

An Empirical Investigation of Leases and Executory Contracts in Chapter 11

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Abstract

This paper offers the first empirical analysis of the decisions large Chapter 11 debtors make with respect to their contractual rights in bankruptcy, with an emphasis on commercial real estate leases. The Bankruptcy Code provides debtors with a rich set of strategic options that can be analyzed from a real options framework. The debtor can assume (keep), abandon (reject), or assign (transfer) their contracts, with time limits provided by the Code. I analyze the effect of a change to the Code in 2005 (BAPCPA) that shortens the time to expiration of a debtor's put option, requiring tenant-debtors to make decisions on their real estate leases within seven months unless a landlord grants an extension.

This paper offers several new findings. The distribution of leases and executory contracts across firms is highly skewed; for debtors at the tails, leases are quite important. At the 90th percentile, leases comprise 46.4% of the firm's assets and over 70% of its financial liabilities. Over 90% of contract assignments occur in the context of sales of business units or the whole firm. The seven month limit strongly accelerated real estate lease disposition decisions, suggesting that bankruptcy bargaining is far from a frictionless, Coasean world. Further, I find that BAPCPA is associated with a significantly lower probability of reorganization for the most lease-intensive firms.

While debtors' behavior is in some ways consistent with a simple real options theory, I find important deviations. In particular, some executory contracts are assumed before expiration. I present suggestive evidence of implicit contracting motives: debtors often assume early in order to secure performance from their counterparties that cannot be guaranteed by the contract alone. In this way, executory contract assumption is similar to the decision to pay off the prepetition claims of "critical vendors".

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I. Introduction

The theory of real options has proven fruitful in understanding bankruptcy dynamics¹. The firm owns a pool of assets that may be worth more as a going-concern than liquidated, or vice versa. Because the firm's claim holders occupy different layers in the firm's capital structure, they may have different preferences over the reorganization/liquidation decision, and the timing of this decision. Senior creditors—conceived as holding risk free debt, less a put option on the firm's assets—generally prefer a quick resolution to minimize the value of the put. This creates incentives for senior creditors to push for a fire sale or a premature shutdown. Junior claims, long a call option on the assets, generally prefer delay. This may result in the inefficient preservation of a non-viable firm, and the incurrence of deadweight costs. Empirical evidence is consistent with these incentives (Ayotte and Morrison, 2009).

In some instances, however, a different set of real options are crucial drivers of the case. Consider Movie Gallery, a retail movie rental chain that filed for Chapter 11 in 2007. There was little debate between the debtor and its major lenders about whether Movie Gallery would reorganize; indeed, a plan supported by its major constituents was negotiated before the filing and proposed early in the case. Instead, the main dynamics in the case were about managing and reducing its portfolio of over 4000 leases (Kurichety, Kwasteniet and Sathy, 2009). Movie Gallery knew that many of its store locations were unprofitable, but it did not know how many were unprofitable at the outset. Some locations required time and more information to evaluate; moreover, a third-party investor providing new equity financing wanted input into the decision-making process. These decisions were accelerated by an important change to the Bankruptcy Code in 2005, which required Movie Gallery to decide on these leases within 210 days. Ultimately, Movie Gallery shed about 1000 leases in the first seven months, and committed to retaining the remainder close to the 210-day deadline.

This paper is the first in-depth study of the decisions Chapter 11 debtors make with respect to their leases and executory contracts. Executory contracts are defined under bankruptcy law as those contracts that are, simultaneously, both assets and liabilities to the bankrupt debtor. Examples of executory contracts include intellectual property licenses, supply contracts, employment contracts, service contracts, customer contracts, and many others. The Bankruptcy Code's rules regarding leases and executory contracts create a real options problem with a rich set of strategic choices available to the debtor, and these choices have not yet been studied empirically.

This project has three main contributions. The first is descriptive. Using a hand-collected, detailed sample of debtor motions in 91 large Chapter 11 cases between 2003 and 2007, I catalog the total

¹ Other work taking a real options approach to corporate bankruptcy decisions include Baird and Morrison (2001), Morrison (2007) and Casey (2011).

number of contracts disposed during the case, the disposition decision made by the debtor--assumption, assignment, or rejection--and the timing of these dispositions. I supplement these detailed findings by constructing a dollar-valued measure of the lease-intensiveness of large Chapter 11, to get a sense of how important leases are to large Chapter 11 debtors.

The second goal of the project is to examine the effect of important changes to the Code (BAPCPA) on lease disposition decisions. In particular, the revised 365(d)(4) requires a debtor/tenant to make a disposition decision on its commercial real estate leases within seven months (210 days), unless the landlord consents to an extension. Prior to the change, courts could extend this deadline without limit. Understanding the effect of this change is important policy issue in its own right. Some bankruptcy professionals claim that this change has affected bankruptcies of retailers and other lease-intensive debtors, making it more difficult for viable firms to reorganize (Gottlieb, Klein and Sussman, 2009). Some reform proposals have advocated eliminating this deadline. Others claim it gives more certainty to landlords, with no effect on the ability of debtors to reorganize.² This change can also be seen as a test of a broader question: how "Coasean" is Chapter 11 bargaining? In a world of frictionless renegotiation, this deadline should have no effect on lease disposition decisions or case outcomes, because debtors can always buy time from or sell time to their counterparties.

The third goal is to formulate and test some predictions from a simple real options model of executory contracts and leases, to see whether debtors behave as theory would predict. Real options theory predicts that a debtor acting strategically under the Bankruptcy Code should never assume contracts early--a contract should be assumed only at the end of the case or when compelled by a deadline, such as the 210 day deadline for real estate leases. Further, a simple options-based theory says that debtors should also be more inclined to reject contracts, and reject them sooner, when they are more insolvent. This is true because rejection damages are unsecured claims that are paid in bankruptcy dollars.

The analysis offers several new findings. The distribution of leases and executory contracts across firms in bankruptcy is highly skewed. The median firm in my sample disposes of 12 real estate leases and 169 other contracts during its Chapter 11 process, but a firm at the 90th percentile disposes of 159 leases and 2250 other contracts. Similarly, when leases are capitalized and treated as assets and liabilities, the median firm's leases comprise 10% of its assets and 12% of its liabilities, but for a firm at the 90th percentile, leases comprise over 45% of its assets and over 70% of its liabilities. At the tails, then, the disposition of leases is a crucial aspect of the bankruptcy case.

When I examine contract assignment in bankruptcy, I find that over 90% of contract assignments occur in the context of sales of business units or the whole firm, rather than on an individual basis. This suggests that the main benefit of the Bankruptcy Code's override of anti-assignment clauses is the prevention of holdup problems in the sale of business units as going-concerns. Furthermore, since contracts commonly permit assignment in these circumstances, bankruptcy law may be simply converting a majoritarian contracting practice into a mandatory rule.

² See, for example, Statement of Elizabeth Holland, Chief Executive Officer, Abell Associates, to National Bankruptcy Review Commission panel, June 4, 2013.

With respect to the revised 365(d)(4), I find that the seven month limit strongly accelerated real estate lease disposition decisions, suggesting that bankruptcy bargaining is far from a frictionless, Coasean world. Furthermore, I find evidence consistent with the hypothesis that the change to the Code affected case outcomes: in difference-in-differences regressions, I find that BAPCPA is associated with a significantly lower probability of reorganization for the most lease-intensive firms.

While debtor's behavior is in some ways consistent with a simple real options theory, I find important deviations. In particular, some executory contracts are assumed before expiration. I present qualitative evidence of implicit contracting motives: debtors often assume early in order to secure performance from their counterparties that cannot be guaranteed by the contract alone. In this way, executory contract assumption can be similar to the decision to pay off the prepetition claims of "critical vendors".

The paper proceeds as follows. Section II gives some background on Section 365 of the Bankruptcy Code, the strategic options it creates, and the major changes in BAPCPA. Section III describes the data and Section IV provides summary statistics. In Section V, I examine the effect of BAPCPA on lease and executory contract disposition behavior and on bankruptcy case outcomes. In Section VI, I test predictions from a real options model of lease disposition and discuss implications of my results. Section VII concludes.

II. Bankruptcy Law Background and Theoretical Framework

Leases and executory contracts are governed by Section 365 of the Bankruptcy Code. This section provides a brief overview intended for those with little or no background in the subject. Section 365 contains many exceptions, conditions, and variations across contract types that I do not cover here; Interested readers can consult a treatise, such as Tabb (2013), for more detail. Readers who are more familiar with bankruptcy law can skip to Section II.b.

Courts generally consider a contract "executory", and thus governed by Section 365, if it is bilateral (both an asset and a liability) at the time of the bankruptcy filing³. Leases also generally have this bilateral feature. Some contracts may be net assets to the debtor, while others are net liabilities. To aid the debtor's restructuring efforts, the Code gives the debtor substantial flexibility to keep net assets, shed net liabilities, and realize the value from contracts that may be net assets to third parties. To use the Bankruptcy Code's terminology, with respect to each executory contract or lease, the debtor has three disposition choices: it can elect to *assume*, to *reject*, or to assume and then *assign*. The disposition must be approved by the bankruptcy judge, but courts defer to the business judgment of the debtor if all other explicit requirements of the Code are satisfied. I discuss the consequences of each disposition choice in turn.

A decision to assume is an election by the debtor to enjoy the benefits under the contract, while remaining subject to all of its obligations. Thus, a debtor will assume a contract only if it is a net asset.

³ Specifically, the most common test used to determine whether a contract is executory is the "Countryman test", or "material breach test", whereby each party's remaining obligations are so far unperformed that a failure to complete performance by one party excuses the performance of the other (Countryman, 1973).

Upon assuming a contract, the debtor must cure any payment arrears that may have accrued before or during the bankruptcy case⁴. In most cases, non-monetary defaults such as covenants to maintain insurance or other requirements must be cured at or soon after assumption. After assuming, the debtor's future obligations under the contract are elevated to the highest priority unsecured claims, which are usually paid in full⁵. If there has been a default under the contract, the debtor must provide "adequate assurance" of future performance of the contract⁶.

A decision to reject is an election by the debtor to breach the contract. Debtors will choose this option for contracts that are net liabilities. The debtor gives up any remaining benefits under the contract. If the contract is a lease, for example, the debtor must surrender the leased asset to the lessor. If the contract entitles the debtor to receive services, the counterparty may stop providing the service. To the extent that the counterparty is entitled to any damages from the breach under non-bankruptcy law, the Code relegates these damages to the priority status of general, unsecured claims⁷. If the debtor is insolvent, these claims will not be paid in full (i.e. they are paid in "bankruptcy dollars"), so the counterparty is unlikely to receive full compensation for any losses it incurs upon rejection.

Finally, the debtor may elect to assign contracts that may be net liabilities to the debtor, but are a net asset to a third party. An unprofitable store lease with below-market rent is a common example. The Code facilitates assignment by nullifying any contractual anti-assignment clauses that would have force outside of bankruptcy⁸. To assign a contract, the debtor must first assume it. This requires satisfying the conditions for assumption, such as curing defaults as described above. To assign, the debtor must also provide adequate assurance that the assignee can perform the obligations under the contract, even if there has not been a default under the contract⁹.

a. Timing and BAPCPA

The Code gives a debtor time to make disposition decisions on its leases and executory contracts. Before BAPCPA, which went into effect on October 17, 2005, debtors could, with court permission, postpone a disposition decision until confirmation of the plan of reorganization, as long as it remained current on any obligations incurred during the bankruptcy case. (Arrears incurred before the filing can remain unpaid until assumption or assignment). The revised 365(d)(4) enacted by BAPCPA limited judicial discretion by adding a 210-day limit for tenant-debtors to make disposition decisions on

⁴ 11 U.S.C. 365(b)(1).

⁵ For a nonresidential real property lease that is assumed and subsequently rejected, the damages entitled to administrative expense priority are capped at 2 years of future obligations under the lease. 11 U.S.C. 503(b)(7).

⁶ 11 U.S.C. 365(b)(1)(C).

⁷ 11 U.S.C. 502(g).

⁸ 11 U.S.C. 365(f)(1). Some contracts, including some types of intellectual property licenses, that are non-assignable under the default rules of non-bankruptcy law may not be assigned, however, and in some jurisdictions they cannot even be assumed. 11 U.S.C. 365(c).

⁹ 11 U.S.C. 365(f)(2)(B).

commercial real estate leases¹⁰. Any contract not assumed by this deadline is automatically deemed rejected. Extensions beyond this 210 day deadline can be obtained only with landlord consent.

b. Real Options and Incentives

In this section, I formulate several hypotheses that follow from a simple real options-based framework applied to leases and executory contracts. (I test one of the predictions here, and leave other tests for future drafts.) The analysis borrows heavily from contributions by Triantis (1993) and Fried (1996). The option to postpone the disposition decision on executory contracts and leases can be valuable to the debtor, for two reasons. First, the underlying value of the contract may change over time. Perhaps more importantly, the debtor may investigate and acquire information about the value of its contracts to itself or to third parties to whom it can assign.¹¹

In the language of real options, the debtor's option to reject can be cast as a put option. When the debtor's obligation under the contract is the payment of money, the strike price is the amount of debt reduction that flows from rejection. This is the difference between the present value of its obligation to the counterparty, and the cost to the estate of the damages claim from rejection. As noted above, the damages claim in bankruptcy costs the estate only ϕD , where D is the damages that the debtor would have to pay if fully solvent, and ϕ is the percentage expected recovery for unsecured creditors. In the gap period before the debtor makes a disposition decision, the contract pays a "dividend" equal to any net benefit from the contract (such as the revenues from operating in a leased storefront, less rent and other costs).

If the estate is more deeply insolvent, then ϕ falls, increasing the strike price of the debtor's put option. This should increase the frequency of rejections and shorten the time to rejection.¹²

A second prediction that follows from a simple real options-based framework is that a debtor should never voluntarily assume a contract before the "expiration date" set by the law. By assuming a contract, the debtor must promptly cure any defaults, and future obligations under the contract are elevated in priority. As noted above, assumption is not necessary to enforce the debtor's right to receive performance from the counterparty. Early assumption, then, is akin to simply exchanging the put option for another put with a lower strike price, since the expected damages from a subsequent rejection

¹⁰ More accurately, 365(d)(4) grants the debtor an initial 120 day period that can be extended by the court for an additional 90 days, but the extension at day 120 is routinely granted.

¹¹ As an example of the latter, some Chapter 11 debtors have auctioned the *designation rights* to their lease portfolio to third-party real estate firms such as Hilco and Gordon Brothers. These designation rights buyers are effectively buying the disposition option from the debtor: in exchange for cash, the buyer purchases the right to direct the debtor to assign the contract if it can find a willing assignee. The designation rights buyer agrees to keep the option value alive by paying the rent and other expenses under the lease, and keeps any proceeds of assignments.

¹² To put the issue differently, an exit option is more valuable when variable costs exceed revenues. The ability to reject a contract in bankruptcy and pay less than full damages converts fixed costs into variable costs.

increase after an assumption. While early assumption is not optimal in a simple real options framework, it may be optimal for a debtor to reject or assign before expiration if the net dividend from the contract is negative.

A third prediction relates to the effects of the shorter expiration date imposed by BAPCPA. A straightforward corollary of the second prediction is that the average time to assumption of contracts should fall for real estate leases after BAPCPA. More subtly, because the time value of the option falls with a shorter maturity, debtors should be less willing to pay to keep the option alive when its intrinsic value is negative. A debtor with a contract that appears marginally unprofitable at the outset of a case might choose to retain it temporarily in the hope that the value will increase, due to the arrival of favorable new information or changes in the underlying fundamentals of the contract. If the time to expiration shortens, debtors should be less willing to incur these short-term losses. Hence, when the time to expiration shortens, we should expect a greater percentage of contracts to be rejected early in the case.

The three hypotheses above rely on two implicit assumptions. First, they follow from the assumption that the debtor acts in the interests of the bankruptcy estate. Since firms in Chapter 11 are usually insolvent, this is usually congruent with the interests of the general unsecured creditors, who are the firm's residual claimants. If the debtor acts in the interests of fully secured creditors, for example, then ϕ should not matter. Second, they follow from the assumption that renegotiation is costly. In a Coasean world of frictionless bargaining, the debtor and counterparty can simply bargain around any deadlines imposed by the law (Che and Schwartz 1999). The disposition decision and its timing will maximize the joint value of the debtor and its counterparties. The data will permit us to test whether this Coasean world can explain bankruptcy disposition decisions.

III. Data

I conduct a detailed examination of lease and executory contract disposition behavior from a sample of large Chapter 11 filers between 2003 and 2007. The time window was chosen to generate a roughly equal number of firms before and after BAPCPA. The original sample consists of large Chapter 11 filers from New Generation Research's Bankruptcy DataSource with assets greater than \$100 million. I match this data with Lynn LoPucki's Bankruptcy Research Database (BRD), which includes case outcome data which I used to classify outcomes as reorganization or sale/liquidation¹³, and variables such as pre-bankruptcy size, leverage, and EBITDA. The BRD includes a slightly smaller sample of larger firms, with assets greater than \$100 million in 1980 dollars. I excluded banks and other financial institutions and home builders. Both types of firms are concentrated in the post-BAPCPA period and were strongly tied to the financial crisis. Eliminating these firms facilitates a comparison of Chapter 11 filers before and after BAPCPA.

¹³ A case was classified as a reorganization using the BRD data if the firm confirms a plan of reorganization and the "Emerge" variable is coded as "yes". The "Emerge" variable in the BRD essentially captures whether the firm continues after bankruptcy as a going-concern. See the LoPucki BRD field definitions for more detail. For non-BRD firms, I coded the outcome as a reorganization or a sale/liquidation using the same criteria.

Data on contract disposition comes from a detailed examination of court dockets and filings from the PACER database. I sought fee waivers from courts which handled at least three large cases during the 2003-2007 time window; of the eleven districts sent a fee waiver request, all districts except two (the Northern and Southern Districts of Texas) granted them. Unfortunately, some filers' documents, particularly from 2003 cases, were removed from the PACER database, making these cases inaccessible.

From the remaining sample of 91 cases, research assistants searched bankruptcy dockets for all motions pertaining to leases and executory contracts, and recorded all motions to assume, assign, or reject an executory contract or lease. Motions were excluded if a corresponding court order approving the motion could not be found. Plans of reorganization were always included, and 363 sales were included to the extent that disposition of executory contracts or leases were also referenced in the motion. For each motion, the number of real estate leases and the number of all other contracts were recorded. We were not able to find any contract count data in 7.3% of the motions in the sample. Thus, the contract disposition counts understate the total number of contracts disposed in all cases.

The timing of a disposition decision is an important object of study in the paper. I use the date of the motion as the disposition date rather than the date of the court order, since the date by which the debtor has made a decision is most relevant to testing a theory of real options. In most cases, the motion and order are very close in time.

One limitation of the case docket data is that it does not capture the economic values of contracts, as these data are unavailable in most cases. I supplement this analysis with data from COMPUSTAT. I estimate the capitalized value of the debtor's future lease obligations by adding the balance sheet value of capitalized leases to the capitalized value of operating leases, using an approach based on Rauh and Sufi (2012). Operating leases are capitalized using a 10% discount rate. I compare this "lease debt" to the value of the debtor's other assets and liabilities to get a quantitative measure of lease-intensity.

IV. Summary Statistics

Tables 1 and 2 report disposition data for real estate leases and all other contracts. The average number of real estate leases and other contracts disposed during a case is 131.6 and 880, respectively, but the distribution across cases is highly skewed. The median firm in Chapter 11 disposes of only 12 real estate leases and 169 other contracts, while a firm at the 90th percentile disposes of 159 leases and over 2000 other contracts.

As we might expect, the disposition choices vary substantially by case outcome. In sale and liquidation cases, 49.8% of disposed real estate leases are assigned, 41.7% are rejected, and 8.5% are assumed. In reorganization cases, 68.1% of disposed real estate leases are assumed, and 29.0% are rejected. Assignments are relatively rare in reorganization cases: only 2.9% of disposed real estate leases are assigned. Results from the other contracts category are qualitatively similar.

Tables 1 and 2 also compare cases pre- and post-BAPCPA. The pre-BAPCPA filers have a greater average and median number of lease disposition motions, and a greater median number of leases disposed, but the post-BAPCPA filers have a greater average number of leases disposed.

Table 3 summarizes leases and executory contracts by type. Many motions dispose of several contracts at once. Because some motions reference a large number of contracts, I did not code the specific type for every contract in the “other” category. Instead, I noted whether a contract of a particular type (say, a supply contract) appears at least once within the motion. Real estate leases are found in 39.3% of the motions recorded. Outside of real estate leases, the most common contract types were services or IP rights (32.1% of all motions), equipment leases (17.3%) and supply contracts (13.3%).

Table 4 complements our detailed case data by providing a dollar-valued measure of lease intensity, based on pre-bankruptcy financial data from COMPUSTAT. As with the number of contracts, the distribution of lease intensity is quite skewed. For the median firm in our sample, only 10% of adjusted assets and 12% of adjusted liabilities are comprised of leases. For firms at the 90th percentile, however, leases are quite substantial: nearly half of the firm’s assets (46.4% of assets) and more than half of its financial liabilities (70.7%) are comprised of leases. The lease intensity measure does not vary substantially by case outcome or by time period.

Table 5 investigates the contexts in which contracts are assigned. As noted above, one important power of debtors in bankruptcy is the ability to override anti-assignment clauses in contracts. In a study of assignment clauses in commercial supply contracts and leases, Ayotte and Hansmann (2013) find that a majority of contracts are “bundled-assignable”: they restrict assignment of the contract on an individual basis, but permit assignment in the sale of a division, business segment, or the whole business of which the contract is a part¹⁴. I find that a large majority of the assignments in the sample are “bundled” assignments: 93% of real estate leases and 97% of other contracts assigned occur in conjunction with a sale of a division, business unit, or the whole firm. This evidence suggests that in most instances, the pro-assignment features in Section 365(f) of the Bankruptcy Code are converting a majoritarian contracting practice into a mandatory rule. It further suggests that the main use of 365(f) is in facilitating sales and/or liquidations of business units, rather than facilitating the restructuring or downsizing of business units in reorganization.

V. The Effect of BAPCPA

The debate over the effect of BAPCPA and the 210 day disposition deadline has been anecdotal to date. Some practitioners claim that this deadline is important and has had a deleterious effect on reorganization cases, particularly in lease-intensive industries such as retail. Debtors may need more

¹⁴ Ayotte and Hansmann (2013) find that nearly all contracts explicitly restrict assignment on an individual basis. But 65.3% of the contracts in their sample explicitly identify a bundle with which the contract can be assigned. Further, the default rules of law generally do not consider a stock acquisition or merger to be an assignment of that entity’s contracts; including contracts that do not explicitly override this default, 85.7% of contracts are bundled assignable in some form.

than seven months to be able to separate the more profitable locations from the less profitable. Others take a more “Coasean” view, arguing that the deadline has had a negligible effect, because debtors can negotiate with their landlords for extensions of time to make decisions. This paper allows for a more thorough examination of these competing conjectures.

Figures 1 and 2 show aggregate contract disposition decisions by month¹⁵, before and after BAPCPA. To limit the influence of outlier motions with large numbers of contracts disposed, I winsorize at the 95th percentile¹⁶. The data reveal a strong effect of the 210-day deadline on real estate lease disposition behavior. Before BAPCPA, debtors routinely took longer than seven months to dispose of their real estate leases: 48.2% of leases were disposed after 210 days. After BAPCPA, only 12.7% of real estate leases were disposed after 210 days.

While I cannot rule out differences in the composition of cases filed before and after BAPCPA, the change in disposition patterns is very likely caused by the 210-day deadline. There is a dramatic drop-off in real estate lease disposition immediately after month 7 in the post-BAPCPA period, but not in the pre-BAPCPA period. Further, the spike in assumptions in month 7 suggests that the deadline was a binding constraint that caused debtors to assume contracts before the deadline that they would have postponed otherwise.

As further suggestive evidence, the same pattern is weaker in the class of contracts that were not affected by the change in the Code. I find no spike in assumptions of non-real estate leases in month 7. I do find that contracts are disposed earlier in the post-BAPCPA period on average, though the difference is less dramatic for non-real estate leases: 47.6% of other contracts are disposed after 210 days in the pre-BAPCPA period, and 32.5% in the post-BAPCPA period.¹⁷ This may be because the need to dispose of real estate leases earlier accelerated the resolution of bankruptcy cases as a whole.

Overall, Figures 1 and 2 suggest that the 210 day limit in BAPCPA had a strong effect on the disposition of real estate leases. Moreover, it suggests that bargaining and renegotiation between debtors and landlords in bankruptcy is far from a Coase theorem ideal. Debtors are sometimes able to buy extra time from their landlords, but in the aggregate, the 7 month deadline is a binding constraint that accelerated dispositions.

The results in Figures 1 and 2 do not necessarily imply that the deadline affected case outcomes, however. In Table 6, I test the hypothesis that BAPCPA reduced the probability of reorganization for the most lease-intensive firms. To do this, I estimate difference-in-differences models of the following form, using BRD data from 2000-2011:

$$Reorg_i = \beta_0 + \beta_1 LeaseIntTop20 + \beta_2 LeaseIntTop20 * AfterBAPCPA + \beta_3 AfterBAPCPA + \beta_4 LeaseIntTop20 * AfterBAPCPA + \gamma X + \varepsilon_i$$

¹⁵ Here, I define a “month” is a 30 day period, so that month 7 ends at day 210.

¹⁶ Results are not sensitive to this assumption: the effect of the 210-day deadline holds when I use motion counts rather than contract counts, and holds more strongly when the data is not winsorized.

¹⁷ A Kolmogorov-Smirnov test for equality of distributions, pre- and post-BAPCPA, in number of days to a disposition motion is rejected at the 1% level for both real estate leases and other contracts. This suggests that the timing of disposition changed after BAPCPA for both classes of contracts.

where $Reorg_i$ is a dummy variable equal to 1 if firm i reorganizes, $LeaseIntTop20_i$ is a dummy indicating the top quintile of firms by the lease intensity measure (Leases/Adjusted Assets) reported in Table 4, $AfterBAPCPA_i$ is a dummy for whether the case was filed after BAPCPA, and X_i is a vector of controls (pre-bankruptcy return on assets and log assets). I use an indicator for the top quintile because, as we saw in Tables 1 and 4, the distribution of lease intensity is highly skewed, and only the most lease-intensive firms are likely to have been affected by the 210-day deadline. The key coefficient of interest is β_4 , the coefficient on the interaction between $LeaseIntTop20$ and $AfterBAPCPA$; this estimates the relative effect of BAPCPA on the most lease-intensive firms relative to all other firms. The difference-in-differences methodology picks up any common forces, such as economic conditions, that affected all firms and may have affected the probability of reorganization. It relies, however, on the identifying assumption of parallel trends in reorganization propensity between lease-intensive and non-lease-intensive firms before and after BAPCPA.

I find that the post-BAPCPA period is associated with a strong negative effect on reorganization for the most lease-intensive firms. The coefficient estimates suggest that BAPCPA reduced the probability of reorganization for top quintile firms between 33 and 38 percent relative to other firms. The effect is statistically significant at the 1% level in the first two specifications and significant at the 5% level in the third specification, which includes controls for both ROA and size.

VI. Testing A Simple Real Options Theory

In this section, I test one of the predictions from a simple real options theory. (In subsequent drafts, I plan to test the other predictions in Section IIb.) The first testable prediction is whether debtors fully exploit the time value of the rejection put option; that is, do debtors assume contracts early? The pattern in Table 1 is suggestive evidence that many debtors waited until the 210 day deadline to assume their real estate leases, but this does not establish conclusively that debtors always assume all contracts at the last possible opportunity.

Identifying early assumptions in the data is not always clean cut because the “end” of the case is not always apparent in the data, and we did not record cases in which assumption or rejection compelled by the court.¹⁸ I adopt a cautious approach to this question by looking for assumptions that are most likely to have been made earlier than required. I look for assumption motions that are a) made in the first month of a case in which b) the firm assumes at least one other contract more than 30 days later, and c) the motion does not mention any renegotiation of terms with the counterparty.

Using this conservative measure, I find that 37 of the 405 assumption motions in the sample (9.1%) can be classified as early assumptions. Table 6 lists the debtors and contracts assumed early with a brief

¹⁸ There are several reasons why this is challenging. In some cases, debtors will propose a plan of reorganization with a series of exhibits that arrive on different dates. A contract might expire during the case, and assumption by the debtor might be part of the bargain for a new contract. The counterparty might simply purchase the option from the debtor; i.e. the debtor will agree to immediate assumption in exchange for more favorable terms, which would be consistent with a real options framework.

description of the classes of contracts being assumed. Notably, 45.9% (17/37) of the motions included a contract that provided of services to the debtor (compared to 32.1% in the overall sample), Only 1 motion included a commercial lease (39.3% of all motions in the overall sample) and no early assumption motions included other kinds of leases like equipment (17.3 in overall sample) or vehicles (5.3% in overall sample). To understand why these motions are more oriented toward services and less oriented toward physical assets like leases, I investigated the debtor's motions in these early assumptions to understand as much as possible about the contracts themselves and the debtor's stated reasons for assuming.

While the circumstances of these assumptions vary greatly, some common patterns emerge from a qualitative analysis of early assumptions. Broadly, early assumptions are consistent with implicit contracting motives: the debtor hopes that assumption will preserve relationships and secure better performance from the counterparty than the mere threat of formal enforcement of the contract.

As an example, several airlines in the sample seek to assume interline agreements. These agreements with other airlines allow an airline or travel agent to issue a single ticket for travel serviced by multiple carriers. These contracts create obligations that are settled on a monthly basis through a clearinghouse. A debtor filing between payment days might be a net debtor to other airlines under the interline agreements when they file for Chapter 11. If the debtor's explicit rights under the contract were the only factor affecting the parties' decisions, the debtor would find it optimal to leave this obligation unpaid while it continues under the agreement, keeping alive the option to reject the agreements later. Instead, debtors argue for the need to preserve "goodwill"¹⁹ with their counterparties by assuming.

Similarly, several airlines seek to assume agreements with clearinghouses that provide intermediary services between travel agents and airlines. The clearinghouses collect money from travel agents and remit them to airlines net of agent commission. Several of the airlines in the sample argue that assumption is necessary to prevent travel agents from holding back funds as a reserve against refund claims by customers. While the debtors' motions suggest that this "self help" remedy may not be permissible under the contract, the debtors see this as a credible threat because agents took these actions in previous airline bankruptcies.²⁰

While implicit contracting motives are present in many of the early assumption motions, debtors also explain their decisions by arguing that the value of the put option is small. For example, ABB Lummus

¹⁹ For example, in the ATA bankruptcy: "Honoring the Obligations will enable the Debtors to provide a high level of service and to retain the confidence and goodwill of travel agents and customers. Absent such relief, the value of the Debtors' estates will suffer."

²⁰ Also from the ATA bankruptcy: "Assuming these contracts and permitting mutual offsets will protect substantial travel agency remittances to the Debtors. As evidenced in the first Continental Airlines and Eastern Air Lines bankruptcies, travel agents - even those who, on the Petition Date, are not owed any refunds - do not remit the full amount of their receipts from postpetition sales. They do this because they wish, by self- help remedies, to establish a reserve against the possibility that they will subsequently be asked by their customers to make refunds of prepetition tickets. Continuation of the normal prepetition procedures with respect to travel agent refunds will greatly reduce the incentive to resort to self- help remedies and avoid wasteful litigation before this Court."

filed its case to manage asbestos liabilities. Its primary motive in assuming was the desire to preserve its relationships with counterparties, but it argued that assumption would not cost the estate because the debtor was solvent.²¹ Some debtors emphasize the absence of any pre-petition obligations that would be elevated in priority.²² Others mention the virtual certainty that the debtor will ultimately assume (suggesting that the put option is out of the money with low volatility).

There is a strong parallel between early assumptions and the payment of “critical vendors”. Debtors argue for the need to pay off essential input providers on prepetition claims in order to receive essential future supplies. While the input providers in the sample supply pursuant to contracts, debtors argue that elevating the status of suppliers is necessary to receive value over and above what is guaranteed by the contract. While a body of case law has developed around the critical vendors issue, articulating the hurdles a debtor must overcome to pay a vendor can be paid on prepetition claims²³, no comparable standards exist for early assumptions of contracts. Given the similarity of the underlying issues at hand, the data suggest that early assumptions should be analyzed by courts through a similar lens.

VII. Conclusion

This paper is the first to empirically investigate disposition decisions in leases and executory contracts in large Chapter 11 cases. From a policy standpoint, the most important results concern the effect of the revised 365(d)(4). My results suggest that the seven month limit for disposing of commercial real estate leases had a strong effect on lease disposition activity. Before BAPCPA, debtors commonly took advantage of the option to postpone lease assumption. After BAPCPA, lease disposition was greatly accelerated. Though debtors were free to negotiate extensions, few did so: after BAPCPA, only 12.7% of leases were disposed after 210 days, compared to 48.2% before BAPCPA. The change also may have had a collateral effect on non-real estate leases, as the time to disposition of these contracts also accelerated. More importantly, difference-in-differences regressions suggest that the change in the Code reduced the probability of reorganization for the most lease-intensive firms, relative to less lease-intensive firms.

Other results in the paper shed light on the way debtors use their rights to dispose of their leases and executory contracts. In particular, I find that 365(f), which allows debtors to freely assign contracts, is rarely used as a device to transfer contracts on an individual basis. Instead, the primary uses of the assignment power are to transfer contracts in a sale of a business unit, or in the sale of the whole firm. In this respect, 365(f) might be seen as a complement to other areas of the code that limit hold-up problems to facilitate sales, such as the ability to sell assets free and clear of liens under 363(f).

²¹ From ABB Lummus bankruptcy: “It is the Debtor’s belief that if it does not assume these Agreements, the contract counterparties will no longer have any incentive to provide services to the Debtor and some parties may regard this as a critical breach of good faith confidence making it difficult for the Debtor to maintain these relationships or forge future business relationships.”

²² Add cite here.

²³ Courts in the Second and Third Circuits are more permissive, recognizing the permissibility of these payments under a “doctrine of necessity”. See, e.g. *In re Just for Feet*, 242 B.R. 821, 826 (D. Del. 1999); *In re Ionosphere Clubs Inc.*, 98 B.R. 174 (Bankr. S.D.N.Y. 1989). Courts in other jurisdictions have set a tougher standard. See, e.g., *In re Kmart Corp.*, 359 F.3d 866 (7th Cir. 2004), *In re CoServ LLC*, 273 B.R. 487, 497-500 (Bankr. N.D. Tex. 2002).

Finally, the paper suggests that a real options framework is a useful tool for understanding debtors' incentives, though the basic model I consider here must be further refined to fully explain debtors' behavior. In many cases, debtors assume executory contracts early in the case to maintain relationships and secure performance that formal enforcement of contracts alone does not provide. Thus, early assumptions are consistent with theories of implicit contracting. In future drafts, I plan to push this model further to get a more complete picture of the strengths and weaknesses of the real options approach to understand whether factors that affect the value of the debtor's put option, such as the degree of insolvency, also affect contract dispositions.

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Figure 1: Real Estate Lease Disposition Before and After BAPCPA

Notes: a) Month 25 includes all dispositions from month 25 and afterward, b) lease counts per-motion are winsorized at the 95th percentile.

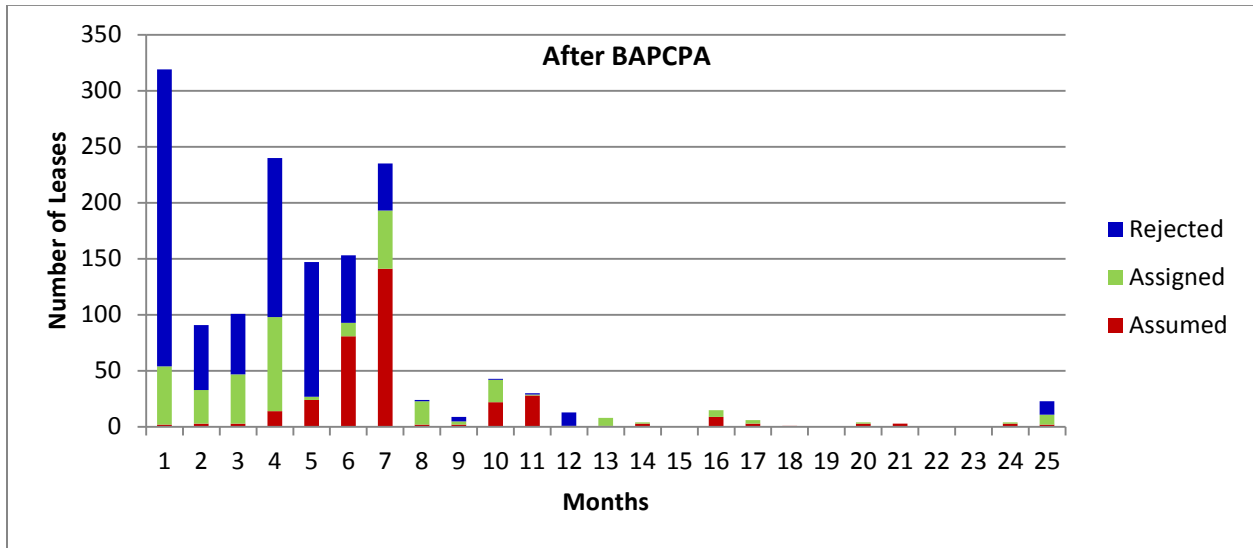
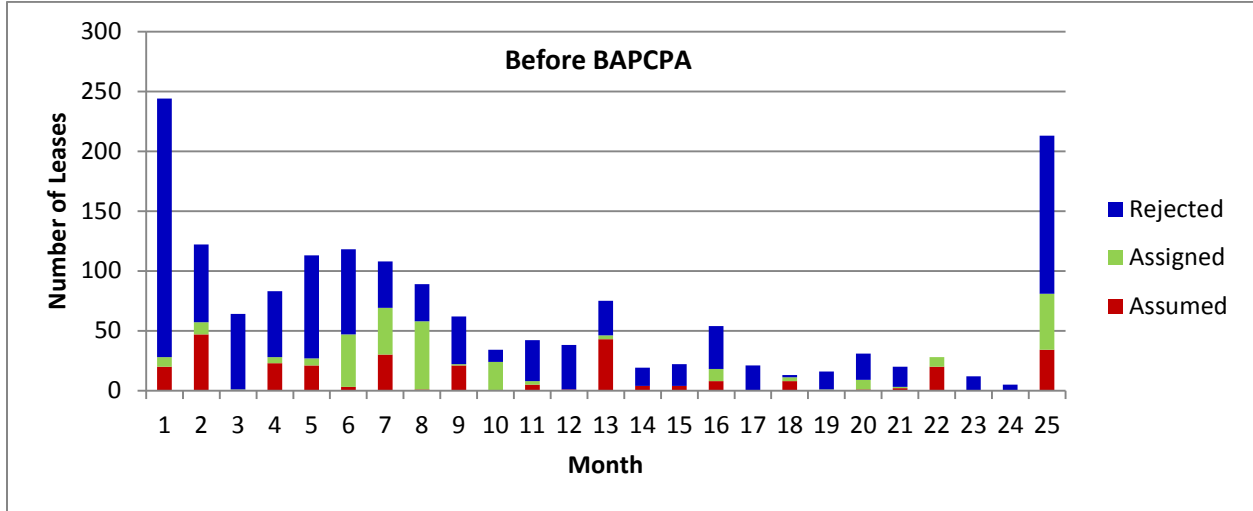


Figure 2: Other Contract Disposition Before and After BAPCPA

Notes: a) Month 25 includes all dispositions from month 25 and afterward, b) contract counts per-motion are winsorized at the 95th percentile.

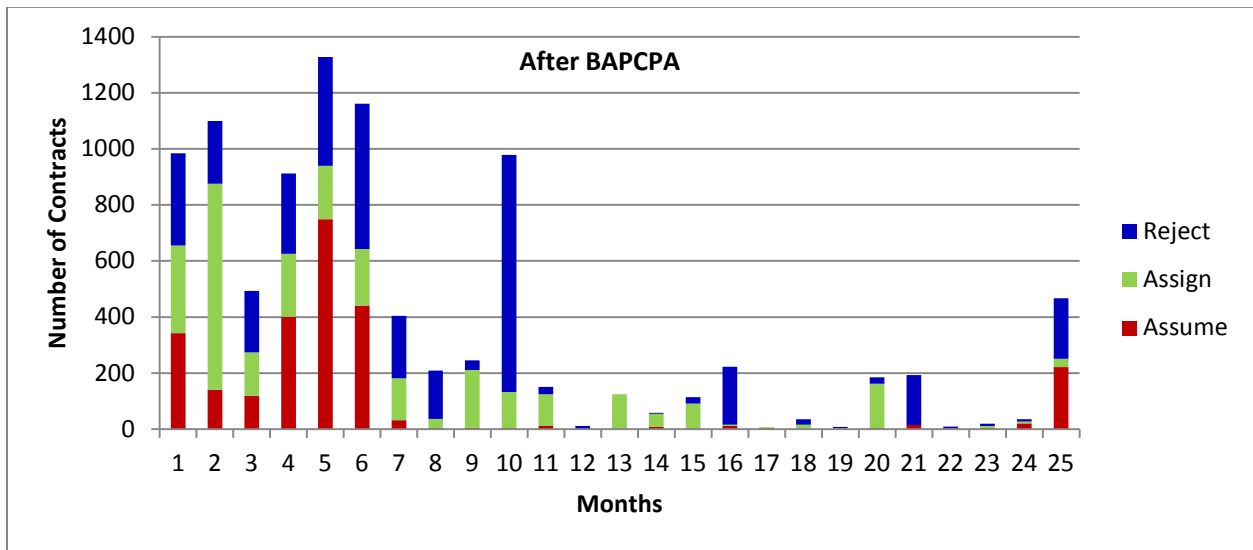
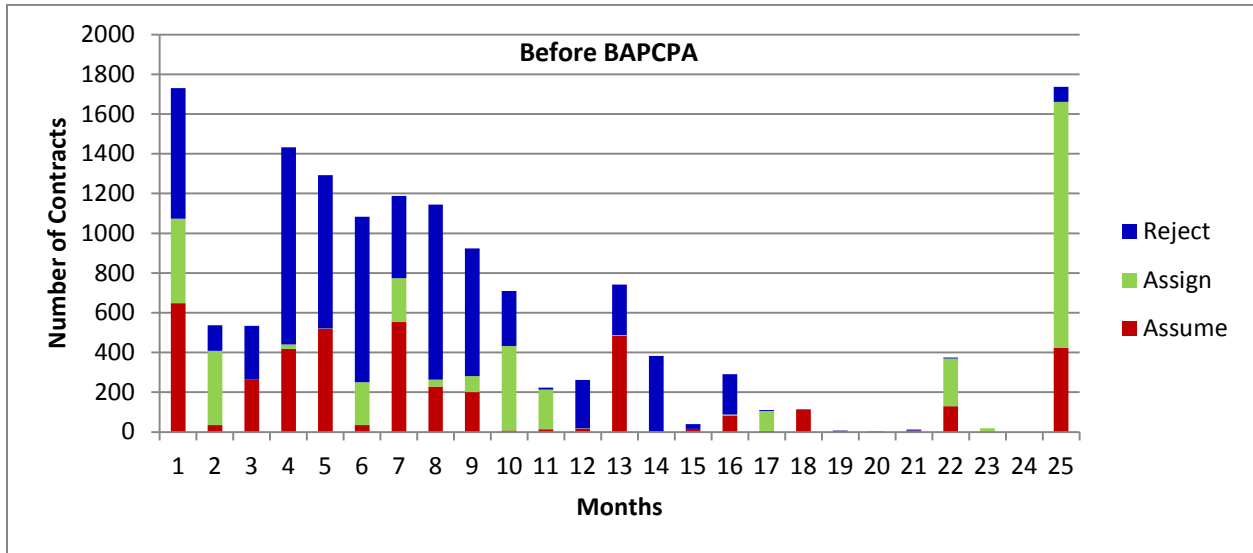


Table 1: Real Estate Leases

		Mean	SD	Median	p90	Max
All Cases N=91	# Motions Containing	6.6	9.3	3.0	16.0	51
	# Leases Disposed	131.6	499.1	12.0	159.0	4400
	# Assumed	65.9	335.5	0.0	82.0	3061
	# Assigned	22.5	88.0	0.0	47.0	632
	# Rejected	43.3	166.1	4.0	63.0	1338
<hr/>						
By Case Outcome: Sale/Liquidation N=41		Mean	SD	Median	p90	Max
	# Motions Containing	6.1	7.6	3.0	13.0	35
	# Leases Disposed	88.5	220.0	14.0	159.0	1300
	# Assumed	7.6	39.3	0.0	6.0	252
	# Assigned	44.1	127.5	3.0	87.0	632
# Rejected	36.9	108.2	5.0	72.0	668	
Reorganization N=50	# Motions Containing	6.9	10.6	3.0	17.5	51
	# Leases Disposed	167.0	644.4	11.5	206.5	4400
	# Assumed	113.7	447.6	4.0	187.5	3061
	# Assigned	4.8	14.9	0.0	7.5	67
	# Rejected	48.5	202.6	3.5	45.5	1338
<hr/>						
By Period: Pre-BAPCPA N=44		Mean	SD	Median	p90	Max
	# Motions Containing	7.3	9.7	4.0	17	51
	# Leases Disposed	87.3	191.1	31.0	155	1226
	# Assumed	40.6	112.1	2.0	108	660
	# Assigned	12.8	29.8	0.0	53	140
# Rejected	33.8	89.6	8.0	70	563	
Post-BAPCPA N=47	# Motions Containing	5.9	9.0	2.0	15	42
	# Disposed	173.2	670.5	10.0	459	4400
	# Assumed	89.5	455.4	0.0	17	3061
	# Assigned	31.5	118.9	1.0	32	632
	# Rejected	52.1	215.2	3.0	63	1338

Table 2: All Other Contract Types

		Mean	SD	Median	p90	Max
All Cases N=91	# Motions Containing	11.7	13.3	6.0	28.0	63
	# Other Contracts Disposed	880.1	1940.4	169.0	2250.0	12690
	# Assumed	334.0	864.4	5.0	736.0	5024
	# Assigned	215.4	1058.2	1.0	282.0	9147
	# Rejected	330.8	1396.1	20.0	365.0	11784
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By Case Outcome:		Mean	SD	Median	p90	Max
Sale/Liquidation N=41	# Motions Containing	10.2	8.9	8.0	22.0	32
	# Other Contracts Disposed	1071.6	2617.7	154.0	2250.0	12690
	# Assumed	141.4	783.7	0.0	59.0	5024
	# Assigned	333.2	1423.2	24.0	395.0	9147
	# Rejected	597.0	2041.5	30.0	592.0	11784
Reorganization N=50	# Motions Containing	12.9	16.0	5.0	40.5	63
	# Other Contracts Disposed	723.1	1125.3	212.0	2489.0	4471
	# Assumed	491.9	902.5	32.0	2004.0	3732
	# Assigned	118.8	618.3	0.0	192.0	4370
	# Rejected	112.5	264.2	13.0	331.0	1689
<hr/>						
By Period:		Mean	SD	Median	p90	Max
Pre-BAPCPA N=44	# Motions Containing	13.5	14.7	7.5	32	57
	# Disposed	1027.3	2169.7	283.5	2250	12690
	# Assumed	414.4	973.8	12.5	948	5024
	# Assigned	171.8	671.2	0.5	283	4370
	# Rejected	441.0	1799.9	27.0	438	11784
Post-BAPCPA N=47	# Motions Containing	10.0	11.6	5.0	22	63
	# Disposed	742.4	1710.6	117.0	2805	9274
	# Assumed	258.7	750.6	1.0	666	3732
	# Assigned	256.2	1329.1	2.0	282	9147
	# Rejected	227.6	873.4	12.0	365	5922

Table 3: Contracts By Type

	# Motions Containing	%
Real Estate Lease	598	39.3%
Employment Contract	80	5.3%
Intangibles (Services or IP licenses)	489	32.1%
Insurance	46	3.0%
Supply (to Debtor)	203	13.3%
Customer (Debtor is supplier)	167	11.0%
Equipment Lease	264	17.3%
Vehicle Lease	80	5.3%
Collective Bargaining	31	2.0%
Other	172	11.3%
Type(s) unknown	107	7.0%
All Motions	1522	100.0%

Table 4: Lease Intensity

This table reports lease intensity measures for 49 of the 91 firms in our sample that are also available in the LoPucki BRD. Leases is the balance sheet value of capitalized leases plus capitalized operating leases, calculated as in Rauh and Sufi (2012) and using a 10% discount rate. Adj. Assets is the book value of total assets plus the capitalized value of operating leases. Adj. Liab is total financial debt (DLC+DLTT from COMPUSTAT) plus capitalized operating leases. Values are derived from COMPUSTAT using the fiscal year that precedes the bankruptcy filing; if this was not available then two years preceding the filing was used.

		Mean	SD	Median	p90	Max
All Cases N=49	Leases/Adj. Assets	17.6%	19.2%	10.0%	46.4%	72.5%
	Leases/Adj. Liab	23.6%	24.5%	12.0%	70.7%	84.9%
By Case Outcome:						
Sale/Liquidation N=14	Leases/Adj. Assets	18.2%	20.8%	8.0%	46.4%	66.5%
	Leases/Adj. Liab	29.2%	31.8%	13.1%	80.1%	84.9%
Reorganization N=35	Leases/Adj. Assets	17.4%	18.9%	10.7%	42.5%	72.5%
	Leases/Adj. Liab	21.4%	21.0%	10.8%	55.8%	80.7%
By Period:						
Pre-BAPCPA N=28	Leases/Adj. Assets	15.7%	16.2%	10.3%	38.3%	72.5%
	Leases/Adj. Liab	21.8%	21.9%	14.1%	64.3%	80.7%
Post-BAPCPA N=21	Leases/Adj. Assets	20.1%	22.9%	8.5%	58.1%	67.4%
	Leases/Adj. Liab	26.0%	28.0%	9.5%	70.7%	84.9%

Table 5: Assignment

This table reports the total number of motions and leases/contracts assigned. An assignment is classified as "bundled" if the assignment occurs in the context of the sale of the segment or division to which the contract belongs, or in a sale of the whole firm.

Real Estate Leases						
		Less than segment	Segment or Division	Whole Firm	Total	% Bundled
Sale/Liquidation N=41	# Motions	18	8	47	73	75%
	# Leases	48	121	1,601	1,770	97%
Reorganization N=50	# Motions	19	16	1	36	47%
	# Leases	89	81	67	237	62%
All Cases N=91	# Motions	37	24	48	109	66%
	# Leases	137	202	1,668	2,007	93%
All Other Contract Types						
		Less than segment	Segment or Division	Whole Firm	Total	% Bundled
Sale/Liquidation N=41	# Motions	28	16	53	97	71%
	# Contracts	180	821	3,417	4,418	96%
Reorganization N=50	# Motions	36	55	2	93	61%
	# Contracts	155	5,482	283	5,920	97%
All Cases N=91	# Motions	64	71	55	190	66%
	# Contracts	335	6,303	3,700	10,338	97%

Table 6: Lease Intensity, BAPCPA, and Reorganization Probabilities

This table reports coefficient estimates from linear probability models. The dependent variable is an indicator that equals one if a firm reorganizes and zero otherwise. Data is Chapter 11 filers between 2000 and 2011 from Lynn LoPucki's Bankruptcy Research Database, with financial firms excluded. LeaseIntTop20 is a dummy variable for the top quintile of lease intensity as measured by Leases/Adj. Assets. Heteroskedasticity-robust standard errors are reported in parentheses.

	(1)	(2)	(3)
LeaseIntTop20	0.096	0.113	0.105
	-0.08	-0.08	-0.079
After BAPCPA	0.131	0.086	0.078
	(0.050)**	-0.055	-0.054
LeaseIntTop20 x After BAPCPA	-0.376	-0.357	-0.33
	(0.139)**	(0.136)**	(0.139)*
Return on Assets		0.587	0.577
		(0.146)**	(0.149)**
Log Assets			0.067
			(0.021)**
Constant	0.54	0.53	0.077
	(0.029)**	(0.030)**	-0.143
R2	0.02	0.05	0.08
N	502	446	446

** indicates $p < .01$, * indicates $p < .05$