

Branko LJ. Radulović¹

The Effect of §363 Sales on Recovery Rates: Allowing for Self-Selection Bias

Abstract

The article empirically examines the determinants of the resolution choice i.e. choice between §363 sale and traditional Chapter 11 reorganization; the determinants of the availability and size of debtor-in-possession financing; and the effects of resolution choice on recovery rates. We find that business justification standard for not going through the traditional process of disclosure and plan confirmation within traditional Chapter 11 reorganization is not randomly applied. The resolution choice doesn't influence on the availability or on the magnitude of DIP financing. Predominant factor explaining difference in recovery rates is profitability prior to bankruptcy rather than the resolution choice. After controlling for self-selection (which is significant and effective), traditional reorganization does seem to offer higher recovery rates comparable to preplan sale, but results are neither statistically robust, nor as important as it is argued in LoPucki and Doherty (2007). Availability of DIP financing doesn't significantly affect recovery rates unless its size is considerable. The increase in relative size of DIP financing makes everyone better-off. Although results suggest that there is no systemic error with respect to companies that opt for preplan sales there are certainly several important procedural issues that could be improved while keeping the flexibility of section 363(b).

***This is a working paper and the author would welcome
any comments on the present text.***

¹ Email: branko.radulovic@unito.it; Institutions Economics Law (IEL), Collegio Carlo Alberto, University of Turin, Department of Law, Italy, Email: bradulovic@ius.bg.ac.yu; phone: (+381) 11 30 27 609; address: Faculty of Law, University of Belgrade, Bulevar kralja Aleksandra 67, 11000 Beograd, Serbia.

*"You go to your incumbent lenders and say I need a loan. They don't want to take more exposure. They say fine, but you've got four months to sell the company."*²

Jonathan Henes, Kirkland & Ellis LLP

I. INTRODUCTION

The Bankruptcy Code was enacted in 1978 and became effective thirty years ago in 1979.³ The Code has been viewed as a debtor-friendly statute featuring a fresh start for debtors and the prospect of reorganization for businesses. However, over the past ten to fifteen years, several major changes in the bankruptcy process have taken place. Technological and financial innovations backed by some bankruptcy and non-bankruptcy related legal changes and bankruptcy courts attitudes, have helped to create new environment for senior lenders who under new circumstances have an improved bargaining position vis-à-vis junior creditors and equity holders. These developments lead some scholars to assert that improvements in the market for large, public companies had rendered traditional reorganization obsolete:

"Corporate reorganizations today are the legal vehicles by which creditors in control decide which course of action – sale, prearranged deal, or a conversion of debt to a controlling equity stake – will maximize their return."⁴

Since the seminal contribution of professors Baird and Rasmussen a number of scholarly articles examined the developments in bankruptcy practice, the underlying causes behind those changes, as well as their significance and potential efficiency consequences.⁵ Proponents of the new bankruptcy landscape argue that creditor control has been largely beneficial leading to more market driven type of transaction as opposed to the old, protracted, debtor-controlled process.⁶ Although a number of scholars have opposite

² "Bankruptcy blues", The Deal Newsweekly, May 19, 2008 available at http://www.thedeal.com/dealscape/2008/05/bankruptcy_blues.php (last visited 8/30/08).

³ Throughout this paper, reference made to the "Bankruptcy Code" or "the Code" unless otherwise noted refers to Title 11 of the United States Code (11 U.S.C.). In addition, all citations to "section" or "§" are to the Bankruptcy Code and all references to the "Rule" are citations to the Federal Rules of Bankruptcy Procedure, unless otherwise noted.

⁴ See Baird, D. and R. Rasmussen "Chapter 11 at Twilight", Stanford Law Review 56:673–699, (2003) at 675.

⁵ See Baird, D. and R. Rasmussen "The End of Bankruptcy", Stanford Law Review 55:751-789, (2002)

⁶ Id. at 789.

views (and over almost every aspect of the debate), everyone seems to agree that actual bankruptcy practice has evolved from how it was usually portrayed two decades ago.

These developments would not be possible without particular provisions of the Code. This paper provides empirical evidence on the role and consequences of two major code-related factors influencing changes in bankruptcy practice. Each factor relates to the specific section in the Code, namely §363 and §364. More specifically, section 363(b) enables sale of all or substantially all the assets of a business free and clear of claims and interest outside the ordinary course of business. Over the course of time, this section has evolved into what is effectively a sale alternative to traditional reorganization process. In parallel, section 364 provides that a debtor-in-possession may obtain additional financing while in Chapter 11. By providing post-petition financing or by allowing debtor to use cash collateral under §364, secured creditors can acquire substantial control over a debtor-in-possession. In a typical case a debtor will face liquidity constraint and will require financing either to reorganize or to sell the business via §363. While creditors often use this opportunity to secure preferential treatment of their post-petition but also of their pre-petition lending simultaneously receiving high rates of interest and collecting large fees, they also gain factual control over the debtor. Using post-petition, better known as DIP financing, as a leverage creditors may force debtor-in-possession to pursue the sale alternative instead of reorganization. Hence, it is often purported that both sections act for the benefit of senior creditors by allowing them to use their legal priority position to gain control rights.

As a consequence, the new bankruptcy landscape has raised several important issues to the academic debate requiring further examination. Certainly, crucial issues to examine are the effects of the shift in bankruptcy control resulting from §363 sales alternative to traditional reorganization,⁷ the role of DIP financing, and “whether the reorganization remains essential for dealing with distressed large public companies”⁸.

The objective of this paper is twofold. First, firms filing for Chapter 11 share similar characteristics of financial distress and therefore it is of interest to predict what determines the decision to opt for §363 sale instead of traditional reorganization. Thus, we expect to classify and predict resolution choice. The paper also aims to improve our understanding of the role of debtor-in-possession financing in the context of preplan sales and their joint effect on recovery rates. These research issues have not been specifically examined in prior law and economics and empirical legal literature.⁹ Second, the exercise

⁷ Baird, D., “The Elements of Bankruptcy”, Fourth Edition, Foundation Press, New York, NY. (2006), defines traditional (large corporate) reorganization as a situation in which a business in financial distress faces three conditions simultaneously: (i) the business has substantial value as a going concern; (ii) the investors cannot sort out the financial distress through ordinary bargaining and instead require Chapter 11’s collective forum; and (iii) the business cannot be readily sold in the market as a going concern at 230. See also *supra* notes 3 and 4. In what follows we use terms traditional or conventional reorganization and preplan or section 363 sales.

⁸ LoPucki, L., and J. Doherty, “Bankruptcy Fire Sales”, Michigan Law Review, Vol.62:1-60 (2007), at 3.

⁹ The only exception is Ayotte, K. and E. Morrison, “Creditor Control and Conflict in Chapter 11”, Northwestern University Law School, Law & Economics Research Paper Series Paper №08-16, available at <http://ssrn.com/abstract=1081661>. However they examine the likelihood of reorganization vs. alternative

in explaining and predicting resolution choice (between §363 sales and conventional reorganization) and recovery rates is not only of academic interest but is of importance to all bankruptcy constituencies. This paper tries to contribute to scholarly debate by doing rigorous empirical investigation to help correctly understand the issues evolving around section 363 sales analyzing factors that influence the decision to use 363 sales and factors that influence difference in recovery rates between two alternative types of exit within Chapter 11. From the perspectives of investors, creditors and other stakeholders it is important to predict the recovery rate following bankruptcy filing. Findings can help to inform decisions with respect to allocation of resources in bankruptcy as a rather costly and time-consuming process pointing to what would be the optimal way to resolve financial and economic distress. Specifically, we try to provide answers to following questions: Should we abolish or amend §363(b)? Is DIP financing beneficial in the context of preplan sales or not or is just leading to wealth expropriation?

The paper is also well-timed and topical. While the percentage of large publicly held debtors that obtain DIP financing has steadily increased over the time, there is no evidence that percentage of 363 sales is heading for a similar trend.¹⁰ Nevertheless, based on experience from 2001-2004 period we may expect an increase in §363 sale in near future, especially with the inversion of the business cycle led by recent credit contraction. As the number and proportion of bankruptcy preplan sales is expected to sharply increase in the next period, the results from empirical examination may suggest what would be the optimal way to resolve distress.

The organization of the paper is as follows. Part II reviews fundamental changes to bankruptcy system. Part III provides a brief overview of the use of sales under section 363(b). Part IV describes the data and variables used in estimation. Part V examines in a detailed manner the features of debtor-in-possession financing. Part VI reviews the literature on “debtor-in-possession” financing and examines determinants of the availability and size of debtor-in-possession financing comparing §363 sales to reorganization cases. Part VII reviews the literature and previous empirical studies on “fire-sales”, describes the methodology and estimation approach and reports and discusses results of the empirical study on the effects of resolution choice on recovery rates. Finally, part VIII concludes. More detailed descriptions of the data set are provided in the appendix.

resolutions in different context and find that resolution is significantly more likely to result in a sale if secured lenders are oversecured, consistent with a secured creditor-driven fire-sale bias.

¹⁰ Lopucki and Doherty (2007), *supra* note 8, at 42-43. The numbers of section 363 sales of large public companies fell from seventeen in 2003 to five in 2004, one in 2005, and in 2006 there were two. Based on Professor LoPucki’s Bankruptcy Research Database, for year 2007 there was only one, and until August 2008 none. Data available at <http://lopucki.law.ucla.edu> (last visited 8/30/2008). However, this version of the database of a large Chapter 11 publicly traded corporations that report more than \$100 million in assets in 1980 US dollars is smaller than the one cited in LoPucki and Doherty (2007) for 2003-2006 period.

II. BACKGROUND

Only until recently, managers and shareholders of bankrupt firms were more or less successfully sheltered from bankruptcy's consequences. Most often, an automatic stay was put on creditors' claims and incumbent managers (at least for a while) were retaining control of the reorganization process. Consequently, the debtor often avoided liquidation and the shareholders frequently retained a share in the value of the reorganized company even though creditors were not paid in full.¹¹ Indeed, many managers ultimately lost their jobs,¹² but as noted by Adler, Capkun and Weiss (2006) „the results were less severe for managers and shareholders than an immediate turnover of the firm to creditors, or forced liquidation, at the outset of the case“.¹³

¹¹ A number of papers present empirical findings on the deviation from absolute priority. See LoPucki, L. and W. Whitford, "Patterns in the Bankruptcy Reorganization of Large, Publicly Held Companies", *Cornell Law Review* 78:597-618, (1993); see Tashjian, E., R. Lease, and J. McConnell, "Prepacks: An empirical analysis of prepackaged bankruptcies", *Journal of Financial Economics* 40: 135-162, (1996) who examine deviations from the absolute priority rights in workouts and Chapter 11 show that creditors did better in workouts than in Chapter 11; Eberhart, A., W. Moore and R. Roenfeldt, "Security Pricing and Deviations from the Absolute Priority Rule in Bankruptcy Proceedings", *The Journal of Finance*, 45:1457-1469 (1990), found deviations in 77% of firms in a sample of 30 Chapter 11 firms. Betker, B., "Management's Incentives, Equity's Bargaining Power, and Deviations from Absolute Priority in Chapter 11 Bankruptcies", *The Journal of Business*, 68: 161-183, (1995) using sample of 75 firms documents that priority deviations are larger when the firm is closer to solvency, banks hold fewer claims and the chief executive officer (CEO) holds more shares. More recent research includes Carpeto, M., "Examining deviations from absolute priority rules", *Journal of Empirical Legal Studies*, Vol.3: 543-560 (2006) and Carapeto, M., "Emerging patterns in deviations from absolute priority rules in bankruptcy", *Journal of Restructuring Finance*, Vol.2:101-109, (2005), showing that their magnitude has been decreasing over time and that is driven mainly by the bargaining power of the debtor and "recontracting" and to some extent by the complexity of the case and information asymmetry; Weiss, L. and V. Capkun, "Bankruptcy Resolution: Priority of Claims with the Secured Creditor in Control", *American Law & Economics Association Meetings*, Paper №34. (2007) using sample of 222 firms that filed for Chapter 11 between 1993 and 2004 find loss of equity holders' ability to extract concessions in violation to priority of claims; Barath, S., V. Panchapagesan and I. Werner "The Changing Nature of Chapter 11", *Fisher College of Business Working Paper №2008-03-033*, (2007), report rapid decline in the frequency of absolute priority deviations from as high as 75%, before 1990 to 22% in 1991-2005 period, and as low as 9% for the period 2000-2005. Paper available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1102366 (last visited 09/15/2008).

¹² See Gilson, S. "Management turnover and financial distress", *Journal of Financial Economics* Vol.25:241-262. (1989); Gilson, S. "Bankruptcy, boards, banks and blockholders", *Journal of Financial Economics*, Vol.26:355-387 (1990), finds that in a 5 year period starting with the year of bankruptcy filing 57% of CEOs and 54% of directors lose their jobs when a debtor files for bankruptcy. However, those who kept their positions are better off compared to the situation under a much tougher system in other countries. More recently, Henderson, T. M. "Paying CEOs in Bankruptcy: Executive Compensation when Agency Costs are Low", *Northwestern University Law Review* Vol.101:1543-1618 (2007) presents empirical evidence that amounts and forms of compensation for 76 firms that faced severe financial distress during the period 1992 to 2003 out of which 68 firms filed to reorganize under Chapter 11, look similar to those of healthy firms. He also finds that over 60% of CEOs were replaced in the zone of insolvency with almost 70% of CEO being outsiders, suggesting that creditors are exercising their power to discipline managers; Barath, S., et al. (2007), *supra* note 11, find from period before 1990 management turnover in Chapter 11 has increased by 65% (from 22.9% of the reorganizations) to 37.7% of the reorganizations after 2000.

¹³ See Adler, B., V. Capkun and L. Weiss, "Destruction of Value in the New Era of Chapter 11" (2006) Paper available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=795987 (last visited 05/17/2008).

Indeed, the efficiency of large Chapter 11 cases has been extensively studied. Both economists and legal scholars have raised reservations and questioned the usefulness of the process that is being run against the interest and at the expense of the creditors.¹⁴ Some researchers emphasized that most bankrupt firms should be liquidated rather than reorganized or argued that Chapter 11 is rather lengthy and costly process.¹⁵ On the contrary, other researchers emphasized the potential benefits associated with the process arguing that it generates net social gains by capturing going concern value, by protecting from dismemberment firms whose value cannot be realized through sale or preserved by soliciting investment in capital markets¹⁶ and by serving the needs of a wide set of interest groups.¹⁷

See, e.g., Bradley, M. and M. Rosenzweig, "The Untenable Case for Chapter 11", *Yale Law Journal*, Vol.101:1043-1090, (1992) who using empirical analysis conclude "that managers effectively invoke Chapter 11 as a defense against unwelcome interference by creditors and as a mechanism for extracting significant wealth from the firm's various security holders." at 1088. See also Bebchuk, L. and H. Chang "Bargaining and the Division of Value in Corporate Reorganization", *Journal of Law, Economics, and Organization*, Vol. 8, 2: 253-279, (1992) who develop a bargaining model of Chapter 11 and explain shareholders ability to obtain a share in value, even though the company was insolvent by the fact that their consent is necessary for a division of value, that is because of their ability to delay the adoption of a reorganization plan (and delay may lead to a favorable resolution or may lead to "financial distress costs"), and by the fact that under Chapter 7 company may entail a loss of value at 255-256.

¹⁴A number of proposals from law and economics scholars (so called "market based" or "contractarian" approach to bankruptcy) sought to replace Chapter 11 with market mechanism. See, e.g. Bebchuk, L., "A New Method for Corporate Reorganization", *Harvard Law Review* 101:775-804, (1988) proposing options to value the assets of firms in bankruptcy, permitting each stockholder or creditor to acquire an equity interest if they paid a pro rata share of all higher priority claims; Aghion, P., O. Hart and J. Moore "The Economics of Bankruptcy Reform", *Journal of Law, Economics and Organization* Vol.8 3:523-546, (1992) extending Bebchuk's options scheme to include a vote by the new equityholders on how the reorganized firm's assets will be used; Adler, B., "A Theory of Corporate Insolvency", *New York University Law Review*, 72:343-382 (1997), presenting a proposal for the use of pre-bankruptcy contracts that would use "Chameleon Equity," stock that would automatically be crammed down by creditors' claims in the event of insolvency; Baird, D., "The Uneasy Case for Corporate Reorganizations", *The Journal of Legal Studies* 15:127-147, (1986) arguing for a standard auction of the bankrupt company's assets; Schwartz, A "Theory of Loan Priorities", *The Journal of Legal Studies* 18:209-261, (1989) developing a proposal to permit creditors to obtain priority purely by contract.

¹⁵ Most empirical studies show that 'old' Chapter 11 reorganization was a rather lengthy and costly procedure. Hotchkiss, E. S., "Postbankruptcy Performance and Management Turnover", *The Journal of Finance* 50:3-21 (1995), examined a sample of public firms emerging from Chapter 11 and showed that the average reorganization required 20 months in court with 40% of reorganized firms continued to have operating losses following reorganization and 32% of reorganized firms refilled for bankruptcy or subsequently restructured out of court. Hotchkiss (1995) concludes that the Chapter 11 is rather ineffective in rehabilitating distressed companies and that it is biased toward the continuation of unprofitable firms. Similarly, LoPucki and Whitford (1993), *supra* note 11, found that 32% of the companies to emerge from the largest bankruptcy reorganization refilled within a few years. However, Bris, A., I. Welch and N. Zhu "The Costs of Bankruptcy: Chapter 7 Liquidation versus Chapter 11 Reorganization", *The Journal of Finance*, 61: 1253-1303, (2006), find that Chapter 7 liquidations appear to be no faster or cheaper in terms of direct expense than Chapter 11 reorganizations.

¹⁶ LoPucki and Doherty (2007), *supra* note 8, at 3.

¹⁷ See Jackson, T. "The Logic and Limits of Bankruptcy Law", Beard Books, Washington, D.C. (Originally published by Harvard University Press Cambridge, Massachusetts (1986)), at 225-252 describing the fresh start policy of bankruptcy law.

As stated in the introduction, over the past ten to fifteen years several major changes related to the bankruptcy process have taken place. Scholarly work named several factors that contributed to changes in bankruptcy practice: (i) changed nature of modern companies (i.e. absence of going-concern value);¹⁸ (ii) advances in financial contracting leading to efficient allocation of controlling rights;¹⁹ (iii) higher market liquidity for assets and for entire companies;²⁰ (iv) change in legislation that allows a security interest in bank accounts enabling a dominant creditor to eliminate a financially distressed debtor's free cash;²¹ (v) the judiciary's shift away from the pro-debtor bias;²² (vi) contractual changes *vis-à-vis* managers (contracts based on the speed of the reorganization or the price obtained in asset sale)²³. All these factors led to creditors

¹⁸See Baird and Rasmussen (2003), *supra* note 4 at 758. But see LoPucki, L., "The Nature of the Bankrupt Firm: A Reply to Baird and Rasmussen's 'The End of Bankruptcy'", *Stanford Law Review* 56:645-672, (2003) presenting critique of Baird and Rasmussen's view of the bankrupt firm as merely an asset-owning entity.

¹⁹ See Lubben, S., "The 'New and Improved' Chapter 11", *Kentucky Law Journal*, Vol. 93: 839-866. (2004) argues that that "The credit for Chapter 11's cure can be traced to improved markets for distressed assets, reduced use of firm-specific assets, ..., but most of the credit goes to control rights." at 840; See Baird and Rasmussen (2003) on how detailed and extensive covenants provided in new or restructured debt contracts enable creditors to take on effective control, *supra* note 4. at 778-785.

²⁰ See Baird, D. And R. Rasmussen "Private Debt and the Missing Lever of Corporate Governance", 154 *University of Pennsylvania Law Review*. Vol.154: 1209-1252, (2006) stating that nowadays "Both large and small corporations are routinely sold in the marketplace." at 1233; see Baird and Rasmussen (2003), *supra* note 4, stating that "The market for selling firms as going concerns is well developed." at 786, arguing that bankruptcy contracting has already replaced bankruptcy reorganization.

²¹ This change relates to §9-104 of the Uniform Commercial Code, which permits a creditor to take a security interest in a debtor's bank accounts. If the secured party is the bank that maintains the deposit account, then control, and hence perfection, is automatic. See Warner, R.G., "Deposit Accounts as Collateral under Revised Article 9", *American Bankruptcy Institute Journal*, (2000), for discussion on the impact of changes. For a critical view see Warren, E., and J. L. Westbrook, "Secured Party in Possession", *American Bankruptcy Institute Journal*, (September, 2003). See Baird and Rasmussen (2006), *supra* note 20, "Article 9, has made it possible for lenders to acquire all of a corporation's assets. ... The expanded security interest not only changes the basis on which the lender extends credit, but also the control that the creditor can exercise over the business." at 1228.

²² See Skeel, D. Jr. "Debt's dominion: A history of bankruptcy law in America". Princeton NJ: Princeton University Press, (2001) documenting a marked increase in pro-debtor bias after the introduction of the 1978 Bankruptcy Code. However, see Baird and Rasmussen (2003), *supra* note 4, documenting a marked reduction in the pro-debtor bias of U.S. bankruptcy courts. See LoPucki, L., (2003), *supra* note 18, criticizing the bankruptcy court's willingness to permit sales of companies without requiring compliance with the reorganization plan process and delaying bankruptcies to later stages of financial decline, at For a view that forum shopping and court competition has a profoundly negative impact on bankruptcy procedure see LoPucki, L., "Courting Failure: How Competition for Big Cases is Corrupting the Bankruptcy Courts" The University of Michigan Press, Ann Arbor (2005). LoPucki argues that the destructive power of "forum shopping," in which bankruptcy professionals, debtors and creditors choose courts that offer the most favorable outcome for their bankrupt clients, and courts streamline their requirements and lower their standards to compete for the most lucrative cases. As a consequence LoPucki argues that the result has been a series of increasingly problematic reorganizations of major American corporations.

²³ See Skeel, D. Jr. "Creditors Ball: The "New" New Corporate Governance in Chapter 11", *University of Pennsylvania Law Review*, Vol. 152: 917-951 (2003), who discusses performance-based compensation packages in Chapter 11.

increasingly exercising *de facto* control. Finally, several authors argue that the recent changes in the Bankruptcy Code²⁴ will further strengthen this trend.²⁵

Factors (i), (iii) and (vi) are explicitly related to the effectiveness of section 363, and factors (ii) and (iv) to the efficiency of section 364. Companies with absence of going-concern value, in situation when markets for assets or for entire companies are liquid and with either “incentivized” incumbent managers or imposed CROs are almost predetermined to opt for §363 sale instead of traditional reorganization.²⁶ Similarly, sophisticated lenders who can easily take a security interest in a debtor’s bank accounts in a situation when liquidity constrained debtor requires an immediate DIP loan can easily force the debtor to cede control over the reorganization process.

Kuney (2004) provides similar classification and names five distinct legal developments that combined have led to chapter 11 metamorphose “from its original, stated purpose”.²⁷ Kuney concludes that “The result is a massive, federally funded, unified foreclosure system for corporate lenders that primarily serves the interests of secured creditors and their assistants – insiders and the insolvency professionals at the center of the case”.²⁸ Warren and Westbrook (2003) argue the changes have been made for the benefit of a single secured creditor come at the expense of general creditors.²⁹ Skeel (2003), LoPucki (2003) and Warren and Westbrook (2003), all agree that creditor control permitting him destruction of viable firms. Similarly, Westbrook (2004) argues that Chapter 11 has gone too far in favoring largely or exclusively secured creditors squeezing out those junior to them.³⁰ These authors claim that instead of serving for the benefit of the bankruptcy estate, benefit of unsecured creditors by rehabilitating troubled business and preserving jobs and enterprises, the Chapter 11 in these new circumstances is used by secured

²⁴ The U.S. Congress enacted a revised Bankruptcy Act on April 20, 2005, called the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA).

²⁵ The new Act is more favorable for creditors of a bankrupt company and could have a profound impact on the ability of firms to reorganize successfully. For example, due to almost regular extensions of exclusivity, managers were sheltered by the courts in some cases for four or more years. BAPCA limits the length of the exclusivity period to a maximum of 18 months, plus two months for confirmation. Other important changes include reduction in the use of key employee retention plans (KERP) unless employee is essential and has competing job offer, improved creditor access to information, reduction of disinterested requirements, etc. See Altman, R. and E. Hotchkiss, “Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt”, 3rd ed., Wiley, (2007), at 47-52.

²⁶ See Baird and Rasmussen (2006), *supra* note 20, noting that often the appointment of the Chief Restructuring Officer (“CRO”) represents a condition of the post-petition loan or the DIP lenders may condition the waiver of loan covenants on the appointment of a CRO.

²⁷ See Kuney, G., “Hijacking Chapter 11”, *Emory Bankruptcy Development Journal*, Vol.21:19-112 (2004). Kuney includes: (i) administrative changes of the bankruptcy judge compared to the pre-1978 bankruptcy system; (ii) secured creditor DIP financing; (iii) insider retention programs; (iv) liability releases for insiders; and (v) sale of substantially all the assets of the business.

²⁸ *Id.* at 111.

²⁹ Warren and Westbrook (2003), *supra* note 21, coined the acronym SPIP (“Having invented the DIP ..., American lawyers are now creating the SPIP (secured-party-in-possession). More and more chapter 11 cases seem to be no more than vehicle through which secured parties may enjoy their Article 9 rights under the umbrella, and the protective shield of the bankruptcy law.” at 12.

³⁰ Westbrook, J.L. “The Control of Wealth in Bankruptcy”, *Texas Law Review*, Vol.82:795- 861, (2004) states that “[A] takeover of the chapter 11 process by one group of creditors would seem to be the occasion for concern, not celebration.” at 860.

creditors and those that they influence to control the liquidation of their collateral. Lubben (2004), states that lender control may only benefit lenders.³¹ Miller and Waisman (2003), wonder whether the rights of secured creditors endanger the bankruptcy system to the point that secured creditors may veto rehabilitation and force the sale of a debtor's assets.³² In other words instead of using traditional reorganization, creditors in control may pressure debtor-in-possession to opt for preplan sale, thus significantly lowering recovery ration that is the size of the pie, or as neatly summarized by LoPucki and Doherty (2007):

“Bankruptcy going-concern sales can provide a substitute for bankruptcy reorganization only if, for a given company, the sale can realize at least as much value as reorganization. Otherwise reorganization should continue in order to maximize value.”³³

However, to answer properly one needs to take into account two important issues. First, criticism is mostly related to equity and not to efficiency aspects of the new bankruptcy landscape. If reallocation of resources either through §363 sale or through traditional reorganization leads to similar recovery rates controlling for various characteristics of the firm and the environment, both alternatives yield the same level of efficiency, with possible distributional effects as senior lenders will obtain a larger piece of the pie that they would otherwise receive using reorganization. The fact that recovery rates are different does not mean that preplan sale alternative is inefficient, rather that it causes major redistributional (wealth transfer) effects, from junior unsecured creditors and (assuming zero recovery in both cases) less likely equity holders to the acquirer of the firm. Second, LoPucki and Doherty (2007) presume that there will be someone who is willing to lend to debtor-in-possession. If this is not the case than the size of the pie will shrink and junior creditors and less likely equity holders will be worse off.³⁴

The claims of a low recovery, unreasonableness and corrupt pattern of how §363 sales are allowed will probably dominate bankruptcy reform in the United States. Therefore it is of essential importance to examine whether newly emerged system is ineffective and whether decisions to use §363 sales were “unreasonable” or rather predictable.

³¹ Supra note 19 at 841-842.

³² See Miller, H. and S. Waisman, “The Creditor in Possession: Creditor Control of Chapter 11 Reorganization Cases”, *Bankruptcy Strategist* (November, 2003)

³³ Supra note 8, at 44.

³⁴ See Eisenberg, T. and S. Tagashira, “Should We Abolish Chapter 11? The Evidence from Japan”, *The Journal of Legal Studies*, Vol.23:111-157 (1994) “The question whether reorganization law generates a net social gain is distinct from the question whether, in filed reorganization cases, creditors receive more than they would were the debtor liquidated. The net social gain issue is not within our reach. ... Nor can ... data reveal what debtors and creditors would have done had there been no reorganization law.” at 114. See also Eisenberg, T., “Baseline Problems in Assessing Chapter 11”, *University of Toronto Law Journal*, Vol.11:633-677 (1993).

III. SECTION 363(b) AND INCENTIVES

1. Statutory Overview of §363(b)

In the United States, when a firm files for bankruptcy, it will be either liquidated or reorganized. In liquidation, governed by chapter 7 of the Bankruptcy Code assets are sold either piecemeal or as a going concern and the proceeds are distributed according to the absolute priority rule, whereby debt and equity are paid according to a predetermined order. In contrast, in a reorganization, governed by Chapter 11 of the Code shareholders and creditors agree on a reorganization plan, which allows the company to continue operations by relieving a portion of its unsecured debt and thus liquidation is at least temporary avoided.³⁵ As such, Chapter 11 involves voting rules and other sophisticated mechanisms for negotiating an acceptable plan of reorganization which often results in a lengthy, intricate and expensive process.³⁶ However, even within Chapter 11 there is an alternative way of exiting from bankruptcy.

Debtor-in-possession, while in Chapter 11, may dispose its assets either under a confirmed plan of reorganization or in a pre-confirmation sale under § 363. Under the Bankruptcy Code, the debtor is authorized to sell property of the estate in the ordinary course of business, but the Code also allows certain types of sales to be conducted outside the ordinary course of business as provided in the § 363(b).³⁷ Besides, § 363(f) offers the buyer the benefit of a title free and clear of liens, subject to some limitations.³⁸ Thus,

³⁵ One needs to be very careful as nearly all companies engage in some form of liquidation. Thus, distinction commonly drawn between reorganizations and liquidations may be misleading. See LoPucki and Whitford (1993), *supra* note 11, at 612. Similarly, Baird and Rasmussen (2003), *supra* note 4, point that “Asset sales preserve a business’s going-concern value in a way that undercuts the liquidation/reorganization dichotomy that marks much discussion about bankruptcy law. Bankruptcy scholars for years have viewed the choices facing a corporation as either to reorganize consensually in order to preserve going-concern value or have its assets sold piece by piece for a fraction of their value. Such a fear is largely misplaced.” at 691.

³⁶ See *supra* note 7 and accompanying text.

³⁷ The sale of assets is governed by § 363 titled ‘Use, sale or lease of property’. § 363 has sixteen subsections. Section 363(b)(1) states in part: “[t]he trustee, after notice and a hearing, may use, sell, or lease, other than in the ordinary course of business, property of the estate” Section 363(c)(1) states: “[i]f the business of the debtor is authorized to be operated under section 721, 1108, 1203, 1204, or 1304 of this title and unless the court orders otherwise, the trustee may enter into transactions, including the sale or lease of property of the estate, in the ordinary course of business, with-out notice or a hearing, and may use property of the estate in the ordinary course of business without notice or a hearing.” The section applies to Chapters 7, 11, 12, and 13 of the Code. However, while its use is not limited to reorganizations, its application in Chapter 11 context is focus of both theoretical and empirical analysis of this paper.

³⁸ Section 363(f) clarifies that trustee may “sell property . . . free and clear of any interest in such property of an entity other than the estate only if: 1) applicable nonbankruptcy law permits sale of such property free and clear of such interest; 2) such entity consents; 3) such interest is a lien and the price at which such property is to be sold is greater than the aggregate value of all liens on such property; 4) Such interest is in bona fide dispute; or 5) Such entity could be compelled, in a legal or equitable proceeding, to accept a money satisfaction of such interest. In addition, when an asset is sold under § 363(b) subject to the provisions of § 363(f), a motion under Rule 9014 will be required, and the holder of the interest must be

selling all or substantially all assets under § 363(b) and related sections, represents an alternative to completing the formal reorganization procedures under Chapter 11.

Section 363(b) imposes minimal requirements: (i) there is no need to get an approval from the debtor's creditors or stockholders;³⁹ (ii) the opportunity to appeal the transaction is limited as the § 363(m) makes an appeal from §363 sale moot, unless the objector has obtained a stay pending appeal or the purchaser has not acted in good faith.⁴⁰

For debtors, bankruptcy professionals and prospective buyers, section 363 sales, carried out via controlled auctions, are perceived to be a quick and easy way of disposing assets free and clear of liens, simultaneously avoiding pervasive scrutiny of transactions by the court, creditors, or other parties in interest. As noted by Brege (2006) „the mere existence of this section appears to be a puzzling contradiction to the purposes of Chapter 11. ... [i]t is doubtful that the drafters anticipated the use of §363(b) sales as an alternative method of selling off large portions of businesses“.⁴¹ Several authors agree that this is just the opposite from what was originally contemplated by the Code drafters.⁴² Among other factors, increased popularity of §363 (preplan or pre-confirmation) sales induced some researchers and practitioners to state that this alternative exit from bankruptcy will replace the conventional Chapter 11 reorganization plans.⁴³ Other researchers either disapproved this direction or stated that it is not based on facts.⁴⁴

notified. Failure to object in this situation will lead to the interest-holder becoming bound by the terms of the notice and ensuing sale.

³⁹ In practice, prior to court approval, the unsecured creditors' committee receives notification containing a description of the terms and conditions of the sale, along with a time specification for filing objections. Hearing is scheduled only if a creditor objects to the sale. 11. U.S.C. § 102(1) (A) that provides the definition of notice and a hearing, allowing that "such notice as is appropriate in the particular circumstances". The § 363(b) notice disclosure requirements as compared to § 1125(b) are much less demanding. In addition, the burden of producing evidence when objecting the § 363(b) sale is born by the objecting party which makes it difficult for her to assess the transaction and prepare a well-reasoned objection within the twenty days prior to the hearing. For a discussion see Rose, E. "Chocolate, Flowers, and § 363(B): The Opportunity for Sweetheart Deals without Chapter 11 Protections". *Emory Bankruptcy Development Journal* 23:249-284 (2007), noting that "Plan confirmation depends on creditor approval but § 363 sale approval depends on the creditors' failure." at 262.

⁴⁰ 11. U.S.C. § 363 (m) states: "The reversal or modification on appeal of an authorization under subsection (b) or (c) ... does not affect the validity of a sale... under such authorization to an entity that purchased or leased such property in good faith, whether or not such entity knew of the pendency of the appeal, unless such authorization and such sale or lease were stayed pending appeal."

⁴¹ Brege, J., "An efficiency model of section 363(b) sales", *Virginia Law Review*, Vol.92:1639-1685, (2007) states: "If Chapter 11 is designed to reorganize failing businesses through an explicit reorganization plan, why should the Code also allow the debtor-in-possession—typically the corporation's management during the bankruptcy process—to sell assets outside the ordinary course of business without regard to that plan? While courts have differed on the extent to which assets can be sold, ranging from partial asset sales to full liquidations, Section 363(b) appears to offer a side door to escape the rigors of the typical bankruptcy plan confirmation." at 1640.

⁴² For a view that legislative history of § 363(b) and § 363(f) does not support the sale of all or substantially all of the debtors' business, see Kuney, G., "Let's Make it Official: Adding an Explicit Preplan Sale Process as an Alternative Exit from Bankruptcy", *Houston Law Review* Vol.40:1265-1322, (2004); Kuney, G., "Misinterpreting Bankruptcy Code Section 363(f) and Undermining the Chapter 11 Process", 76 *American Bankruptcy Law Journal*, Vol.:76 235-287, (2002).

⁴³ See Baird, D. "The New Face of Chapter 11", *American Bankruptcy Institute Law Review* Vol.12 (2004) arguing that "... creditors of insolvent businesses . . . no longer need a substitute for a market sale. Instead

2. §363 and Incentives

Ideally, when continuing operating losses or declining market conditions rapidly diminish the value of assets or because of other firm-specific factors, the need to conclude a transaction quickly is of essential importance. Since in a §363(b) sale there is a limited number of interested parties that the debtor has to negotiate with, this alternative creates minimum transaction costs and is quicker to close. As a result §363(b) sales, at least in some cases, may lead to a more efficient outcome. Opposite view argues that without proceeding through a reorganization confirmation process alternative regime creates opportunities for abuse and hard-to-detect insider dealing. Even without insider dealing, some authors argue that the incentive structure of parties in interest may lead not only to wealth transfers, but in some cases to welfare loss through waste of assets. To better understand how §363(b) works we need to examine incentives of the parties in interest.

For a debtor-in-possession, apart from the ability to circumvent plan confirmation, preplan sale alternative eliminates management exposure for the sale, and limits exposure for breach of representations and warranties.⁴⁵ The possible benefits of §363(b) for executives are manifold. Sale can trigger executives severance payments, executives can be hired by the buyer or engaged as consultants to the buyer after the sale. Indeed creditor and court approved benefits to directors and executives counter the tendency for managers to prolong the proceedings.

Kuney (2002) argues that equity holders are favored by preplan sales quoting the avoidance of the formal disclosure, and possibility to negotiate the terms of the benefits for insiders or those with large stake.⁴⁶ Unlike insiders, as noted by Baird and Rasmussen (2003) equity is nearly always wiped out in modern, large Chapter 11 cases, even when

of providing a substitute for a market sale, Chapter 11 now serves as the forum where such sales are conducted.” at 69, 71. See also Baird and Rasmussen (2003), (2004), *supra* notes 4 and 5. See *Bank of Am Nat’l Trust & Sav.Ass’n v. N. LaSalle St. P’ship*, 526 U.S. at 434 and 457 (1999) in which the Supreme Court would appear to concur with this view stating “The best way to determine [a debtor’s in possession] value is exposure to a market.”

⁴⁴ See *supra* note 6 and accompanying text.

⁴⁵ See Glosband, D. “Pathology of Section 363 Sales: Not as Simple as They Look“, *Journal of Private Equity*, (Fall, 2004).

⁴⁶ Kuney (2004) notes that “[I]nsiders may benefit from these sales, especially when the majority of their postpetition compensation is tied to the sale of the corporation or where they expect to be employed by the purchaser post sale.” *supra* note at 109. For a discussion related to the sample used in this paper see LoPucki and Doherty (2007), *supra* note 8, at 32-35. The postpetition compensation i.e. key employees retention plans (KERPs) that promise key executives a large bonus if the reorganizations proceeds quickly and increasingly smaller bonuses the longer the time spent in Chapter 11 play an important role in the framework of section 363(b). Though important, this paper will not address the role of KERPs in section 363 sales. For recent empirical evidence see Barath et al. (2007), *supra* note 11, and Henderson (2007), *supra* note 12. On the implications of recent changes of the Code limiting a debtor’s ability to distribute key employee retention payments see Harring, E.W. “Walking And Talking Like a KERP: Implications of BAPCPA Section 503(C) for Effective Leadership at Troubled Companies”, *University of Illinois Law Review* Vol.2008:1285-1318, (2008).

there are not asset sales, and at least in this respect the impact of preplan sales is neutral.⁴⁷

Debtor's secured creditors, interested in achieving a sale price that satisfies its secured claim in full, usually support a sale transaction or even exert a pressure on debtors to commence a sale once they are assured that the value of the collateral will satisfy their claims in full even if the sale occurs at a "fire sale" price.⁴⁸ This is in line with Ayotte and Morrison (2008) who examine secured creditors' incentives as a function of the lender's ratio of collateral value to loan. When the ratio is higher than one, i.e. when the secured lender is over-secured he is biased toward an immediate resolution of the case.⁴⁹ Ayotte and Morrison (2008) argue that there is non-linear relationship between collateral value to loan ratio and the probability of an immediate sale:

"While the oversecured creditor will always prefer an immediate sale, the ability to realize his preferred outcome should depend on the extent to which it is oversecured. When a creditor is substantially oversecured, the bankruptcy judge is likely to be less sympathetic to actions that would force an immediate sale (such as covenants in the DIP loan that force a sale, or motions to lift the automatic stay). When the value of the firm greatly exceeds the secured creditor's claim, it is very likely that the creditor will be paid in full, even in a reorganization. As the secured creditor becomes only slightly oversecured, we expect that the judge is more likely to approve attempts by the secured creditor to move for a quick sale, since its claim is more at risk".⁵⁰

While this argumentation is plausible, it implicitly assumes that going-concern value is significantly or at least sufficiently larger than sale price of the company. Furthermore, it neglects the role of senior lender's bargaining power vis-à-vis DIP financing. In several cases, the only party willing to provide post-petition loan will be incumbent senior lender himself or he will object to debtor's motion for DIP financing from other source.

With respect to unsecured creditors, using equity versus debt conflicts analogy, Ayotte and Morrison (2008) state that they generally exhibit a bias toward lengthy cases, especially reorganizations, when the firm enters bankruptcy with senior secured debt. However, with § 363(b) on its way, general unsecured creditors lose negotiating leverage and specific protections (the best interest test, the requirement that there be at least one consenting impaired class and the absolute priority rule).⁵¹ Still, even in conventional Chapter 11 cases recovery of these creditors is often extremely low or firms use various judgment proofing strategies to channel profits to stockholders and insiders prior to bankruptcy.⁵² Because of the absence of the conventional protections of traditional

⁴⁷ See Baird and Rasmussen (2003), *supra* note 4, at 677.

⁴⁸ See Kuney, (2002), *supra* note , at 235, 287.

⁴⁹ See Ayotte and Morrison (2008), *supra* note 9, at 18.

⁵⁰ *Id.* at 18.

⁵¹ See 11 U.S.C. § 1129

⁵² See LoPucki, L. "The Essential Structure of Judgment Proofing", *Stanford Law Review*, Vol.50: 147-160 (1998).

Chapter 11 reorganization, general creditors or other impaired classes of creditors may oppose the sale and seek a traditional reorganization course instead. In a situation in which unsecured creditors are anyway “out of the money” and in the absence of protections under traditional reorganization, they have little or no incentive to do anything. The loss of bargaining power, the speed of procedure and lack of information make it less likely that they will be able to substantially participate and object. Furthermore, even when the committees sought to propose their own reorganization plans it is not likely that they will be able to finance them.⁵³

Kuney (2002) argues that preplan sales benefit bankruptcy professionals as they limit their exposure to loss over that which can be sustained in Chapter 11. LoPucki and Doherty (2007) argue that the investment banks that advise debtors have interests of their own that may conflict with price maximization. Furthermore they are aware only within thirty or ninety days of the petition whether or not the sale will gain court approval and are able to protect their interests accordingly. The negative side for administrative creditors and for other priority creditors is the loss of veto power, with loss being greater in case of other priority creditors as a reflection of their relatively dismal position. However, total effect of preplan sales on other priority creditors is unclear, as they may benefit from fast-track process.⁵⁴

Finally, for a prospective buyer § 363(b) represents an exceptional mechanism for acquiring a troubled business as they are acquiring it unencumbered by unsecured debts, successor liability or property interest. To fully understand these benefits we need to understand the mechanism of sale via § 363(b):

Basic Section 363 sale mechanics include an initial bidder, colloquially known as a “stalking horse,” who reaches an agreement to purchase assets from the chapter 11 debtor. The buyer and the debtor in possession negotiate an asset purchase agreement which rewards the stalking horse for investing the effort and expense to sign a transaction that will be exposed to “higher and better” bids. The protections afforded to a stalking horse generally include a combination of a break-up fee between 1% and 5% of the sale price, expense reimbursement up to a negotiated cap, minimum increments for overbids, qualification requirements for competing bidders, strict deadlines for competing bids and dates for the run-off auction, final court approval and closing.

The Bankruptcy Court will approve the bidding procedures, including the incentives for the stalking horse, and will pronounce clear rules for the remainder of the sale process. Notice of the sale will be given, qualified bids will arrive and there will be an auction. The sale to the highest bidder will close within four to six weeks after the notice and the stalking horse

⁵³ LoPucki and Doherty (2007), *supra* note 8, at 37-39.

⁵⁴ It is not surprising that numerous law firms and financial groups advise their clients to pursue them whenever possible. See e.g. Smith, J. and E. Connor, “Selling ‘Free and Clear’: Will It Continue?“, *Bankruptcy Strategist*, (January, 2004).

will either acquire the assets or take home its break-up fee and expense reimbursement as consolation.⁵⁵

Finally, in case prospective buyer acts as the DIP lender providing post-chapter 11 financing his leverage is multiplied. However, the buyer at a Section 363 sale is just taking an advantage of the financial distress of the seller and the opportunity provided by the Code to buy the „free and clear” assets. With this respect from the ex post efficiency perspective, once the bankruptcy is commenced, the use § 363(b) is just making wealth transfers without any welfare loss.⁵⁶

3. Applying §363(b)

To sell their businesses, the debtors need to justify their sales to the bankruptcy courts. Most often they do this by claiming that business is not viable and that preplan sales will maximize value for the estate by saving time and money.⁵⁷ Generally speaking, the debtor-in-possession is permitted to dispose of assets but bears the burden to prove that a good business reason exists for such a sale, the assets are not being disposed at less than their fair value, or the sale may not be detrimental of the debtor's creditors. Rose (2007) and Shea et al (2004) describe case development and doctrines (the emergency doctrine, the *sub rosa* doctrine, and the sound business justification test) developed by the courts to curb the use of § 363 sales.⁵⁸ They observe that the dominant standard to scrutinize a sale of a debtor's assets outside of a plan of reorganization pursuant to § 363 of the bankruptcy code is the sound business justification test.⁵⁹

“Courts regularly apply the business justification standard for approval of §363 preplan business sales. Yet the basis for court approval varies. There are reoccurring business justifications that typically result in approval of

⁵⁵ Glosband (2004), supra note 25.

⁵⁶ Under the assumption that market for companies is efficient.

⁵⁷ See LoPucki and Doherty (2007) examining how debtors justify their sales. Supra note 8, at 30-31.

⁵⁸ Rose (2007), supra note 39, at 263-269. For comprehensive overview of cases and doctrines see Shea, J.P., C. Carlyon, and R. Hansen “Section 363 and the Path to World Domination - Can All be Achieved in the Sale Motion?”, ABI Southwest Bankruptcy Conference September, (2004).

⁵⁹ In *Comm. of Equity Sec. Holders v. Lionel Corp.* (In re *Lionel Corp.*), 722 F.2d 1063, 1071 (2d Cir. 1983), the Second Circuit addressed the appropriate standard for approval of a sale of substantially all of the debtor's assets prior to the confirmation of a Chapter 11 plan and adopted the "sound business purpose" or "sound business justification" test. As a result, many courts began applying the sound business purpose test in lieu of the emergency test, e.g. In re *Montgomery Ward Holding Corp.*, 242 B.R. 147, 155 (Bankr. D. Del. 1999) the court, using factors prescribed In re *Lionel Corp.* held that the debtor does not have to show that it possessed a reasonable prospect of successfully reorganizing to justify the sale, but rather that the sale will "aid in the debtor's reorganization." The court clarified that "in evaluating whether a sound business purpose justifies the use, sale or lease of property under § 363(b), courts consider a variety of factors, which essentially represent a business judgment test." The test analyzes: (a) the proportionate value of the asset to the estate as a whole, (b) the amount of elapsed time since the filing, (c) the likelihood that a plan will be proposed and confirmed in the near future, (d) The effect of the proposed distribution on future plans, (e) the proceeds to be obtained from the disposition vis-a-vis any appraisals of the property, (f) which of the alternatives of use, sale, or lease the proposal envisions, and (g) whether the asset is increasing or decreasing in value.

the debtor's sale of all or substantially all of its assets. Sales that allow the debtor to avoid unnecessary administrative costs, sales where time is of the essence, and sales that preserve the going concern value of the business are generally found to be sound business justifications.”⁶⁰

Recent decisions augmented the business justification standard such that the sale is adequately and reasonably noticed that the sale has been proposed in good faith, and that the disposition is “fair and expeditious.”⁶¹

LoPucki and Doherty (2007) state that they are not aware of any modern case in which a large public company debtor proposed a sale and the court refused to approve it. Linking section 363 sales to the competition among courts, they argue that:

“Courts had required “good business reason[s]” for selling a company without plan formalities and disclosures. Routine section 363 sale approvals appealed to case placers because it was essentially an option for them to sell the company. If they chose to exercise the sale option, they could sell on short notice, without giving creditors either the opportunity to vote or the extensive disclosure statement required by reorganization law in connection with voting.”, adding that „[m]ost section 363 sales were of doubtful legality. But if a court refused to permit them, the case placers simply took their business elsewhere.”⁶²

The opposite view is that if not every at least most of approvals were well founded for various reasons. Approvals may be based on following reasons: (i) debtor-in-possession may have rapidly declining assets and the prospective purchaser has already been identified, while a sale consummated under a Chapter 11 reorganization plan causes unnecessary delay resulting in further depreciation of debtor's asset value;⁶³ (ii) conversion to Chapter 7 would increase administrative expenses; (iii) debtor entered bankruptcy for the primary purpose of selling assets free and clear of interests preserving going concern value; etc. In addition, other benefits may be linked to the resolution of the hold-up problems (when junior creditors capture the debtor-in-possession and hold up the efficient resolution) or faster “redeployment” of assets to their more productive use.

The importance of understanding real causes is obvious as some scholars call either for elimination of §363(b) from the Code or call for an explicit statutory amendment to clarify the operation of a non-plan sale procedure.⁶⁴ Others claim that the low recoveries

⁶⁰ Rose (2007) *supra* note 39 at 269 (internal citations omitted).

⁶¹ See Brege (2007), *supra* note 21, at 1653. Following the Lionel decision, other cases refined and confirmed the business justification standard. For details see *In re N. Atl. Millwork Corp.*, 155 B.R. 272, 275 (Bankr. D. Mass. 1993); *In re Abbotts Dairies of Pa., Inc.*, 788 F.2d 143, 149–50 (3d Cir. 1986) and *In re White Motor Credit Corp.*, 14 B.R. 584 (Bankr. N.D. Ohio 1981). For a comprehensive review of local rules applicable to § 363(b) and (f), see Kuney (2004), *supra* note 42, at 1305-1322.

⁶² See LoPucki and Doherty (2007), *supra* 8 at 13.

⁶³ See e.g. Bodoh, W.T., J.W. Kennedy, and J.P. Mulligan, “The Parameters of the Non-Plan Liquidating Chapter Eleven: Refining the Lionel Standard”, *Bankruptcy Developments Journal*, Vol.9: 10–12 (1992);

⁶⁴ See Kuney (2004), *supra* note 42.

in §363(b) cases are linked to continuing market illiquidity, managers' and professional advisors' conflicts of interest, and the corruption of the bankruptcy process by competition among bankruptcy courts for large public company cases.

These conclusions may be false for two reasons. First, while relative speed of § 363(b) sale may undermine obtaining best price for assets in case of "emergency" may enhance it. Second, besides speed other factors may influence self-selection of companies into the § 363(b) group. If true, this means that the true problem lies somewhere else, most probably in the late initiation of bankruptcy proceedings. Finally, not only practitioners, but most scholars as well, acknowledge that "The way in which Chapter 11 practice has developed over the last twenty or so years indicates a clear demand for a process of reorganization by nonplan sale."⁶⁵

IV. BANKRUPT FIRM CHARACTERISTICS

In this section we describe the sample of bankrupt firms and choice of various economic measures financial ratios and bankruptcy indicators.

1. The Sample

We use LoPucki and Doherty (2007) sample of thirty §363 sale cases and thirty reorganization cases. These cases are initially obtained from Professor LoPucki's Bankruptcy Research Database ("BRD").⁶⁶ LoPucki and Doherty (2007) chose the most recent §363 sales cases available. The sample covers period from December 2000 to April 2004. As they state, sample contains cases in which (1) the debtor sold all or substantially all of its assets pursuant to §363 of the Bankruptcy Code, (2) the debtor indicated the amount of its total assets on Exhibit A to the Petition, and (3) the PACER file included sufficient information to support calculation of a sale price. The sales studied were thirty of the fifty-one sales occurring during that period or 59%.

Next, we use EDGAR (the SEC database) to obtain financial statements reported to the SEC prior to and after the bankruptcy. The Standard and Poor's Compustat, the PACER, the Bankruptcy Data Source and the Bankruptcy Insider database are used to obtain additional financial and bankruptcy related information on these firms and to calculate standard measures and ratios that reflect firms' economic and financial health. Due to data availability, not all the measures and ratios could be computed for all the firms in the sample. The only difference with respect to companies in LoPucki and Doherty (2007) is

⁶⁵ Id. at 1269.

⁶⁶ That database includes all large public company bankruptcies filed in the United States since the effective date of the Bankruptcy Code, October 1, 1979. Data are available at <http://lopucki.law.ucla.edu> (last visited 8/30/2008). Here we explain difference with respect to data reported in the LoPucki and Doherty (2007) study. Detailed tables are provided in Annex.

that we eliminate Conseco, Inc. as a financial institution that has a unique financial statement not comparable with other industrial firms in the sample.⁶⁷

2. Variable Selection

The key ratios and measures are linked to solvency, liquidity and profitability. Together these measures are expected to capture the reasons for resolution choice, the flexibility afforded a firm once in bankruptcy and eventually recovery rate. Here we describe main economic, financial and bankruptcy measures used in empirical investigation and theoretical underpinning. A “§363 sale” means that the debtor sold all or substantially all of its assets during the Chapter 11 case. Thereafter, the court may have confirmed a plan distributing the proceeds of the sale (“§363 sale confirmed”) or converted the case to Chapter 7 (“§363 sale converted”).

The resolution decision should be affected by the size of the firm. To measure the size, we obtained all standard forms that upon entering bankruptcy, firms fill out. These standard forms are declarations of a company’s business outlook and financial situations, and specifically their assets and liabilities. Bris, Welch and Zhu (2006) note that many firms exercise discretion in filling out the form, yet, these are the most accurate valuations available to academic research.⁶⁸ In most cases financial conditions presented in petitions are the numbers from the last available SEC filing at the moment of filing. However, in several cases the last filing was either sixth or even more months before the filing. For a distressed company six months period is a period during which significant changes occur, making stated scheduled assets and liabilities inaccurate.⁶⁹ To make these valuations more accurate we correct them with data from quarterly or annual reports (10Q or 10K) in which company filed for bankruptcy.⁷⁰ This correction takes into account changes in the valuation of intangible assets or and are much more accurate after

⁶⁷ Conseco, inc., is a financial services holding company. (SIC major group 63 – insurance carriers and primary SIC 6321 - accident and health insurance). The only other company that is excluded is Impath, Inc., as including Impath, Inc. being an accounting fraud case, “would result in the overstatement of asset values at the time of filing and thus cause under statements of sale and reorganization recoveries.” See LoPucki and Doherty (2007) *supra* note 8, at 16-17.

⁶⁸ Bris, A., I. Welch and N. Zhu “The Costs of Bankruptcy: Chapter 7 Liquidation versus Chapter 11 Reorganization”, *The Journal of Finance*, Vol.61: 1253-1303, (2006), at 1262.

⁶⁹ To illustrate problem with scheduled assets we use the example of Superior TeleCom Inc. that filed voluntary petition for relief under Chapter 11 in the United States Bankruptcy Court for the District of Delaware on March 3, 2003 (Case No. 03-10607). In the exhibit A to voluntary petition the company presented the latest available information as of January 31, 2003 showing total assets of 861,716,000 US\$ and Total Debts of 1,415,746,000 US\$. However, in 10K Form for the fiscal year ended December 31, 2002 filed on April 15, 2003 (40 days after filing), company listed total assets of 570,605.000 US\$ or 66% of the assets represented in the schedule. The key reason lies in the fact that in the fourth quarter of 2002 Superior TeleCom Inc. recognized an additional goodwill impairment loss of \$324.7 million to write-off the remaining goodwill since the carrying amount was greater than the fair value (as determined using the expected present value of future cash flows).

⁷⁰ This correction directly violates second condition for sample selection in LoPucki and Doherty (2007) but makes data more reliable.

the removal of ‘phantom assets’.⁷¹ The other source of inaccuracy are cases where scheduled amount must have been wrong (most often too low).⁷² In empirical analysis we use the natural logarithm of Total Assets. We expect that the larger the size of operations the smaller the probability of opting for 363 sales, i.e. bigger firms should be better candidates for restoring a business model via traditional reorganization i.e. the complexity of larger firms may make traditional reorganization more likely.

In similar fashion to assets, we obtained data on a firm’s indebtedness at the time of filing. We use solvency or inverse leverage ratio (total assets as a proportion of its liabilities) either from Schedule A or the last available 10K or 10q filing – the one representing more accurate valuation. We predict that §363 firms will be more solvent as the main problems they face are the one of profitability and economic distress.

The EBITDA (the firm’s earnings before interest, taxes, depreciation and amortization) divided by total books assets proxies for performance in the year prior to bankruptcy filing.⁷³ The data are gathered from Compustat and if not available from the most recent financial statements prior to the bankruptcy filing. Better performance affects both the resolution choice and recovery rate. White (1984) predicts that firms with greater earnings prospects are more likely to emerge.⁷⁴ We can draw an analogy and predict that firms with greater earnings are more likely to reorganize, because those firms can generate funds internally or borrow externally.⁷⁵

To examine how secured debt financing impacts the resolution decision we use ratio of secured to total liabilities and alternatively ratio of secured liabilities to total assets. Secured credit may also increase the cost of reorganization in bankruptcy, as secured creditors have priority they tend to prefer low-risk bankruptcy strategies including §363 sales even if such sales destroy value and lower recovery. As noted by Bergström, Eisenberg and Sundgren (2002), if reorganization occurs and the value of the firm appreciates, the secured creditor receives only part of the gain, but if the firm’s value depreciates, the secured creditor bears all of the cost.⁷⁶ Similarly, Asquith, Gertner and

⁷¹ Superior TeleCom was not an isolated case. The proportion of scheduled assets that we count as phantom assets was 30,08% in Gentek, inc., 25,64% in Globalstar LP, 22,15% in Casual Male Corporation, etc..

⁷² For example, SpectraSite Holdings listed US\$ 742 million in the exhibit A as of November, 15th. Yet, in SEC filings it reported US\$ 2,578 million for end 2002..

⁷³ In comparison to LoPucki and Doherty (2007) several ratios, including EBITDA to Total Assets, differ with respect to four companies. For three (DTI Holdings Inc., Velocita Corp. and Globalstar LP) we obtain ratios from available 10K filings and for one instead of subsidiary who filed for bankruptcy (Wheeling Pittsburgh Corp). LoPucki and Doherty use Compustat data for mother company (WHX Corporation) so we made necessary corrections. For these companies all ratios are obtained using Compustat methodology.

⁷⁴ See White, M., “Bankruptcy Liquidation and Reorganization”, in: „Handbook of Modern Finance”, ed. by D. Logue, Boston, MA: Warren, Gorham and Lamont, (1984).

⁷⁵ See Campbell, S., “Predicting bankruptcy reorganization for closely held firms”, Accounting Horizons Vol.10:12-25, (1996) using profitability (return on assets) to proxy for earnings prospects finds profitability to be significantly related to emergence of closely held firms.

⁷⁶ See Bergström, C., T. Eisenberg and S. Sundgren “Secured debt and the likelihood of reorganization“, International Review of Law and Economics, Vol.2: 359-372 (2002), who in their study of reorganizations in Finland find that large bank creditors, the creditors most likely to be secured, systematically oppose reorganization more than unsecured creditors.

Scharfstein (1994) find that the presence of secured bank debt in a financially distressed firm's funding mix influences creditors' willingness to restructure.⁷⁷ Using similar line of reasoning we may argue that since secured creditors are generally well protected in bankruptcy, they have strong incentives to use §363 sales when they fear that their collateral is threatened. Secured claimants, thus, often have more to lose than to gain in reorganizations. In other words, efficient bankruptcy reorganizations may be obstructed by large amounts of secured debt—an important additional cost created by secured as opposed to unsecured debt. If successful negotiations are not a probable outcome or if they fail and end in §363 sale or case conversion, the secured creditor is uniquely placed to “hold-up” the negotiations and demand excess value.⁷⁸ The mix of secured and unsecured borrowing by firms is initially examined using annual Compustat data. However, Compustat provides only the amount of long-term debt that is secured (data item 241 Debt - Mortgages and Other Secured), and the data tends to understate the ratio of secured debt to total debt, so instead we inspect equivalent 10K to include short-term secured debt.⁷⁹

In a similar manner to Ayotte and Morrison (2008) we create dummy variables by distinguishing firms with relatively low share of a secured liabilities, from those with substantial and dominant creditors (“secured liabilities > 40% but < 60% of total liabilities”), and (“secured liabilities > 60% of total liabilities). we predict that the probability of a traditional reorganization will differ between these three groups, with the probability being highest when secured creditors play a dominant role.

In order to examine the impact of the availability of the DIP financing on the resolution decision and results, we first use the Deal's Bankruptcy Insider "Debtor-in-Possession" database. Second, since the Deal's Bankruptcy Insider database is not a comprehensive source of all such loans, we use the SEC filings and reorganization plans to confirm the information from the first step and to find additional cases of DIP financing. In all cases, we were able to verify that the bankruptcy court had approved the DIP financing plan, as the DIP financing is subject to formal court approval and. we discuss DIP financing related indicators in more details in Section V.

⁷⁷ See Asquith, P., R. Gertner and D. Scharfstein, “Anatomy of Financial Distress: An Examination of Junk-Bond Issuers”, *The Quarterly Journal of Economics*, Vol. 109: 625-658 (1994), at 655. In particular, they find that companies with more secured private debt as well as companies with more complex public debt structures are more prone to seek bankruptcy protection.

⁷⁸ Campbell (1996), finds that firms with fewer secured creditors are more likely to reorganize. The other important variable is the complexity of debt structure. Gilson, John and Lang (1990) find that firms with more distinct classes of debt are more likely to utilize a public resolution process, concluding that the complex capital structure hinders the firm's ability to restructure privately. See also Hotchkiss (1993), *supra* note and LoPucki and Whitford (1993), *supra* note 11. For theoretical model see Bolton, P. And D. Scharfstein, “Optimal Debt Structure and the Number of Creditors”, *The Journal of Political Economy*, Vol.104:1-25 (1996).

⁷⁹ From SEC filing we obtain all secured debt regardless of maturity, while Compustat only includes long-term secured debt, as there is no direct measure of short-term secured debt. Comparing secured debt ratios across SEC filings and Compustat resulted in frequent disagreements of material magnitude. In about half of the sample we found difference such that ratios calculated from 10K filings would reflect a firm-year having a secured debt ratio of 100% and Compustat would reflect a lower number.

To measure for liquidity, we use cash and cash equivalents to total assets ratio from the last available filing prior to bankruptcy petition date. Higher liquidity implies that a firm is in a better position to keep operating through the bankruptcy proceedings and therefore reorganization is the more likely outcome. Higher liquidity also diminishes the need for debtor-in-possession financing. To examine the influence of the ability of a company to meet liabilities as they come due we use the current ratio. However, as most long-term debt becomes current when a firm defaults this ratio we use as a proxy for the occurrence and (magnitude) of default prior to filing.

To measure the duration of financial and economic distress, similarly to Adler, Capkun and Weiss (2006), we use the number of quarterly operating losses as reported in 10K and 10Q, after depreciation, amortization, extraordinary items and discontinued operations two years prior to filing (maximum 8 quarters).⁸⁰ Alternative proxy is the number of quarters with negative operating cash flow as reported in 10K and 10Q. For each company we obtained annual and quarterly statements from which we hand coded number of quarters with negative operating income and negative cash flow from operations. A large fraction of the firms in the sample have negative operating income for more than 4 quarters, and, therefore, questionable value as going concerns even after taking into account the effect of seasonality. Those firms are not only financially distressed, but also economically distressed. Longer period of financial and economic distress affects both the resolution choice and the recovery rate. We predict that on the average the number of quarters with negative results is higher for companies that were sold through §363, as they suffer a longer period of economic distress prior to filing for bankruptcy.⁸¹

To partly capture the significance of intangibles we use the ratio of goodwill to total assets. We obtained goodwill for almost all companies from Compustat and for few companies from their SEC filings. We predict that §363 sales are usually sought and granted in the case where the business has an insignificant amount of goodwill so nothing would be lost if the business were sold or liquidated.

⁸⁰ See Andrade, G., and S. Kaplan, "How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed", *The Journal of Finance*, Vol.53: 1443-1493, (1998) at 1450. Financial distress occurs when a firm cannot meet its debt obligations or has to restructure its debt to avoid a default. Andrade and Kaplan (1998) define the first year of financial distress as the first year that a firm either has EBITDA less than interest expense, attempts to restructure its debt, or defaults. Instead of using number of quarters with negative results we tried to establish more precise measure of the duration of financial distress. However, for relatively large number of companies we was not able to specify when or whether the firm was indeed in financial distress (in default or negotiating with its creditors to restructure). In addition, using operating income as reported by companies instead of EBITDA has more informational value, as it captures extraordinary business events that may affect future of the firm.

⁸¹ Alternatively, to examine the impact and the speed of economic distress we use the reduction in a firm's value in the year prior to its bankruptcy filing. we predict that 363 companies weaken more rapid as they approach bankruptcy, leading to a lower ratio. Even though distress typically occurs for both group of companies, that explanatory power of this variable may be strong for 363 companies as their financial and economic condition rapidly deteriorates. Similarly, we use the 8-quarter change in assets variable, to proxy for the reduction in a firm's value in the two years prior to its bankruptcy filing. we predict, will have more influence than the variable for one year change in assets because we believe a two-year decline is more likely for 363 group.

Industry specific and macro variables also affect the decision whether to sell or to reorganize. We use “industry distress” measure calculated by LoPucki and Doherty (2007). In calculating this measure they follow Stromberg (2000) and Eckbo and Thorburn (2008).⁸² “Industry distress” represents the fraction of the firms in an industry whose income is insufficient to cover the firm’s interest expense. We also use the Standard & Poor’s 500 Index (“S&P 500”) — as collected by LoPucki and Doherty (2007) measured at its closing price on the day the court entered its sale order in sale cases or its confirmation order in reorganization cases and we use Net Mergers⁸³ variable as calculated by LoPucki and Doherty (2007). By doing this we also make our empirical findings comparable to their research.

Finally, we also test for the impact of the ownership structure. Jensen and Meckling (1976) suggest that the agency conflicts between managers and shareholders decrease as management ownership rises.⁸⁴ Accordingly higher ownership by managers is responsible for aligning managers’ and shareholders’ interests, reducing the likelihood of value-destroying decisions since managers will be paying a larger share of the costs for value-destroying, self-interested decisions. Given this, we expect a positive relation between insider ownership and probability of timely bankruptcy protection that eventually leads to higher recovery ratio. The managerial ownership data are obtained from proxy filings (DEF-14A) with the Securities and Exchange Commission for each of the firms and years in the sample or equivalent information contained in 10K filings.

3. Firm Characteristics

Table 1 presents detailed summary statistics of the characteristics of firms as they entered bankruptcy as potential explanatory variables to resolution decision. Results in table are broken down by resolution type. The full sample firms have total assets with a mean of \$1.73 billion and median of \$593 million. Both the mean and the median reorganization are about 2 times as large as the mean and the median §363 Sale. The means are greater because the sample contains some relatively large Chapter 11 cases.⁸⁵

⁸² See Stromberg, P., “Conflicts of Interest and Market Illiquidity in Bankruptcy Auctions: Theory and Tests”, *The Journal of Finance*, Vol.55: 2641–2691, (2000); Eckbo, B. E. and K. S. Thorburn, “Automatic Bankruptcy Auctions and Fire-Sales,” *Journal of Financial Economics* Vol.89:404-422, (2008)

⁸³ LoPucki and Doherty (2007), *supra* note 8, conducted a path analysis in which they regressed the S&P 500 variable on the Net Mergers variable to construct a new variable, Net Merger residuals. The Net Merger residuals variable is the difference between the S&P 500 and Net Mergers variables. It is the part of the Net Mergers variable that is not directly correlated with the S&P 500 variable. Thus the coefficient on this variable is a clean estimate of the effect of the Net Mergers variable on the recovery ratio.

⁸⁴ Jensen, M.C. and W. H. Meckling, “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure”, *Journal of Financial Economics*, Vol.3: 305-360, (1976)

⁸⁵ The mean difference would be even greater (about three times) if we include Consecro as a very large Chapter 11 case.

Table 1
Descriptive Statistics

Resolution	Variable	mean	p50	sd	min	max	n
Reorganization	Scheduled Assets (US\$ million)	2,300	938	3,630	191	16,300	29
	Cash/Total Assets	0.035	0.030	0.028	0.000	0.137	29
	Current ratio	0.443	0.316	0.448	0.037	1.967	28
	Quarters with Operating Loss	4.714	4.000	2.537	0.000	8.000	28
	Quarters with negative cash flow	3.897	4.000	2.209	0.000	8.000	29
	Solvency	0.900	0.940	0.249	0.341	1.299	29
	Secured/Total Liabilities	0.313	0.297	0.197	0.000	0.795	29
	Ebitda/Total Assets (fiscal year prior to filing)	0.051	0.049	0.076	-0.160	0.229	26
	Ebitda/ Total Assets (two fiscal years prior to filing)	0.046	0.075	0.120	-0.311	0.246	
	Goodwill/ Total Assets	0.178	0.102	0.175	0.000	0.653	27
	ΔTotal Assets/ Total Assets (year prior to filing)	-0.227	-0.215	0.177	-0.696	0.022	
	Debtor in Possession Financing	0.793	1.000	0.412	0.000	1.000	29
	DIP financing/Total Assets	0.075	0.061	0.078	0.000	0.360	29
Sale	Scheduled Assets (US\$ million)	1,150	456	1,450	177	6,500	29
	Cash/Total Assets	0.064	0.013	0.112	0.000	0.483	29
	Current ratio	0.788	0.820	0.511	0.023	1.951	28
	Quarters with Operating Loss	5.448	6.000	2.836	0.000	8.000	29
	Quarters with negative cash flow	4.379	4.000	2.111	0.000	8.000	29
	Solvency	1.121	1.107	0.398	0.133	2.123	29
	Secured/Total Liabilities	0.366	0.401	0.216	0.000	0.752	29
	Ebitda/Total Assets (fiscal year prior to filing)	-0.001	0.022	0.138	-0.339	0.178	29
	Ebitda/ Total Assets (two fiscal years prior to filing)	-0.066	0.033	0.401	-1.989	0.178	
	Goodwill/ Total Assets	0.087	0.021	0.142	0.000	0.586	28
	ΔTotal Assets/ Total Assets (year prior to filing)	-0.042	-0.100	0.400	-0.673	1.216	
	Debtor in Possession Financing	0.655	1.000	0.484	0.000	1.000	29
	DIP financing/Total Assets	0.098	0.028	0.142	0.000	0.551	29
All	Scheduled Assets (US\$ million)	1,730	593	2,800	177	16,300	58
	Cash/Total Assets	0.050	0.023	0.082	0.000	0.483	58
	Current ratio	0.616	0.433	0.507	0.023	1.967	56
	Quarters with Operating Loss	5.088	5.000	2.694	0.000	8.000	57
	Quarters with negative cash flow	4.138	4.000	2.156	0.000	8.000	58
	Solvency	1.011	1.023	0.348	0.133	2.123	58
	Secured/Total Liabilities	0.340	0.350	0.206	0.000	0.795	58
	Ebitda/Total Assets (fiscal year prior to filing)	0.024	0.047	0.115	-0.339	0.229	55
	Ebitda/ Total Assets (two fiscal years prior to filing)	-0.012	0.064	0.303	-1.989	0.246	
	Goodwill/ Total Assets	0.131	0.064	0.164	0.000	0.653	55
	ΔTotal Assets/ Total Assets (year prior to filing)	-0.135	-0.183	0.321	-0.696	1.216	
	Debtor in Possession Financing	0.724	1.000	0.451	0.000	1.000	58
	DIP financing/Total Assets	0.087	0.053	0.114	0.000	0.551	58

Besides the difference in size, Table 1 shows that § 363 sale firms are solvent and liquid but less profitable and with slightly longer duration of financial or economic distress. In addition, §363 sale companies had significantly lower goodwill. Proxy for the magnitude of default (current assets to current liabilities) signals that fewer companies that opted for §363 sale resolution defaulted prior to filing for bankruptcy.

However, we need to examine whether a significant difference exists between the §363 sale and reorganization companies and Chapter 11 period is tested for various size, financial status and performance variables. Two-sample t-tests are conducted to examine the association between the resolution decision and various characteristics of the

companies. Table 2 confirms that there are some significant differences between companies that opted for reorganization and § 363 sale.

Table 2

Variable	Reorg.	363 Sales	t-test	one-sided test	Obs
In Scheduled Assets	20.776	20.330	1.5641	diff > 0 *	58
Cash/Total Assets	0.035	0.064	-1.3483	diff < 0 *	58
Current Assets /Total Assets	0.258	0.379	-2.4512 **	diff > 0 ***	56
Current ratio	0.443	0.788	-2.6853 ***	diff < 0 ***	56
Quarters with Operating Loss	4.714	5.448	-1.0287		57
Quarters with negative cash flow	3.897	4.379	-0.8507		58
Solvency	0.890	1.076	-2.2087 **	diff < 0 **	58
Secured/Total Liabilities	0.313	0.366	-0.9823		58
Ebitda/Total Assets one fiscal year prior to bankruptcy	0.051	-0.001	1.7621	diff > 0 **	55
Ebitda/ Total Assets two fiscal years prior to bankruptcy	0.046	-0.066	1.3899	diff > 0 *	56
Goodwill/ Total Assets	0.178	0.087	2.1258 **	diff > 0 **	53
ΔTotal Assets (one year prior to filing)	-0.227	-0.042	-2.2806 **	diff < 0 **	58
Debtor in Possession Financing†	0.793	0.655	1.1751		58
DIP Financing / Total Scheduled Assets	0.075	0.098	-0.7905		58

† z statistics from the test of proportions.

Statistical significance: * <.1, ** <.05 and *** <.01

For scheduled assets and cash to total assets ratio the difference is statistically significant at the 10% level in a one-sided test, with companies in reorganization somewhat larger and companies in preplan sale alternative had better liquidity. Compared to duration of financial distress the preplan sale companies experience longer periods of financial distress. However, duration of financial distress is not statistically significant both in terms of the number of quarters for which companies had operating loss or quarters with negative cash flow. Both ratio of current to total assets and current ratio which is also proxy for default show that preplan sale companies have much higher share of current assets and that much more companies in reorganization experienced official default before filing for bankruptcy. Similarly, companies in reorganization were much more leveraged. This difference in the EBITDA to Total Assets ratio is statistically significant for the last fiscal year prior to bankruptcy filing, and the difference is statistically significant at the 10% level in a one-sided test for EBITDA to Total Assets two fiscal years prior to filing. Surprisingly, there are no statistically significant differences in proportions of DIP financing in samples of reorganization and § 363 sale companies and in availability of debtor-in-possession financing normalized to the size of the company (mean ratio is even higher for § 363 sales companies – about 10%).

V. DETERMINANTS OF CHAPTER 11 RESOLUTION CHOICE

Prior research has shown that the accounting information available in the year just prior to filing bankruptcy is associated with the likelihood of filing for Chapter 11 protection or the likelihood of emerging from Chapter 11.⁸⁶ With respect to determinants of resolution choice and more specifically between Chapter 11 “alternatives”, the closest research paper that tries to analyze the probability of traditional reorganization is Ayotte and Morrisson (2008). They compare the probability of traditional reorganization on one side to liquidating plans of reorganization, section 363 sales or conversions to Chapter 7 and dismissals on the other side. However, they only use proxies for creditor control and creditor conflict and control only for size, leaving financial and economic variables outside of the scope of their research. We extend this line of research by showing that in addition to being associated with bankruptcy, the accounting and other bankruptcy related information available in the period just prior to a firm filing for bankruptcy protection is also associated with whether or not a firm will opt for §363 sale alternative.

In order to measure the impact of various firm characteristics on the resolution decision, after controlling for other factors, we estimate a probit regression model of the following form.⁸⁷

$$363Sale_i = f(\ln \text{ Scheduled Assets}_i, \text{ Solvency}_i, \text{ Current assets/Total assets}_i, \text{ EBITDA/Total assets}_i, \text{ Quarters with negative operating income}_i, \text{ Goodwill/Total assets}_i, \text{ Secured liabilities/Total liabilities}_i, \text{ Retail sector})$$

The dependent variable in our models is “1” in the case a resolution choice is 363 sale and “0” for reorganization. First, we perform univariate analysis of the variables and probit regressions, results suggest that all but three of these variables are statistically significant for predicting the final resolution. We also conduct correlation analysis and for variables that are highly correlated with one another, only one variable is selected. Table 3 investigates whether companies systematically begin their bankruptcies differently in terms of a binary choice: whether they opt for §363 sales (vs. traditional reorganization). This choice is endogenous, and self-selection could distort efforts to determine the influence of other variables on recovery rates. Thus, in later regressions, we control for the firms’ self-selection into ultimate resolution type once firms’ file for bankruptcy under Chapter 11.

From Table 3 we see that §363 sale decision is strongly related to the firm’s solvency (company with a negative net worth are more likely to be reorganized). However, as solvency is highly correlated with the proxy for distress magnitude (percentage change in assets for last four quarters) we use only one of these two. In models I to V, firms where solvency is not the main problem are more likely to end up using preplan sales

⁸⁶ See e.g. Weiss, L. “Bankruptcy Resolution: Direct Costs and Violation of Priority of Claims“, Journal of Financial Economics Vol.27: 285- (1990) and Bariv, R., A. Agarwal, and R. Leach “Predicting Bankruptcy Resolution“, Journal of Business Finance and Accounting, Vol.29: 497-520 (2002) who analyze probability of firms being acquired, emerged or liquidated.

⁸⁷ We also experiment with other variables, but they ultimately matter little, so we do not report the related results.

(standardized beta range from 50 to 60 per cent).⁸⁸ The standardized coefficients (betas) for percentage change in assets in models VII and IX are somewhat higher.

§363 sales are negatively related with firms' size (relatively smaller companies are more likely to end up being sold via 363 sales). Although reorganization cases are larger, we should note that there is considerable overlap in a way that a large number of firms could have chosen either procedure. The standardized coefficient (beta) for firm size depending on the model is between 26 and 30 percent. Alternatively, we use retail sector dummy that is both statistically important and has betas higher than natural log of scheduled assets (from 0.36 to 0.43).

Profitability measured by EBITDA to total assets is significant, with less profitable companies more likely to end up being sold either piecemeal or as ongoing concern via §363 sales. Proxy for the duration of financial distress measured as a number of quarters with negative operating income is highly correlated to EBITDA to total assets ratio and is also statistically significant but has less absolute influence on resolution choice than EBITDA to total assets ratio.⁸⁹

Both the share of secured to total liabilities and ratio of current to total assets (which also serves as a proxy for default prior to filing) are significant. The beta for the share of secured to total liabilities is up to 0.37 in model V, which suggests that the relative importance of that variable is less than the EBITDA to total assets and solvency. Firms with no or small intangibles are more likely to end up being sold via 363 sales. Ratio of goodwill to total assets a year prior to filing has beta that changes depending on the inclusion or exclusion of certain variables. In model V, the beta is 0.33.

Results suggest that for solvent but unprofitable companies in the absence of intangibles see no benefit in corporate reorganization. Similar interpretation might be that firms opting for preplan sales move in top down direction (being solvent but losing money),

⁸⁸ Following Bris, Welch and Zhu (2006), *supra* note to compare the strength of a particular coefficient to the coefficient for another variable we report the standardized beta coefficient for regression variables. Standardized beta coefficient is obtained by multiplying the estimated coefficient with the standard deviation of the independent variable, and dividing it by the standard deviation of the dependent variable. As the beta coefficients are measured in standard deviations, instead of the units of the variables, they can be compared to one another and can be used to estimate the relative importance of different variables. The resulting number measures what fraction of the range of the dependent variable is implied to be explained by the range of the independent variable.

⁸⁹ However, we should note that results reported in Table 3 show that by adding new variables model may be overfit, producing numerically unstable estimated coefficients for EBITDA to total assets variable. As the number of variables in the model is relatively large to the number of subjects, this may be especially troublesome. As Menard (2002) notes much of the diagnostic information for multicollinearity (e.g. VIFs) can be obtained by calculating an OLS regression model using the same dependent and independent variables used in logistic regression model. "Because the concern is with the relationship among the independent variables, the functional form of the model for the dependent variable is irrelevant to the estimation of collinearity." See Menard, S. W., "Applied Logistic Regression Analysis", Sage Publication (2002), at 76. In other words, one could use an OLS regression and ignore most of the results but still use the information that pertained to multicollinearity.

and reorganization type of companies are moving in bottom-up direction (insolvent but with better chances to recover).

The focus of this section is the choice of a bankrupt firm—whether to use reorganization or preplan sales. As we will argue in the next section, if firms identifiably self-select, then it could be misleading to compare the proceeds, without controlling for endogeneity of resolution choice. While the reasons for decision to sell or to reorganize obviously vary from case to case, unlike LoPucki and Dougherty (2007) who argue that pervasive factors are in the agency problem or corrupt process, previous financial and economic state of the company if properly controlled may turn to be a dominant factor. In other words, issues leading to financial and economic distress are consequently those that we should pay attention at. This also means that the ex ante agency problem predominantly determines the fate of the firm once in Chapter 11, i.e. influence the resolution choice and ultimately the recovery rate.

DRAFT

Table 3 Determinants of Chapter 11 Resolution Choices

Specification: The probit estimation for the Chapter 11 Resolution choices. The probits for the choice of 363 Sales (=1) vs. Reorganization (=0). z-statistics below coefficient estimates. Sample data are from LoPucki and Doherty (2007), Compustat or hand coded from the Public Access to Court Electronic Records (PACER) and 10K or 10q filings. They include all corporate bankruptcies with sufficient data.

<i>Probits</i>	I	II	III	IV	V	VI	VII	VIII	IX	X
	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>	<i>363Sale</i>
Solvency	2.139**	2.327***	2.419**							
<i>(at filing)</i>	(-2.85)	(-3.35)	(-3.11)							
In Solvency				2.034**	2.624***	2.345**				
<i>(at filing)</i>				(3.00)	(3.49)	(3.19)				
% change in Assets last year							3.127**	2.982	3.514**	3.637*
<i>(last 4 quarters before filing)</i>							(2.77)	(1.86)	2.79	(2.41)
In Scheduled Assets	-0.318*	-0.332	-0.344*	-0.368*	-0.418*		-0.312			-0.287
<i>(at filing)</i>	(-1.98)	(-1.84)	(-2.12)	(-2.31)	(-2.09)		(-1.65)			(-1.73)
Ebitda/Total Assets		-3.708*			-7.151**	-7.816***	-5.552**			
<i>(last fiscal year prior to filing)</i>		(-1.98)			(-3.08)	(-3.45)	(-2.62)			
Quarters with negative operating income			0.155*	0.170*				0.140		0.231*
<i>(out of 8 quarters before filing)</i>			(2.02)	(2.11)				(1.71)		(2.40)
Goodwill/ Total Assets	-3.430**	-3.627**	-3.230**	-3.150*	-3.322*		-2.568	-3.595*	-2.619	-2.579*
<i>(last fiscal year prior to filing)</i>	(-2.83)	(-3.13)	(-2.59)	(-2.52)	(-2.51)		(-1.89)	(-2.42)	(-1.50)	(-2.07)
Secured Liabilities/ Total Liabilities	1.331		1.835	1.835	2.988**		2.220*	2.220	0.863	
<i>(last fiscal year prior to filing)</i>	(1.30)		(1.83)	(1.79)	(2.80)		(1.97)	(1.78)	(0.80)	
40%<Secured<60% of Total Liabilities						0.899				0.389
						(1.62)				(0.86)
Secured>60% of Total Liabilities						2.228**				1.620*
						(2.99)				(2.28)
Current Assets/Total Assets									3.099*	
<i>(last available quarter prior to filing)</i>									(2.57)	
Retail						2.149**		1.939**		
						(-2.66)		(-2.65)		
Constant	4.431	5.213	3.761	6.682*	8.529*	0.192	6.800	-0.640	-0.288	5.484
	(1.32)	(1.38)	(1.08)	(2.00)	(2.01)	(0.58)	(1.71)	(-0.97)	(-0.53)	(1.60)
Number of observations	55	54	54	54	54	54	54	54	52	54
Wald chi ²	16.32	19.66	18.47	16.95	21.43	21.32	16.11	13.75	11.68	13.95
Prob > chi ²	0.0026	0.0006	0.0024	0.0032	0.0007	0.0016	0.0066	0.0173	0.0199	0.0302
Pseudo R ²	0.265	0.306	0.314	0.300	0.381	0.441	0.293	0.325	0.2872	0.3180
<i>Correctly classified</i>	72.73%	77.78%	77.78%	75.93%	83.33%	83.33%	74.07%	77.78%	81.13%	81.48%

*, **, and *** denote statistical significance at 5%, 1%, and 0.1% respectively.

Several probit models perform quite well in both classification and prediction tasks. we present results from model V as the best in terms of classification and prediction accuracy. Based on Model V we construct a table of observed values, predicted values and rate of correct classification.

Table 4
Firms correctly classified by Model V

Classified	1	0	Total	Correctly Classified (%)
1	23	4	27	85.19
0	5	22	27	78.57
Total	28	26	52	83.33

From this output, we can see that positive responses were predicted for 27 observations, of which 23 of these were correctly classified because the observed response was positive (§363sale= 1), while the other 3 were incorrectly classified because the observed response was negative. Likewise, of the 27 observations for which a negative response was predicted, 22 were correctly classified, and 5 were incorrectly classified. The model (with all firms, including those that might be identified as outliers or influential cases) correctly classifies 83.33 percent of the cases (45 out of 52 companies).

We also compute predicted probabilities of §363 sales for companies in specific financial conditions. For example, relatively small and solvent company with negative EBITDA, no goodwill and larger share of secured to total liabilities once it files for Chapter 11 is more likely to end up in 363 sales.

Ayotte and Morrison (2008) present several models in which the probability of traditional reorganization is a function of the pervasiveness of secured debt, firm size, and several other creditor's control related dummies. They find a statistically significant, non-monotonic relationship between the ratio of secured debt-to-assets and the resolution of the case. Model in this section takes into account various distress measures and has much better predictability compared to Ayotte and Morrison (2008). In our sample secured debt to total assets does not have any explanatory power. Following Ayotte and Morrison, we use a lowess curve to display the relationship between the probability of §363 sale and several explanatory variables. Even though statistically not important the ratio of secured debt to total assets (not shown) displays similar non-monotonic relationship, being relatively high among firms with no secured debt and then declining. However, in Ayotte and Morrison's sample the number of firms that are undersecured is much higher, while in our sample there is only one company where the ratio of secured liabilities to total assets is greater than one.

Figure 2(a) shows the lowess curve where the probability of reorganization is relatively high among firms with senior secured creditors having relatively more power compared to junior creditors. The probability then mildly declines, but as the ratio of secured-debt-to assets increases trend reverses. More precisely, we can identify three regions with respect to creditor's powers. The probability of preplan sales in case when secured liabilities are below 40% of total liabilities is similar to a coin toss. However, after reaching 40% share the probability of having preplan sales then increases, as the ratio of

secured to total liabilities further increases. For a substantial range of the ratio, from about 40% to 60% the probability increases, but once the ratio exceeds 60% the probability begins to decrease. Nevertheless, the probability of having preplan sales is still above 50%. This non-monotonic relationship is incorporated in Model VI.

With respect to change in assets, Figure 2(b) shows that for large drop in assets before filing, firms are more likely to opt for traditional reorganization. While for once the decrease in assets approaches to zero and as they exceed it the probability of opting for preplan sale begins to increase. This pattern is largely, consistent with other financial data.

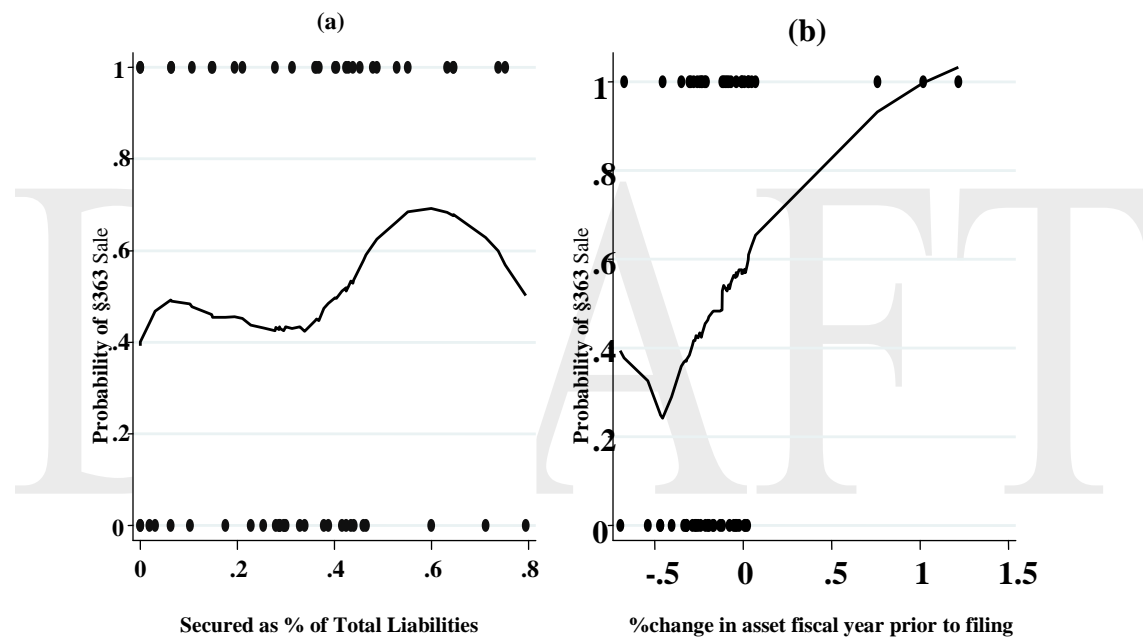


Figure 1

Lowess curve relating the probability of §363 (y-axis) to (a) the ratio of secured to total liabilities, in logs (x-axis); (b) percentage change in total assets one fiscal year prior to filing

In sum, it appears that the poorer companies perform, for a given level of solvency and liquidity, the closer they are to use preplan sale via Chapter 11. At least at the selection level it seems that “on average” business justification standard for not going through the Chapter 11 process of disclosure and plan confirmation is not randomly applied and that once firm files for Chapter 11 one can correctly classify companies according to the

probable resolution scenarios.⁹⁰ To which extent this can explain differences in recovery rates we discuss in section VII.

VI. DEBTOR-IN-POSSESSION FINANCING AND §363 SALES

The outcome of a case under the Bankruptcy Code often depends on the ability of a debtor-in-possession to gain access to sufficient funds necessary either to continue the business or sell or liquidate the assets of the bankruptcy estate in an orderly fashion. Financially distressed firms typically file a motion for authorization of a 'debtor in possession' financing at the same time as the Chapter 11 petition or shortly thereafter. Under Section 364 of the Bankruptcy Code, the courts can treat a DIP loan as an administrative expense - below existing secured lenders, the courts can provide DIP lenders security interest in debtor's unencumbered assets or a primary lien - a super-priority status that effectively strips seniority covenants from existing debt or weakens existing security interests on the same collateral (this process is referred to as "priming").⁹¹

As noted by Dahiya et al. (2003) DIP financing as a market for funds to troubled companies evolved in the 1990s.⁹² Several recent articles have examined the benefits of debtor-in-possession financing.⁹³ Dahiya et al. (2003) find that DIP-financed firms have a

⁹⁰ The "business justification" standard means that certain reasons for a sale are impermissible, such as appeasement of major creditors and the pure need for an expedited process, and the court will have to consider the ramifications of a number of factors before approving a sale. See *infra* note 57.

⁹¹ The security and seniority of the DIP financing is governed by Section 364 titled 'Obtaining Credit'. Section 364 has four subsections each offering increasing inducements that the debtor may offer to attract credit. First two subsections, 364(a) and 364(b), provide the DIP lender with the administrative expense priority status. This implies that DIP credit is unsecured, but within the class of unsecured loans it has the first priority along with other administrative claims such as professional fees and costs of administering the estate of the firm. In most cases this level of security is not enough to induce lenders to provide DIP financing. The subsection 364(c) provides a priority over administrative expenses, a lien on unencumbered assets and a junior lien on encumbered assets. Thus the financing under this subsection enjoys better seniority as well as enhanced security. The subsection 364(d) provides the highest level of security, allowing a senior or equal lien on the assets that are already subject to a lien. Such a lien is referred to as a "priming lien" and is approved only after stringent conditions are met. Finally, to obtain DIP financing the debtor makes a motion for authorization to obtain credit pursuant to the Federal Rule of Bankruptcy Procedure 4001 (c)(1).

⁹² In one of the first studies of DIP financing in Chapter 11, Dahiya et al (2003) note that even though DIP financing was available under the law since 1978, it did not become prominent until the 1990s. The percentage of bankrupt debtors that obtained DIP financing rose from 10.42% in 1989, to 48.21% in 1996, in their sample.

⁹³ See Triantis, G. "A theory of the regulation of debtor-in-possession financing", *Vanderbilt Law Review* 46:901-935 (1993), and Chen, Y., J. Weston, and E. Altman, "Financial Distress and Restructuring Models", *Financial Management* Summer:57-75 (1995). Both papers conclude that DIP financing is beneficial in the reorganization process. More recently several researchers focused on analyzing the costs and benefits of DIP financing for the borrowers. See Fayez, A. and M. Thomas "The impact of receiving debtor-in-possession financing on the probability of successful emergence and time spent under Chapter 11 bankruptcy" *Journal of Business Finance and Accounting* 28:905-942 (2001), Carapeto, M. "Does debtor-

shorter reorganization period (they are quicker to restructure under Chapter 11) and contrary to perception, they find there is little evidence of systematic overinvestment in DIP-financed firms. However, the view on benefits is not unanimous and some legal scholars have raised doubts about DIP financing's effects on debt-holders and the possibility of expropriative wealth transfers.⁹⁴

Although numerous articles have dealt with the DIP financing, none so far examined the role and the effects of DIP lending on Section 363(b) sales.⁹⁵ Indeed, the role of DIP financing may be quite different depending on the resolution choice. On the one hand, goals of DIP financing differ in § 363 sales and in reorganizations. In § 363 sale we expect that secured or unsecured creditors provide DIP financing to allow firms enough funds to stay alive for a short while before the company is put up for sale. Alternatively, potential buyer provides DIP financing while it waits for court approval of a proposed sale. Even if company is not cash constrained at the moment of filing the availability of DIP financing will reaffirm creditors that company has plenty of liquidity to pay them. As we should not expect any DIP financing to cause overinvestment in § 363 sale cases, by preventing the worst case scenario DIP financing makes the overall “pie” for claimants to be larger, having positive effect of DIP financing on the recovery rate. Similar argumentation is used by Datta and Iskandar-Datta (1995) who point out that with DIP financing the firm value is refrained from diminishing, as there is an opportunity to invest in positive NPV projects.⁹⁶ This leads to the assumption that DIP

in-possession financing add value?” unpublished working paper (2004), Chatterjee, S., U. Dhillon and G. Ramirez “Debtor-in-possession financing”. *Journal of Banking and Finance* 28(12):3097–3111 (2004), Daniels, K. And G. Ramirez “Information, Credit Risk, Lender Specialization and Loan Pricing: Evidence from the DIP Financing Market”, *Journal of Financial Services Research* 34:35–59 (2008), and “The Impact of Receiving Debtor-in- Possession Financing on the Probability of Successful Emergence and Time Spent Under Chapter 11 Bankruptcy”, *Journal of Business Finance & Accounting* 28:905-942 (2001)

⁹⁴ See e.g. Bebchuk, L.A., Fried, J.M., “The Uneasy Case for Priority of Secured Claims in Bankruptcy”, *Yale Law Journal* Vol.105: 857- (1996); and most recently Skeel, D., “The Past, Present and Future of Debtor-in-Possession Financing”, *Cardozo Law Review*, Vol.25:1905-1934, (2004). These scholars accentuate that pledging of assets to new secured lenders can lead to a transfer of wealth from existing creditors to new secured creditors, particularly when firms are in financial distress. Skeel (2004) notes that “A DIP lender may use its controls to achieve an efficient resolution of the debtor’s financial distress, whether through a reorganization, a sale or a piecemeal liquidation. But it may also use its control to divert value from other creditors.” at 1930-1931.

⁹⁵ Baird and Rasmussen (2003), *supra* note 4, claim that “The control that the lender has over cash collateral makes it hard to enter into a financing arrangement without its explicit blessing. Its blessing can be contingent upon many things, including a requirement that the firm be sold as a going concern within a fixed period of time.” adding that “[t]hese revolving credit facilities and the practical control they give lenders over a firm are some of the most striking changes in Chapter 11 practice over the last twenty years.” at 784–785. (footnotes omitted). LoPucki (2004), *supra* note 18, concludes that “Theoretically, creditors could contract for greater control of reorganizing firms and use that control to force sales-as-going-concerns. In practice, they do so infrequently. The relative dearth of going-concern sales in Chapter 11 suggests either that firms cannot operate efficiently at the point of their lead lender’s bayonet or that lenders holding the bayonets do not think going-concern sales are in their own interests.” at 604

⁹⁶ See Datta, S. and M. Iskandar-Datta “Reorganization and financial distress: An empirical investigation”, *Journal of Financial Research* 18:15-32 (1995). See also Adler, Capkun and Weiss (2006), *supra* note 13, who argue that: “Not only do managers lose control of the debtor and reorganization process, but once in control creditor concessions to shareholders become unnecessary. Since the beginning of this decade,

financed firms are more likely to achieve higher price (controlling for liquidity) than non-DIP financed firms and are quicker to be sold.

On the other hand expropriative wealth transfers may also act differently within § 363 sale framework. In § 363 sale environment, management may be even more encouraged than in reorganization to shirk its responsibility toward the entirety of its creditors in favor of the DIP lender i.e. either existing senior creditor or prospective buyer who provides DIP financing. As they are not required to obtain confirmation by the creditors, executives and directors have additional incentives to evade their duty of loyalty to creditors and sell assets at depressed values. Alternatively, managers may be pressured by DIP lender (so called „loan-and-control“ lender) into a hurried sale of assets at less than the „highest and best“ price possible, causing not only significant wealth transfer effects but welfare loss as well.⁹⁷ This channel of interaction between DIP financing and 363 sales may negatively influence recovery rate. The two effects move in opposite directions and could therefore bias the results in an indeterminate direction. Before examining this issue in more details, we need to determine the influence of other variables on availability of DIP financing.

Our sample is consistent with recent findings of an increasing importance of debtor-in-possession financing. More than two thirds of companies in our § 363 sale sub-sample, and more than 80% of companies in our reorganization sub-sample obtained debtor-in-possession financing.⁹⁸ Similarly to Chatterjee et al. (2005),⁹⁹ the maturity of DIP loans in our sample initially does not exceed 2 years. The mean ratio of DIP loans to total assets for 42 (out of total of 58) companies that obtained DIP financing is 8.70%, with ratio for 363 sale companies somewhat higher.¹⁰⁰ Total amount of DIP financing in the sample is US\$ 5,552 million.

In the previous section we show that the choice of resolution is indeed correlated with a number of identifiable firm characteristics and that the choice between a § 363 sale or a reorganization is not a random one. However, somewhat counterintuitive we were not

therefore, for many or most publicly traded firms the bankruptcy process has represented a “hard landing” as compared to earlier times.”

⁹⁷ Skeel (2004), *supra* note 94, distinguishes two types of DIP loans. First, what he calls loan-oriented DIP arrangement, takes the form of a standard loan, structured as a revolving credit agreement and with strict conditions on each new round of financing. The DIP lender is assured that it will have significant leverage over the debtor's managers' decision-making throughout the Chapter 11 case. Second type, referred to as a loan-and-control financing arrangement is used to transfer control to the DIP lender itself, either through a sale to the DIP lender or as the intended outcome of the Chapter 11 reorganization.

⁹⁸ For recent trends see Barath et al. (2007), *supra* note 11, who show that from 1998 to 2004 the share of Chapter 11 companies receiving DIP financing was constantly over 60% (with exception of two years, 2001-53% and 2002-58%). The average share for the period related to our sample was 62%. Similarly, Daniels and Ramirez (2007), *supra* note 94, document the issuance of over US\$64 billion in DIP loans during 1998–2004.

⁹⁹ In their sample the maturity of DIP loans rarely exceeds 2 years (only in 22% of the cases) and loans are usually made in the form of revolving line of credit (RLC) sometimes accompanied by a term loan and/or a letter of credit. See Chatterjee, S. et al. (2004), *supra* note 93, at 3105-3106.

¹⁰⁰ This is lower than in comparable studies e.g. in Dhillon, U., T. Noe and G. Ramírez “Debtor-in-possession financing and the resolution of uncertainty in Chapter 11 reorganizations”, *Journal of Financial Stability*, Vol. 3: 238-260, (2007) this ratio was 17.20%.

able to conclude that there is substantial difference between resolution choice types with respect to proportion of companies that obtained DIP financing, as well as to relative size of available DIP financing. Finally, we were not able to state that companies sold via 363 sales are the ones that run significantly more out of cash (Table 2).

In order to measure the impact of various firm characteristics on the availability to obtain DIP financing, after controlling for other factors, we estimate a logit regression model of the following form¹⁰¹:

$$DIP\ financing = f(Cash/Total\ Assets, \ln\ Scheduled\ Assets, Solvency, Current\ Assets/Total\ Assets, Secured\ Liabilities/Total\ Liabilities\ Prepacks\ or\ prenegotiated, Telecom, Retail)$$

The impact of the size of the firm's assets on its likelihood to obtain DIP financing is measured by natural log of scheduled assets. Alternatively we use current assets as a measure of liquid collateral instead of total assets. As the major role of DIP financing is to provide the company with the liquidity needed to operate through the reorganization process or to facilitate sale we use cash to total assets ratio and alternatively we use current assets to total assets ratio. As both ratio of current to total assets and natural log of current assets turn out not a significant determinant of DIP financing we omit both from reported regressions. Like in logistic regression for resolution choice, we use solvency (inverse leverage ration) to capture the influence of the capital structure of the debtor. Following Dahiya et al (2003) as a potential explanatory variable we use dummy if a debtor filled a prepackaged reorganization or 363 sale, as according to the theory plan is less likely to need DIP financing due to a shorter anticipated stay in the reorganization process and we expect to find a negative coefficient for the prepackaged/prenegotiated variable.¹⁰² In addition, we use two sector dummies. First, following Dahiya et al. (2003) we use dummy for the retail industry as it typically has a high level of inventories and accounts receivables that can be used as collateral in DIP financing or retail firms arrange DIP financing in order to reassure trade creditors and customers of their continued access to liquid funds. Second, we use dummy for telecommunications industry because of the large presence of telecoms in the sample and because telecommunication sector companies differ in several respects to other companies in the sample, both in terms of solvency, but also in terms of profitability measured by EBITDA to total assets ratio. In the logistic regression, we also examined whether the more profitable a firm is, measured in terms of EBITDA to total assets ratio the more likely it is to obtain DIP financing. However, as the results are not significant and consequently not reported.

¹⁰¹ For a similar approach see Dahiya S. et al. (2003) , supra note at 269 and Dhillon et al. (2007), supra note 100 at 253. Dhillon et. al (2007) estimate a Probit equation with DIP financing as the dependent variable as a first step equation in order to take account of the endogeneity of DIP financing to obtain the consistent coefficients in the OLS regression.

¹⁰² A prepackaged filing requires the firm to file a plan of reorganization that has been agreed to by all claim classes at the time of filing for Chapter 11. As reported by Tashjian, Lease and McConnell (1996) a prepackaged filing leads to a significantly shorter stay in the reorganization process for the debtor. However logic in case of 363 sales may be different as in order to speed up prearranged sale DIP may turn out to be necessary.

It is not only the availability of DIP financing that matters. Carpeto (1998) documents that there is no significant relation between the presence of DIP financing and recovery rates, unless its size is big.¹⁰³

$$\ln (\text{DIP Loans/Total Assets})_i = f(\text{Cash/Total Assets, EBITDA/Total Assets, } \ln \text{ Scheduled Assets, Solvency, Secured Liabilities/Total Liabilities, Prepacks or prenegotiated, 363 Sale, Incumbent creditor, Telecom, Retail })$$

Dependent variable (DIP Loans/Total Assets) is obtained by dividing available DIP funding with total scheduled assets as described in the previous section. The amount of the lender's commitment is not necessarily constant throughout the bankruptcy process, as either the firm or the lender may decide to change it.¹⁰⁴ We use last DIP financing available to the debtor-in-possession. Alternatively, we use DIP Loans/Total Liabilities as a dependent variable. To prevent the cases with the highest absolute values from dominating the model, we used the logarithm of the values for fees awarded, number of firm and days in bankruptcy.¹⁰⁵

Besides explanatory variables from logistic regression we add two more variables, namely dummies for pre-petition relationship and for resolution choice. In certain cases, the incumbent creditor who already has a pre-petition relationship with the debtor provides the debtor-in-possession financing. By taking the role of DIP lender, pre-petition creditor is trying to both protect his collateral base and give an appearance of normality towards the debtor's customers and suppliers, to ensure that the going concern of the collateral is maintained. In addition he is strengthening his position and simultaneously avoiding making concessions to the debtor and other creditors that might weaken his existing claims.¹⁰⁶ The inclusion of the resolution choice dummy is based on hypothesis that potential DIP lender is familiar with non-viability assertions meaning that he has prior knowledge on the resolution choice of the company and that this will be reflected in the size of the loan he is ready to provide.¹⁰⁷

¹⁰³ See Carpeto, M. (1998) "Debtor-in-possession financing: Size does matter", unpublished manuscript available at <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.22.4904>. (last visited on 02/01/08)

¹⁰⁴ In several cases, DIP lenders reduced DIP financing available to the borrower. For example, in case of Sun Healthcare Group Inc., the U.S. Bankruptcy Court granted Sun Healthcare Group, Inc. final approval of a US\$ 200 million DIP financing package with CIT Group/Business Credit Corp. Group/Business Credit, Inc. However, total amount available was reduced with the third amendment to the loan agreement to US\$ 150 million, and we use this amount.

¹⁰⁵ This decision was validated using Shapiro-Wilk and Shapiro-Francia tests for normality.

¹⁰⁶ See e.g. Carapeto (1998), supra note 103, quoting Cott, A. "A Lender Looks at DIP Financing", *Journal of Commercial Lending*, Vol.70: 24-34 and Kleiman, R., *Debtor in possession financing*, *Business Credit* 13-15 (1992), "The most advantageous aspects of DIP is the possibility of collateralizing his pre-petition claims with property collateralizing his postpetition claims. In this way, the collateral for the lender's pre-petition claims secures the collateral for his post-petition claims and vice-versa, and he can effectively condition post-petition financing on the concession of additional collateral for his prepetition loan. Also, when the new financing is provided by existing secured lenders, they sometimes have to prime themselves (Kleiman, 1992); in exchange, they can ask for (a) the conversion of their pre-petition claim into post-petition and (b) the interest payments on pre-petition debt to be continuously paid."

¹⁰⁷ LoPucki and Doherty (2007), supra note 8, at 30, use several examples: "In seeking to justify their sales to the bankruptcy court, 16 of the 30 companies studied (53%) made strong assertions of non-viability. That is, they represented to the court that they were unable to reorganize. These statements ranged from

Table 5 reports the results. The first three columns on the left show the results of the logistic regression on whether DIP availability systematically differs and the last two columns show the results of OLS that explains the magnitude of DIP financing in proportion of the scheduled assets in terms of previously mentioned relevant variables.

As expected, cash constrained firms are more likely to obtain DIP financing consistent with the coefficient for cash to total assets ratio being negative and significant. The results show that the larger firms are more likely to obtain DIP financing and that solvent companies are less likely to obtain DIP financing as the coefficient for solvency is negative though not statistically significant. The only sign that is counterintuitive is the one related to the ratio of current to total assets. While one would assume that a firm's ability to obtain DIP financing is positively related to the fact that DIP lenders prefer to lend against liquid collateral, result is inconsistent with prediction that working capital intensive firms having higher demand for DIP financing. The results did not change even after removing cash to total assets ratio from regression.

Neither the coefficient for retailers nor for prepackaged filings is significant in our logit regression. Both coefficients are consistently negative, but the z-statistics are always very low. This is intuitively appealing as the prepackaged filings are accompanied by a pre-approved plan of reorganization. Thus in most prepackaged filings the borrower continues to have access to its existing credit lines, which obviates the need to obtain DIP financing. Possible explanation for the results different to those in other studies is the fact that the use of the DIP financing is now widespread and common way of financing companies in all industrial sectors. However, contrary to retail sector dummy, telecom dummy is significant. Regressions suggest that telecoms have a tendency to have a lower demand for DIP financing as reflected in the fact that only one third of telecommunication sector firms in our sample get DIP financing. Probable reason is the fact that while telecom firms were expanding in most cases reaching overcapacity, they had taken on enormous amounts of debt and that the major cause was insolvency coupled with enormous losses.¹⁰⁸

GlobalStar's stark assertion that it would run out of cash for administrative expenses "within weeks"¹¹⁶ to Polaroid's catchy metaphor that the company was "a melting ice cube."

¹⁰⁸ In our sample average telecom firm was deeply insolvent with ratio of total assets to total liabilities of only 80%. Causes of telecom firms collapse are complex and possibly linked to the 1996 Telecommunications Act. Numerous firms borrowing heavily to finance their growth could not survive and filed bankruptcy. During the race to the bottom, telecommunication companies' overbuilt capacity e.g. only a small fraction of fiber-optic cables in the US is in use. For discussion of the role of CLECs (competitive local exchange carriers. See White, J., "Bankruptcy Noir", Michigan Law Review, Vol. 62:691-720, at 703-704. See also LoPucki, L and J. Doherty "Bankruptcy Vérité", Michigan Law Review, Vol. 62:721-743.

Table 5
Determinants of DIP Financing

Specification: The logit estimation for the availability of DIP Financings. The logits for the availability of DIP financing (=1) vs. Reorganization (=0). z-statistics below coefficient estimates. Sample data are from LoPucki and Doherty (2007), Compustat or hand coded from the Public Access to Court Electronic Records (PACER) and 10K or 10q filings. They include all corporate bankruptcies with sufficient data.

<i>Logits/OLS</i>	LOGIT		LOGIT		LOGIT		OLS		OLS	
	I		II		III		II		III	
	<i>DIP</i>		<i>DIP</i>		<i>DIP</i>		<i>Ln(DIP/TA)</i>		<i>Ln(DIP/TA)</i>	
Cash / Total Assets	-13.416	***	-13.585	***			-5.995	**	-6.983	**
(last available quarter prior to filing)	-3.09		-3.08				-2.51		-2.53	
Current Assets/Total Assets					-0.875		2.440	***	2.582	***
(last available quarter prior to filing)					-0.36		2.79		2.87	
Solvency	-1.740		-1.766		-0.424					
(at filing)	-1.28		-1.28		-0.3					
In Scheduled Assets	0.772	*	0.745	*	0.480		0.106		0.097	
(at filing)	1.9		1.66		1.09		0.9		0.79	
Secured Liabilities/Total Liabilities			-1.222							
(last fiscal year prior to filing)			-1.44							
Prepackaged or Prenegotiated	-1.179		-0.592		-0.463		-0.391		-0.498	*
	-1.36		-0.26		-0.5		-1.44		-1.81	
Telecom	-2.819	***	-2.795	***	-2.817	***			0.109	
(SIC Primary 4800 – 4900)	-3.23		-3.18		-3.04				0.5	
Retail	-0.419		-0.475		-0.296		0.794	***	0.889	***
(SIC Primary 5200 – 6000)	-0.3		-0.33		-0.26		3.14		3.03	
Incumbent creditors									0.021	
									0.09	
363 Sale									-0.311	
									-1.11	
Constant	-11.178		-10.397		-7.282		-5.27	*	-4.967	*
	-1.37		-1.07		-0.79		-2.04		-1.87	
<i>Number of observations</i>	58		58		56		40		40	
LR chi ²	17.64		20.07		12.65					
Prob > chi ²	0.007		0.005		0.049					
Log likelihood	-23.465		-23.421		-27.176					
Pseudo R ²	0.313		0.314		0.189					
R ²							0.451		0.473	

This logistic model LOGIT II has an overall accuracy of 81.03%, with 82.98% correct predictions for firms with DIP financing and 72.73% correct predictions for firms without DIP financing.¹⁰⁹ However, reported results are different from those in other studies. There are two possible reasons. First, other studies did not explicitly control for liquidity needs and used, in case of firms in distress, not up-to-date company financials, thus either

¹⁰⁹ Model LOGIT II (with all firms, including those that might be identified as outliers or influential cases) correctly classifies 81.48 percent of the cases (47 out of 58 companies for cut-off at 0.5). For cut-off at 0.4 model correctly classifies 79,31percent of companies.

not capturing accurate or omitting important explanatory variables. Second, we should note that the sample has positive skewness, meaning that there are many small size DIP loans not only in absolute terms of DIP financing, but also in terms of its proportion on the firm's assets (liabilities).

In the OLS regressions, the size of DIP loans, like the availability of DIP is predominantly determined by liquidity needs. In addition, the size of DIP financing relative to total assets increases with the firm size and decreases with the solvency of the firm. Unlike in the logistic regressions the size of DIP financing is positively related to the fact that DIP lenders prefer to lend against liquid collateral. We may read these findings in a way that once the DIP is available working capital intensive firms have higher demand for DIP financing.

While liquidity needs and liquid collateral drive results in the OLS regression, other results are consistent with similar studies. Prepackaged and prenegotiated bankruptcies and retail companies are negatively associated with DIP financing. This coincides with Chatterjee et al. (2004), who found that the companies with DIP financing are mostly wholesale and retail firms, as they need working capital to continue their activities.¹¹⁰ One exemption to this pattern of similar findings is that pre-petition lender granting the post-petition financing though positively associated with the size of DIP financing is neither important nor statistically significant.¹¹¹ None of the stakeholders is willing to invest the cash to keep it running. Only a third-party buyer with deep pockets will.

We do not report results for other models as additional variables used are not significant – e.g. share of secured in total liabilities has a positive coefficient, meaning that it does not represent significant impediment to 'recontracting' that DIP financing requires to facilitate lending to firms in bankruptcy. Finally, we can once again confirm that the resolution choice does not influence on the magnitude of DIP financing. Still, when we examine factors influencing recovery ratios, both elements should be taken into account.

¹¹⁰ "Retail firms are able to obtain larger loans since they normally have larger, lien-free, inventories and accounts receivables which are used as a borrowing base for DIP loans." Chatterjee et al. (2004), *supra* note 93, at 3101.

¹¹¹ In our sample prepetition lenders provide DIP financing in 29 cases out of 44, making on average US\$ 124,5 million available in terms of DIP financing.

VII. RESOLUTION CHOICE AND RECOVERY RATES

In this section, we will try to examine the following question: What determines the level of recovery? Is the poor performance of 363 sales due to difference in firm type or due to other measurable factors, or is the performance equally bad after taking these factors into account? How important is the availability of debtor-in-possession financing?

1. Previous Research

Apart from a study of LoPucki and Doherty (2007) to which this section is closely related only a handful of studies examined estimates of sale vs. reorganization recovery rates.¹¹² Namely, Stromberg (2000) studies the Swedish bankruptcy system comparing official estimates of piecemeal sale value with going-concern sale value.¹¹³ Stromberg finds that a sale of the assets back to incumbent management (salebacks) are relatively more likely when banks benefit more from a sale-back than a liquidation at the expense of other creditors, when the indebtedness of the firm's industry is relatively high and when a firm's assets are more specific. However, the expected liquidation value is lower when industry indebtedness is high and assets are specific. Yet, as the practical implementation of Swedish cash auctions look more like a reorganization procedure inefficient liquidations are frequently avoided through sale-backs when markets are illiquid, that is, when industry indebtedness is high and the firm has few nonspecific assets providing support for Schleifer and Vishny (1992) who argue that a cash auction is likely to suffer from considerable inefficiencies arising from transaction costs as industry-specific assets are sold to outside lower-value users when market is illiquid.¹¹⁴

Bris, Welch and Zhu (2006) using 300 both publicly traded and privately held corporation cases from the Arizona and New York federal bankruptcy courts from 1995 to 2001 explore the alternative between Chapter 11 reorganizations and Chapter 7 liquidations. They find that Chapter 7 liquidations are systematically different from Chapter 11 cases along a number of dimensions such as firm size. After controlling for self-selection (which is important and effective), they find that Chapter 7 seems to offer few advantages. They find that Chapter 7 cases appear to be no faster or cheaper (in terms of direct expense) than Chapter 11 reorganizations and what is more relevant to this

¹¹² See Hotchkiss, E., J. Kose, R. Mooradian and K. Thorburn "Bankruptcy and the Resolution of Financial Distress" in Eckbo B.E. (ed.), "Handbook of Corporate Finance: Empirical Corporate Finance", Vol. 2, Elsevier/North Holland, (2008) for survey of the empirical and theoretical work on fire sales available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1086942

¹¹³ Stromberg, P., (2000), *supra* note 82, at 2658-2692. Stromberg uses the sample of 205 observations of Swedish cash auction bankruptcies occurring between 1988 and 1991.

¹¹⁴ Shleifer, A. and R. Vishny, "Liquidation values and debt capacity: A market equilibrium approach", *The Journal of Finance* Vol.47: 1343–1366 (1992), present a model predicting that distressed firms will receive lower prices and be more likely to sell itself to industry outsiders in periods when the industry is financially distressed and that the more specialized the assets the greater this fire-sale discount will be.

study they find that Chapter 11 preserve assets better allowing creditors to recover relatively more.

Eckbo and Thornburn (2008) also examine the Swedish bankruptcy system and test for fire-sale tendencies in automatic bankruptcy auctions. In their empirical examination they provide evidence of fire-sale discounts when the auction leads to piecemeal liquidation, but not when the bankrupt firm is sold as a going concern. They also find no support for industry-wide distress and the industry affiliation of the buyer affecting prices in going-concern sales. They show that prices in prepackaged auctions are on average lower than for in-auction going-concern sales explaining this by the fact that prepackaged auctions help in preempting excessive liquidation when there is not enough liquidity around.¹¹⁵

Eisenberg and Tagashira¹¹⁶ based on the Japanese data show that reorganization of small firms, even in the face of substantial failure rate yields a net surplus over liquidation, while for larger firms the surplus should be even larger. Authors analyze the factors influencing liquidation value estimates and proposed recovery rates controlling for financial status, regional factors and the examiner who estimates liquidation value. Also of interest from this study, authors explore factors influencing plan confirmation and find average size of creditor claims as a dominant factor.

Several articles present evidence on fire-sale discounts in sales, inside and outside of Chapter 11 in the United States. Pulvino (1998) using airline companies sample provide evidence of price discounts for the sale of individual aircrafts of financially constrained companies compared to financially unconstrained companies in the industry.¹¹⁷ He also finds that unconstrained airlines significantly increase buying activity when aircraft prices are depressed. In subsequent paper, Pulvino (1999) examines the degree to which bankruptcy court protection alleviates costs of financial distress associated with asset sales of airline companies showing that court protection does little to mitigate price discounts associated with distressed asset sales.¹¹⁸

LoPucki and Doherty (2007) were the first to report an empirical study comparing preplan sales values with reorganization values. LoPucki and Doherty (2007) controlling for company values measured at case commencement and for operating profits, provide empirical evidence of more than double value received for the recoveries in reorganization cases to the recoveries from 'new' Chapter 11 going concern sales. They find that the low recoveries in sale cases are caused by continuing market illiquidity, managers' and professional advisors' conflicts of interest, and the corruption of the bankruptcy process by competition among bankruptcy courts for large public company

¹¹⁵ Eckbo and Thorburn (2008), *supra* note 82.

¹¹⁶ *Supra* note 34.

¹¹⁷ Pulvino, T., "Do asset fire-sales exist?: An empirical investigation of commercial aircraft transactions, *The Journal of Finance*, Vol.53: 939–978, (1998) and Pulvino, T., "Effects of bankruptcy court protection on asset sales", *Journal of Financial Economics*, Vol.52: 151–186 (1999)

¹¹⁸ For liquidity driven price discounts associated with distressed plant closings and corporate targets outside of bankruptcy see Officer, M., "The price of corporate liquidity: Acquisition discounts for unlisted targets", *Journal of Financial Economics* Vol.83:571–598, (2007).

cases.¹¹⁹ As a result, debtors agree to sell at low prices, the auctions are rushed, and in most cases only a single bidder participates.¹²⁰ Further, they show that (i) recovery rates are higher when debt capacity in the debtor's industry is lower; (ii) cases in which debtors sell their companies as going concerns on average remain pending significantly longer than reorganization cases; (iii) recoveries are high in years when merger and acquisition activity is high for reasons other than high stock prices and (iv) the number and proportion of bankruptcy sales have sharply declined in the past two years, suggesting that the sale era may be ending.¹²¹

LoPucki and Doherty's article initiated lively debate. White (2008) using Total Enterprise Values ("TEV") as firms' value at filing and for the reorganized companies at confirmation finds no statistically significant difference between sale prices and reorganization values.¹²² Further, he claims that the firms that were sold in 363 sales were significantly different from firms that successfully reorganized and that "Section 363 sales do not cause low value, but low value might cause 363 sales. Put another way, the firms that find their way into 363 sales are weaker from the outset and that difference, not the process, explains lower returns".¹²³ White using TEV approach to valuation and excluding several telecommunication sector companies arguing that they "appear to be not capable of reorganization" even present results according to which the 363 sales returns approach or exceed the reorganization returns when we use the TEV as a starting measure of value."¹²⁴

Responding to this critique, LoPucki and Doherty (2008) criticize White's approach on several points.¹²⁵ First, they claim that White's approach severely understates reorganization relative to sale recoveries due to (i) inadequate usage of TEV as a valuation method for financially distressed companies, as it converts debt into phantom assets thus overstating the values of both resolution type companies, making these phantom assets disappear once the debts are discharged at confirmation, so it appears that the reorganization process had destroyed them; (ii) inappropriate comparison of the reorganization TEV recoveries to Sale Prices as the former excluded assets equal to short-term debt while the latter included all assets; (iii) erroneous comparison of the reorganization recoveries calculated exclusive of cash with sale prices including cash.¹²⁶ Second, they claim that White is erroneously eliminating the cases (telecoms) thus

¹¹⁹ In the US, bankrupt large public companies have the right to file in any bankruptcy court they chose. The Delaware bankruptcy court triggered the court competition in the early 1990s by adopting a variety of practices that appealed to the lawyers, executives, and DIP lenders who choose courts for bankrupt companies. By 1996, the Delaware bankruptcy court had a near-national monopoly on large public company bankruptcies, attracting thirteen of the fifteen such cases filed that year (87%). In the late 1990s, other courts responded by copying many of Delaware's practices, thus joining in the competition. For extensive treatment see LoPucki (2005), *supra* note 22, at 49–76.

¹²⁰ *Supra* note 8, at 45.

¹²¹ *Id.* at 1.

¹²² White (2008), *supra* note 108.

¹²³ *Id.* at 692, 702.

¹²⁴ *Id.* at 701.

¹²⁵ LoPucki and Doherty (2008), *supra* note 108.

¹²⁶ *Id.* at 740

biasing his study in favor of the sales.¹²⁷ However, this scholarly debate discussed self-selection bias only in fragments as the central topic of discussion was the valuation of bankrupt companies and the role of various stakeholders in the process. However, in our opinion both studies use questionable regression methodology. In what follows we present what we believe is a correct approach to resolving the effects of preplan sales on recovery rates. However as we opted for LoPucki and Doherty (2007) valuation approach, that is market capitalization adjusted for substantial changes during the bankruptcy case, criticism related to this approach applies to our findings as well.

2. Results

Resolution via 363 sales may be endogenous and companies may self-select into preplan sale or traditional reorganization group.¹²⁸ In general, endogeneity refers to the fact that an independent variable included in the model is potentially a choice variable, correlated with unobservables relegated to the error term.¹²⁹ Similarly, self-selection bias occurs when one or more regressors are correlated with the residual term.¹³⁰ In our case, preplan sales may be endogenous if the resolution decision (to use preplan sale or reorganization) is correlated with unobservables that affect recovery ratio. In other words, if companies that are rapidly deteriorating or have some other characteristics influencing the likelihood of choosing section 363 instead of traditional reorganization will consequently receive lower recovery. Thus, failure to control for this correlation will yield biased estimates and negative effects of 363 sales on recovery outcomes may be overstated. To avoid such results one should instrument for 363 sales.

¹²⁷ Ibid at 722, 732.

¹²⁸ To quote professor Baird, professors LoPucki and Doherty “assume that there is a treatment effect - putting a company up for §363 sale will lead to lower returns than if the company is reorganized. But the results could equally well be the result of a selection effect—the bad firms are the ones that get sold. ... data do not reject this story, and authors offer no method for choosing between competing interpretations.” available at http://uchicagolaw.typepad.com/faculty/h2h_lopucki_v_baird_/index.html

¹²⁹ An important assumption in OLS models is the independence of the explanatory variables and the random error components. Failure of this assumption may lead to biased or inconsistent estimates when standard OLS model is used. Regressor-error dependencies may arise from a number of different sources: (i) relevant omitted variables, (ii) measurement error in the regressors, (iii) self-selection, (iv) simultaneity, and (v) serially correlated errors in the presence of a lagged dependent variables as regressors. Ruud, P. A. (2000), “An Introduction to Classical Econometric Theory”, Oxford, Oxford University Press shows that the last four possibilities can be viewed as a special case of relevant omitted variables.

¹³⁰ For general discussion see e.g. Colin Cameron, A. and P.K. Trivedi “Microeconometrics - Methods and Applications”, Cambridge, Cambridge University Press, (2006). Here we refer to selection due to self-selection, with the outcome of interest (recovery rates) determined in part by company’s choice of whether or not to participate in treatment (preplan sales). Obviously selection can also result from sample selection, with those who participate in the preplan sales as an activity of interest deliberately oversampled. “The term “treatment” ... [i]n econometrics ... commonly refers to participation in some activity that may impact an outcome of interest. This activity may be randomly assigned to the participants or may be self-selected by the participant.” For details, see Colin Cameron and Trivedi (2006), at 9. The “treatment effects” literature usually focuses on a binary indicator for treatment where $X = 1$ indicates the treatment group and $X = 0$ the control, but X is not randomly assigned in the sample.

In previous section we found evidence that companies that opt for section 363 sale have different characteristics to companies that choose traditional reorganization. Some of these differences, such as solvency, profitability or previous existence of goodwill, are observable from financial statements and other data sources but others, such as “relationships within firm”, “firm specific assets” or “firm specific (organizational) distress are not or at least not completely.”¹³¹ If a regressor ends up proxying for those factors, we cannot interpret its estimated coefficient as the effect of that regressor *per se*, since it also captures part of the effect of the omitted or mismeasured variables.

We use several methods suggested to correct for selection bias. The aim is to estimate how much reduction in recovery rates associated with company being sold via section 363 sales is a genuine treatment effect of the use of preplan sales instead of “traditional” reorganization and how much would have occurred in any case because of unobservable characteristics of bankrupt companies. The most interesting variable relates to the observed choice of procedure.

The first model is simple ordinary least squares, (first column in each panel of Table 6) which ignores self-selection but does include the actual resolution choice as a dummy. Like in LoPucki and Doherty (2007), the resolution choice coefficient measures both the influence of the procedure itself, and the differences between firms that are sold via 363 sales and firms that are reorganized. The remaining models seek to disentangle these two effects by relying on the predictions from the procedural choice.

In the second model we estimate a two stage least squared (2SLS) regression to allow for possible endogeneity of the resolution choice. We run several probit and logit models to estimate the binary resolution choice variable as reported in Table 3. The predicted probabilities are then used as an instrumental variable for resolution choice status in the 2SLS estimation of the recovery rate model (see Appendix). According to Wooldridge (2002), with slightly stronger assumptions, this procedure yields valid standard errors i.e. one can use a more efficient and robust IV estimator.¹³² The usual 2SLS standard errors and test statistics are valid and we also employ heteroskedasticity consistent standard errors. In general, we do not have to ensure the model for selection is properly specified, merely that the instruments are good predictors of section 363 sale resolution. We estimate the model (second column in each panel of Table 6) using the logit and ivreg2 commands in Stata.¹³³ To test that the instruments are correlated with treatment status we

¹³¹ See LoPucki (2003), *supra* note 17 at. 652. LoPucki, using Coasian framework, argues that going-concern value resides principally in relationships that reorganization seeks to preserve and that as only with time do these relationships coalesce in a smoothly operating competitive firm. Alternatively, parties-in-interest might assign companies based on characteristics that the researcher cannot observe. See Wooldridge, J. “Econometric Analysis of Cross Section and Panel Data“, The MIT Press: Cambridge, MA, 2002, at 254, 255.

¹³² As Wooldridge documents, there are several nice features of this IV estimator. First, it can be shown that the conditions sufficient to ignore the estimation in the first stage hold. Therefore, the usual 2SLS standard errors and test statistics are asymptotically valid. Second, under certain assumptions, the IV estimator is asymptotically efficient. See Wooldridge (2002), *supra* note 131, at 623-25

¹³³ See Baum C., M. Schaffer M. and S. Stillman “Instrumental variables and GMM: estimation and testing”, The Stata Journal 3: 1–31 (2003), Baum C., “An Introduction to Modern Econometrics Using

include them in the first stage. We use `ivreg2` to estimate the all relevant statistics To test the over-identifying restrictions, and hence the independence of the instruments from the unobservable error process, we require an excess number of instruments. With the sole instrument, the model is exactly identified. However, one can use the linear predictor to test this assumption by employing a one step 2SLS using all the excluded instruments. The tests can also be considered as joint tests of both correct model specification (the excluded instruments are valid instruments and correctly excluded from the estimated equation) and the orthogonality conditions.¹³⁴

To allow for endogeneity of resolution type we use Heckman's two-step consistent estimator which does not require that the variables which explain resolution type are uncorrelated with the errors in recovery rate regression (third model in each panel in Table 6).¹³⁵ We apply both two-step and maximum likelihood estimators. The maximum likelihood estimator specifies different likelihood functions for each observation according to their resolution choice status. However, we do not report maximum likelihood estimators due to convergence problems. In the two-step estimator a probit treatment model is used to obtain estimates of the inverse Mills ratio for each company depending on its resolution choice status. The inverse Mills ratio is then included in the second stage recovery rate regression. We ran the *treatreg* command using robust standard errors for the maximum likelihood estimates, and used the two-step estimator to obtain estimates of the hazard function for both 363 sale and reorganization choice and included this as a regressor in the second stage model of recovery rates.

All regressions use the same sample and the same set of regressors in all regressions. As independent variables we include all variables entertained in LoPucki and Doherty (2007), adding the share of beneficial owners in firms equity and court dummy (where 1 is for cases that were resolved either in Delaware or in the Southern District of New York). Furthermore, all models that take into account the effect of self-selection are reported after substantial data mining. We also experiment with first-stage probits and logits that rely on fewer variables. In almost all cases such first-stage variations make little or no difference in the second-stage regression results reported below, as are fairly robust to endogeneity in terms of coefficient estimates other than the coefficient estimate of the specific first-stage resolution choice dummy itself. Finally, to check for robustness we use other control functions approaches but they also make little or no difference in the second-stage regression.

The first regression in Table 6 (Panel A) is an ordinary least squared regression that to some extent replicate s LoPucki and Doherty's final model, expressing natural log of recovery ratio as a function of several variables. Here the coefficient measures both the

Stata", Stata Press (2006), at 185-218; and Baum C., M. Schaffer M. and S. Stillman "Enhanced routines for instrumental variables/GMM estimation and testing", The Stata Journal Vol.7: 465-506 (2007)

¹³⁴ The model is estimated using robust standard errors and `ivreg2` employs Hansen's J statistic, which is distributed as a chi-squared with degrees of freedom equal to the number of over-identification restrictions (L-K), where L is the total number of exogenous regressors and K the number of exclusion restrictions (over-identified instruments). The J statistic is calculated and displayed by `ivreg2` when the robust option is specified.

¹³⁵ We use the *treatreg* command in Stata to obtain all the necessary parameters in the model.

influence of the procedure itself, and the differences between firms that opt for preplan sales and firms that opt for traditional reorganization. However, it is not completely the same regression, as apart from ignoring self-selection, the model used by LoPucki and Doherty includes interaction dummy between the time and procedure, in order to try to control for the time with respect to each resolution choice. However, due to multicollinearity presented results are rather worrisome and authors' conclusion exaggerates the real effects of §363 on recovery rates.¹³⁶ We also run kitchen sink OLS regression (not reported) of recovery rates on the set including additional covariates (from Model VII in section IV). Again, the resolution choice effect is statistically significant and negative. Similarly, to LoPucki and Doherty both resolution choice dummy and profitability indicator are statistically significant (standardized betas 57% and 35% respectively). The only other statistically significant coefficient is a dummy for telecommunication companies (standardized beta 29 percent).

Model 2 in Panel A represents reporting format for second-stage regression.¹³⁷ In addition, we run various first and second stage regressions and note instances in which variables seem not particularly robust. Table 6 reports results that under several criteria track the process best.

While under the first model, the average traditional reorganization achieves 96% higher value than the average preplan sale (standardized beta 57%), after controlling for self-selection decreases this number to 54% (standardized beta 32%).¹³⁸ One should note that under small sample corrections resolution choice dummy does not appear to be statistically significant. Therefore, second model in panel (A) suggests that preplan sales is somewhere between “statistically significantly but not greatly worse” and “considerably but not statistically significantly worse”. With regard to other variables, and consistently to OLS model in panel (A) there are only two other variables that matter – EBITDA to Total Assets and dummy for telecommunication companies (standardized betas 39% and 26% respectively). Thus, it seems that predominant factor explaining difference in recovery rates is companies' profitability prior to bankruptcy rather than resolution choice itself.¹³⁹

¹³⁶ Using their data we check for multicollinearity. As a rule of thumb, a variable whose VIF (variance inflation factor) values are greater than 10 may merit further investigation. Tolerance, defined as 1/VIF, is used to check on the degree of collinearity. A tolerance value lower than 0.1 is comparable to a VIF of 10. Variance inflation factors for sale dummy and interaction term between sale and natural log of time in bankruptcy are well over 300 and are almost perfectly collinear.

¹³⁷ The IV model satisfied the assumptions underpinning the IV estimation. We do not report overidentification tests since all equations are just identified. The first stage F-statistics in all cases are large enough (i.e. they are greater than 10 that is according to Stock and Watson (2003) rule of thumb for good instruments). The Anderson Rubin Wald Test which is the preferred test for robust inference in the weak instrument case is rejected in all three cases, possibly suggesting that all three obstacles are individually important in affecting firm growth. We do not report overidentification tests since the equation is just identified in each case in panel A.

¹³⁸ Note that standardized betas for the IV model are obtained using *ivreg* not *ivreg2*.

¹³⁹ When running reduced model using only EBITDA to total assets and two sector dummies and using only goodwill to total assets year before filing and the ratio of secured to total liabilities, resolution choice does not appear to be statistically significant with coefficient being only a third of the one reported in OLS.

The 2-step Heckman selection correction model is the third model shown in panel (A) and produces very similar estimates to the IV estimate. This is rather encouraging as the consistent estimators can get quite different estimators in small samples. From the two-step treatment model we find a negative and statistically significant coefficient (at the 10% level) on the inverse Mills ratio, which implies that the effect of unobservable firms' characteristics associated with both recovery rates and resolution status is to decrease recovery rates. Thus, estimate of the impact of resolution choice on recovery rates is less negative. Running smaller model (not reported), resolution choice even turns out not to be statistically significant. Therefore, results suggest that the self-selection process itself plays an important role in explaining why preplan sales result in lower recovery rates in Chapter 11. Thus, contrary to findings of LoPucki and Doherty which do not control for self-selection bias, we find that the resolution choice has weakly important and positive impact on recovery rates, once we control for self-selection bias. We should note that the heterogeneous treatment effects estimator does allow the effect of unobservable characteristics on recovery rates to vary by resolution choice, we was not able (due to sample size) to report results from estimates of the recovery rates models. One could expect that that the coefficients on the inverse Mills ratios for preplan sales and traditional reorganization to differ.

In panel (b) and (c) we include dummy for DIP financing availability. As expected recovery rates for creditors in DIP financing firms and non-DIP financing firms are not significantly different, on average, but they differ with the size of DIP financing. In the second model in panel (b) the binary variable for resolution choice is not statistically significant while in the treatment effect model results are very similar to those reported in panel (A). Simple availability of debtor-in-possession financing does not seem to have any positive or negative role i.e. does not significantly affect recovery rates unless its size is considerable (panel (C)).¹⁴⁰ All three models show that firms which obtained proportionally high DIP financing will have higher recovery rates (standardized beta 24% and 23% for the first and the second model in panel (C) respectively.). Furthermore, taking into account that recovery calculated by LoPucki and Doherty was done in a way that if the debtor borrowed money during the case on a DIP loan, but did not pay it back prior to the sale, the amount was deducted, the relative size of DIP financing makes the "pie" larger.

¹⁴⁰ This confirms results reported in Carpeto (1998), *supra* note XX, that there is no significant relation between the presence of DIP financing and recovery rates, unless its size is big, See *supra* note 101.

Table 6 Determinants of Recovery Ratio

The first step for IV and Treatment regression is model logit from Table XX.) Boldfaced variables and “pluses/minuses” indicate where our text attributes robust statistical significance to a variable. t-statistics below coefficient estimates are in absolute value. *, **, and *** denote two-sided statistical significance at 10%, 5%, and 1%, respectively.																		
	Panel (A)						Panel (B)						Panel (C)					
	OLS		IV		TREAT2S		OLS		IV		TREAT2S		OLS		IV		TREAT2S	
EBITDA/Total Assets	2.81	***	3.093	***	3.105	***	2.793	***	3.033	***	3.074	***	2.612	**	2.853	***	2.871	***
	(2.77)		(2.96)		(3.35)		(2.75)		(2.98)		(3.30)		(2.55)		(2.86)		(3.31)	
Sale	-0.969	***	-0.542	*	-0.574	*	-0.961	***	-0.474		-0.544	*	-1.003	***	-0.656	**	-0.672	**
	(-5.77)		(-1.78)		(-1.92)		(-4.96)		(-1.28)		(-1.77)		(-6.03)		(-2.53)		(-2.40)	
DIP							0.0418		0.198		0.0984							
							(0.14)		(0.57)		(0.41)							
DIP/ Total Assets													1.798	***	1.679	***	1.674	**
													(2.98)		(3.30)		(2.43)	
Del/SDNY	0.026		0.093		0.171		0.0259		0.0987		0.176		0.0567		0.109		0.175	
	(0.14)		(0.51)		(0.92)		(0.14)		(0.55)		(0.95)		(0.33)		(0.67)		(1.00)	
Beneficial ownership	-0.403		-0.436		-0.445		-0.407		-0.456		-0.455		-0.411		-0.437		-0.445	
	(-1.02)		(-1.15)		(-1.35)		(-1.03)		(-1.19)		(-1.38)		(-1.15)		(-1.29)		(-1.44)	
In Days In	-0.081		-0.007		-0.086		-0.084		-0.018		-0.094		-0.113		-0.0508		-0.115	
	(-0.81)		(-0.06)		(-0.77)		(-0.81)		(-0.17)		(-0.84)		(-1.13)		(-0.55)		(-1.10)	
Industry Interest Coverage	0.198		0.656		0.484		0.214		0.766		0.531		0.367		0.726		0.594	
	(0.34)		(1.06)		(0.76)		(0.38)		(1.18)		(0.82)		(0.76)		(1.29)		(0.99)	
S&P 500	-0.751		-0.661		-0.741		-0.762		-0.705		-0.766		-0.682		-0.614		-0.679	
	(-1.21)		(-1.19)		(-1.15)		(-1.21)		(-1.29)		(-1.18)		(-1.05)		(-1.10)		(-1.13)	
Net Merger residuals	0.249		0.242		0.214		0.252		0.257		0.22	*	0.252		0.246	*	0.223	*
	(1.51)		(1.57)		(1.61)		(1.50)		(1.60)		(1.65)		(1.62)		(1.72)		(1.79)	
Telecom	-0.605	**	-0.55	**	-0.663	***	-0.581	*	-0.432		-0.608	**			-0.426	*	-0.519	**
	(-2.35)		(-2.22)		(-3.14)		(-1.77)		(-1.20)		(-2.43)				(-1.77)		(-2.50)	
Constant	1.812		0.009		1.473		1.837		-0.0136		1.519				0.541		1.715	
	(0.88)		0.00		(0.63)		(0.87)		(-0.01)		(0.65)				(0.26)		(0.78)	
Inverse Mills					-0.375	*					-0.387	*					-0.312	
					(-1.71)						(-1.76)						(1.51)	
Number of Observations	50		50		50		50		50		50		50		50		50	
R ²	0.587		0.535				0.587		0.489				0.638		0.604			
Weak-instrument-robust inference			2.53						1.33						4.82			
Anderson-Rubin Wald test Chi-sq(1)			0.116						0.248						0.028			
Weak identification test																		
Kleibergen-Paap Wald rk F statistic			50.29						37.19						48.46			
Underidentification test															17.35			
Kleibergen-Paap rk LM statistic															0.000			
Endogeneity test			3.429						3.374						3.312			
			0.064*						0.066*						0.069*			
Durbin-Wu-Hausman chi-sq test			3.887						4.152						2.877			
Chi-sq(1) (for non robust model) [†]			0.048**						0.041**						0.090*			
Shea Partial R2			0.382						0.349						0.379			
Conditional LR			[-1.130, 0.307]						[-1.114, 0.512]						[-1.222, 0.132]			
Anderson canonical correlation			0.000						0.000						0.000			
Wald chi2(10)					48.18						48.17						60.92	
Prob > chi2			0.000		0.000						0.000						0.000	

Carpeto (1998) offers plausible explanation arguing that firms with larger new loans (in proportion to firm size) will be subject to more monitoring from the lenders so less likely to over-invest. With respect to resolution choice decision and reported results we may argue that while in traditional reorganization firms with relatively large DIP financing will tend not to over-invest, considerable DIP financing in preplan sales enable firms not to under-invest leading to relatively higher retention of assets. If firms are not able to obtain adequate DIP financing the alternative may be worse for everyone, but one cannot force pre-petition lenders or other potential creditors to provide optimal level of lending. Even the perfect bankruptcy framework cannot solve this type of collective action problem. Interaction dummy (not reported) for the resolution choice and dip availability has also positive sign and higher coefficient though being not statistically significant.

Once including relative size of DIP financing, results are slightly changed compared to those reported in panels (A) and (B). The importance of resolution choice increases both in terms of magnitude and statistical significance, while the interpretation with respect to inverse Mill's ratio remains the same, but the ratio is not even marginally significant. However, adding DIP financing variable makes the explanation of the effect of the resolution choice on recovery rate even more challenging. The lack of optimal DIP financing is possibly additional explanation of low retention rates of preplan sales, but this is something one cannot measure. Furthermore, the relative size of DIP financing is probably itself endogenous variable, but we lack sufficient data to do proper analysis.¹⁴¹ For now, we can only speculate that the firm that pursues preplan sale alternative wants to use this procedure because they know that they will reduce further assets dissipation that among other factors depend on the level of DIP financing.

Other variables, apart from the Net Merger residuals as defined by LoPucki and Doherty (2007), do not come in as statistically or economically significant variables, so we will limit our discussion only to most interesting findings. With respect to stock market conditions and merger and acquisition activity, findings are almost identical to LoPucki and Doherty, so we similarly conclude that recovery rates do not increase when merger and acquisition activity is high as a result of high stock prices proxied by S&P500 index, but do increase when merger and acquisition activity is high for other reasons. Like in LoPucki and Doherty (2007), industry distress variable - "Industry Interest Coverage," was positive, but unlike in their results it was not even marginally significant. The positive coefficient indicates that when industry distress is high, recovery ratios are high confirming interpretation that bad companies in distressed industries have higher retention rates than bad companies in healthy industries because the problems of the former are exogenous while the problems of the latter are endogenous.¹⁴²

In all models, two new variables (share of beneficial ownership and court dummy) do not appear to be statistically significant. Surprisingly, while we may hypothesize that filing firms with higher share of beneficial owners (inside equity ownership) will file in better condition consequently leading to higher recovery rates, than those with low inside equity

¹⁴¹ The sample is reduced to 40 once natural log transformation is performed. See Table 4 columns 4 and 5.

¹⁴² Supra note 3, see discussion at 29.

ownership, the sign for beneficial ownership is negative.¹⁴³ This is contrary to Jensen and Meckling (1976) argument that the agency conflicts between managers and shareholders decrease as management ownership rises. One possible explanation is that these companies who are either in prolonged or accelerated distress bargain for resurrection, and that this may result in value-destroying decisions as evidenced in lower recovery rates. Finally, with respect recovery rates it seems that Delaware and the Southern district of New York do not play any particular role with respect to recovery rates.¹⁴⁴ However, one has to be very cautious as the choice of the venue itself may be endogenous.

VIII. CONCLUSION

The paper empirically examined determinants of the resolution choice i.e. choice between §363 sales and traditional reorganization, determinants of the availability and size of debtor-in-possession financing, and the effects of resolution choice on recovery rates. Here we summarize most important findings:

- From examination of resolution choice decision we show that business justification standard for not going through the traditional Chapter 11 process of disclosure and plan confirmation is not randomly applied and that once firm files for Chapter 11 one can rather accurately predict resolution choice, i.e. classify companies according to their resolution type (§363 sales vs. traditional reorganization) based on several indicators (including their profitability and duration of distress, solvency and the role of secured creditors). In other words, preplan sales are systematically different from traditional reorganizations along a number of dimensions.
- The resolution choice does not influence on the availability of DIP financing or on the magnitude of DIP financing. The relationship between the availability of DIP financing and the resolution choice is the one expected as the use of DIP financing is now widespread and common way of financing companies.
- We found that predominant factor explaining difference in recovery rates is companies' profitability prior to bankruptcy rather than resolution choice itself. §363 sales are somewhere between "statistically significantly but not greatly worse" and "considerably but not statistically significantly worse". After controlling for self-selection (which is significant and effective),

¹⁴³ The sign is also consistent with Donohue (2004) who tests hypothesis that manager with equity, is expected to file when the firm is in fairly good financial condition, i.e. when equity is relatively more concentrated in management's hands, management can be expected to file when the firm is in relatively good financial condition so as to maximize the value of its own recovery. See Donohue, W. "To File Or Not To File? Systemic Incentives, Corporate Control, and the Bankruptcy Decision", *Journal of Management* Vol.30: 239–262, (2004) at 244-254.

¹⁴⁴ On 'the irrelevance of Delaware' see Lubben, S. "Delaware's Irrelevance", *American Bankruptcy Institute Law Review*, 16: 267-281, (2008).

traditional reorganization does seem to offer higher recovery rates comparable to preplan sale, but results are not as statistically robust as in LoPucki and Doherty (2007), and the magnitude is far from being as high as represented in their paper.

- Simple availability of debtor-in-possession financing does not significantly affect recovery rates unless its size is considerable i.e. the increase in relative size of DIP financing makes everyone better-off. This is relevant both for §363 sales and for traditional reorganizations as wealth transfers are less probable with the relative size of DIP financing.
- The relationship between DIP financing availability and resolution choice is probably intrinsic. The lack of optimal DIP financing is possibly additional explanation of low retention rates of preplan sales. However, one cannot measure optimal level of DIP financing and the relative size of DIP financing is probably itself endogenous variable, that due to the lack sufficient data we cannot analyze.
- Courts (forum shopping) does not have influence on recovery rates, while firms with higher share of beneficial owners though not statistically significant have lower recovery rates leading to a possible explanation that beneficial owners in these companies bargain for resurrection prolonging the initiation of bankruptcy.

As argued in the introduction, the forthcoming period shall witness a sharp increase in the in the absolute number and in the proportion of bankruptcy preplan sales. While, there are calls either for complete elimination of §363(b) from the Code or for an explicit statutory amendment to clarify the operation of a non-plan sale procedure, results suggest that there is no systemic error with respect to companies that opt for pre-plan sales. Nevertheless there are certainly several important procedural issues that could be improved while keeping the flexibility of section 363(b) intact.

Finally, paper shows that both wealth transfers and welfare loss are to a large extent wrongly attributed to § 363(b). The only loss we can relate to § 363(b) is the one from potential *ex ante* reduction in lending to borrowers with positive net present value projects due to uncertainties imposed by the introduction of preplan sale alternative to traditional reorganization. However, as we argue in the companion paper, a major cause of welfare loss in the current bankruptcy framework in the US comes predominantly because of the late filing, as characterized in bankrupt companies' worsening financials.

