A Typology of U.S. Corporate Bankruptcy

(Previously Four Facts about Corporate Bankruptcy in the U.S.)

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PRELIMINARY AND INCOMPLETE

Abstract

This paper constructs an empirical typology of large Chapter 11 debtors based on their objectives and levels of preparation at filing. Approximately two thirds of the firms in the sample set out to reorganize while the remaining third aim to sell substantially all of their assets, either as a going concern or in liquidation. Nearly 60% of firms enter bankruptcy already having negotiated with creditors and other constituencies. Excluding cases that involve significant litigation, firms that intend on reorganizing but ultimately liquidate represent only 5% of the total sample. Today's bankruptcy environment appears broadly consistent with one in which assets are liquid and verifiable, but also one in which firms are occasionally confronted by shocks and complexities that prevent out-of-court negotiations.

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1 Introduction

The major provisions of the U.S. Bankruptcy Code have been in place for over forty years. In this time, M&A markets have become deep and liquid. The typical distressed bondholder, once dispersed and uncoordinated, is now a sophisticated investor. Bankruptcy judges have become experts in valuation.[1] In sum, assets have become increasingly verifiable. According to Bolton and Scharfstein (1990) and Aghion and Bolton (1992), improvements in asset verifiability during bankruptcy should be associated with a reduction in bankruptcy filing rates. And yet, from 2004 to the end of 2017, nearly 800 non-financial firms, each with over $100 million in assets, filed for Chapter 11 in the U.S. Between them, these corporations had over $1 trillion in assets and employed nearly 4 million workers. If bankruptcy is costly, what prevented these firms from restructuring out of court?

In order to explore this question, I tabulate managers' objectives on the first day of bankruptcy. This information is available through a common declaration that describes the debtor's background, the circumstances that led to bankruptcy, and the intended outcome of the bankruptcy.[2] I show that nearly a third of large corporations that enter Chapter 11 plan on selling all or nearly all of their assets rather than reorganizing in the traditional sense. Using these objectives, as well as information on the extent to which firms are prepared for bankruptcy before they file, I build a typology of large non-financial Chapter 11 cases. This typology consists of five main categories: firms that (1) intend on reorganizing and already have a plan in place, (2) intend on selling the firm's assets and have a buyer in place, (3) intend on selling the firm's assets but do not have a buyer in place, (4) intend on liquidating, and (5) intend on reorganizing but do not have a plan in place.

I show that, for firms in the first four categories, negotiations between managers and stakeholders are essentially complete by the time the firm enters bankruptcy. The first four categories encompass nearly 60% of the sample. In other words, of the large corporations that file for Chapter 11, a minority pursue the traditional reorganization in which a court facilitates negotiations in the hopes of confirming a plan. There must be other factors, apart from those related to the negotiation process, that incentivize firms to file for bankruptcy.

I then develop sub-categories based on characteristics that are unique to each the five major categories. For example, I distinguish between firms with pre-arranged plans of reorganization that voted before versus after bankruptcy. For firms that intended to sell their assets but did not have a buyer in place, I distinguish between those that received a sale proposal prior to bankruptcy and those that did not. These sub-categories provide deeper

[1] See Sontchi (2012).

[2] More detail about this declaration is provided in Section 2.

insights into the extent to which firms were prepared at the time of filing and, in certain cases, firms' motivations for entering bankruptcy.

Unfortunately, it is difficult to tell whether first-day declarations accurately depict motivations for the fifth category, or the "regular" reorganizations. In order to delve further into why these firms filed for bankruptcy without pre-arranged plans in place, I limit the sample to firms that intended on reorganizing (roughly two thirds of the sample) and regress an indicator variable for pre-arranged status on cross-sectional features of each firm at the time of filing. I show that firms that were hit by an external shock or firms that were more complex were significantly less likely to file pre-arranged plans. Other characteristics such as hedge fund involvement and repeat filing also correlate strongly with the pre-arrangement of reorganization plans.

Finally, I present summary statistics on emergence and liquidation. For firms that intended on selling their assets, there is a distinct correlation between pre-bankruptcy marketing outcomes and bankruptcy sale outcomes. 99.5% of the corporations with pre-arranged plans of reorganization emerged from bankruptcy. Of the firms in the "regular" reorganization category, only 15% ended up liquidating. In this group, belonging to the retail industry is by far the clearest indicator of liquidation.

This paper makes several contributions to the literature. While descriptive, it is the first to systematically categorize Chapter 11 objectives at the beginning of each case. Conditioning on objectives is important because evaluating Chapter 11 based solely on outcomes will overstate failure rates and be subject to reverse causality bias. It also provides support, using data across courts and time, for normative frameworks of bankruptcy. Finally, this paper makes a methodological contribution. I use a combination of heuristic and machine learning techniques to extract data from a corpus of bankruptcy documents that provide a detailed window into the events that take place prior to filing.

Related Literature: There is a deep legal literature on historical paradigms of U.S. bankruptcy. The most recent paradigm, beginning in the late 1990s, has generally been characterized by creditor control, sophisticated participants, market tests, and bankruptcy sales. Baird and Rasmussen (2002) argue that the traditional role of bankruptcy, in which multiple stakeholders engage in structured negotiations overseen by a judge, has been almost completely replaced by pre-arranged deals. They support this claim empirically in Baird and Rasmussen (2003), finding that in a sample of 93 large bankruptcy cases filed in 2002, 84% were either pre-packaged plans or resulted in acquisition.[3] Roe (2017) describes

[3]While I find in my sample that the corresponding fraction is only 59%, their study relies on data from the UCLA-LoPucki database, which covers larger firms.

the current bankruptcy regime as the "market-sale" era, in which sales of entire firms are not only feasible but customary, and judges trust the speed and efficiency of markets relative to insiders and existing creditors. Skeel and Triantis (2017) argue that contracting has become a common feature of distress and bankruptcy, owing in part to increased creditor control as well as the rise of experienced distressed debt professionals.[4]

While this paper focuses on firms that underwent bankruptcy, it is related to the literature on private work-outs. Gilson et al. (1990) show that, conditional on distress, roughly half of firms restructure privately and that these work-outs are associated with firms that have simpler capital structures and more intangible assets. Chatterjee et al. (1996) explore the choice between full Chapter 11 bankruptcies, prepackaged plans, private work-outs, and public work-outs. Chu et al. (2019) find that when investment funds hold both debt and equity, firms are more likely to restructure privately.

This paper demonstrates that Chapter 11 is more than just a mechanism for reorganization, and that it is frequently used as an environment that facilitates M&A. There are several existing studies on the rise of asset sales in Chapter 11. Hotchkiss and Mooradian (1998) focus on a sample of 55 Chapter 11 acquisitions and find that they lead to improved operating performance. Gilson et al. (2019) explore the dynamics and efficiency considerations of M&A in bankruptcy, showing that bankruptcy sales are similar to reorganizations in terms of economic efficiency. Meier and Servaes (2014) also study asset sales in bankruptcy, but do so from the perspective of value creation for acquirers.[5]

One of the insights of this paper is that the net impact of bankruptcy on the firm's cash flows may be positive, even if distress overall is costly. Using relatively small samples of mostly public firms, Weiss (1990), Betker (1995), and Tashjian et al. (1996) find that costs are between 5% and 10%. Using a more comprehensive sample, Bris et al. (2006) find that bankruptcy costs are between 0% and 20% of firm assets.[6]

Finally, this paper has important implications for the procedural efficiency of Chapter 11. I provide descriptive evidence in line with an existing literature that shows that distressed debt professionals improve the restructuring process.[7] This evidence also suggests that studies of judicial bias in corporate bankruptcy should be conditioned carefully on the scope of the judge's influence over the case.[8]

[4]Ellias and Stark (2018) have identified a potential shift towards a new paradigm. There has been a rise in combativeness between parties both before and during bankruptcy, which may be an early sign that the system is moving back toward a deal-facilitating regime.

[5]The rise of asset sales is linked to the rise of creditor control, on which there exists a deep legal literature. See Skeel (2003), Ayotte and Morrison (2009), and Westbrook (2015).

[6]Studies that have focused specifically on legal costs have obviously obtained lower estimates, from 1.4% of assets (LoPucki and Doherty, 2004) to 1.8% to 5% of assets (Lubben, 2000).

[7]See Hotchkiss and Mooradian (1997), Jiang et al. (2012), Hotchkiss et al. (2014), and Ellias (2016).

[8]A number of papers rely on judge bias as an identification mechanism. See, Chang and Schoar (2013),

The rest of the paper is organized as follows. Section 2 describes the sample refinement process and data sources. Section 3 presents the bankruptcy typology and describes each category and sub-category. Section 4 explores the characteristics associated with pre-arranged reorganizations and Section 5 explores the characteristics associated with liquidations. Section 6 discusses the broad implications of the results. Section 7 concludes.

2 Data

This section describes the sample selection process, the quasi-automated techniques used to extract data from court records, the methods used to identify bankruptcy outcomes, and variables collected from other sources.

2.1 Sample

The sample of bankruptcies in this paper covers all non-financial Chapter 11 firms with over $100 million in assets that filed between 2004 and 2017 (inclusive) in U.S. non-territorial courts. To begin, I retrieve the list of all Chapter 11 filings with over $100 million in assets in the sample period from the New Generation Research bankruptcydata.com database (NGR). NGR provides information on the firm name, the bankruptcy court of filing, the year of filing, and a 5-digit number that is unique within each court-year. This search yields 2,549 individual cases. However, despite being large, many of these cases represent subsidiaries that are administered jointly under one lead or parent case. In order to identify subsidiaries, I first identify candidates by selecting cases that were filed on the same day in the same court. For these cases, I then check three sources of information from the Public Access to Court Electronic Records (PACER) repository to identify the lead case: the associated cases page, docket entries that reference joint administration, and the full text of joint administration orders.[9] After consolidating cases at the lead level, 970 bankruptcies remain.

In the next round of filtering, I remove 76 cases that differ substantially from the representative Chapter 11 case. The removals include the following: twenty-one (21) foreign business entities, thirteen (13) cases that were immediately dismissed for having been filed in bad faith or for not meeting basic filing requirements, thirteen (13) cases that were truncated because they were transferred into or out of different courts, eleven (11) cases with assets less than $100 million, six (6) early cases without documents on PACER, five (5) churches

Iverson (2017), and Bernstein et al. (2018).

[9]The docket is a description of all documents filed in a case, as well as major court actions such as hearings or adversary case filings.

or non-profits, five (5) firms that filed for the sole purpose of administering asbestos claims, and two (2) cases that had not reached a disposition as of September 30th, 2019.[10]

Then, I remove 117 firms in the financial or real estate industries. Firms in the financial industry are excluded because these are predominantly banks or insurance companies, and these cases often involve significant oversight by regulators such as the FDIC or the NAIC. For real estate cases, it is not clear that there is a meaningful economic difference between restructuring, acquisition, and liquidation (or foreclosure).

Finally, I remove five (5) involuntary Chapter 11 cases. It is harder to discern objectives in these cases because managers did not file first-day declarations at the beginning of each case, as discussed below. A close look at other case documents reveals that, in all five cases, the involuntary petition was filed because of an inter-creditor dispute. In particular, one class of creditors commenced the bankruptcy as a check on the power of another class of creditors. Noteholders are involved in four out of the five cases. All involuntary cases end up reorganized or sold as a going concern. However, since these cases are distinct from the rest and represent such a small fraction of the sample, I exclude them. This process yields a final sample of 772 cases.

2.2 First-Day Declarations

Some bankruptcy districts have implemented local rules that require debtors to submit, along with the first-day motions, an affidavit or declaration (henceforth referred to as the first-day declaration) describing the key elements of the case, including a description of the debtor's business, the events that led to the filing of the case, and information about the debtor's continued business operations.[11] First-day declarations are usually written by the CEO, CFO, or Chief Restructuring Office of the firm. Even in courts where no such rule is formalized, it is often the convention that such declarations are filed. To identify these documents, I automatically search all docket entries for the terms "first", "in support", and either "affidavit" or "declaration".[12] In courts where I was able to identify a local rule concerning first-day declarations, I also search for the local rule number. I then verify the accuracy of these docket entries manually. For firms without first-day declarations, it is still overwhelmingly the case that similar information is provided in the text of one of the first-day motions. I manually identify and review the text of all first-day motions in these cases,

[10]Although several firms report that their total assets may be less than $100 million because they are hard to value, I remove only the cases with clearly less than $100 million in assets that were included in the NGR sample because they appeared to have reported their asset bin erroneously.

[11]See, for example, Local Rule 1007-2 in the Southern District of New York.

[12]A popular naming convention for this type of document is "Declaration of *Name* in Support of the Debtor's Chapter 11 Petition and First Day Motions."

selecting the document that provides the most background information about the case.

Equipped with first-day declarations, I then identify the debtor's objectives for the bankruptcy using a combination of automated and manual methods. After reading a random sample of twenty first-day declarations, I identified anchor terms that are associated with stated outcomes.[13] I then use an automated procedure to extract three lines of text inclusive of and immediately before and after the matched term, and manually identify and classify the most representative intent snippet from the candidates selected in the automated step. The three classes of intent are restructuring, acquisition, or liquidation. Consider, for example, the following excerpts:

> (1) "`The company is confident that a court-guided reorganization will give Citation the breathing room it needs to improve cash flow and emerge as a profitable company.`" *Citation Corporation (2004)*
>
> (2) "`Fleetwood intends to focus on maximizing the value of its business through potential sales as a going concern.`" *Fleetwood Enterprises (2009)*
>
> (3) "`The Debtors commenced these Chapter 11 cases to promptly and efficiently liquidate their assets.`" *Goody's, LLC (2009)*

For the above excerpts, (1) is classified as an intended restructuring, (2) as an intended acquisition, and (3) as an intended liquidation. In cases for which no snippets were identified in the automated step, I manually searched the entire first-day declaration for excerpts signaling intent. I was able to identify intended outcomes and corresponding text snippets in all cases.

I also use first-day declarations to characterize the restructuring efforts and negotiations that took place prior to the filing of each bankruptcy.[14] First-day declarations are typically organized into three sections: an introduction, an overview of the firm's background, and a description of all court motions filed on the first day of the case. Within the background section, the document usually contains information about the firm's operations, its capital structure, financial and non-financial restructuring attempts, and the events that triggered the bankruptcy filing.

I Identify all variables using anchor terms.[15] In some instances, it is appropriate to search the entire first-day declaration for an anchor phrase in order to populate a variable.

[13] These terms are "objective", "emerge", "ultimate", "potential buyer", "potential bid", "363 sale", "stalking horse", "substantially", "wind down", and "orderly liquidation". I also search for instances of the word "success" within two lines of the word stems "restructur" or "reorg" as well instances of the phrase "balance sheet" within two lines of the word stems "restructur" or "reorg".

[14] High-level summaries, extracted from first-day declarations, are provided in the Online Appendix.

[15] Data on these anchor phrases are available in the Online Appendix.

For example, a case is considered to have involved a restructuring support agreement if the phrase "restructuring support agreement" was present anywhere in the first-day declaration. In other cases, it is necessary to limit the search to a particular section. For example, "trade terms" may indicate that unfavorable trade terms were a cause of the bankruptcy if this phrase appears in a paragraph describing bankruptcy triggers whereas the term may also appear in the description of a first-day motion requesting the designation of certain vendors as critical, in which case a phrase match would not indicate cause. In order to search for certain anchor terms, I require a corpus of first-day declaration sections that are classified by type. I classify paragraphs within the declaration using the six steps described in the Online Appendix.

While classified paragraphs might provide the appropriate corpus over which to search for pre-bankruptcy planning and negotiation terms, the next step involves identifying those terms. Having reviewed at this point a significant volume of declaration paragraphs, I heuristically identify four relevant categories of data: plan sophistication, pre-bankruptcy financial restructuring efforts, pre-bankruptcy non-financial restructuring efforts, and bankruptcy causes. I further divide these into sub-categories. Plan sophistication consists of prepackaged plans (for which I already have data) and restructuring support agreements. Pre-bankruptcy financial restructuring consists of credit agreement amendments and forbearance agreements. Pre-bankruptcy non-financial restructuring consists of store closures, layoffs, and attempts to sell all or part of the firm. Causes are broken down into four categories (economic, financial, competition, and cost).

To select anchor terms for each variable, I then review an additional 2,000 classified paragraphs. For example, an anchor term that indicates that a firm listed an overall economic downturn as one if its causes of filing is the presence of the phrase "global recession" in a cause paragraph. All variables collected using this procedure are indicator variables that equal one if an anchor term is matched at least once for a given firm in to its respective variable, and zero otherwise. One problem with the classified paragraphs, however, is that while a single paragraph may contain more than one true class, the Naive Bayes procedure only assigns one class to each paragraph. There is significant overlap between capital structure, negotiation, and cause paragraphs, as indicated by the fact that the highest pair-wise correlation between classification categories exists between these three. Therefore, I select for certain terms to be searched for in the full first-day declaration while other terms are only searched within these three paragraphs. The full set of anchor terms, variables, and search criteria are available in the Online Appendix.

Finally, first-day declarations are also used to identify the presence of hedge fund activists *at the outset of the case.* I obtained a list of distress fund names by combining the lists

provided by Capital IQ and the Distressed Debt Investing website http://www.distressed-debt-investing.com. Because financial institution names usually come in multiple variations (e.g. Oak Hill Capital Partners and Oak Hill Investment Management LP), I trim names to 10 characters. After randomly reviewing name matches within paragraphs, I manually lengthen distress fund names that are not sufficiently informative (e.g. Summit) to minimize type I errors. I also exclude the names of firms that manage large pensions such as Fidelity and Blackrock because they are frequently mentioned in first-day motions that describe retirement contracts. The measure of hedge fund presence is an indicator variable that equals one if there is at least one distress fund name match in a first-day declaration. Because distress funds sometimes use tactics to remain anonymous, I add to this measure any additional firms that mentioned "ad hoc" groups in their first-day declarations.[16] Anecdotally, these groups and committees typically consist of hedge funds, which is verifiable in cases that submit Chapter 11 plans that must contain a list of group members in the definitions section.

2.3 Other Variables

I also collect data on outcomes from the UCLA-LoPucki Bankruptcy Research Database (BRD) and NGR, although neither cover the complete set of non-financial cases with over $100 million in assets. For cases not covered by BRD or NGR, I count the outcome that I identified as the final outcome. For cases with data from at least two sources, if all available sources were in agreement on the outcome, I count that outcome as the final outcome. If all available sources were not in agreement, I use broad-based web searches to verify the final outcome.

To identify firms that have filed for bankruptcy at least once before (indicated as Ch. 22 in the tables), I start with the names provided by NGR. NGR uses a naming convention that indicates a repeat filer by including the year of the bankruptcy in parentheses after its name. For example, the name of KB Toys in its first bankruptcy filing is "KB Toys, Inc. (2004)" while its name in its second bankruptcy filing is "KB Toys, Inc. (2008)". NGR does not indicate, however, the sequence of filings. In order to verify that a firm has filed for bankruptcy previously as of its petition date (and not that it will file again in the future), I manually check each of the candidate repeat filers using NGR name queries and broad-based web searches.

Finally, data on judges, employees, and leverage are collected from NGR. Although data on assets and liabilities are non-missing for nearly the whole sample, liabilities are frequently

[16] I ran a text search for the term "ad hoc" combined with any of the following: "committee", "noteholder", "prepetition", "group", "second lien", and "third lien".

reported as 0 and assets frequently reported as one dollar over the minimum threshold of the asset size bin that was selected on the firm's bankruptcy petition. To overcome this issue, I create flags that indicate when assets and liabilities are most likely reported incorrectly. For these cases, I hand-collect data from disclosure statements and schedules of assets and liabilities. Because data from disclosure statements and schedules often omit or double count liabilities, the leverage variable is winsorized at the 2% level. Summary statistics for assets, employees, and leverage for each of the five main categories are provided in Table 1.

3 A Typology of Bankruptcy

This section presents the empirical typology of cases. Cases are classified based on intended outcomes and the extent of preparation at the time of filing. There are three possible intended outcomes: reorganization, sale as a going concern, and liquidation. In terms of preparation, cases with clear paths towards achieving their intended outcomes are considered pre-arranged while those without clear paths are considered regular bankruptcies.[17] Because there is little uncertainty about the path toward liquidation, all intended liquidations are considered pre-arranged. This yields five categories: intended reorganizations (pre-arranged), intended reorganizations (regular), intended going-concern sales (pre-arranged), intended going-concern sales (regular), and intended liquidations.

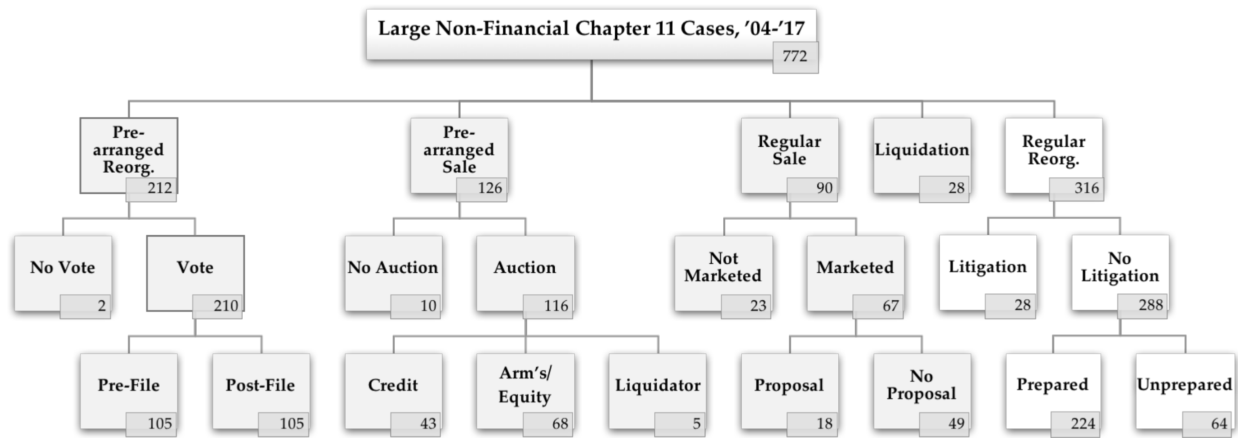

Figure 1: Typology

There is a subtle but important distinction between cases with outcomes that have been pre-arranged and cases that have been pre-negotiated. All pre-arranged cases are considered

[17]There are now several different terms that are used to describe bankruptcies without definite plans in place at the outset, including 'traditional' and 'free-fall'. I use the term 'regular' because bankruptcy is regularly thought of as a process that is uncertain and time-intensive.

pre-negotiated. But could it be that a case without a pre-arranged outcome was nonetheless pre-negotiated? I argue yes, and I show in Section 3.3 that most regular sales involved attempts at going-concern sales prior to bankruptcy, indicating that the fact that these sales were not pre-arranged is more likely a symptom of asset quality or the state of M&A markets rather the absence of consensus in negotiations among claimants. Thus, regular reorganizations are the only cases that are not considered pre-*negotiated*.

For the remainder of this section, I first present the pre-negotiated categories and then present regular reorganizations, which are the most complex. Each category has distinct sub-categories based on relevant characteristics. Table 1 shows summary statistics for the five major categories.

Table 1: Summary Statistics

	# Cases	% of Sample		Median Value		
Group		Cases	Assets	Assets	Employees	Leverage
Pre Reorg.	212	27	19	$454 M	1,445	1.10
Pre Sale	126	16	17	$258 M	1,184	1.04
Reg. Sale	90	12	4	$241 M	1,087	1.02
Liquidation	28	4	1	$204 M	929	1.01
Reg. Reorg.	316	41	59	$462 M	1,770	0.98
Total Value	772	100%	100%	1.07 T	3.74 M	-

3.1 Pre-arranged Reorganizations

A case is considered a pre-arranged reorganization if the debtor (a) indicated at the outset of the case that it intended to restructure through a reorganizing plan and (b) filed its first plan within 30 days of the original bankruptcy petition.[18] Within this category, there are two main sub-categories: firms that solicited plan votes prior to the bankruptcy petition and firms that solicited votes post-petition.

The split between these two sub-categories is exactly even. 105 firms began or completed the vote solicitation process prior to bankruptcy and 105 firms commenced voting after bankruptcy.[19] In two cases, the capital structure was simple enough that the debtor was

[18]While this might seem long relative to what would be considered a standard filing cut-off for a pre-arranged bankruptcy, the median plan for firms in this category was filed on second day of the case.

[19]There is a hybrid of these sub-categories, often known as a "partial pre-packaged plan", in which voting for certain classes takes place before bankruptcy and voting for other classes is completed after bankruptcy. Pre-bankruptcy votes typically must comply with securities registration rules, whereas securities issued as part of a bankruptcy plan are exempt. In this case, some debtors choose to solicit votes for classes that do not receive new securities prior to bankruptcy and solicit votes for classes that do receive new securities after

able to obtain confirmation without a formal vote, i.e. each impaired party was able to individually signal its support for the plan.

One might expect that a major factor in determining the timing of voting would be the possibility of opportunistic post-bankruptcy hold-up. That is, parties that reached an agreement through negotiations prior to bankruptcy might then be able to extract rents by deviating from the agreement once bankruptcy has been filed. As a result of this friction, "renegotiation-proof" contracts known as Restructuring Support Agreements (RSAs) have arisen to protect the debtor from this outcome. These contracts commit participating parties to supporting and voting for the plan once bankruptcy procedures have commenced. RSAs are present in 83% of cases pre-arranged cases that involve post-bankruptcy voting.

One of the key risks that debtors face when waiting to vote is that the bankruptcy court must approve the disclosure statement in addition to the plan, which usually involves a heightened level of scrutiny over the disclosure statement. When it comes to these approvals, there is significant uniformity across firms that sought vote solicitations prior to bankruptcy. In all cases, disclosure statements were approved on the same day as plan confirmations, and it took on average 46 days to reach confirmation. Disclosure statement (and plan) confirmations took longer than three months in only four cases. For cases that involved post-bankruptcy vote solicitations, however, there is significantly more variation in the amount of time it took to approve disclosure statements. It took on average 96 days to reach disclosure statement confirmation, and the process took longer than three months in 28 cases.

Given that firms with pre-arranged reorganizations enter bankruptcy having completed negotiations and with a plan in place, why would they even bother filing? Bankruptcy, after all, is often associated with deadweight costs such as court and professional fees. There are three main reasons a large corporation would file for bankruptcy even if it has finished negotiating with its claimants: a) voting benefits, b) direct financial benefits, and c) reduced litigation risk. Taking these into consideration, there are circumstances under which the traditional deadweight cost of bankruptcy is *negative*.

The simplest explanation for a pre-arranged reorganization is that it allows the debtor to cure hold-outs. Private work-outs are constrained by the Trust Indenture Act of 1939 (TIA), which requires that any changes to payment terms of publicly-held bonds must obtain unanimous consent from all holders. Bankruptcy voting rules, on the other hand, only require consent from one half of holders by number and two thirds of holders by amount, within class.[20] Thus, a firm with public debt whose only obstacle to restructuring is a minority of

bankruptcy. See below for further discussion.

[20]Classes of claimants are defined by the debtor within the disclosure statement, but there is substantial uniformity of class definitions across Chapter 11 cases.

hold-out bondholders can easily bypass the TIA by soliciting votes for a restructuring plan prior to bankruptcy and then aiming to file a Chapter 11 petition and obtain confirmation within several weeks.

There are a number of direct financial benefits afforded by the Code, however, some of which are not available to firms that solicit pre-bankruptcy votes. §1145 exempts debtors from having to comply with costly securities registration. It is common for firms to convert a portion of their debt to newly-issued equity, for example, but firms hoping to engage in such a conversion would typically have to comply with standard securities registration rules if they solicit votes for those converted classes of debt prior to bankruptcy. The right to assume or reject contracts in bankruptcy can be valuable, especially to firms with a significant burden of unfavorable leases.[21] In addition, contractual damages owed to lessors for rejected contracts are capped by the Code. There are also direct financial benefits of bankruptcy that are available regardless of when votes are solicited. There are tax benefits for firms discharging debt, since the discharged amount does not need to be treated as income for tax purposes if written off in bankruptcy. Whereas net operating losses carryovers are typically limited when corporations change ownership or control, a firm is exempt from this limitation if the change takes place in bankruptcy.

Finally, bankruptcy provides emerging claim holders with protections against future litigation, particularly allegations of fraudulent transfer. This safe harbor is codified in §1125(e) of the Code. Claimants who voted outside of bankruptcy are typically not protected by §1125(e), however.

Conditional on having negotiated a plan of reorganization prior to filing, the choice of voting before or after bankruptcy therefore reveals differences in the frictions faced by each debtor. A firm with a stubborn group of minority bondholders will most likely solicit votes prior to bankruptcy if it is not issuing new securities as part of the plan and it does not need to amend many of its contracts. In this case, the risk of delay associated with disclosure statement approval outweighs the risk of post-bankruptcy litigation. A firm that either plans to convert a number of claims into new securities or wishes to reject a significant number of its existing contracts is more likely to wait until after bankruptcy to vote. For some firms, the direct financial benefits of bankruptcy may be so great that they choose to file even in the presence of unanimous claimholder support for a plan.

[21] Although firms that solicit votes prior to bankruptcy can also assume or reject contracts upon filing, they may face problems with non-bankruptcy solicitation rules if they seek to make significant contractual modifications.

3.2 Pre-arranged Sales

In order to qualify as a pre-arranged sale, a firm must enter into bankruptcy with an asset purchase agreement (APA) in place that is binding subject to court approval. These agreements must apply to sales of all or nearly all of the firm's core assets, either as a whole or in several units, at least one of which preserves going-concern value. The vast majority of APAs upon entry into bankruptcy are with stalking horse purchasers. A stalking horse is a potential acquirer that makes an early, public bid that acts as the reserve price for a debtor's assets prior to an auction. In exchange for publicizing its bid, the stalking horse usually benefits from bid protections such as negotiation expense reimbursements and fees that must be paid to the stalking horse in the event that it is outbid by another party.[22] All stalking horse bids involve APAs but not all APAs are associated with stalking horses because a debtor might opt for a private sale, i.e. a sale without an auction, or a sale implemented through a Chapter 11 plan. Pre-arranged private sales are relatively rare, however, since they must meet stringent conditions that ensure that the sales do not benefit insiders and are proposed in good faith. Of the 126 pre-arranged sales in the sample, only 10 were intended to be private or plan sales.[23] The remainder were filed with the objective of engaging in an auction under §363 of the Code.

Of the debtors that intended to proceed to auction, the key distinction among them involves the use of credit in the bidding process. In bankruptcy, a creditor is usually allowed to make a bid for the firm's assets using its outstanding claim as the bid itself. Often, however, a credit will be supplemented by cash. Most credit bids are issued by senior lenders, i.e. DIP or first-lien lenders.[24] Logistical considerations aside, there are circumstances under which a credit bid is identical to a plan that issues that creditor 100% of the equity in the restructured firm.[25] 37% of the pre-arranged sample, excluding non-auction sales, involve stalking horse credit bids. The remainder of the stalking horses are typically arms'-length financial or strategic buyers, although stalking horses may also be equity holders, non-debtor affiliates, and liquidators.[26] See Gilson et al. for more detail on Chapter 11 sales.

Why would a firm file for bankruptcy if it has already found a buyer? As is the case

[22]This "break-up" fee, when approved by the court, is usually between 3 and 3.5%.

[23]Two of the proposed private sales were to business affiliates or franchisors. Three pre-arranged sales were implemented through plans.

[24]Even if a firm files for bankruptcy with a buyer in place, it usually requires an infusion of liquidity or at least a letter of credit so that it can continue operating either while the sale process is underway or if the sale is delayed by an event that terminates the initial APA.

[25]Indeed, some APAs with credit bidders contain clauses that give creditors the option to exercise the change of control under a Chapter 11 plan rather than a §363 sale.

[26]In five cases, the stalking horse syndicate was made up partially or entirely of professional liquidators. However, in all cases, the debtor expressed in its first-day declaration its desire to attract a going-concern buyer for its assets.

with pre-arranged reorganizations, there are benefits to selling assets inside bankruptcy. The primary advantage of a §363 sale is that it allows the assets to be sold "free and clear of all liens, claims, interests, and encumbrances". That is, bankruptcy allows the purchaser to shed excessive debt, judicial claims, and past-due expenses, and continue operations with a clean slate.[27] Similar to the pre-arranged reorganization, a pre-arranged sale may also benefit from Code provisions that shield the debtor from future litigation, including attacks on enforceability and fraudulent transfers, and allow the debtor to assume or reject contracts. In addition, there are secondary advantages to bankruptcy sales such as the ability to dodge state laws governing M&A and, in some cases, receive expedited review from anti-trust authorities.

Baird (1986) argues that under a wide range of circumstances that are particularly relevant to large, public corporations, a sale of the firm's assets conducted by the firm's residual claimants is the most efficient form of insolvency resolution. The pre-arranged sale is the closest approximation to his ideal. It would be hard to argue that these are fire sales, since each case (excluding non-auction sales) involved a pre-marketing process that yielded an asset purchase agreement, a pre-auction solicitation of qualified bids, and in the case of multiple bidders, the auction itself. The bankruptcy auction, through credit bidding as well as the bid procedure approval process, which allows parties to object, allows residual claimants to share control over the sale. In some cases, the impetus for the bankruptcy sale may be driven by an inefficient allocation of control rights outside of bankruptcy or information frictions that can be partially mitigated by a credit bid. In approximately half of these cases, however, the direct financial benefits of the bankruptcy sale process seem to be significant enough to bring about a bankruptcy filing on their own.[28]

3.3 Regular Sales

A firm is classified as a regular sale if its primary objective was to sell the firm's assets as a going concern, or at least preserve certain assets through a going-concern sale, but it entered bankruptcy without an APA in place. 90 cases, or 12% of the total sample, fall into this category.

As mentioned in the beginning of this section, it is not immediately clear whether regular sales should be considered the outcome of pre-negotiated arrangements among bankruptcy parties. One explanation for the regular sales category might be that these debtors would

[27]Of course, the "free and clear" clause is associated with a number of contingencies that have faced their own challenges. See Jones Day Insights, 2011.

[28]Approximately 66 stalking horses appear to be arms'-length financial or strategic purchasers. These figures are likely inflated, however, because existing claimants sometimes form purchasing entities and their identities are not disclosed in first-day declarations.

have preferred to enter into bankruptcy with an asset purchase agreement in place but were unable to close a deal. If this is true, then the implicit pre-negotiated path through bankruptcy would involve an attempt at an auction followed by either a consummation of the winning bid if the auction was successful or a liquidation if no qualified going-concern bids were received. On the other hand, it is possible that managers were offering up "cheap talk" in their first-day declarations in order to appease secured lenders, while at the same time hoping that the automatic stay would last long enough for operating performance to improve so that they could regain bargaining power.

Evidence suggests that the vast majority of regular sales were in fact pre-negotiated. The clearest proof of this assertion is that in 67 cases, or three quarters of the category, managers attempted to market and sell the firm's assets prior to bankruptcy. While most of these sale processes yielded insufficient interest, 18 debtors did receive acquisition proposals prior to filing. These proposals either did not develop into full asset purchase agreements, or the drafted asset purchase agreements fell through prior to filing. These statistics suggest that most regular sales are pre-arranged sales that failed to secure formal buyers. To further support the pre-negotiation hypothesis, 77% of debtors in the regular sale category filed sale procedure motions within the first 30 days of the case.[29] Only 7 cases involved neither a pre-bankruptcy sale attempt nor a sale procedure motion within the first 30 days.

A regular sale can therefore be considered a hybrid between a pre-arranged sale and a liquidation. Though the outcome (going-concern acquisition or piece-meal liquidation) is uncertain at the beginning of the case, the path through bankruptcy is clear: the debtors will make an attempt at a going-concern sale through a competitive auction and, if no buyer emerges, they will liquidate. In filing for bankruptcy, these firms reveal similar frictions as the cases in the pre-arranged sale category. There may be information asymmetries preventing buyers from entering the market or misallocations of control over the sale process outside of bankruptcy. It is also likely, however, that the many debtors were attracted to the financial benefits of engaging in M&A during bankruptcy.

3.4 Liquidations

The 28 cases that were direct Chapter 11 liquidations account for only a small fraction of the sample, and even less when weighted by assets.[30] Still, they draw attention because they run contrary to the spirit of Chapter 11, which provides the debtor an opportunity for

[29]The median duration until the first sale procedure motion is 9 days in the regular sale category.

[30]I exclude the 10 corporate Chapter 7 cases involving over $100 million in assets from the sample because first-day declarations are not systematically available. It is clear, however, that the preferred method for liquidating is in Chapter 11.

rehabilitation. The rationale for a liquidation in Chapter 11 rather than Chapter 7, however, is straightforward: Chapter 11 allows creditors or managers to retain control during the sale process while Chapter 7 assigns a trustee to oversee the liquidation. The liquidation of a large corporation may require firm-specific know-how, and this know-how may rest in the hands of managers who have overseen prior store liquidations or professional large-scale liquidators such as Gordon Brothers and Hilco Merchant Resources. If a skilled liquidator can provide controlling parties with recovery rates net of fees that are higher than the rates they would expect to receive in Chapter 7, the debtor will opt to liquidate in Chapter 11.

Nearly all direct Chapter 11 liquidations mention, in their first-day declarations, either the lack of viable options to improve liquidity or the inability to locate a going-concern buyer. In a couple cases, the debtor was unable to negotiate with a powerful counterparty, such as the Department of Education or a primary lessor. In most cases that identify a controlling party, however, that party is usually a lender. In a third of direct liquidating cases, the debtor or the debtor's parent had filed for bankruptcy at least once before. In the other categories, only 9% of cases involved a prior bankruptcy.

3.5 Regular Reorganizations

The regular reorganization category encompasses all debtors that express the desire to restructure or reorganize in the first-day declaration but enter bankruptcy without a concrete plan in place. It is also the only category that represents firms that did not reach a substantive conclusion in negotiations prior to bankruptcy. While this category represents a minority of cases by number (41%), it represents a majority of cases by assets (59%).

Up until this point, the main purpose of each sub-category was to reveal insights about each debtor's reason for filing for bankruptcy. The fact that those cases were pre-negotiated, however, made it relatively straightforward to decipher these reasons. Once a case is on a deterministic path through bankruptcy, there is no motivation to conceal details about how that path was decided or what the path will look like. For cases that were not pre-negotiated, however, there may be certain debtors that strategically file for bankruptcy in the hopes of expropriating wealth from other claimholders. These firms have an incentive to conceal their true motivations, thus giving rise to a potential pooling equilibrium among disclosures in first-day affidavits.

Rather than attempting to identify motive, therefore, I simply categorize regular reorganization cases based on the extent to which they have prepared for bankruptcy. First, however, I set aside 23 cases that involved fraud or significant litigation throughout the bankruptcy. Most of these cases were under investigation for violating securities laws or

faced a significant number of class action lawsuits stemming from product defects and personal injury.[31] Of the remaining 293 firms, I label debtors as either prepared or unprepared. A prepared case is one that a) engaged a financial or restructuring professional to assist in exploring strategic alternatives to bankruptcy, b) attempted to market or sell assets prior to bankruptcy, or c) received confirmation of DIP financing within 30 days of filing.[32] Excluding fraud and major litigation cases, 229 were prepared while 64 were unprepared.

Is this really an accurate measure of the extent to which these debtors are prepared for bankruptcy at filing? There are several clear differences between prepared and unprepared cases. The median number of characters in the first-day declarations of prepared cases is 138 thousand, whereas the median number of characters in the first-day declarations of unprepared cases is 60 thousand. Of course, there might be a mechanical relationship between these figures if shorter declarations reveal less information, and descriptions of pre-bankruptcy financial advisors are omitted. Turning to a different measure, the median number of first-day motions filed by prepared debtors is 16 while the median number filed by unprepared debtors is 11.[33] Some motions are more important than others, however. I define an *important* first-day motion as any of the following: assume or reject contracts, set deadlines, maintain bank accounts, use cash, pay critical vendors, honor customer obligations, pay employees, maintain insurance, pay taxes, retain professionals, and maintain utilities. The median number of important motions filed within the first week is 8 for prepared firms and 6 for unprepared firms. Finally, this distinction may reflect size. The median prepared firm had assets of approximately $503 million while the median unprepared firm had assets of only $297 million. In sum, the preparation variable appears to be correlated with lengths of initial disclosures and the number of first-day motions filed, but these may be partially driven by constraints within medium-sized firms.

It appears that a significant majority, 78% of regular reorganizations, were prepared at the time of bankruptcy. The remainder entered bankruptcy at least slightly less prepared. It is still not clear why none of the firms in this category were able to reach a deal in negotiations prior to filing, however. The next section explores the difference between firms that file pre-arranged plans of reorganization versus those that undergo the regular structured bargaining process during bankruptcy.

[31]While non-operational asbestos trusts do not show up in the sample, there are still several operational firms in the sample that faced significant asbestos-related litigation at the time of filing.

[32]DIP financing is usually approved in a two-step process: an interim order and a final order. I count interim orders as confirmations because the objective is to measure preparedness, not the actual receipt of DIP funds.

[33]A first-day motion is defined liberally as any motion filed by the debtor within the first week of the case.

4 Pre-arranged versus Regular Reorganizations

Between 2004 and 2017, 316 large non-financial corporations filed for voluntary Chapter 11 bankruptcy hoping to restructure but without a concrete plan in place. Why were these particular firms unable to arrive at a plan, while so many others completed negotiations prior to filing?

There are two main explanations for the absence of completed negotiations: strategic unwillingness to negotiate and a true inability to arrive at consensus. The latter explanation can itself stem from several reasons. In this section, I define and quantify three categories of barriers to negotiation. These include external shocks, financial complexity, and operational complexity. There is a fourth category, poor management, that is difficult to quantify. Certain variables may indirectly proxy for poor management, or may reflect poor management ex-post. To some extent, however, poor management can also be considered a sign of strategic unwillingness to negotiate, if managers use the debtor-in-possession provisions of the Code to hold onto jobs they do not deserve. In this case, managers are essentially exploiting control to extract rents by maintaining control.

Table 2 explores the characteristics that give rise to a pre-arranged reorganization relative to a regular reorganization. Because of fundamental differences between debtors wishing to reorganize rather than sell assets, I focus only on the reorganization categories, which encompass 528 firms. I organize explanatory variables first into the three main categories of motivations for filing, followed by size measures, other important firm characteristics, and industry indicators. The dependent variable takes a value of 1 if the bankruptcy was pre-arranged and 0 if it was a regular reorganization. I run a simple ordinary least squares regression, which is the linear probability model in the case of a binary dependent variable. I include indicators for the periods from 2008 through 2010, 2011 through 2014, and 2015 through 2017 (the first period, from 2004 to 2007, is the baseline period). Standard errors are clustered by court group.[34]

[34]There is a separate court group for each court that presided over at least 10 bankruptcies in the sample, and one general group for all others. The courts with their own groups are Delaware, New York Southern, New Jersey, Texas Northern, Texas Southern, Virginia Eastern, Georgia Northern, and Illinois Northern.

Table 2: Characteristics of Pre-arranged Bankruptcies

	Dep. Variable = Pre-arranged	
	Coefficient	Std. Err.
External Shock		
Industry Shock	-0.165**	(0.0598)
Trade Creditor Run	-0.0870	(0.0594)
Force Majeure	-0.0663*	(0.0325)
Financial Complexity		
Public Equity	-0.0358**	(0.0145)
Bond Issues	-0.00869	(0.00943)
Operational Complexity		
Store/Unit Closure	-0.0788***	(0.0216)
Layoffs	-0.0253	(0.0721)
ln(Foreign Mentions)	-0.0192*	(0.00881)
Size		
ln(Assets)	-0.0385	(0.0295)
ln(Sales)	0.0133***	(0.00280)
ln(Employees)	0.0191*	(0.00963)
Other Characteristics		
Hedge Fund	0.200***	0.0494
Forbearance	0.156*	(0.0693)
Leverage	-0.00284	(0.0254)
Chapter 22	-0.107***	(0.0277)
Industries		
Autos & Transportation	-0.214*	(0.107)
Energy, Oil, Gas	-0.0365	(0.0730)
Entertainment	-0.121	(0.139)
Food & Restaurants	-0.259	(0.171)
Manufacturing	0.122**	(0.0395)
Publishing & Paper	0.133	(0.0769)
Materials	-0.116	(0.141)
Retail	-0.0869	(0.110)
Technology	-0.0299	(0.0720)
Time Period Dummies	Yes	
Observations	528	
Adj. R^2	0.113	

The first three variables are measures of whether the debtor was exposed to an external shock before the bankruptcy. *Industry Shock* equals one if the debtor belonged to an industry that experienced negative (median) sales in the year the debtor filed for bankruptcy, but not the year prior. *Trade Creditor Run* equals one if the debtor described a trade creditor run as one of the reasons that it filed for bankruptcy. *Force majeure* equals one if the debtor experienced a natural disaster prior to filing. All three variables have negative and sizeable coefficients, indicating that external shocks are associated with a lower propensity to file a pre-arranged reorganization, although the coefficient on *Trade Creditor Run* is not statistically significant.

I define two straightforward measures of capital structure complexity: a variable that equals one of the firm had publicly-traded equity prior to filing and the number of bond issuances. Both yield negative coefficients, indicating that financial complexity is associated with a lower propensity to file a pre-arranged reorganization, although only *Public Equity* is statistically significant. In unreported regressions, I also run similar tests on the sub-sample of firms for which the number of secured or unsecured creditors is available through LoPucki or claims registers, but neither variable has a statistically significant effect on whether reorganizations are pre-arranged.

Variables that capture operational complexity are also negatively correlated with pre-arranged bankruptcies. Firms that closed stores, plants, or other units prior to filing are less likely to enter bankruptcy with pre-arranged plans, despite the fact that they began implementing operational restructuring plans prior to bankruptcy. This variable is significant at the 1% level. Firms that underwent layoffs prior to filing are also negatively associated with pre-arranged plans, although this variable is not statistically significant. The last proxy for operational complexity is the natural log of the number of times a foreign country is mentioned in the first-day declaration. This coefficient is also negative, and significant at the 10% level.

I explore the effect of size by evaluating the effects of total assets, total sales, and the number of employees on the propensity to file a pre-arranged bankruptcy. The coefficients on these measures betray that they capture other firm characteristics aside from just size. The coefficient on sales is positive and significant at the 1% level, which is not surprising because strong revenues can be a proxy for operational health. The coefficient on assets is negative, however. Despite the fact that the coefficient is not statistically significant, it is worth noting that it is rare for large cases to file pre-arranged plans. While the unconditional average fraction of regular reorganizations is 41%, this fraction increases to 56% for cases with over $1 billion in assets and 78% for cases with over $3 billion in assets. Total assets, therefore, may also belong under financial or operational complexity.

There are several other variables that are worth considering. First, the presence of hedge fund makes a firm 20% more likely to file a pre-arranged plan, and this is statistically significant at the 1% level.[35] While hedge funds might target simpler or more operationally healthy firms, prior research has also found that they facilitate the bankruptcy process due to their procedural expertise. These results are consistent with prior findings. I also find that debtors that had previously received forbearance on a loan are more likely to file a pre-arranged plan. While forbearance might proxy for a positive relationship with lenders, it may also contribute mechanically to a higher likelihood of pre-negotiation since debtors were granted more time. Interestingly, there is no relationship between leverage and pre-arranged bankruptcies. A firm that has filed for bankruptcy previously is approximately 11% less likely to have a pre-arranged plan in place.[36]

The last category of covariates include indicator variables for major industries. The omitted group consists of observations in the *Other* industry category. Only two industries, manufacturing and publishing, are more likely to yield pre-arranged bankruptcies. The coefficient on manufacturing is significant at the 5% level. The remainder are more likely to yield regular reorganizations, although most coefficients are statistically insignificant with the exception of automobiles and transportation, which is significant at the 10% level. Although coefficients on time period indicators are not reported in Table 2, there was a significant increase in pre-arranged filings in the later half of the sample. Relative to the baseline category of bankruptcies filed between 2004 and the end of 2007, bankruptcies during the Great Recession (2008-2010), the post-Recession recovery (2011-2014), and the drop in oil prices (2015-2017) witnessed 15 to 19% more pre-arranged bankruptcies according to the specification in Table 2.

The results from Table 2 confirm a number of basic hypotheses regarding the need for a judicial insolvency system. Firms are more likely to file for regular reorganizations, as

[35] Recall that *Hedge Fund* equals one if a known distressed fund is named in the first-day declaration or if the declaration mentions an ad-hoc group. Interestingly, it is important to pool these two definitions of hedge fund involvement, otherwise they are almost entirely unique to either pre-arranged category or regular category. That is, there is only one regular bankruptcy that mentions a hedge fund by name, and there are only two pre-arranged bankruptcies that mention ad-hoc committees. In some sense, there is almost a mechanical distinction in the way that hedge fund presence is disclosed. Usually, at the end of the bankruptcy, the disclosure statement will mention influential negotiating parties by name, including hedge funds if they were present. For pre-arranged bankruptcies, the disclosure statement is usually included with the first-day filings, so there is no reason to conceal the name of the hedge fund in the first-day declaration. For regular bankruptcies, however, hedge funds might wish to operate anonymously through ad-hoc groups in order to conceal their identities while negotiations are still underway.

[36] This result can be difficult to interpret. On one hand, a firm that has already filed for bankruptcy in the past should be experienced in negotiations regarding restructuring. On the other, a repeat filing may have eroded goodwill between parties, or may indicate that the firm has deeper operational issues than previously understood.

opposed to pre-arranged reorganizations, after they are hit with negative external shocks, particularly industry downturns. They are also more likely to file regular reorganizations if they have complex capital structures or faced operational difficulties prior to filing, as evidenced by store or plant closures in particular.

Table 2 does not address, however, the extent to which firms take advantage of Chapter 11 to opportunistically extract wealth from other constituencies. Indeed, it is exceedingly difficult to observe this sort of behavior, because these parties will attempt to mask their incentives. Another complicating factor is that there is no reason that bankruptcy motives should be mutually exclusive. For example, an equity-aligned CEO of a firm facing operational challenges, may file for bankruptcy in order to appeal to a judge's desire to preserve jobs in a certain region, hoping to maximize distributions to equity holders at the detriment of secured creditors. That is, just because a debtor faced obstacles to pre-bankruptcy negotiation, this does not imply that the party in control will not attempt to expropriate from other constituencies. Still, a count of firms that did *not* face observable barriers to pre-bankruptcy negotiation provides a *lower bound* rough, back-of-the-envelope estimate of firms that underwent regular bankruptcies for opportunistic purposes.

Table 3: Summary Statistics on Motivations for Filing

Reason	# Cases	% Cases
Fraud/Litigation	23	7
External Shock	127	40
Financial Complexity	93	29
Operational Complexity	164	52
None of the Above	73	23

Table 3 shows the number of firms that filed for regular reorganizations due to the reasons explored in Table 2. I count a firm as having filed due to an external shock if it filed in the first year of an industry downturn (negative median sales, with positive median sales in the year prior), or if it listed a trade creditor run or a natural disaster among its reasons for filing. I count a firm as having filed due to financial complexity if it was public and had at least two bond issuances at its time of filing according to NGR. I count a firm as having filed due to operational complexity if it closed stores or plants, laid off workers, or was in the top quartile of foreign mentions. I also include firms that were being investigated for fraud or that faced significant litigation at the time of their bankruptcies.

Only a quarter of firms filing for regular reorganization bankruptcies do so without an external shock, in the absence of clear financial and operational complexities, and without significant litigation. This serves as a lower bound estimate for opportunistic regular reorga-

nizations. Although most large Chapter 11 cases are pre-negotiated, and most of the cases that are not pre-negotiated appear to have at least one valid reason for not being able to pre-negotiate, it is likely that some firms still file for bankruptcy with strategic gaming in mind.

5 Outcomes

A significant literature has been devoted to understanding the ex-post efficiency of the bankruptcy system. Although the focus of this paper is on how and why corporations use the Code, there are several takeaways regarding outcomes that may inform the study of ex-post efficiency. Table 4 presents summary statistics on the fraction of firms that are liquidated according to the major categories and sub-categories described in Figure 1.

Table 4: Summary Statistics on Liquidation by Category

Category	Liquidated
Negotiated Prior to Bankruptcy	
Pre-arranged Reorganization	**0%**
Voted Prior	0%
Voted Post	1%
No Vote	0%
Pre-arranged Sale	**7%**
Stalking Horse - Arms'/Equity	4%
Stalking Horse - Credit	7%
Stalking Horse - Liquidator	40%
No Auction	10%
Regular Sale	**19%**
Prior Marketing, Proposal	11%
Prior Marketing, No Proposal	20%
No Prior Marketing	22%
Liquidation	**100%**
Negotiated During Bankruptcy	
Regular Reorganization	**15%**
Prepared	13%
Unprepared	18%
Major Litigation	26%

Table 4 demonstrates that liquidations of pre-arranged reorganizations are exceedingly rare. In fact, there was only one pre-arranged reorganization out of 212 cases that resulted

in a liquidation, and it was not a case that was pre-voted. As described in Section 3, the progression from pre-arranged sale to regular sale to liquidation can be viewed as a progression from lowest to highest likelihood of liquidation. Within each major category, each sub-category also demonstrates a predictable pattern in liquidation rates. Pre-arranged sales that were able to attract an arms'-length stalking horse purchaser, or those that entered bankruptcy with a stalking horse bid from equity holders, were only liquidated at a rate of approximately 4%. Those with stalking horse offers that were credit bids were more likely to be liquidated, although the liquidation rate was still only 7%. This is consistent with intuition because creditors usually only make stalking horse bids when the debtor was unable to attract an arms'-length purchaser.[37] As expected, firms for which the stalking horse was a liquidator experience the highest rate of liquidations, 40%.[38]

Of the firms that pursued regular sales, or those that intended to sell substantially all of their assets during bankruptcy but did not have an asset purchase agreement in place when they filed, approximately 19% are liquidated. While this is significantly higher than the pre-arranged sales, it is relatively low considering that most firms attempted to but were unable to find a buyer prior to bankruptcy. Again, it is not surprising that the firms that received but were unable to consummate sale proposals prior to bankruptcy ended up liquidating at the lowest rate within this category, 11%. Firms that marketed their assets for sale prior to the bankruptcy but did not receive a proposal resulted in a liquidation rate of 20%. The highest liquidation rate within this category was among firms that did not attempt to market their assets for sale prior to bankruptcy, and they liquidated at a rate of 22%.[39] Finally, all intended liquidations resulted in liquidation.

The most interesting category with respect to outcomes is the regular reorganization, or the group of firms that did not have pre-negotiated plans at the time of filing. The unconditional rate of liquidation for this category was 15%. Among these, cases that entered into Chapter 11 having pre-arranged DIP financing, marketed assets, or hired a restructuring professional (but not involving significant litigation) had the lowest within-group rate of liquidation, 13%. Those that did not involve significant litigation but were less prepared for bankruptcy liquidated at a rate of 18%. Over a quarter of debtors that had major ongoing litigation at the time of filing ended up liquidating. Still, in general, Table 4 indicates that the rate of liquidation for firms that did not complete negotiations prior to bankruptcy is relatively low. In fact, if we set aside cases that involved significant litigation, only 40

[37] The major exception to this is in the case of hedge fund investors pursuing loan-to-own strategies, in which case the fund may have purchased discounted debt in order to make a credit bid on the firm's assets.

[38] Of the ten cases that attempted to pursue a pre-arranged asset sale without an auction, only one was disallowed by the judge and resulted in a liquidation.

[39] For more detailed information on sale outcomes, see Gilson et al. (2019).

regular reorganization cases were liquidated. Put differently, while the traditional view of Chapter 11 is that firms facing financial or operational difficulties file for bankruptcy hoping to reorganize but often end up having to liquidate, this scenario only describes 5% of large corporate bankruptcies from 2004 to 2017.

In Table 5, I use the same set of variables used to explore pre-arranged versus regular reorganizations in order to observe whether any of these variables correlate with rates of liquidation. The dependent variable is an indicator variable that equals one if a firm is liquidated, and zero otherwise. I limit the sample to the 316 regular reorganization cases. Standard errors are once again clustered at the district group level. Court controls are left out, but when included they do not change results, and the coefficients on Delaware and New York Southern are small and statistically insignificant.

Reassuringly, there is no indication that firms that filed for bankruptcy because of external shocks or complex capital structures liquidated at a higher rate. Surprisingly, debtors that closed stores or units prior to bankruptcy were significantly *less* likely to liquidate, perhaps reflecting the general favorability of the bankruptcy system towards debtors that are well-prepared.

The one variable that has the strongest positive association with liquidation is *Retail*. Firms in the retail industry are 27% more likely to liquidate, and this is significant at the 1% level. This coefficient is consistent with the raw data, as slightly over a quarter of the non-litigation cases that liquidated in this category belonged to the retail industry. While the coefficients on *Manufacturing* and *Publishing and Paper* are significant at the 5% level, these results are not robust to the exclusion of cases that involved significant litigation.

Aside from store closures, the two variables that yield the strongest negative coefficients are the involvement of a hedge fund and the natural log of the number of employees. While consistent with the positive literature on distressed funds mentioned earlier, this variable should be interpreted with particular caution, since distressed funds are unlikely to target firms that have slim prospects for reorganization. The result regarding employees is consistent with the widely-held view (and perhaps concern) that the state has a bias towards protecting jobs when it comes to intervention in corporate management.

Table 5: Characteristics of Liquidations

	Dep. Variable = Liquidated	
	Coefficient	Std. Err.
External Shock		
Industry Shock	-0.0285	(0.0359)
Trade Creditor Run	0.0747	(0.0603)
Force Majeure	-0.0949*	(0.0421)
Financial Complexity		
Public Equity	-0.0321	(0.0213)
Bond Issues	0.00842	(0.00965)
Operational Complexity		
Store/Unit Closure	-0.0673**	(0.0249)
Layoffs	0.00317	(0.0476)
ln(Foreign Mentions)	0.0121	(0.0175)
Size		
ln(Assets)	0.00175	(0.0149)
ln(Sales)	-0.00592	(0.00732)
ln(Employees)	-0.0273**	(0.00932)
Other Characteristics		
Hedge Fund	-0.111**	0.0416
Forbearance	-0.0223	(0.0772)
Leverage	0.00405	(0.0111)
Chapter 22	0.0780	(0.0587)
Industries		
Autos & Transportation	-0.0479	(0.0588)
Energy, Oil, Gas	-0.0502	(0.0310)
Entertainment	-0.0469	(0.0654)
Food & Restaurants	-0.0416	(0.0448)
Manufacturing	0.0738**	(0.0281)
Publishing & Paper	-0.159**	(0.0665)
Materials	-0.105	(0.0626)
Retail	0.265***	(0.0807)
Technology	0.0527	(0.102)
Time Period Dummies	Yes	
Observations	316	
Adj. R^2	0.078	

6 Discussion

I have demonstrated that most large corporations, when they file for bankruptcy, have already undergone extensive negotiations with major constituencies. Nearly a third of these firms use Chapter 11 to sell their assets, with no intention of reorganizing. Whether it is through the direct marketing of assets, the exploration of strategic transactions by financial advisors, or the process of securing DIP financing, the vast majority of firms have been exposed to some form of market test by the early stages of their bankruptcies.

There is still a significant role for traditional bankruptcies, however. During economy-wide or industry downturns, for example, firms either do not have the time to negotiate before they run out of liquidity, or they are unable to negotiate because of frozen markets. In addition, financial distress of complex, multi-national firms with billions in assets can take years to work out. In these cases, judges are often faced with important decisions about asset valuation, mediation, expediency, the appointment of trustees, and the ultimate continuation or liquidation outcome.

With such a variegated system of Chapter 11, how is one supposed to evaluate ex-post efficiency? For starters, we should acknowledge that when assets are immediately verifiable and the rules of bankruptcy are known, firms should only file for bankruptcy if there are direct benefits to be gained. If assets take time to verify, and this time is a function of firm complexity, then firms should also file for bankruptcy if non-bankruptcy rules impose burdens on the verification process. It appears that about 90% of the observations in the sample filed for bankruptcy in order to capture the benefits of Chapter 11, because they were hit with an external shock, or because they were too complex to restructure outside of bankruptcy. In broad terms, these statistics reflect very positively on the system overall. Although the costs of financial distress are real, bankruptcy itself ought to be recognized for the benefits that it can confer, in addition to any deadweight losses.[40]

Overall, the system seems to be working well. To take a more granular approach to the evaluation of ex-post bankruptcy efficiency, however, it is important for researchers to condition their approaches on whether bankruptcies that have been pre-negotiated. While it is common practice for empiricists in this field to remove pre-packaged plans from the sample, I show that these cases, which are typically defined as debtors that have solicited votes prior to filing, only constitute about one quarter of the pre-negotiated sample.

For pre-negotiated cases, ex-post efficiency has little to do with the influence of the court over outcomes. Instead, it hinges on factors such as whether the design of the Code gives

[40]There are, of course, deadweight losses associated with any bankruptcy, if only because there are court fees that must be paid in each case. Still, for large corporations, benefits seem to outweigh losses in many cases.

too much power to certain constituencies ex-ante. The process for selecting DIP lenders, for example, will affect which parties have control even before bankruptcy begins. In pre-negotiated sales, while judges may have little to do with the ultimate outcome, they still have power over the sale process that can have powerful effects on sale participation. A 2.5% break-up fee versus a 3.5% break-up fee, for example, can be the difference between no stalking horse and an entrenched stalking horse.

For regular reorganizations, the traditional question remains of whether judges facilitate an insolvency resolution process that preserves positive NPV assets and liquidates negative NPV assets. At first blush, it seems difficult to make the case that the system is biased towards inefficient liquidations. Only approximately 40% of Chapter 11 cases are regular reorganizations, and only 15% of those regular reorganizations result in liquidations. Still, in a world where market tests are pervasive and there are buyers for nearly every sort of asset, perhaps any liquidation is inefficient. On the other hand, the scarcity of liquidations might suggest that the system is biased towards reorganization and that equity holders are endowed with excessive power. This does not square with the sizable mass of cases that are pre-negotiated sales, however, and it may be consistent with a system in which the only companies that pursue regular reorganizations are operationally health firms that face external barriers to cooperation. In addition, within regular reorganizations, there may be significant differences between managers that seek to expropriate wealth from creditors and equity holders that seek to expropriate wealth from litigation claimants. Once again, it appears that efficiency should be evaluated on a granular level and that, for certain types of efficiency, case studies may yield more accurate inferences than empirical exercises.

One last note is that an optimal bankruptcy equilibrium need not be stable. As the judicial system becomes better-equipped to minimize transaction costs and information asymmetries, more firms will move toward pre-negotiated outcomes. As more firms move toward pre-negotiated outcomes, the judicial system will have less experience with complex bankruptcies. Particularly in an environment in which years have elapsed since a major economic shock, rent-seeking debtors might attempt to exploit inexperienced judges. The judiciary should work hard, therefore, to preserve the equilibrium that has arisen by keeping up with non-bankruptcy trends and valuation methodologies.

7 Conclusion

This paper constructs an empirical typology of large corporate bankruptcies based on filings from 2004 to 2017. Based on objectives and levels of preparation, I sort bankruptcies into five main categories: pre-arranged reorganizations, pre-arranged sales, regular sales,

liquidations, and regular reorganizations. The first four categories represent debtors that completed or had nearly completed negotiations prior to filing, and represent nearly 60% of all large corporate Chapter 11 cases. The remainder sought to reorganize during bankruptcy, but had not completed negotiations as of the filing date.

The fact that the majority of corporations that file for bankruptcy do so having undergone all substantive negotiations indicates that bankruptcy serves a purpose beyond that of a sorting mechanism or negotiation facilitator. I describe a number of direct financial reasons for filing for bankruptcy, including flexibility over rejecting leases, exemptions from security registration requirements, tax benefits, legal protections, and sales free and clear of liens. However, over 100 firms commenced the plan voting process prior to filing, indicating that hold-out problems still exist and that firms still take advantage of the Code in order to benefit from voting rules that are more relaxed than their non-bankruptcy counterparts.

Despite being in the minority by number, a majority of asset-weighted cases undergo regular reorganizations that are not pre-negotiated. I present evidence that these firms file for bankruptcy after negative external shocks, or when they face financial and operational challenges that complicate the negotiation process. Thus, the judicial system still serves an important economic role in facilitating negotiations and influencing ultimate bankruptcy outcomes. Interestingly, this system has yielded a low number of liquidations in the sample period under question. Only 15% of regular reorganizations were ultimately liquidated.

This paper is not intended to be an evaluation of ex-post bankruptcy efficiency. Still, it raises important issues that are relevant to any study of efficiency. First, it is important to condition on objectives. The court process for a pre-arranged sale looks almost nothing like the court process for a regular reorganization, and the influence of the judge manifests in different ways. Market tests are pervasive in bankruptcy, shifting the fault of liquidation somewhat away from the judicial system. In addition, when weighing the costs of financial distress, researchers should take into account that in the majority of cases, negotiation costs are incurred prior to filing, and that the Code offers a number of direct financial benefits. Finally, the traditional concept of the in-court Chapter 11 liquidation is actually a rare occurrence, and it may not proper to use statistical analysis to evaluate inefficient liquidations at all.

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