Corporate Reorganization & Professional Fees

by

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> *The one great principle of the English law is, to make business for itself. There is no other principle distinctly, certainly, and consistently maintained through all its narrow turnings. Viewed by this light it becomes a coherent scheme, and not the monstrous maze the laity are apt to think it. Let them but once clearly perceive that its grand principle is to make business for itself at their expense, and surely they will cease to grumble.*
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> CHARLES DICKENS, BLEAK HOUSE 621(1853).

> *Let the lawyers work it out. They write the laws for other lawyers to dissect in front of other lawyers called judges so that other judges can say the first judges were wrong and the Supreme Court can say the second lot were wrong. Sure there's such a thing as law. We're up to our necks in it. About all it does is make business for lawyers.*
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> RAYMOND CHANDLER, THE LONG GOODBYE (1953).[1]

INTRODUCTION

There is a long literary tradition supporting the belief that the work of lawyers often—or even always—benefits the legal profession first and foremost. In recent years, this same strain of criticism has become especially pronounced in the area of corporate bankruptcy, where the idea of professionals receiving millions from a company that is ostensibly "broke" strikes more than

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[1] RAYMOND CHANDLER, LATER NOVELS & OTHER WRITINGS 681 (1995).

a few as peculiar, or worse.[2] Writing with equal passion, if less grace than either Dickens or Chandler, these critics have lambasted a system that they see as nothing more than "competing bankruptcy courts offer[ing] high fees to bribe the lawyers to bring them cases."[3] Of course, big firm corporate attorneys earn lofty hourly rates in or out of bankruptcy court. And too often critics of chapter 11 mistakenly assume that the general agency problems inherent in all corporations can be solved by the bankruptcy system.

Declarations that bankruptcy courts are failing to control professional fees[4] or that certain categories of professionals fees should be disallowed in bankruptcy begs the question of "why bankruptcy?" Solvent corporations hire the vast bulk of corporate professionals – it seems odd to think that bankruptcy courts should be the primary mechanism for controlling what these professional charge. Commentators and courts regularly assume a need for government intervention in the market for bankruptcy professionals without discussion of why this market is different from the broader market for these professionals. And exactly how much it should cost to reorganize a corporate entity is a matter of surprising elusiveness. Often, especially in the press, excessive chapter 11 cost, like pornography, is recognized by whatever shocks a particular commentator.[5]

In recent years a trio of legal scholars – Lynn LoPucki,[6] Robert Lawless,[7] and myself[8] – have attempted to bring some rigor to this debate through consideration of the pertinent empirical evidence. Although these papers have made some progress in informing intellectual debates about chapter 11,

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[2]*See* Michael Arndt & Aaron Bernstein, *UAL Lawyers: Eight Days a Week?*, BUS. WK., April 4, 2005, at 13.

[3]LYNN M. LOPUCKI, COURTING FAILURE: HOW COMPETITION FOR BIG CASES IS CORRUPTING THE BANKRUPTCY COURTS 141 (2005).

[4]Karen Donovan, *Breaking Tradition While Embracing Bankruptcy Law*, N.Y. TIMES, Aug. 3, 2007, at C5 (quoting professor LoPucki's assertion that "[t]he surprising thing . . . is that the fees are not going up faster because no one is controlling them.").

[5]*Cf.* Jacobellis v. Ohio, 378 U.S. 184, 197 (1964) (Stewart, J. concurring) ("[U]nder the First and Fourteenth Amendments criminal laws in this area are constitutionally limited to hard-core pornography. I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it . . .").

[6]Lynn M. LoPucki & Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases*, 1 J. EMPIRICAL L. STUD. 111, 140 (2004) (reporting that the average ratio of fees and expenses to assets in a sample of 48 chapter 11 cases was 2.2 percent).

[7]Stephen P. Ferris & Robert M. Lawless, *The Expenses of Financial Distress: The Direct Costs of Chapter 11*, 61 U. PITT. L. REV. 629 (2000).

[8]Stephen J. Lubben, *The Direct Costs of Corporate Reorganization: An Empirical Examination of Professional Fees in Large Chapter 11 Cases*, 74 AM. BANKR. L.J. 509, 540 (2000) (finding that professional fees averaged 2.5 percent of assets if prepackaged cases were excluded from the sample).

they all suffer from a two-part problem: they rely on small sample sizes and capture but an isolated part of the chapter 11 market.

This paper overcomes these problems and provides the most extensive study to date of the professional fees and expenses awarded by U.S. bankruptcy courts in the reorganizations of American businesses. Its database includes approximately 1,050 chapter 11 cases filed in 2004 – almost more than 1,000 more cases than the next largest American study.[9] Similarly, the study includes chapter 11 cases of all types, ranging from very large, well known companies like US Airways Group, Inc., which reported assets of more than $8 billion, to decidedly less glamorous firms like Pot of Gold Porta Potties, Inc, which reported assets of just over $950,000. Even considered alone, the big case portion of the sample is larger than any prior study of professional fees in chapter 11.

This paper also represents the results of a unique partnership between academics and practitioners to generate a study of chapter 11 that does not suffer from reliance on cases filed many years before the study is written. All prior studies of chapter 11 professional fees suffer from this problem to some degree – for example, my 2000 study was based on cases filed in 1994. The lag between case filings and paper publication dates has often given rise to concerns that the study no longer reflects the current state of chapter 11 practice. It also generates concerns that multi-year studies reflect practices that are no longer "state of the art" in the quickly changing world of corporate reorganization.

The present study examined a sample of cases filed in 2004, followed these cases for approximately two years, and generated this paper by the end of 2007. By following cases for approximately two year without regard to outcome, we also obtained a unique view of chapter 11 that may avoid a potential survivorship bias in prior studies that examined only cases with confirmed chapter 11 plans. This study thus provides an important new look at the chapter 11 system and its most controversial feature: the fees paid to the professionals who operate the system. Among the key findings of this study are:

- Most of the regulation of professional fees provided by the Bankruptcy Code is valuable primarily for its deterrence effects. Retention applications are rarely denied and requested fees are rarely reduced. This, of course, does not mean that the regulatory system is broken, but rather that much of the system is not easily viewed by outsiders.

[9]And substantially larger than the largest study of the costs of corporate insolvency I have seen, John Armour, Audrey Hsu & Adrian Walters, *The Costs and Benefits of Secured Creditor Control in Bankruptcy: Evidence from the UK* (September 2006). 1st Annual Conference on Empirical Legal Studies Paper Available at SSRN: http://ssrn.com/abstract=912302 (studying 348 British cases).

- Unlike prior studies, I find that time spent in chapter 11 seems to have very little independent effect on the costs of the case. Factors like the size of the debtor corporation, the number of professionals retained, and whether a committee is appointed play much bigger roles.
- Professional fees in chapter 11 are subject to economies of scale. In particular, with every 1 percent increase in the size of a debtor, professional fees only grow by less than half a percent – holding other key factors constant.
- Most prior papers have reported professionals' fees relative to the asset size of the debtor. Asset size turns out to be a suboptimal measure of firm size in this context – especially when applied outside of very big chapter 11 cases. For that reason, I urge future researchers to use the sum of assets and debts to account for debtor size. This measure works across a broad range of chapter 11 cases.
- Lost in the sound and fury about large professional expenses in large cases is the fact that almost 35 percent of the chapter 11 cases result in no payment whatsoever to the professionals. These are typically smaller cases that are often converted to chapter 7 or dismissed outright.

These findings have important implications for a range of theoretical and policy debates concerning chapter 11. For example, it is still common to see chapter 11 described as a lengthy or expensive process.[10] First, it has already become clear that this is simply untrue by international standards. Moreover, the present study shows that the time spent in chapter 11 no longer has any significant relationship with professional costs, the most important component in the direct costs of corporate reorganization.

More generally, the model of fees that I ultimately present in this paper shows how much chapter 11 varies with the size of the debtor. As noted, factors such as the retention of a number of additional professionals and the appointment of a creditors committee are big factors that determine how much a chapter 11 reorganization ultimately costs. These factors are proxies for the size of the debtor and, more directly, the complexity of its reorganization. In short, this paper not only provides a wealth of information about the actual costs of chapter 11, but also illuminates the wealth of variation that hides under the rather bland heading of "chapter 11."

A case that proceeds with no professionals, save for debtor's counsel, and no creditors committee is a decidedly different animal than the kinds of complex corporate reorganizations that are the subject of well known works by

[10] *See, e.g.,* Arturo Bris *et al.*, *Who Should Pay Bankruptcy Costs?*, 34 J. LEGAL STUD. 295, 295-96 (2005) ("The fees of professionals . . . drain substantial resources from the estates of large bankrupts.").

leading academics.[11] As this paper illustrates, the cost structure of the two types of cases are remarkably different, and, with different costs, one can also assume that other less apparent differences distinguish the cases. Authors who attempt to draw conclusions across this divide do so at their peril.[12]

The paper proceeds as follows: First, I very briefly summarize the existing literature on professional fees. My focus here is not a detailed review of all extant literature, but rather a consideration of the patchwork nature of the prior studies. Part II describes my study methods and provides basic descriptive information about the study. Part III then examines the use of professionals and describes how their fees are regulated in the sample cases. Part IV presents the empirical heart of the paper. I examine several regression models that explain the professional fees associated with chapter 11 cases. I ultimately find that most of the variance in professional expense in chapter 11 can be explained by a relatively simple model that accounts for debtor size and case complexity. This model gives no support to recent headline-grabbing claims that Delaware or certain large New York law firms contribute to larger expenses in chapter 11. Part V then concludes by briefly looking at the implications of my findings for the ongoing debates about chapter 11.

I. PROFESSIONAL FEES IN CHAPTER 11

Under the Bankruptcy Code, section 327(a), when read with section 1107(a), allows a chapter 11 debtor to retain "one or more attorneys, accountants, appraisers, auctioneers, or other professional persons, that do not hold or represent an interest adverse to the estate, and that are disinterested persons."[13] Thus, a professional must satisfy a two-part test before retention: the professional must be disinterested and hold no adverse interest.[14] This *ex ante* control over professionals is coupled with the bankruptcy court's power to alter professional compensation at the conclusion of a case. For example, section 328(c) gives the courts the power to deny compensation for services previously rendered by professionals, or to order disgorgement of fees already paid, if a professional is found to have been not disinterested (*i.e.*, found to

[11]*See, e.g.,* Barry E. Adler & Ian Ayers, *A Dilution Mechanism for Valuing Corporations in Bankruptcy,* 111 YALE L.J. 83, 140-49 (2001); Douglas G. Baird & Robert K. Rasmussen, *The End of Bankruptcy,* 55 STAN. L. REV. 751 (2002); Robert K. Rasmussen, *Debtor's Choice: A Menu Approach to Corporate Bankruptcy,* 71 TEX. L. REV. 51, 55-68 (1992); David A. Skeel, Jr., *Creditors Ball: The "New" New Corporate Governance in Chapter 11*, 152 U. PA. L. REV. 917 (2003).

[12]For example, papers that attempt to draw conclusions about theories developed in reference to large American corporate chapter 11 cases, *see supra* note 11, by reference to samples of comparatively small foreign reorganization cases would seem to be especially suspect. *E.g.*, B. Espen Eckbo & Karin S. Thorburn, *Automatic bankruptcy auctions and fire-sales*, (unpublished manuscript February 2007)(http://mba.tuck.dartmouth.edu/pages/faculty/karin.thorburn/publications/ET-Fire-07.pdf).

[13]11 U.S.C. §327(a), §1107(a).

[14]*See In re* Martin, 817 F.2d 175, 180 (1st Cir. 1987).

have been "interested").[15]

It is one of the odder facets of corporate bankruptcy that a large corporation, upon entering bankruptcy, is subject to government oversight of its business choices. Under statute, the United States Trustee, "shall supervise the administration" of chapter 11 cases, "whenever the United States trustee considers it to be appropriate."[16] The key role of the United States Trustee in chapter 11 is that of professional fee monitor – thus, even though the 1978 Bankruptcy Code is often said to have moved to a market driven system of professional compensation, a non-market actor plays a key role in the compensation of bankruptcy professionals.[17]

Since 2000, the primary empirical studies of professional fees in chapter 11 are those done by three legal academics, Robert Lawless, Lynn LoPucki, and myself.[18] Professor Lawless has conducted the only prior study of professional fees in small business bankruptcy cases.[19] Pulling up to 20 cases from each of six districts around the country, Lawless and his co-author Stephen Ferris assembled a sample of 118 chapter 11 cases filed between 1986 and 1993, with 65 percent of the sample coming from 1991-92. The debtors in this study had mean (median) assets of $4.3 million ($0.7 million). The ratio of debt to assets in the sample was 4.44 (1.25). From this sample Lawless and Ferris reported that professional fees consumed 17.6 percent of the debtors' assets, as reported on the petition date. Attorneys' fees were the single largest component of this cost, consuming 12.9 percent of reported assets.

On the other end of the spectrum, Lynn LoPucki, with his co-author Joseph Doherty, has authored three recent studies of professional fees in very large chapter 11 cases. In the first, the authors considered the professional fees and expenses awarded by U.S. bankruptcy courts in 48 cases involving large, public companies whose chapter 11 plans were confirmed between 1998 and 2002.[20] They found that fees and expenses in the 48 cases studied

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[15]11 U.S.C. §328(c).

[16]28 U.S.C. ' 586(a)(3).

[17]*In re* Busy Beaver Bldg. Centers, Inc., 19 F.3d 833, 848 (3d Cir. 1995) (explaining that one purpose of enactment of the current Bankruptcy Code in 1978 "was to compensate bankruptcy attorneys at the same level as non-bankruptcy attorneys. The clearest path to that goal is to rely on the market, subject to the modification that the court will, in practical terms, act as a surrogate for the estate, reviewing the fee application much as a sophisticated non-bankruptcy client would review a legal bill.").

[18]For a more comprehensive review of the prior literature, see Stephen J. Lubben, *The Microeconomics of Chapter 11*, Part 1, 4 INT'L. CORP. RESCUE 31 (2007).

[19]Stephen P. Ferris & Robert M. Lawless, *The Expenses of Financial Distress: The Direct Costs of Chapter 11*, 61 U. PITT. L. REV. 629 (2000).

[20]Lynn M. LoPucki & Joseph W. Doherty, *The Determination of Professional Fees in Large Bankruptcy Reorganization Cases*, 1 J. EMPIRICAL L. STUD. 111 (2004). For purposes of the LoPucki database, a case is "large" if debtor reported assets or more than $100 million (measured in 1980 dollars) on the last form 10-K that the debtor filed with the Securities Exchange Commission before filing the bankruptcy case. *Id.* at 115.

collectively totaled 1.4 percent of the debtors' assets as reported in the bankruptcy files at the beginning of their bankruptcy cases.

LoPucki and Doherty also developed a regression model to predict professional fees in chapter 11 cases. After testing a variety of variables, they concluded that debtor size and length of time between filing and confirmation were the strongest determinants of professional fees awarded.[21] Further, the number of professional firms seeking reimbursement also impacted the overall amount of professional fees awarded, albeit causing a smaller effect than the first two variables.[22] Using only those three factors in their regression analysis, LoPucki and Doherty were able to explain 77 percent of the variance of fees.[23]

Most recently, LoPucki and Doherty have produced two follow-up studies. The first paper revisited the earlier study and expanded it to consider a larger group of cases – 74 cases with plans confirmed between 1998 and 2003.[24] The authors confirmed their initial findings that (a) asset size, (b) case duration, and (c) number of professionals are the most important determinants of the amount of professional fees incurred in chapter 11 cases. The authors made strong claims in favor of scale effects with regard to these professional fees. In particular, they argued that "[t]he scale effect with respect to firm size is so great that study results reported in the conventional format – costs as a percentage of firm assets – are virtually meaningless."

In the third paper, LoPucki and Doherty examined the growing role of investment bankers in modern chapter 11 practice and constructed regression models for specific bankruptcy professionals.[25] The primary findings of this paper largely track those of its companion paper, although the authors do note that "financial advisors' awards rose at the rate of 20% per year, while attorneys' awards rose at the rate of only about 1% per year." They also conclude that "Skadden Arps representation cost more in these cases because Skadden Arps billed more hours."

Sitting somewhere in the middle of the Lawless and LoPucki studies is my 2000 study of 22 mid-sized and large, public and private firms that filed for bankruptcy in 1994.[26] The study examined professional fees along three dimensions: "(a) fees as a percentage of the firm's overall debt load, (b) fees as a percentage of the debtor's reported assets, and (c) fees in relation to total

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[21]*Id.* at 120.

[22]*Id.*

[23]*Id.*

[24]Lynn M. LoPucki & Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases Revisited* (unpublished manuscript June 11, 2006)(on file with author).

[25]Lynn M. LoPucki & Joseph W. Doherty, *Rise of the Financial Advisors: An Empirical Study of the Division of Professional Fees in Large Bankruptcies*, 82 AM. BANKR. L.J. 141, 152-53, 172 n.96 (2008).

[26]Stephen J. Lubben, *The Direct Costs of Corporate Reorganization: An Empirical Examination of Professional Fees in Large Chapter 11 Cases*, 74 AM. BANKR. L.J. 509, 510-11 (2000).

firm size."[27] With respect to the entire sample, the direct costs of chapter 11 were found to average 0.87 percent of total firm size.[28] When prepackaged bankruptcies were removed from the sample, the direct costs increased to 1.20 percent of total firm size.[29] When measured as a percentage of assets, direct costs were found to average 1.8 percent of total firm size for the entire sample and 2.5 percent of total firm size when prepacks were excluded.[30] Additionally, I found no indication of a scale effect for the direct costs of chapter 11.[31]

Taken together, these articles show the fragmented nature of prior work in this area: the three sets of studies cover small, medium, and large debtors, with very little overlap between them and likely even some gaps in coverage. Moreover, the studies cover different time periods; further frustrating attempts to stitch them together for a bigger picture of chapter 11 practice. It is with this background that the present study proceeds.

II. AN EMPIRICAL STUDY OF PROFESSIONAL FEES IN CHAPTER 11

The cases in the ABI Chapter 11 Fee Study were drawn from 33 districts around the United States. Three districts from each of the eleven numbered judicial circuits were selected: one from each of the high, low and median population states in the circuit, as determined by the July 1, 2003 Population Estimate published by the U.S. Census. This stratified sampling procedure ensures that sufficient cases from each type of state are represented in the sample, and helps reduce sampling error. In states with multiple districts, the district that included the highest population city was chosen. For example, California was chosen as the high population state from the 9th Circuit, and the Central District of California, which includes Los Angeles, was selected as the California district for inclusion in the sample. Where there was an even number of states in the circuit, I calculated the average population for the circuit and selected the state with the population closest to that figure as the "median population state." Cases had an equal chance of selection regardless of the location within the district where they were filed. For example, cases from the Southern District of New York include cases filed in both Manhattan and White Plains.

As a result of the destruction caused by Hurricane Katrina in late August 2005, two districts originally included in the sample were replaced by neighboring districts. In particular, the Northern District of Mississippi was sub-

[27] *Id.* at 512.
[28] *Id.*
[29] *Id.* at 512-13.
[30] *Id.* at 513.
[31] *Id.*

stituted for that state's Southern District and the Western District of Louisiana was substituted for that state's Eastern District. These changes avoided the need to work with courts whose operations were tremendously disrupted by the storm and further prevented any skewing effects on the sample that the devastation in these two districts might have had. Of course, the replacement districts neighbored the areas of greatest destruction, but for purposes of comparability, I felt it important to use replacement districts that were within the same State as the original districts.

From each district, I selected up to forty cases: approximately half from filings during the first six months of the year and approximately half from the final six months. Within each six-month period, cases were selected in the order they were filed. When it was necessary to select between cases filed on the same day, the first case filed on that day, as indicated by the time stamp on the petition, was selected.

Only business entities are included in the sample; cases involving individual debtors were passed over as part of the selection process. Similarly, cases that were consolidated with individual debtors were removed from the sample and replaced by the next available case that met the selection criteria. For example, if twenty cases were drawn from a particular district, but case number fifteen was consolidated with the individual business owner's bankruptcy case, this case was removed from the sample and replaced with the 21st eligible case in the district. A series of related cases, filed together, was counted only as a single case, with the lead (or first-filed, if there is no lead) case included in the database. Cases were only considered related cases if (a) they were so listed on their petitions or (b) there is a motion to jointly administer the estates. While this approach is perhaps somewhat under inclusive, it avoids the need to make subjective judgments about the relatedness of particular debtors.

All cases in the sample were filed in 2004. Cases were followed for two years or until they ceased to be in chapter 11. Specifically, under the second factor, cases were followed until confirmation of a chapter 11 plan that was not revoked or until the case was dismissed or converted to another chapter of the Bankruptcy Code. The study captures professional fees incurred during the study period, even if approved or requested outside of the stud period.

Because fee applications sometimes aggregate professional fees earned before and after the study coverage, in ways that made it impossible to isolate the relevant fees, it was sometimes necessary to expand the study period slightly beyond the two year mark. For example, if a plan was confirmed at 2.2 years into the case, and first and final fee applications filed shortly thereafter, I typically followed the case until confirmation, rather than to risk having no fee data for the case whatsoever.

While most of the cases in the sample were originally filed under chapter

11, I also included as "chapter 11 cases" those debtors who converted to chapter 11 from another chapter within one month of the petition date. Most often this occurred when an involuntary chapter 7 petition was filed against a debtor who then converted the petition to chapter 11.

To facilitate separate study of very large chapter 11 debtors, a "big case sub-sample" was added to the database. It is comprised of all 2004 bankruptcy cases listed in the "Major Bankruptcies" database on bankruptcydata.com (New Generation Research, Inc.)[32] less cases (a) initially filed under chapter 7 and not converted, (b) filed under section 304, and (c) already in the database under the prior case selection rules.

My random sample includes 945 chapter 11 cases in addition to 81 cases in the big case sub-sample, for a total sample of 1,026 chapter 11 cases. There are 99 cases in the separate big case dataset when the 81 cases in the big case sub-sample are combined with the 18 cases already in the main database under the general case selection rules. A total of 777 fields were part of the original data entry process (including title and comment fields). In addition fields 0 and 00 were hidden fields used for case tracking and error checking purposes. Several additional variables were created in SPSS as part of the data analysis. A codebook is available from the author outlining the variables in the sample.

All data entry was performed in Microsoft Excel. Most fields were restricted using the "data validation" function in Excel to reduce input errors. Approximately twenty percent of the cases were reentered as a further check for input errors. Data analysis was performed primarily in SPSS, although some calculations or graphs were executed in Stata/SE when that program was more suitable to the task at hand, for example to provide appropriate standard errors with the weighted regressions in the random sample. A supplemental multilevel analysis that adjusts for the nesting of cases in districts and circuits was conducted in HLM 6.2.

A. Methodological Notes

In this section I describe several specific features of the study that readers and future researchers may want to consider when interpreting and working with this report and the database. The casual reader can safely skim this section.

Missing data is an issue with this database, as it is with most legal studies that rely on court data. The key sources of the missing data are three-fold. First, although PACER was to have been fully operational by 2004, there

[32]http://www.bankruptcydata.com/findabrtop.asp Note that the sample was based on the cases listed as of August 2005, and does not account for any subsequent changes to the web page.

were several cases where needed documents were not imaged.[33] This problem was especially prevalent in the Northern District of Alabama and the Central District of California. In the latter district, the missing document problem was so severe that I purchased paper documents for several cases from a document retrieval service. Similarly, while the data entry form calls for the input of various information from the claims register, I found that some districts had yet to make that information available on PACER.[34]

Second, some cases have missing documents because the attorneys never filed them. This is especially a problem for dismissed cases, where failure to file required documents, such as schedules, is often the basis for dismissal. The following table illustrates this point, sorting the cases with missing schedules by their outcome. In the main dataset, more than 54 percent of these cases were dismissed, and an additional 19 percent were converted to chapter 7. In the big case dataset, missing schedules are common in prepackaged cases and also in certain jurisdictions, like the Northern District of California, where there seems to be a policy of not imaging the schedules or statements of financial affairs.

And finally, some cases are missing information because of unanticipated deviations from "best practices." For example, certain fields capture the highest and lowest hourly rates charged by key attorneys in the cases. In designing the data entry form, it never occurred to us that some attorneys would not disclose their hourly rates as part of the retention process.[35] Nevertheless, some attorneys, including some well-known national law firms, did indeed file retention applications without hourly rates and these applications were approved by the courts.

The study design also has the potential to slightly depress reported fees in the largest cases in the sample. Specifically, the data entry form allowed for the input of up to ten debtor professionals: lead counsel, local counsel and up to eight other professionals. In just over seventeen percent of the cases in the big case dataset, and in about one-half of one percent of the random sample, all eight "other professional" fields were used. Consequently, in some sub-part of this group of cases, additional professionals were retained by the debtor but not entered into the database.

Because I followed cases for approximately two years, there is some risk

[33]*See, e.g., In re* Atlas Worldwide Aviation, 04-10792-RAM (S.D. Fla. 2004) (document imaging starts with docket number 2427).

[34]This is in addition to the anticipated problem that cases utilizing claims agents would also not have claims information available via PACER. While this problem was anticipated, the author respectfully suggests that there is no good reason why claims agents should not be required to work with the clerk's office to make claims data available to the public through PACER. There are 43 cases with claims agents in the random sample and 46 such cases in the big case dataset.

[35]*Cf.* 11 U.S.C. § 330(a)(3).

OUTCOMES FOR CASES WITH MISSING SCHEDULES

Random Sample

	Frequency	*Percent*	*Cumulative Percent*
Case dismissed	118	54.63	54.63
Case converted to chapter 7, no confirmed plan	42	19.44	74.07
Plan confirmed, no modifications	36	16.67	90.74
Case still pending in chapter 11	12	5.56	96.30
Case transferred to district outside of study	5	2.31	98.61
Plan confirmed, case converted to chapter 7	2	0.93	99.54
Plan confirmed, modified later	1	0.46	100.00
Total	216	100	

Big Case Dataset

	Frequency	*Percent*	*Cumulative Percent*
Plan confirmed, no modifications	17	73.91	73.91
Case converted to chapter 7, no confirmed plan	2	8.70	82.61
Case still pending in chapter 11	2	8.70	91.30
Case dismissed	1	4.35	95.65
Case transferred to district outside of study	1	4.35	100.00
Total	23	100	

that this approach might create a censoring problem that biases the study results. Specifically, what if cases that last longer than two years are somehow different from the cases in the study? Because I ultimately find that the relationship between time and chapter 11 cost is linear, I believe that this risk is minimal. But it is possible to imagine a story about chapter 11 professional fees that generates a non-linear relationship between time and costs after the two-year mark. For example, what if cases are more likely to explode into factious litigation after two years? Of course, one could be equally skeptical about a story that ascribes so much significance to a fixed point in time. The obvious way to avoid this issue would be to collect data for all cases until the end of their time in chapter 11. On the other hand, doing so would have increased the cost of the study and would have delayed its completion. One of the innovative features of this study is its use of relatively recent data, which thereby avoided the charge frequently made against academic studies, that the reported results are no longer descriptive of current practice.

Finally, because of the study design, cases from districts with lower volumes of chapter 11 cases had a higher probability of being selected than cases from high volume districts. For example, the sample includes almost every chapter 11 case filed in North Dakota and Wyoming in 2004, but only a mere sliver of the chapter 11 cases filed in New York during that year. To

account for this, I weight the cases in the random sample by the inverse of the sampling fraction, rescaled to return the sample to its original size. For example, the random sample contains 13 of the 42 business chapter 11 cases filed in Maine during 2004. Cases from Maine are then weighted by the following factor:

$$(42/13) \times (945/5716)$$

945 is the total number of chapter 11 cases in the random sample, and 5,716 is the total number of business chapter 11 cases filed in 2004 in the districts sampled. Weighting the sample places special emphasis on cases from New York and reflects the reality that more than 2,000 of the 9,000 business chapter 11 cases filed in 2004 were filed in the Southern District of New York.

It should be noted that the data used for the above calculation was obtained from the Administrative Office of the United States Courts and is based on total cases filed. In contrast, the present study considers a series of related filings as a single case. This likely results in some excess emphasis on cases from jurisdictions that are more likely to see large, multi-debtor cases – for example, the Southern District of New York and Delaware. Unfortunately, the Administrative Office does not indicate which cases filed in a district relate to a single corporate group. Weighting is not an issue when the big cases in the sample are considered alone, as the addition of the big case sub-sample to the database allows for consideration of the entire population of 2004 big chapter 11 cases.

B. Descriptive Statistics

As noted, there are 945 cases in the random sample and 81 cases in the big case sub-sample. The big case sub-sample is not a separate sample but considered throughout along with the 18 cases already in the random sample, which together provide the population of big chapter 11 cases filed in 2004. Going forward, this report will refer to these 99 cases as the big case dataset.

In the random sample, the cases are distributed throughout the United States, with the heaviest concentrations of cases in the 3rd, 7th and 11th Circuits. This distribution is set forth in Table 1. Table 1A, set forth in the Statistical Appendix, shows the distribution of cases by judicial district. Table 1C, also in the Statistical Appendix, shows this same information for the big case dataset.

The majority of the cases in the sample are traditional, voluntary chapter 11 cases. As shown on Table 2, involuntary cases make up just over 2 percent of the sample, and prepackaged and pre-negotiated plans are even rarer.

As indicated on Table 3, the debtors in the sample are primarily corporations. There are also a sizable number of limited liability companies, how-

TABLE 1: CASE BY JUDICIAL CIRCUIT (UNWEIGHTED RANDOM SAMPLE)

Circuit No.	*Frequency*	*Percent*
11	121	12.80
3	118	12.49
7	95	10.05
2	89	9.42
9	87	9.21
5	86	9.10
6	83	8.78
10	79	8.36
4	69	7.30
1	63	6.67
8	55	5.82
Total	945	100

ever, due perhaps to the growing popularity of these entities during the past decade.

The average firm in the random sample has scheduled assets of $21.2 million and scheduled liabilities of more than $37 million, and the median firm has assets of $818,000 and liabilities of about $1.2 million.[36] By both measures, the sample firms are insolvent – heavily insolvent in the case of the average firm. On the brighter side, the firms in the sample do show some evidence of economic viability, with both the mean and median firm showing strongly positive operating income. As indicated, the large discrepancy between the mean (average) and median suggests that the distribution of values is highly skewed. The skewness statistic equals 0 for normal (zero skew) distributions, and the skewness divided by the SE of skew is less than 1.96 for distributions that do not deviate significantly from a normal distribution (zero skew). The skew is caused by the presence of several very large cases that create an extended (stretched to the right) distribution. For example, assets range from a minimum of zero to a maximum of $846 million. The next largest case has $444.8 million in assets, and the third largest case has $277.6 million in assets. This broad distribution in the data can also be seen in the very large standard deviations. Because of this skew, the 5 percent trimmed mean is a better indicator of typical values in the sample than the mean of the entire distribution.

The cases from the high, median and low population districts are, on average, quite similar in terms of assets, with two key exceptions: Delaware and

[36]Throughout this paper data from the schedules or statement of financial affairs comes from the lead debtor's documents.

TABLE 2: CASE CHARACTERISTICS (WEIGHTED RANDOM SAMPLE)

Does/did Debtor file '34 Act Reports with SEC? (y/n)

	Frequency	*Percent*
No	847	89.65
Yes	98	10.35
Total	945	100.00

Involuntary case? (y/n)

	Frequency	*Percent*
No	922	97.60
Yes	23	2.40
Total	945	100.00

Pre-packaged Case? (y/n)

	Frequency	*Percent*
No	942	99.66
Yes	3	0.34
Total	945	100.00

Pre-negotiated case? (y/n)

	Frequency	*Percent*
No	940	99.46
Yes	5	0.54
Total	945	100.00

the Southern District of New York. An average Delaware case has assets of just over $25 million and the average Southern District of New York case is even larger, with assets of $34.4 million. The largest debtor in the random

TABLE 3: DEBTOR TYPE (WEIGHTED RANDOM SAMPLE)

	Frequency	*Percent*
Corporation	744	78.79
LLC	116	12.30
LP	30	3.16
GP	3	0.32
Not for Profit Corporation	3	0.30
LLP/PLLC	6	0.61
Cooperative	1	0.11
Other/Unknown	42	4.41
Total	945	100.00

FIGURE 4A: DEBTS BY OPERATING INCOME (RANDOM SAMPLE, WEIGHTED)

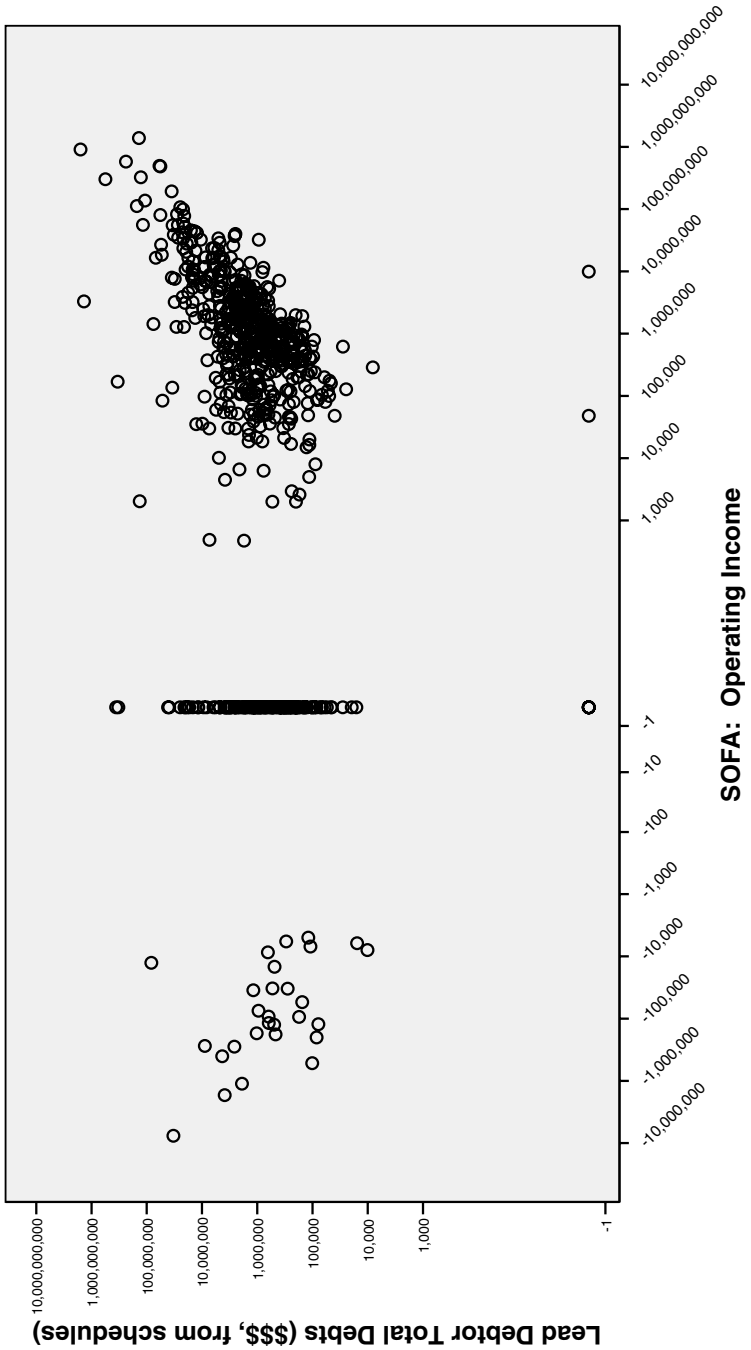


TABLE 4: FINANCIAL CHARACTERISTICS OF DEBTORS (WEIGHTED RANDOM SAMPLE)

Lead Debtor Total Assets (schedules)	Mean		$21,158,365.74
(n=781)	95% Confidence Interval for Mean	Lower Bound	$13,357,729.33
		Upper Bound	$28,959,002.15
	5% Trimmed Mean		$2,010,390.24
	Median		$818,500.00
	Std. Deviation		$111,048,215.13
	Skewness (SE of skew)		6.71 (0.09)
Lead Debtor Total Debts (schedules)	Mean		$37,151,148.53
(n=770)	95% Confidence Interval for Mean	Lower Bound	$23,759,639.05
		Upper Bound	$50,542,658.02
	5% Trimmed Mean		$3,535,963.75
	Median		$1,165,362.27
	Std. Deviation		$189,242,778.99
	Skewness		6.33 (0.09)
Operating Income (SOFA)	Mean		$14,836,913.66
(n=720)	95% Confidence Interval for Mean	Lower Bound	$7,674,539.26
		Upper Bound	$21,999,288.07
	5% Trimmed Mean		$2,585,593.26
	Median		$575,514.00
	Std. Deviation		$97,869,449.47
	Skewness		20.90 (0.09)

sample is UnitedGlobalCom, Inc.'s wholly owned subsidiary, Old UGC, Inc., which listed assets of more than $840 million upon filing. A table setting forth the largest cases in the sample, defined by asset size, can be found at Table 5A in the Statistical Appendix.

The cases in the big case dataset are more than a little bit different from those in the random sample. Average scheduled assets here are almost one hundred times those in the random sample. But this group of cases is itself subject to a good deal of variation, with cases like Yukos Oil Company and US Airways Inc. reporting assets far larger than those found in a typical case, even in this rather elite group of cases, and a handful of cases reporting surprisingly low asset figures.[37] This latter group of cases may argue in favor of considering case size in terms of the sum of assets and liabilities, which would

[37]By way of comparison, Lynn LoPucki's Bankruptcy Research Database contains 30 cases filed in 2004. The mean (median) asset figures for these cases are $1.112 billion ($465 million). In 2004 a debtor needed to have assets of more than $229,247,573 to be included in LoPucki's database. All asset figures in the LoPucki database relate to the assets reported on Exhibit A to the debtor's petition, which may vary from the scheduled assets reported herein. *See* www.lopucki.com.

TABLE 5: SCHEDULED ASSETS BY DISTRICT POPULATION GROUPS (WEIGHTED RANDOM SAMPLE)

	N	*Mean*	*95% Confidence Interval for Mean*	
			Lower Bound	*Upper Bound*
High population districts	610	$25,086,924.73	$15,155,665.80	$35,018,183.65
High population districts (less SDNY)	*192*	*$4,951,253.13*	*$1,210,162.16*	*$8,692,344.10*
Median population districts	116	$3,280,763.82	$944,790.90	$5,616,736.75
Low population districts	56	$15,238,091.08	$6,411,783.23	$24,064,398.92
Low population districts (less Delaware)	*27*	*$5,055,374.39*	*-$3,596,757.16*	*$13,707,505.95*
Total	781	$21,158,365.74	$13,357,729.33	$28,959,002.15

then account for those cases that seek chapter 11 relief only after their assets have evaporated.[38]

Figure 7 summarizes the distribution of scheduled assets in the big case dataset. The box shows the values of the lowest quartile to the highest quartile (the interquartile range), and the line in the box shows the median. The lines stretch down to the lower and upper extreme, and the extreme outlying case is presented as a discontinuous separate circle.

Within the random sample, cases took less than a year, on average, to reach resolution (M = 0.91). If we omit the cases that were still pending when data entry was completed, the length drops to 0.85 years. Approximately a quarter of the cases ended in a confirmed plan, and a similar number of cases converted to chapter 7. Dismissal was the most common outcome, with more than forty-five percent of the cases leaving chapter 11 via dismissals. Table 8A, set forth in the statistical appendix, provides a complete breakdown of case outcomes in the random sample.

In the big case dataset, confirmed chapter 11 plans are the norm: 70 of the 99 cases in the sample ended with confirmation. Conversions and dismissals are similarly rare, together representing just seventeen cases. Cases in the big case dataset took an average of 1.08 years to complete – or just under a year to complete, if the still pending cases are ignored (M = 0.98).

Finally, creditors' committees were used in about 19 percent of cases in the random sample, and four cases had a second committee. Conversely, creditors' committees are much more common in the big case dataset, where they appear in more than 67 percent of the cases. But even in this universe of larger cases, only 11 or just over ten percent of cases have more than one committee.

[38]*See generally* Lubben (2000).

TABLE 6: FINANCIAL CHARACTERISTICS OF DEBTORS (BIG CASE DATASET)

Lead Debtor Total Assets (schedules) (*n*=77)	Mean		$423,383,482.83
	95% Confidence Interval for Mean	Lower Bound	–$98,024,343.28
		Upper Bound	$944,791,308.94
	5% Trimmed Mean		$79,064,699.78
	Median		$13,717,741.50
	Std. Deviation		$2,297,232,528.72
	Skewness (SE of skew)		7.78 (0.27)
Lead Debtor Total Debts (schedules) (*n*=77)	Mean		$775,672,546.42
	95% Confidence Interval for Mean	Lower Bound	–$213,346,280.44
		Upper Bound	$1,764,691,373.29
	5% Trimmed Mean		$143,280,589.53
	Median		$50,194,329.79
	Std. Deviation		$4,357,445,567.21
	Skewness		8.16 (0.27)
Operating Income (SOFA) (n=77)	Mean		$239,125,584.67
	95% Confidence Interval for Mean	Lower Bound	$36,506,983.66
		Upper Bound	$441,744,185.69
	5% Trimmed Mean		$72,507,309.84
	Median		$6,144,000.00
	Std. Deviation		$892,702,444.94
	Skewness		6.03 (0.27)

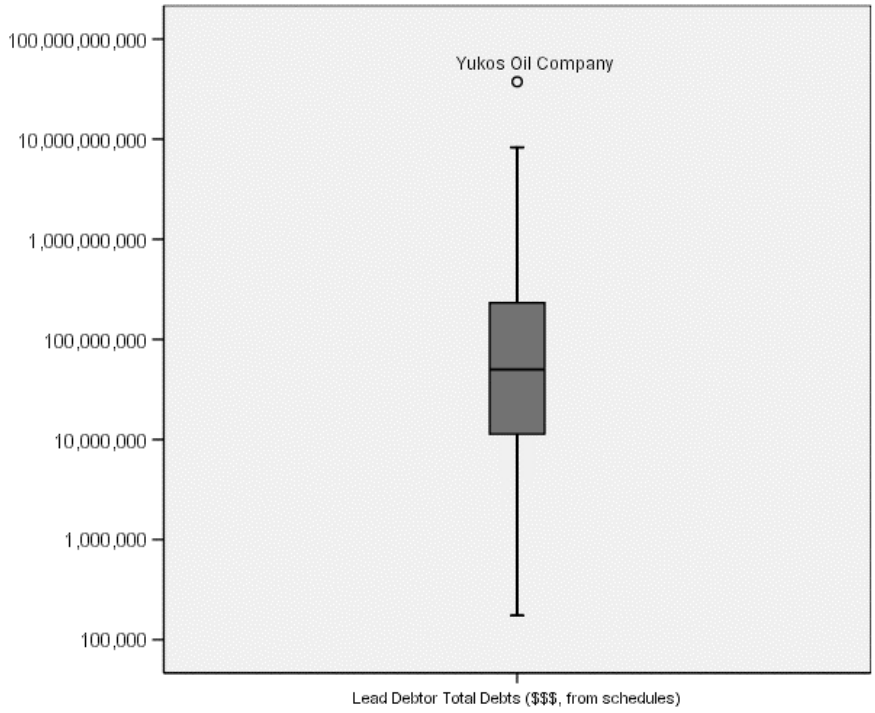
III. PROFESSIONAL FEES IN CHAPTER 11

The debtors in the datasets retained a wide variety of attorneys as their counsel during chapter 11. In the main sample only one firm—Westall, Gray, Connolly & Davis P.A. of Asheville, North Carolina – appears even ten times as lead debtor's counsel. In the big case dataset the names are perhaps more familiar, but the results are equally dispersed. Skadden, Arps represented six debtors here, and Weil Gotshal represented five debtors, but most law firms appear only once as lead counsel.[39]

In the random sample, the debtor's lead counsel billed an average of 1,725.5 hours per case. In the big case dataset lead counsel billed an average of 5,026.7 hours per case. In addition to the debtor's primary counsel, 45

[39]Kirkland & Ellis represented three debtors in the big case dataset. *See* Stephen J. Lubben, *Choosing Corporate Bankruptcy Counsel*, 14 AM. BANKR. INST. L. REV. 391 (2006) (identifying these three firms as the market leaders in representing large corporate debtors).

FIGURE 7: BIG CASE SAMPLE, SCHEDULED ASSETS



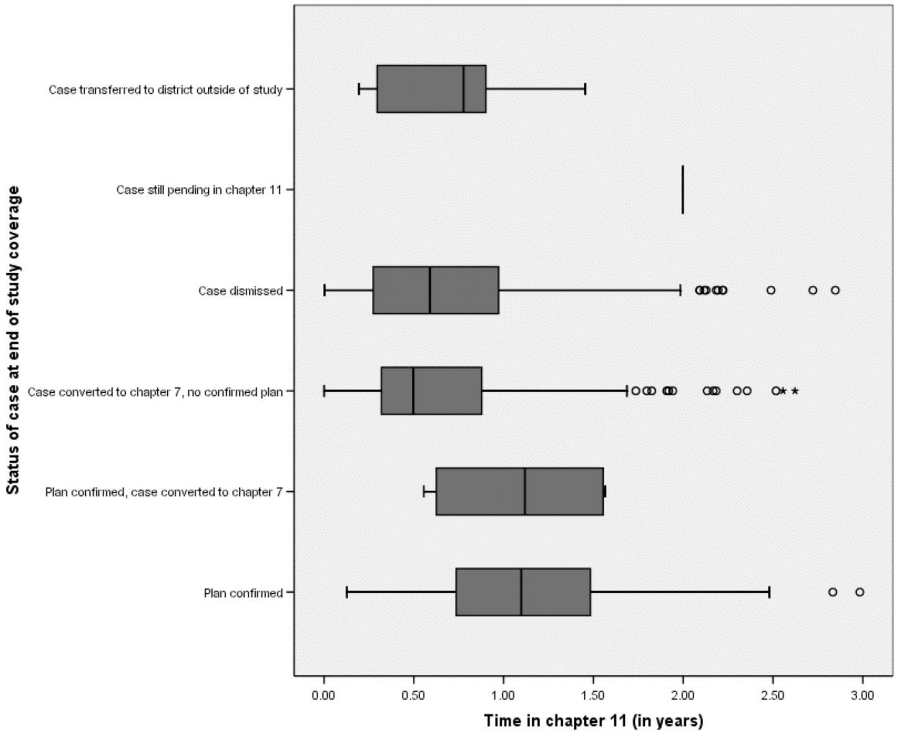
debtors in the random sample and 33 debtors in the big case dataset employed local counsel. Perhaps unsurprisingly, Delaware law firms appear most often in this role in both the random sample and the big case dataset, although no firm appears more than three times in either sample.

The debtors also retained a variety of other professionals to assist in their reorganization. First, about 3 percent of the debtors in the random sample and 39 percent of the debtors in the big case dataset obtained court authorization to pay certain "ordinary course professionals" with limited court oversight. In the big case dataset, debtors were authorized to pay an average of $98,000 per month to these professionals.

In the random sample, debtors also formally retained an average of 0.84 additional professionals, beyond lead and local counsel. In the big case dataset, the debtors retained an average 3.80 additional professionals, again highlighting the elemental differences between the two types of cases. Table 11, set forth below, shows more of the types of additional professionals retained in the two groups of cases.

In addition to its own professionals, debtors are responsible for the costs associated with any committees appointed in the case. As noted in the previous section of this report, about two-thirds of the cases in the big case dataset

FIGURE 8: TIME IN CHAPTER 11 BY OUTCOME (WEIGHTED DATA, RANDOM SAMPLE, NO PENDING CASES)



had appointed committees, whereas only a fifth of the cases in the random sample had even one committee. And even when committees are appointed, they do not always retain professionals: more than 22 percent of the committees in the random sample apparently retained no professionals whatsoever.

TABLE 9: TIME TO RESOLUTION IN YEARS (BIG CASE DATASET, EXCLUDING PENDING CASES)

Status of case at end of study coverage	*Mean*	*N*	*Std. Deviation*	*Std. Error of Mean*
Plan confirmed	1.00	70	0.59	0.07
Case converted to chapter 7, no confirmed plan	0.98	9	0.76	0.25
Case dismissed	1.00	8	0.82	0.29
Case transferred to district outside of study	0.33	1	.	.
Total	0.99	88	0.62	0.07

Committees in the random and big case datasets retained an almost equal number of additional professionals, a remarkable fact given that the random

TABLE 10: LEAD COUNSEL HOURLY RATES (IN DOLLARS)

Random sample	*N*	*Mean*	*Std. Error*	*Std. Deviation*	*Minimum*	*Maximum*
Highest hourly rate for attorneys	579	290.54	5.58	134.26	100.00	950.00
lowest hourly rate for attorneys	391	181.89	2.71	53.53	50.00	390.00
Big case dataset						
Highest hourly rate for attorneys	77	564.53	21.13	185.40	215.00	950.00
lowest hourly rate for attorneys	75	204.00	6.92	59.89	100.00	425.00

sample is almost ten times larger than the big case dataset. Table 12, the counterpart to Table 11 above, provides more information on the types of professionals retained by all committees in the sample.

TABLE 11: ADDITIONAL PROFESSIONALS RETAINED BY DEBTORS

	Random Sample (weighted)			*Big Case Dataset*		
	N	*Percent of total*	*Percent of cases*	*N*	*Percent of total*	*Percent of cases*
financial adviser and accountant (any type)	183	23.14	48.54	23	6.12	26.74
attorney retained under sec. 327(e)	135	17.07	35.81	91	24.20	105.81
attorney retained under sec. 327(a)	111	14.03	29.44	54	14.36	62.79
other accountant (tax, forensic, etc.)	84	10.62	22.28	21	5.59	24.42
financial adviser or investment banker (but not an accountant)	67	8.47	17.77	61	16.22	70.93
Other	64	8.09	16.98	36	9.57	41.86
real estate professional	56	7.08	14.85	20	5.32	23.26
turnaround/restructuring/management consultant or adviser	41	5.18	10.88	31	8.24	36.05
appraiser or auctioneer	38	4.80	10.08	15	3.99	17.44
Auditor	12	1.52	3.18	24	6.38	27.91
Total	791	100.00		376	100.00	

Finally, the debtor is also responsible for the professionals retained by any trustee, examiner or, more recently, fee examiner appointed in the case. Capturing the costs of these professionals is somewhat challenging, inasmuch as the appointment of these kinds of "neutrals" is relatively rare in chapter 11, and the appointment may lead to the end of the chapter 11 case. Indeed, for these reasons, fees paid to these professionals will often appear only in chap-

ter 7. In the Statistical Appendix, Table 12A sets forth the available data on this subject. Examiner professionals seem to add the most cost to the chapter 11 process, charging the estate an average of $514,768.70 in the random sample, where six examiners were appointed, and $939,225.79 in the big case dataset, where four examiners were appointed. It appears that examiners are more likely to be appointed in larger cases, although the small numbers of examiners involved make definitive statements difficult.

TABLE 12: ADDITIONAL PROFESSIONALS RETAINED BY COMMITTEES

	Random Sample (weighted)			*Big Case Dataset*		
	N	*Percent*	*Percent of Cases*	*N*	*Percent*	*Percent of Cases*
a financial adviser or investment banker (but not an accountant)	32	37.21	47.76	47	54.02	79.66
financial adviser and accountant (any type)	25	29.07	37.31	10	11.49	16.95
attorney retained under sec. 327(a)	8	9.30	11.94	8	9.20	13.56
Other	8	9.30	11.94	7	8.05	11.86
other accountant (tax, forensic, etc.)	5	5.81	7.46	0		
an attorney retained under sec. 327(e)	3	3.49	4.48	6	6.90	10.17
appraiser or auctioneer	3	3.49	4.48	3	3.45	5.08
turnaround/restructuring/management consultant or adviser	2	2.33	2.99	3	3.45	5.08
Auditor	0			1	1.15	1.69
real estate professional	0			2	2.30	3.39
Total	86	100	128.36	87	100	147.46

In the random sample, 16.5 percent of the cases had at least one retention objection. In the big case dataset, where each debtor typically retained many more professionals, 34 percent of the cases had at least one retention objection. Within the big case dataset, the most common objections were that the proposed compensation was too high and that the professional's services would duplicate those of another retained professional. In the random sample, no clear pattern of objections is apparent. There were 191 retention objections in the random sample and 100 such objections in the big case dataset. In some cases multiple objections were lodged against a single professional.

Courts rarely deny retention applications – just 2 percent of retention applications in both samples were rejected. This most likely reflects the specialized nature of chapter 11 practice, particularly among those attorneys who act as lead debtors' counsel and probably filter out many potential retention applications before they ever get before a judge. Motions to revoke a

professional's retention or order the return of compensation are also rare, occurring in just 3 cases in the big case dataset and only 2 cases in the random sample.[40] When filed, these motions are granted in the vast majority of cases.

Although much discussed in the bankruptcy community, fee examiners or fee committees are still rare, appearing in 6 percent of cases in the big case dataset and less than 1 percent of the cases in the random sample. There are no fee committees recorded in either dataset.

In the random sample, the debtor's lead counsel's fee applications motivated objections in about 10 percent of the cases. The United States Trustee objected to the lead counsel's fee application in just over 3 percent of the cases. In the big case dataset, these objections are somewhat more common, with the U.S. Trustee objecting to lead counsel's fee applications in more than 13 percent of the cases and all parties objecting in fewer than 20 percent of the cases. As the next two tables show, this may be simply a reflection of the greater amounts at stake in these cases. Note that the cases in the random sample are much more skewed than those in the big case dataset. Also, recall that 18 cases appear in both datasets.

TABLE 13A: SUMMARY OF DEBTOR AND COMMITTEE FEES (WEIGHTED RANDOM SAMPLE)

		Total debtor fees requested, expenses requested, and pre-petition payments (n=945)	*Total committee fees requested and expenses requested (n=176)*	*Sum of total debtor and committee requests (plus pre-petition) (n=945)*
Mean		$356,948.89	$403,489.74	$432,940.79
95% Confidence Interval for Mean	Lower Bound	$220,248.50	$227,221.77	$267,062.74
	Upper Bound	$493,649.28	$579,757.71	$598,818.84
5% Trimmed Mean		$62,823.42	$184,279.17	$72,981.20
Median		$10,000.00	$46,009.22	$10,000.00
Std. Deviation		$2,141,314.19	$1,184,862.25	$2,598,361.33
Skewness (SE of skew)		11.49 (0.08)	5.39 (0.15)	10.83 (0.08)

In the random sample, the debtor's professionals represent on average 88.7 percent of the total costs of the chapter 11 case. In the big case dataset, where more professionals per case are the norm, debtor professionals represent 79.9 percent of the total costs. Committee total costs average 44.4 percent of debtor total costs in the random sample and 35.9 percent in the big case dataset – that is, committee professionals cost the estate, on average, about two-fifths of what the debtor's professionals cost.

[40]One case appears in both the random sample and the big case dataset – that is, there are four total cases with motions to revoke retention or order the return of compensation.

TABLE 13B: SUMMARY OF DEBTOR AND COMMITTEE FEES (BIG CASE DATASET)

		Total debtor fees requested, expenses requested, and pre-petition payments (n=99)	*Total committee fees requested and expenses requested (n=67)*	*Sum of total debtor and committee requests (plus pre-petition) (n=99)*
Mean		$5,845,543.44	$1,807,553.54	$7,115,654.53
95% Confidence Interval for Mean	Lower Bound	$3,855,068.51	$1,244,634.24	$4,791,075.77
	Upper Bound	$7,836,018.38	$2,370,472.84	$9,440,233.29
5% Trimmed Mean		$4,281,234.00	$1,512,055.79	$5,366,314.07
Median		$1,794,021.22	$891,072.33	$2,118,143.09
Std. Deviation		$9,979,995.15	$2,307,810.87	$11,655,150.39
Skewness (SE of skew)		3.27 (0.24)	1.95 (0.29)	2.94 (0.24)

The debtor's lead attorney is responsible for 55.4 percent of the total cost in the random sample and 39.6 percent of the total cost in the big case dataset. Lead counsel for the debtor and the creditor's committee together represented 62.4 percent of the total costs of the cases in the random sample, and 50 percent of the cost for the big cases. In the random sample investment banker fees and expenses averaged 11.6 percent of the total cost, whereas in the big case dataset these items represented an average of 15 percent of total costs.

Fees requested are typically granted. Indeed, the most frequent explanation for a discrepancy between the fees requested and the fees granted in a case is that the court had yet to enter an order on the fee application. For example, of the 945 cases in the random sample, the debtor's lead counsel fees were reduced by court order in only 2.6 percent of the cases. Counsel "voluntarily" reduced their requested fees or expenses in a similar number of cases. For this reason, throughout I use fees requested as the true measure of the costs of a particular case. Throughout I also include all prepetition chapter 11 costs, as reported on the debtor's Statement of Financial Affairs.

Finally, monthly compensation systems were used in a sizable number of cases in the study, especially the big case dataset. More than 46 percent of the debtors in the big case study sought and obtained permission to partially pay professionals on a monthly basis. About 8 percent of the cases in the random sample also used monthly compensation systems. In both datasets, courts allowed an average of 82 percent of fees to be paid each month.

It has been typical for studies of professional fees in bankruptcy to standardize the fees by some measure of the debtor's size. This allows for the easy comparison of fees incurred by debtors of varying sizes. But this approach immediately raises the question of what is the appropriate measure of a

TABLE 14: TOTAL CHAPTER 11 COST BY OUTCOME

Sum of total debtor and committee requests (plus pre-petition costs)	*N*	*Mean*	*Std. Deviation*	*Std. Error*	*95% Confidence Interval for Mean*	
					Lower Bound	*Upper Bound*
			Random Sample (weighted)			
Plan confirmed	246	$3,302,664.75	$8,663,201.75	$552,632.06	$2,214,143.11	$4,391,186.39
Plan confirmed, case converted to chapter 7	1	$138,335.66				
Case converted to chapter 7, no confirmed plan	172	$229,284.63	$872,476.52	$66,615.34	$97,787.81	$360,781.45
Case dismissed	423	$30,841.85	$152,744.30	$7,422.72	$16,251.78	$45,431.91
Case transferred to district outside of study	3	$627,345.11	$1,007,196.83	$596,021.59	–$2,138,114.84	$3,392,805.05
Total	845	$1,025,084.46	$4,906,322.89	$168,797.16	$693,772.91	$1,356,396.01
			Big Case Dataset			
Plan confirmed	66	$8,836,976.23	$13,071,463.13	$1,608,985.89	$5,623,609.52	$12,050,342.93
Case converted to chapter 7, no confirmed plan	9	$3,019,421.55	$3,497,160.90	$1,165,720.30	$331,265.72	$5,707,577.38
Case dismissed	8	$2,279,102.37	$3,936,535.31	$1,391,775.41	–$1,011,923.50	$5,570,128.25
Case still pending in chapter 11	10	$7,580,175.45	$11,355,324.17	$3,590,868.79	–$542,934.12	$15,703,285.01
Total	93	$7,574,729.01	$11,882,199.46	$1,232,126.69	$5,127,619.06	$10,021,838.97

debtor's size in this context? Typically some measure of the debtor's assets has been used.

In a recent paper, Professor LoPucki settles on assets listed on Exhibit A to the petition as the best measure of debtor size.[41] But only publicly traded debtors are required to provide this information with their petitions. I could use scheduled assets as an alternative, but as will be seen in the next section, I actually find that the sum of the debtor's scheduled assets and debts captures more information about the fees incurred in a case. I first suggested this measure in 2000 as a way to better control for debtors who file for bankruptcy relief after a sudden drop in the value of their assets,[42] and Professor LoPucki's paper suggests that this measure is of comparable utility to assets, his preferred measure of debtor size. Accordingly, in Table 15, I show the total fees requested in a case standardized by the sum of scheduled assets and debts – that is, fees as a percentage of assets and debts. In addition to showing the total average cost, the table also shows the average costs for each quintile of debtor size, with the smallest debtors in group 1 and the largest in group 5.

One case in the second quintile of the random sample skews the results.

[41]Lynn M. LoPucki & Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases Revisited* (unpublished manuscript June 11, 2006).

[42]Stephen J. Lubben, *The Direct Costs of Corporate Reorganization: An Empirical Examination of Professional Fees in Large Chapter 11 Cases*, 74 AM. BANKR. L.J. 509, 534 (2000)

TABLE 15: TOTAL FEES AND EXPENSES AS A PERCENTAGE OF DEBTOR SIZE (ASSETS PLUS DEBT)

Debtor Size (1=smallest)	*N*	*Mean*	*Std. Deviation*	*Std. Error*	*95% Confidence Interval for Mean*	
					Lower Bound	*Upper Bound*
Random Sample (weighted)						
1	154	3.48%	12.21%	0.98%	1.54%	5.42%
2	114	39.58%	107.07%	10.03%	19.70%	59.46%
3	179	6.97%	15.39%	1.15%	4.70%	9.24%
4	135	2.79%	3.61%	0.31%	2.18%	3.41%
5	156	3.14%	8.01%	0.64%	1.88%	4.41%
Total	738	9.70%	45.00%	1.66%	6.45%	12.95%
Big Case Dataset						
1	15	5.49%	5.25%	1.36%	2.58%	8.40%
2	16	5.19%	4.82%	1.21%	2.62%	7.76%
3	15	5.49%	4.31%	1.11%	3.11%	7.88%
4	16	4.46%	2.82%	0.70%	2.96%	5.96%
5	15	1.97%	1.99%	0.51%	0.86%	3.07%
Total	77	4.53%	4.14%	0.47%	3.59%	5.47%

debtor quintiles by sum of assets and debts

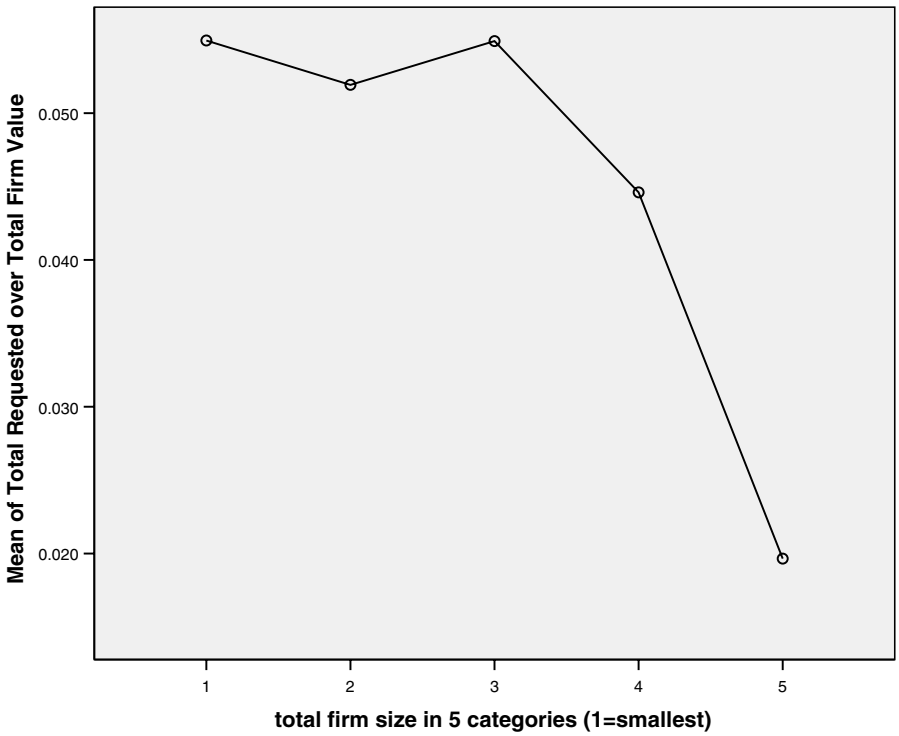
This case involved the appointment of a trustee, an examiner, and the retention of "special criminal litigation counsel." Ultimately, the fees spent in the case exceeded three times the sum of scheduled asset and liabilities. Removing this one case from the sample would result in average total fees and expenses of 4.0 percent of firm size in the random sample, and 2.5 percent in the second quintile.

In either dataset, fees total about 4 percent to 4.5 percent of the sum of assets and debts. There are some differences among quintiles, although few reach statistical significance once the one anomalous outlying case is removed from the analysis. The declining rate of costs in the fifth quintile of the big case dataset does hint at the real possibility that fees decline relative to firm size, a point that I examine in greater detail in the next section. Figure 16 illustrates this last point graphically. For those who still prefer the more traditional approach of measuring cost as a percentage of assets, Table 15A, in the appendix, sets forth these figures.

IV. MODELING PROFESSIONAL FEES

Reporting fees and expenses as a percentage of debtor size has the clear advantage of simplicity, but a regression model is the only way to account for the multiple factors that may influence the total cost of a chapter 11 case.

FIGURE 16: COST AS PERCENTAGE OF FIRM SIZE (BIG CASE SAMPLE)



Beyond the size of the debtor, we can imagine a variety of factors that may influence the total cost of a bankruptcy cases. First, the complexity of the case, in terms of the number of legal and business issues presented, would likely influence cost. Case outcomes also play a role here – a case that converts to chapter 7 or is dismissed is likely to have lower costs, at least within chapter 11, as compared with a case that results in a full reorganization plan.

Time spent in chapter 11 is often seen as a likely predictor of the cost of a case, and Professor LoPucki has found that a model consisting of size, number of professionals retained and time in chapter 11 predicts professional fees quite well. And the relationship between case duration and cost is unclear, given that large professional firms typically can adjust the staffing of a case to accommodate the case's timeline. Moreover, time in chapter 11 may simply be a proxy for other case characteristics like complexity or case outcome. And time in chapter 11 is also likely comprised of factors exogenous to the case itself, such as the workload of the judges in the district.

Finally, Professor LoPucki has suggested that filing in Delaware and employing Skadden, Arps as lead debtor's counsel may lead to increased fees and

it bears checking if those results appear in this broader sample of chapter 11 cases. Indeed, Professor LoPucki has argued that Skadden, Arps is associated with a more than 54 percent increase in debtor's counsel costs.[43]

Prior work in this area, including that recently performed by Professor LoPucki, has concentrated on large chapter 11 cases. For this reason, I begin with an examination of the big case dataset and then extend the model to the random dataset. I then conclude this section of the report by distilling the lessons of these exercises and presenting an examination of a simplified model of professional costs in chapter 11. This model may have the most day to day utility for practitioners seeking to predict the costs of a chapter 11 case. Throughout, we must keep in mind the number of cases available for use in a particular model. Because schedules or other data are sometimes missing, especially among the cases that converted or were dismissed, the number of cases in a model is often somewhat less than the total sample size. Descriptive statistics for the variables in both the big case dataset and random sample models can be found in the appendix.

I start with the three basic concepts that Professor LoPucki uses – debtor size, number of professionals and time in chapter 11 – albeit in a slightly different form. I model debtor size with the sum of assets and debts. As noted, assets alone have been the typical measure in this context, but arguably this variable does a poor job of capturing the true size of a debtor who has experienced a catastrophic decline in asset values just before bankruptcy – for example, where a loss in a significant intellectual property suit has forced the debtor to write-down substantial asset value or to replace a business model that was thereby rendered unviable. For this reason I have previously urged the use of the sum of assets and liabilities as a measure of debtor size.[44] Indeed, a variety of size measurements has been tested through a series of bivariate regressions, which confirm that this variable has the greatest explanatory power in the present context.

Professor LoPucki accounted for the number of professionals in a case through a count of the total number of retained professionals. I take a slightly different approach in an effort to distinguish between debtor and committee retained professionals. First, I use a "dummy" variable that indicates whether or not the debtor retained three or more professionals beyond local and lead counsel. I assigned significance to the retention of three or

[43]Lynn M. LoPucki & Joseph W. Doherty, *Rise of the Financial Advisors: An Empirical Study of the Division of Professional Fees in Large Bankruptcies*, 82 AM. BANKR. L.J. 141, 152 (2008). To be sure, Professor LoPucki only finds such an effect when examining debtor's counsel as distinct from all other professionals. The significance of such a finding is unclear. Creditors are likely more concerned with the overall cost of chapter 11, and not the intra professional allocation of that cost.

[44]*See id.*

more additional professionals only after extensive testing with a broad array of dummy variables.

Next, I also include a dummy variable that indicates whether or not a committee was appointed in the case. Plainly the appointment of a committee often leads to the retention of additional professionals, especially in larger cases. Beyond simply capturing the number of professionals in a case, both of the foregoing variables can also be seen as indicators of case complexity. Similarly, the appointment of a committee also increases the number of key parties that debtor's counsel must consult and potentially increases overall costs in a way that is not captured by counting the total number of professionals retained in a case. I then include total time spent in chapter 11, measured in years or fractions thereof.

Prior studies by both Betker and myself have suggested that chapter 11 costs have a curvilinear relationship with debtor size. Because both debtor size and time in chapter 11 exhibited such a relationship in these datasets, I also entered squared versions of these terms into the model.

Table 17 begins by modeling total chapter 11 costs by reference only to the debtor's size. For big cases, over 85 percent of the cost of chapter 11 can be predicted by the size of the firm (assets plus debts) before the chapter 11 process begins. The association, however, is not linear. The steep increase in costs associated with increases in debtor size becomes less steep among the extremely large firms, suggesting some complex economies of scale even among the big cases.

Model 2 begins to explain the non-linearity. In particular, by incorporating indicators of additional professionals in the case, we can now see that the staffing of a case, a factor that will especially effect the largest cases, is also an important part of any explanation of chapter 11 costs. An additional 4 percent of variance is explained by including indicators of additional debtor professionals, committee involvement, and time in chapter 11, although retention of additional debtor professionals is the only variable in this block that is significant.

In Model 3, I introduce two variables that address effects related to the time a debtor spends in chapter 11. Specifically, the model now considers whether the debtor's case was converted or dismissed, two ways to bring an early end to the debtor's time in chapter 11. Case dismissal is predictive of lower total costs and overall the addition of these factors substantially increases the utility of the model, explaining an additional 2 percent of the variance in total chapter 11 costs.

In Model 4, I consider whether the retention of Skadden, Arps has any effect on total costs. Because Skadden appears as lead counsel with almost the same frequency as Weil, Gotshal, I decided to use a variable that captures whether either firm was lead counsel. The results show that retention of

TABLE 17A: REGRESSION MODELS OF PROFESSIONAL COSTS (BIG CASE DATASET)

	Model 1			*Model 2*			*Model 3*			*Model 4*		
	B	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*
Log of assets plus debt (mean centered)	0.843	0.058	0.905***	0.665	0.075	0.715***	0.699	0.07	0.751***	0.65	0.074	0.698***
Squared log of assets plus debt (mean centered)	−0.082	0.018	−0.292***	−0.024	0.024	−0.086	−0.033	0.019	−0.118	−0.03	0.019	−0.105
Did debtor employ 3 or additional professionals				0.998	0.288	0.244**	0.926	0.275	0.226**	0.963	0.274	0.235**
Is there a UST-appointed committee in this case?				0.611	0.394	0.138	0.321	0.351	0.072	0.402	0.34	0.091
Log of time in chapter 11 (in years, mean centered)				0.18	0.217	0.061	0.193	0.203	0.065	0.17	0.2	0.057
Squared log of time in chapter 11 (in years, mean centered)				−0.331	0.298	−0.083	−0.259	0.255	−0.065	−0.246	0.259	−0.062
Case was converted to Chapter 7 (no plan)							−1.06	0.393	−0.174**	−0.974	0.401	−0.159*
Case was dismissed							−0.723	0.279	−0.092*	−0.567	0.295	−0.072
Was lead counsel Skadden or Weil										0.453	0.268	0.086
Case from SDNY												
Delaware case												
Is there a fee examiner/auditor in the case												
Highest hourly rate for lead attorneys												
"First day" motions in this case												
(Constant)	15.07	0.156	***	13.861	0.466	***	14.293	0.381	***	14.101	0.394	***
R-Square			0.855***			0.904***			0.922**			0.925
Adj. R-square			0.732			0.818			0.85			0.855

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: OLS Regressions (n=61). The dependent variable is log of total fees and expenses requested.

Weil or Skadden is not a significant factor in the total cost of a chapter 11 case after controlling for indicators of firm size and time. This result is robust across an alternative specification of the model with separate variables for each firm.

In Model 5, I look at whether filing in Delaware or the Southern District of New York, two leading jurisdictions for large chapter 11 cases, provides any additional explanation for the variance in the cost of chapter 11 fees beyond the variables already in the model. Addition of these variables to the model does not result in any significant change in the utility of the model – the change in R-squared is negligible.

Model 6 considers the use of fee examiners. I find no effect from the participation of a fee examiner or auditor in a case. Given that my dependent variable, total fees and expenses requested in the case, is exclusive of court appointed neutrals like trustees and examiners, this suggests that the use of a fee examiner imposes a positive cost on the estate. This indicates that the benefits of fee examiners, if any, come from administrative assistance they offer the bankruptcy court and not from any direct cost savings in the case.

In the final two models, I add two more indicators that most will associate with very large chapter 11 cases. Model 7 shows that the highest hourly rate charged by lead debtor's counsel is also a significant predictor of total costs, explaining 1 percent more of the variance in fees and expenses, and this change is statistically significant. Why should this be so? One reason is evident: all else being equal, higher hourly rates mean higher overall costs. And even though the highest hourly rate is rarely the prevailing rate for most attorneys in the case, it is an indicator of a higher overall rate structure. But this variable again also captures some degree of case complexity – cases with high hourly rates are also cases that often have committees, involve more than $100 million of assets, and are rarely dismissed.

Model 8 adds an indicator of case size, complexity and the sophistication of representation, by considering whether there were first day motions filed in the case. In this study, a case was deemed to have first day motions if one of three types of motions were filed within ten days of the petition.[45] Addition of this final variable increases the models' predictive power by another percent, and again this change is significant. Very little of the variance in the 61 big cases in this analysis remains unexplained in the final model with 14 variables measuring 11 concepts (Size, Time, and District are each measured by 2 variables). The R-square indicates that almost 95 percent of the variance is explained. A slightly more conservative measure of explained variance,

[45]Applications/motions regarding payments to employees; applications/motions to allow payments to pre-petition creditors (a.k.a. trade creditors or vendors); and applications/motions to continue cash management systems.

TABLE 17B: REGRESSION MODELS OF PROFESSIONAL COSTS (BIG CASE DATASET)

	Model 5			*Model 6*			*Model 7*			*Model 8*		
	B	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*
Log of assets plus debt (mean centered)	0.63	0.075	0.677***	0.628	0.075	0.675***	0.446	0.116	0.479***	0.383	0.104	0.412**
Squared log of assets plus debt (mean centered)	−0.024	0.02	−0.085	−0.024	0.02	−0.087	−0.01	0.023	−0.037	−0.001	0.021	−0.003
Did debtor employ 3 or additional professionals	1.006	0.272	0.246**	0.988	0.276	0.241**	1.059	0.25	0.258***	1.137	0.227	0.277***
Is there a UST-appointed committee in this case?	0.45	0.352	0.102	0.445	0.357	0.101	0.816	0.401	0.184*	0.888	0.358	0.201*
Log of time in chapter 11 (in years, mean centered)	0.148	0.199	0.05	0.122	0.202	0.041	0.01	0.206	0.003	0.026	0.192	0.009
Squared log of time in chapter 11 (in years, mean centered)	−0.2	0.258	−0.05	−0.217	0.261	−0.054	−0.155	0.223	−0.039	−0.111	0.22	−0.028
Case was converted to Chapter 7 (no plan)	−0.959	0.394	−0.157*	−1.01	0.416	−0.165**	−0.878	0.346	−0.144*	−0.697	0.327	−0.114*
Case was dismissed	−0.507	0.322	−0.064	−0.495	0.325	−0.063	−0.063	0.421	−0.008	−0.199	0.364	−0.025
Was lead counsel Skadden or Weil	0.553	0.286	0.105	0.492	0.31	0.094	0.242	0.305	0.046	0.406	0.269	0.077
Case from SDNY	0.161	0.265	0.031	0.134	0.265	0.025	−0.077	0.298	−0.015	−0.025	0.28	−0.005
Delaware case	0.65	0.196	0.106**	0.554	0.218	0.091*	0.326	0.185	0.053	0.223	0.181	0.037
Is there a fee examiner/auditor in the case				0.332	0.229	0.042	0.275	0.217	0.035	0.272	0.214	0.035
Highest hourly rate for lead attorneys							0.003	0.001	0.241**	0.002	0.001	0.186*
"First day" motions in this case										0.595	0.23	0.152*
(Constant)	13.873	0.441	***	13.91	0.449	***	12.16	0.868	***	11.963	0.8	***
R-Square			0.93			0.931			0.942**			0.949*
Adj. R-square			0.866			0.867			0.888**			0.901*

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: OLS Regressions (n=61). The dependent variable is log of total fees and expenses requested.

the adjusted R-Square, compensates for the positive bias in the R-square measure. This measure also suggests that at least 90 percent of the variance in the fees in big cases is explained by the final model.

Model 8 provides the best prediction of professional costs for the cases in the big case dataset, capturing almost 95 percent of the variance in professional fees. The first day papers variable, along with the highest hourly rate charged by lead debtor's counsel, the basic debtor size variable and the two variables that capture the number of professionals in the case are all significant predictors of overall cost. Time spent in chapter 11 is no longer significant and the curved debtor size variable ceases to be significant. These outcomes suggest that the apparent curvilinear effect was in fact the result of a group of complex cases, with multiple professionals charging high hourly rates, and not directly the result of the size of the debtors in those cases. Moreover, it appears that previous significance of time spent in chapter 11 was actually the result of case outcome and complexity factors that are now represented elsewhere in the model.

Because Model 8 is the most useful model for predicting professional expenses in large chapter 11 cases, it is also a good place to examine whether chapter 11 costs exhibit economies of scale. When, as here, both the dependent variable and independent variable of interest are log-transformed variables,[46] the relationship is commonly referred to as an "elasticity," which means that it represents a percentage relationship. In a regression setting, we interpret the elasticity as the percent change in y (the dependent variable, total professional costs), while x (the independent variable, debtor size) increases by one percent. For this model, where the coefficient for the primary size variable is 0.383, we can conclude that a one percent increase in the sum of the debtor's assets and debts results in a 0.38 percent increase in professional costs. This is quite similar to the result recently reported by Professor LoPucki – he found a coefficient of 0.422 for his fully specified model[47] – and is strong evidence of economies of scale. This result also corresponds with empirical examinations of business bankruptcy in other developed economies.[48] Bigger cases cost less as a percentage of debtor size, all else being equal. The most important implication of this finding is that the percentage figures on Table 15 must be used with caution. In particular, using the total figures from that table to estimate the cost of an extremely small or large

[46]That is, I have entered the log of the variable in question into the models, rather than entering the variable directly. This is done to account for the skew and lack of normality in the "natural" variable.

[47]Lynn M. LoPucki & Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases Revisited* (unpublished manuscript June 11, 2006)(on file with author), at p. 9.

[48]*See, e.g.*, Oscar Couwenberg & Abe de Jong, *Costs and Recovery Rates in the Dutch Liquidation-Based Bankruptcy System* (October 2007). University of Groningen Faculty of Law, Working Paper Series in Law and Economics Available at SSRN: http://ssrn.com/abstract=1020888.

chapter 11 case is likely to result in significant errors. Use of the appropriate quintile figures will at least partially avoid this problem. Use of a regression model, like Model 8 or the simplified model I present in subsequent pages, is even better.

The final models on Table 17 also show the importance of considering a richer model. While a handful of basic variables, like debtor size, retention of extra professionals, and time spent in chapter 11, seem to explain a good deal of total professional cost, the use of the sequential inclusion of specific variables not only explains a higher percentage of the variance in fees, but shows that many of these basic factors are in fact proxies for other factors.

Before extending this model to the random sample, we need to address a key difference between the random sample and the big case dataset. In the random sample, professionals received no payments whatsoever in just over 34 percent of the cases. As shown on the next table, these cases are typically much smaller than the other cases in the random sample, across a wide range of measures. Cases with no requested fees or expenses also face an 80 percent probability of being dismissed, compared with a 29 percent probability of dismissal among the cases with total requested fees and expense of any amount greater than zero. Given these key differences, and the difficulties presented by inclusion of these two distinct sets of cases in a single regression model, I proceed by modeling only those cases with some amount of requested fees.[49]

Table 19 sets forth the extension of the model to the broader universe of chapter 11 cases. The models on this table follow the same basic progression as those on Table 17. One variable, the indicator that Skadden or Weil served as lead counsel, has been dropped because these law firms do not appear in the random sample with sufficient frequency.

In the broader random sample, debtor size alone proves to be a less powerful predictor of total professional expenses, explaining only about one quarter of the variance in total cost. But Model 2, which adds in the basic indicators of number of professionals retained and time spent in chapter 11, shows a large and significant increase in predictive power, explaining more than two thirds of the total professional costs of chapter 11.

As with the big case model, the large coefficient associated with the retention of 3 or more additional professionals in the case shows that this factor is a strong predictor of a more expensive case. In part this is because only

[49]To be sure, one could use an alternative approach that allows for all cases to be modeled together (*e.g.*, tobit or perhaps zero inflated Poisson). Admittedly, this would be more "elegant" than the approach I adopt, but that elegance comes with the costs of reduced interpretability, loss of consistency between the two datasets, and general loss of comprehension among the intended audience for this paper.

TABLE 18: DESCRIPTIVE STATISTICS, RANDOM SAMPLE CASES BY WHETHER CASE HAD $0 IN REQUESTED COSTS

	Total Cost Greater than $0			*Total Costs Equal $0*			*Difference in Means*	
	Mean	*N*	Std. Deviation	*Mean*	*N*	*Std. Deviation*	*Total N*	*p. value*
Local counsel in this case	0.07	604	0.25	0.00	312	0.04	916	0.000***
Log of number of attys in lead debtor firm	3.08	395	2.05	1.83	100	2.27	495	0.000***
Statement of Financial Affairs: Operating Income (in dollars)	18,739,511.00	566	110,013,461.41	460,954.82	134	1,426,394.87	700	0.055*
Lead Debtor Total Assets (in dollars, from schedules)	29,740,786.31	547	131,843,098.46	1,167,639.66	214	2,607,485.43	761	0.002***
Lead Debtor Total Debts (in dollars, from schedules)	52,385,164.91	534	225,450,940.16	2,596,432.88	216	6,733,865.10	750	0.001***
Centered log of total firm value variable	0.59	533	2.10	−2.55	213	4.74	746	0.000***
Centered log of time in chapter 11	0.27	569	0.70	−0.55	310	0.81	878	0.000***
Did debtor employ 3 or additional professionals	0.17	604	0.37	0.00	312	0.06	916	0.000***
Is there a UST-appointed committee in this case	0.34	604	0.48	0.13	312	0.34	916	0.000***
Case was dismissed	0.29	604	0.45	0.80	312	0.40	916	0.000***
Case was converted to Chapter 7 (no plan)	0.18	604	0.38	0.20	312	0.40	916	0.426
Case from SDNY	0.47	604	0.50	0.59	312	0.49	916	0.000***
Delaware case	0.05	604	0.22	0.01	312	0.10	916	0.002***
Is there a fee examiner/auditor in the case	0.01	604	0.09	0.00	312	0.00	916	0.128
From debtor's lead law firm application, highest hourly rate for attorneys	375.90	483	147.82	330.46	119	138.47	602	0.002***
Assets plus debt	83,057,202.40	533	358,205,104.10	3,766,218.81	213	8,620,036.75	746	0.001***
Time in chapter 11 (in years)	1.09	570	0.63	0.53	310	0.42	880	0.000***

just over 16 percent of the cases in the random sample retained this many professionals, suggesting a relatively rare but important event.

As seen in this model and throughout the random sample models, the presence of a committee is an important predictor of total cost. The appointment of a committee, as discussed earlier, indicates two things about a case. First, it often leads to the retention of additional committee professionals. Equally important, the appointment also signals a case of greater complexity and with greater assets at stake, so that creditors feel that participation is worthwhile. Appointment of a committee also increases the amount of negotiation in a case. Time spent in chapter 11 is not significant upon controlling for these other case complexity factors (*i.e.*, committees and additional debtor professionals).

Model 3, which adds the two case outcome variables, shows that converted cases are now an even more important downward influence on total cost of the case. More generally, and perhaps not surprisingly, this block of the models shows that cases that are dismissed or converted to chapter 7 incur lower chapter 11 expenses. On the other hand, the fact that this is so suggests that bankruptcy judges are doing a reasonable job of addressing these cases before they incur substantial reorganization expenses.

Turning to Model 4, we see that, unlike in the big case dataset, the fact that a case was filed in Delaware is now statistically significant. Given the positive coefficient on this variable, it appears that filing in Wilmington is associated with higher costs, but subsequent models show that the apparent geographic effect is actually the result of very large cases filed in Delaware.

First, Model 5 revisits the question of whether fee examiners play a role in the total cost of a chapter 11 case. As in the big case dataset, the presence of a fee examiner does not appear to affect the total cost associated with the other professionals retained in the case.

Model 6 then adds in the top hourly rate from the debtor's lead counsel and Model 7 considers whether the case included first day papers. Both of these variables provide significant improvements in the utility of the models, with the final model explaining more than 77 percent of the total cost of chapter 11 across this broad range of cases. The size of the case is no longer statistically significant, suggesting that among smaller cases, factors other than firm size are important for predicting costs. Importantly, the addition of these final two variables also has important effects with regard to the two district variables entered in Model 4. Once we control for the very large cases in the sample, by inclusion of the hourly rate and first day papers, Delaware's influence is no longer significant. And upon controlling for these same factors, filing in the Southern District of New York is now associated with a substantial decrease in professional costs. The latter pattern suggests that

TABLE 19A: REGRESSION MODELS OF PROFESSIONAL COSTS (RANDOM SAMPLE)

		Model 1			*Model 2*			*Model 3*	
	B	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*
Log of assets plus debt (mean centered)	.645	.138	.454***	.301	.066	.212***	.311	.065	.219***
Squared log of assets plus debt (mean centered)	.063	.034	.118	.011	.025	.022	.018	.022	.034
Did debtor employ 3 or additional professionals				1.858	.300	.311***	1.734	.299	.290***
Is there a UST-appointed committee in this case?				2.487	.366	.527***	2.360	.356	.500***
Log of time in chapter 11 (in years, mean centered)				.320	.212	.092	.271	.237	.078
Squared log of time in chapter 11 (in years, mean centered)				–.262	.215	–.060	–.380	.224	–.087
Case was converted to Chapter 7 (no plan)							–.912	.535	–.164
Case was dismissed							–.464	.298	–.096
Case from SDNY									
Delaware case									
Is there a fee examiner/auditor in the case									
Highest hourly rate for lead attorneys									
"First day" motions in this case									
(Constant)	10.806	.344	***	9.950	.279	***	10.382	.293	***
R-Square			.253***			.669***			.692***
Adj. R-square			.249			.664			.686

Note: OLS Regressions (N=410), Weighted Data. The dependent variable is log of total fees and expenses requested (cases with $0 omitted).
$* p < .05$, $** p < .01$, $*** p < .001$

the effect of filing in the Southern District of New York was suppressed until the model was more fully specified.

Consideration of Tables 17 and 19 together also shows that conclusions drawn from debtor size are highly dependent on the nature of the sample under consideration. This is shown graphically in Figure 20. In the random sample, when cases have a total log size of about 15,[50] fees start to accelerate. But in the big case dataset, total log size of debtors starts at about 15, so we only see the acceleration. On the other hand, there are not enough very large cases in the random sample to see the very noticeable downturn that stands out clearly in the big case dataset. These varying patterns no doubt explain why earlier studies, based on much smaller sample sizes, reported conflicting information about the pattern of fee expenditures and whether or not economies of scale exist in chapter 11 cases. Only with the broad sample available in the present study are these patterns evident.

In both datasets, I tested several variables that one might expect would help predict total professional costs, but that I did not find to be statistically significant. These variables include whether local counsel was retained in the case, whether an investment banker was retained in the case, the number of claims filed in the case, whether the case was involuntary and the number of motions to lift the automatic stay, appoint a trustee, and convert or dismiss the case.

Finally, Table 21 sets forth a simplified model for both the big case and random datasets. This model is a reduced model that applies to either dataset, and provides a "pretty good" estimate of total costs in chapter 11. I provide this primarily as a service for practitioners looking for an easier way of estimating fees, as compared with the more elaborate models set forth on Tables 17 and 18. This model is also designed to be more purely predictive, omitting terms like time spent in chapter 11 which are not easily estimated at the outset of a case.

A. A Note on the Effects of Missing Data

As noted at the outset, this study, like many that rely on court pleadings, must labor within the reality that many cases are missing data. For example, while the random sample includes more than 940 chapter 11 cases, the foregoing models are only able to use 410 of those cases. A common approach to handling missing data is to exclude any cases with missing data on any variables in the model (called listwise deletion). Although this approach was used in the foregoing models, it eliminated about a third of the cases that could be included in the analysis if data were available. Three variables account for the missing data in these datasets: total firm size, length of time in

[50]The equivalent of about $3.3. million. $e^{15} = 3{,}269{,}017.37$.

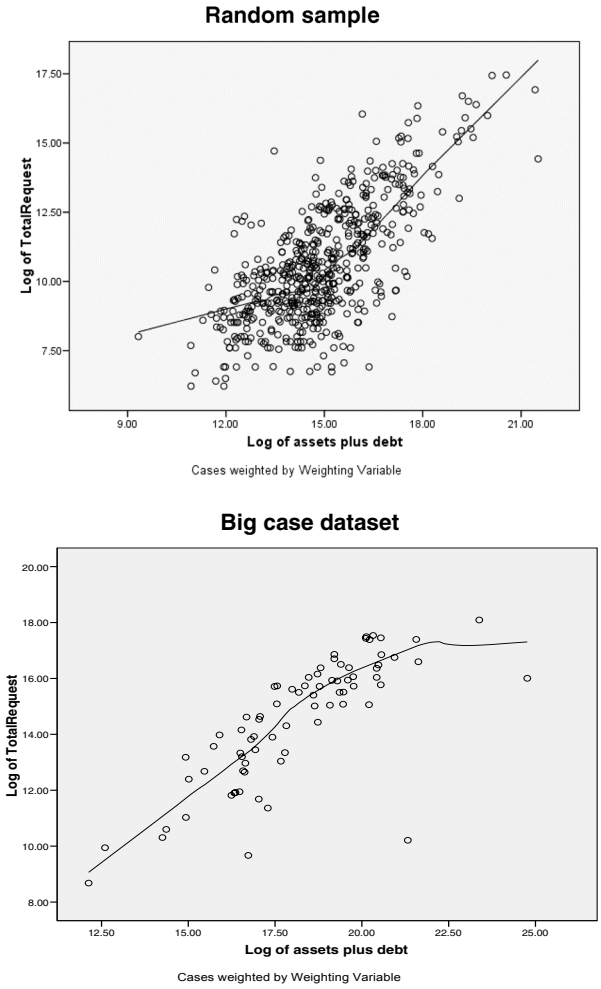
TABLE 19B: REGRESSION MODELS OF PROFESSIONAL COSTS (RANDOM SAMPLE)

	Model 4			*Model 5*			*Model 6*			*Model 7*		
	B	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*	*B*	*Robust SE*	*Beta*
Log of assets plus debt (mean centered)	0.276	0.068	0.195***	0.276	0.069	0.195***	0.111	0.056	0.078*	0.105	0.053	0.074
Squared log of assets plus debt (mean centered)	0.006	0.02	0.012	0.007	0.021	0.012	–0.012	0.018	–0.022	–0.011	0.018	–0.021
Did debtor employ 3 or additional professionals	1.633	0.302	0.273***	1.634	0.303	0.273***	1.552	0.294	0.259***	1.653	0.314	0.276***
Is there a UST-appointed committee in this case?	2.308	0.375	0.489***	2.307	0.376	0.489***	1.633	0.331	0.346***	1.345	0.264	0.285***
Log of time in chapter 11 (in years, mean centered)	0.277	0.239	0.079	0.278	0.24	0.08	–0.008	0.156	–0.002	–0.036	0.155	–0.01
Squared log of time in chapter 11 (in years, mean centered)	–0.34	0.219	–0.078	–0.34	0.22	–0.078	–0.099	0.144	–0.023	–0.102	0.151	–0.023
Case was converted to chapter 7 (no plan)	–0.969	0.548	–0.174	–0.969	0.549	–0.174	–1.087	0.544	–0.195*	–0.982	0.499	–0.176
Case was dismissed	–0.498	0.301	–0.103	–0.498	0.301	–0.103	–0.643	0.224	–0.132**	–0.578	0.216	–0.119**
Case from SDNY	0.043	0.304	0.01	0.043	0.304	0.01	–0.557	0.229	–0.126*	–0.641	0.239	–0.145**
Delaware case	0.964	0.357	0.102**	0.969	0.361	0.103**	0.453	0.322	0.048	0.304	0.351	0.032
Is there a fee examiner/auditor in the case				–0.094	0.428	–0.003	–0.194	0.388	–0.007	0.027	0.5	0.001
Highest hourly rate for lead attorneys				0.006	0.001	0.395***	0.006	0.001	0.374***			
"First day" motions in this case										0.602	0.287	0.132*
(Constant)	10.375	0.226	***	10.374	0.228	***	8.66	0.322	***	8.663	0.296	***
R-Square			0.699**			0.699			0.767***			0.777***
Adj. R-square			0.692			0.691			0.76			0.769

Note: OLS Regressions (N=410), Weighted Data. The dependent variable is log of total fees and expenses requested (cases with $0 omitted).

**p<.05, **p<.01, ***p<.001*

FIGURE 20: LOGGED TOTAL COSTS BY LOGGED TOTAL DEBTOR SIZE (WITH LOESS LINES)



chapter 11, and the highest hourly rate for the lead law firm. Comparison of mean values between cases with complete data and cases with incomplete data shows that cases in the two groups are similar in most ways. The few differences are described below.

In the random sample, cases with complete data tend to be smaller.[51] Cases with complete data have been in chapter 11 significantly longer, on average,[52] than cases with any missing data.[53] Two other characteristics dif-

[51]Mean log size equals 0.47 compared to 0.94 for cases with some missing data, but not missing on this variable.

[52]Mean equals 0.34 years.

TABLE 21: SIMPLIFIED REGRESSION MODELS OF PROFESSIONAL COSTS

	Random Sample (weighted, without $0 cases, n=410)			*Big case dataset (n=61)*		
	B	*SE*	*Beta*	*B*	*SE*	*Beta*
Log of assets plus debt (mean centered)	.119	.049	.083*	.358	.049	.385***
Did debtor employ 3 or additional professionals	1.741	.346	.291***	1.182	.191	.289***
Is there a UST-appointed committee in this case?	1.501	.271	.318***	1.050	.226	.237***
Case was converted to chapter 7 (no plan)	–.722	.481	–.130	–.672	.300	–.110*
Case from SDNY	–.621	.247	–.141*	–.020	.251	–.004
Highest hourly rate for lead attorneys	.006	.001	.358***	.003	.001	.261***
"First day" motions in this case	.685	.273	.150*	.556	.213	.142*
(Constant)	8.357	.290	***	11.435	.389	***
R-Square			.766			.893
Adj. R-square			.761			.879

OLS Regressions
Dependent variable: Log of total fees and expenses requested
* $p < .05$, ** $p < .01$, *** $p < .001$

fer between cases with complete and cases with incomplete data. Few of the cases with any missing data have information on the highest hourly rate for the lead law firm, but of those that do, the average is higher than for cases with complete data.[54] A significantly higher proportion of cases with complete data[55] had "first day motions" compared to cases with missing data.[56] On all of the remaining variables, there is no significant difference in the means between cases with complete data and cases with missing values. As described, three variables are primarily responsible for the missing data: firm size, time in chapter 11, and the highest hourly rate of the lead law firm. Many of the cases with missing values on those variables, however, have complete data on several other variables. A large random sample provides greater confidence that the patterns discerned in the analysis actually represent the population of bankruptcy cases in 2004. Losing cases because of missing data could potentially limit this ability to generalize, if cases that have missing data are systematically different from cases without missing data, and if the indicators of those differences are not included in the analysis. Therefore it is helpful to confirm that the cases with missing data tend to be mostly similar to cases with complete data, and the systematic differences are measured and included in the model (*e.g.* firm size, time in chapter 11, attorney hourly rates).

Emerging "modern" methods for handling missing data take advantage of

[53]Mean equals 0.12 years.

[54]Mean hourly rates of $411.76 compared with $367.56.

[55]P = 0.37.

[56]P = 0.25.

the information that is available in the sample to impute values for the missing data in a way that uses the information available to have a more informed and less biased analysis.[57] This method does not attempt to estimate the exact values that are missing but instead attempts to provide a less biased information matrix than what would occur from deleting cases with any missing data. Creating several imputed datasets and combining the results of analysis with each set is considered one of the best approaches to handling missing data, and far superior to single imputation methods that artificially reduce standard errors and increase the risk of falsely concluding a significant association when none exists.[58]

To further examine the effects of the cases with missing information, I examined the two datasets using the ICE module in Stata.[59] This software creates multiple imputed datasets for a dataset with missing values – in this case I created 10 datasets with values imputed for missing values. The imputations are based on the information available in the dataset and are created to retain the covariance structure of the sample, while taking advantage of the most information possible. The imputed values are not treated as the value that would have occurred if the data were obtained, but instead are used to produce the least biased and most efficient estimates in the multiple variable analysis. The ten imputed datasets are used to run ten OLS regression analysis, and the results of these ten analysis sets are then combined using "Rubin's Rules"[60] to create a correct average of the coefficients and standard errors. Using only one imputed dataset would result in artificially small standard errors; using ten provides a better estimate. Table 22 contains a summary of the results from the final models of both the imputed and unimputed (listwise) datasets. The random sample increases from 410 complete cases to 647 cases. Therefore, the total includes 231 additional cases that had missing values on at least one of the variables in the model (usually firm size or attorney hourly rates). The 31 cases with missing values on the dependent variable, total requested fees, were not included in this analysis, nor were the 267 cases in the random sample with a value of 0 for total fees requested.

The increased sample size of the imputed random dataset contributed to two coefficients now reaching statistical significance that were marginal but not significant in the listwise deletion model. The association between firm

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[57]J. L. Schafer & J.W. Graham, *Missing Data: Our View of The State of Art*, 7 PSYCHOLOGICAL METHODS 147 (2002).

[58]The latter approach is used by SPSS's missing data module, thus influencing the decision to use Stata for this part of the analysis.

[59]Patrick Royston, *Multiple Imputation Of Missing Values: Update Of ICE*, 15 STATA J. 527 (2005).

[60]DONALD B. RUBIN, MULTIPLE IMPUTATION FOR NONRESPONSE IN SURVEYS (1987).

size and requested fees increased,[61] but the standard errors changed very little.[62] The wider range of values and the larger sample both contribute to this change in significance. This result suggests that, similar to the big case dataset, firm size is an important predictor of total fees requested, but, unlike the big case dataset, the effect is modest. One other variable, the indicator of conversion to chapter 7 without a plan, also becomes statistically significant, and slightly larger, in the analysis of the random sample with imputed datasets.[63]

Two associations (SDNY and "first day" motions) cease to be statistically significant in the analysis with imputed datasets. The effect of the New York cases is smaller in the dataset with more cases, as is the effect of first day motions. Even though there is no difference in the proportion of cases with or without missing data, of the 23 SDNY cases, 8 are excluded in the listwise deletion model but incorporated in the multiple imputed model. Of the 117 cases with first day motions, 27 were excluded in the listwise deletion model but are included in the multiple imputation model. For both variables, the cases that were excluded in the listwise model have higher average log requested fees than those cases with complete data.

Despite a similar increase in the number of cases from multiple imputation for the big case dataset, there are few differences between the complete and incomplete case regression models. The main difference is that the coefficient for the variable indicating "converted to chapter 7" is not significant in the multiple imputed analysis, and is smaller.

B. Modeling Professional Fees with Geographic Effects[64]

To date, empirical research on corporate bankruptcy has largely ignored the reality that any study of bankruptcy involves inherently clustered data: cases are grouped within districts and circuits around the United States. Traditional linear models, such as those presented in the foregoing sections, are based on the assumption that each case is independent, but it is unlikely that cases within districts and circuits are fully independent. Instead, it is likely that they share unmeasured characteristics that make them more similar to each other than to cases in other districts or circuits. Failing to acknowledge and model the hierarchical or nested structure of cases can result in the miss-estimation of standard errors—leading to an overstatement of statistical significance (*e.g.,* saying that an association is significant when it is not).

Multilevel modeling can be used to account for the hierarchical structure

[61]From B = 0.105 to B = 0.166***.

[62]From SE =0.53 to SE = 0.55.

[63]From B = -.982 (SE = 0.451) to B = -1.051 (SE = 0.499)**.

[64]I am particularly grateful for Julia McQuillan's assistance with this part of the report.

TABLE 22: ANALYSIS OF MISSING VALUES

	Imputed Random Sample Model (weighted, no $0 cases, n=647)		*Random Sample Model 7 (weighted, n=410)*		*Imputed Big Case Model (n=93)*		*Big Case Model 8 (n=61)*	
	B	*Robust SE*	*B*	*Robust SE*	*B*	*Robust SE*	*B*	*Robust SE*
Log of assets plus debt (mean centered)	0.166	0.055***	0.105	0.053	0.350	0.101***	0.383	0.104**
Squared log of assets plus debt (mean centered)	0.010	0.006	−0.011	0.018	0.001	0.020	−0.001	0.021
Did debtor employ 3 or additional professionals	1.364	0.275***	1.653	0.314***	1.066	0.215***	1.137	0.227***
Is there a UST-appointed committee in this case?	1.151	0.332***	1.345	0.264***	0.850	0.301***	0.888	0.358*
Log of time in chapter 11 (in years, mean centered)	0.131	0.178	−0.036	0.155	0.194	0.161	0.026	0.192
Squared log of time in chapter 11 (in years, mean centered)	−0.046	0.160	−0.102	0.151	−0.266	0.190	−0.111	0.220
Case was converted to chapter 7 (no plan)	−1.051	0.451**	−0.982	0.499	−0.434	0.278	−0.697	0.327*
Case was dismissed	−0.743	0.273***	−0.578	0.216**	−0.465	0.516	−0.199	0.364
Was lead counsel Skadden or Weil					0.403	0.316	0.406	0.269
Case from SDNY	−0.410	0.284	−0.641	0.239**	−0.368	0.366	−0.025	0.280
Delaware case	0.510	0.313	0.304	0.351	0.001	0.249	0.223	0.181
Is there a fee examiner/ auditor in the case	−0.575	0.419	0.027	0.500	0.105	0.395	0.272	0.214
Highest hourly rate for lead attorneys	0.006	0.001***	0.006	0.001***	0.003	0.001**	0.002	0.001*
"First day" motions in this case	0.480	0.303	0.602	0.287*	0.622	0.245**	0.595	0.230*
(Constant)	8.764	0.335***	8.663	0.296***	11.669	0.751***	11.963	0.800***

OLS Regressions
Dependent: Log of total fees and expenses requested
* $p < .05$, ** $p < .01$, *** $p < .001$

of datasets like the ones used in this study, and to obtain correct estimates of coefficients and standard errors.[65] The exploration of variation between groups (*i.e.* districts), which may be of interest in its own right, is also facilitated by this approach. For example, using a multilevel modeling approach provides an estimate of the amount of variance in fees that is within districts

[65]For a good, concise discussion of multilevel models, see DOUGLAS A. LUKE, MULTILEVEL MODELING (2004). For a more advanced treatment of MLMs, see STEPHEN W. RAUDENBUSH & ANTHONY S. BRYK, HIERARCHICAL LINEAR MODELS: APPLICATIONS AND DATA ANALYSIS METHODS (2d ed. 2001).

and the amount that is between districts. In addition, it provides an estimate of the range of coefficients across districts. It is possible that associations could be much stronger in some districts or circuits than in others. In addition, the multilevel model approach provides a way to appropriately include variables measured at the case or district level into the model at the appropriate level. In the standard multiple regression approach, district level variables (*e.g.,* the indicators of Delaware or New York cases) are analyzed at the case level, but these are in fact district level variables.

One difficulty with using a multilevel model with this kind of case data is that the highest level of the model represents the total number of units (or the *n*). That is, running a three part multilevel model on these datasets, with the eleven numbered circuits as the highest level in the model, would be similar to conducting regular OLS regression with eleven bankruptcy cases because all of the information from the cases and the districts would be aggregated up to the circuit level. To avoid this problem, I instead opted to construct two level models which examine cases nested within districts. I then address the effects of the 11 circuits by inclusion of dummy variables in some of the models, an approach that is sometimes called "fixed effects" in the econometric literature. That is, I control for circuit effects but do not directly model them.

I examine the final models from both the random sample and the big case dataset by using the above approach that now includes the district variables at the district level. One way to conceptualize multilevel models is to imagine running the regression models within each of the thirty-three districts, and then averaging the resulting intercepts and slopes to get the overall estimates. Districts with more cases could be weighted to provide more information for the overall estimates than districts with fewer cases. In addition, we could calculate summary statistics to determine how different the district estimates are from each other (called variance components in multilevel modeling). We can then take the thirty-three intercepts and thirty-three slopes, and model the variance in these estimates (deviations from the overall average) by using district level predictors. For example, an analysis of the thirty-three intercepts could include indicators for cases from the Southern District of New York and Delaware to estimate if the average log fees for these districts is higher than in other districts. If the characteristics of individual cases are included in the model, then the intercepts become the statistically adjusted average log requested fees within each district.

The multilevel software creates a separate regression model for each district in the study, and then combines the estimates of the intercepts and slopes using a weighted average to get an overall estimate of the coefficients. Mathematically, the procedure simultaneously integrates the process across all cases and districts, using an iterative maximum likelihood estimation pro-

cess. The resulting models provide coefficients and standard errors, but because they provide maximum likelihood estimates, the familiar R-square statistics are absent. A baseline model provides estimates of the variance components—the percent of variance at the case and district levels—and the full model provides the appropriate coefficients and standard errors. The variance components for each model provide the traditional case level error (level-1, R) and a separate error term for the district level (Uo).

The slopes can also have random effects (individual slopes for each district). Each slope was evaluated separately to see if it did vary significantly across districts in the random sample model. The random sample model includes random effects for three or more professionals, the existence of a creditors' committee, log time, log time squared, and case dismissed. The big case sample did not include any random slopes. Only the varying intercepts are of substantive interest (i.e., different average log fees between districts). Accordingly, these are interpreted in the results. The chi-square test for the intercept variance components (U0) provides an estimate of the significance of the difference in intercepts (average log fees) between districts, after controlling for any case characteristics that are included in the model.

I begin by looking at the basic random dataset model. The results of this analysis are set forth on Table 23. The first model shows that the variance between districts, without controlling for circuits, is significant. About 14 percent of the variance in total fees is between districts. These differences, however, are explained by the differences in the characteristics of the cases in different districts, as shown by the inclusion of the regression variables from the prior OLS models.[66]

Model 2 shows that compared to all other districts, again before controlling for circuits, cases in the Southern District of New York cost significantly less and Delaware cases cost more. After controlling for characteristics of the cases, however, this second difference is not significant. Adding case characteristics significantly improves the fit of the model, as indicated by the large and significant decrease in the deviance statistic.[67] Several case characteristics are associated with total fees. Similar to the earlier models, increases in firm size are associated with increases in cost.[68] Likewise, cases with three or more additional professionals,[69] with committees,[70] higher hourly rates,[71] and

[66]The variance component reduces to 0 (100 percent is explained) and is no longer significant in the next model.

[67]Change = 581.7, change in number of parameters = 14, $P < .001$.

[68]B = .111*.

[69]B = 1.645***.

[70]B = 1.367***.

[71]B = .006***.

first day motions[72] are all associated with higher total costs. Two characteristics—cases converted to chapter 7[73] and dismissed cases[74]—are associated with lower chapter 11 costs.

Model 2 also adds an additional district level variable that captures the "caseload" of the bankruptcy courts in the district. This variable is calculated as the total number of all bankruptcy cases in the district divided by the number of permanent judges authorized for that jurisdiction. The variable is then log transformed. This variable allows for some consideration of whether the overall workload of a particular bankruptcy court influences costs, a further possible explanation for why prior studies have found time spent in chapter 11 to be a significant factor in overall cost.

Model 3 is quite challenging to interpret. In this model I add dummy variables to represent the circuits that do not include either New York (2nd Circuit) or Delaware (3rd Circuit). I do this to control for the nesting of cases and districts within circuits. Including the circuit indicator variables does not significantly improve the fit of the model, but does control for the clustering of districts within circuits by holding all unmeasured circuit characteristics constant. Including two district indicator variables (New York Southern and Delaware) and nine circuit indicator variables makes the excluded category equal to the districts that are in the 2nd and 3rd Circuits, but are other than New York Southern and Delaware. In short, the omitted category in this model represents cases from the Districts of Connecticut, Vermont, New Jersey and the Eastern District of Pennsylvania. As a result of this change in interpretation, the coefficients for the Southern District of New York and Delaware change considerably: the Southern District goes from B = -.483 to .027, and is no longer significant; Delaware goes from B = .356 to .742 and becomes significant.

Table 24 then considers Model 3 from Table 23, but this time using the imputed random sample, to allow for consideration of the effects of missing data. The results are largely the same as those shown on Table 23. This suggests a robust finding that is not sensitive to model specification or missing data. The one notable exception is time spent in chapter 11. In particular, time has negative coefficients in the listwise deletion model[75] but a positive and significant association in the imputed model.[76] Also, in all of the models, dismissed cases entailed lesser costs, but the effect is bigger in the imputed models.[77] The variance components are quite similar across datasets,

[72] B = .596***.
[73] B = –.992***.
[74] B = –.576***.
[75] B = –.019.
[76] B = .181*.
[77] B = –.601*** for the listwise model, but B = –.788 in the imputed model.

TABLE 23: MULTILEVEL MODEL OF LOG FEES, RANDOM SAMPLE, N=410, CASES WITHIN DISTRICTS, FULL INFORMATION MAXIMUM LIKELIHOOD

	Model 1: Baseline Model				*Model 2: Full model, not controlling for circuits*				*Model 3: Full Model, Controlling for Circuits*			
	Coeff	*SE*	*DF*	*P*	*Coeff*	*SE*	*DF*	*P*	*Coeff*	*SE*	*DF*	*P*
Intercept^	11.095	0.179	31	0***	8.570	0.194	28	0.000***	8.242	0.276	19	0.000***
x SDNY					–0.483	0.216	28	0.034*	0.027	0.343	19	0.937
x Delaware					0.356	0.356	28	0.209	0.742	0.325	19	0.034*
x Ln Caseload					0.202	0.225	28	0.379	0.429	0.360	19	0.249
xCir1									0.825	0.370	19	0.038*
xCir2 (reference)												
xCir3 (reference)												
xCIr4									0.054	0.382	19	0.889
xCir5									0.436	0.288	19	0.147
xCir6									0.040	0.321	19	0.904
xCir7									0.602	0.336	19	0.089
xCir8									0.226	0.584	19	0.703
xCir9									0.502	0.329	19	0.143
xCir10									0.473	0.348	19	0.190
xCir11									0.387	0.295	19	0.205
Firm size					0.111	0.043	395	0.010*	0.103	0.043	386	0.016*
Firm size sq					–0.011	0.015	395	0.441	–0.010	0.015	386	0.496
Professionals 3+					1.645	0.175	395	0.000***	1.650	0.174	386	0.000***
Committee					1.367	0.161	395	0.000***	1.374	0.161	386	0.000***
Ln Time					–0.032	0.094	395	0.738	–0.019	0.095	386	0.842
Ln Time sq					–0.093	0.117	395	0.426	–0.105	0.118	386	0.372
Case Converted					–0.992	0.146	395	0.000***	–0.978	0.147	386	0.000***
Case Dismissed					–0.576	0.134	395	0.000***	–0.601	0.136	386	0.000***
Fee Examiner					0.007	0.703	395	0.993	0.063	0.696	386	0.928
Highest Hr. Rate					0.006	0.001	395	0.000***	0.006	0.001	386	0.000***
First day Motions					0.586	0.144	395	0.000***	0.657	0.146	386	0.000***

Variance Components		SD	VC	DF	P		SD	VC	DF	P		SD	VC	DF	P
Intercept	Uo	0.822	0.676	31	0	Uo	0.015	0.000	28	>.500	Uo	0.011	0.000	19	>.500
Level-1	R	2.038	4.154			R	1.082	1.082			R	1.029	1.058		
Deviance		1777.65					1195.95					1186.85			
# of Parameters		3					17					26			
Change Significance							***								

* $p < .05$, ** $p < .01$, *** $p < .001$

^ The intercept is the average log requested fees across the districts when the predictor variables have a value of zero. The variance components provide an estimate of how much district specific intercepts differ from this overall average. The 95% confidence interval around the intercept is calculated by multiplying 1.96*the variance component $^{1/2}$, and adding and subtracting this value from the intercept. In model 1, the 95% confidence interval is 11.095 ±1.61. The three district variables (log caseload, Southern District of New York and Delaware), plus the indicator variables for the circuits in Model 3, model the differences in these intercepts between districts, controlling for the individual case characteristics. The change in the deviance statistic provides an indicator of improvement in model fit (relative to the change in the number of parameters) for maximum likelihood models.

Note: Several random slopes were also estimated but would not converge because there was so little difference between districts in the slopes. The following random effects were able to be included in Model 3 but were not significant: Professionals 3+, committee, log time, log time squared and case dismissed.

and in both cases all of the variance in average log fees requested between districts was explained by the case characteristics (the variance components become .000 and are no longer significant).

TABLE 24: MULTI-LEVEL MODEL OF LOG TOTAL FEES, CASES WITHIN DISTRICTS, MULTIPLY IMPUTED RANDOM SAMPLE, N = 647

	Coeff	*SE*	*DF*	*P*
Intercept^	8.772	2.538	20	0.003***
SDNY	0.164	0.299	20	5.880
Delaware	0.984	0.284	20	0.003***
Ln Caseload	0.159	0.299	20	0.601
xcir1	1.028	0.308	20	0.004***
xCir2				
xCir3				
xcir4	−0.005	0.357	20	0.988
xcir5	0.373	0.256	20	0.161
xcir6	0.060	0.285	20	0.835
xcir7	0.478	0.281	20	0.104
xcir8	0.057	0.416	20	0.893
xcir9	0.532	0.277	20	0.068
xcir10	0.413	0.317	20	0.209
xcir11	0.332	0.238	20	0.179
Firm size	0.180	0.062	21	0.009*
Firm size sq	0.010	0.011	30	0.389
Professionals 3+	1.486	0.169	135	0.000***
Committee	1.178	0.171	39	0.000***
Ln Time	0.181	0.086	75	0.038*
Ln Time sq	−0.169	0.109	44	0.128
Case Converted	−1.078	0.131	623	0.000***
Case Dismissed	−0.788	0.116	623	0.000***
Fee Examiner	−0.511	0.574	623	0.375
Highest Hr. Rate	0.005	0.001	26	0.000***
First day Motions	0.610	0.151	102	0.000***
Variance Components	SD	VC	DF	P
Intercept U0	0.010	0.000	20	>.50
Level-1 R	1.103	1.216		

* $p < .05$, ** $p < .01$, *** $p < .001$

^ The intercept is the average log requested fees across the districts when the predictor variables have a value of zero. Note: The following random effects were included in Model 3 but were not significant: Professionals 3+, committee, log time, log time squared and case dismissed.

With respect to the big case dataset, Table 25 considers the listwise and imputed models together. In these models, the comparison groups are again the districts in the 2nd and 3rd Circuits other than Southern District of New York and Delaware. Because there were no cases in the 4th Circuit in this dataset, the listwise model also omits that indicator variable. Because the

multiple imputation restored cases to Circuit 4, it is included in the imputed model.

The average log total fees for the comparison districts is slightly lower in the imputed model[78] than in the listwise model.[79] This is probably because the cases missing schedules or attorney hourly rate information were, broadly speaking, smaller cases. Including those cases back into the model therefore lowers the mean total fees for the cases. In both models, cases in districts with a higher volume of cases per judge (log caseload) tend to cost less.[80] This association, however, is only statistically significant in the listwise deletion model.

The association between log firm size and total cost is very similar and is significant in both models, but is slightly weaker in the MI model.[81] When three or more professionals are involved in a case, costs are much higher than cases involving a smaller number of professionals.[82] The pattern is the same when court-appointed committees are involved, but the effect is stronger in the imputed models.[83] Cases converted to chapter 7 incur lower chapter 11 costs in both models.[84] In neither model do chapter 11 costs differ significantly as between dismissed cases and cases not dismissed. Interestingly, however, the coefficients have opposite directions (positive in the listwise models and negative in the imputed models). The retention of Skadden or Weil is not significant in either model. There is a weak but significant association between the highest hourly rates in the lead law firm and total costs in the imputed model,[85] but not in the listwise model.[86] The variable indicating that first day motions were part of the case has very similar associations in both the listwise[87] and the imputed models.[88]

The baseline deviance statistic for the listwise deletion big case dataset is 252.54, with 3 parameters.[89] Adding the case characteristics more than halves the deviance statistic (the new value is 111.92, with 15 parameters). This change is statistically significant. The deviance value only reduces slightly when the district specific variables are included.[90] Unlike the random sample models, adding the circuit indicator variables significantly im-

[78]Bo = 12.835.
[79]Bo=13.251.
[80]The coefficients are negative: listwise B = –.791*, MI B = –.201.
[81]Listwise log firm B = .434***, MI log firm B = .317**.
[82]Listwise prof3+ B = 1.307***, MI prof3+ B = 1.183***.
[83]Listwise B = .672**, mi B = 822**.
[84]Listwise B = –1.243***, mi B = –.715**.
[85]B = .002**.
[86]B = .001.
[87]B = .848***.
[88]B = .756***.
[89]This model is not shown on the table.
[90]SDNY, Delaware, and Caseload, Deviance = 110.94, with 18 parameters.

TABLE 25: MULTI-LEVEL MODEL OF LOG TOTAL FEES, CASES WITHIN DISTRICTS, BIG CASE DATASET, MAXIMUM LIKELIHOOD ESTIMATION

	Model 1: Listwise				*Model 2: Multiply Imputed Data*			
	B	*SE*	*DF*	*P*	*B*	*SE*	*DF*	*P*
Intercept^	13.251	.330	14	.000***	12.835	.417	23	.000***
xLn Caseload	−.791	.313	14	.024*	−.201	.382	23	.602
x SDNY	−.858	.417	14	.059	−.499	.559	23	.382
x Delaware	−.396	.373	14	.306	−.153	.422	23	.720
xCir1	.890	.490	14	.090	1.196	.531	23	.034*
xCir2NY								
xCir3Del								
xCIr4 =0					−.861	.575	23	.147
xcir5	−.201	.275	14	.476	.128	.358	23	.724
xcir6	−.197	.335	14	.566	.165	.393	23	.678
xcir7	.469	.328	14	.175	.576	.313	23	.079
xcir8	.185	.415	14	.663	.574	.321	23	.086
xcir9	−1.704	.411	14	.001**	−.761	.518	23	.155
xcir10	.965	.630	14	.148	.625	.482	23	.208
xCir11	−.794	.318	14	.026*	−.183	.361	23	.618
Firm size	.434	.075	37	.000***	.317	.092	68	.001**
Firm size sq	−.029	.015	37	.056	−.005	.016	68	.783
Professionals 3+	1.307	.170	37	.000***	1.183	.167	68	.000***
Committee	.672	.238	37	.008**	.822	.267	68	.004**
Ln Time	−.069	.128	37	.595	.097	.180	68	.592
Ln Time sq	.116	.151	37	.450	−.212	.190	60	.269
Case Converted	−1.243	.264	37	.000***	−.715	.260	68	.008**
Case Dismissed	.113	.335	37	.738	−.164	.514	68	.750
Skadden/Weil	.231	.224	37	.308	.356	.225	68	.119
Fee Examiner	.527	.295	37	.082	.380	.347	68	.277
Highest Hr. Rate	.001	.001	37	.146	.002	.001	31	.009**
First day Motions	.848	.195	37	.000***	.756	.194	68	.000***
Variance Components	SD	VC	df	P	SD	VC	DF	P
Intercept (Uo)	.005	.000	14	>.50	.009	.000	23	>.500
Level1 (R)	.462	.213			.710	.504		

* $p < .05$, ** $p < .01$, *** $p < .001$

^ In these models, the intercept represents the average log total fees when all of the variables in the model have a value of 0. The three district variables (log caseload, Southern District of New York and Delaware), plus the indicator variables for the circuits, are modeling the differences in these intercepts (average log total fees) between districts, controlling for the individual case characteristics.

proves the model fit.[91] These results indicate that circuit specific characteristics are more important for explaining chapter 11 fees in big cases than in smaller cases.

It is important to acknowledge the empirical limits of this last set of models. First, there are a limited number of cases in this dataset, a fact that

[91]The new deviance value is 77.954, with an increase in 8 parameters, $p < .001$.

becomes increasingly important with the partitioning of the data required for multilevel models. The standard errors for the big case models are suspect because there are so few cases at any level of the model. With very little information to inform the standard errors, caution is needed when interpreting the significance tests. In short, the big case models presented in this section should be used with care, although they suggest a promising avenue for future research.

V. IMPLICATIONS AND CONCLUSIONS

Corporations spend a lot of money making changes to their financial structure. When undertaking an IPO, a company faces a host of professional fees, including attorney, accountant, investment banker, underwriter, and other adviser fees. The underwriter fee typically equals 7 percent of the offering.[92] The fees paid to lawyers, accountants, and other advisers can be an additional 3 percent or more.[93] If underpricing is included in the final cost calculation of an IPO, the total cost averages 17 percent of the value of the stock sold.[94]

In this context, chapter 11 expenses totaling about 4.5 percent of a debtor's assets plus debts seem unexceptional. And given that the present study has found substantial economies of scale with regard to chapter 11, management could expect that a large chapter 11 case would cost substantially less than other corporate transactions. For example, Kmart's recent bankruptcy[95] incurred professional costs of just over $134 million, but this sum represents less than 0.7 percent of combined assets and debts totaling more than $19 billion.[96] This is quite comparable to the fees associated with mergers, among the least expensive corporate finance transactions, in which a company can expect to pay from 0.5 percent to 1 percent of the deal's total value in professional fees.[97]

Similarly, the Bancroft family reportedly spent more than $30 million on professionals to advise the family on the recent sale of Dow Jones & Co. to

[92]Dale A. Oesterle, *The High Cost of IPOs Depresses Venture Capital in the United States,* Ohio State Public Law Working Paper No. 75 (August 2006), available at SSRN: http://ssrn.com/abstract=923572.

[93]*Id.*

[94]*Id.* at 4.

[95]I should note that before entering academia, I was among the attorneys who represented Kmart in its chapter 11 case.

[96]Calculations based on Kmart schedules of assets and liabilities (on file with author) and professional fee figures reported in Lynn M. LoPucki & Joseph W. Doherty, *The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases Revisited* (unpublished manuscript June 11, 2006)(on file with author).

[97]Diane Brady & Emily Thornton, *M&A: Bypassing the Street*, BUS. WK., June 2, 2003; Diya Gullapalli, *Moving the Market*, WALL ST. J., March 8, 2005.

News Corporation for $5 billion.[98] In other words, the controlling shareholders total professional expenses alone were 0.6 percent of the deal's total value. And on April 2, 2007, Tribune Company announced it was taking itself private in a two-stage $8.2 billion deal. The bankers' fees totaled $120 million, making the cost, expressed as a percentage of the deal, about 1.5 percent.[99] And presumably bankers were not the only professionals involved in the transaction.

Of course, chapter 11 commonly occurs in a context of financial hardship for creditors and employees of the bankrupt firm.[100] In this setting, the image of professionals collecting more than $134 million in professional fees is understandably jarring for many, and prompts the kinds of comments that I noted at the outset of this paper.[101]

Often unnoticed in these critiques is the value created within chapter 11. Even when used as a liquidation device, the available evidence suggests that chapter 11 returns much more to creditors than do liquidations under chapter 7.[102] The real questions then are whether there are ways to reduce the costs of chapter 11 even further and whether debtors are allowed to reorganize under chapter 11 when they should in fact liquidate, that is, whether chapter 11 suffers from a continuation bias. Although academics have heavily debated these questions,[103] the issues are fundamentally distinct from debates about the levels of professional fees in current chapter 11.

The present study provides an objective baseline for what a chapter 11 case should cost. Rather than debate whether $134 million was "too much" to reorganize Kmart, we can apply the model from Table 17. This tells us that the best estimate of what it should cost to reorganize Kmart is $104.4 million, although the figure might be as high as $135.8 million.[104] At $134 million, Kmart was within the range of what one would expect, albeit just

[98]Sarah Ellison & Matthew Karnitschnig, *Murdock Wins His Bid for Dow Jones*, WALL ST. J., Aug. 1, 2007, at A1.

[99]Dennis K. Berman, Sarah Ellison, & Serena Ng, *Tribune Co.'s Climb to Going Private Gets Steeper*, WALL ST. J., May 25, 2007.

[100]*See, e.g.,* Eric Fleischauer, *No wage cut for Delphi's lawyers*, THE DECATUR DAILY, July 15, 2007 ("On the same day that UAW members voted for an agreement dropping their $27-per-hour Delphi wages to a maximum of $18 an hour, others working for Delphi did better . . .).

[101]*See* Greta Guest, *Bill Kmart's Lawyer, Consultant Exceeds $138 Million,* DETROIT FREE PRESS, Oct. 3, 2003, at 1A (""It's a gross injustice. In this thing, there was no fairness, no balance and no honesty," said Jim Garvie, a retired municipal employee from Fowlerville who lost $5,000 when Kmart shares were canceled.").

[102]*See* Stephen J. Lubben, *Business Liquidation*, 81 AM. BANKR. L.J. 65 (2007).

[103]On the question of whether theoretical alternatives to chapter 11 would reduce costs, *see, e.g.*, Susan Block-Lieb, *The Logic and Limits of Contract Bankruptcy,* 2001 U. ILL. L. REV. 503, 516-517; ("Despite claims about the cost-saving effect of [bankruptcy choice], commentators are dubious that contractual substitutes will be less costly than the current bankruptcy process.").

[104]This is the 95 percent prediction interval for the predicted value of $104.4 million. Most cases (95 percent) should fall within this range, a case that does not could be considered abnormal.

barely. Given the multiple appeals to the Seventh Circuit in the case, a likely sign of its contentiousness, perhaps it is not altogether surprising that the total costs were at the upper end of the range.[105]

Of course, one may well question whether it is ever worthwhile for a large corporation to spend $134 million to reorganize or $120 million to "go private," but this is not a question about bankruptcy. Indeed, it is little more than another variation on the question that corporate scholars have wrestled with in the decades since Berle and Means first observed that corporate managers are essentially spending other people's money.[106] Chapter 11, once contextualized by the data provided in this paper, is just one facet of that question.

[105]*See, e.g., In re* Kmart Corp., 359 F.3d 866 (7th Cir. 2004); *In re* Kmart Corp., 381 F.3d 709 (7th Cir. 2004).

[106]*See* Adolf A. Berle and Gardiner C. Means, THE MODERN CORPORATION AND PRIVATE PROPERTY (1932).

STATISTICAL APPENDIX

TABLE 1A: CASES BY DISTRICT (UNWEIGHTED RANDOM SAMPLE)

District	*Frequency*	*Percent*
Southern District of Texas	42	4.44
District of Massachusetts	41	4.34
District of New Jersey	41	4.34
Northern District of Georgia	41	4.34
District of Connecticut	40	4.23
Eastern District of Pennsylvania	40	4.23
Southern District of Ohio	40	4.23
Northern District of Illinois	40	4.23
Central District of California	40	4.23
District of Colorado	40	4.23
Middle District of Florida	40	4.23
Northern District of Alabama	40	4.23
Southern District of New York	39	4.13
Southern District of Indiana	39	4.13
District of Nevada	39	4.13
District of Delaware	37	3.92
District of Kansas	31	3.28
Western District of North Carolina	30	3.17
Western District of Louisiana	28	2.96
Western District of Tennessee	26	2.75
Western District of Missouri	25	2.65
Eastern District of Arkansas	25	2.65
District of South Carolina	21	2.22
Southern District of West Virginia	18	1.90
Eastern District of Kentucky	17	1.80
Northern District of Mississippi	16	1.69
Eastern District of Wisconsin	16	1.69
District of Maine	13	1.38
District of Vermont	10	1.06
District of Rhode Island	9	0.95
District of Alaska	8	0.85
District of Wyoming	8	0.85
District of North Dakota	5	0.53
Total	945	100

TABLE 1B: CASES BY DISTRICT POPULATION SIZE GROUPS (UNWEIGHTED RANDOM SAMPLE)

Group	*Frequency*	*Percent*
High population district	417	44.13
Median population district	344	36.40
Low population district	184	19.47
Total	945	100

TABLE 1C: BIG CASE DATASET BY JUDICIAL CIRCUIT

Circuit	*Frequency*	*Percent*
2	18	18.18
3	18	18.18
5	14	14.14
11	12	12.12
6	11	11.11
9	11	11.11
7	6	6.06
1	4	4.04
8	3	3.03
4	1	1.01
10	1	1.01
Total	99	100

TABLE 2A: ADDITIONAL CASE CHARACTERISTICS (WEIGHTED RANDOM SAMPLE)

Any motion to pay critical vendors/trade creditors? (y/n)

	Frequency	*Percent*
No	885	93.7
Yes	59	6.3
Total	945	100.0

Final order approving new (post-petition) financing under sec. 364? (y/n)

	Frequency	*Percent*
No	786	83.2
Yes	158	16.8
Total	945	100.0

Any trustee appointed in this case? (y/n)

	Frequency	*Percent*
No	884	93.6
Yes	60	6.4
Total	945	100.0

Any examiner appointed in this case (excluding fee examiners)? (y/n)

	Frequency	*Percent*
No	917	97.1
Yes	27	2.9
Total	945	100.0

Any motion to sell substantially all assets under sec. 363? (y/n)

	Frequency	*Percent*
No	895	94.8
Yes	49	5.2
Total	945	100.0

Was there an ordinary course professional system used in the case? (y/n)

	Frequency	*Percent*
No	890	94.2
Yes	55	5.8
Total	945	100.0

Was a monthly compensation system used in this case? (y/n)

	Frequency	*Percent*
No	788	83.4
Yes	157	16.6
Total	945	100.0

TABLE 5A: FIVE LARGEST CASES BY ASSET SIZE, BY DISTRICT POPULATION GROUPS (WEIGHTED RANDOM SAMPLE)

	Lead Debtor Name	*Assets*
High population districts	Old UGC, Inc.	$846,050,021.67
	Ormet Corporation, A Delaware Corporation	$444,816,346.00
	Cornerstone Propane, L.P.	$277,594,020.00
	Techneglas, Inc.	$137,934,301.06
	Wickes Inc	$126,641,753.00
Median population districts	Pegasus Satellite Television, Inc.	$167,987,702.00
	Perryville Energy Holdings, LLC	$51,276,150.45
	Kiel Bros. Oil Company, Inc.	$50,215,845.93
	Capital City Enterprises, Inc.	$28,459,620.00
	Dyer Fabrics, Inc.	$27,577,210.50
Low population districts	FiberMark	$185,364,623.58
	Factory 2-U Stores, Inc.	$180,823,452.00
	Canyon Club, Inc	$117,132,790.38
	Breuners Home Furnishings Corp	$86,428,545.00
	Chas Coal, LLC	$78,694,999.00

TABLE 6A: FIVE LARGEST CASES BY THREE MEASURES (BIG CASE DATASET)

	Lead Debtor Name	
Lead Debtor Total Assets (schedules)	Yukos Oil Company	$19,384,847,493.00
	US Airways Inc.	$5,974,269,341.00
	Interstate Bakeries Corporation	$1,368,592,766.00
	ACR Management LLC	$463,088,233.00
Dan River, Inc.	$426,706,531.00	
Lead Debtor Total Debts (schedules)	Yukos Oil Company	$37,515,064,157.00
	US Airways Inc.	$8,298,577,928.00
	RCN Corporation	$2,430,555,236.00
	Globalstar Telecommunications, Ltd. (2004)	$1,823,799,468.32
	Interstate Bakeries Corporation	$954,436,569.00
Operating Income (SOFA)	US Airways Inc.	$6,761,645,329.00
	Interstate Bakeries Corporation	$3,467,500,000.00
	Footstar, Inc.	$1,988,781,481.00
	Wickes Inc	$1,386,105,456.00
	Factory 2-U Stores, Inc.	$496,073,167.00

TABLE 8A: TIME TO RESOLUTION IN YEARS (WEIGHTED RANDOM SAMPLE, EXCLUDING PENDING CASES)

Status of case at end of study coverage	*Mean*	*N*	*Std. Deviation*	*Std. Error of Mean*
Plan confirmed	1.16	246	0.56	0.04
Plan confirmed, case converted to chapter 7	1.09	4	0.54	0.27
Case converted to chapter 7, no confirmed plan	0.70	218	0.55	0.04
Case dismissed	0.73	383	0.55	0.03
Case transferred to district outside of study	0.69	11	0.39	0.12
Total	0.85	862	0.58	0.02

TABLE 12A: COSTS OF COURT APPOINTED "NEUTRALS"

Random sample	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Total trustee's fees charged to estate	16	$0.00	$147,891.48	$38,913.55	$39,564.01
Total cost to the estate of examiner	6	$20,830.98	$2,006,686.88	$514,768.70	$814,276.24
Total costs to the estate of fee examiner/auditor	4	$29,930.83	$133,563.87	$69,389.68	$48,191.54
Big case dataset					
Total trustee's fees charged to estate	1			$4,943.07	
Total cost to the estate of examiner	4	$18,992.10	$2,006,686.88	$939,225.79	$1,068,828.62
Total costs to the estate of fee examiner/auditor	5	$22,963.40	$133,563.87	$72,165.92	$46,238.01

TABLE 15A: TOTAL FEES AND EXPENSES OVER SCHEDULED ASSETS

Debtor Size (1=smallest)	*N*	*Mean*	*Std. Deviation*	*Std. Error*	*95% Confidence Interval for Mean*	
					Lower Bound	*Upper Bound*
Random Sample (weighted)						
1	137	3.61	50.24	4.30	−4.89	12.11
2	113	2.21	7.96	0.75	0.73	3.70
3	177	0.24	1.30	0.10	0.04	0.43
4	133	0.39	4.07	0.35	−0.31	1.09
5	154	0.28	1.33	0.11	0.07	0.49
Total	714	1.23	22.27	0.83	−0.40	2.87
Big Case Dataset						
1	14	13.78	50.56	13.51	−15.42	42.97
2	16	0.34	0.64	0.16	0.00	0.68
3	15	0.48	0.88	0.23	−0.01	0.97
4	16	1.30	3.99	1.00	−0.83	3.43
5	14	0.09	0.12	0.03	0.02	0.16
Total	75	3.03	21.90	2.53	−2.00	8.07

debtor quintiles by sum of assets and debts

TABLE 15B: CUTPOINTS FOR DATASET QUINTILES

		Big Case Dataset	*Random Sample*
Percentiles	20%	$14,918,928.39	$425,000.00
	40%	$39,711,877.51	$1,642,750.00
	60%	$147,030,241.80	$2,896,065.00
	80%	$568,932,032.96	$9,861,326.57

TABLE 17A: DESCRIPTIVE STATISTICS FOR VARIABLES IN BIG CASE DATASET MODELS

	Mean	*Std. Deviation*	*N*
LogFeesReq Log of TotalRequest	14.81	1.96	61
logtotalfirmM Centered log of total firm value variable	0.11	2.11	61
logtotalfirmMSQ Squared version of centered log of total firm	4.38	6.99	61
Prof3 Did debtor employ 3 or additional professionals	0.66	0.48	61
V376 Is there a UST-appointed committee in this case? (y/n)	0.74	0.44	61
logtimeln11M Centered log of time in chapter 11	0.09	0.66	61
logtimeln11MSQ Squared version of centered log of time in chapter 11	0.44	0.49	61
CaseConv Case was converted to chapter 7 (no plan)	0.11	0.32	61
CaseDism Case was dismissed	0.07	0.25	61
SkaddenWeil Was lead counsel Skadden or Weil?	0.16	0.37	61
SDNYCase Case from Southern District of New York	0.16	0.37	61
DelCase Delaware case	0.11	0.32	61
V59 Is there a fee examiner/auditor in the case? (y/n)	0.07	0.25	61
V75 From lead law firm application, highest hourly rate for attorneys	548.67	181.32	61
V762 "First day" motions in this case? (y/n)	0.56	0.50	61

TABLE 19A: DESCRIPTIVE STATISTICS FOR VARIABLES IN RANDOM SAMPLE MODEL (WEIGHTED DATA)

	Mean	*Std. Deviation*	*N*
LogFeesReq Log of TotalRequest	11.13	2.21	410
logtotalfirmM Centered log of total firm value variable	0.26	1.55	410
logtotalfirmMSQ Squared version of centered log of total firm	2.48	4.16	410
Prof3 Did debtor employ 3 or additional professionals	0.16	0.37	410
V376 Is there a UST-appointed committee in this case? (y/n)	0.32	0.47	410
logtimeln11M Centered log of time in chapter 11	0.34	0.63	410
logtimeln11MSQ Squared version of centered log of time in chapter 11	0.51	0.50	410
CaseConv Case was converted to chapter 7 (no plan)	0.19	0.40	410
CaseDism Case was dismissed	0.29	0.45	410
SDNYCase Case from Southern District of New York	0.47	0.50	410
DelCase Delaware case	0.06	0.23	410
V59 Is there a fee examiner/auditor in the case? (y/n)	0.01	0.08	410
V75 From lead law firm application, highest hourly rate for attorneys	367.56	134.38	410
V762 "First day" motions in this case? (y/n)	0.37	0.48	410