptcy filing.¹⁰²

Table 7 shows the differences in the Concentration Ratio and the State House Price between cases where a bank filed a lift-stay motion pursuant to foreclosure and those where the motion was not filed. The difference in the Concentration Ratio is more than 10.0%, and is statistically significant with the p-value close to zero. In contrast, there is a less distinct difference between the State House Price levels. Analyzing this difference in the Concentration Ratio non-parametrically using the z-statistic in the Wilcoxon rank sum test, it is also statistically significant with a p-value close to zero. These statistics are then benchmarked against the State House Price Index, which shows less contrast in levels in the two types of cases and the difference between the cases is only significant to the 5.0% level.

TABLE 7
STATISTICS FROM UNIVARIATE TESTING

	Concentration Ratio	State House Price Index
Cases where Lift-Stay Motion was filed	35.80%	209.53
Cases where Lift-Stay Motion was not filed	25.50%	219.29
t-statistic	4.63***	2.56**
z-statistic	4.46***	2.53**

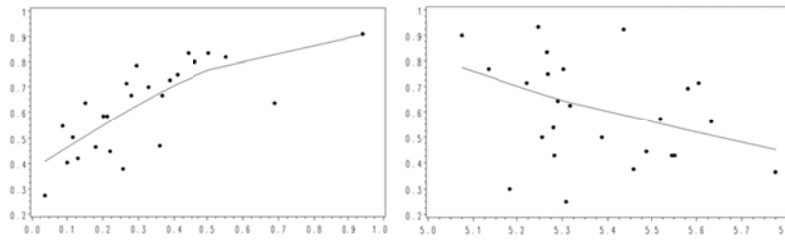
In addition, to control for asset quality, three key asset quality indicators are taken into account in this empirical analysis, namely, the charge-offs level, the loan loss allowance and the ratio of non-current loans to gross loans, in relation to the entire portfolio and the segment of construction and development exposures. Figure 2 reports the univariate relationship of these factors graphically, by plotting the probability that a bank will file a lift-stay motion pursuant to foreclosure graphically using a local regression curve.

FIGURE 2
UNIVARIATE RELATIONSHIP

2a. Concentration Ratio

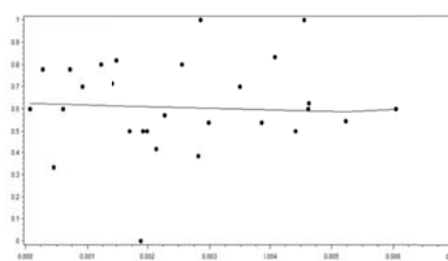
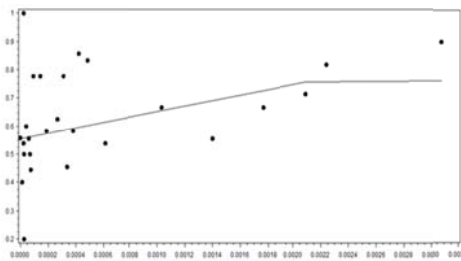
2b. State House Price Index

¹⁰²See generally Fed. Hous. Fin. Agency, House Price Index, available at <http://www.fhfa.gov/Default.aspx?Page=14> (last visited Aug. 6, 2010). The state-specific indices used in this Article are chained to 1990 levels across the board.



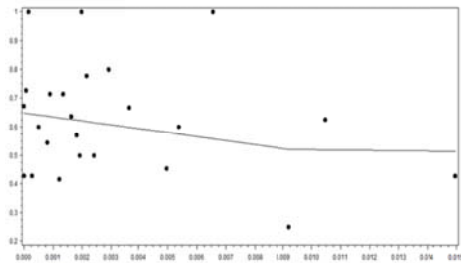
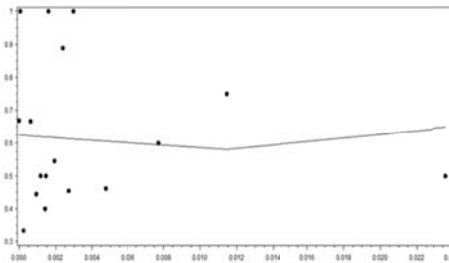
2c. Loss Rates (Charge-offs), ADC Loans

2d. Loss Rates (Charge-offs), Total Loans

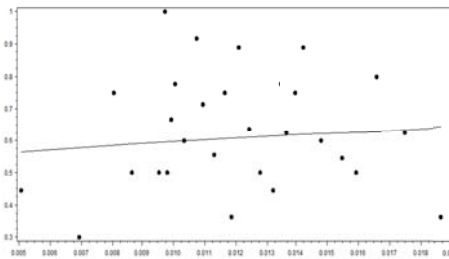


2e. Non-current Loan Percent, ADC Loans

2f. Non-current Loan Percent, Total loans



2g. Loan Loss Allowance (Bad debt reserve)



Note: The curve displays the relationship between the probability of a lift-stay motion being filed (y-axis) and the independent variable (x-axis) using a local regression.¹⁰³

¹⁰³ Local regression involves running a linear regression for every observation (x_i, y_i)

Figure 2a further supports the primacy of the Concentration Ratio as the explanation for a bank filing a lift-stay motion pursuant to foreclosure. Benchmarked against the scattered patterns shown in the other figures, the distinctive monotonic pattern relationship displayed in Figure 2a is consistent with the hypothesis that as the Concentration Ratio for a bank increases, the probability that the bank will file a lift-stay motion increases.

C. Regression Models

To control for other factors that may explain a bank's use of lift-stay motions pursuant to foreclosure, a logistic regression model is used with a dependent variable that equals 1 when a lift-stay motion was filed by a bank in the bankruptcy case and that equals 0 when no lift-stay motion was filed. Appendix 3 presents the variants of the model specifications and the results of eighteen regressions.

Columns (1) and (2) display basic models in which the filing of a lift-stay motion is a function of the Concentration Ratio and State House Price Index variables, respectively. Column (3) specifies a model with the Concentration Ratio and the size of the developer, as measured by the log of total assets. Column (4) controls for the state of the housing market in which the real estate is located at the time of the bankruptcy filing using the State House Price Index. Column (5) controls for the general housing market through the use of the Housing Price Index released by the Office of Federal Housing Enterprise Oversight in the month that the developer filed the bankruptcy petition.

Columns (6) and (7) controls for a bank's Total Assets and the size of its construction and development loan book in order to ensure that the results are not driven by larger banks or banks with higher absolute amounts of construction and development loans.¹⁰⁴ Columns (8) to (10) expand this model to include variables reflecting the capital structure of the developer: the leverage ratio, the ratio of secured debt to 75% of total assets, the ratio of secured debt to total liabilities.¹⁰⁵ Column (11) introduces dummy

in the data, where each observation is weighted according to a weighting function that is a decreasing function of the distance between x_i and an adjacent observation, x_j . The fitted values from the local regression form the connecting line constituting the functional relationship between the variables.

¹⁰⁴ A set of unreported regressions includes tests excluding banks with multiple exposures in the sample, and the Concentration Ratio is still statistically significant at the 1.0% confidence level.

¹⁰⁵ A set of unreported regressions included these control variables, after winsorization at the second and ninety-eighth percentiles, and the regression results were substantially similar to those where the variables were not winsorized.

variables based on the geographic region: Pacific, Mountain, Midwest, Northeast, Mid-Atlantic, South and Southeast (the base category) – to control for any regional characteristics apart from the local housing price levels.

A set of models to test the potential explanatory power of the banks' asset quality is presented in Columns (12) to (17). These columns display models specifying various asset quality indicators for the overall portfolio of the bank as well as its loan book for construction and development, including loss rates (based on net charge-offs), the percentage of non-current loans, and the percentage of loan loss allowance, while controlling for the size of the developer and the State House Price Index, and the Concentration Ratio is included in Column (17). Finally, Column (18) presents the “Kitchen Sink” model where all variables are tested in the regression.

Regardless of the specification, the primary result is the same: the estimated coefficient of Concentration Ratio, when included in the model, is positive, meaning that the likelihood of a lift-stay filing increases when the bank has higher concentration risk. The effect of the Concentration Ratio is highly significant, both statistically (a p-value of 0.01% means that there is less than one in ten thousand chance that the relationship observed is due to chance) and economically (on average, a standard deviation change in the Concentration Ratio is associated with an approximately 71.4% greater likelihood of a bank filing a lift-stay motion).

Another variable which is found to be statistically significant throughout specifications is the State House Price Index in the month of the bankruptcy filing, a factor representing systematic risk. An idiosyncratic factor which is significant in 50% of the regressions run (albeit at a higher level of significance) is the size of the developer, a variable which is usually considered to affect the probability of liquidation/reorganization. Most surprisingly, none of the asset quality indicators are found to have statistical significance in these models up to the 10% level. The loss rates variables are statistically significant at the 15% level in two of the regression models, but are no longer significant with the addition of the Concentration Ratio (see Column (17)). These results thus buttress the argument that the key impetus driving a bank towards liquidation and foreclosure is not asset quality, but concentration risk.

Furthermore, the addition of the Concentration Ratio variable does more to improve the fit of the model than any of the other variables tested. This finding is confirmed using tests for model fit and sensitivity. First, model performance is evaluated by estimating Receiver Operating Characteristic (“ROC”) curves to test the extent to which each model discriminates between cases where a lift-stay motion is filed by a bank and those where it

is not.¹⁰⁶ A ROC curve graphs the proportion of cases that the model correctly identifies as positive (1-Specificity), versus Sensitivity, the proportion of cases that the model correctly identifies as negative. The area under the curve ("AUC") quantifies the overall rank-ordering ability of the model, where a perfect model will yield an area of 1.0 and an uninformative random model would yield an area of 0.5.

Table 8 below tabulates the AUC as well as the 95.0% confidence interval for the following models: (i) a model testing the Concentration Ratio only; (ii) a parsimonious model testing only the Concentration Ratio, the State House Price Index and the size of the developer (the "Parsimonious Model"); (iii) the "Kitchen Sink" model. The AUCs confirm the above results that the Concentration Ratio variable does contain substantial information value in terms of discriminating between whether a bank files a lift-stay motion – the AUC for the model testing the Concentration Ratio only is 0.6572, not too far off from the 0.7279 level in the "Kitchen Sink" model.

TABLE 8
EXAMINING MODEL FIT USING AREA UNDER ROC CURVES

	AUC	95.0% Confidence Intervals	
Model Testing Concentration Ratio	0.6572	0.5928	0.7217
Parsimonious Model	0.6917	0.6260	0.7574
"Kitchen Sink" Model	0.7279	0.6656	0.7902

A technique to improve the quality of the results involves controlling for the possibility that concentration risk only affects outcomes at the extreme (where banks have either very low or very high Concentration Ratios). To such end, an analysis is undertaken by replacing the continuous Concentration Ratio variable with two indicator variables representing the top and bottom deciles for concentration levels, respectively. Using the specification of the Parsimonious Model, both indicator variables are only significant at the 5.0% level and the AUC is lower at 0.6180, showing that the discriminative ability of the Concentration Ratio is not driven by extreme values.

Stepwise logit regressions are then undertaken as a final check of the robustness of the results. This kind of regression analysis adds or subtracts independent variables according to the variable's effect on the model's predictive power (a sequence of F-tests). Consistent with prior results, the

¹⁰⁶A ROC curve is a graphical representation of classification performance for binary variables, and the area under the ROC curve (the AUC) is a simple metric allowing us to gauge the performance of the dependent variable in distinguishing between two cases.

Concentration Ratio is statistically significant and retains the expected sign.¹⁰⁷ Therefore, the evidence presented so far shows that an exogenous factor in the form of a bank's own concentration risk in its overall portfolio is an empirically important determinant in a bank's decision to pursue liquidation. Moreover, the impact of this regulation-driven constraint increasing the probability of asset fire sales is robust to the inclusion of a host of control variables in the multivariate regression.

IV. RE-CONCEPTUALIZING BANKRUPTCY POLICY

This Article has provided the first set of systematic evidence, to the best of the author's knowledge, that the financial regulatory regime affects bankruptcy law and policy. Some key issues remain for discussion: (i) Are there alternative and plausible explanations for the observed behavior?; (ii) How applicable are the conceptual framework and empirical results to cases outside commercial real estate?; and (iii) What are the policy implications?

This Part starts by recognizing the possibility that severe negative shocks in the real estate market might have effectively diminished any going concern surplus, rendering liquidation inevitable. The behavior observed in this Article would thus fall within the classical paradigm of value maximization. To address this argument, Part IV.A develops a brief discourse of "value" in the collateral underlying construction and development loans. This discourse leads to the logical conclusion that asset liquidation in such cases is typically an action of last resort by secured creditors, resulting in an inference that an exogenous factor might be at work outside the economics within the four corners of the bankruptcy case.

Part IV.B bolsters the above argument by examining, in turn, the alternatives options available to secured creditors vis-a-vis the bankrupt debtors. While debt restructuring and bankruptcy reorganization is not risk-free or cost-free, the available alternatives may result in greater destruction of value, and thus lower recoveries. Together, Parts IV.A and IV.B identify the baseline of creditors' incentives, and deviations from this baseline, as evidenced by the results in Part III, suggest that these incentives might have been distorted by the micro-prudential regulatory regime. Throughout this discussion, I will also allude to the applicability of generalizing the theory and findings in the Article outside commercial real estate.

Part IV.C articulates the policy implications of regulatory bankruptcy. One key implication relates to bankruptcy policy—just as there is

¹⁰⁷ The resulting model specification is that of the Parsimonious Model, supporting the above results. Note that a key limitation of stepwise regressions is that the specification of the final model is driven by the data, instead of hypotheses formulated from theories. This technique is only used to check for robustness of the associations.

growing concern regarding the actual economic interests of creditors participating in bankruptcy cases owing to financial innovation, we should be equally worried that financial regulation has changed the nature of bank creditors' economic interests of bank. Moreover, regulatory bankruptcy in relation to commercial real estate cases during the downturn could lead to a collective action problem. This problem, best described as bankruptcy contagion, can contribute to heightened systemic risk in the financial system. Finally, Part IV.D discusses how the regulatory bankruptcy problem can be mitigated through policy reforms relating to the specific provisions relating to the ability of secured creditors to obtain relief from stay as well as the establishment of the Financial Stability Oversight Council by the Dodd-Frank Act.¹⁰⁸

A. Understanding "Value" in Distressed Cases

To begin, it is useful to first highlight the classical argument that liquidation is typically a value-maximizing strategy for secured creditors.¹⁰⁹ It would generally be conceded that bankruptcies are fairly often filed where the lenders are over-secured, i.e., where there is value in the collateral in excess of the secured debt.¹¹⁰ In such cases, the push for immediate liquidation (notwithstanding the risk of loss of excess value) by secured creditors is rational and value-maximizing.

However, liquidation would only make sense if secured creditors could be sure to maximize recovery on the loans, minus the costs of liquidation.¹¹¹ As Professors Baird and Rasmussen have remarked, "[t]he recent credit contraction has meant that the sale of the company sometimes must be done too quickly and sometimes cannot be done at all."¹¹² Indeed a body of research in finance literature relating to financial distress and fire sales casts doubt on the validity of this alternative interpretation in illiquid markets. Liquidated assets have been found to be underpriced during recessions.¹¹³

A study of defaulted firms in the United States reported the fire sale effect as follows: creditors recover less if the industry is in distress, particularly if the industry is characterized by assets that are specific, that is,

¹⁰⁸See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 112(a)(1)(A) (2010).

¹⁰⁹See, e.g., THOMAS. H. JACKSON, *THE LOGIC AND LIMITS OF BANKRUPTCY LAW* 7-19 (1986); Robert C. Clark, *The Interdisciplinary Study of Legal Evolution*, 90 *YALE L.J.* 1238, 1252 (1981)

¹¹⁰See, e.g., Westbrook, *supra* note 18, at 851.

¹¹¹ Stephen J. Lubben, *No Big Deal: The GM and Chrysler Cases in Context*, 83 *AM. BANKR.L.J.* 531, 544 (2009).

¹¹² Baird & Rasmussen, *Anti-Bankruptcy*, *supra* note 1, at 651-52.

¹¹³ Shleifer & Vishny, *supra* note 2, 1344-45.

not easily re-deployable by other industries, and if the debt is collateralized by such specific assets.¹¹⁴ In addition, an analysis of commercial real estate mortgages during the downturns in the 1980s and 1990s found that distressed commercial real estate obtained through foreclosure by the lender during the early 1990s were sold at discounts of roughly 30.0-35.0% towards the beginning of the market downturn, declining to the 20.0% range as the market bottomed out, and the fire sale discounts effectively disappeared in 1994-1995 when significant liquidity returned to the market.¹¹⁵ The authors of this study also concluded that restructuring is more attractive “when the pool of buyers for the foreclosed asset is thin and wealth-constrained.”¹¹⁶

To then understand why in construction loans, liquidation is seldom preferable to re-organization, it is necessary to understand the path of value-maximization in bankruptcies involving construction and development loans, and the nature of liquidation values and going concern values in such cases. The choice between these values has been recognized to be at the heart of most disputes over asset valuation in bankruptcy.¹¹⁷ Although it is typically contentious as to whether a financially distressed firm has going-concern surplus over liquidation value,¹¹⁸ such determination is relatively clear-cut in relation to construction and development loans generally. Using terminology from bank lending, these values are commonly termed “Post-Stabilization Value,” a value based on forecasted sale prices of the residential homes constructed during a project and “As-Is Liquidation Value,” a value at any time prior to the completion of construction.¹¹⁹

The Post-Stabilization Value of a construction and development project is important because it is the basis upon which a bank makes the decision to originate the loan. In particular, this value is used to calculate a regulatory metric, the Loan-to-Value (hereafter known as LTV) ratio, which is the ratio of the loan amount to the Post-Stabilization Value. Under financial

¹¹⁴ Viral V. Acharya, Sreedhar T. Bharath & Anand Srinivasan, *Does Industry-Wide Distress Affect Defaulted Firms? Evidence from Creditor Recoveries*, 85 J. FIN. ECON. 787, 788 (2007).

¹¹⁵ David T. Brown, Brian A. Ciochetti & Timothy J. Riddiough, *Theory and Evidence on the Resolution of Financial Distress*, 19 REV. FIN. STUD. 1357, 1387 (2006).

¹¹⁶ *Id.*, at 1393.

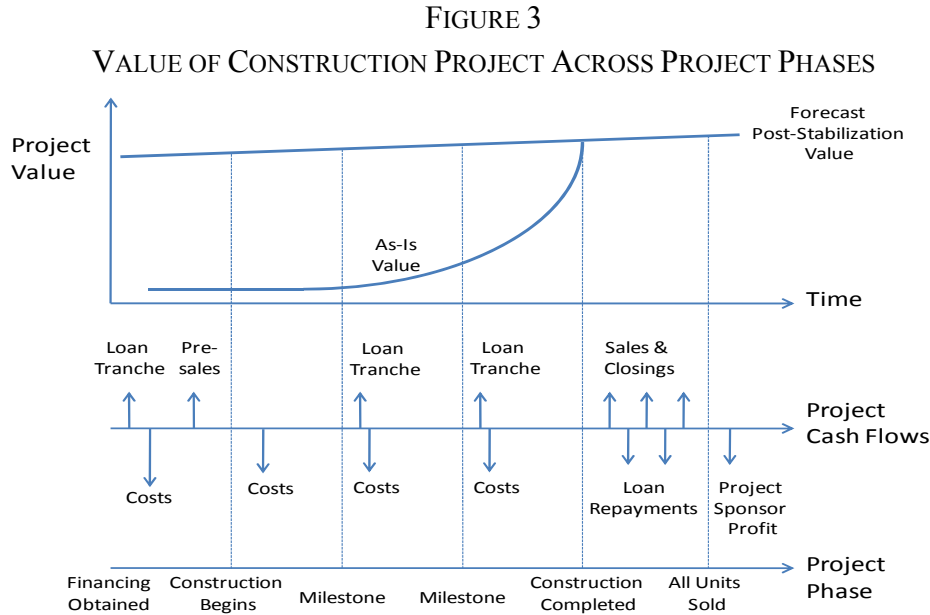
¹¹⁷ Fortgang & Mayer, *supra* note 23, at 1063 (“The creditor looking to foreclose on an asset used as collateral may foresee its immediate disposition and, consequently, may attach a ‘liquidation value’ to the asset. The same creditor, seeking to maximize his secured claim under a plan of reorganization, may foresee the same asset’s continued use as part of the debtor’s business, and consequently may attach a ‘going concern value’ to the asset.”).

¹¹⁸ See, e.g., Baird & Rasmussen, *End of Bankruptcy*, *supra* note 15, at 781-82.

¹¹⁹ See Frank diLorenzo, *The Construction Loan Agreement* (pts. 1, 2 & 3), 89 RMA J. No. 3 at 58 (Nov. 2006), 89 RMA J. No. 4 at 106 (Dec. 2006), 89 RMA J. No. 5 at 78 (Feb. 2007).

regulations governing real estate lending, the LTV ratio cannot exceed supervisory limits.¹²⁰ Since this limit ranges between 65% and 85%,¹²¹ the As-Is Value, which is typically very low at the outset, is much less relevant to the bank's decision of assessing the loan on its merits.

Figure 3 below provides a graphical explanation of Post-Stabilization versus As-Is Value as a construction and development project evolves over time:



As the above Figure depicts, the As-Is Value of the project moves from a low position non-linearly towards its Post-Stabilization Value, which it ought to reach at project completion. There is a slight upward trend in the forecasted post-stabilization value to reflect the long-term tendency for residential real estate to rise in value, but clearly the path can be quite volatile in reality. On the other hand, the As-Is Value only reaches a level close to the bank's total loan value close to the end of the project. Moreover, common areas, utilities, sewage and infrastructure, which

¹²⁰OFFICE OF THE COMPTROLLER OF THE CURRENCY, COMMERCIAL REAL ESTATE AND CONSTRUCTION LENDING: COMPTROLLER'S HANDBOOK 66 (1998). The four major bank regulatory agencies, namely, the Office of Thrift Supervision, the Federal Reserve, the Office of the Comptroller of the Currency, and FDIC, have adopted a uniform rule on Loan-to-Value limits in real estate lending. *See* 12 C.F.R. pt. 365 (FDIC); 12 C.F.R. pt. 208, subpt. C (Fed. Reserve); 12 C.F.R. pt. 34, subpt.D (OCC); and 12 C.F.R. § 563.100-101 (OTS).

¹²¹*Id.*

constitute part of Post-Stabilization Value, are unlikely to be fully completed until the end of the project.¹²²

Therefore, if the project is liquidated in an uncompleted state, the As-Is Liquidation Value of the project is much lower than the Post-Stabilization Value. As a regulatory manual on bank lending states, banks ought to have every incentive to see the project to completion, and if the project runs into trouble, work out a solution with the sponsor:¹²³

Since the full collateral value supporting a construction loan does not exist when the loan is granted, a bank must be in a position to either complete the project or to salvage its construction advances if default occurs. Instituting litigation against a borrower to collect on a construction loan or liquidating collateral are usually last resort measures in a workout situation . . . the lack of attachable assets may even make such action futile.

This policy statement is driven by the rationale that a construction loan is unlikely to be repaid in full if the development project is unfinished or abandoned prior to completion. Unlike other commercial loans where the loans are to be repaid using the stream of revenue from a continuing business, a construction and development project is not an ongoing operation that generates a positive cash flow prior to the completion of construction. Furthermore, a liquidation value assumes no future or a limited future for an asset's relationship to a concern.¹²⁴ This assumption is unduly strained in justifying the liquidation of construction and development loans, given the asymmetric payoffs depending on whether the construction project is completed or unfinished. Put simply, the full potential value of the loan collateral would only be realized at project completion.

For distressed debtors in other industries, the distinction between liquidation values and going concern values is often less clear-cut. As such, the argument put forth in this Article is: if an exogenous factor arising from the financial regulatory regime can influence secured creditors to favor liquidation in such an extreme case where reorganization is preferable to liquidation, this logic should theoretically extend to less extreme cases, i.e.,

¹²² Note that the common areas and infrastructure in a development project are typically built simultaneously, due to the (efficient) practice of delivering all of the same kind of building material at the same time. Due to economies of scale, it is unlikely that individual buyers can, for example, put in place their own roofs, roads, and coordinate to build the community swimming pool, without unreasonable cost, should the construction project suddenly cease.

¹²³ OFFICE OF THE COMPTROLLER OF THE CURRENCY, *supra* note 69, at 21.

¹²⁴ Fortgang & Mayer, *supra* note 23, at 1064.

bankruptcy cases outside commercial real estate.

B. Dearth of Alternatives during Downturn Conditions

This section considers the alternatives available to secured creditors to put the assets to other use during the recession, apart from a reorganization positing the continuation of the construction project. This step of the analysis is necessarily to deal with the argument that secured creditors would not be maximizing the value of their claims by pursuing a debt restructuring and bankruptcy reorganization where demand for completed houses has sharply contracted. After all, for reorganization to be a viable option, a going-concern surplus has to exist to the extent that the expected value of the business's ongoing operations exceeds the value that could be generated by putting the assets to some other use.¹²⁵

First, an option open to the secured creditor is to undertake a bulk sale of the development in its unfinished state to another financial institution or developer. As the above discussion of As-Is Value versus Post-Stabilization Value suggests, a sale of the property "As Is" is likely to yield a substantially lower value than the market value of the completed property estimated on the basis of sales to retail buyers. Moreover, where a project is terminated prematurely and sold to a new corporate sponsor, numerous costs must be re-sunk, an entire network of contractors and sub-contractors re-established, and weather-damaged sections rebuilt. Furthermore, such bulk sales are likely to be subject to the "Fire Sale" effect discussed above.

Second, the secured creditor can foreclose and hold onto the development until it can find buyers offering reasonable prices. This option is not risk-free, because partially-completed properties, which have been foreclosed upon but not yet resold to a new sponsor, may depreciate in value quickly due to vandalism, exposure to the elements, and simple lack of maintenance.¹²⁶ For example, in the bankruptcy proceedings of California Cove at San Elijo, an expert witness testified that there was considerable risk that the partially-completed homes would be substantially damaged in upcoming months if immediate work is not performed to complete certain aspects of the construction:¹²⁷

¹²⁵ Baird & Rasmussen, *Twilight*, *supra* note 15, at 114.

¹²⁶ Note that the principal amount of the loan is typically structured for payment from the sale and closing of homes after completion of construction. Thus, until completion is reached and Certificates of Occupancy have been issued, the bank is unlikely to receive repayments from property sales. On the contrary, the bank may be imposed with maintenance costs, including fines owing to non-compliance with municipal ordinances for partially-developed properties.

¹²⁷ See *In re California Cove at San Elijo, LLC*, No. 08-15506 (Bankr. C.D. Cal. Sep. 5, 2008).

[A] concern is that the doors on the Production Homes are not completed. There are no door handles and the weather stripping has not been installed. This means wind and rain will damage the doors of the Production Homes and, additionally, the elements can penetrate into such homes by being blown through the holes where the door handles should be. Thus, even without rain, dust and debris will likely be blown into the Production Homes, which will cause damage to the interior of such homes. Additionally, the lack of maintenance on the Project, combined with the lack of door handles and, thus, locks on the Production Homes, creates an abandoned feel for such homes raising the prospect of theft and vandalism as well. In addition to the foregoing, the drainage for the Production Homes has not been completed either. This is especially worrisome since the Production Homes are situated on a hill and the improper drainage could possibly cause erosion to the earth surrounding such homes, compromising their structural integrity.¹²⁸

The above testimony thus illustrates the potential complications and risks of further devaluation of a development project if it were foreclosed upon during a state of partial completion. Nonetheless, a third alternative is for secured creditors to foreclose, demolish the partially-completed development and sell the raw real estate in a piecemeal fashion. A prompt liquidation of the real estate may be considered the best course of action where a debtor is “not worth saving,” and thus a construction and development project that produces homes no one will buy amidst the financial crisis should be liquidated.¹²⁹

For this alternative to yield more value than a reorganization in the case of residential development projects, the assumption is that the net present value of the completed homes has fallen to zero. Although the housing market has deteriorated during the downturn, this assumption may be too

¹²⁸See *Declaration Of David Caillouette In Support Of Motion For Relief From The Automatic Stay*, *id.*, at 498-499 (Nov. 18, 2008).

¹²⁹See Douglas G. Baird & Thomas H. Jackson, *Bargaining After the Fall and the Contours of the Absolute Priority Rule*, 55 U. CHI. L. REV. 738, 741 (1988). Baird and Jackson argue that:

[s]ome firms that cannot meet their obligations are not worth keeping intact as going concerns. These are the manufacturers that sell computers no one will buy and the restaurants that serve food no one will eat. The firm's assets are worth more sold piece by piece than as a unit.

extreme and untenable. Table 9 below demonstrates that housing starts have declined between 2006 and 2008. Nonetheless, housing starts remain positive, i.e., there are still a number of residential development projects begun during the 2007-8 downturn—a phenomenon which should be non-existent in a state if the above assumption is true. As such, the key risk faced by the secured creditors if they were not granted relief from stay to foreclose, as the debtors raised during the bankruptcy proceedings of Village Homes of Colorado, is "the risk that the Debtor's improvements to the property will not be enough to offset any potential market decline and their claims will be diminished as the market goes down."¹³⁰ This particular risk then has to be balanced against the other risks pertaining to a foreclosure or liquidation as outlined above.

TABLE 9
HOUSING STARTS BY REGION (2006-8)

	Northeast	Midwest	South	West
2006	167	280	910	444
2007	143	210	681	321
2008	121	135	453	196

Numbers in thousands. Source: Fitch Ratings.¹³¹

Another way to put this issue in perspective is to draw from the historical policy underpinnings for rehabilitation and reorganization in the equity receivership that was utilized to resolve the financial distress which permeated the railroad industry between the late nineteenth and twentieth centuries.¹³² Attorneys and investment bankers realized that the liquidation of distressed railroads would destroy a considerable amount of going concern value.¹³³ There was also a broad consensus that the railroad industry must be saved for public interest reasons, absence of which would leave "nothing but a streak of iron-rust on the prairie", the latter possibly being slightly analogous to half-completed abandoned residential properties which may contribute to price-depressing spillover effects in the region.¹³⁴ Indeed, a 2008 discussion paper by the Federal Reserve Bank of Boston stated that

¹³⁰See *In re Village Homes of Colo. Inc.*, No. 08-27714 (Bankr. D. Colo. Nov. 6, 2008).

¹³¹FITCH RATINGS, US HOMEBUILDING/CONSTRUCTION: THE CHALK LINE—QUARTERLY UPDATE: SPRING 2009.

¹³²See generally David A. Skeel, Jr., *Debts Dominion, A History of Bankruptcy Law in America* (2001), at 48-70, 131-41.

¹³³See Henry H. Swain, *Economic Aspects of Railroad Receiverships*, 3 Econ. Stud. 53, 73 (1898); W. Miller, Jr., *Bankruptcy's New Value Exception: No Longer a Necessity*, 77 B.U. L. Rev. 975, 976-77, 981-82 (1997).

¹³⁴*Cent. Trust Co. of N.Y. v. Wabash*, 29 F. 618, 626 (E.D. Mo. 1886).

one of the three main channels by which foreclosures can have a negative spillover effect on housing prices is blight.¹³⁵

Therefore, the above discussion suggests that a rational secured creditor, when faced with a decision within the four corners of a bankruptcy case, would normally be hard-pressed to choose liquidation of incomplete residential developments and settle for repayment from the low As-Is Liquidation Value. The thrust of this Part is not an argument that reorganizations are risk-free in these situations, but rather that the alternatives are likely to result in greater destruction of value. The main takeaway here is: an exogenous factor is clearly influencing secured creditors to favor liquidation in such an extreme case where reorganization is preferable to liquidation, and this paper identifies financial regulation as a major suspect.

It might be argued that liquidation is preferable to “throwing good money after bad”, as the saying goes, where a bank may have to increase its exposure to a bankrupt development (whether through pure-vanilla loans or instruments providing the bank with an equity upside) in order to keep it as a going concern. However, liquidation is by no means value-maximizing if properties foreclosed upon by banks merely sit on the bank’s books as a result of a thin and illiquid market for buyers. For example, in relation to construction and development loans, this phenomenon is evidenced by the high levels of Other Real Estate-Owned (OREO) remaining on the balance sheets of banks. The OREO is the class of property which has been taken back by a bank after an unsuccessful sale at a foreclosure auction, i.e., real estate “in limbo.” Between 2007 and 2008, the total amount of OREO in relation to construction and development loans in all FDIC-insured banks in the U.S. rose by about 300%, and exceeded \$15 billion by the end of 2009.¹³⁶ The Office of the Inspector General in the Material Loss Review of Omni National Bank aptly summarized this phenomenon for a creditor bank by stating that “[i]n 2008, Omni’s OREO portfolio included over 600 properties from foreclosed development loans. The only way Omni could sell the properties was at deep discounts”.¹³⁷

Furthermore, construction loans ranked ahead only of subprime mortgages, credit cards, and 2nd lien mortgages in terms of loss rates for

¹³⁵See generally Kai-Yan Lee, *Foreclosure’s Price-Depressing Spillover Effects on Local Properties: A Literature Review* (Federal Reserve Bank of Boston Community Affairs Discussion Paper, 2008), available at <http://www.bos.frb.org/commdev/pcadp/2008/pcadp0801.pdf>.

¹³⁶Quarterly Banking Profile 2009, *supra* note 10, at 5.

¹³⁷See OFFICE OF THE INSPECTOR GEN., U.S. TREASURY., MATERIAL LOSS REVIEW OF FREEDOM BANK OF OMNI NATIONAL BANK 13, Audit Rep. No. 10-017 (2009). [https://ustreas.gov/inspector-general/audit-reports/2010/OIG10017%20\(Omni%20MLR\).pdf](https://ustreas.gov/inspector-general/audit-reports/2010/OIG10017%20(Omni%20MLR).pdf)

banks. This means that it is unlikely that there exists a ready pool of buyers, except at extremely low prices.¹³⁸ As the Chairman of the Federal Reserve, Ben Bernanke stated, the fire sale price may be much less than the hold-to-maturity price where there is no active market for distressed assets and securities.¹³⁹ If banks start to conduct fire sales, they can spark a vicious circle as fire sales spawn big write-downs and capital reductions, which, in turn, force additional sales, sending the price down further.¹⁴⁰

A similar position was taken by the Office of the Inspector General in the Material Loss Review of Riverside Bank of the Gulf Coast when commenting that supervisory guidance provided to the bank to off-load loans in the secondary market, in order to mitigate real estate concentrations in adverse market conditions, turned out to be the wrong strategy.¹⁴¹ The bank eventually suffered unprecedented and unexpected losses on the market. Focusing on this case, the Office of the Inspector General considered it a lesson learned for bank examiners that fire sales may not always be a reliable option, especially where the real estate market has already deteriorated.¹⁴²

Overall, given the illiquidity in the market during the downturn, it is extremely difficult for banks to rely on market alternatives such as selling the loans or claims to third parties. Following a sharp decline in an asset's price, investors normally will buy the asset after they deem its price has dropped enough and help stabilize the market, but in times of crisis, investors may be unable or unwilling to buy the asset.¹⁴³ When market liquidity is low, namely in times of market stress, asset sales establish lower market prices and result in financial institutions marking down their

¹³⁸BD. OF GOVERNORS OF THE FED. RESERVE SYS., THE SUPERVISORY CAPITAL ASSESSMENT PROGRAM: OVERVIEW OF RESULTS 5(2009), available at <http://www.financialstability.gov/docs/SCAPResults.pdf>.

¹³⁹ Alan Rappeport, *Bernanke: Bailout Would Cool Fire Sales*, CFO.COM, Sep. 23, 2008, available at <http://www.cfonet.com/article.cfm/12286942>.

¹⁴⁰*Id.*

¹⁴¹OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF RIVERSIDE BANK OF THE GULF COAST 3 (2009).

¹⁴²*Id.* See also OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF 1ST CENTENNIAL BANK 18, Audit Rep. No. 09-019 (2009) (stating that the bank's recovery efforts from the loan losses were negatively affected by an upheaval in the secondary market); OFFICE OF THE INSPECTOR GEN., FED. DEPOSIT INS. CORP., MATERIAL LOSS REVIEW OF ALLIANCE BANK 12, Audit Rep. No. 09-022 (2009) (criticizing the fact that the bank was relying on the sale of real estate collateral as the primary source of repayment for the loans).

¹⁴³U.S. GOVERNMENT ACCOUNTABILITY OFFICE, FINANCIAL MARKETS REGULATION: FINANCIAL CRISIS HIGHLIGHTS NEED TO IMPROVE OVERSIGHT OF LEVERAGE AT FINANCIAL INSTITUTIONS AND ACROSS SYSTEM, A Report to the Subcommittee On Oversight and Investigations, House Committee On Financial Services, No. 10-555T (2010).

positions—potentially creating a reinforcing cycle of deleveraging across the financial system.¹⁴⁴

C. Implications of Regulatory Bankruptcy and Bankruptcy Contagion

With rapid changes in the financial industry and the advent of complex derivatives, there has been growing concern regarding the actual economic interests of creditors participating in bankruptcy cases, which may conflict with its position purely as a creditor.¹⁴⁵ As Professors Black and Hu summarized the problem, voting in bankruptcy rests on the logic "that control rights should be held by those with an incentive to increase the value of the firm, or at least the value of the asset class held."¹⁴⁶ Regulatory bankruptcy, mainly affecting banks which are secured creditors, has analogous implications for bankruptcy policy in terms of changing the bargaining dynamics and decision-making in a pro-creditor bankruptcy regime.¹⁴⁷

More importantly, regulatory bankruptcy has serious implications in terms of a resulting collective action problem. As a product of the financial regulatory regime, regulatory bankruptcy is not an idiosyncratic driver of creditors' incentives. Indeed the numbers documented in the Part III and the wave of commercial real estate defaults observed during the crisis suggest a systemic risk problem. A starting point to understanding this collective action problem lies in appreciating that a primary purpose of bankruptcy law is to solve a tragedy of the commons where numerous dispersed creditors making asset grab decisions in relation to a distressed debtor can be worse-off relative to a situation where asset allocation decisions are made as a group.¹⁴⁸ In a recession, this collective action problem can play out on a larger scale across bankruptcy cases.

¹⁴⁴*Id.*

¹⁴⁵*Supra*, note 25.

¹⁴⁶ Black & Hu, *supra*, note 12, at 734.

¹⁴⁷ There is a line of literature discussing the shift from the debtor-in-possession ("DIP") period where the bankrupt firm remains under control of the debtor's managers to the secured-party-in-possession ("SPIP") era where the bankruptcy process became increasingly controlled by secured creditors: *see, e.g.*, Barry E. Adler, Vedran Capkun & Lawrence A. Weiss, *Destruction of Value in the New Era of Chapter 11*, (NYU Working Paper No. 06-032, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1291620; Elizabeth Warren & Jay Westbrook, *Secured Party in Possession*, 22 AM. BANKR. INST. J. 7, at 12. Note that the issue of whether a pro-creditor bankruptcy regime is desirable is out of the scope of this Article, which serves to provide a theoretical framework and empirical account of the regulatory bankruptcy phenomenon.

¹⁴⁸ Jackson, *supra* note 15, at 10-13. *See also* BARRY E. ADLER ET AL., BANKRUPTCY CASES, PROBLEMS, AND MATERIALS 2 (2007) (citing that "[b]ankruptcy law . . . responds to this collective action problem, a problem akin to the one that exists when individuals,

In the traditional collective action problem envisaged by the drafters of the bankruptcy regime, none of the creditors have any incentive to exercise self-restraint in collecting claims as it merely leaves a larger pool of assets for the debtor's more aggressive creditors.¹⁴⁹ Similarly, in regulatory bankruptcy cases, none of the banks with concentration risk have any incentive to exercise self-restraint in liquidating the relevant debtors in order to avoid the risk of forced liquidation, if there is likely to be a run on the market owing to financial regulatory pressure exerted on multiple banks.¹⁵⁰ This process deserves the term *bankruptcy contagion* because the exogenous factor affecting bankruptcy proceedings—the micro-prudential regulatory regime—is not an idiosyncratic factor at work but rather one which affects the banking industry all at once—a systemic factor. As the theoretical framework in Part II suggests, banks as a class can reduce tail loss rates, and thereby capital adequacy requirements, more effectively by reducing concentration risk, as compared to maximizing recovery.

This problem takes on a greater significance when we look at the proportion of banks with high concentration risk in the United States. The Congressional Oversight Panel reported in 2010 that, prior to the crisis, many banks' portfolios were becoming less diversified generally.¹⁵¹ By 2005, 60% of the banks in eleven states, including California, Arizona, and Nevada, had commercial real estate exposure of more than three times their capital levels.¹⁵² Bankruptcy contagion can also be inferred from the empirical evidence in Part III which documented the low bankruptcy reorganization rate of such cases (under 5%) and the strong relationship between banks' concentration risk levels and their intent to liquidate. As such, bankruptcy contagion, a knock-on effect of regulatory bankruptcy, is a serious phenomenon which contributes to elevated systemic risk in the financial system.

Where regulatory scrutiny by bank supervisors intensifies across the board, and prices for the loan collateral are falling, troubled banks have to sell similar types of assets as quickly as possible, or else face the lowest prices of all sellers, causing these prices to collapse as numerous banks conduct near simultaneous fire sales.¹⁵³ The riskier the portfolio, the more

pursuing their own interest, graze too many cattle in a common pasture").

¹⁴⁹See DOUGLAS G. BAIRD & THOMAS H. JACKSON, *CASES, PROBLEMS, AND MATERIALS ON BANKRUPTCY* 39-40 (2d ed. 1990).

¹⁵⁰See, e.g., Antonio E. Bernardo & Ivo Welch, *Liquidity and Financial Market Runs*, 119 Q. J. ECON. 135, 139 (2004) (examining how fears of liquidity shocks in the future can be self-fulfilling by prompting investors to sell in advance of the crowd).

¹⁵¹Oversight Report, *supra* note 10, at 23.

¹⁵²*Id.*

¹⁵³See generally THE WARWICK COMM'N ON INT'L FIN. REFORM, UNIV. OF WARWICK, IN PRAISE OF UNLEVEL PLAYING FIELDS (2009), available at

capital banks must maintain to guard against that risk, thereby contributing to capital shortfalls. As capital shortfalls spread to more banks leading to further fire sales, the situation turns into a vicious cycle which can quickly ensnare other banks which did not necessarily begin in a precarious position but whose real estate exposures become less and less adequately protected as fire sales cause market-wide prices to fall. Eventually, this situation forces banks to sell assets previously assessed to have high credit quality, as each sale further lowers prices.

Indeed this race to the bottom, promoted by regulatory bankruptcy, has been a feature of previous financial crises as well as the recent one.¹⁵⁴ It should be noted, however, that regulatory bankruptcy and bankruptcy contagion can be generalized outside the realm of commercial real estate. An analogy can be drawn to an episode of fire sales undertaken by British life insurance companies owing to financial regulatory issues in 2002. In the United Kingdom, life insurers were subject to a "resilience test" for solvency based on stock market values. As stock market prices plunged during the recession in 2002, insurers were forced to sell stocks so as to reduce their exposures to them, and maintain solvency levels. These large-scale fire sales consequently led to a loss spiral in European markets.¹⁵⁵

Realizing the severity of this problem, the U.K. Financial Services Authority then had to dilute the resilience test so as to stabilize markets.¹⁵⁶ Similarly, in relation to the bankruptcy contagion problem, U.S. regulators eventually issued a policy statement on commercial real estate loans by the end of 2009, making clear that prudent workouts are "often in the best interest of the financial institution and the borrower," and that loans should not be subject to adverse classification and write-downs "solely because the value of the underlying collateral has declined to an amount that is less than the loan balance."¹⁵⁷ Nonetheless, this kind of stop-gap measure, while addressing the "effect" (bankruptcy contagion), neither confronts head-on the issue of regulatory bankruptcy itself nor provides a permanent solution

http://www2.warwick.ac.uk/research/warwickcommission/report/uw_warcomm_intfinreform_09.pdf [hereinafter Warwick Commission Report].

¹⁵⁴*Id.*

¹⁵⁵See Markus K Brunnermeier, Andrew Crockett, Charles A Goodhart, Avinash Persaud, Hyun Song Shin, *THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION* (2009), at 17; Federal Deposit Insurance Corporation, *POLICY STATEMENT ON PRUDENT COMMERCIAL REAL ESTATE LOAN WORKOUTS* (Oct. 30, 2009), available at www.fdic.gov/news/news/financial/2009/fil09061a1.pdf.

¹⁵⁶FSA Press Release, June 28th 2002, no FSA/PN/071/2002, "FSA introduces new element to life insurers' resilience tests".

¹⁵⁷See Federal Deposit Insurance Corporation, *Policy Statement on Prudent Commercial Real Estate Loan Workouts* (Oct. 30, 2009) (online at www.fdic.gov/news/news/financial/2009/fil09061a1.pdf).

to the occurrence of bankruptcy contagion outside the current set of circumstances.

D. Proposed Policy Reforms

This Article proposes two sets of policy reforms to mitigate the effects of regulatory bankruptcy, contain bankruptcy contagion and forestall banks' race to the bottom as described in Part IV.C. The first involves a re-examination of the bankruptcy framework in terms of the provisions allowing relief from the automatic stay, as amended by the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 ("BAPCPA"). The second proposes to leverage new efforts to monitor and mitigate systemic risk and incorporate the prevention of regulatory bankruptcy into the mandate of the new bodies charged with monitoring systemic risks.

In relation to the first set of policy reforms, the imposition of an automatic stay at the time of the filing of the petition, is predicated on the policy that there should be a moratorium against asset grabs. Provisions relating to lift-stay motions constitute a key device in the Bankruptcy Code which resolves the traditional collective action problem among numerous dispersed creditors. A discussion of the type of policy reforms which can help contain the larger-scale collective action problem of bankruptcy contagion should thus start with such provisions.

The specific provision in the Bankruptcy Code which deserves re-examination is the Single Asset Real Estate ("SARE") provision which entitles secured creditors to relief from the automatic stay in certain real estate cases involving a single property or project.¹⁵⁸ An SARE determination shortens the deadline for submission of a confirmable plan to 90 days of the petition date or 30 days after the court determines that the debtor is subject to SARE provisions, whichever is later. If a debtor is unable to comply with this filing deadline or commence monthly interest payments during this time frame, the court can enter an order for relief from stay.

A SARE case has been defined as one involving "real property constituting a single property or project . . . , which generates substantially all of the gross income of a debtor . . . and on which no substantial business is being conducted by a debtor other than the business of operating the real property and activities incidental thereto."¹⁵⁹ Prior to 2005, the debtor's aggregate, non-contingent, liquidated, secured debts must also be less than \$4 million. The BAPCPA eliminated this cap—a development with a significant impact on the bankruptcy proceedings of residential developers.

¹⁵⁸ See 11 U.S.C. § 362(d) (2008).

¹⁵⁹ See 11 U.S.C. § 101(51B) (2002).

This meant that huge residential developments now fall within the ambit of a SARE case, and these SARE provisions are likely to have served as an "enabling mechanism" for secured creditors seeking relief from the automatic stay to pursue foreclosure and liquidation.¹⁶⁰

The underlying legislative intent of these amendments is that passive investment in real estate is a less appropriate subject for Chapter 11 reorganization. Historically, the single-asset debtor is an investment vehicle (typically a limited partnership) formed to purchase a single piece of real estate such as an apartment block or a commercial building which retain a high liquidation value relative to their going concern value.¹⁶¹ In marked contrast, residential development projects are not "passive" and the discussion in Part IV.A demonstrates the gulf between the liquidation value (As-Is Value) versus the going concern value (Post-Stabilization Value).

It is thus unreasonable to intend an artificially short plan filing deadline for cases involving such huge dollar value amounts of real estate under development, with complicated valuation issues. Moreover, the alternative requirement of resumption of monthly interest payments is hardly relevant to debtors in residential development which generate the bulk of their cash flows upon completion.¹⁶² As such, the catchment of debtors in the residential development sector by the SARE amendments may be an unintended consequence and an amendment to exclude residential developers may help contain bankruptcy contagion, at least in this particular sector.

Next, although the proposed exclusion may reduce the risk of residential developers causing systemic risk through regulatory bankruptcy, the possibility that some other source of risk in banks' portfolios might still default in a correlated way and drive a similar crisis, in this downturn, posed, and still poses, a serious systemic risk. An organized, collective response is required to deal with future systemic risks that emerge out of the bankruptcy process but whose solution cannot be found in any one provision of the Bankruptcy Code.

It is worth reflecting for a while on whether the bankruptcy framework is

¹⁶⁰Examples of huge SARE cases include a luxury real estate project consisting of 1,100 partially developed acres and aggregate assets and liabilities of approximately \$53 million (*In re Le Jardin LLC*, No. 08-77019 (Bankr. N.D. Ga. Aug. 9, 2008)) and a 944-acre development with an appraisal value of \$162 million (*In re Crosswinds at Lone Star Ranch 1000, Inc.*, No. 08-40262 (Bankr. E.D. Tex. Feb. 4, 2008)).

¹⁶¹*See, e.g.*, David Gray Carlson, A Symposium on Bankruptcy Reform: An Agenda for the Next Century: Artificial Impairment and the Single Asset Chapter 11 Case, 23 CAP. U.L. REV. 339, at 339-344.

¹⁶²For a fuller discussion, see Sarah Pei Woo, Simultaneous Distress of Residential Developers and Their Secured Lenders: An Analysis of Bankruptcy & Bank Regulation, 15 FORDHAM J. CORP. & FIN. L. 617, at 661-4.

adequately designed to deal with en-masse bankruptcies. At the end of 2007, there were 2,376 financial institutions which had exposure to construction loans exceeding their total capital, reflecting the potential scale and scope of bankruptcy contagion.¹⁶³ According to the estimates by the Congressional Oversight Panel, a significant wave of commercial mortgage defaults and liquidations “would trigger economic damage that could touch the lives of nearly every American.”¹⁶⁴ It is not clear that the “micro” bankruptcy regime can offer an optimal outcome from a macro perspective to internalize costly spillovers and externalities which the actions of some banks can impose on the overall market.¹⁶⁵ Chapter 11 of the Bankruptcy Code is designed for idiosyncratic events in which liquidation-reorganization decisions largely hinge on market valuations.¹⁶⁶ The externalities relating to systemic risk are difficult to internalize in this regime because market participants are primarily motivated to protect themselves, but not necessarily to protect the system as a whole.¹⁶⁷

Despite the serious implications of regulatory bankruptcy in relation to systemic risk, lawmakers have paid scant attention to the hazard presented by this phenomenon. Prior to the crisis, achieving systemic stability was generally thought to be a natural byproduct of micro-prudential regulation. By focusing on the individual institutions in isolation, this pre-crisis approach did not incorporate endogenous risk, and it neglected the systemic implications of collective behavior.¹⁶⁸ The recently-enacted Dodd-Frank Act, which is the keystone of financial reforms in the United States in the wake of this crisis, provides for systemic risk regulation, but those provisions take no direct account of regulatory bankruptcy or bankruptcy contagion.

The most important piece of systemic risk regulation in the Dodd-Frank Act establishes the Financial Stability Council to monitor, identify, and address systemic risks.¹⁶⁹ The provision defining the authority of the

¹⁶³Quarterly Banking Profile 2007, *supra* note 80, at 3.

¹⁶⁴Oversight Report, *supra* note 10, at 3.

¹⁶⁵*Id.*; see also MARKUS K. BRUNNERMEIER, ANDREW CROCKETT, CHARLES A. GOODHART, AVINASH PERSAUD & HYUN SONG SHIN, THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION 38 (2009); FIN. SERVS. AUTH. OF THE U.K., THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS 65 (2009), available at http://www.fsa.gov.uk/pubs/other/turner_review.pdf (“If all market participants attempt simultaneously to liquidate positions, markets which were previously reasonably liquid will become illiquid, and realisable values may, for all banks, be significantly lower than the published accounts suggested.”); Bernauer & Koubi, *supra* note 51.

¹⁶⁶John Geanakoplos, *Liquidity, Default, and Crashes: Endogenous Contracts in General Equilibrium*, 2 ECONOMETRIC SOC’Y MONOGRAPHS 170–205 (2003).

¹⁶⁷Schwarcz, *supra* note 2, at 206.

¹⁶⁸See generally Warwick Commission Report, *supra* note 153.

¹⁶⁹Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-

Council is broadly phrased: the Council is charged with the goals, among others, of identifying “risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected bank holding companies or nonbank financial companies, or that could arise outside the financial services marketplace” and responding to “emerging threats to the stability of the United States financial system.”¹⁷⁰ So far, congressional discussion of the role of the Financial Stability Council has largely focused on the “too big to fail syndrome,” that is, identifying and regulating financial institutions that are so large or interconnected that they pose a systemic risk to the economy as a whole.¹⁷¹

However, the systemic risks posed by regulatory bankruptcy can begin through the actions of banks of any size, and through bankruptcy contagion, affect large swathes of the banking industry, one small bank at a time, before growing to unmanageable proportions. As the Congressional Oversight Panel noted, mid-size and smaller institutions, especially those between the size of \$1 billion and \$10 billion in assets, have the largest percentage of banks highly concentrated in commercial real estate, relative to all banks.¹⁷² As such, the problem of systemic risk goes beyond individual institutions that are “too big to fail” and deserve more attention.

The Act leaves most of the details up to regulators who are to determine the types of problems contributing to systemic risk. Clearly, these details need to include safeguards and procedures to deal with regulatory bankruptcy and bankruptcy contagion. With the rule-making processes of the Council left ambiguous, it is worryingly unclear as to how the Council will coordinate with bank regulators to put into place clear and transparent mechanisms for balancing micro- and macro-prudential financial regulatory interests, and resolving conflicts between the two interests. Regulatory bankruptcy poses precisely such a conflict. As such, one can only hope that the Council adopts an approach that “involve[s] a full range of coordinated measures aimed at different aspects of the problem,” which Chairman Bernanke, has once stated to be “the most effective approach.”¹⁷³

203, § 111 (2010) (financial stability oversight council established).

¹⁷⁰Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 112 (2010) (council authority).

¹⁷¹See e.g., 156 CONG. REC. E1262 (daily ed. July 1, 2010) (statement of Rep. Etheridge); 155 CONG. REC. S3611 (daily ed. Mar. 23, 2009) (statement of Sen. Collins).

¹⁷²Oversight Report, *supra* note 10, at 47.

¹⁷³ Ben S. Bernanke, Chairman, Fed. Reserve Bd., Address at the Federal Reserve System Conference on Housing and Mortgage Markets: Housing, Mortgage Markets, and Foreclosures (Dec. 4, 2008).

CONCLUSION

Past and present debates in bankruptcy law have relied heavily on the theoretical assumption of value maximization by creditors within the four corners of each bankruptcy case. There is, however, little empirical research as to how secured creditors, which are mainly banks, actually make decisions about when or why they choose to liquidate or re-organize their bankrupt debtors. Understanding the decision-making process of these creditors matters, as increasing numbers of debtors fall into bankruptcy with the current financial crisis.

This Article has several breakthrough contributions in that respect, conceptual and empirical. As the bankruptcy literature is primarily focused on the debtor, the Article fills this research gap by furthering an understanding of secured creditors' motivations. It introduces the concept of regulatory bankruptcy, where a bank's own riskiness, amplified by regulatory pressure, becomes an explanatory factor in its behavior in bankruptcy. The theoretical framework and evidence-based findings explain the regulation-driven mechanism of capital adequacy, which in turn motivates specific actions by banks to increase capital and reduce concentrations by liquidating exposures, especially during times of systemic risk and as exemplified by the current economic downturn.

As a test case for the framework of analysis put forward by this Article, a spotlight is cast upon construction and development loans, which constitute the leading cause of bank failure in the last few years.¹⁷⁴ These loans form a good test case as they clearly affect individual banks' portfolio-level credit risk and are of sufficient critical mass to pose systemic risk. A primary finding of this Article is that a high concentration of construction and development loans in a bank's portfolio is significantly associated with the probability that a bank will obtain relief from the automatic stay in bankruptcy to pursue foreclosure. This result holds after controlling for housing prices, asset quality indicators and debtor characteristics. The implication is that financial regulatory policy, in the form of capital adequacy requirements, does influence bank behavior in bankruptcy.

The existence of regulatory bankruptcy thus creates a tectonic shift in the traditional view of creditors in bankruptcy law and policy. As this Article has shown, the behavior of secured creditors such as banks cannot be explained simply by understanding the economics of the case itself, as the standard paradigm of bankruptcy theory maintains. Existing bankruptcy theory has typically viewed the debtor and its managers as the main

¹⁷⁴*Examining the State of the Banking Industry: Hearing Before the Subcomm. on Fin. Insts. of the S. Comm. on Banking, Hous., & Urban Affairs, supra note 55.*

variables of interest in a bankruptcy. This Article refocuses the debate on the traditional secured creditor and its complex set of interests, thus debunking the myth that a bank creditor's actions in bankruptcy are driven by value maximization.

The findings in this Article also have implications for the future of bank regulation, as it suggests that we should be careful of unintended consequences of regulatory bankruptcy such as bankruptcy contagion leading to widespread falls in asset prices, spreading first from banks with concentration risk to other similarly exposed banks, and eventually affecting nominally healthy banks when regulatory bankruptcies become widespread. Bankruptcy contagion has the potential to create systemic risk implications that financial regulators cannot afford to overlook. Based on the proportion of liquidations observed from the data underlying this Article, it is also unclear that we can rely solely on the bankruptcy framework to deal with a wave of defaults from a macro rather than on a case-by-case basis.

Arguably, although the actions examined in this Article play out in bankruptcy court, the most effective way to reduce the influence of bank regulation in the bankruptcy arena would be for financial regulators themselves to become more aware of the consequences of their actions and coordinate expectations among banks so as to avoid bankruptcy contagion.¹⁷⁵ This appears to fall squarely within the ambit of the Financial Stability Council established by the newly-enacted Dodd-Frank Act. However, the Dodd-Frank Act left in its wake too much ambiguity as to how the systemic risk regulator should regulate, thereby not expressly providing for a legislative solution for regulatory bankruptcy.

It is worth noting that work on establishing the complete dynamics of the creditor-debtor relationship through empirical studies has far to go. With a renewed focus on the creditor and a wealth of information emerging from the financial crisis, much research will continue to examine the critical interactions between financial regulation, systemic risk, and bankruptcy.

¹⁷⁵ Russell Cooper & Jonathan L. Willis, *Coordination of Expectations in the Recent Crisis: Private Actions and Policy Responses*, 1 FED. RES. BANK OF KAN. CITY ECON. REV. 5, 18 (2010).

APPENDIX 1

MODEL ILLUSTRATING PORTFOLIO DYNAMICS FOR BANK LENDERS

The formal model used to illustrate portfolio dynamics and how the incentives of bank lenders can be shaped by credit losses and capital adequacy requirements is structured as a single-factor Merton-inspired model.¹⁷⁶ Under the Merton structural framework, a default event occurs if the borrower's asset value falls below a defined threshold, where the latter is interpreted as the value for required debt payments. This single-factor modeling framework defines the distance between the borrower's current asset value and this threshold as Distance to Default (DD), which can be translated to a probability of default (PD).¹⁷⁷

A change in DD for exposure i can be decomposed into a function of a systematic factor, r_m , and a firm-specific (idiosyncratic) factor, e_i .¹⁷⁸

$$\Delta DD_i = \sqrt{\rho} r_m + \sqrt{1-\rho} e_i$$

where ρ is a measure of the sensitivity of the exposure to a systematic factor that represents the latent factor (e.g., the variation of a borrower's returns explained by the market) affecting all the exposures.

Default for exposure i occurs if the DD falls below a certain threshold.¹⁷⁹

$$\sqrt{\rho} r_m + \sqrt{1-\rho} e_i < \Phi^{-1}(PD)$$

where PD denotes the unconditional PD parameter attributed to the exposure.

In this modeling framework, portfolio outcomes are simulated in each trial by drawing aggregate shocks for the portfolio as a whole, and idiosyncratic shocks from a standard normal distribution for each exposure in the portfolio, and compute the composite change in DD for each exposure. After determining whether each exposure defaults or not, the

¹⁷⁶See generally Darrell Duffie, *Black, Merton and Scholes — Their Central Contributions to Economics*, 100 SCANDINAVIAN J. ECON. 411 (1998) (summarizing, inter alia, the Merton option pricing model).

¹⁷⁷See generally PETER CROSBIE & JEFF BOHN, *MOODY'S KMV, MODELING DEFAULT RISK: MODELING Methodology* (2003), available at <http://www.moodykmv.com/research/files/wp/ModelingDefaultRisk.pdf> (defining the distance-to-default ratio as a single measure of default risk which combines asset value, business risk and leverage).

¹⁷⁸*Id.*

¹⁷⁹*Id.*

simulation calculates the loss for each exposure, using a loss given default (LGD) parameter. The cumulative losses for the exposures constitute a portfolio outcome. This Monte Carlo simulation is then repeated 50,000 times to create a loss distribution for the portfolio.

The following presents the detailed parameters used in different scenarios which I use to compare the outcomes for Portfolios A and B (as described in Part III.B):

Base Case Scenario –The average PD parameters are based on FDIC data for the average percentage of non-current loans for the specific loan type as of December 31, 2005.¹⁸⁰ The average LGD parameters are based on estimates from a Moody's database containing more than 3,500 exposures which defaulted between 1987 and 2006.¹⁸¹ The asset correlation is held constant across exposures at the average estimate for non-financial firms.¹⁸² These parameters are summarized in Figure 4.

FIGURE 4
BASE CASE PARAMETERS

Parameter	Value	Comment
PD of Commercial and Industrial Exposures	0.76%	Average percentage of non-current commercial and industrial loans as of Dec 31, 2005
LGD of Commercial and Industrial Exposures	45.00%	Average LGD of commercial and industrial loans (1987-2006)
PD of Construction and Development Exposures	0.38%	Average percentage of non-current construction and development loans as of Dec 31, 2005
LGD of Construction and Development Exposures	55.00%	Average LGD of construction and development loans (1987-2006)
Correlation of Exposures	18.00%	Average asset correlation within non-financial firms (1988-2007)

Correlation Stress Scenarios –In determining the range of correlations to

¹⁸⁰See *Quarterly Banking Profile*, FDIC QUARTERLY, at 10 (Dec. 2005), available at <http://www2.fdic.gov/qbp/2005dec/qbp.pdf>.

¹⁸¹MOODY'S INVESTORS SERVICE, BACK-TESTING MOODY'S LGD METHODOLOGY (2007), available at <http://www.moody.com/cust/content/content.ashx?source=StaticContent/Free%20pages/Credit%20Policy%20Research/documents/current/2006600000441444.pdf>.

¹⁸²JOSEPH LEE, JOY WANG, & JING ZHANG, MOODY'S KMV, THE RELATIONSHIP BETWEEN AVERAGE ASSET CORRELATION AND DEFAULT PROBABILITY (2009), available at http://www.moodyskmv.com/research/files/wp/Dynamic_Relationship_Between_Average_Asset_Correlation_and_Default_Probability.pdf.

use in this exercise, the benchmark level is 39.0% for a class of High Volatility Commercial Real Estate (HVCRE) based on Moody's average correlations.¹⁸³ As such, the correlation parameters for different stress scenarios can be reasonably set between 30.0% and 50.0%.

Adverse Scenarios – In these set of scenarios, PD and LGD levels are increased to incorporate downturn conditions in the simulation, but the asset correlation for Construction and Development loans is maintained at 40.0%. The PD parameters are estimated based on FDIC data for the average percentage of non-current loans for each loan type, with the December 31, 2008 levels, representing the Baseline Adverse Scenario and June 30, 2009 numbers representing the More Adverse Scenario.¹⁸⁴ The LGD parameters are set, based on the SCAP indicative loss rates. The indicative loss rates for Construction and Development exposures over a two-year horizon are pegged at 8.0% to 12.0% in the Baseline Adverse Scenario and 15.0% to 18.0% in the More Adverse Scenario.¹⁸⁵ Adjusting these to a one-year horizon, the LGD parameter to be used in this modeling exercise is set at 65.0%. These parameters are summarized in Figure 5.

FIGURE 5
PARAMETERS FOR ADVERSE SCENARIOS

Parameter	Value
<i>Baseline Adverse Scenario:</i>	
Average PD of Commercial and Industrial Exposures	1.69%
Average PD of Construction and Development Exposures	8.55%
<i>More Adverse Scenario:</i>	
Average PD of Commercial and Industrial Exposures	2.79%
Average PD of Construction and Development Exposures	13.45%

¹⁸³LEE, WANG, & ZHANG, *supra* note 182. This is an estimate for High Volatility Commercial Real Estate, of which construction and development loans form a part.

¹⁸⁴Quarterly Banking Profile 2008, *supra* note 56, at 10.

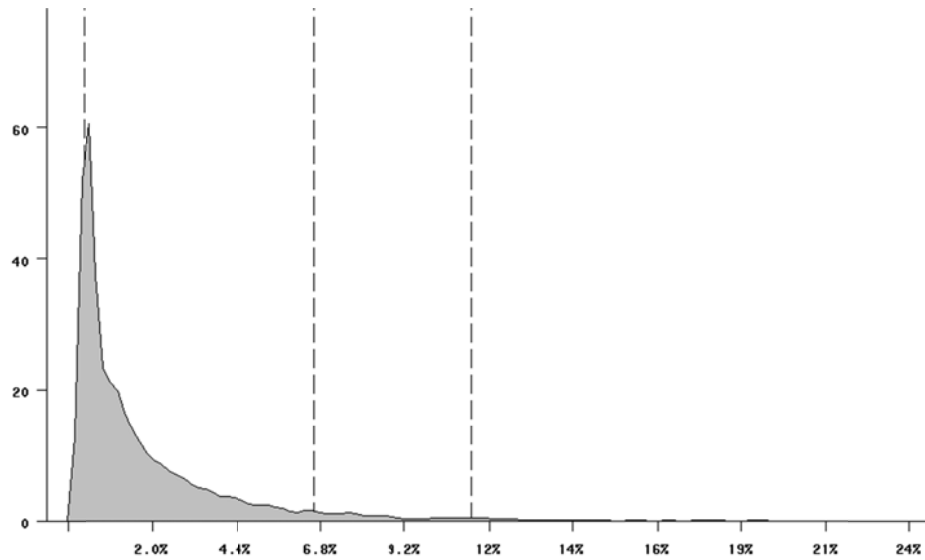
¹⁸⁵BD. OF GOVERNORS OF THE FED. RESERVE SYS., *supra* note 138.

APPENDIX 2

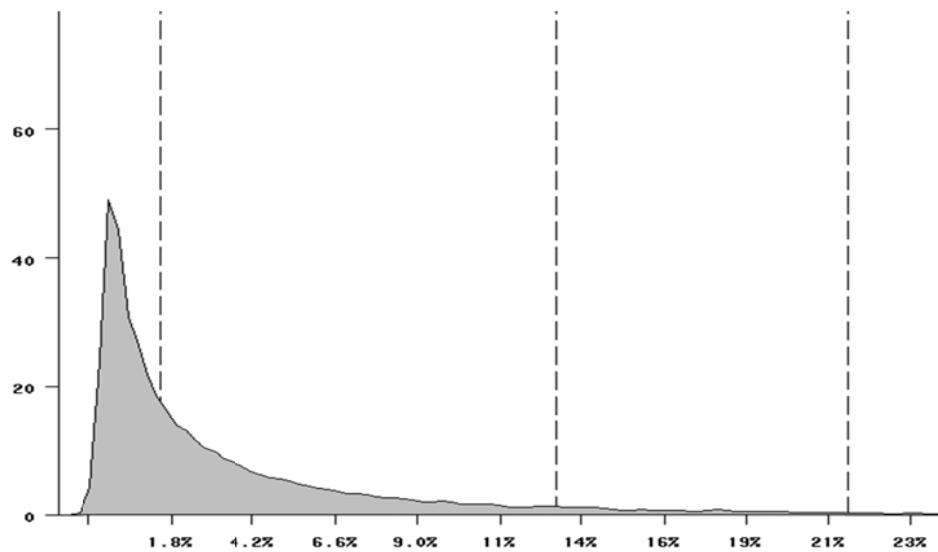
COMPARING THE LOSS DISTRIBUTIONS IN ADVERSE SCENARIOS

NOTE.— These kernel density graphs provide a non-parametric way of showing the probability density function of portfolio losses (they are not histograms). The graphs illustrate how the tails of the loss distribution become much broader for the Portfolio with Concentration Risk in adverse scenarios, with the x-axis representing Portfolio Percentage Loss, and the dotted lines marking the median, 95th and 99th percentiles of the loss distribution, respectively.

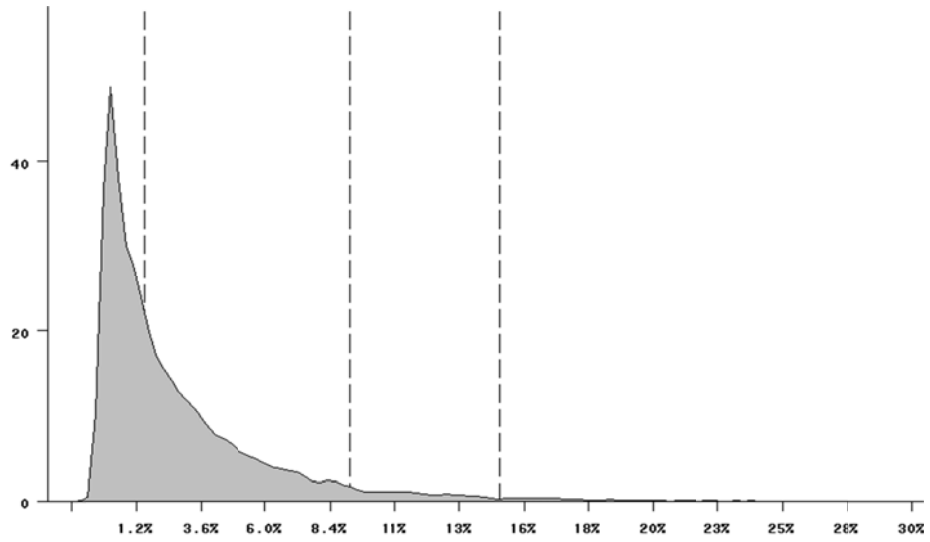
PORTFOLIO WITHOUT CONCENTRATION RISK (ADVERSE SCENARIO)



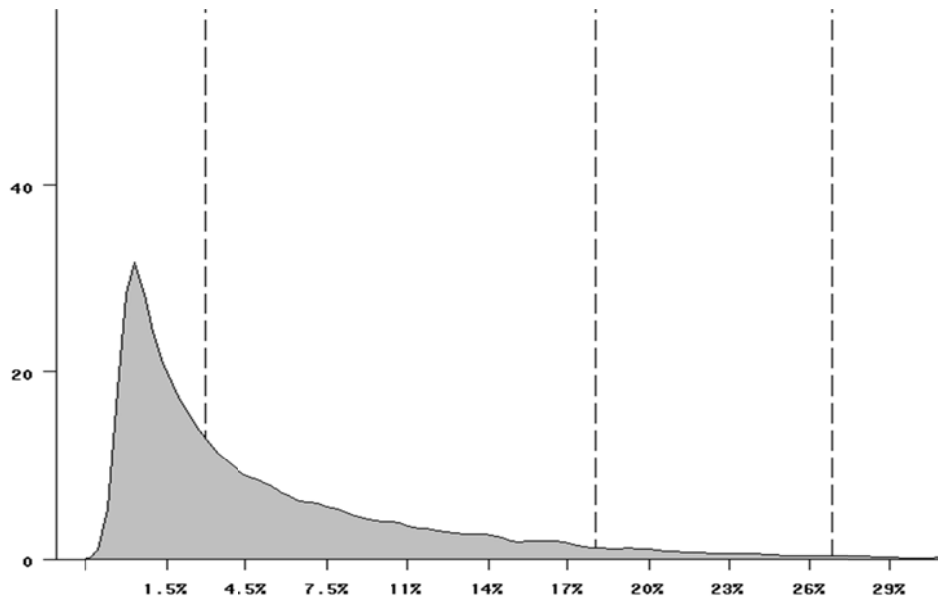
PORTFOLIO WITH CONCENTRATION RISK (ADVERSE SCENARIO)



PORTFOLIO WITHOUT CONCENTRATION (MORE ADVERSE SCENARIO)



PORTFOLIO WITH CONCENTRATION (MORE ADVERSE SCENARIO)



APPENDIX 3

REGRESSIONS: PROBABILITY OF A BANK FILING A LIFT-STAY MOTION

NOTE.—Regression results. The dependent variable is a binary variable that equals 1 where a lift-stay motion was filed by a bank in a bankruptcy case and equals 0 where no lift-stay motion was filed. Standard errors are in parentheses. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Dependent Variable: Bank's filing of a lift-stay motion					
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.46*	2.23*	2.33	4.19***	11.21**	4.01**
	(0.25)	(0.71)	(1.42)	(1.60)	(5.19)	(1.80)
Concentration Ratio	3.12***		3.23***	3.37***	3.48***	3.45***
	(0.77)		(0.80)	(0.80)	(0.80)	(0.88)
Log(Total Assets)			-0.17**	-0.15*	-0.16*	-0.15*
			(0.09)	(0.09)	(0.09)	(0.09)
State House Price Index		-0.01**	.	-0.01***	-0.01**	-0.01***
		(0.00)	.	(0.00)	(0.00)	(0.00)
Nationwide House Price Index			.	.	-0.04	.
			.	.	(0.02)	.
Log(Total Assets of Bank)			.	.	.	0.01
			.	.	.	(0.05)
Log(Total Construction Loans)			.	.	.	.
Leverage Ratio			.	.	.	.
Secured Debt/Total Liabilities			.	.	.	.
Secured Debt/75% of Total Assets			.	.	.	.
Region = Pacific			.	.	.	.
Region = Mountain			.	.	.	.
Region = Midwest			.	.	.	.
Region = South			.	.	.	.
Region = Mid-Atlantic			.	.	.	.
Region = Northeast			.	.	.	.
Number of Observations	285	285	276	276	276	276

Dependent Variable: Bank's filing of a lift-stay motion					
	(7)	(8)	(9)	(10)	(11)
Constant	3.89**	3.79**	3.43**	4.09**	12.10**
	(1.73)	(1.61)	(1.68)	(1.64)	(5.38)
Concentration Ratio	3.44***	3.40***	3.31***	3.36***	3.23***
	(0.82)	(0.80)	(0.80)	(0.80)	(0.80)
Log(Total Assets)	-0.15*	-0.10	-0.16*	-0.15	-0.14*
	(0.09)	(0.10)	(0.09)	(0.09)	(0.10)
State House Price Index	-0.01***	-0.01***	-0.01***	-0.01***	
	(0.00)	(0.00)	(0.00)	(0.00)	
Nationwide House Price Index	.	.	.	.	-0.05**
	.	.	.	.	(0.02)
Log(Total Assets of Bank)	.	.	.	.
	
Log(Total Construction Loans)	0.02	.	.	.	
	(0.05)	.	.	.	
Leverage Ratio	.	-0.21	.	.	
	.	(0.20)	.	.	
Secured Debt/Total Liabilities	.	.	1.00	.	
	.	.	(0.65)	.	
Secured Debt/75% of Total Assets	.	.	.	0.00	
	.	.	.	(0.00)	
Region = Pacific	.	.	.	.	-0.51
	.	.	.	.	(0.44)
Region = Mountain	.	.	.	.	0.01
	.	.	.	.	(0.39)
Region = Midwest	.	.	.	.	0.16
	.	.	.	.	(0.59)
Region = South	.	.	.	.	0.69
	.	.	.	.	(0.45)
Region = Mid-Atlantic	.	.	.	.	-0.19
	.	.	.	.	(0.44)
Region = Northeast	.	.	.	.	-0.54
	.	.	.	.	(1.06)
Number of Observations	276	276	276	276	276

