

The Chrysler Effect: The Impact of the Chrysler Bailout on Borrowing Costs*

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Abstract

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I. Introduction

In late 2008 and early 2009, the outgoing Bush and incoming Obama administrations announced a series of steps to assist Chrysler, the struggling automaker, in an extraordinary intervention into private industry. Some charge that the government, in implementing the bailout, impermissibly favored the auto union over Chrysler's senior creditors. As these critics see it, the government attempted to save the politically powerful union by elevating the junior claims of organized labor above the senior claims of Chrysler's lenders, contrary to well-established creditor priorities in bankruptcy. If the critics are correct, the Chrysler bailout could represent an overturning of bankruptcy law in the U.S.

A long-standing principal of bankruptcy law requires that a debtor's senior creditors be repaid, in full, before its junior creditors receive anything. However, critics argue that the government structured Chrysler's bankruptcy reorganization so that Chrysler's junior creditor, the auto union, got paid before Chrysler's senior lenders were fully repaid. The auto union walked away from the reorganization with \$1.5 billion in cash, a \$4.6 billion note, and a majority equity stake in the reorganized Chrysler, despite the fact that Chrysler's senior lenders had not been repaid in full. Although they had a \$6.9 billion first-priority secured claim on Chrysler, the lenders received only \$2 billion in the reorganization, or twenty-nine cents on the dollar.

As critics view the Chrysler reorganization, the bankruptcy laws established by Congress were arbitrarily overthrown by an act of the Executive, undermining long-established tenants of debt financing. They believe that, in protecting the interests of taxpayers, the Treasury negotiated aggressively with the senior creditors but, in protecting the interests of organized labor, the Treasury offered the union special treatment.¹ Hence, the critics attack the Chrysler reorganization as a government transfer of value from one group to another based on political considerations in place of

¹ The Treasury negotiated aggressively in the reorganizations, extracting significant concessions. Some felt that "the government was too tough, or too tough with the wrong parties." CONG. OVERSIGHT PANEL, SEPTEMBER OVERSIGHT REPORT: THE USE OF TARP FUNDS IN THE SUPPORT AND REORGANIZATION OF THE DOMESTIC AUTOMOTIVE INDUSTRY 111 (2009) [hereinafter "PANEL REPORT"]. The negotiations reportedly gave rise to "allegations of threats and bullying." PANEL REPORT, *supra*, at n.506 (noting that the panel's staff contacted many of the parties involved in the transactions to substantiate the allegations, but none of the inquiries received a response).

established law. As one participant interpreted the transaction, the assets of retired Indiana policemen (which were invested in Chrysler's secured debt) were given to retired Michigan autoworkers.² Critics wonder "why the UAW funds should be favored over other retirement funds, those that invested in Chrysler secured debt" (Adler 2009, 6). Chrysler's creditors argued that the "government is penalizing people ... for having funded [their] retirement with ... bonds" and that they were "being ignored in negotiations and singled out to bear the greatest share of the cost of restructuring."³ Others believed that "everything this Treasury touches turns to politics."⁴ Chrysler's creditors argued that the deal is "overturning the rule of law and practices that have governed our ... bankruptcy code for decades."⁵ Critics assert that this disregard of creditors' rights represents a precedent-setting distortion of bankruptcy priorities, opening the door to future distributions of assets to favorite political groups.

Critics warn that the Chrysler reorganization will have severe consequences in financial markets, disrupting credit markets and increasing the cost of debt for borrowers. Financial experts such as Warren Buffett have stated that the federal government's actions in the bankruptcy can have "a whole lot of consequences" for deal making.⁶ According to Buffett, the government's treatment of Chrysler's senior creditors is "going to disrupt lending practices in the future. If we want to encourage lending in this country, we don't want to say to somebody who lends and gets a secured position that the secured position doesn't mean anything." Buffett's concerns echo those of many debt market participants, who fear that "lenders may be unwilling to back unionized companies."⁷ Those participants believe "lenders will have to figure out how to price this risk [Either] don't lend money to a company with big legacy liabilities, or demand a much higher rate of interest because you may be leap-frogged in a bankruptcy."⁸ A

² PANEL REPORT, *supra* note 1, at 52.

³ Dennis Buckholtz, Op-Ed., *GM Bondholders Are People Like You and Me*, WALL ST. J., May 27, 2009, at A17; see also *Statement from Non-TARP Lenders of Chrysler*, WALL ST. J., Apr. 30, 2009.

⁴ *Gettelfinger Motors*, WALL ST. J., May 4, 2009, at A14.

⁵ *Statement from Non-TARP Lenders of Chrysler*, WALL ST. J., Apr. 30, 2009.

⁶ Lou Whiteman, *Buffett Warns of Chrysler Cramdown Ramifications*, THEDEAL.COM, May 5, 2009, available at http://thedeal.com/dealscape/2009/05/buffett_warns_of_chrysler_cram.php.

⁷ Caroline Salas, *Fund Managers Burned by Obama Now Say They Are Wary*, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a5u0MEwLk7A> (May 20, 2009, 18:13 EDT).

⁸ *Id.* (quoting hedge fund manager George Schultze).

Congressional panel hypothesized that “Treasury’s involvement in the Chrysler bankruptcy ... is likely to cause investors to reevaluate their risk assessment regarding certain companies with similar characteristics.”⁹ Reacting to the Chrysler reorganization, PIMCO’s global head of corporate bond portfolios stated that “any investor is going to price in increasing political risk in considering where to put their money.”¹⁰ In other words, if a government bailout distorts creditor priorities, lenders may think twice before making loans to firms that might receive a government bailout, due to the risk that certain creditors (namely, organized labor) might leap-frog them when the company experiences financial distress.

Critics distinguish public bailouts from other reorganizations because dealing with the U.S. government is not the same as dealing with private DIP lenders. The Treasury can exert greater influence over the parties than a private lender can. One reason is that “the government [can] accuse a bondholder ... of failing to assume some correct proportion of ‘shared sacrifice.’”¹¹ For example, President Obama referred to Chrysler’s dissident lenders as “speculators” who were “refusing to sacrifice like everyone else.”¹² The U.S. government “has a throw weight that its counterparties cannot match, as there is little in the regular commercial arsenal that can counter a charge of ‘unpatriotic’ behavior by the President of the United States.”¹³

Moreover, some critics fear that the Chrysler bailout will not be an isolated, one-time event, as further government interventions using public funds have been suggested. For example, a Congressional panel, in its report on the use of TARP funds to support the auto industry, asked Treasury to “provide its legal analysis justifying the use of TARP funds for this purpose. This analysis will inform policymakers’ and taxpayers’ understanding of the potential for Treasury to use its authority to assist other struggling industries.”¹⁴ The panel’s report even lays out criteria for further Treasury interventions. Hence, critics say the Chrysler bailout demonstrates the federal government’s inclination

⁹ PANEL REPORT, *supra* note 1, at 53.

¹⁰ Salas, *supra* note 7.

¹¹ *Id.* at n.506.

¹² Press Release, Office of the White House Press Secretary, Remarks by the President on the Auto Industry (April 30, 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-the-Auto-Industry.

¹³ PANEL REPORT, *supra* note 1, at n.506.

¹⁴ *Id.* at 5.

to intervene in private industry when politically motivated. Some market players assert that, with “anything that involves a large number of jobs or affects a large number of people, you can expect to see a Chrysler redux.”¹⁵ Because of such possibilities, companies that are public bailout candidates may face higher borrowing costs than companies not at risk of government intervention.

Notwithstanding the criticisms, the Chrysler bailout does have its supporters. Supporters argue that the public assistance to Chrysler was a reluctant intervention by a lender of last resort acting through a clever but legal manipulation of the bankruptcy system. Supporters add that, in any event, the decision to assist Chrysler is an isolated policy choice that should have no ramifications beyond the auto industry. Others point out that priority violations in bankruptcy have become commonplace, especially with the development of the claims trading markets in recent decades, and should cause no alarm.

In other words, the Chrysler bailout has generated an important debate among market participants and academics in bankruptcy and finance. Did the government intervene in Chrysler in a manner that distorts bankruptcy law in the U.S.? This study answers that question by performing an empirical analysis of the bailout’s impact on credit markets.

The same question was raised by Congress when it established an oversight panel in connection with TARP to review “the impact of Treasury decisions on the financial markets.” The panel sought to examine “whether predictions that the Chrysler decision would result in changes in market behavior or the cost of capital were (1) accurate and (2) measurable.”¹⁶ In its report to Congress, the panel concluded that “there is little evidence, empirical or anecdotal, to prove or disprove the claim.” The panel believed that it is “too early and, given the number of variables, perhaps not possible to conclude one way or another as to what effect the government’s involvement in the Chrysler bankruptcy will have on the credit markets.”¹⁷ Hence, the panel did not attempt an analysis. We, however, disagree with the panel’s finding. This study performs the crucial empirical analysis of the government’s bailout of Chrysler that the oversight panel did not attempt.

¹⁵ Salas, *supra* note 7 (quoting Jerry del Missier, president of Barclays Capital).

¹⁶ PANEL REPORT, *supra* note 1, at 53.

¹⁷ *Id.*

We answer the question empirically by examining the financial market where the effect would be most detectible, the market for senior bonds of highly unionized companies. If the government, in order to favor organized labor, implemented the Chrysler reorganization in a manner that ignored established lending priorities, investors in other unionized companies should have perceived increased risk. Rational investors would price this increased risk into the debt of the unionized firms. We test this claim empirically.

We analyze senior debt securities traded over a 24 month period around the Chrysler bailout. We find no evidence of a negative reaction to the Chrysler bailout by the bondholders of unionized firms. We thus reject the notion that investors perceived a distortion of bankruptcy priorities in the Chrysler case. To the contrary, we find that bondholders of unionized firms reacted positively to the Chrysler bailout. During the period when the Chrysler bailout was being formulated, adopted, and implemented, bonds of unionized firms exhibited lower yields (i.e., traded at higher prices in the bond markets) than bonds of non-unionized companies. Unionized firms also generated greater returns for their bondholders than non-unionized firms generated for their bondholders. In addition, we find positive abnormal returns for bonds of unionized firms on a key event date relating to the bailout. These results suggest that bondholders interpreted the Chrysler bailout not as a threat to bankruptcy priorities, but rather as a signal that the government will stand behind the obligations of unionized firms.

The next section describes the federal government's bailout of Chrysler. Section III presents the hypothesis to be tested. Section IV identifies the related literature. Section V describes the data and the methodologies employed. The empirical results are presented in Section VI. Section VII concludes.

II. The Reorganization of Chrysler

In December, 2008, Chrysler was on the brink of insolvency (as was General Motors). The automaker could not obtain the financing needed to conduct day-to-day operations. Chrysler, which employed over 55,000 workers, turned to the U.S. government for help. Congress considered legislation that would rescue the automaker, but the legislation failed to pass. President Bush thereupon ordered the United States

Department of the Treasury (the “Treasury”) to extend a \$4 billion loan to Chrysler. To make the loan, the Treasury tapped funds in the Troubled Asset Relief Program (“TARP”)¹⁸ enacted by Congress as a way to keep distressed financial institutions from collapsing.

The \$4 billion loan was a bridge loan, intended to buy Chrysler extra months of breathing room until the incoming Obama administration entered office. The loan required that Chrysler submit to the Obama administration a turn-around plan showing Chrysler’s proposed path to becoming a viable, independent entity. On February 17, 2009, Chrysler submitted its proposed plan to the Obama administration. Notably, Chrysler’s plan contemplated the eventual full repayment of its outstanding senior secured debt.¹⁹

On March 30, 2009, the Treasury rejected Chrysler’s plan, and gave Chrysler thirty days to propose another arrangement that would eliminate the company’s senior secured debt through the use of the bankruptcy code.²⁰ More particularly, the Treasury announced that Chrysler’s revised plan would have to show that the automaker will take several steps: (i) enter into a partnership with Fiat to bring new management and technology to Chrysler; (ii) enter into a new collective bargaining agreement with the United Auto Workers union (the “UAW”); and (iii) restructure its balance sheet so that it has a sustainable debt burden. The Treasury contemplated that this third step would “require extinguishing the vast majority of Chrysler’s outstanding secured debt and all of its unsecured debt and equity.” The Treasury stated that the “most effective way for Chrysler to emerge from this restructuring [would be to use] an expedited bankruptcy process as a tool to extinguish liabilities.” The Treasury told Chrysler’s creditors that, instead of reorganizing under a Chapter 11 plan, Chrysler must opt for a “quick and surgical” reorganization. The Treasury envisioned that Chrysler would sell its assets “free and clear” of all interests, under section 363 of the Bankruptcy Code, to a newly created shell corporation that would become the revitalized “Chrysler.” Only if these conditions were satisfied would the Treasury provide the billions of dollars of additional

¹⁸ 12 U.S.C. §§ 5201-5241.

¹⁹ Chrysler Restructuring Plan for Long-Term Viability (February 17, 2009).

²⁰ Press Release, Office of the White House Press Sec’y, Fact Sheet: Obama Administration New Path to Viability for GM & Chrysler (Mar. 30, 2009), *available at* http://www.whitehouse.gov/assets/documents/Fact_Sheet_GM_Chrysler_FIN.pdf.

TARP loans required to finance Chrysler's ongoing operations. Since the TARP-funded loans were the only apparent source of available cash, most of Chrysler's creditors acquiesced to the proposed restructuring plan. A timeline of events is set forth in the Appendix hereto.

Here's how the restructuring worked. Chrysler and its subsidiaries (referred to herein as "Old Chrysler") filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code on April 30, 2009.²¹ Instead of then exiting Chapter 11 through a plan of reorganization confirmed by the creditors, the company left bankruptcy through the "side door" of section 363 of the Bankruptcy Code. Section 363 allows a debtor to sell assets to a buyer free and clear of creditor claims. Only weeks after filing for Chapter 11, the majority of Old Chrysler's assets were sold to a newly-formed entity (referred to herein as "New Chrysler") under section 363 of the Code.²² New Chrysler agreed to assume some of the liabilities of Old Chrysler, most notably the unsecured obligations owed to UAW retirees. But most liabilities remained with Old Chrysler, including the secured liabilities owed to Old Chrysler's lenders. Through this mechanism, critics argue, *the claims of junior creditors (the UAW retirees) were elevated above the claims of senior creditors*, contrary to established priorities in bankruptcy.

To see this, consider the following. Upon filing Chapter 11, Old Chrysler was indebted to several groups of creditors. First, Old Chrysler owed \$6.9 billion to a syndicate of lenders, secured by a first-priority security interest in substantially all of Old Chrysler's assets. Second, Old Chrysler owed \$2 billion to Cerberus and Daimler, Old Chrysler's equity holders, secured by a second-priority security interest in Old Chrysler's assets. Third, Old Chrysler owed over \$4 billion to the U.S. Treasury pursuant to TARP (and to the Canadian government), secured by a third-priority security interest in Old Chrysler's assets. Fourth, Old Chrysler owed \$10 billion, on an unsecured basis, to a trust established to provide healthcare benefits to union retirees (the "UAW Trust"), a

²¹ Voluntary Petition, *In re Chrysler LLC*, 405 B.R. 84 (Bankr. S.D.N.Y. 2009) (No. 09-50002).

²² See *In re Chrysler LLC (Chrysler I)*, 405 B.R. 84, 113 (Bankr. S.D.N.Y. 2009), *aff'd*, 576 F.3d 108 (2d Cir. 2009), *vacated sub nom. Ind. State Police Pension Trust v. Chrysler LLC*, 130 S. Ct. 1015 (2009) (mem.).

voluntary employee benefit association.²³ Unlike the other debt, the obligation to the UAW Trust was not secured. As an unsecured creditor, the UAW Trust was entitled to repayment only after Old Chrysler's secured creditors had been repaid in full. Old Chrysler also owed approximately \$5 billion to various trade creditors, as well as billions in warranty and dealer obligations. This indebtedness was also unsecured. Finally, upon filing Chapter 11, Old Chrysler obtained about \$5 billion in debtor-in-possession (DIP) financing (to fund its bankruptcy) from the U.S. Treasury and the Canadian government. The DIP loan's security interest primed the TARP loan's security interest, but ranked behind the other secured claims.

The crucial features of the Chrysler reorganization are illustrated in Figure 1. With the approval of the bankruptcy court, Old Chrysler sold substantially all its operating assets to New Chrysler, a newly-formed entity, in exchange for \$2 billion in cash from New Chrysler and the assumption of some of Old Chrysler's liabilities (most notably, the obligations owed to the UAW Trust). The \$2 billion received by Old Chrysler was distributed to Old Chrysler's first-priority secured lenders, in accordance with bankruptcy's priority rule. Since the first-priority secured lenders were owed \$6.9 billion, they received 29 cents on the dollar, leaving no assets for the junior secured lenders or for unsecured creditors. Old Chrysler's equity holders also received nothing.

How did New Chrysler, a newly-formed entity, obtain the cash to purchase Old Chrysler's assets? The U.S. Treasury agreed to provide New Chrysler up to \$6 billion in senior secured loans to fund the asset purchase, as well as its ongoing operations. The Canadian government, in addition, committed to provide financing to New Chrysler's Canadian affiliate. In return, New Chrysler issued an 8% equity stake to the U.S.

²³ Chrysler's \$10 billion commitment to the UAW Trust arose out of a litigation settlement reached in 2008 with the UAW. Pursuant to the settlement, Chrysler was obligated to fund the UAW Trust with cash. According to the Panel Report,

By the end of the last century, Ford, Chrysler and GM found themselves faced with tens of billions of dollars in employee health obligations. In 2007 and 2008, after it became clear to both the companies and their unions that the state of the American automotive industry made these healthcare obligations unsustainable, the UAW and each of the three companies ultimately entered into an agreement whereby, in exchange for significant upfront payments principally in the form of cash and notes, healthcare obligations for retired union employees would be transferred off the books of the companies and into a trust (an independent entity totally separate from either the union or the automotive companies), the UAW Retiree Medical Benefits Trust, a Voluntary Employees' Beneficiary Association. PANEL REPORT, *supra* note 1, at n.49.

Treasury and a 2% equity stake to the Canadian government. Up to 35% of the equity in New Chrysler was awarded to Fiat S.p.A. (“Fiat”) in return for its provision of technology, distribution systems, and other capabilities to New Chrysler.²⁴ As part of a collective bargaining agreement reached with the UAW, New Chrysler granted to the UAW Trust a 55% equity stake, \$1.5 billion in cash, and a \$4.6 billion unsecured note.

It was an important step for New Chrysler to reach the collective bargaining agreement with the UAW. Covering both active and retired workers, the agreement provides New Chrysler with Old Chrysler’s labor force but at a reduced wage structure for active employees and a reduced funding structure for retirees, bringing them more into line with those of foreign auto manufacturers in the U.S. Such an agreement was obtainable, in part, because the UAW wanted to ensure continued employment for its active employees as well as continued funding of the UAW Trust for retirees. UAW retirees have to look exclusively to that UAW Trust for healthcare benefits, and Old Chrysler’s obligation to continue funding the UAW Trust is solely a contractual (i.e., voidable) one, not subject to ERISA funding rules.²⁵ The bankruptcy, consequently, jeopardized the funding commitments that Chrysler had made to the UAW Trust. In place of its \$10 billion unsecured claim on Old Chrysler, the UAW Trust agreed to take a \$4.6 billion unsecured note from New Chrysler, as well as \$1.5 billion in upfront cash and a 55% equity stake in New Chrysler. As a result, New Chrysler’s commitment to fund retiree healthcare benefits is not as burdensome as the one that weighted down its predecessor, while the UAW Trust walks away from the reorganization with a greater payout than it would have received had it remained solely an unsecured creditor of Old Chrysler.

During the bankruptcy proceedings, three Indiana state pension funds objected to the terms of the reorganization.²⁶ The Indiana pension funds were among the first-priority

²⁴ Fiat has an initial 20% stake, which increases to up to 35% upon achievement of certain performance metrics. The equity percentages presented above assume Fiat achieves those performance metrics. Initially, 9.85% of the equity in New Chrysler was held by the U.S. Treasury, 2.46% by the Canadian government, 67.69% by the UAW Trust, and 20% by Fiat.

²⁵ The UAW Trust is a Voluntary Employees’ Beneficiary Association (VEBA). VEBAs are tax free entities that pay health, life, or similar benefits. Although subject to the fiduciary requirements of the Employee Retirement Income Security Act of 1974 (ERISA), they are not subject to ERISA funding rules as are qualified retirement plans. Instead, a company’s obligation to fund the trust is solely contractual. See PANEL REPORT, *supra* note 1, at n.49.

²⁶ The funds consist of two pension funds that are fiduciaries for retirement assets of Indiana police officers

secured lenders of Old Chrysler. The dissident pension funds argued that the sale would improperly result in value going to junior creditors before the senior creditors had been paid in full. The pension funds pointed out that an unsecured creditor of Old Chrysler, the UAW Trust, would be receiving payments (\$1.5 billion in cash, a 55% equity stake in New Chrysler, and a \$4.6 billion note issued by New Chrysler) before Old Chrysler's secured creditors had been paid in full. The Indiana pension funds and the other first-priority secured lenders, receiving \$2 billion from the sale on their \$6.9 billion senior claim, would be receiving only twenty-nine cents on the dollar, while the UAW Trust, a junior creditor, would be receiving payments worth billions of dollars. The Indiana pension funds argued that the sale would violate creditor priorities, making it an illicit "sub rosa confirmation plan."

The bankruptcy court, however, disagreed. Key to the court's conclusion was its view that the UAW Trust would not be receiving any payments *on account of its pre-petition claims on Old Chrysler*.²⁷ Instead, according to the court, the payments to the UAW Trust resulted from independent, arms-length negotiations between the UAW and the buyer (New Chrysler), resulting in the UAW Trust providing new value to New Chrysler. The bankruptcy court stated:

[I]n negotiating with those groups essential to its viability, New Chrysler made certain agreements and provided ownership interests in the new entity, which was neither a diversion of value from the Debtors' assets nor an allocation of the proceeds from the sale of the Debtors' assets. The allocation of ownership interests in the new enterprise is irrelevant to the estates' economic interests.²⁸

The bankruptcy court viewed the payments to the UAW Trust as "provided under separately-negotiated agreements with New Chrysler" and not on account of their pre-petition claims on Old Chrysler.

The Indiana state pension funds immediately appealed the bankruptcy court's ruling. The Second Circuit issued a short order ratifying the bankruptcy court's decision and issuing a stay to allow for the U.S. Supreme Court's review. The Supreme Court, however, denied a request for a stay of the bankruptcy reorganization.²⁹ Upon remand, the Second Circuit

and school teachers, and an infrastructure construction fund. See Petition for Writ of Certiorari at 4, *Ind. State Police Pension Trust v. Chrysler LLC*, 130 S. Ct. 1015 (2009) (No. 09-285), 2009 WL 2864378. The three funds together held about \$43 million of first-priority secured debt of Chrysler. *Id.* There was more opposition earlier in the restructuring. At one point, 30 funds holding over \$1 billion objected to Obama's plan. Salas, *supra* note 7.

²⁷ *Chrysler I*, 405 B.R. at 99 (emphasis added).

²⁸ *Id.*

²⁹ *Ind. State Police Pension Trust v. Chrysler LLC*, 129 S. Ct. 2275, 2276 (2009) (per curiam).

affirmed the bankruptcy court's decision.³⁰ The Second Circuit decided that all consideration paid to the UAW Trust was in exchange for new value given to New Chrysler, not in exchange for the UAW Trust's claim on Old Chrysler. Hence, the court concluded that the transaction was consistent with bankruptcy priority rules.

III. Hypothesis

Critics hypothesize that the Chrysler intervention introduces a new form of risk into credit markets, one that will be priced by the markets, resulting in a higher cost of debt for businesses. Why? Critics claim the federal government's intervention in Chrysler overturned creditor priorities under bankruptcy law, generating a fundamental change in how reorganizations will be conducted (Roe and Skeel 2010, Adler 2009, Zywicki 2009; see Warburton 2010).

In the critics' view, the Chrysler intervention altered the long-standing absolute priority rule of bankruptcy. The absolute priority rule prevents a junior-priority class of claims from receiving assets from the debtor while a more senior class of claims has not yet been paid in full and objects to the payment.³¹ The absolute priority rule results in claimants being paid in order of seniority, with senior creditors ranking ahead of junior creditors, who rank ahead of equity holders.

In Chrysler, the UAW Trust, which held a junior claim, received billions of dollars of assets while Chrysler's senior creditors had not been paid in full (the secured lenders received only twenty-nine cents on the dollar). When certain senior creditors objected to those payments to the UAW Trust as a violation of the absolute priority rule, their objections were dismissed. Critics believe the Chrysler transaction establishes a dangerous precedent, one that validates the disregard of the absolute priority rule of bankruptcy.

³⁰ *In re Chrysler LLC (Chrysler II)*, 576 F.3d 108, 119 (2d Cir.), vacated sub nom. *Ind. State Police Pension Trust v. Chrysler LLC*, 130 S. Ct. 1015 (2009) (mem.). A few months later, the Indiana pension funds filed another petition for writ of certiorari to the U.S. Supreme Court to appeal the Second Circuit's decision. Petition for Writ of Certiorari, *supra* note 26. The pension funds no longer sought to block the asset sale as before, but rather sought a greater repayment on the loan. On December 14, 2009, the Supreme Court vacated the Second Circuit's ruling and remanded the case to the Second Circuit with instructions to dismiss the appeal as moot. *Ind. State Police Pension Trust v. Chrysler LLC*, 130 S. Ct. 1015 (2009) (mem.).

³¹ 11 U.S.C. § 1129(b) (2006).

In addition to the absolute priority rule, critics believe Chrysler undermines the Bankruptcy Code's rule against "unfair discrimination." The rule against unfair discrimination requires that similarly ranked creditors be paid pro rata.³² Since the value of the secured lenders' claims exceeded the value of Chrysler's collateral, it could be argued that the secured lenders were in part senior creditors (to the extent of the value of the collateral) and in part junior creditors (to the extent of their deficiency claim, the amount by which their secured claims exceeded the value of the collateral). In other words, the secured lenders had senior status on part of their claim, and junior status on the balance. Hence, with respect to their deficiency claim, the secured lenders ranked equal in priority to the UAW Trust and other unsecured creditors. Yet the asset sale resulted in cash and securities being paid to the unsecured UAW Trust, while nothing was paid to the secured lenders on their deficiency claim (or to the other unsecured creditors). Since they were not paid a pro rata share, Chrysler's creditors argued that the "side award" to the UAW Trust violated the rule against unfair discrimination.³³ Some of GM's creditors made similar arguments.

As critics view the Chrysler reorganization, the bankruptcy laws established by Congress were arbitrarily overthrown by an act of the Executive, undermining long-established tenants of debt financing. Critics predict that these violations of creditor protections will have substantial ramifications for the cost of debt. From the critics' perspective, the bailout introduces a new form of risk into the credit markets. If investors agree with the critics, the Chrysler intervention should have resulted in greater borrowing costs for businesses.

This risk to investors should be greatest in companies that are public bailout candidates. The Chrysler bailout, it is argued, established a precedent for future distributions of assets in bankruptcy to favorite political groups. The risk to investors should be most evident in large, industrial firms that are highly unionized or subject to collective bargaining. The government purportedly jiggered bankruptcy laws with Chrysler in order to favor organized labor. Hence, it is investors in other unionized

³² 11 U.S.C. § 1129(b) (2006). 7 COLLIER ON BANKRUPTCY ¶ 1129.03[3] (Allan N. Resnick & Henry J. Sommer eds., 16th ed. 2009).

³³ Brief for Appellants Indiana State Pension Trust et al. at 24, *Chrysler II*, 576 F.3d 108 (2d Cir. 2009) (No. 09-2311-bk), 2009 WL 1560029; *Chrysler II*, 576 F.3d at 123.

companies that should perceive the greatest threat to creditor priorities. If the credit market viewed the Chrysler bailout as a violation of creditor priorities, investors should be reluctant to extend credit to unionized firms, or should demand a higher return on their capital, to compensate for the increased risk that certain creditors (organized labor) might leap-frog them when the company experiences financial distress. In other words, the bailout should have had a negative impact on bonds of unionized companies, if the critics' hypothesis is true. If true, we should see bond prices for unionized companies significantly decreasing in response to the Chrysler bailout. Stated equivalently, we should see yields on bonds of unionized companies significantly increasing. That is,

H₀: During the bailout, bonds of unionized firms should have outperformed bonds of non-unionized firms.

On the other hand, supporters of the Chrysler intervention disagree with the critics' predictions. Instead, supporters predict that bond prices and yields should not change significantly in response to the bailout.

Unlike the critics, the supporters believe the federal government's involvement in the Chrysler bankruptcy occurred in accordance with the Bankruptcy Code, and that no statutory priorities were overturned (Morrison 2009, Lubben 2009; see Warburton 2010). Simply put, supporters believe the government was acting as an arms-length participant in a Section 363 asset sale, which has become an increasingly common means to exit bankruptcy. Although TARP money was used to finance the reorganization, the government was nothing more than a debtor-in-possession (DIP) lender in an otherwise typical bankruptcy reorganization. From this viewpoint, the transaction left unaltered established bankruptcy practices and priorities. If the credit market agrees, bonds of unionized companies should not have exhibited any significant change around the Chrysler bailout.

Proponents of the reorganization point out that the payments to the UAW Trust were made by the buyer of Chrysler's assets (New Chrysler) and not by the debtor that was in Chapter 11 (Old Chrysler). More specifically, proponents assert that no payments were made to the UAW Trust on account of the Trust's pre-petition claims on Old Chrysler. Instead, they argue that the payments to the UAW Trust were extracted from New Chrysler, the newly-constituted entity, as the product of a fresh negotiation between

the Trust and New Chrysler.³⁴ This is an important distinction. While the proceeds that the debtor receives in an asset sale must be distributed to its creditors in accordance with the Bankruptcy Code's absolute priority rule, the purchaser of assets is not restrained by the Code in the price it pays to acquire those assets, in its use of those assets, or in any other manner. Proponents observe that the purchaser is free to strike any deal it can with its own labor unions, financiers, suppliers, and other stakeholders. If these stakeholders establish relationships with the purchaser on more favorable terms than "those whose relationships terminated with the bankruptcy estate, this perceived disparity has a clear business reason; i.e., the purchaser needs to maintain these relationships to make its business viable."³⁵

For instance, if the purchaser needs to continue ordering from the debtor's suppliers, then those suppliers may be paid by the purchaser even though the suppliers are entitled to nothing from the debtor under Chapter 11. The two transactions are independent; there is no "exchange" of claims against the debtor for payments from the purchaser. This is the case so long as payments from the purchaser are made in exchange for the provision of goods or services to the purchaser. According to supporters of the Chrysler asset sale, the assets were purchased cleanly and appropriately from Old Chrysler by New Chrysler for \$2 billion. New Chrysler then, in separate transactions, entered into independent agreements with labor, financiers, suppliers, and other stakeholders, some of which happened to involve Old Chrysler's claimholders.

Proponents argue that New Chrysler had to negotiate with various constituencies "essential to the new venture, including . . . Chrysler's employees – contributing a skilled workforce with a more competitive cost structure."³⁶ Since New Chrysler needed skilled workers (and labor peace), proponents believe the UAW had bargaining leverage with New Chrysler, which enabled it to extract continued support for retiree health plans and

³⁴ Critics respond that the asset sale by Old Chrysler did more than merely sell assets for cash. The sale effectively determined which creditors of the Old Chrysler would get paid, and how much they would be paid (Adler 2009, 3; Roe and Skeel 2010, 5 and 22). The sale terms fully determined the distribution amount that Old Chrysler's secured creditors would receive from the debtor: the first-priority secured parties' distribution equaled the \$2 billion sales proceeds. Moreover, the sale terms provided Old Chrysler's unsecured creditor, the UAW Trust, with \$1.5 billion in cash, a promise of an additional \$4.6 billion, and substantial equity in New Chrysler. The terms of the 363 sale, hence, fully determined the payments made to Old Chrysler's creditors.

³⁵ PANEL REPORT, *supra* note 1, at 48.

³⁶ Chrysler I, 405 B.R. 84, 99 (Bankr. S.D.N.Y. 2009).

an ownership stake in New Chrysler. The senior creditors of Old Chrysler lacked similar bargaining power with New Chrysler. Parties with whom New Chrysler must do business going forward (such as the UAW) have leverage in negotiating favorable terms, and nothing in bankruptcy law takes that leverage away. The UAW was able to negotiate directly with New Chrysler in the same way that any company can negotiate, without any restraints imposed by bankruptcy laws.

Moreover, proponents observe that the UAW made significant concessions to New Chrysler, including making substantial changes to its contracts in order to improve the profitability of New Chrysler. Old Chrysler's senior creditors made no similar concessions. According to proponents, although the disgruntled senior creditors of Old Chrysler were disappointed with what they received in the bankruptcy, and felt that the UAW walked away with generous terms from New Chrysler, that outcome was the product of negotiations which are not within the scope of the bankruptcy laws.

In addition, supporters believe that it is not alarming, or even unusual, that the U.S. Treasury pushed for favorable treatment of certain stakeholders, the UAW retirees. The Treasury was the DIP lender, with the power and influence that role confers in any bankruptcy. As Chrysler's condition deteriorated, the government provided both pre- and post-petition financing. On account of the government's pre-petition claim, it had the rights of a pre-petition creditor entitled only to distributions from the bankruptcy estate in accordance with priority rules under Chapter 11. On account of its post-petition claim, however, the government had power and leverage as a DIP financier. Because no post-petition lender is required to lend to the debtor and because dealing with bankrupt businesses is often regarded as quite risky, the leverage of the DIP lender is extremely high. As a result, DIP lenders routinely use the terms of the new loan to assume control and shape the outcome of the reorganization (for example, by deciding which contracts with suppliers, dealers, labor, etc. it wishes the debtor to assume) (see Lubben 2009, 535; and Miller and Waisman 2004). At the time Chrysler filed bankruptcy, the capital markets were experiencing a credit freeze and the amount of money needed to reorganize the company was very large. This allowed any DIP financier that stepped forward even more leverage than it may have had under ordinary circumstances, according to

supporters (this argument also addresses the claims of federal government bullying mentioned in footnote 1).

Because the Treasury played an important role in financing and negotiating the restructuring of Chrysler, proponents argue that it is not surprising that the Treasury exercised its bargaining power as a DIP lender to dictate that the UAW Trust receive special treatment. From this perspective, the Treasury was acting as any other DIP lender would act. Although the involvement of the U.S. Treasury in the reorganization may have been novel, proponents argue that the Treasury's exercise of the DIP lender's power in connection with the asset sale was not. As Professor Lubben stated, one "can debate whether it is wise for the government to bail out the UAW, but it does not implicate the bankruptcy process" (Lubben 2009, 535).

It may also be argued that priority violations are common in bankruptcy and are already factored into bond prices. Prior research shows that priority violations in favor of junior investors over senior investors have been common in bankruptcy (see Section IV). Professors Baird and Bernstein explain, moreover, that these observed deviations from absolute priority do not necessarily flow from manipulation of Chapter 11 (Baird and Bernstein 2006). Rather, they more likely represent rational, voluntary settlements that reflect the uncertainty involved in valuing complex business enterprises in distress. Since Chapter 11 entitles junior investors to insist on an appraisal of the debtor, the outcome of which is uncertain, senior investors may willingly agree to distributions in favor of junior investors as an insurance policy against that uncertainty. That is, valuation uncertainty produces a bargaining dynamic that accounts for observed deviations from absolute priority, not a defect in Chapter 11 that allows junior investors to manipulate the process. Viewed in this light, the Chrysler reorganization does not represent a lack of commitment to the principle of absolute priority.

Moreover, some proponents argue that the Chrysler reorganization is a one-off transaction with no precedential value, due to the unusual circumstances surrounding it. The reorganization required heavy government involvement. Without the government providing major financial assistance, proponents believe a greater number the creditors might have challenged the terms of the reorganization. In other words, supporters argue that the \$2 billion price the government-financed buyer paid for Chrysler's assets was

more than their fair value. Hence, the downside to creditors of any priority violation was more than offset by the large cash infusion from the government. Without that aspect, more creditors might have objected to the proposed terms, producing a more traditional and time-intensive reorganization process that may have ended in liquidation and a smaller net recovery by claimants.

Hence, from this perspective, the Chrysler restructuring does not disrupt existing bankruptcy laws or current bankruptcy practices. The government played fairly by the established rules. According to adherents of this view, the critics are bothered by the fact that the government was a major participant in the transaction, and that it chose to favor the union over investors. While critics may object to that decision, supporters say it is a policy question, not a legal one. If market participants view the Chrysler bailout in this manner, bond prices (and yields) of unionized companies should not have exhibited any significant change around the bailout. That is,

H₁: During the bailout, bonds of unionized firms should not have performed significantly different from bonds of non-unionized firms.

IV. Related Literature

When it established the TARP, Congress created an oversight panel (the “Oversight Panel”) to oversee Treasury’s administration of the TARP. The Oversight Panel was mandated to review “the impact of Treasury decisions on the financial markets” and, regarding the decision to bail out Chrysler, to “determine whether predictions that the Chrysler decision would result in changes in market behavior or the cost of capital were (1) accurate and (2) measurable.”³⁷ However, after consulting with academics and market participants, the Oversight Panel concluded that “there is little evidence, empirical or anecdotal, to prove or disprove the claim that the Chrysler bankruptcy had any effect on the market.”³⁸ The Oversight Panel decided that it is “too early and, given the number of variables, perhaps not possible to conclude one way or

³⁷ PANEL REPORT, *supra* note 1, at 53.

³⁸ PANEL REPORT, *supra* note 1, at 53.

another as to what effect the government's involvement in the Chrysler bankruptcy will have on the credit markets."³⁹

Few academic studies are on point, and the existing papers do not shed much light on the issues. Warner (1977) and Eberhart and Sweeney (1992) find evidence that the market adjusts the price of debt claims to reflect the possibility of priority violations in bankruptcy. A larger literature documents the frequency of priority violations in bankruptcy (Franks and Torous 1989, 1994; Eberhart, Moore and Roenfeldt 1990; Weiss 1990, Betker 1995, and Bharath, Panchapagesan and Wermer 2007). This literature finds that priority violations in favor of equity holders were common in the 1980s, but since the mid-1990s equity-favoring violations have disappeared as a result of greater creditor control of bankruptcy. However, in addition to being largely outdated, this literature focuses on an issue not at hand in Chrysler. It focuses on the subordination of creditors to equity holders. At issue in Chrysler was the purported subordination of one (senior) class of creditors to another (junior) class of creditors.

Unlike those earlier studies, which treat creditors as a single, unified class, this study examines conflict among creditors. That is, we focus on the purported subordination of senior creditors to junior, but politically-favored, creditors. This is an important line of inquiry. A senior creditor expects to have a lower risk of non-payment than were it a junior creditor, and prices the loan accordingly. As a result, violations of established creditor priorities might have substantial ramifications for the availability and cost of credit.

Recently, the law scholarship has turned its attention away from the conflict between creditors and equity holders, focusing instead on conflict among creditors. This interest in inter-creditor conflict coincides with the development of the claim trading market for distressed securities. The law scholarship observes that claims trading has resulted in a traditional, fairly homogenous set of creditors being replaced by a more fluid set of stakeholders, including distressed debt investors with varying motivations and objectives (Baird and Rasmussen 2010, 2003; Ayotte and Morrison 2009; Baird 2009; Levitin 2009; Baird and Bernstein 2006; Miller and Waisman 2004). Law scholars debate whether the claims trading market is beneficial or harmful for the bankruptcy

³⁹ PANEL REPORT, *supra* note 1, at 53.

reorganization process and the cost of capital for business. But the literature is mostly theoretical and, as a result, “scholarly treatments have operated with a high level of generality and scant evidentiary basis” (Levitin 2009, 67). Law scholars have seized upon the Chrysler reorganization to continue this debate. While some argue that the Chrysler case “cannot be understood as complying with good bankruptcy practice” and that it has “potential for disrupting financial markets surrounding troubled companies” (Roe and Skeel 2010; see also Adler 2009), others see it as “entirely within the mainstream of chapter 11 practice” (Lubben 2009). Warburton (2010) provides a comprehensive account of arguments on each side of the debate. But this debate has proceeded with little empirical evidence. For instance, while Adler (2009) cautions that “one might expect future firms to face a higher cost of capital” as a result of Chrysler, he also states that “I am unaware of empirical support for the claim.” Hence, we contribute to this literature by providing needed empirical evidence.

Our paper also contributes to the literature tracing the effects of government bailouts on the firm (e.g., Jiang, Kim and Zhang 2010; and Faccio, Masulis, and McConnell 2006). Existing studies examine the impact of government bailouts on firm performance. But we examine a different effect. Our study looks at the impact of bailouts on borrowing costs.

Our paper is also related to the empirical literature on moral hazard in financial institutions. While most of that literature examines how the too-big-to-fail status of a bank benefits its stockholders (e.g., Demirgüç-Kunt and Huizinga 2010; Fratianni and Marchionne 2010; Angbazo and Saunders 1997; Black et al. 1997; and O’Hara and Shaw 1990), there have been only a few studies that examine the effects on bondholders (Morgan and Stroh 2005; Penas and Unal 2004; and Flannery and Sorescu 1996). Our study furthers that literature on moral hazard in credit markets.

While academic research has looked at the role of organized labor within the firm, it has not explored whether government bailouts of unionized firms impact credit markets. Previous research has shown that unionization has an impact on firm operations. For example, labor unions increase worker salaries (e.g., Lewis 1986), reduce firm operating flexibility (e.g., Chen, Kacperczyk, and Ortiz-Molina 2011a), reduce firm profitability and equity values (e.g., Hirsch 1991 and Abowd 1989), and impact corporate

investment decisions (e.g., Connolly, Hirsch, and Hirschey 1986). Chen, Kacperczyk, and Ortiz-Molina (2011b) look at the impact of unions on firm borrowing costs. Their study finds that firms in more unionized industries have lower bond yields than firms in lesser unionized industries. The authors of that study believe bondholders view unions favorably because they place a check on management, mitigating agency within the firm. But Chen, Kacperczyk, and Ortiz-Molina do not examine the role of public support for unionized companies, which is the focus of our paper. Unlike their study, we examine how government support for unionized companies impacts their borrowing costs.

V. Data and Sample Characteristics

This study focuses on senior bonds issued by U.S. companies. One reason we focus on bonds is that they are more actively traded than bank loans. An additional reason is that bondholders are generally considered weaker fighters than banks (Welch 1997). Bondholders, for instance, lack the organizational and informational advantages, the reputational incentives, and the control that banks typically have. Hence, any reaction to Chrysler is more likely to be detected by examining senior bonds than senior bank loans.

Bond trade prices are obtained from the Trade Reporting and Compliance Engine (TRACE) system dataset for the time period January 2008 to December 2009.⁴⁰ We follow Bessembinder, Panayides and Venkataraman (2009) by eliminating cancelled, corrected, and commission trades from the data. We merge the remaining bond trades with the Mergent Fixed Income Security Database (FISD), which contains information regarding each bond's rating, seniority, maturity, coupon payments, and other characteristics. We then merge the data with firm-level accounting and financial data obtained from COMPUSTAT and CRSP. We remove bonds that fail to satisfy a set of selection criteria commonly used in the corporate bond literature (see, for instance, Duffee 1999; Collin-Dufresne, Goldstein, and Martin 2001; and Avramov et al. 2006). We also remove bonds with equity or derivative features (i.e., callable, puttable, and convertible bonds), bonds with warrants, bonds with floating interest rates, and bonds

⁴⁰ TRACE reports prices for roughly 95% of all corporate bond transactions. The only transaction that are not reported are those that take place in exchanges.

with any credit enhancements. We also eliminate bonds that have less than one year to maturity or that have been issued within one year, bonds in default, and bonds that lack an assigned rating and SIC code. As we are interested in industrial firms, we remove all financial firms from the sample (SIC codes 6000-6999). So as to not bias our analyses, we also remove from the sample Ford, General Motors and Chrysler, as well as other firms in the auto sector. To compute daily bond returns, we also require bonds to have traded on two consecutive days over the sample period. Our final sample consists of 508 senior bonds issued by 269 firms.

Bond returns are calculated as:

$$R_t = \frac{P_t + AI_t + C_t}{P_{t-1} + AI_{t-1}}$$

where P_t is the clean price of the bond, AI_t is the accrued interest over one period, and C_t is the coupon payment whenever it is paid (in which case $AI_t = 0$). To remove potential data entry errors, we follow Bessembinder, Maxwell and Venkataraman (2006) by requiring that the absolute value of the return be less than 30%. As there are multiple bonds for each firm, company-level returns are computed by value-weighting individual bond returns using their market values.

To identify firms that are unionized or subject to collective bargaining, we review 10-K reports filed with the U.S. Securities and Exchange Commission by the 269 firms in our dataset.⁴¹ We categorize companies as unionized or non-unionized. We define a unionized company as one where 30% or more of its workforce is unionized or covered by a collective bargaining agreement.⁴² We are unable to find unionization rates for all the firms in our sample. Of the 269 firms in our sample, we are able to find unionization rates for 163 firms. Of the 163 firms, we classify 69 as unionized.

⁴¹ As a robustness check, we also examined industry-level unionization rates, which are obtained from the Union Membership and Coverage Database (Unionstats). This database provides annual industry estimates at the 4-digit SIC level. Results, however, do not substantially differ from the reported results employing firm-level unionization rates. Moreover, there is a 58% correlation between firm- and industry-level unionization rates.

⁴² As a robustness check, we also employed alternative methodologies: (i) we used different percentages (20% and 50%) to define a unionized company; and (ii) we sorted companies into, alternatively, three buckets and five buckets, based upon unionization rates. Results, however, do not substantially differ from the reported results employing the 30% unionization definition.

Conceivably, there could be significant differences between unionized and non-unionized companies that might impact our results. Hence, we want to be sure that our results do not reflect differences between the two sets of firms, particularly regarding differences in credit risk. We compute summary statistics for various default measures and financial characteristics of unionized and non-unionized companies. These are the same measures used in Anginer and Yildizhan (2010) and discussed in detail in that paper. These results are summarized in Table 1. *O-score* is the Ohlson (1985) default score.⁴³ *Merton-DD* is the Merton (1974) distance-to-default measure. The computation of *merton-DD* is described in detail in Anginer and Yildizhan (2010). *Chs-pd* is the default probability, calculated as in Campbell, Hilscher and Szilagyi (2008).⁴⁴ Aggregate volatility, *totvol*, is measured using daily returns over the previous 12 months. Idiosyncratic volatility, *idiov*, is calculated relative to the Fama-French 3-factor model.⁴⁵ *Maturity* is the average maturity of the bonds for a firm and is measured in years. *Rating* is the Standard & Poor's rating, where the rating has been converted to numeric values (AAA = 1, ..., C = 13). Next, *bm* is the book-to-market ratio, *lme* is the log of market capitalization, and *nimtavg* measures profitability calculated as a geometrically declining average of past values of the ratio of net income to the market

⁴³ The o-score is defined as:

$$o\text{-score} = -1.32 - 0.407 \log(SIZE) + 6.03 TLTA - 1.43 WCTA + 0.076 CLCA - 1.72 OENEG - 2.37 NITA - 1.83 FUTL + 0.285 INTWO - 0.521 CHIN$$

where *SIZE* is total assets divided by the consumer price index, *TLTA* is the ratio of total liabilities to total assets, *CLCA* is the ratio of current liabilities to current assets, *OENEG* is a dummy variable set equal to one if total liabilities exceeds total assets and zero otherwise, *NITA* is the ratio of net income to total assets, *FUTL* is the ratio of funds from operations to total liabilities, *INTWO* is a dummy variable equal to one if net income was negative for the past two years and zero otherwise, and *CHIN* is change in net income over the last quarter: $(NI_t - NI_{t-1}) / (|NI_t| + |NI_{t-1}|)$.

⁴⁴ *Chs-pd* is defined as:

$$CHSPD = \frac{1}{\exp(1)} + \exp\left\{ \frac{9.164 - 20.264 NIMTAAVG_t + 1.416 TLMTA_t - 7.129 EXRETAVG_t + 1.411 SIGMA_t - 0.045 RSIZE_t - 2.132 CASHMTA_t + 0.075 MB_t - 0.058 PRICE_t}{100} \right\}$$

where *NIMTAAVG* is a geometrically declining average of past values of the ratio of net income to the market value of total assets, *TLMTA* is the ratio of total liabilities to the market value of total assets, *EXRETAVG* is a geometrically declining average of monthly log excess stock returns relative to the S&P 500 index, *SIGMA* is the standard deviation of daily stock returns over the previous three months, *RSIZE* is the log of the ratio of market capitalization to the market value of the S&P 500 index, *CASHMTA* is the ratio of cash to the market value of total assets, *MB* is the market-to-book ratio, and *PRICE* is the log of the price per share truncated from above at \$15.

⁴⁵ We regress daily stock returns from the previous calendar year on the Fama-French 3

factors: $r_t^i = a^i + b_{MKT}^i MKT_t + b_{SMB}^i SMB_t + b_{HML}^i HML_t + e_t^i$. Idiosyncratic volatility is then calculated as the standard deviation of the residuals: $\sqrt{\text{var}(e_t^i)}$.

value of total assets. Finally, leverage is measured by *tlmta*, which is the ratio of total liabilities to the market value of total assets.

Table 1 reports that, for most of the financial and credit risk characteristics described above, unionized and non-unionized companies are similar. The results indicate that, relative to the non-unionized companies, the unionized companies are slightly larger, are slightly less profitable, and have greater leverage. Bonds of unionized companies have slightly longer maturities. But with respect to other financial and credit risk measures, we do not see statistically significant differences. That is, unionized and non-unionized companies are the same in terms of o-score, Merton's distance-to-default measure, and the Campbell-Hilscher-Szilagyi measure of default probability, as well as in terms of aggregate volatility and idiosyncratic volatility. These results suggest that the two sets of companies are similar in terms of credit risk as measured by these variables.

VI. Results

In this section, we test the critics' prediction that the Chrysler bailout would have a negative impact on bond performance. We first examine yields and returns on senior bonds over the 2008 and 2009 period. We then conduct an event study of abnormal bond returns on key event dates relating to the Chrysler bailout.

Figure 2 shows the yields on bonds of unionized companies and non-unionized companies. Yields are shown for high yield bonds; since high yield bonds pose a greater risk of non-payment than investment grade bonds, high yield bonds should be more sensitive to government policies.

The yield on bonds of unionized companies tracks the yield on bonds of non-unionized companies during 2008. Yields on both unionized and non-unionized bonds are flat through most of 2008. Yields on both spike in September of 2008, with the collapse of Lehman Brothers and the worsening of the financial crisis.

In early 2009, however, the yields diverge. In March of 2009, there is a second panic in the financial markets, and yields spike on bonds of non-unionized companies. But yields on bonds of unionized companies stay relatively flat. It is during this period (March and April of 2009) that the full details of the Chrysler bailout emerge.

Critics of the Chrysler bailout predicted that the bond market for unionized firms would react negatively to the terms of the bailout. That is, their hypothesis predicts that yields on bonds of unionized firms would spike, relative to yields on bonds of non-unionized firms, as the bailout is rolled out. But yields for unionized bonds did not spike. To the contrary, yields on non-unionized bonds spiked relative to yields on unionized bonds during the rollout. And the spread in yields persisted through the remainder of 2009. That is, Figure 2 shows a pattern opposite to the one the critics predicted.

Figure 2 indicates that investors perceived unionized bonds as less risky than non-unionized bonds, from the Chrysler bailout forward. The relative stability of unionized bond yields is consistent with the notion that the Chrysler intervention led investors to expect public support for unionized companies.

Figure 3 shows cumulative raw returns on bonds of unionized firms versus non-unionized firms over the 2008-09 period. The bonds of unionized firms generated greater cumulative returns than the bonds of non-unionized firms. The difference in cumulative returns over the period amounts to about 30%. An investor that invested \$1 in bonds of unionized firms at the start of 2008 would have \$1.40 at the end of 2009, but only \$1.10 if the investor bought bonds of non-unionized firms instead. Moreover, all of this performance differential is generated during the Chrysler bailout. There is no perceptible differential in returns before the bailout. During 2008, returns are flat for both types of bonds. After Lehman collapses, returns decline for both types of bonds. But the pattern in returns diverges once the bailout comes into the picture, with unionized firms outperforming non-unionized firms in early 2009. The performance differential subsequently remains steady in the second half of 2009.

We also examine cumulative returns on a risk-adjusted basis. Following Bessembinder, Panayides and Venkataraman (2009), we group all bonds into four S&P rating categories, and compute value-weighted returns for all bonds falling into each of the rating groups.⁴⁶ We do not further partition by size or time-to-maturity due to the fact that a number of bonds do not trade on a daily basis; thus finer partitions result in small sample sizes within each partition.

⁴⁶ The rating groups are (i) AAA to AA-; (ii) A+ to A-; (iii) BBB+ to BBB-; and (iv) BB+ to C.

Cumulative risk-adjusted returns are shown in Figure 4. Bonds of unionized firms generate greater cumulative risk-adjusted returns over the period. As with raw returns, the difference in cumulative risk-adjusted returns amounts to about 30% over the period studied. An investor that invested \$1 in bonds of unionized firms at the start of 2008 would have \$1.20 (on a risk-adjusted basis) at the end of 2009, but only \$0.90 if the investor bought bonds of non-unionized firms instead. Moreover, all of the performance differential is generated during the bailout. Bonds of unionized and non-unionized firms generate similar cumulative risk-adjusted returns before the Chrysler bailout. It is during the bailout that bonds of unionized firms outperform.

Over the period we study, there is no evidence that bond investors were worried about political interference in unionized firms as a consequence of the bailout. To the contrary, investors in unionized firms appear to have benefitted from the Chrysler bailout.

We next undertake an event study of bond returns in order to pinpoint when and how the bailout impacted the credit market. Key event dates relating to the bailout are set forth in the Appendix hereto.

To compute abnormal returns, we use the five-factor bond model developed in Fama and French (1993). This model is an extension of the commonly used three-factor stock return model, which includes factors for the market risk premium (or MKT), firm size (small minus big, or SMB), and value (high minus low, or HML). The bond model adds two additional factors: TERM, which represents the slope of the Treasury yield curve, and DEF, the default premium measured as the difference between the returns on long-term corporate bond indices and long-term Treasuries. Formally, the model developed by Fama and French to estimate expected bond returns is:

$$R_t^i = a^i + b_{MKT}^i MKT_t + b_{SMB}^i SMB_t + b_{HML}^i HML_t + b_{DEF}^i DEF_t + b_{TERM}^i TERM_t + b_{DUMMY}^i DATE_DUMMY_t + e_t^i$$

To the model, we've added a dummy variable, *DATE_DUMMY*, that takes a value of one during a three-day window around the event dates (*t-1*, *t*, *t+1*) we study in this paper.⁴⁷ The results from these regressions are reported in Table 2 for unionized companies (Panel

⁴⁷ Except where mentioned, we find similar results using simply the event dates, and using a five-day window around event dates.

A), non-unionized companies (Panel B), and the difference between unionized and non-unionized companies (Panel C). The coefficient on the dummy variable represents the abnormal return on the bonds during the event window. It captures the impact of the event on bond returns.

(a) The Bush Administration Approves Use of TARP Funds for Chrysler and GM

December 12, 2008. The Bush administration suggested, on December 12, 2008, that Chrysler and General Motors might be eligible for TARP funds. This announcement reversed Treasury Secretary Paulson's position that TARP funds would be used to help only financial institutions. The administration's announcement was prompted by the Senate's rejection of a legislative bailout package for the auto companies on December 11. The legislative failure prompted the Bush administration, on the morning of December 12, to declare that it would be "irresponsible" to let the auto companies fail, and that it would consider using the TARP funds.

Bonds of unionized companies did not respond to this reversal of position by the Bush administration. The coefficient on the date dummy is insignificant for unionized companies (Panel A), indicating that the announcement did not have a significant impact on bond returns for unionized companies. The announcement did not have a significant impact on bond returns for non-unionized companies (Panel B) either. It may be that the possibility of a bailout was still too uncertain. That uncertainty, however, was resolved on December 19.

December 19, 2008. The Bush administration made its formal announcement, on December 19, 2008, that it would lend Chrysler and GM a combined total of \$17.4 billion from TARP funds. These "bridge" funds were intended to buy the automakers the breathing room necessary to avert bankruptcy.

Bonds of unionized companies responded positively to the announcement. Those bonds generated significant positive abnormal returns upon the bailout announcement. The announcement added approximately 1.19% to the daily returns on bonds of unionized companies. Bonds of non-unionized companies, in contrast, exhibited no response. The difference in the abnormal returns on bonds of the two types of companies was a statistically significant one, amounting to 1.19% on a daily basis.

After Lehman Brothers was allowed to fail in September of 2008, there was reason for credit markets to doubt whether the government would support troubled firms. The TARP bridge loans appear to have altered investors' expectations of public support. The significant positive impact of the announcement on unionized bond returns suggests that bondholders believed that the government had become willing to assist highly unionized companies.

Although the bridge loans exhorted the auto company to meet certain targets (including replacing some of its debt with stock and establishing wage structures and workplace rules that are more competitive with foreign rivals), the targets were non-binding. Moreover, it was not obvious, at this point, that the UAW would receive favorable treatment vis-à-vis Chrysler's other creditors. While oversight would fall to the incoming Obama administration, which was strongly backed by the UAW, the terms of the bridge loan envisioned labor sharing fully in the sacrifice (including, for instance, having to use stock instead of cash to fund retiree health care obligations). In fact, the bridge loans would become due if, by March 31, the company failed to extract sufficient concessions from its stakeholders, including labor, to establish long-term viability.

The significant positive impact of the bridge loans on unionized bond returns is surprising given that the loans drained what remained of the first half of the \$700 billion TARP funds. To make additional loans to Chrysler or other companies from the TARP funds, the administration would have to approach Congress. While Secretary Paulson, on this date, stated that Congress should release the second \$350 billion of TARP funds, he did not formally make that request to Congress, stating that the formal request would happen "in the near future" after consulting with the incoming Obama administration.

(b) Congress Fails to Block Second Half of TARP Funds

Under the TARP legislation passed in October, 2008, Congress was authorized to block the release of the second half of the \$700 billion of TARP funds. Congress could block the release only if both the House and Senate voted to do so (though the President could veto any legislation). A resolution of disapproval was submitted to both the House and Senate for a vote, passage of which would block Treasury's access to the remaining TARP funds. Some members of Congress wanted to scrap TARP, some wanted to

impose new conditions on any additional funds, and some wanted to dedicate funds to preventing foreclosures. Hence, Treasury's access to the second half of TARP funds for the auto bailout was not a certainty.

January 15, 2009. On this date, the Senate voted to defeat a resolution that would block the release of the additional TARP funds. Since both chambers had to pass such a resolution to block the release of the funds, a House vote was consequently rendered moot and access to the remaining TARP funds was assured. However, bond returns did not exhibit a significant response to the vote.

(c) The Treasury Issues Results of its Viability Review

In February, 2009, Chrysler submitted to the Treasury its plan to achieve long-term viability. Submission of an acceptable viability plan was a requirement attached to the TARP bridge loans the auto companies received in December.

March 29, 2009. After reviewing the viability plan submitted by Chrysler, the Treasury announced a summary of its findings on March 29, 2009. The Treasury made the following findings:

- Chrysler is not viable as a stand-alone company and must merge with Fiat.
- The best chance for success would “require utilizing the bankruptcy code in a quick and surgical way.”
- The company will have additional time (30 days) to produce a new, more aggressive viability plan, in order to pursue an alliance with Fiat (or another company) and to gain bigger concessions from stakeholders, particularly creditors and the UAW. If an acceptable plan is not submitted by then, government support will end and bankruptcy will be the likely course.

The findings indicated that Treasury intended to intervene more deeply than expected into the affairs of the auto company.

Bond returns, however, did not respond in a significant manner. Treasury's announcement had an insignificant impact on bonds of unionized and non-unionized companies.

March 30, 2009. Following up on the summary announced the day before, President Obama and the Treasury released more details, including term sheets.

Treasury indicated that Chrysler's survival "at a minimum would require extinguishing the vast majority of Chrysler's outstanding secured debt and all of its unsecured debt and equity." The Treasury, however, *did not explicitly mention any cuts for retirees or reductions in Chrysler's legacy costs*. According to the media, the announcement surprised some secured creditors, who believed they would fare better without government intervention. One of the creditors stated, "If you are a secured lender, you expect to come out on top. I hope the government isn't saying it has the right to reshuffle the decks."⁴⁸

Nevertheless, bond returns did not react. Abnormal returns on bonds of unionized and non-unionized companies were not significantly different from zero. Although critics argued that the government was distorting the Bankruptcy Code in its implementation of the bailout, bond investors did not share that concern.

(d) Litigation

During the *Chrysler* bankruptcy proceedings, certain senior debt holders, three Indiana state pension funds, objected to the proposed reorganization. The funds argued that the scheme would violate the Bankruptcy Code by impermissibly subordinating their interests as senior creditors. They claimed that the sale would violate bankruptcy priority rules by paying junior creditors while secured creditors were receiving only 29 cents on the dollar. The funds also argued that the senior debt holders could recover more in liquidation, and that Chrysler could sell the assets for more than the \$2 billion New Chrysler had offered. The bankruptcy court denied the funds' motion⁴⁹ and approved the reorganization. The funds immediately appealed. The Second Circuit issued an order ratifying the bankruptcy court's decision, and issued a stay to allow for review by the U.S. Supreme Court. Although the Supreme Court initially granted a temporary stay, it vacated the stay on the next day.⁵⁰ Upon remand, the Second Circuit affirmed⁵¹ the

⁴⁸ Kate Linebaugh, *Detroit's New Model: Chrysler Plan Trims Fiat's Stake*, WALL ST. J., March 31, 2009.

⁴⁹ Order Denying Emergency Motion of the Indiana Pensioners for Stay of Proceedings Pending Determination of Motion to Withdraw the Reference (May 20, 2009), *In Re Chrysler LLC*, S.D.N.Y. (No. 09 B 50002 (AJG)) (online at chap11.epiqsystems.com/docket/docketlist.aspx?pk=1c8f7215-f675-41bf-a79be1b2cb9c18f0&l=1).

⁵⁰ *Ind. State Police Pension Trust v. Chrysler LLC*, 129 S. Ct. 2275, 2276 (2009) (per curiam).

⁵¹ *Chrysler II*, 576 F.3d 108, 127 (2d Cir. 2009).

bankruptcy court's decision.⁵² The relevant dates are April 30, June 1, June 2, June 5, June 8, June 9, June 10, July 5, and August 5, as set forth in the Appendix.

None of these event dates, however, produces a significant impact on bond returns. The structure of the Chrysler reorganization was challenged but upheld in the bankruptcy court, the Second Circuit, and the U.S. Supreme Court. Yet, none of those decisions generated significant abnormal returns on bonds of unionized or non-unionized companies. If the critics were correct, that the bailout involved an unprecedented distortion of bankruptcy principles in favor of politically-powerful junior claimants, bondholders of unionized firms should have reacted negatively to these judicial decisions. But they did not.

In sum, bondholders of unionized firms reacted positively to the announcement that the government would make bridge loans to Chrysler, the move that allowed the company to delay bankruptcy while the full details of the bailout package were fashioned. In contrast, bondholders exhibited no reaction to the specific terms of the bailout that emerged over the subsequent months purportedly favoring the union over other creditors. Bondholders also shrugged of the court decisions that put a judicial stamp of approval on the arrangement. In other words, the event study results fail to support the argument made by the bailout's critics, that the bailout would be perceived by bondholders as establishing a dangerous precedent for future subordination of creditors in bankruptcy.

VII. Conclusion

Did the Chrysler bailout have negative consequences in the financial markets? Critics claim that the government's intervention in Chrysler was unprecedented. As they see it, the government elevated labor's claims in the established hierarchy of creditors, in violation of the Bankruptcy Code. Critics warn that the government's actions constitute a new form of risk that will be priced by the market, resulting in a higher cost of debt for unionized companies.

We test the critics' claim empirically. In doing so, we conduct an analysis that the TARP Congressional Oversight Panel failed to undertake. In our analysis, we

⁵² *Chrysler I*, 405 B.R. 79, 83 (Bankr. S.D.N.Y. 2009).

investigate the market where an effect would be most detectible, the market for senior bonds of highly unionized companies.

We find no evidence of a negative reaction to the bailout by bondholders of unionized firms. In fact, their reaction to the bailout was positive. During the period when the Chrysler bailout was being formulated, adopted, and implemented, bonds of unionized firms exhibited lower yields than bonds of non-unionized companies. Unionized firms also generated greater returns for their bondholders during this period than non-unionized firms generated for their bondholders. Furthermore, bonds of unionized firms generated significant positive abnormal returns upon the commencement of the bailout, yet abnormal returns were not impacted in any significant manner by subsequent events that purportedly favored the UAW over Chrysler's other creditors. That is, we find that bondholders responded positively to the government's decision to assist Chrysler.

The results are consistent with the notion that government bailouts generate moral hazard in financial markets. After the government allowed Lehman Brothers to fail in September of 2008, there was reason for credit markets to doubt whether the government would support troubled firms. Bondholders appear to have interpreted the subsequent Chrysler bailout as a signal that the government had become willing to stand behind large, struggling companies, especially those with high unionization rates. While not dispositive of the issue, our results suggest that bondholders viewed Chrysler as a signal that large, unionized companies had become too important to fail, and that, as a result, they perceived the debt of these companies as less risky than debt of non-unionized companies. In this respect, the Chrysler bailout could have unfortunate consequences for the economy.

References

Abowd, John M., (1989): "The Effect of Wage Bargaining on the Stock Market Value of the Firm," *American Economic Review* 79, 774-800.

Adler, Barry E., (2009): "What's Good for General Motors," in Annex A to Congressional Oversight Panel, September Oversight Report: The Use of TARP Funds in the Support and Reorganization of the Domestic Automotive Industry.

Anginer, Deniz, and Celim Yildizhan, (2010): "Is There a Distress Risk Anomaly? Corporate Bond Spread as a Proxy For Default Risk," (Working Paper), *available at* <http://ssrn.com/abstract=1344745>.

Avramov, Doron, Tarun Chordia, Gergana Jostova, and Alexander Philipov, (2006): "Momentum and Credit Rating," *Journal of Finance* 62, 2503-2520.

Ayotte, Kenneth M., and Edward R. Morrison, (2009): "Creditor Control and Conflict in Chapter 11," *Journal of Legal Analysis* 1, 511-551.

Baird, Douglas G., (2009): "The Bankruptcy Exchange," *Brooklyn Journal of Corporate, Financial & Commercial Law* 4, 23-38.

Baird, Douglas G., and Donald S. Bernstein, (2006): "Absolute Priority, Valuation Uncertainty, and the Reorganization Bargain," *Yale Law Journal* 115, 1930-70.

Baird, Douglas G., and Robert K. Rasmussen, (2010): "Anti-Bankruptcy," *Yale Law Journal* 119, 648-699.

Baird, Douglas G., and Robert K. Rasmussen, (2003): "Chapter 11 at Twilight," *Stanford Law Review* 56, 673-699.

Bessembinder, Hendrik, Marios Panayides, and Kumar Venkataraman, (2009): "Hidden Liquidity: An Analysis of Order Exposure Strategies in Electronic Stock Markets," *Journal of Financial Economics* 94, 361-83.

Bessembinder, Hendrik, William Maxwell, and Kumar Venkataraman, (2006): "Market Transparency, Liquidity Externalities, and Institutional Trading Costs in Corporate Bonds," *Journal of Financial Economics* 82, 251-88.

Betker, B.L., (1995): "Management Incentives, Equity's Bargaining Power, and Deviations from Absolute Priority in Chapter 11 Bankruptcies," *Journal of Business* 68, 161-83.

Bharath, Sreedhar, Ventatesh Panchapagesan and Ingrid Wermer, (2007): "The Changing Nature of Chapter 11," (Working Paper), *available at* <http://ssrn.com/abstract=1102366>.

Black, Harold, Cary Collins, Breck Robinson and Robert Schweitzer, (1997): "Changes in Market Perceptions of Riskiness: The Case of Too-Big-To-Fail," *Journal of Financial Research* 20, 398-406.

Campbell, John Y., Jens Hilscher, and Jan Szilagyi, (2008): "In Search of Distress Risk," *Journal of Finance* 63, 2899-2939.

Chen, Huafeng (Jason), Marcin Kacperczyk, and Hernan Ortiz-Molina, (2011a): "Labor Unions, Operating Flexibility, and the Cost of Equity," *Journal of Financial and Quantitative Analysis*, 46, 25-58.

Chen, Huafeng (Jason), Marcin Kacperczyk, and Hernan Ortiz-Molina, (2011b): "Do Non-Financial Stakeholders Affect the Pricing of Risky Debt? Evidence from Unionized Workers," *Review of Finance*, forthcoming.

Collin-Dufresne, Pierre, Robert S. Goldstein, and J. Spencer Martin, (2001): "The Determinants of Credit Spread Changes," *Journal of Finance* 56, 2177-2207.

Connolly, Robert A., Barry T. Hirsch, and Mark Hirschey, (1986): "Union Rent Seeking, Intangible Capital, and Market Value of the Firm," *Review of Economics and Statistics* 68, 567-77.

Demirgüç-Kunt, Asli, and Harry Huizinga, (2010): "Are Banks Too Big To Fail Or Too Big To Save? International Evidence From Equity Prices and CDS Spreads," (Working Paper), *available at* <http://ssrn.com/abstracts=1645731>.

Duffee, Gregory, (1999): "Estimating the Price of Default Risk," *Review of Financial Studies* 12, 197- 226.

Eberhart, A.C., W.T. Moore, and R.L. Roenfeldt, (1990): "Security Pricing and Deviations from the Absolute Priority Rule in Bankruptcy Proceedings," *Journal of Finance* 45, 1457-69.

Eberhart, Allan C., and Richard J. Sweeney, (1992): "Does the Bond Market Predict Bankruptcy Settlements?," *Journal of Finance* 47, 943-980.

Faccio, Mara, Ronald W. Masulis, and John J. McConnell, (2006): "Political Connections and Corporate Bailouts," *Journal of Finance* 61, 2597-635.

Fama, Eugene F., and Kenneth R. French, (1993): "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics* 33, 3-56.

Flannery, Mark J., and Sorin M. Sorescu, (1996): "Evidence of Bank Market Discipline in Subordinated Debenture Yields: 1983-1991," *Journal of Finance* 51, 1347-77.

- Franks, J.R., and W.N. Torous, (1989): "An Empirical Investigation of U.S. Firms in Reorganization," *Journal of Finance* 44, 747-69.
- Franks, J.R., and W.N. Torous, (1994): "A Comparison of Financial Contracting in Distressed Exchanges and Chapter 11 Reorganizations," *Journal of Financial Economics* 35, 349-70.
- Fратиани, Michele, and Francesco Marchionne, (2010): "Banks' Great Bailout of 2008-2009," Working Paper.
- Hirsch, Barry T., (1991): "Union Coverage and Profitability Among U.S. Firms," *Review of Economics and Statistics* 73, 69-77.
- Levitin, Adam J., (2009): "Bankruptcy Markets: Making Sense of Claims Trading," *Brooklyn Journal of Corporate, Financial & Commercial Law* 4, 67-112.
- Lewis, H. Gregg, (1986): "Union Relative Wage Effects," in O. Ashenfelter and R. Layard (eds.), *Handbook of Labor Economics, Volume 2 of Handbooks in Economics*, 1139-81 (New York: Elsevier Science).
- Lubben, Stephen J., (2009): "No Big Deal: The GM and Chrysler Cases in Context," *American Bankruptcy Law Journal* 83, 531-47.
- Merton, Robert C., (1974): "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates," *Journal of Finance* 29, 449-470.
- Miller, Harvey R., and Shai Y. Waisman, (2004): "Does Chapter 11 Reorganization Remain a Viable Option for Distressed Businesses for the Twenty-First Century?," *American Bankruptcy Law Journal* 78, 153-200.
- Morgan, Donald P., and Kevin J. Stiroh, (2005): "Too Big To Fail After All These Years," Federal Reserve Bank of New York Staff Report No. 220.
- Morrison, Edward R., (2009): "Chrysler, GM and the Future of Chapter 11," (Working Paper No. 365, Ctr. for Law & Econ. Studies.), *available at* <http://ssrn.com/abstract=1529734>.
- O'Hara, Maureen, and Wayne Shaw, (1990): "Deposit Insurance and Wealth Effects: The Value of Being 'Too Big To Fail'," *Journal of Finance* 45, 1587-600.
- Ohlson, James A., (1980): "Financial Ratios and the Probabilistic Prediction of Bankruptcy," *Journal of Accounting Research* 18, 109-131.
- Penas, Maria Fabiana, and Haluk Unal, (2004): "Gains in Bank Mergers: Evidence from Bond Markets," *Journal of Financial Economics* 74, 149-179.

Roe, Mark J., and David Skeel, (2010): "Assessing the Chrysler Bankruptcy," *Michigan Law Review* 108, 727-771.

Warburton, A. Joseph, (2010): "Understanding the Bankruptcies of Chrysler and General Motors: A Primer," *Syracuse Law Review* 60, 531-82.

Warner, Jerold B., (1977): "Bankruptcy, Absolute Priority, and the Pricing of Risky Debt Claims," *Journal of Financial Economics* 4, 239-276.

Weiss, L.A., (1990): "Bankruptcy Resolution: Direct Costs and Violations of Priority Claims," *Journal of Financial Economics* 27, 285-314.

Welch, Ivo, (1997): "Why is Bank Debt Senior? A Theory of Asymmetry and Claim Priority Based on Influence Costs," *Review of Financial Studies* 10, 1203–1236.

Zhan, Jiang, Kenneth A. Kim, and Hao Zhang, (2010): "On the Efficacy of Corporate Bailouts: Evidence from Around the World," (Working Paper), *available at* <http://ssrn.com/abstracts=1555066>.

Zywicki, Todd J., (2009): "Opinion, Chrysler and the Rule of Law," *Wall Street Journal*, May 13, 2009.

Figure 1: The Chrysler Reorganization

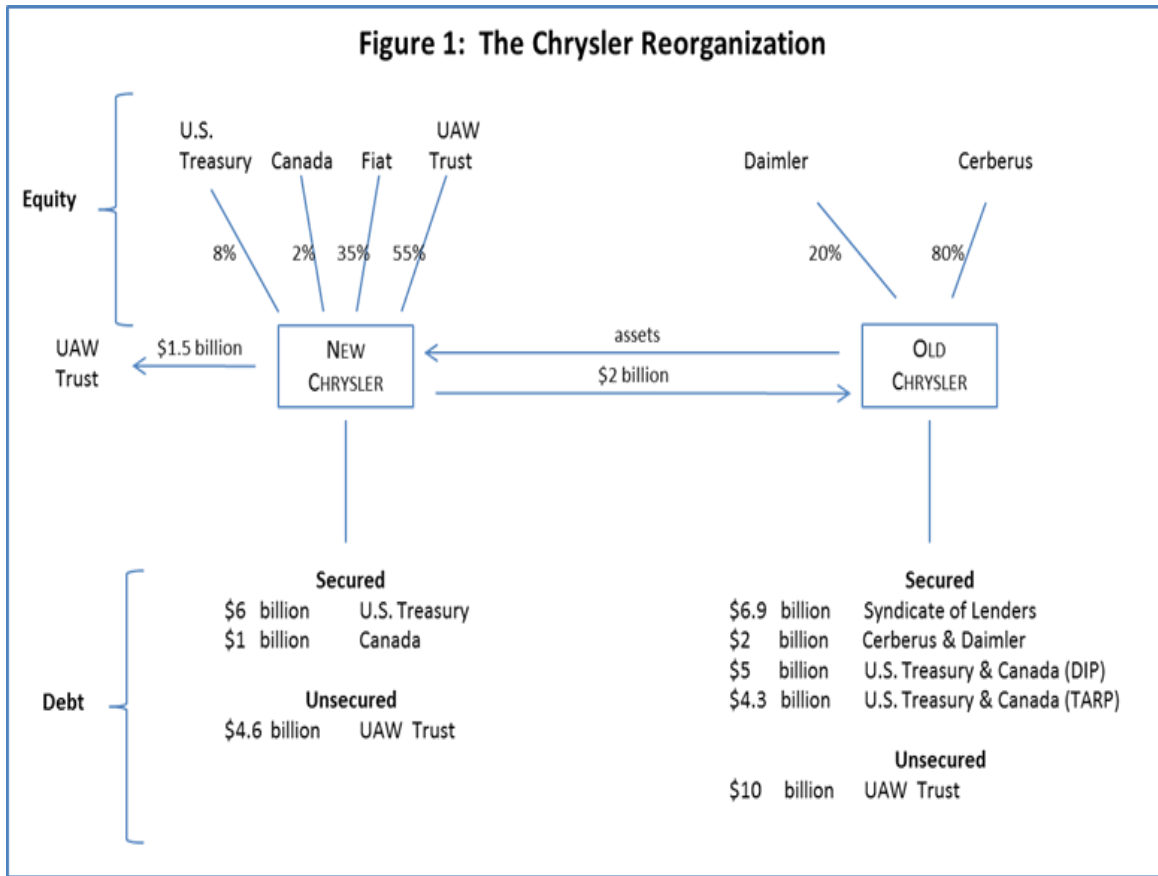


Figure 2: Corporate Yields

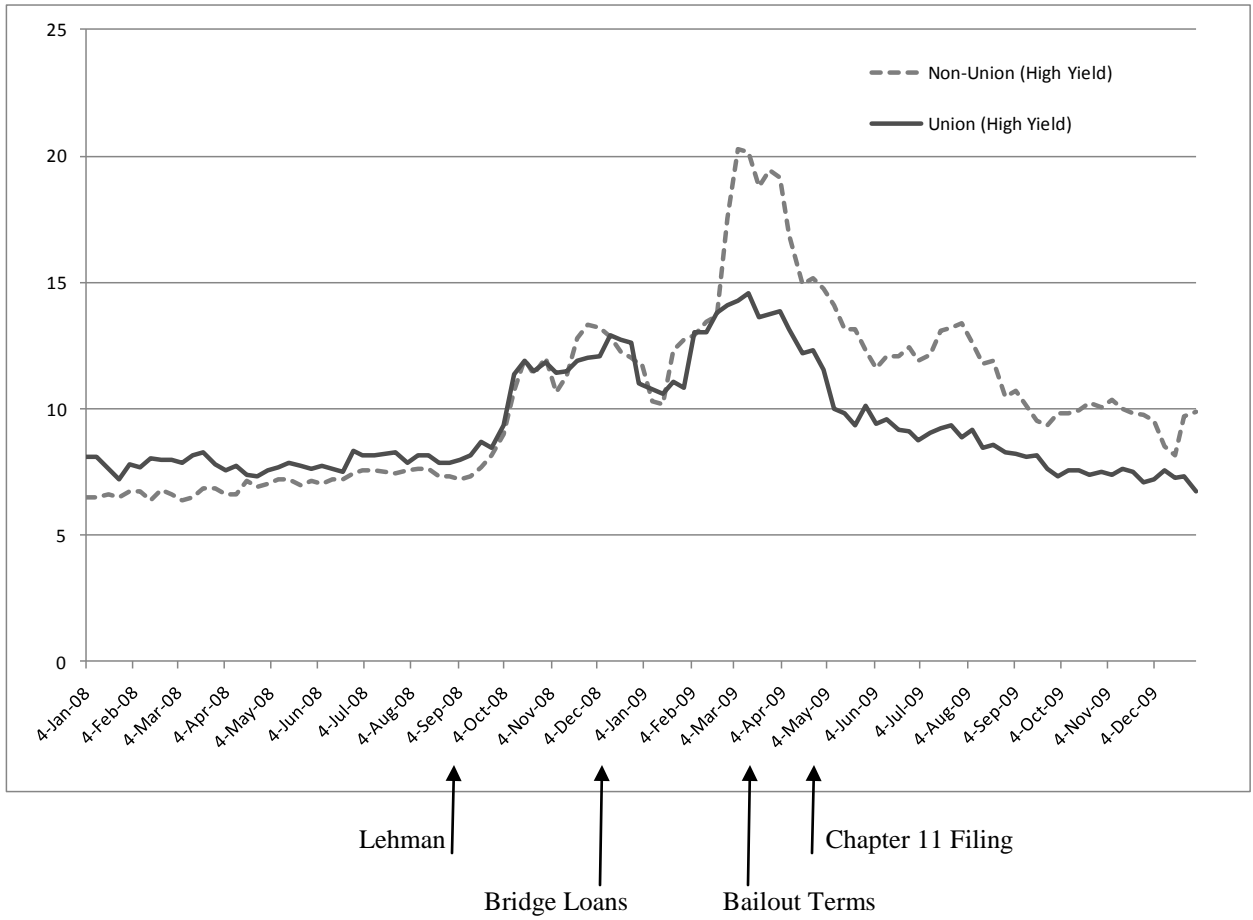


Figure 3: Cumulative Raw Bond Returns

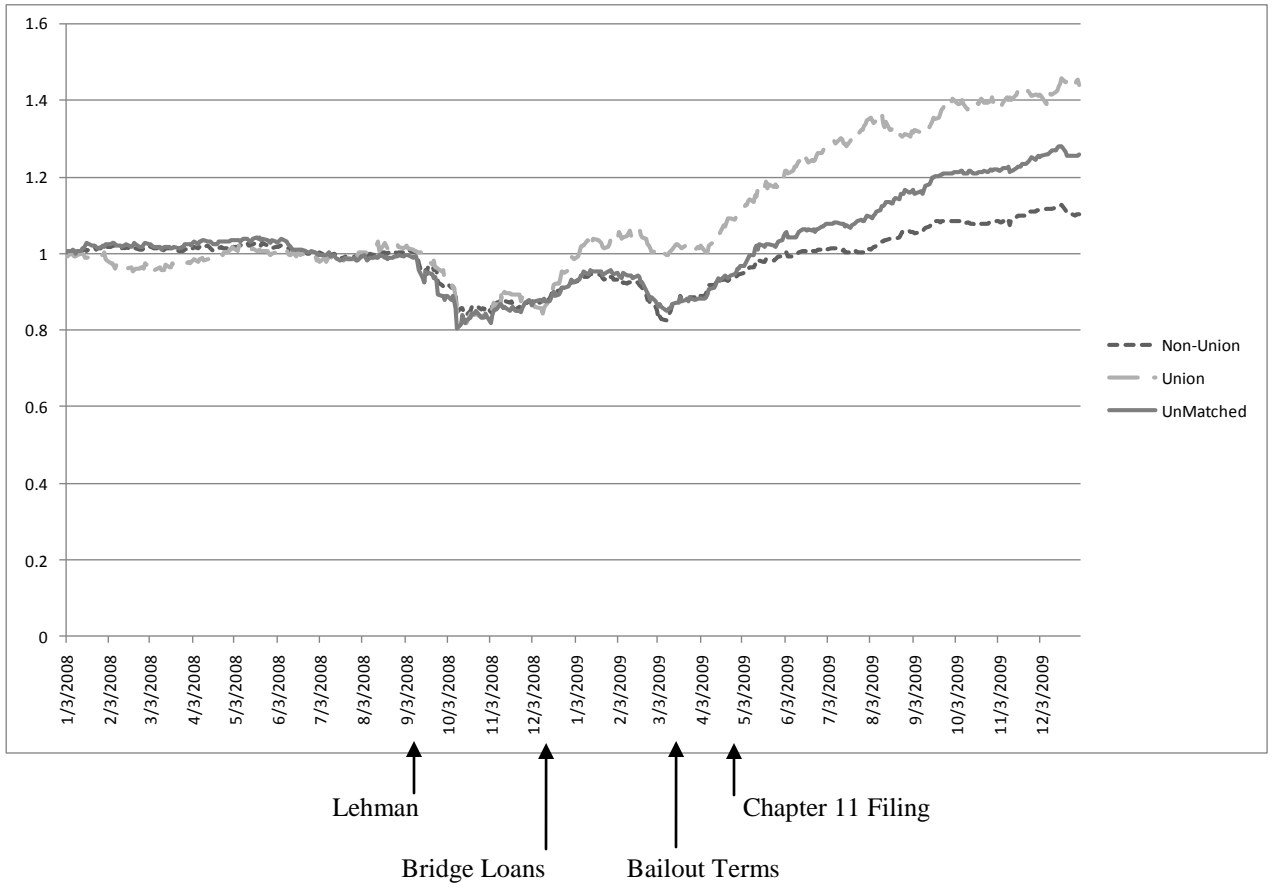


Figure 4: Cumulative Risk-Adjusted Bond Returns

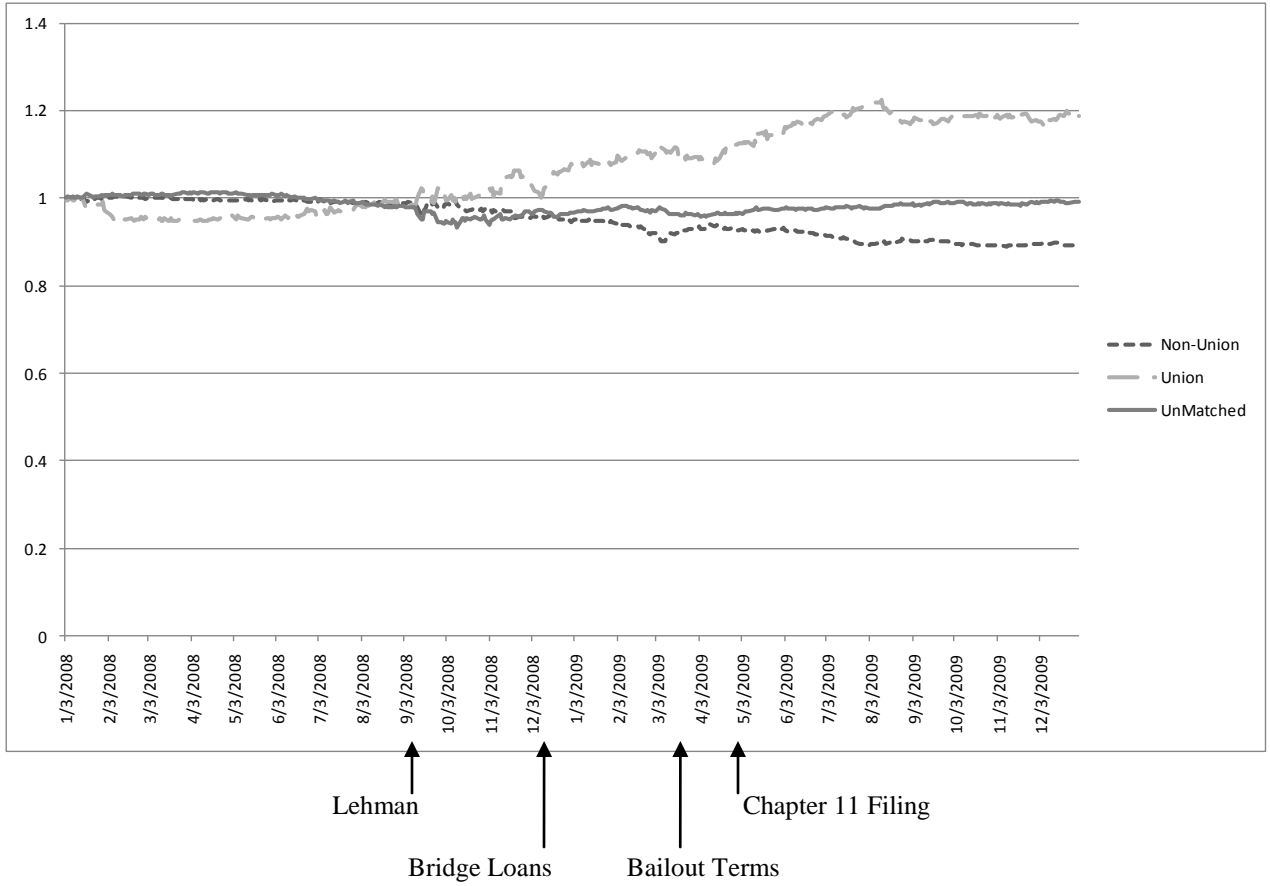


Table 1: Summary Statistics

This table provides summary statistics for various default measures and financial characteristics of unionized, non-unionized and unclassified companies. *O-score* is the Ohlson (1985) default score. *Merton-DD* is the Merton (1974) distance-to-default measure. The computation of *merton-DD* is described in detail in Anginer and Yildizhan (2010). *Chs-pd* is the default probability, calculated as in Campbell, Hilscher and Szilagyi (2008). Aggregate volatility, *totvol*, is measured using daily returns over the previous 12 months. Idiosyncratic volatility, *idiovol*, is calculated relative to the Fama-French 3-factor model. *Maturity* is the average maturity of the bonds for a firm and is measured in years. *Rating* is the S&P rating, where the rating has been converted to numeric values (AAA = 1, ..., C = 13). *bm* is the book-to-market ratio. *lme* is the log of market capitalization. *nimtavg* measures profitability and is calculated as a geometrically declining average of past values of the ratio of net income to the market value of total assets. Leverage is measured by *tlmta*, which is the ratio of total liabilities to the market value of total assets. Statistical significance at 10%, 5% and 1% is denoted by *, **, and ***, respectively.

Variable	UNION					NON-UNION					UNION - NON-UNION	
	Mean	Std Dev	Median	25th Pctl	75th Pctl	Mean	Std Dev	Median	25th Pctl	75th Pctl	Mean	t-stat
o-score	-2.407	0.664	-2.581	-2.848	-1.865	-2.517	0.868	-2.407	-3.326	-1.868	0.109	-0.84
merton-DD	8.504	3.176	9.018	6.214	10.832	9.243	4.886	7.967	6.315	10.844	-0.739	1.06
chs-pd	0.001	0.002	0.001	0.000	0.001	0.002	0.002	0.001	0.001	0.002	0.000	1.39
totvol	0.036	0.019	0.029	0.027	0.037	0.039	0.014	0.037	0.032	0.044	-0.003	1.15
idiovol	0.024	0.018	0.017	0.016	0.027	0.025	0.010	0.023	0.018	0.027	0.000	0.11
maturity	11.073	7.238	9.855	4.857	16.230	8.932	5.868	7.205	3.344	13.795	2.141	1.91**
rating	9.570	4.075	9.000	6.000	13.000	8.684	3.030	9.000	7.000	10.000	0.886	-1.65
bm	1.458	1.109	1.244	0.891	1.417	1.400	1.037	1.125	0.536	1.851	0.058	-0.33
lme	9.489	1.674	9.263	8.036	11.475	9.025	1.519	8.799	8.115	10.425	0.463	-1.79*
nimtavg	0.009	0.005	0.008	0.006	0.009	0.014	0.008	0.012	0.009	0.019	-0.005	-4.34***
tlmta	0.614	0.151	0.585	0.479	0.742	0.558	0.219	0.534	0.393	0.761	0.056	-1.74*

UNCLASSIFIED					
Variable	Mean	Std Dev	Median	25th Pctl	75th Pctl
o-score	-3.001	2.474	-2.605	-3.206	-2.321
merton-DD	10.188	5.916	8.522	6.757	13.115
chs-pd	0.002	0.004	0.001	0.000	0.001
totvol	0.038	0.014	0.033	0.027	0.045
idiovol	0.025	0.013	0.021	0.017	0.029
maturity	12.878	9.953	12.389	6.938	17.037
rating	9.076	3.751	9.000	7.000	11.000
bm	1.559	1.054	1.386	0.790	2.266
lme	9.191	1.435	9.242	8.384	9.968
nimtavg	0.011	0.008	0.012	0.007	0.016
tlmta	0.510	0.219	0.492	0.323	0.673

Table 2: Event Study – Panel A

This table provides the results from the event regressions: $r_t^i - r_f^i = a^i + b_{MKT}^i MKT_t + b_{SMB}^i SMB_t + b_{HML}^i HML_t + b_{DEF}^i DEF_t + b_{TERM}^i TERM_t + b_{DUMMY}^i DATE_DUMMY_t + e_t^i$. Value – weighted excess bond returns ($r_t^i - r_f^i$) of a portfolio of unionized (Panel A) and non-unionized companies (Panel B), as well as a portfolio formed by going long unionized and short non-unionized companies (Panel C), are regressed on risk factors and a dummy variable (*DATE_DUMMY*) that takes on a value of one in the three days ($t-1, t, t+1$) around the specified event date. *MKT* is the market risk premium, *SMB* is the size factor, *HML* is the value factor, computed as in Fama and French (1993). *TERM* is the return on long-term treasury bonds minus the return on short-term (three month) treasuries. *DEF* is the return on value-weighted long-term corporate bonds minus the return on long-term treasury bonds. Significance at 10%, 5% and 1% is denoted by *, **, and ***, respectively.

Panel A: Unionized Companies Portfolio Bond Returns														Adj R ²								
	Intercept	MKTRF	SMB	HML	DEF	TERM	12/12/08	12/19/08	1/15/09	3/29/09	3/30/09	4/30/09	6/1/09	6/2/09	6/5/09	6/8/09	6/9/09	6/10/09	7/5/09	8/5/09	Adj R ²	
Coeff	0.0001	0.0362	-0.0013	0.0183	0.5516	0.1746	0.0077														0.074	
t-stat	0.35	1.59	-0.03	0.4	5.29***	3.49***	1.50															
Coeff	0.0001	0.0369	-0.0066	0.0137	0.5451	0.1744		0.0119														0.067
t-stat	0.35	1.61	-0.13	0.3	5.19***	3.47***		3.35***														
Coeff	0.0001	0.0358	-0.0032	0.0143	0.5582	0.1775			0.0016													0.063
t-stat	0.36	1.56	-0.06	0.31	5.32***	3.52***			0.31													
Coeff	0.0001	0.0363	-0.0022	0.0133	0.5589	0.1781				0.0011												0.063
t-stat	0.36	1.58	-0.04	0.29	5.33***	3.54***				0.18												
Coeff	0.0001	0.0363	-0.0022	0.0133	0.5589	0.1781					0.0011											0.063
t-stat	0.36	1.58	-0.04	0.29	5.33***	3.54***	✓	✓	✓	✓	0.18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0361	-0.0022	0.0129	0.5625	0.1781						-0.0012										0.063
t-stat	0.36	1.58	-0.04	0.28	5.32***	3.54***	✓	✓	✓	✓	✓	-0.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0358	-0.0032	0.0133	0.5558	0.1772							0.0009									0.063
t-stat	0.36	1.56	-0.06	0.29	5.21***	3.5***	✓	✓	✓	✓	✓	✓	0.18	✓	✓	✓	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0358	-0.0046	0.0140	0.5520	0.1775								0.0021								0.063
t-stat	0.36	1.56	-0.09	0.31	5.19***	3.52***	✓	✓	✓	✓	✓	✓	✓	0.41	✓	✓	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0362	-0.0022	0.0128	0.5587	0.1782									0.0005							0.063
t-stat	0.36	1.58	-0.04	0.28	5.32***	3.53***	✓	✓	✓	✓	✓	✓	✓	✓	0.09	✓	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0364	-0.0017	0.0132	0.5527	0.1782										0.0052						0.065
t-stat	0.35	1.59	-0.03	0.29	5.27***	3.54***	✓	✓	✓	✓	✓	✓	✓	✓	✓	1.02	✓	✓	✓	✓	✓	
Coeff	0.0001	0.0365	-0.0006	0.0129	0.5533	0.1784											0.0058					0.065
t-stat	0.35	1.59	-0.01	0.28	5.28***	3.55***	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1.14	✓	✓	✓	✓	
Coeff	0.0001	0.0361	-0.0022	0.0130	0.5581	0.1778												0.0009				0.063
t-stat	0.36	1.57	-0.04	0.29	5.31***	3.53***	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0.17	✓	✓	✓	
Coeff	0.0001	0.0356	0.0012	0.0157	0.5625	0.1794													0.0114			0.066
t-stat	0.36	1.56	0.02	0.35	5.37***	3.57***	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1.29	✓	✓	
Coeff	0.0001	0.0366	-0.0015	0.0118	0.5576	0.1782															0.0015	0.063
t-stat	0.36	1.59	-0.03	0.26	5.31***	3.54***															0.29	

Table 2: Event Study – Panel B

Panel B: Non-Unionized Companies Portfolio Bond Returns																						
							Date Dummy															
	Intercept	MKTRF	SMB	HML	DEF	TERM	12/12/08	12/19/08	1/15/09	3/29/09	3/30/09	4/30/09	6/1/09	6/2/09	6/5/09	6/8/09	6/9/09	6/10/09	7/5/09	8/5/09	Adj R ²	
Coeff	0.0006	0.0548	-0.0570	-0.0539	0.5703	0.2534	0.0054														0.125	
t-stat	0.31	2.89***	-1.38	-1.43	6.58***	6.09***	1.27															
Coeff	0.0006	0.0554	-0.0600	-0.0533	0.5604	0.2508		0.0000														0.128
t-stat	0.31	2.93***	-1.45	-1.42	6.46***	6.03***		-0.01														
Coeff	0.0006	0.0536	-0.0608	-0.0480	0.5661	0.2516			0.0065													0.129
t-stat	0.3	2.83***	-1.47	-1.27	6.55***	6.06***			1.53													
Coeff	0.0005	0.0539	-0.0569	-0.0557	0.5723	0.2530				-0.0053												0.127
t-stat	0.28	2.84***	-1.38	-1.48	6.61***	6.09***				-1.03												
Coeff	0.0005	0.0539	-0.0569	-0.0557	0.5723	0.2530					-0.0053											0.127
t-stat	0.28	2.84***	-1.38	-1.48	6.61***	6.09***					-1.03											
Coeff	0.0007	0.0548	-0.0571	-0.0540	0.5641	0.2531						0.0023										0.125
t-stat	0.37	2.89***	-1.38	-1.44	6.46***	6.09***						0.53										
Coeff	0.0006	0.0548	-0.0569	-0.0540	0.5705	0.2534							0.0000									0.125
t-stat	0.33	2.89***	-1.37	-1.43	6.48***	6.07***							-0.01									
Coeff	0.0007	0.0551	-0.0543	-0.0551	0.5783	0.2539								-0.0023								0.125
t-stat	0.35	2.91***	-1.31	-1.46	6.59***	6.1***								-0.54								
Coeff	0.0004	0.0547	-0.0570	-0.0538	0.5709	0.2531									-0.0005							0.125
t-stat	0.22	2.89***	-1.38	-1.43	6.58***	6.08***									-0.11							
Coeff	0.0004	0.0548	-0.0571	-0.0540	0.5715	0.2533										-0.0010						0.125
t-stat	0.23	2.89***	-1.38	-1.44	6.59***	6.09***										-0.23						
Coeff	0.0007	0.0546	-0.0578	-0.0539	0.5736	0.2531											-0.0032					0.126
t-stat	0.37	2.88***	-1.4	-1.43	6.62***	6.09***											-0.75					
Coeff	0.0007	0.0548	-0.0570	-0.0540	0.5708	0.2534												-0.0004				0.125
t-stat	0.35	2.89***	-1.38	-1.44	6.58***	6.09***												-0.09				
Coeff	0.0006	0.0546	-0.0557	-0.0528	0.5715	0.2539													0.0043			0.125
t-stat	0.33	2.88***	-1.35	-1.4	6.6***	6.1***													0.60			
Coeff	0.0006	0.0560	-0.0550	-0.0567	0.5659	0.2539															0.0040	0.126
t-stat	0.3	2.95***	-1.33	-1.5	6.53***	6.11***															0.94	

Table 2: Event Study – Panel C

Panel C: Unionized - Non-Unionized Portfolio Bond Returns																						
		Date Dummy																				
	Intercept	MKTRF	SMB	HML	DEF	TERM	12/12/08	12/19/08	1/15/09	3/29/09	3/30/09	4/30/09	6/1/09	6/2/09	6/5/09	6/8/09	6/9/09	6/10/09	7/5/09	8/5/09	Adj R ²	
Coeff	-0.0005	-0.0186	0.0556	0.0722	-0.0187	-0.0788	0.0023														0.0043	
t-stat	-0.7	-0.67	0.92	1.31	-0.15	-1.3	0.37															
Coeff	-0.0005	-0.0185	0.0534	0.0671	-0.0153	-0.0765		0.0119														-0.004
t-stat	-0.57	-0.66	0.88	1.22	-0.12	-1.25		2.94***														
Coeff	-0.0005	-0.0178	0.0577	0.0624	-0.0078	-0.0741			-0.0049													-0.0026
t-stat	-0.48	-0.64	0.95	1.13	-0.06	-1.21			-0.79													
Coeff	-0.0004	-0.0176	0.0546	0.0690	-0.0134	-0.0749				0.0064												-0.0023
t-stat	-0.6	-0.63	0.9	1.25	-0.11	-1.23				0.85												
Coeff	-0.0004	-0.0176	0.0546	0.0690	-0.0134	-0.0749					0.0064											-0.0023
t-stat	-0.6	-0.63	0.9	1.25	-0.11	-1.23					0.85											
Coeff	-0.0006	-0.0186	0.0549	0.0669	-0.0016	-0.0749						-0.0034										-0.0033
t-stat	-0.5	-0.67	0.91	1.21	-0.01	-1.23						-0.55										
Coeff	-0.0005	-0.0190	0.0537	0.0673	-0.0147	-0.0762							0.0010									-0.0039
t-stat	-0.55	-0.68	0.88	1.22	-0.11	-1.25							0.16									
Coeff	-0.0006	-0.0192	0.0497	0.0691	-0.0263	-0.0765								0.0045								-0.0028
t-stat	-0.6	-0.69	0.82	1.25	-0.2	-1.25								0.71								
Coeff	-0.0003	-0.0186	0.0549	0.0666	-0.0122	-0.0749									0.0009							-0.0039
t-stat	-0.55	-0.67	0.91	1.21	-0.1	-1.23									0.15							
Coeff	-0.0003	-0.0184	0.0554	0.0671	-0.0188	-0.0751										0.0062						-0.0017
t-stat	-0.62	-0.66	0.92	1.22	-0.15	-1.23										1.00						
Coeff	-0.0006	-0.0181	0.0572	0.0668	-0.0203	-0.0748											0.0090					0.0007
t-stat	-0.66	-0.65	0.95	1.21	-0.16	-1.23											1.46					
Coeff	-0.0006	-0.0188	0.0548	0.0670	-0.0126	-0.0757												0.0013				-0.0038
t-stat	-0.56	-0.68	0.91	1.21	-0.1	-1.24												0.20				
Coeff	-0.0005	-0.0190	0.0568	0.0686	-0.0091	-0.0745													0.0070			-0.0030
t-stat	-0.58	-0.68	0.94	1.24	-0.07	-1.22													0.66			
Coeff	-0.0005	-0.0194	0.0535	0.0685	-0.0083	-0.0757																-0.0025
t-stat	-0.51	-0.7	0.88	1.24	-0.06	-1.24																-0.40

Appendix: Timeline of Events

October 3, 2008	TARP enacted.
December 11, 2008	Congress rejects auto bailout.
December 12, 2008	Bush Administration suggests TARP might be used for the auto companies, reversing its earlier position.
December 19, 2008	Bush Administration announces the making of bridge loans to the auto companies.
January 15, 2009	Congress approves release of second half of TARP funds.
February 17, 2009	Chrysler submits its viability plan.
March 29, 2009	Treasury announces summary findings of its review of Chrysler viability plan.
March 30, 2009	President Obama and Treasury announce further details of their findings, set forth requirements that Chrysler's viability plan must meet, and give Chrysler 30 days to submit a revised plan.
April 30, 2009	Chrysler files for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy Code.
June 1, 2009	Bankruptcy Court authorizes the sale of Chrysler's assets to New Chrysler under section 363 of the Code. Separately, GM files for bankruptcy protection under Chapter 11.
June 2, 2009	Second Circuit issues a motion for a stay.
June 5, 2009	Second Circuit affirms the June 1 order of the Bankruptcy Court.
June 8, 2009	Supreme Court issues stay.
June 9, 2009	Supreme Court vacates stay.
June 10, 2009	Chrysler's assets are sold to New Chrysler under section 363 of the Code.
July 5, 2009	GM's assets are sold under section 363 of the Code.
August 5, 2009	Second Circuit issues its opinion explaining its June 5 <i>Chrysler</i> decision.