PROFESSIONAL OVERCHARGING IN LARGE BANKRUPTCY REORGANIZATION CASES

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Professional Overcharging in Large Bankruptcy Reorganization Cases

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In an empirical study of professional fees and expenses in 74 large public company bankruptcies concluded 1998–2003, we found that (1) controlling for the trend over time and the geographical location of the cases, company size (measured by assets), case duration (measured in days), and the number of parties (measured by the number of professional firms working) explain nearly 87 percent of the case-to-case variation in professional fees, (2) fees and expenses increased about 10.4 percent per year over the six-year period covered by our study, (3) five of six predictors of fees and expenses exhibited a strong scale effect, (4) the scale effect for company size is so severe that reporting fees as a simple percentage of assets is misleading, (5) using the same model we used with court file data, our variables explain 86 percent of the case-to-case variance in the amounts of professional fees and expenses reported in SEC filing data, and (6) fees and expenses reported in SEC filing data are highly correlated with those reported in court file data, but are 58 percent higher. The principal determinants of fees and expenses—assets, days in bankruptcy, and the number of professional firms working—appear to us to measure not only the need for professional services, but also the opportunity for professionals to bill. In an attempt to statistically isolate this "billing opportunity" component of fees and expenses, we compiled a second set of variables—employees, docket length, and reorganization plan classes—that we believe measures case complexity without measuring billing opportunity. When those variables are substituted for the principal determinants, the regression explains substantially the same percentage of variance in fees and expenses. This second, complexity-only model predicts fees that, controlling for scale, are significantly lower for companies with assets greater than about $770 million. We

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theorize that this systematic difference in the two models' predictions measures the billing opportunity component of fees and expenses in large public company bankruptcies. That component is an overcharge because it is not warranted by the complexity of the cases, including complexity resulting from company size.

For more than three decades, scholars in law and corporate finance have attempted to quantify the "direct costs" of bankruptcy.[1] Both sets of scholars work from the same kinds of data: professional fees and expenses in bankruptcy reorganizations, as reflected either in court files or in the debtors' financial statements. Both generally report those costs as percentages of the debtors' assets.

In an earlier study (LoPucki & Doherty 2004), we identified three principal determinants of the amount of professional fees and expenses incurred in reorganizing a large public company: (1) company size, measured by assets reported at filing (ASSETS), (2) case duration, measured in days (DAYS IN), and (3) the number of parties, measured by the number of professional firms working in the case (ROLES). For the study reported here, we extended our database to include four kinds of additional data: new variables, more recent cases, hours and hourly rates, and professional fees reported in financial statements. This new study is based on examination of 931 fee applications filed by lawyers, investment bankers, and other professionals in 74 large public company bankruptcies concluded by plan confirmations from 1998 through 2003 and orders awarding approximately $1.7 billion in fees on the basis of those applications. The study included such high-visibility cases as Kmart, Global Crossing, US Airways, Polaroid, TWA, and Fruit of the Loom. The data include the professional fees and expenses of these 74 companies as reported in the debtors' Securities and Exchange Commission filings. The data also include the number of documents filed in the cases and the number of creditor classes in the plans. Finally, for the 26 most recent cases—a total of 417 final fee applications—we also gathered data on (1) the hourly rates charged by the professionals and (2) the number of hours worked by professionals and paraprofessionals.

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[1]Efforts on the law side are Ferris and Lawless (2000), Lawless et al. (1994), LoPucki and Doherty (2004), and Lubben (2000, 2008). Those on the finance side include Altman (1984), Betker (1995, 1997), Bris et al. (2004), Fisher and Martel (2001), Tashjian et al. (1996), Warner (1977), and Weiss (1990).

The findings of principal importance are these:

1. *We confirm the three principal determinants identified in our earlier study.* Controlling for the trend in fees over time and courts in which the cases were filed, the three principal determinants explain 87 percent of the case-to-case variance in court-awarded professional fees and expenses. Each is statistically significant at the $p < 0.001$ level.
2. *Comparative analysis with a second variable set suggests that the three principal determinants measure not merely the complexity of the case, but also the billing opportunity the case presents to professionals.* The second variable set measures company size by employees rather than assets, case duration by the number of documents filed, and parties by the number of creditor and shareholder classes in the reorganization plan. We theorize that the variables in this second set are less likely to reflect billing opportunity than the variables in the first set. The variables in the second set perform nearly as well as those in the first set. They explain 80 percent of the case-to-case variance. Regression of the differences in predictions from the two sets reveals that the differences are correlated with two variables from the first set (ASSETS and ROLES). The strongest correlation is to ASSETS. Controlling for scale, the first variable set predicts higher fees than the second set at asset values above $770 million. We interpret this finding to indicate that the first variable set measures billing opportunity and case complexity, the second measures only case complexity, and the two differ systematically only at asset values above about $770 million.
3. *Professional fees and expenses increased over the six-year period of this study at the rate of 10.4 percent per year.* That means the cost of bankruptcy professional fees and expenses increased by an estimated 71 percent over the six-year period, 57 percent more than the 14 percent reported increase in consumer prices (Bureau of Labor Statistics 2006).
4. *Professional fees and expenses are 32 percent higher in forum-shopped cases.* The most likely explanation is that forum shopping moves cases from courts where fees would have been low, to courts where they are higher. The principal destination courts were Delaware and New York.

5. *Fees and expenses exhibit significant scale effects with respect to all variables in the two sets except ROLES.* Professional fees and expenses increase as firm size, case duration, and plan classes increase, but at declining rates. The scale effects with respect to firm size are so great that study results reported in the conventional format—costs as a percentage of firm assets—are virtually meaningless. We recommend that scholars cease reporting professional fee and expense findings in that form.
6. *Professional fees reported in SEC filings are significantly higher than professional fee and expense awards shown in court files.* The former are about 58 percent higher, on average, than are the latter. Thus studies will show widely differing fee and expense levels depending on which of the two main data sources the researcher uses.
7. *Data from court files and data from SEC filings are strongly correlated and predict professional fees and expense about equally well. Each has advantages.* SEC filing data are available for fewer cases, but are easier to collect. SEC filing data carry a risk of survivor bias, but that risk may be small. Court file data contain more detail.

The firms studied were identified from Lynn M. LoPucki's Bankruptcy Research Database (BRD) (LoPucki 2006). The BRD includes data on all large public companies filing bankruptcy in the United States from 1980 to the present. The method of case selection is described in Section I.A. In keeping with our standard practice, we will post both our data and the statistical runs on the website of the Empirical Research Group at the UCLA School of Law (http://www.law.ucla.edu/erg/) so others can easily replicate and extend our study.

We will also update the LoPucki-Doherty Fee Calculator to include the formulas derived from the regression analyses we present here. The Fee Calculator, which is posted at http://lopucki.law.ucla.edu/feecalculator.asp, enables users to predict the fees that will be incurred in a large public company bankruptcy cases based on the determinants we have identified.

The article proceeds as follows. Section I presents the new fees and expenses regression model and explains the changes from our earlier model. Section II presents our findings as to scale effects. Section III describes the availability of data from SEC filings and uses those data to estimate a regression model of the determinants of fees and expenses. Section III also comments on the differences in results from the use of SEC filing data rather than court file data.

I. The Regression Model Using Court File Data

This section reports on our regression model of the determinants of the total amount of professional fees and expenses incurred in the bankruptcies of large public companies based on court file data.

A. Sample Selection

To obtain the sample for this study, we added 26 cases to the 48 cases in our prior study. Each of the 74 was a large public company prior to filing.[2]

The sample is not random. We selected the cases in three phases. In the initial data-collection phase in 2001, we collected data on all cases for which complete fee and expense data were available on PACER, supplementing that data with some documents purchased through service companies. In the second phase of data collection in 2002, we added only cases from Delaware and courts other than Delaware of New York. In the third phase in 2004, we added 26 cases, which came disproportionately from New York and courts other than Delaware of New York. To assure that our findings would be applicable to large as well as small cases, we selected 20 cases with assets in excess of $1 billion for which data were available on PACER.

The mix of courts in the resulting sample reasonably reflects the mix of courts in the population of large public company bankruptcies.[3] Of the 74 cases in the current sample, 24 are Delaware cases, 21 are New York cases, and 29 are other court cases. A table analyzing the composition of the sample and comparing it to the relevant universes appears in Appendix A.

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[2]We selected our sample from Lynn M. LoPucki's Bankruptcy Research Database (BRD). Three debtor companies included in this study, Greate Bay Hotel and Casino, Inc., Stratosphere, Inc., and Unison Healthcare, Inc., were classified as large public companies and included in the BRD at the time of their selection for our sample because they reported sufficient assets in their petitions. As the result of a change in BRD protocols, they have since been deleted from the BRD as not "large" because they did not report sufficient assets on their last 10-Ks filed prior to bankruptcy.

[3]Delaware cases are slightly underrepresented in the sample. They comprise 45 percent of all cases disposed of by plan confirmation during the six-year period of this study, but only 32 percent of the cases studied. New York cases are overrepresented in the sample. They comprise 16 percent of all cases disposed of by plan confirmation during the study period, and 28 percent of the cases studied. Other court cases comprise 39 percent of all cases disposed of during the study period and 39 percent of the cases studied. Overinclusion of New York cases created a substantial New York cell, making it possible to compare New York cases with Delaware and other court cases.

As a result of the manner in which the sample was compiled, a disproportionate number of the Delaware cases are from the early years covered by the study. The assets of bankrupt companies were generally lower during those years, as were the fees. A disproportionate number of the New York cases are from the later years of the study when assets and fees were generally higher. To distinguish the differences attributable to courts from the differences attributable to the trend in fees over time, we employed a mixed-effects model to estimate the effect of court by controlling for trend and to estimate the trend by controlling for court. We also used probability weights when estimating the regression model, based on the data in Appendix A.

Because the later cases in our sample are generally the larger cases in our sample, we have also had to consider whether our data are adequate to distinguish the effects of increasing case size from the effects of the upward trend in fees over time. We think we have addressed that adequately by controlling for assets when estimating the trend coefficient.[4]

B. The Determinants of Fees and Expenses

In an earlier article, we reported a regression model of the determinants of professional fees and expenses in large public company bankruptcies. The model identified three principal determinants: the debtor's asset size at filing (ASSETS), the duration of the bankruptcy case (DAYS IN), and the number of professional firms sharing in the fees and expenses (ROLES). With a sample size of 48 cases, the adjusted R^2 was .77, indicating that the three determinants explained 77 percent of the case-to-case variance in professional fees and expenses. We expanded our sample with more recent bankruptcies to include a total of 74 cases. The same three determinants (ASSETS,

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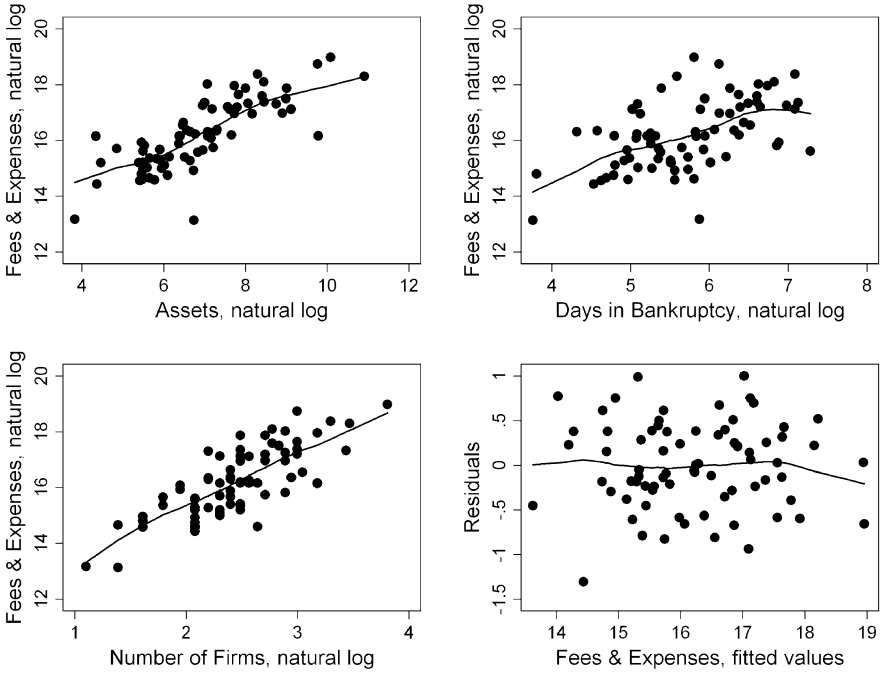
[4]As noted, in choosing cases for the period from mid-2002 to the end of 2003, we favored cases generally larger than the cases in our earlier sample. To investigate whether the differences in these additional cases were attributable to case size rather than the trend in fees over time, we tested whether the new cases were drawn from a different population. If they had been, the relationships among variables might have been inconsistent with the findings from our prior study. The null hypothesis for this investigation was that our earlier regression model would be able to predict the new cases. To test this hypothesis, we added slope and intercept variables for the new data to the model. If the new data were drawn from a different population, then these variables would be statistically significant; that is, they would have a significantly different slope and intercept from the older data. The results were negative, indicating that the new data are drawn from the same population as the old data, and our prior findings apply to the entire data set.

Figure 1: Bivariate plots of the three primary determinants of fees and expenses in bankruptcy, with residual plot from a regression including all three.



DAYS IN, and ROLES) from the earlier study are still highly significant. Each is independently correlated with fees and expenses (Figure 1), and the R^2 of a model that includes all three is 0.85, indicating that the three determinants explain 85 percent of the case-to-case variance.

1. Additional Variables Measured

Those three determinants are to some degree a measure of the complexity of bankruptcy cases and so, probably, of the need for professional services. In cases with more assets, more interests must be accounted for, more issues are likely to arise, and because more is at stake, more thoroughness is warranted. Cases may be longer because more time is needed to complete the more complex work required. Parties are likely to seek professional services from more professional firms when the problems encountered are more complex.

We theorize that those three determinants also to some degree measure the professionals' billing opportunities. Debtors with more assets are able to pay higher fees and managers of larger companies are less likely to concern themselves with professional fees of a given magnitude than are managers of smaller companies.

The professionals in our study generally billed their clients and were paid monthly. A few billed a fixed amount each month, regardless of the amount of work done; most billed similar amounts from month to month. The professionals themselves analogize their total monthly billings to the "burn rate" of a rocket, making the point that one month of the journey is likely to cost about the same as another. The persons responsible for evaluating and controlling fees can easily compare the burn rate in their case to the burn rate in other similar cases, but cannot easily relate that burn rate to the amount of progress achieved on the case. Thus if the case extends over a longer period of time, larger total billings are likely to be acceptable, even if the services rendered are the same.

When the same amount of work is divided among more professionals, fee controlling becomes more complex, creating billing opportunity. Thus, absent an effective fee-control system, professionals may be able to bill more for services of the same value in larger, longer cases with more professional firms working. To the degree that occurs, the three determinants measure not just the need for professional services, but also the billing opportunity presented to the professionals.

To test this theory empirically, we designated the three original determinants Variable Set A (ASSETS, DAYS IN, and ROLES). We then collected data for a second set of determinants, Variable Set B, designed to measure complexity without also measuring billing opportunity. The first Set B variable is EMPLOYEES, defined as the number of persons employed by the debtor at the fiscal year end immediately prior to filing. Companies with more employees are likely to have more complex bankruptcies because employment, pay, and benefits considerations intrude, because operations are more complex and far flung, and because operations are likely to be more varied. EMPLOYEES, like ASSETS, is thus a measure of the size of a company. Unlike more ASSETS, however, more EMPLOYEES does not directly indicate greater ability to pay professional fees.

The second Set B variable, DOCKET LENGTH, is the number of docket entries in the court file from filing to plan confirmation. We selected that period because it most closely corresponds to the period we used for mea-

suring fees and expenses.[5] A docket entry is made each time a document is added to the court file. Thus DOCKET LENGTH is the number of documents filed in the bankruptcy case, without regard to the length or complexity of the document. In using DOCKET LENGTH as a measure of case complexity, we have implicitly assumed that the mix of document page lengths remains roughly constant from case to case, and that total document length is a good measure of the value of the professionals' services. DOCKET LENGTH is not as likely to measure billing opportunity as is case duration. Theoretically, parties could prepare unnecessary documents in order to justify increased fees, but that strategy is unlikely to succeed because the necessity for a particular document is among the easiest factors for a fee controller to assess.

The third Set B variable, PLAN CLASSES, is the number of creditor groups separately classified in the reorganization plan.[6] David Skeel initially suggested this variable as a measure of the complexity of a bankruptcy case (Skeel 2001). Separate classification indicates that the group had legal rights different from those of other creditors and that the parties who drafted and negotiated the plan gave separate consideration to their rights. Separate classification is, in an important sense, a measure of the number of parties to the case. ROLES is in one sense a better measure of complexity than PLAN CLASSES: it measures the number of groups important enough to receive separate representation at the expense of the estate and distinguishes among them by the number of professionals considered necessary. But the logic of using ROLES as a justification for higher fees is in part circular. Controlling the number of professional firms working may be precisely what is needed to control fees and expenses. PLAN CLASSES has the advantage of being at least apparently independent of the professionals' efforts to increase their own fees.

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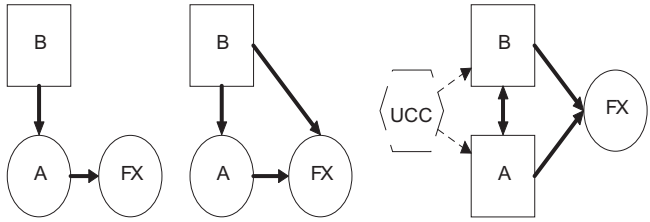
[5]The period for measuring fees and expenses extended through the "final fee order" generally entered shortly after confirmation. That order generally included fees through and including plan confirmation, but sometimes included some postconfirmation fees.

[6]We collected the plan class data principally from the Plan Summaries compiled by the Bankruptcy DataSource and made available on LEXIS, Library COMPNY, File BDSPLN. We counted the number of creditor groups whose treatment was separately specified, regardless of whether the group was designated as a class, a subclass (e.g., Class 4B), or unclassified (e.g., administrative expenses). We counted groups designated separately in the plan as a class even if the groups received no distributions.

Table 1: The Three Sets of Variables

Underlying Case Complexity	*Set A*	*Set B*
Company size	Dollar value of assets reported at filing	Number of employees reported before filing
Case length	Days from filing to plan confirmation	Number of documents filed in the case
Number of parties	Number of professional firms paid from the estate	Number of classes recognized in the plan

Figure 2: Three models of how fees and expenses (Fx) relate to different aspects of complexity. UCC, A, and B correspond to the three columns in Table 1.



2. Models of Causality

It should be clear from the preceding paragraphs that the variables in Set A are not independent of the variables in Set B. Indeed, each of the three variables in each set is a proxy for a roughly corresponding underlying factor (Underlying Case Complexity (UCC) in Table 1). This lack of independence raises significant questions about how to proceed with the analysis, specifically how to deal with the high degree of multicollinearity. To understand these questions we have modeled three mechanisms that may have generated our dependent variable. These helped guide us in our selection of the statistical framework for analysis.

The three models represent different ways that Set A variables, Set B variables, and the dependent variable, FEES AND EXPENSES, might interact (Figure 2). Model 1 is a path analysis with a single exogenous variable set (B) and two endogenous ones (Set A and FEES AND EXPENSES). In this model we assume that Set B variables are precursors to Set A variables, and that the entire effect of Set B on fees and expenses is indirect (Set B → Set A → FEES AND EXPENSES). Set B is incorporated through Set A, such that the residual variance in variable Set B is uncorrelated with FEES AND EXPENSES. That

assumption presumes that nothing in Set B has an effect on fees and expenses except those factors that are correlated with Set A. It is not an instrumental variable model, however, as Set A is expected to independently influence FEES AND EXPENSES over and above the influence of Set B.[7]

Model 2 appears similar to Model 1, but it represents the direct path of Set B and the residual effect of Set A. The direct path (Set B → FEES AND EXPENSES) represents the total effect of Set B without the influence of Set A, and the indirect path (Set B→ Set A→ FEES AND EXPENSES) represents the effect of Set A after the influence of Set B has been removed. The assumption of Model 2 is that Set B is a precursor to Set A, and that Set A is correlated with Set B but has its own contribution to FEES AND EXPENSES. To estimate the effect of Set B we would isolate the effect of Set A using a two-step partial regression in which the residuals from the first equation (eA) would be an independent variable in the second equation. Since these residuals would be orthogonal to the Set B variables, the coefficients and standard errors of the regression would be free of the problems caused by multicollinearity.[8]

Model 3 assumes that both Set B and Set A are exogenous, and that they are correlated with each other but that neither is a precursor or cause of the other. Instead, Underlying Case Complexity—which we cannot measure directly—generates the values of the Set A and Set B variables. The Set A and Set B variables are measures of case complexity, which in turn generates FEES AND EXPENSES. We can differentiate between Set A and Set B by the differences in their explanatory power. If the variance explained by Set A is equivalent to the variance explained by Set B, and if the combined explained variance is equal to the variance explained by either Set A or Set B, then we can conclude that the two sets of variables are substitutes. If they explain different percentages of the variance, such that the combined explained variance is significantly different from the variance explained by either, then we assume that the difference is caused by separate factors in each set of measures, and that they are imperfect substitutes.

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[7]This model takes the following form:

Set A = b0 + b1 * Set B + eA

FX = b0 + b2 * Set A + eFX.

[8] Set A = b0 + b1 * Set B + eA

FX = b0 + b2 * Set B + b3*eA + eFX.

Each of these models have intuitive strengths and weaknesses. We chose Model 3 as the basis for our initial analysis because it required us to make the fewest assumptions regarding causality. Unlike Models 1 and 2, it does not require an assumption that Set A is endogenous and, like Model 2, it specifies that Set B and Set A are not independent. The single assumption of Model 3 is that both these variables are at least partly determined by the underlying complexity of the case. We use "complexity" here to refer to the characteristics of a case that warrant higher fees, and "billing opportunity" to refer to characteristics that cause higher fees without warranting them. If our single assumption is true, Set A and Set B each explain the common variance, and each might explain some additional variance. We think that common variance is a good estimate of the portion of fees and expenses resulting from the complexity of the cases because it is predicted by two variable sets, each of which is a plausible measure of case complexity. To the extent that variance in FEES AND EXPENSES is explained by one of Set A or B and not the other we conclude that a factor separate from case complexity may cause the difference.

The analysis based on Model 3 is fundamentally different from those that would have been appropriate for Model 1 or Model 2. Instead of partitioning the variance along individual paths, as would have been required under Model 1 or Model 2, our analysis estimates the common variance that Set B and Set A share with FEES AND EXPENSES (complexity), along with the unique variance that each shares with FEES AND EXPENSES (other causes). To put this in regression terms, this is a commonality analysis (Pedhazur 1982). The goal is to identify that portion of the R^2 that is due to both Set B or Set A, and to further identify that portion of the R^2 that is unique to Set B or Set A.

3. Regression Analysis

We theorize that the Set B variables measure the complexity of the professionals' task, while the Set A variables measure both that complexity plus the opportunity to bill more. That opportunity arises because the assets to bill against are large, the length of the billing period is long, and the number of professionals authorized to bill is large. The following analysis is designed to separate the influence of the two sets of variables on fees and expenses and quantify the difference—the billing opportunity.[9]

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[9]We removed one case for the purpose of this analysis. United Australia/Pacific is an extreme outlier. United Australia/Pacific has the lowest value among all cases in every variable except

Table 2: Bivariate (Pearson r) Correlations of Variables in the Analysis

	Fees & Expenses	*Assets*	*Days In*	*Roles*	*Employees*	*Dockets*	*Plan Classes*	*Trend*
Assets	.78**							
Days in	.57**	.20^						
Roles	.76**	.52**	.57**					
Employees	.60**	.59**	.33**	.42**				
Dockets	.78**	.51**	.78**	.73**	.59**			
Plan classes	.27*	.37**	−.03	.09	.09	.14		
Trend	.61**	.61**	.17	.47**	.36**	.40**	.17	
Shop	.35**	.21^	.17	.21^	.15	.28*	.02	.11

**$p < 0.01$; *$p < 0.05$; ^$p < 0.10$.
$N = 73$.

The difficulty of the task is evident from an examination of the bivariate correlations (Table 2). All the main variables are correlates of FEES AND EXPENSES. Most of the main variables are correlates of each other in predictable ways; for example, DAYS IN is highly correlated with DOCKETS, which is to be expected because both increase with time. We therefore proceed in several steps. The first step estimates how much of the fee and expense variance is explained by the Set A variables (ASSETS, ROLES, DAYS IN). The second estimates how much of the variance in fees and expenses is explained by the Set B variables (EMPLOYEES, DOCKETS, PLAN CLASSES). The third step sets up the commonality analysis by combining both sets of variables in the same model. By subtracting the variance explained by Set B from the combined model we can calculate the variance in FEES AND EXPENSES that is unique to Set A, and by subtracting the variance explained by Set A from the combined model we can calculate the variance that is unique to Set B.

In all these regressions we have added the control variables TREND and SHOP.[10] TREND is a six-category ordinal variable for year of plan confirmation (0 = 1998, 5 = 2003). It controls for changes in the other independent variables—most notably the increase in asset size—that occurred with time during the study period. SHOP is short for "forum shopped." It controls for whether the case was filed in the jurisdiction where the company is headquartered. Fees and expenses are higher in shopped cases. Shopping is

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DAYS IN. If we included it in this analysis it would not alter our conclusions. As always, the data and the command files are published on the ERG website, http://www.law.ucla.edu/erg/pubs.

[10]The R^2 of the control variables is .47.

Table 3: Determinants of Professional Fees and Expenses in Large Company Bankruptcies

	I	*II*	*III*
Assets natural log	0.405***		0.302***
mean = 6.922, *SD* = 1.199	(0.063)		(0.067)
Days in natural log	0.412***		0.294*
mean = 5.718, *SD* = 0.803	(0.085)		(0.121)
Roles natural log	0.677***		0.598**
mean = 2.467, *SD* = 0.476	(0.175)		(0.176)
Employees natural log		0.119*	0.065
mean = 8.328, *SD* = 1.406		(0.059)	(0.554)
Dockets natural log		0.589***	0.136
mean = 6.917, *SD* = 1.097		(0.083)	(0.110)
Plan classes natural log		0.367**	0.226
mean = 2.585, *SD* = 0.412		(0.129)	(0.138)
Trend 0 = 1998, 5 = 2003	0.104**	0.205***	0.106*
mean = 2.75	(0.039)	(0.043)	(0.042)
Shop	0.322**	0.336*	0.306**
mean = 0.60	(0.118)	(0.141)	(0.110)
Constant	8.913***	9.456***	8.421***
	(0.507)	(0.467)	(0.599)
R^2	.87	.80	.88
N	73	73	73

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

NOTE: The dependent variable is the natural log of the fees and expenses. Cell entries are OLS coefficients (standard errors in parentheses). Estimated using probability weights based on court location.

correlated with both fees and assets, but the data provide no reason to believe that forum shopping occurs in more complex cases. (LoPucki & Doherty 2006) Shopping is not correlated with the number of employees or plan classes. Shopping is a proxy for court location. All the Delaware cases, about one-half the New York cases, and about one-third of the remaining cases were filed in a city other than the city where the company was headquartered.[11] We used probability weights in the regression based on the location of the court.

In Table 3, Model I, the Set A variables replicate the findings from our previous study. ASSETS, DAYS IN, and ROLES are all highly significant predic-

[11]Our previous research found (1) that cases filed in Delaware were more costly than those filed elsewhere (LoPucki & Doherty 2004) and (2) that Delaware cases were not measurably more complex than cases filed elsewhere (LoPucki & Doherty 2002).

tors of fees and expenses, explaining 87 percent of the variance in the dependent variable.[12] The values of the coefficients are not important to the argument we make in this section, and so we have reserved discussion of them and the related scale effects to Section II. Both the control variables achieve conventional levels of significance. The coefficient for TREND indicates that FEES AND EXPENSES increased by approximately 10 percent per year over the period under study. Cases that were SHOPPED were more costly than ones filed in the company's headquarters city, by approximately 32 percent.

Model II of Table 3 uses the Set B variables to predict FEES AND EXPENSES. All three variables, EMPLOYEES, DOCKET LENGTH, and PLAN CLASSES, are individually significant. In combination with the control variables they explain 80 percent of the variance in the dependent variable.[13] That is a very large percentage of the variance in fees and expenses, but not as large as the percentage explained by the Set A variables in Model I. As in Model I, the control variables are highly significant and positive.

Model III of Table 3 begins our effort to determine the proportions of explained variance that are common to the two variable sets or unique to one of them. It sets up the commonality analysis by combining the Set A and Set B variables into a single equation. In that combination, none of the Set B variables remains a significant predictor of fees and expenses. We conclude that substantially all the explanatory power of the Set B variables is present also in the Set A variables. That the difference in the R^2 of Models I and III is only .01 (.88–.87) indicates that Set B variables uniquely explain an insignificant amount (1 percent) of the case-to-case variance in fees and expenses. Conversely, the Set A variables uniquely explain a substantial 8 percent (.88–.80) of the variance in FEES AND EXPENSES. These findings are consistent with the assumption of Model 1 of Figure 2 that the effect of Set B variables is indirect and incorporated into the Set A measures. We conclude that most of the variance in FEES AND EXPENSES can be explained by either Set A or Set B. All the variance explained by Set B is explained by Set A, but a significant amount of variance is explained by Set A and not Set B.

These findings tell us only the general relationships among the two sets of variables. The specific effects of the Set B variables (EMPLOYEES, DOCKETS,

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[12]The R^2 of Model I without controls is .84.

[13]The R^2 of Model II without controls is .73.

and PLAN CLASSES) are masked by their collinearity with the Set A variables (ASSETS, DAYS IN, and ROLES). To parse the differential contributions of Set A and Set B we assume the causal relationships shown in Model 2 of Fig. 2, and use a type of partial regression to isolate the residual variance in Set A that is not correlated with Set B.[14] Table 4, Model I is the same as Table 3, Model III, but with the residual variances of the Set A variables substituted for Set A variables.

Our strategy is motivated by two concerns. First, we want to create a single equation with reliable estimates of the influence of all variables in Set A and Set B. The effects of multicollinearity on coefficients and standard errors make it impossible to estimate the influence of Set B variables using a simple regression model. Our second concern is that our theory of billing opportunity requires a test that identifies the *additional* effect of Set A variables. That is, we hypothesize that each of the three measures in Set A will be significant and positive and seek to determine the magnitude of the additional effect.

Including the residual variance from Set A in a model with Set B addresses both these concerns. The resulting equation (Table 4, Model I) estimates the additional variance in fees and expenses (over and above Set B) that result from the factors measured by Set A.

As hypothesized, after removal of the collinearity, the direct effect of Set B variables on fees and expenses is significant and positive (Table 4, Model I). The residual effects of the Set A variables are also significant and positive.[15] Each of the six variables makes a significant contribution to the prediction of fees and expenses. Consistent with our billing opportunity theory, the Set B variables predict fees and expenses and the noncollinear

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[14]To isolate the residual variance we regressed each variable in Set B on its counterpart in Set A. This takes the form:

$$A_i = b0 + b1B_i + eA_i,$$

with each *i* representing the paired variables from each set in Table 1 (ASSETS/EMPLOYEES, DAYS IN/DOCKETS, ROLES/PLAN CLASSES). This generates a new variable that is uncorrelated with its partner. For example, substituting ASSETS for A*i* and EMPLOYEES for B*i* in the equation above would generate eA*i*, which is the part of ASSETS that is not explained by EMPLOYEES. After generating residuals for all the pairs of variables, we then estimated the direct effect of Set B and the residual effect of Set A on FEES AND EXPENSES (FX):

$$FX = b0 + b1B_i + b2eA_i + e.$$

[15]The coefficients and standard errors of the residual variables are identical to Model III of Table 3.

Table 4: Determinants of Professional Fees in Large Company Bankruptcies

	I (All Cases)	*II* (All Cases)	*III* (Cases with Assets Below Median)	*IV* (Cases with Assets at or Above Median)
Assets		0.340***		
		(0.069)		
Days in		0.439***		
		(0.098)		
Roles		0.61***		
		(0.177)		
Employees	0.242***		0.048	0.177**
	(0.061)		(0.098)	(0.056)
Dockets	0.304**		0.361*	0.239*
	(0.083)		(0.151)	(0.106)
Plan classes	0.287*		–0.157	0.209
	(0.141)		(0.304)	(0.152)
Resid(Assets)	0.302***		0.096	0.313**
	(0.067)		(0.139)	(0.102)
Resid(Days in)	0.294*		0.286	0.301
	(0.121)		(0.206)	(0.164)
Resid(Roles)	0.598**		0.649*	0.330
	(0.176)		(0.248)	(0.247)
Resid(Employees)		0.065		
		(0.055)		
Resid(Dockets)		0.136		
		(0.111)		
Resid(Plan classes)		0.226		
		(0.138)		
Trend	0.106*	0.106*	0.102	0.128**
	(0.042)	(0.042)	(0.062)	(0.043)
Shop	0.306**	0.306**	0.149	0.393*
	(0.110)	(0.110)	(0.201)	(0.145)
Constant	10.873***	9.346***	12.800***	11.018***
	(0.576)	(0.506)	(1.585)	(0.735)
R^2	0.88	0.88	0.65	0.83
N	73	73	36	37

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

NOTE: Dependent variable is the natural log of FEES AND EXPENSES. Cell entries are weighted OLS coefficients (standard errors in parentheses).

portions of each of the Set A variables adds significantly to that predictive power.[16]

[16]Comments on an earlier version of this article suggested that ASSETS is a significant factor only because we do not account for the asset/employee ratio. The assumption expressed in these

Table 4, Model II tests our intuition that this is a one-direction effect, that is, all the complexity of Set B is incorporated into Set A. Another way to put it is that Model II tests whether the arrow from B to A in Model 2 (of Figure 2) is unidirectional or bidirectional. The results in Table 4, Model II show that the Set B residuals (the variance in fees and expenses explained by Set B variables that is not also explained by Set A variables) make an insignificant contribution to explaining fees and expenses. Nearly all the explanatory power of the Set B variables is also contained in the Set A variables. That suggests that Model 2 correctly depicts the direction of the causal effect (Table 4, Model II).

The last step in testing our billing opportunity hypothesis was to divide our data into two subsets, using the median ASSET case as the admittedly arbitrary dividing line between the sets. We repeated the Table 4, Model I analysis for each of the two subsets. For the below-median group of cases (Table 4, Model III), the Set B (complexity) variables, aided by the Set A residuals, was a relatively poor predictor of fees and expenses. They explained only 65 percent of the total variance in fees and expenses, and only the numbers of docket entries and the residuals of the numbers of professionals working contributed significantly. Neither ASSETS nor EMPLOYEES has any effect after controlling for these variables. For the above-median group of cases (Table 4, Model IV), those same variables were much better predictors of fees and expenses. The key finding is that it is only in this group of larger companies that ASSETS contributes significantly to the cost of the case. Our conclusion is that, for a given level of case complexity (measured by Set B variables), fees and expenses are higher when the Set A variables are higher. That higher amount of fees and expenses results from the presence of higher amounts of assets, even in the absence of greater complexity.

The change in the control variables TREND and SHOP in the Table 4 models is also noteworthy. Comparison of those variables in Models III and IV yields the conclusion that the increases in fees and expenses over time

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comments is that the ratio is curvilinear with respect to employees, such that the second derivative of the relationship between assets and employees would be negative, and thus our results are the consequence of mis-specification. We tested this in several ways. We added a squared term for employees in the equation that created the RESID(ASSETS) variable and in the final equation. We also divided the data into above- and below-median employee groups, and replicated Columns III and IV of Table 4. We conducted visual inspections of the residuals and of the raw data to see if there is evidence of an omitted variable. All these tests confirmed our initial findings.

occurred principally in the largest cases (where fees and expenses were increasing at the rate of 13 percent per year) and principally in the shopped cases. SHOPPED cases were 39 percent more expensive than non-SHOPPED cases.

We propose the following theory to explain our findings. When the amounts of money involved in a matter are small, the effect is to put pressure on the professionals to control the amounts of their fees. A lawyer, for example, will feel pressured not to bill $2 million in a fight over $1 million, even if the lawyer is billing by the hour and the $2 million is the product of the hourly rate and the number of hours worked. The implication is that the work should not have been done at all. The same kind of pressures continue to operate even when the fees are less than the amounts involved, but high in relation to them. The lawyer who recovers $1 million dollars for the client may feel pressured to reduce a $500,000 fee, but not a $500 fee—even if the two are equally justified based on hourly rate and hours worked.

It follows that for a given amount involved in litigation there is a fee amount below which billing pressures operate and above which they do not. Professionals know there is some level of client size and level of client peril at which "the gloves come off" with respect to billing. We will refer to the additional amounts billed above that point as the "billing opportunity premium." They represent the amounts that the professionals would not have charged had they done the same work for companies of the same operational size (EMPLOYEES), but smaller asset size (ASSETS).

II. SCALE EFFECTS

The term "scale effect" refers to an economic function in which the number of units of input necessary to produce an additional unit of output decreases as the number of units of output increases. In the context of large bankruptcies, the units of input are fees and expenses, measured in dollars. The units of output are the determinants of fees and expenses: the independent variables. We found statistically significant scale effects for ASSETS, DAYS IN, EMPLOYEES, DOCKETS, and PLAN CLASSES. The scale effects for asset size and docket length were the most pronounced.

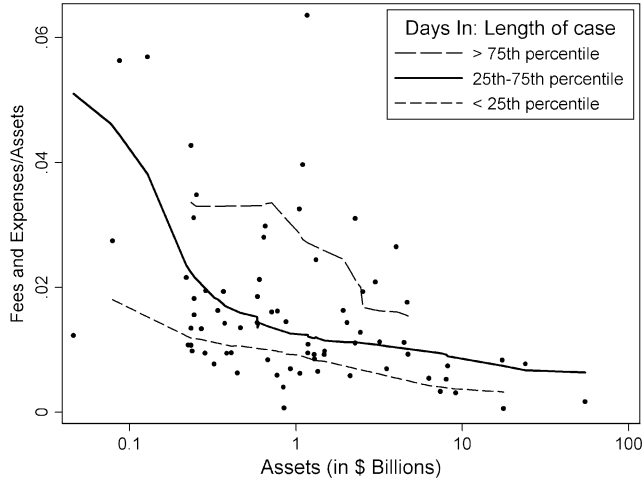
A. Asset Size

In our earlier article, we reviewed prior research regarding the existence of a scale effect in Chapter 11 fees and expenses. As Fisher and Martel recently noted, "studies examining whether there is a scale effect in direct bankruptcy

costs are, overall, inconclusive" (Fisher & Martel 2005) Based on a comparison of the ratios of fees and expenses to assets discovered by researchers in studies of firms of widely differing sizes, we concluded that a scale effect not only exists, but is pronounced (LoPucki & Doherty 2004). The data used in this study, which covers a much wider range of firm sizes than the data used in our earlier study, supports that conclusion. The coefficient for ASSETS in Model I (Table 3) is 0.405. Since this is a log-log coefficient it is an elasticity. The coefficient indicates that the change in fees and expenses is equal to 41 percent of the change in assets, when all else is equal. In other words, if one company has assets that are 1 percent greater than another, we would expect the fees and expenses for the bigger company's bankruptcy to be only 0.41 percent higher. This rate is not significantly different from our prior findings. However, because this study covers firms of a wider range of size and the ratio of change applies over the entire range, the cumulative scale effect is considerably more pronounced. This effect is illustrated in Figure 3.

Earlier researchers, including ourselves, have reported average and median ratios of fees and expenses to assets for the samples studied. Those ratios range from a high of 6 percent (Altman 1984) to a low of a little more than 1 percent (LoPucki & Doherty 2004). Those percentages have been widely reported without reference to the assets of the companies studied

Figure 3: The proportion of fees and expenses to assets, as a function of company book value (assets) and length of bankruptcy. The lines indicate the presence of a significant scale effect at all levels of case length.



(e.g., Bris et al. 2005:296 n.1). Our research shows that method of reporting to be a mistake. The size of the company and the length of time in bankruptcy are significant predictors of the percentage of a company's assets that will be absorbed by professional fees and expenses. Longer cases[17] are nearly twice as expensive as shorter cases[18] at any asset level, and the percentage of assets that are expended declines dramatically as the size of the firm increases.

Because the scale effect is so pronounced, the reporting and use of single percentages to reflect studies in which the subject companies were of varying size is misleading. A recent use of the report of our earlier study in the Kmart case exemplifies our concern. In its final fee application in that case, Skadden Arps—the DIP's lead counsel—argued that "the amounts incurred [in the Kmart case] clearly fall within the range of fees being incurred in other mega-chapter 11 cases" (Skadden et al. 2003). In support of that assertion, Skadden compared the fees in Kmart with the fees in other ongoing mega-cases, concluding:

> Finally, a recent study by LoPucki and Doherty (The Determinants of Professional Fees in Large Bankruptcy Reorganization Cases, Journal of Empirical Legal Studies . . .) suggests that the size of the debtor, as measured by its assets reported on its petition, is the single most important factor in determining the amount of fees and expenses that will be incurred in a debtors' Chapter 11 case. The average ratio of all expenses of all retained professional in the 48 cases included in the study was approximately 1.9% of reported assets. In these Reorganization Cases, 1.9% of reported assets of $14.3 billion would yield predicted total retained professional fees and expenses of more than $270 million—whereas the estimated total professional fees and expenses [in this case] are less than one-half of that amount. (Skadden et al. 2003)

Skadden's error was in projecting the 1.9 percent figure derived from a study of cases in which the average company had assets of less than $1 billion and the largest company had assets of less than $8 billion to a case in which the debtor had assets of $14.3 billion. The magnitude of that error can be determined using the fee calculator from our earlier study. For Kmart's assets of $14.3 billion, the calculator returns a predicted fee of $61 million, not the $270 million stated in Skadden's application. Thus, the Kmart fees were not half what would be predicted from our earlier study; they were

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[17]A "longer case" is a 672-day case, one standard deviation longer than average.

[18]A "shorter case" is a 136-day case, one standard deviation shorter than average.

double what would be predicted from our earlier study. For a company Kmart's size, the predicted ratio of fees and expenses to assets is 0.4 percent, not 1.9 percent.[19]

No meaningful ratio of fees and expenses to assets can be stated for Chapter 11 cases generally. Researchers should report such ratios only for specified asset sizes.

B. Burn Rates

In this study and in our earlier study we found a strong relationship between the length of the case and the amount of professional fees awarded. Longer cases are significantly more expensive. In the earlier study, we estimated that doubling the time a case remains pending results in a 57 percent increase in fees. In this expanded study, we estimate the increase to be 38 percent. The scale effect is statistically significant. Another way to think about this is that the length of the case represents a sort of fixed cost. An average case ($880 million) that takes an average length of time to conclude (about 300 days) incurs costs of about $9.7 million. If the case is longer, the fixed cost is incurred along with a variable periodic cost that declines with the number of periods.

Figure 3 illustrates the simultaneous scale effects of ASSETS and DAYS IN. The X-axis represents the company's book value in billions of dollars, on a natural log scale. The Y-axis is a proportion, and represents the cost of bankruptcy as a percentage of each company's book value. It ranges from 0–6 percent. A lower value indicates that relatively fewer of the company's assets were spent paying professional fees and expenses. The lines represent cases of different lengths: shortest (<25th percentile), medium (25th–75th percentile), and longest (>75th percentile).

The combination of the scale effects of ASSETS and DAYS IN is evident in Figure 3. At all lengths of cases, as assets increase, the ratio of fees to assets declines significantly. They decrease from nearly 2 percent of assets in smaller cases[19] to less than 0.5 percent in the largest cases.[20] The longer cases are significantly more expensive than those with median or short lengths.

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[19]For readers who do not have statistician's vision, the 2 percent figure is derived by mentally logging and averaging the data points under $1 billion in Figure 3.

[20]That is, the data points in Figure 3 for cases with assets in excess of about $8 billion average about 0.5 percent of assets.

C. Other Variables Exhibiting Scale Effects

A 1 percent increase in the number of employees in a firm increases the cost of bankruptcy by approximately 0.12 percent. Lengthening dockets increase fees and expenses at a much faster rate, with an estimated 0.59 percent increase in fees for every 1 percent increase in the number of dockets filed with the court. For PLAN CLASSES, the change ratio is in the middle of these two, with every percentage increase resulting in a 0.37 percent increase in fees and expenses.

III. The Regression Model Using 10-K Data

The data regarding fees and expenses used in the models discussed in Sections I and II of this article were collected from the court files (court file professional fee data). The fee and expense studies by Altman (1984), Lubben (2000), and Weiss (1990) were also based on court file professional fee data. The fee and expense studies by Betker (1997) and Gilson (1990) were based on professional fee data gathered from reports filed with the Securities and Exchange Commission (10-K professional fee data). Betker (1995) and Tashjian et al. (1996) report using a mix of disclosure statement and 10-K professional fee data. The disclosure statement data may have been taken from the court files, from the 10-Ks, or from one of those sources in some cases and the other source in other cases. The different data sources used may have contributed to some otherwise puzzling differences in the scholars' findings. For example, Lubben (2000:516) notes:

> The results reported by Tashjian et al. (1996) suggest that prepacks are significantly less expensive than traditional Chapter 11 cases, as reported by both the present study and Weiss (1990). Betker (1995), on the other hand, reports figures that are comparable to these studies of traditional Chapter 11 cases. Given the significant overlap that one would expect among the two samples—they cover virtually the same time period and include the same number of firms—the divergence in results is puzzling.

To determine the differences between court file professional fee data and 10-K professional fee data, we gathered 10-K professional fee data on the 74 cases that were the subject of our study. We found stark differences both in the availability of the data and in the amounts reported for the same cases.

A. Data Availability

Public companies are required to file annual reports (Form 10-K) with the Securities and Exchange Commission. All 74 of the firms in our sample (100 percent) filed such a report for at least one of their last two fiscal years ending before the filing of the bankruptcy case. Only 57 of the 74 (77 percent) filed in the year before bankruptcy. The proportion filing continued to decline during bankruptcy. Only 24 of the 74 firms (32 percent) reported usable 10-K professional fee data through plan confirmation.

The remaining 50 of the 74 firms studied (68 percent) provided insufficient data for calculating professional fees and expenses.[21] In 44 of the 50 cases (88 percent), the debtor did not file 10-Ks for some or all of the years in which the 10-K professional fee data would have been reported. In the other six cases (12 percent), the debtor filed 10-Ks for the relevant years, but those 10-Ks either did not report professional fee data or reported them incoherently.[22] Thus, these 74 cases yielded only 24 10-K professional fee data points.

B. Data Comparison

Based on the legal criteria that define the two sets of data, one might expect the professional fees reported in court records and securities filings for the same case to be similar in amount. AICPA Statement of Position 90-7 governs the reporting of 10-K professional fees (American Institute of Certified Public Accountants 1992; Jensen-Conklin 1992). SOP 90-7.22 requires that "financial statements for periods including and subsequent to filing the Chapter 11 petition should distinguish transactions and events that are directly associated with the reorganization from the ongoing operations of the business." SOP 90-7.27 requires that "expenses (including professional fees) . . . resulting from the reorganization and restructuring of the business should be reported separately as reorganization items." The result is usually a separate section of the financial statement reporting the expenses of

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[21]Fifty-five of the 74 firms (74 percent) emerged from bankruptcy. Some emerged as private companies that were not required to file 10-Ks. Some remained public and filed 10-Ks, but did not report the required professional fee data.

[22]Percentages do not total 100 due to rounding.

reorganization and restructuring. One of the items typically reported in that section is "professional fees."

Bankruptcy Code Section 330(a) authorizes a court to award "reasonable compensation" to "a professional person" employed by the debtor in possession or an official committee. Bankruptcy Rule 2016 requires that "[a]n application for compensation shall include a statement as to what payments have theretofore been made or promised to the applicant for services rendered or to be rendered in any capacity whatsoever in connection with the case."

Thus, SOP 90-7 requires reporting of professional fees "resulting from the reorganization and restructuring," whereas Rule 2016 requires reporting of professional fees rendered "in connection with the case." Rule 2016 by its terms only applies, however, to applicants seeking reimbursement "from the estate." It does not apply to secured creditor applicants seeking professional fees from their collateral, even though the effect of payment of those fees is to reduce the value of the estate.

In the 24 cases for which professional fee data from both sources were available, court file professional fees and expenses were $917 million while 10-K professional fees were $1.454 billion. (The former figure is 63 percent of the latter.) The average ratio of court file professional fees in a case to 10-K professional fees in the same case was 59 percent. This systematic difference between the two measures of professional fees may largely explain the differences between studies that report different results for similar sets of cases. One example is Betker's finding based on 10-K data that professional fees were 3.9 percent of prebankruptcy total assets (Betker 1997) as compared with Weiss's finding based on court file data that professional fees were 2.4 percent of prebankruptcy total assets (Weiss 1990). Weiss's figure is 61 percent of Betker's.

Despite the substantial difference in the amounts of professional fees by the two measures, those amounts are highly correlated; the Pearson's r of the natural logs of the two variables is 0.85. Omitting four outliers, court file professional fees and expenses were always between 48 percent and 88 percent of 10-K professional fees.

This high correlation suggests that court file professional fees and expenses are only one component of 10-K professional fees. SOP 90-7 does not explain what is included in the definition of "professional fees" for accounting purposes and the accounting statements themselves offer no breakdowns or detail. We suspect the existence of six additional compo-

nents.[23] First, 10-K professional fees may include fees paid by the debtor for the representation of secured creditors. Second, 10-K professional fees may include fees paid by the debtor to professionals working on "restructuring," but who either never filed a fee application or did not report the payment on that fee application because they interpreted their work as not having been "in connection with the case." Third, 10-K professional fees may include some amounts applied for after the filing of final fee applications. Fourth, courts sometimes preapprove "ordinary course" fees up to a specified dollar amount without requiring a subsequent application or order.[24] Lastly, creative accounting may play a role. In determining what professional fees "result from restructuring," debtors' managers and accountants may favor inclusion. By maximizing the restructuring fees, they minimize the ongoing costs of operations and so maximize both ongoing income and apparent firm value.

According to SOP 90-7, only professional fees "resulting from the reorganization and restructuring of the business should be reported separately as reorganization items."[25] The test for when professional fees require court approval is in some respects more inclusive. For example, the bankruptcy courts approve fees for ordinary course professionals and special counsel who work only on nonbankruptcy matters and the Bankruptcy Code

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[23]After making inquiry with financial advisors involved in some of the cases studied and other cases, Professor Grant Newton suggested these categories: (1) secured lenders' fees, (2) professionals involved in the debtors' transactions, (3) fees paid to claims agents, (4) auditing fees beyond the normal, nonrestructuring auditing fees, (5) fees paid for services rendered after the final fee order, including avoidance actions, and (6) "ordinary course" fees paid under orders that waive filing of a fee application and entry of a subsequent order approving the specific amount to be paid. Email from Grant Newton, Professor of Accounting, Pepperdine University to Lynn M. LoPucki, Security Pacific Bank Professor of Law, UCLA School of Law (Feb. 3, 2007 10:28 PST) (on file with author).

[24]For example, Order Pursuant to Sections 105(a), 327, 328 and 330 of the Bankruptcy Code Authorizing the Debtors to Employ Professionals Utilized in the Ordinary Course of Business, filed Jan. 30, 2002, docket number 36 (authorizing such payments up to $300,000 per month), and Order Granting Debtors' Motion Pursuant to Sections 105(a), 327, 328 and 330 of the Bankruptcy Code for Increase in Aggregate Monthly Cap for Ordinary Course Professionals, filed Nov. 19, 2002, docket number 2230 (authorizing such payments up to $600,000 per month); In re Global Crossing Ltd., case number 02-40188, in the U.S. Bankruptcy Court for the Southern District of New York.

[25]SOP 90-7.27. "The task force concluded that professional fees and similar types of expenditures directly relating to the Chapter 11 proceeding . . . should be . . . reported as reorganization items." Id. at .28.

requires that.[26] It would seem, however, that those court-approved professional fees should not be included in the restructuring costs calculated under SOP 90-7.

C. The 10-K Data Regression Model

We estimated regression models using the same independent variables we used in our court file data regression model, but with 10-K professional fees as the dependent variable. The models are shown in Table 5. In those models, only company size and the length of the case appear to be robust determinants of the amounts of 10-K professional fees.

The most salient feature of these models is the high R^2s. Specifically, the models based on 10-K data yielded R^2s of .86, .82, and .88. The regression models using court file data yielded R^2s of .87, .80, and .88, respectively. Thus, models based on 10-K data yield nearly identical R^2 using data from less than one-third the number of cases.

We expect that, in at least some respects, debtors that survive and remain public long enough to report professional fees for their entire cases will be significantly different from those that do not. The differences, however, are not apparent from a comparison of the two sets of models. The principal difference appears to be that the levels of statistical significance are lower in the 10-K data models because of the smaller numbers of cases. We conclude that the principal advantage in using court file data rather than 10-K data for exploring the determinants of professional fees in large public company bankruptcy cases is that data are available from the court files in more cases.

The principal advantages of using 10-K data are: (1) 10-K data are easier and less expensive to collect and (2) 10-K data probably provide a more complete accounting for the direct costs of bankruptcy reorganization because they include components omitted from court file professional fees and expenses data. The high correlation of predictions from the two data sources suggests that results from one can be safely converted to the other. Total professional fees in Chapter 11 cases should probably be estimated as

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[26]See, e.g., 11 U.S.C. § 327(e) (2007) ("The trustee, with the court's approval, may employ, for a specified special purpose, other than to represent the trustee in conducting the case, an attorney that has represented the debtor"); § 330 ("After notice . . . and a hearing . . . the court may award to . . . a professional person employed under section 327 . . . reasonable compensation for actual, necessary services rendered by the . . . professional person").

Table 5: Determinants of 10K Fees in Large Public Company Bankruptcies

	I	*II*	*III*
Assets natural log	0.553**		0.505*
mean = 7.693, *SD* = 1.570	(0.149)		(0.193)
Days in natural log	0.576*		0.812∧
mean = 5.593, *SD* = 0.801	(0.219)		(0.404)
Roles natural log	–0.444		0.048
mean = 2.514, *SD* = 0.505	(0.554)		(0.569)
Employees natural log		0.214	0.161
mean = 8.858, *SD* = 1.306		(0.151)	(0.179)
Dockets natural log		0.296∧	–0.414
mean =7.019, *SD* = 1.258		(0.161)	(0.397)
Plan classes natural log		0.579*	0.408
mean = 2.722, *SD* = 0.439		(0.244)	(0.238)
Trend 0 = 1978, 5 = 2003	0.166	0.238**	0.160
mean = 3.167	(0.111)	(0.079)	(0.116)
Shop mean = 0.54	0.223	0.205	0.090
	(0.410)	(0.364)	(0.362)
Delaware mean = 0.21	0.357	0.328	0.452
	(0.457)	(0.353)	(0.434)
New York mean = 0.33	0.156	0.659	–0.043
	(0.322)	(0.380)	(0.474)
Constant	10.192***	10.617***	8.511***
	(1.014)	(0.804)	(1.483)
R^2	.86	.82	.88
N	24	24	24

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; ∧$p < 0.10$.

NOTE: Cell entries are OLS coefficients (standard errors in parentheses). Estimated using probability weights based on court location.

58 percent higher than measured using court file professional fees and expenses data.[27]

IV. CONCLUSIONS

Controlling for the trend over time and the location of the case, three variables—asset size, case duration, and the number of professional firms

[27]Based on our finding that court file professional fees and expenses are 63 percent of 10-K professional fees: 1/0.63 = 158 percent.

working—account for 87 percent of the case-to-case variance in professional fees and expenses in large public company bankruptcy cases. That means factors independent of these can explain no more than the remaining 13 percent.

Readers might be inclined to view these principal determinants as rough measures of the quantity of work necessary to reorganize or liquidate a company. Professionals must do more work in bigger cases, longer cases, and cases requiring more professional firms. However, it seems implausible to us that rough measures of true determinants would account for such a large portion of the variance. We think it more likely that the three variables we have identified are not surrogates for the true determinants of the fee and expense levels observed, but the true determinants themselves. That is, professionals have the *opportunity* to bill more in bigger cases, longer cases, and cases involving more professional firms. Greater amounts in issue mean that larger billings can be justified. Longer cases give the professionals time to take on more tasks. More professional firms mean more—and more specialized—tasks to perform. Those billing opportunities, not merely the value of the services required, drive fees and expenses.

To put it another way, we do not think it is plausible that factors other than company size, case duration, and number of professional firms working account for only 13 percent of case-to-case variance in fees and expenses. Some cases are highly contentious, others involve little or no conflict. Some companies have complex corporate structures involving hundreds or even thousands of entities, while others are essentially a single asset in a single entity. Some cases are filed to deal with complex financial structures involving dozens of classes of competing claimants while others seek only to affect a single class of debt. If fee awards reflected the value of services needed, we think case-specific differences such as these would play a larger role, if not predominate.

Similarly, neither the quality of the work performed nor the level of success achieved appear to be important determinants of the amount of fees and expenses paid. Except to the extent they are related to the three principal determinants of fees and expenses (we see no obvious connection), their variance, too, must be included in that 13 percent of the variance left unexplained.

Studies of reorganization outcomes suggest that success cannot be determined for a period of about five years after confirmation of the plan (LoPucki & Doherty 2002; LoPucki & Kalin 2001). As of this writing, the number of cases (1) that were confirmed more than five years ago and (2)

for which fee and expense data are available through PACER is not large enough to support a study of the relationship between reorganization success and the amount of fees and expenses awarded. We would be surprised, however, if, when those studies are eventually done, they showed a significant correlation between the two.

To determine the necessity for the additional fees and expenses that come with debtor size, case length, and additional professional firms, it would be useful to have breakdowns of the professionals' hours expended by project categories. The Executive Office of the U.S. Trustee apparently drew this same conclusion because it promulgated guidelines suggesting project categories for use in summarizing fees in fee applications, 28 C.F.R. Section 58, Appendix A. In reviewing fee applications, however, we found that project categories were not used with sufficient consistency to support an empirical analysis.

The significance of the three principal fees and expenses determinants we identified is highlighted by the large and promising array of variables that appear from our data not to be significant determinants of professional fees and expenses. Fees and expenses do not vary with the use of fee reviewers, between liquidation cases and reorganization cases, by whether the case was run by New York lawyers or took place in the New York Bankruptcy Court, by the extent of paralegal billing, by the hourly rates the professionals charged, or between solvent and insolvent companies. Only a few factors matter and they are factors that suggest fees and expenses are in substantial part driven by the professionals' billing opportunities.

In an effort to isolate and quantify the role billing opportunity plays in professional fees, we compiled a second set of variables that measure company size, case duration, and parties in ways less likely than the primary determinants to measure billing opportunity. That second set predicts fees and expenses substantially as well as the primary determinants, but predicts significantly lower fees and expenses for companies with more than about $770 million in assets. We think the differences in the predictions from those two sets of variables is a measure of the billing opportunity component of professional fees and expenses in large public company bankruptcies.

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Appendix A: Sample Distributions by Court

	Delaware	*New York*	*Other Courts*	*Total or Proportion*
All large public company cases disposed of by confirmation of a plan, 1998–2003	134 (45%)	47 (16%)	115 (39%)	296 (100%)
All cases included in this study	24 (32%)	21 (28%)	29 (39%)	74 (99%)
Percent of all large public company cases included in this study	18%	47%	25%	25%
All billion dollar public company cases disposed of by confirmation of a plan, 1998–2003	47 (42%)	28 (25%)	36 (32%)	111 (99%)
All billion dollar public company cases included in this study	12 (33%)	13 (36%)	11 (31%)	36 (100%)
Percent of all billion dollar public company cases in this study	26%	46%	31%	32%

Source: LoPucki (2006a).

Appendix B: The 74-Case Sample

Company Name	*Court City*	*Date Plan Confirmed*	*Assets in Millions*	*Fees and Expenses from Court File*	*Fees and Expense from 10-K*	*Fees and Expenses as Percent of Assets*	*Days in Bankruptcy*	*Professional Firms Working*
Global Crossing	New York	12/26/02	$22,438	$174,100,392	$248,000,000	0.78%	332	43
Kmart	Chicago	4/22/03	$16,287	$134,864,301	$163,000,000	0.83%	455	19
Integrated Health	Wilmington	6/12/03	$3,596	$95,256,268	No 10-K	2.65%	1226	29
Conseco	Chicago	9/9/03	$52,286	$88,779,880	$85,300,000	0.17%	266	31
Loewen Group Intl	Wilmington	12/5/01	$4,100	$72,164,685	$140,185,000	1.76%	918	15
Sunterra Corp.	Baltimore	7/29/02	$1,058	$67,250,806	$91,592,000	6.36%	789	17
Fruit of the Loom	Wilmington	5/1/02	$2,020	$62,674,710	No 10-K	3.10%	854	23
Hayes Lemmerz	Wilmington	5/12/03	$2,802	$58,415,305	$68,100,000	2.09%	523	15
US Airways	Alexandria	3/18/03	$7,807	$57,873,431	$112,000,000	0.74%	219	11
Bethlehem Steel	New York	10/23/03	$4,200	$47,004,430	No 10-K	1.12%	738	17
Warnaco	New York	1/16/03	$2,373	$45,804,377	$51,940,000	1.93%	584	19
Comdisco, Inc.	Chicago	7/31/02	$7,524	$39,760,160	$75,000,000	0.53%	380	16
Montgomery Ward	Wilmington	7/15/99	$4,000	$37,135,789	Partial rept	0.93%	738	20
Williams Communications	New York	10/1/02	$5,992	$36,069,412	$68,109,000	0.60%	162	10
Bradlees Inc	New York	11/18/98	$885	$35,095,892	$41,200,000	3.97%	1244	13
Sunbeam	New York	11/25/02	$2,960	$33,376,840	No 10-K	1.13%	657	31
InaCom	Wilmington	5/23/03	$957	$31,139,929	No 10-K	3.26%	1071	15
National Steel	Chicago	10/23/03	$2,308	$29,514,147	No 10-K	1.28%	596	16
Polaroid	Wilmington	11/21/03	$1,810	$29,510,042	Partial rept	1.63%	770	23
Genuity Inc.	New York	11/28/03	$1,944	$27,924,279	No 10-K	1.44%	366	14
Levitz Furniture, Inc.	Wilmington	12/14/00	$1,124	$27,447,756	Partial rept	2.44%	1196	11
XO Communications	New York	11/15/02	$8,700	$27,220,885	$36,602,000	0.31%	151	9
Metromedia Fiber	White Plains	8/21/03	$7,024	$23,436,879	No 10-K	0.33%	458	14
Flag Telecom	New York	9/26/02	$3,335	$23,267,252	No data	0.70%	167	15
Trans World Airlines	Wilmington	6/17/02	$2,100	$23,266,061	No 10-K	1.11%	523	17
APS Holding Corp.	Wilmington	10/19/99	$560	$16,694,429	No 10-K	2.98%	624	10
Geneva Steel Co.	Salt Lake City	12/8/00	$556	$15,590,331	No data	2.80%	676	22
Breed Technologies	Wilmington	11/22/00	$1,321	$12,958,759	No 10-K	0.98%	429	10

Appendix B Continued

Company Name	*Court City*	*Date Plan Confirmed*	*Assets in Millions*	*Fees and Expenses from Court File*	*Fees and Expense from 10-K*	*Fees and Expenses as Percent of Assets*	*Days in Bankruptcy*	*Professional Firms Working*
Special Metals	Lexington, KY	9/25/03	$790	$12,693,943	No 10-K	1.61%	547	18
Paging Network	Wilmington	10/28/00	$1,351	$12,504,471	No 10-K	0.93%	96	8
Metals USA	Houston	10/22/02	$1,105	$12,037,688	$22,100,000	1.09%	342	10
Spectrasite Holdings	Raleigh	1/28/03	$742	$12,019,266	$23,894,000	1.62%	74	9
Encompass Services	Houston	5/28/03	$1,234	$11,427,369	No 10-K	0.93%	190	12
Purina Mills, Inc.	Wilmington	4/5/00	$774	$11,225,908	No data	1.45%	160	13
Alliance Entertainment	New York	7/30/98	$512	$10,890,169	No 10-K	2.13%	381	18
Boston (Market) Chicken	Phoenix	5/15/00	$1,839	$10,740,583	No 10-K	0.58%	588	11
NTL, Inc.	New York	9/5/02	$16,834	$10,451,665	$116,700,000	0.06%	120	9
Focal Communications	Wilmington	6/20/03	$561	$10,398,754	No 10-K	1.85%	183	11
Imperial Sugar Co.	Wilmington	8/7/01	$1,090	$10,348,384	$19,716,000	0.95%	203	12
Pegasus Gold, Inc.	Reno	12/22/98	$65	$10,326,104	No 10-K	15.91%	340	23
Philip Services Corp.	Wilmington	11/30/99	$1,135	$9,678,261	$40,700,000	0.85%	158	6
Kenetech Corp.	Oakland	1/27/99	$193	$8,253,918	Not App.	4.27%	973	6
Guilford Mills	New York	9/19/02	$551	$7,920,912	$9,542,000	1.44%	190	10
Southern Pacific Funding	Portland, OR	7/12/99	$1,172	$7,668,355	No 10-K	0.65%	284	16
Greate Bay Hotel	Camden	8/14/00	$215	$7,480,433	No data	3.48%	954	19
Creditrust	Baltimore	1/18/01	$116	$6,599,877	No 10-K	5.69%	211	9
Key Plastics	Detroit	4/1/01	$331	$6,400,959	No 10-K	1.93%	374	10
Pinnacle Holdings	New York	10/10/02	$1,003	$6,253,207	No 10-K	0.62%	142	5
Plaid Clothing Group	New York	7/8/99	$195	$6,073,302	No 10-K	3.11%	1452	7
ContiFinancial Corp.	New York	12/20/00	$839	$5,851,077	No 10-K	0.70%	217	7

Stratosphere Corp.	Las Vegas	5/15/98	$390	$5,270,892	$8,416,261	1.35%	473	13
Venture Stores, Inc.	Wilmington	11/23/98	$579	$4,867,603	No 10-K	0.84%	307	10
Golden Books	New York	9/24/99	$294	$4,792,264	$8,808,000	1.63%	210	16
Home Holdings, Inc.	New York	6/9/98	$245	$4,763,899	No 10-K	1.95%	145	10
Cityscape Financial	White Plains	6/16/99	$322	$4,591,648	$8,531,118	1.43%	252	10
Oxford Automotive	Detroit	6/3/02	$721	$4,279,296	No 10-K	0.59%	136	8
Unison Healthcare Corp.	Phoenix	1/29/99	$74	$4,166,625	Partial rept	5.63%	246	10
Vista Eyecare, Inc.	Atlanta	5/18/01	$220	$4,011,723	$5,429,000	1.82%	408	7
First Merchants	Wilmington	3/16/98	$185	$3,989,706	No 10-K	2.16%	248	11
USInternetworking, Inc.	Baltimore	5/8/02	$382	$3,636,417	No 10-K	0.95%	121	9
Medical Resources	New York	2/8/01	$220	$3,431,336	No 10-K	1.56%	307	5
Drug Emporium	Youngstown	8/30/01	$251	$3,357,070	No 10-K	1.34%	157	8
CellNet Data Systems	Wilmington	8/16/00	$343	$3,246,275	No 10-K	0.95%	194	9
Leasing Solutions	San Jose	8/2/00	$747	$3,011,094	No 10-K	0.40%	259	7
Farm Fresh, Inc	Wilmington	2/20/98	$199	$2,676,677	No 10-K	1.35%	44	4
Prime Succession.	Wilmington	11/8/00	$406	$2,550,126	No 10-K	0.63%	119	7
Salant Corp.	New York	4/16/99	$245	$2,324,901	Partial rept	0.95%	108	3
American Banknote	New York	11/3/00	$208	$2,230,531	No data	1.07%	331	7
Talon Automotive Group	Detroit	11/19/01	$223	$2,185,224	No 10-K	0.98%	143	13
Wireless One, Inc.	Wilmington	10/28/99	$279	$2,153,600	No 10-K	0.77%	259	4
Heartland Wireless	Wilmington	3/15/99	$194	$2,091,317	$6,588,000	1.08%	101	7
Westbridge Capital Corp.	Wilmington	12/17/98	$67	$1,847,289	No 10-K	2.74%	92	7
United Australia/Pacific	New York	3/18/03	$43	$525,204	No 10-K	1.23%	354	2
Grand Union	Newark	8/5/98	$730	$503,748	$2,700,000	0.07%	42	3

NOTE: Days in bankruptcy are measured from filing to plan confirmation. Number of professional firms working is the number filing fee applications, excluding those filing exclusively under Bankruptcy Code Section 503(b). No 10-K means the debtor did not file a 10-K after bankruptcy. No data or Partial rept means that the debtor filed a 10-K after bankruptcy but did not report all professional fees and expenses.