The 1981 Bankruptcy Court Time Study

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THE 1981 BANKRUPTCY COURT TIME STUDY

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Part 1

INTRODUCTION

In March 1981, at the request and with the assistance of the Bankruptcy Division of the Administrative Office of the United States Courts, the Federal Judicial Center undertook a study designed to determine how much judge time is consumed by the various types of cases and adversary proceedings that come before the judges of the United States bankruptcy courts under the new bankruptcy code.[1] The purpose of the study was to assist the Administrative Office, the Judicial Conference of the United States, and the Congress in determining the number of bankruptcy judges that will be needed when the "transition period" of the Bankruptcy Reform Act ends in 1984. This report explains the design, execution, and results of the study and illustrates how those results can be used to aid estimation of judicial manpower needs for 1984.

The principal goal of this study was to produce useful measurements of the amount of judge time consumed by different types of cases coming before the bankruptcy courts. Such measurements are generally called case weights. Suppose that each of two courts with the same number of judges has a caseload of one thou-

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1. Bankruptcy Reform Act, Pub. L. No. 95-598, 92 Stat. 2672 (1978) (codified at 11 U.S.C. and at various sections of other titles of U.S.C.).

sand case filings per year. The workloads in the two courts would differ dramatically if, for instance, all the cases in one court took twice as much judge time as those in the other court. But with a reliable set of case weights, one can compute weighted caseloads that take account of differences in burden associated with different types of cases and thus permit more reliable comparisons of actual workload. In the federal courts, case weights have usually been measured by techniques that produce weights scaled in arbitrary units. Normally, the average case is assigned a weight of 1, a case that consumes twice as much time as the average case is given a weight of 2, and so forth. The term case weight, however, need not imply any particular unit of measurement. In this study, the case weights are scaled in judge-hours--each weight represents an estimate of the actual amount of judge time consumed by the average case of some particular type.

The method employed in this study represents an improvement over methods employed in previous time studies conducted by the Center and is capable of producing very reliable case weights. However, the study was undertaken in circumstances that were far less than ideal for application of any time study method. These circumstances required that we make several rather complex adjustments to the data to compensate for biasing effects associated with the timing of the study and that we employ simplifying assumptions in the data analysis that necessitated additional technical adjustments. Moreover, appropriate understanding of the results requires an appreciation of the strengths and weak-

nesses of the underlying data, including both the data provided by participating judges and case-related data provided by the Administrative Office. The consequence is that although the study is based on rather simple premises, it is quite complicated in its entirety.

This report has therefore been organized, insofar as possible, to move from the simple to the complex. The time study method is explained in chapter 1, and the limitations imposed by the timing of the study are discussed at some length in chapter 2. Chapter 3 presents the case weights and explains their derivation, describing the most important of the adjustments necessitated by the timing of the study. Chapter 3 also illustrates how to use the case weights to produce weighted caseload measurements and how to interpret such measurements in light of the limitations of the study. Details of the data collection effort and the more technical aspects of the data analysis are discussed in chapters 4 and 5, respectively.

I. RESEARCH METHOD

The present study is similar to several previous time studies conducted by the Center,[2] in that it is based on time logs maintained by about one hundred judges over a period of twelve weeks. This study, however, employs a markedly different method for derivation of case weights from the study data.

The method is based on the fact that for any class of cases,[3] there exists an average pattern in the amount of judge time a case consumes from the time it is filed until the time it

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2. See, e.g., Flanders, The 1979 Federal District Court Time Study (Federal Judicial Center 1980); Statistical Reporting Service, U.S. Dep't of Agriculture, The 1969-70 Federal District Court Time Study (Federal Judicial Center 1971).

3. Except where the context indicates otherwise, we use the term cases to refer to both adversary proceedings and cases. A bankruptcy case is an action seeking relief in bankruptcy through discharge or reorganization of debts. An adversary proceeding is a type of contested matter that relates to a particular bankruptcy case (e.g., a creditor's complaint seeking judgment that the debt owed the creditor cannot be discharged) but that is treated in certain respects as a distinct entity. The distinction relevant to this time study is simply that adversary proceedings are separately docketed and therefore can be traced individually in records maintained by the Administrative Office. The value of a time study such as this one depends on an ability to identify different categories of tasks that vary in the amount of judge time they consume. Thus, we dealt with adversary proceedings as distinct entities simply because we were able to: Their independent docketing permitted their use as additional categories of tasks performed by judges. For reasons explained later, however, we also performed case-weight computations in which only cases were treated as distinct tasks and an adversary proceeding was treated merely as part of the work done on the case to which the proceeding related.

is disposed of. Just as children grow taller at a rate that changes in a fairly predictable pattern as age increases, so cases consume judge time in a pattern that changes predictably as the cases age (although this pattern is far less predictable than that of growth in children). The time study method enables one to estimate the pattern of judge-time consumption as a function of case age, and knowledge of this pattern in turn enables one to estimate the total judge time consumed over the life of an average case of a particular type. Considering the analogy for illustration, suppose one knows that the average child is twenty-four inches long at birth and grows at rates of five inches in the first year, four in the second, four in the third, and so forth, until the growth rate reaches zero in the late teens. One could then estimate the average child's height at maturity simply by adding together all the annual rates of growth plus the length at birth.

The data that enabled us to estimate patterns of judge-time consumption as a function of case age were provided by 102 full-time bankruptcy judges who kept detailed logs of the time they spent working on cases during the twelve weeks between May 18 and August 7, 1981. These time logs were supplemented with detailed data about case filings obtained from the Administrative Office.

As an illustration of how we estimated these patterns of judge-time consumption, suppose that the 102 judges in the study received a total of one thousand chapter 11 cases ten months ago

and that these cases consumed the judges' time at an aggregate rate of one thousand hours per month during the study. We can then estimate that ten-month-old chapter 11 cases consume judge time at the rate of one hour per case per month. This is, of course, an average or composite figure; some such cases may consume no judge time, while others may consume it at very high rates (just as some children may not grow at all during their tenth year, while others may experience a major growth spurt at that age). Similarly, we can obtain estimates of the average rate of judge-time consumption by chapter 11 cases in their first month after filing, in their second month, and so on, up to the oldest age reached by any chapter 11 case. A similar set of estimates can of course be derived for any type of case or adversary proceeding.

Fourteen categories of bankruptcy cases and adversary proceedings were designated as distinct case types, and rates of judge-time consumption were computed for each case type from age zero to twenty-one months. The sum of all the monthly rates of time consumption for a particular case type provides an estimate of the total judge time consumed by the average case or proceeding of that type within 21 months after filing. These estimates are shown in table 2 infra. Analogous computations were performed using another set of case types that included cases only; each expenditure of time reported for an adversary proceeding was treated as time spent on the case to which the proceeding related. Estimates of judge-time consumption for this set of case

types can be employed without concern about complications associated with the districts' differing requirements regarding which types of contested matters must be formally docketed as adversary proceedings and which may be heard without docketing (see discussion at the end of chapter 2). The estimates for this set of case types are shown in table 3 infra.

In addition to time devoted to cases and proceedings, the judges' time logs recorded time expended on matters not directly related to particular cases or proceedings, for example, time spent on court administration, on traveling between places of holding court, and on other work-related activities such as attendance at seminars, bar committee meetings, and the like. Since the focus of the study was on cases governed by the new bankruptcy code, the time judges spent on cases filed prior to October 1979 was reported separately.[4] Table 1 infra shows the total amount of judge time reported for each activity listed on the time logs.

It is crucial to emphasize that the time study method is exclusively descriptive in nature. Even if it were possible to produce perfectly accurate results, our estimates would simply be measures of the average amount of time judges actually spend on cases of the designated types. No normative element is implied--the estimates do not suggest how much time judges ought to spend

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4. Cases filed on or after October 1, 1979, and thus governed by the Bankruptcy Reform Act of 1978 are referred to as "code" cases; cases governed by prior law are called "act" cases.

on these cases. The importance of this distinction cannot be overstressed. The exclusively descriptive nature of the research leads to a definite circularity of logic when the estimates of time spent on cases are applied to current caseloads to produce estimates of the number of judges required to handle those caseloads.

If this study had been undertaken during a period when case filing rates were fairly constant, then we would conclude that the number of judges needed now is precisely the current number. This would be true regardless of the current number of judges or the current magnitude of filing rates. At its very best, all our method tells us is how much time judges are devoting, on the average, to cases in the present caseload; and it thus enables us to determine how many judges will be needed to maintain the same level of time expended per case for the caseload that ensues from future filing rates. If filing rates do not change, the present and future caseloads will be the same, so the total number of judges we estimate will be "needed" in the future must be the same as we have now. The consequence is this: To the extent that the present number of judges is insufficient for the present caseload, projections based on our results of the number of judges needed for future caseloads will be equally insufficient.

II. LIMITATIONS OF THE STUDY

Although we believe that the time study method and the methods employed to analyze the data are sound, the results produced must be understood in light of limitations having to do with the context in which these methods were applied. The most troublesome of these limitations can be overcome adequately by adjustments (as illustrated in tables 5 and 6 infra). Nonetheless, it is best to explain the fundamental problems that confronted the study before we consider the possibilities for overcoming those problems.

The principal limitations are that (1) the unadjusted estimates of average judge time consumed by cases take account only of that time consumed within twenty-one months of case filing; (2) those estimates probably do not adequately account for judge time consumed by trials or trial-like hearings in proceedings requiring them; and (3) those estimates reflect activity during a period of significant change in the law and thus in the practices of judges and counsel, affording ample reason to suppose that the full impact of these changes has not yet been felt and is not reflected in the estimates.

Paramount among the problems associated with the present study is that it took place only twenty-one months after the im-

plementation of the new bankruptcy code.[5] Most obvious among the consequences of this problem is that we were precluded from being able to evaluate directly the amount of judge time consumed by those cases that last more than twenty-one months. Our basic estimates[6] of judge-time consumption are therefore underestimates of varying degrees. Or, put more precisely, the estimates are of the average amount of time a case of a given type will consume within twenty-one months of filing; they do not account for the time that is spent on cases older than twenty-one months.

A less obvious but possibly more significant consequence of conducting the time study relatively soon after the effective date of the new code is that changes that will ensue from the code probably have not yet reached their full impact. Delayed but significant impact is especially likely in the case of the bankruptcy courts' new plenary jurisdiction over civil suits related to bankruptcy cases. Not only will it take some time before the bar becomes fully aware of this jurisdiction and takes full advantage of it, but the major impact of this change on the

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5. The study began May 18, 1981, just over nineteen months after the effective date of the new code, and terminated August 7, 1981, twenty-two months after the effective date. The computations employed to produce case weights, however, treated the study as though it had taken place exactly twenty-one months after the effective date of the code. This assumption is explained more fully at pages 23-24.

6. By basic estimates we mean the estimates derived from application of the method of analysis outlined in the introduction, without any adjustment to overcome the problems here discussed. All subsequent references to estimates of judge time consumed by cases pertain to these basic estimates, except where we explicitly refer to adjusted estimates.

bankruptcy judges will not appear until large numbers of these cases reach trial. Although we cannot yet say how long it will take for the cases to reach trial, twenty months from filing to trial is not untypical as a median time for civil litigation.[7] If the median is twenty months, only half of those cases filed twenty months before the beginning of the study would have reached trial by the time of the study. And since rates of filing increased in the interim, it is reasonable to suppose that for those types of adversary proceedings that may require trial, the estimates of judge-time consumption over twenty-one months could reflect much less than half of the time that these cases will ultimately consume in trial.[8]

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7. For instance, twenty months is the current median for civil cases in the United States district courts. See Administrative Office of the United States Courts, 1980 Annual Report of the Director at A-30. We do not mean to analogize the bankruptcy courts to the district courts or any other particular court system; we simply wish to point out that the median time from filing to trial in the bankruptcy courts is probably not vastly shorter than the elapsed time from the effective date of the new code to the end of the time study. Only if the median time from filing to trial were far shorter than twenty-one months could we assume that the level of trial activity during the time-logging effort was typical and not biased on the low side as a result of the infancy of code litigation.

8. Suppose, for example, that a particular type of case had a twenty-one-month median time from filing to trial and that, on the average, each case consumed 2 hours of judge time--1 hour prior to trial and 1 hour in trial. In our twenty-one-month time study, then, (1) we would observe not more than 1 hour of time (on the average, of course) associated with pretrial activity, and (2) because only half of even the oldest cases would have yet reached trial, we would likely observe fewer than .5 hours per case attributable to judge time spent in trial. Thus, the time study would result in an estimate of fewer than 1.5 hours of judge time consumed per case.

The second problem associated with the timing of this study is that it was conducted during the summer, a time when vacation activity very likely alters the patterns of judges' work, making our picture of those patterns somewhat distorted.[9] We believe that we have been able to correct for the obvious distortion of a reduced aggregate number of judge-hours worked during the summer months. A less obvious consequence of the summer timing of the study is that even when the judge is not on vacation, attorneys, litigants, or witnesses may be. This makes it more difficult to schedule trials or hearings that require participation by numerous persons. Thus, there is good reason to suppose, as some judges have assured us, that trial and trial-like activity decreases during the summer. Although we cannot be certain how this decrease in activity has affected our estimates of judge time consumed by cases, we think it most likely that it has resulted in an understatement of the differences between the most time-consuming and the least time-consuming types of cases. The estimates for case types that commonly require trial or an evidentiary hearing are probably understated, whereas those for case types that rarely require such procedures may be somewhat overstated.[10] Note that by "understated" or "overstated" we mean

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9. The study was undertaken despite this problem because the timetable according to which the results were needed as a basis for developing recommendations to the Congress did not permit delaying the study until after the summer of 1981.

10. Decreased trial activity provides judges with more time to spend on other activities. Some of this excess time may be absorbed by the judges' vacation time, and the remainder may be

relative to what the estimates would have been had the study occurred some time between September and May. Because other limitations suggest that all our basic estimates may be underestimates, the summer timing of the study more likely caused different degrees of underestimation for different types of cases.

The sources of the data employed in this time study impose other limitations that need to be understood in interpreting the data. The aim of the study was to provide estimates of judge-time consumption that can be applied to routinely collected caseload statistics to produce estimates of the aggregate annual judge-hours required by the caseloads of particular districts. The only routinely collected caseload data that are available for all districts are those collected by the Administrative Office (AO). These AO data were the basis on which we determined the case type and filing date of each studied case. We correlated the AO data with the judges' log entries by reference to the case docket numbers provided by the judges. Both the AO data and the results of our correlations undoubtedly contain two kinds of error.

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spent on other (nontrial) case-related work or non-case-related duties. By standardizing each participant's time-log data according to an assumption that the typical judge-month contains eighteen "office working days" (see pages 24-25), we believe that we have restricted the potential biases caused by the excess time to overestimation of either time spent on court administration or time spent on nontrial case-related work (or both). Between the two types of work, we expect that more of the excess time was devoted to nontrial case-related work than to court administration. Thus we assume that the effect of decreased trial activity is most likely some underestimation of time spent on types of cases that require trial and slight overestimation of time spent on other types of cases.

To determine the case type of a specific case or proceeding, we relied on information relating to either (1) the chapter under which a bankruptcy case was filed and the total amount of secured and unsecured obligations as scheduled by the debtor or (2) the "nature of suit" of an adversary proceeding. These data are provided by the attorney who files the petition or complaint, and they are interpreted by at least one clerk and rewritten at least twice before they are recorded onto magnetic tapes by the Administrative Office. Our identifications of case types must therefore be understood as products of the origin and history of the data we employed and not necessarily as identifications based on accurate and informed characterizations of the cases and proceedings considered in the study.

Moreover, the identity of the cases reported in the judges' time logs was determined by correlating the docket numbers in the time logs to the docket numbers of the cases in the AO data files. Some amount of error in identifying the correct case was unavoidable because of likely error in the docket numbers listed in both the time logs and the AO data.[11]

For these reasons, it must be assumed that the cases we grouped under any particular case type included some cases of

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11. The infeasibility of trying to eliminate such error is evident from the scale of the study. The scale had to be fairly large to ensure that the data represented an accurate cross section of the caseloads and working patterns of the judiciary. The study involved 102 judges logging their time expenditures over a twelve-week period, during which they worked on more than 45,000 cases and proceedings from a total docket of about 300,000 (i.e., roughly half of the total of about 600,000 filings since the effective date of the code).

other case types. The consequence is that judge-time estimates for the more time-consuming case types are probably understated, whereas those for the least time-consuming types are probably overstated (or--because "overstated" is used in a relative sense--less understated).[12] It is important to recognize, however, that because the AO data we used to identify cases are also the source of caseload statistics employed to estimate the total judge time required to handle the caseloads of particular districts, it is entirely correct that we should accept, and not try to avoid, these errors of misidentification. Our estimates are applicable, for example, to the group of cases labeled as chapter 11 cases involving more than $500,000 in debts, and the AO caseload data reflect filing rates of the cases so labeled. Reliance on the AO data in this way--as authoritative regarding case type--thus affords a degree of self-correction for problems of mislabeling.[13] The correction is by no means perfect, however; we suggest how to interpret the remaining distortion in the discussion accompanying table 7 infra.

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12. It can be shown, assuming that identification errors occur randomly, that the effect of such errors is overstatement or understatement by a constant percentage of the difference between the true average time expenditure for the case type and the average for all cases of all types. Thus the effect of the problem is greatest for case types that take substantially more or less time than the average case type.

13. An analogy may help to explain the self-correction point. Suppose we were asked to mill an axle to fit inside a bearing with an inside diameter measured at 1.12 inches. If we had any suspicion about the accuracy of the "yardstick" yielding that measurement, we would be on safest ground using that same yardstick to build the axle. It would be a mistake to use in-

Finally, it should be recognized that the estimates of time spent on cases of various types do not take account of differences beyond those reflected in the definitions of case types. The averages are national averages, which do not reflect differences that may exist among districts, circuits, or larger regions. For a variety of reasons, cases of a particular type may actually consume more time in some districts than in others. The differences may have to do with the cases themselves,[14] with diversity in practice among attorneys,[15] or with variation in the case management styles or the number of judges in the districts.

Of particular concern is that there appear to be differences among districts regarding what kinds of actions are required to be docketed formally as adversary proceedings. Some districts apparently permit a matter that would in other districts be docketed as an adversary proceeding to be heard as a motion, without

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stead a yardstick we knew to be more accurate. The goal is to build an axle to fit the particular bearing, not to build an axle exactly 1.12 inches in diameter. The analogy is that it would be a mistake for us to classify bankruptcy cases according to any yardstick other than that used for the AO data, because our goal is to generate estimates of judge time consumed that correctly "fit" bankruptcy court caseloads as measured by the AO yardstick.

14. Chapter 11 cases with more than $500,000 in scheduled obligations may be a much more burdensome group of cases in New York and Chicago, for instance, where that group includes many cases involving tens of millions in debts, than they are in other districts, where that group includes very few cases of such scale.

15. Counsel in some districts may be more inclined to try to proceed under chapter 11 in marginal cases, or may pursue more or less litigious strategies in certain matters, than counsel in other districts.

docketing. Two districts with identical caseloads that follow different practices in this regard would thus appear--artificially--to have different filing rates. The district that required docketing would appear to have a more burdensome caseload, and thus require more judges, than would the district that did not require docketing. To overcome this potential problem, we also estimated judge-time consumption for a set of case types consisting only of cases, with time spent on adversary proceedings being attributed to the cases to which the proceedings related.

III. RESULTS

General Breakdown of Work Activities

The participants' time logs indicated the time spent on every work-related activity during the course of the twelve-week study period and identified the activity as one of five types. Information was also provided regarding periods when the judge was on vacation, sick leave, or other personal leave. The five activity types were (1) work on act cases (those filed prior to October 1, 1979); (2) work on code cases or adversary proceedings; (3) travel, defined to include only travel to and from a usual place of holding court other than the judge's home court (i.e., "riding circuit"); (4) court administrative tasks (any work that is part of the responsibilities of the judge but that is neither travel nor related to specific cases); and (5) other, defined to include responsibilities that come with the position but are not necessarily obligatory (these include reading professional literature to keep abreast of developments, speaking at professional meetings, attending circuit conferences, and the like). Definitions of these terms, instructions for completion of the time log, and the log form itself are reproduced in the appendix.

There were 58 working days in the twelve-week period covered by the judges' time logs (there were two holidays in the period),

and the logs we received and analyzed covered a total of 4,432 "office working days."[16] The average was 45 working days per judge, the minimum was 25 days, and the maximum was 58 days. The total number of hours reported on the logs was 35,891, which represents an average of 8.1 hours per office working day. Some of the case-related or administrative work reported by the judges (about 2.5 percent of the total) was logged on Saturdays, Sundays, or holidays. For purposes of computing average time expenditures, all such work was treated as though it was done on office working days.

The general breakdown of the judges' work activities is shown in table 1. Days when a judge was on vacation or other leave are of course not included, but we have included every working day for which the judge reported any time spent working on cases or court administration. Because the figures include some days when a judge took the afternoon off to leave early for a vacation, or became ill and left early in the day, the reported averages probably understate slightly the amount of time spent working on a typical working day.

The results shown in table 1 are offered as a rough summary of the data recorded on the judges' daily logs. These results

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16. An office working day is a day other than a Saturday, Sunday, or holiday on which the judge reported any time spent on case-related work or administrative duties. The total number of working days reported, including Saturdays, Sundays, and holidays on which work was done and weekdays spent entirely on travel or "other" (non-case-related) work, was 5,320. The rationale of the definition of office working day is explained at pages 24-25.

TABLE 1

AVERAGE DAILY TIME EXPENDITURES BY TYPE OF ACTIVITY

Activity	Mean Hours per Day
Work on act cases	0.9
Work on code cases or proceedings	5.1
Travel	0.3
Court administration	1.0
Other	0.9
Total[1]	8.1

NOTE: The maximum daily average by a single judge is 11.6 hours/day, the minimum daily average, 4.8 hours/day.

[1]Items do not add exactly to total because of rounding.

were not relied upon in calculating estimates of the judge time consumed by different types of cases. Moreover, they probably should not be relied upon, except in the most general way, as guides to the amount of time judges can be expected to spend on particular activities. The averages in table 1 do not reveal differences in the duties of particular judges such as chief judges, who presumably have greater administrative burdens, or judges from geographically large districts, who may spend much greater portions of their time traveling between places of holding court.

Although the maximum and minimum daily averages for individual judges might appear to be extreme, we believe the data are quite reliable for our purposes. The daily averages for all judges range smoothly between the extremes of 4.8 and 11.6 hours, forming--as we would hope--a distribution much like a normal

(bell-shaped) distribution.[17] The range in the data is probably somewhat exaggerated: The judge who averaged 11.6 hours per day probably works long hours and tends to overestimate time expenditures, whereas the one who averaged 4.8 hours probably works shorter hours and tends to underestimate time expenditures.

The accuracy of all our results is of course dependent on the accuracy with which the judges reported their time expenditures, and the possibility of systematic error (overestimation or underestimation) in such a task clearly cannot be ignored. It is quite possible that most judges tend to underestimate (or underreport) time spent on fairly brief tasks and to overestimate that spent on longer tasks. When a judge has spent all day in trial, for example, the total hours worked might be attributed to the trial, even though a few minor tasks were handled during recesses. The consequence would be to overstate the time consumed by the trial and to understate that taken by the few minor tasks. Of course, other patterns of misestimation or misreporting of time can occur, and it is almost certain that they vary among individuals. Because time expenditures by bankruptcy judges range very widely, with both moderately lengthy hearings and numerous very brief tasks making up their normal daily agenda, it may well be that the data in table 1 understate the average judicial workday to a significant degree.

This possibility, however, need not be grounds for serious

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17. The standard deviation of the individual-judge averages is 1.4 hours.

concern about the utility of the results. Potential underreporting of time would affect our estimates of the amount of time consumed by cases of particular types in about the same proportion as it would affect overall estimates of time worked per day. Estimates of judicial manpower needs that were based on both types of estimate, however, would not be influenced by the underestimates. If, for instance, the participants actually spent an average of seven hours per day on cases rather than the six reported, then our estimates of average total time consumed by particular types of cases would be understated by an average of one-seventh. But our estimates of how much case-related time each judge could provide would also be understated by one-seventh, so estimates of the number of judges needed to handle a given caseload would be correct. In essence, underestimates or overestimates have the effect of multiplying both the numerator and denominator of a fraction by the same number, leaving the value of the fraction unaffected.

Estimates of Judge Time Consumed by Cases of Various Types

The method employed to estimate the judge time consumed by the average case of a particular type was explained in abstract terms in the introduction. The details of applying the method to the data obtained from the twelve-week time study, however, are somewhat more complicated than might be suggested by that explanation. We discuss only the more important details here and explain the full data-processing and computation task in chapter 5.

To estimate the rate of judge-time expenditure on a particular type of case, we need to know the normal rate of judges' time expenditure on all cases of that type, as well as the total number of cases of that type. Within the limitations of potential error in the AO data, it is a straightforward matter to determine the total number of cases of any designated type. Because of the summer timing of the study as well as the varying number of working days reported by individual participants, however, it is far from a straightforward matter to convert the actual time expenditures recorded into a reasonable estimate of the normal rate of time expenditure.

Consider, for example, the "average" participant in the study, for whom we recorded a total of forty-five working days during the twelve-week period (the remaining thirteen of fifty-eight possible working days being spent on vacation or sick leave or lost because of error or the judge's late entry into or early departure from the study). Suppose that this judge reported one hundred hours of time spent on lien avoidance proceedings filed one month prior to the start of the study and that there were fifty of these matters in the judge's caseload. How is the age of these cases to be characterized, and what are we to assume is their average monthly rate of judge-time consumption?

First, because the time-logging effort lasted for twelve weeks, these cases obviously aged during the course of the study. To follow the computational method precisely would have required that we associate each time-log entry with the date of the entry,

determine the precise time from case filing to date of log entry, and then aggregate the time expenditures and AO data on case filings for every possible case age. To avoid the rather extreme data-processing complexity that would thus be added to a task that was already very complex, we adopted simplifying assumptions whereby each case was treated as though it remained the same age throughout the logging effort (which lasted from May 18 to August 7) and its age was measured in months, on the basis of the month of filing. Cases filed in July 1981 were treated as zero months old throughout the study, those filed in June were one month old, and so on. The effect of these assumptions is that our computed rates of judge-time expenditure for cases of a given type and age are moving averages; the rate for cases aged four months, for instance, is in fact an average that is dominated by time spent on cases four months old but also includes some time spent on cases three months old and five months old. The moving averages do not bias the estimates, but tend to make the patterns of time expenditure as a function of case age somewhat smoother than they would be if the more complex computations were employed.

Second, we cannot properly regard the 45 working days reported as typical of any twelve-week period in the year. But the study itself does not suggest what portion of a typical year is represented by 45 working days. To account for the summer timing of the study as well as less than complete data for all participants for all 58 working days in the study, we had to base our calculations on some assumption about the average number of days

worked per judge per year. Our unavoidably arbitrary choice of a standard was 216 "office working days" per year, a rate of 18 per month. An office working day was defined as a day other than a Saturday, Sunday, or holiday on which the judge did any work on cases or court administration. A day on which the only work done was of the types defined as "travel" or "other" was not considered an office working day. This definition permitted us to make correction not only for summer vacation time but also for time spent at judicial conferences and training seminars.[18]

We used the standard of eighteen office working days per month to measure that portion of a normal year's work represented by each participating judge's time logs. If our average judge had reported thirty-six office working days (the remaining nine of the judge's forty-five reported working days might have been spent at the circuit judicial conference and a training seminar), then that judge would have been regarded as reporting two months' worth of data (36/18 = 2). Thus, the one hundred hours spent on fifty lien avoidance matters of age one month would reflect two months' worth of work, a rate of time expenditure of fifty hours per month. This judge's reports would therefore contribute fifty hours per month to the aggregate time spent by all participants on lien avoidance matters of age one month and would also contribute fifty cases to the aggregate number of cases of that type

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18. Days spent exclusively in travel were not counted as office working days because it was apparent that some time logged as travel was associated with travel to a judicial conference.

and age. If after counting the contributions from all participants, we had five thousand hours per month spent on ten thousand such cases, we would estimate that lien avoidance matters of age one month consume judge time at the rate of one-half hour per month.

The consequence of this adjustment procedure is that our estimates of rates of judge-time consumption, and of total time consumed by cases, are partly determined by our assumed standard of eighteen office working days per month. Had we chosen twenty office working days instead, our estimates of judge-time consumption would have increased proportionally (i.e., by a factor of 20/18). Had we chosen sixteen as the standard, the estimates would have been 16/18 of those shown in table 2.

The figures in part 2 of this report provide graphic illustrations of our estimates, plotting the monthly rate of judge time expended per case as a function of case age for each of fourteen case types. All the figures clearly exhibit patterns in the rate of judge-time expenditure, albeit patterns of varying clarity. For very common cases such as chapter 7 individual bankruptcies (see figure 3), the graphs are smooth and the patterns quite clear. For less common case types, expectable random variation in the data results in ragged graphs, but patterns are nevertheless apparent. That patterns are evident affords confidence that the results are statistically meaningful, and the varying degrees of smoothness permit subjective assessment of the statistical accuracy of the results. The notes to table 2 indi-

cate the apparent statistical reliability of the estimates and summarize how the various limitations mentioned have likely biased the estimates.

Table 3 shows judge-time estimates for the set of case types consisting only of case types 1 through 8 from table 2. These estimates were produced by computations analogous to those employed for table 2. The difference between the two sets of estimates is simply that in the table 3 computations, adversary proceedings were not treated as entities distinct from their associated cases; time spent on an adversary proceeding was treated as time spent on the case to which the proceeding related. The estimates shown in table 3 are therefore not influenced by differences among districts in requirements regarding when contested matters must be docketed formally as adversary proceedings rather than being heard on motion, without docketing. Potential problems associated with such differences were discussed in chapter 2.

The judge-time estimates in table 3 tend to be higher than the corresponding estimates in table 2 because time spent on adversary proceedings accounts for about 45 percent of all case-related judge time (see table 4). The varying proportions by which the table 3 estimates exceed the corresponding table 2 estimates are a consequence of the fact that the eight types of bankruptcy cases differ in the extent to which they generate adversary proceedings.

Table 4 shows the distribution by case type of time logged by the participant judges. Note that the data in table 4 are

TABLE 2

BASIC ESTIMATES OF JUDGE TIME CONSUMED PER CASE (WITHIN TWENTY-ONE MONTHS AFTER FILING) BY CASE TYPE

Case Type Number	Case Type	Judge Time Consumed in Hours
	Bankruptcy Cases	
1	Chapter 7 business, scheduled debts[1] of less than $100,000	0.55[b,i]
2	Chapter 7 business, scheduled debts of at least $100,000	0.66[c,j]
3	Chapter 7 nonbusiness, scheduled debts of less than $50,000	0.19[a,j]
4	Chapter 7 nonbusiness, scheduled debts of at least $50,000	0.35[b,i]
5	Chapter 11, scheduled debts of less than $500,000	5.92[a,k]
6	Chapter 11, scheduled debts of at least $500,000	8.80[c,k,x]
7	Chapter 13, scheduled debts of less than $50,000	0.42[b,i,x]
8	Chapter 13, scheduled debts of at least $50,000	0.94[b,i,x]
	Adversary Proceedings	
9	Automatic-stay litigation (NS 418)[2]	1.35[a,j]
10	Preference litigation (NS 419)	2.05[b,j]
11	Lien avoidance matters (NS 423)	0.68[b,i]
12	Dischargeability, objection to or revocation of discharge (NS 424-429)	1.85[b,j]
13	Other bankruptcy-specific matters or statutory actions (NS 420 or 890)	1.25[a,j]
14	All other adversary proceedings	2.20[b,k,x]
	Aggregate average[3]	0.62

NOTE: The letter superscripts (a-c, i-k, and x) are offered to assist the reader in evaluating the estimates in light of the various limitations we believe have resulted in varying degrees of underestimation or possibly slight overestimation.

[a]This estimate appears to be quite accurate in a statistical sense because the patterns of judge time consumed as a function

TABLE 2 (Continued)

of case age are smooth and there is no indication from the patterns that these cases consume much judge time beyond twenty-one months after filing.

[b]This estimate appears slightly uncertain in a statistical sense either because the relatively small number of these cases produced somewhat erratic patterns of judge-time consumption or because the patterns suggest that these cases may consume significant amounts of judge time beyond twenty-one months after filing.

[c]This estimate appears to be among the least reliable in a statistical sense because the patterns of judge-time consumption are very erratic.

[i]This estimate is unlikely to have been influenced more than very slightly by the possible tendency toward underestimation or overestimation created by error in identifying case type because the estimate is quite close to the average for all case types (.62 hours).

[j]Error in identifying case type probably resulted in a modest tendency toward underestimation or overestimation for this estimate.

[k]Error in identifying case type may have resulted in a fairly significant degree of underestimation for this estimate.

[x]Cases of this type are especially likely to consume significant amounts of judge time beyond twenty-one months after filing, so the limitation of this estimate to cases not more than twenty-one months of age may have caused substantial underestimation.

[1]Scheduled debts refers to the total of secured and unsecured obligations (not including priority debts) as scheduled at the time of filing.

[2]NS refers to the nature-of-suit codes used by the Administrative Office to identify the various types of adversary proceeding.

[3]This average is based on the aggregate of all judge time reported for all cases and proceedings; it is not an average of the estimates for the fourteen case types.

TABLE 3

BASIC ESTIMATES OF JUDGE TIME CONSUMED PER CASE (WITHIN TWENTY-ONE MONTHS AFTER FILING), INCLUDING TIME CONSUMED BY RELATED ADVERSARY PROCEEDINGS, BY CASE TYPE

Case Type Number	Case Type	Judge Time Consumed in Hours
1	Chapter 7 business, scheduled debts[1] of less than $100,000	0.95
2	Chapter 7 business, scheduled debts of at least $100,000	1.70
3	Chapter 7 nonbusiness, scheduled debts of less than $50,000	0.31
4	Chapter 7 nonbusiness, scheduled debts of at least $50,000	0.79
5	Chapter 11, scheduled debts of less than $500,000	10.78
6	Chapter 11, scheduled debts of at least $500,000	16.62
7	Chapter 13, scheduled debts of less than $50,000	0.59
8	Chapter 13, scheduled debts of at least $50,000	1.68
	Aggregate average[2]	0.775

[1]Scheduled debts refers to the total of secured and unsecured obligations (not including priority debts) as scheduled at the time of filing.

[2]This average is based on the aggregate of all judge time reported for all cases; it is not an average of the estimates for the eight case types.

influenced by certain of the limitations we have discussed. The expected consequence is that the figures in table 4 for high-burden cases and cases that consume significant judge time beyond twenty-one months after filing are probably underestimates, whereas those for other cases are overestimates. It should also be recognized that the data in table 4 are almost certainly dis-

TABLE 4

CONTRIBUTION OF EACH CASE TYPE TO TOTAL JUDGE TIME CONSUMED

Case Type Number	Case Type	Percentage of Judge Time: Among 14 Case Types	Among 8 Case Types
1	Chapter 7 business, debts of less than $100,000	4.1	8.4
2	Chapter 7 business, debts of at least $100,000	2.7	6.9
3	Chapter 7 nonbusiness, debts of less than $50,000	11.6	22.9
4	Chapter 7 nonbusiness, debts of at least $50,000	3.5	8.6
5	Chapter 11, debts of less than $500,000	14.0	24.7
6	Chapter 11, debts of at least $500,000	4.5	6.9
7	Chapter 13, debts of less than $50,000	11.6	16.7
8	Chapter 13, debts of at least $50,000	2.7	4.9
9	Automatic-stay litigation	15.8	
10	Preference litigation	3.0	
11	Lien avoidance matters	4.4	
12	Dischargeability, objection to or revocation of discharge	9.6	
13	Other bankruptcy-specific matters or statutory actions	8.0	
14	All other adversary proceedings	4.5	

torted by both the infancy of litigation under the new code and the increasing filing rates experienced in the months prior to the time study. The distortion results from the fact that a disproportionately large part of this caseload consists of "young" cases. Cases that consume judge time relatively soon after filing thus appear in table 4 to consume a larger portion of judge time than they would in more stable circumstances, and

cases that consume judge time relatively long after filing appear to consume an unduly small portion of total judge time.

Using the Estimates of Judge Time Consumed to Evaluate the Number of Judges Needed in Each District

Because of the limitations we have discussed, our basic estimates of the average judge time consumed by cases of various types should not be regarded as especially valuable pieces of information by themselves. Their value lies in how they can be employed, namely, (1) to produce more realistic, adjusted estimates of judge time consumed by particular case types and (2) to produce estimates of the number of judges required by specific court caseloads, using the adjusted estimates as "weights" applied to data about those caseloads. The individual estimates of average judge-time consumption, when understood in light of the various limitations and problems we have mentioned, are best viewed as lower limits to the actual amount of time consumed by different types of cases. We do not suggest in table 2, for instance, that large chapter 11 cases consume an average of 8.8 judge-hours each; rather, we suggest that they average more than 8.8 hours each, it being impossible in this study to determine with certainty how much more.

In the following sections, we demonstrate several ways in which the results shown in table 2 or table 3 can provide a basis for generating more useful information regarding the burdens of bankruptcy court caseloads.

Adjustments to the Data in Tables 2 and 3

We have emphasized that the estimates in table 2 are inaccurate in several predictable ways, one being that they apply only to judge time consumed by cases within twenty-one months after filing. Although we could not avoid this problem in our study of code cases (there were none older than twenty-one months when the study was undertaken), it may be appropriate to correct for the problem by reference to the time judges spent on older act cases in the course of the study. We know from table 1 that of the 6 hours per office working day that judges spent working on cases, .9 hours were spent on act cases. If act cases are similar to code cases insofar as their consumption of judge time is concerned, then it is reasonable to treat this .9 hours per day as though it were time spent on code cases older than twenty-one months.

In adjusting the estimates in table 2 to take account of time spent on cases older than twenty-one months, we must recognize both that filing rates were considerably lower during the years when these older cases were filed and that only certain types of cases are likely to consume judge time more than twenty-one months after filing. One approach to the adjustment is as follows. First, annual filing rates of bankruptcy estates for the five years preceding October 1, 1979, averaged about 227,000 per year. The average for the period from October 1979 to July

1981, however, was about 400,000 per year.[19] The .9 hours per day spent on "old" cases are from a caseload that we can index at 227, whereas the 5.1 hours spent on "young" cases are from a caseload indexed at 400. By the time the young code caseload reaches the age of the old act caseload, we would expect the code cases to require not .9 hours per day, but about .9 x 400/227 = 1.6 hours per day. We assume, therefore, that if our time study had continued into the future and had thus measured time spent on code cases older than twenty-one months, the judges would have been spending 1.6 hours per day to serve these cases.[20]

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19. Administrative Office of the United States Courts, 1981 Annual Report of the Director at 8. (An estate is slightly different from a case because a case filed jointly by spouses includes the estates of both spouses. However, if the proportion of joint filings has remained fairly constant over recent years, relative differences between estate filing rates should be about the same as relative differences between case filing rates.)

20. The reason this adjustment procedure is appropriate, at least as an approximation, is that we are attempting to include the .9 hours per day spent on act cases in our pattern of time consumption as a function of case age in order to extend that pattern beyond twenty-one months. The extended pattern is constructed by taking the aggregate monthly rate of time expenditure for all cases of a given age, x months, and dividing that rate by the total number of such cases filed x months ago. For the .9 hours per day spent on old cases, the number filed at any time more than twenty-one months ago is assumed to be about 227/400 of the number filed in any more recent month.

Suppose that a judge reported spending 40 minutes on 1 of 400 cases of type 13 filed twenty-one months ago. That would contribute 40/400 = .1 minutes to the total time consumed by an average case of type 13. But 40 minutes spent on a case filed twenty-two or more months ago is assumed to be time spent on 1 of 227 such cases and should contribute 40/227 = .18 minutes to the total time consumed by an average case of that type. So even though .9 hours is only 18 percent of 5.1 hours (the average time consumed by code cases), had those .9 hours been used in computing the patterns of judge time consumed, they would have increased total judge-time consumption by roughly 31 percent (400/227 x 18 = 31).

Second, we need to adjust the estimates in table 2 so that they account for a total of 5.1 + 1.6 = 6.7 hours (rather than 5.1 hours) of case-related work per office working day. It will not do, however, simply to increase each figure in table 2 by 31 percent (6.7 is 31 percent more than 5.1) because not all types of cases are likely to consume much judge time beyond twenty-one months after filing. We will assume, therefore, that all the time spent on older cases is spent on five types of cases: both types of chapter 11 cases, both types of chapter 13 cases, and chapter 7 business cases involving at least $100,000 in debts.[21] Table 4, which shows the approximate proportion of total judge time consumed by cases of each case type, indicates that these five case types account for 35.5 percent of the time judges spent on code cases; that is, these cases account for .355 x 5.1 = 1.8 hours per day. Accordingly, we will suppose that had cases older than twenty-one months been included in our data, they would have accounted for 1.8 + 1.6 = 3.4 hours per day. So we adjust the table 2 entries for each of these case types by a factor of 3.4/1.8 and arrive at the estimates shown in table 5. Although these adjustments are reasonable (but imprecise) means to account for time spent on cases beyond twenty-one months after filing, bear in mind that the estimates in table 5 still fail to account

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21. This assumption is crude, at best, although it is supported both by the experience of bankruptcy judges and by the patterns of judge-time expenditure as a function of case age, which suggest that these case types are the most likely to consume time beyond twenty-one months after filing.

TABLE 5

ESTIMATES OF JUDGE TIME CONSUMED PER CASE BY CASE TYPE, ADJUSTED TO ACCOUNT FOR CASES OLDER THAN TWENTY-ONE MONTHS

Case Type Number	Case Type	Judge Time Consumed in Hours
1	Chapter 7 business, scheduled debts of less than $100,000	0.55
2	Chapter 7 business, scheduled debts of at least $100,000	1.25[a]
3	Chapter 7 nonbusiness, scheduled debts of less than $50,000	0.19
4	Chapter 7 nonbusiness, scheduled debts of at least $50,000	0.35
5	Chapter 11, scheduled debts of less than $500,000	11.33[a]
6	Chapter 11, scheduled debts of at least $500,000	16.62[a]
7	Chapter 13, scheduled debts of less than $50,000	0.79[a]
8	Chapter 13, scheduled debts of at least $50,000	1.76[a]
9	Automatic-stay litigation (NS 418)	1.35
10	Preference litigation (NS 419)	2.05
11	Lien avoidance matters (NS 423)	0.68
12	Dischargeability, objection to or revocation of discharge (NS 424-429)	1.85
13	Other bankruptcy-specific matters or statutory actions (NS 420 or 890)	1.25
14	All other adversary proceedings	2.20
	Aggregate average[b]	0.81

[a]The estimate for this case type has been adjusted to account for time spent on cases older than twenty-one months. This case type is one of those assumed to include cases that consume time beyond twenty-one months after filing.

[b]This average is based on the aggregate of all judge time reported for all cases and proceedings; it is not an average of the estimates for the fourteen case types. The average has been adjusted, but because it does not account for differences between case types, the adjustment is based on adding 1.6 hours to the 5.1 hours spent on all cases, an increase of 31 percent.

for distortions produced by decreased trial activity during the summer months.

Table 6 illustrates analogous adjustments applied to the judge-time estimates for the "case-only" case types shown in table 3. Since table 3 does not treat adversary proceedings as distinct from the cases to which they relate, the adjustment must differ accordingly. If we regard the 5.1 hours per day spent on code cases as applying only to bankruptcy cases (and not to adversary proceedings), we can compute from table 4 that the five case types that are assumed to account for time spent on cases older than twenty-one months consumed about 60 percent (rather than 35.5 percent) of the 5.1 hours, or 3.1 hours per day. The adjustment factor is therefore (3.1 + 1.6)/3.1 = 1.5.

Computation and Evaluation of Weighted Caseloads

Once the estimates in table 2 have been adjusted to reflect more accurately the average time consumed by cases of various types, they can be applied to estimates of actual court caseloads to evaluate the judge time required by those caseloads. The most straightforward approach is to measure caseload in terms of annual filing rates and then estimate how many judges will be needed to handle that caseload. Suppose that we want to estimate the number of judges required by the caseload of a particular bankruptcy court. Such an estimate can be derived as follows.

First, we must measure the caseload of the court in terms of the annual filing rates of each of the fourteen case types we

TABLE 6

ESTIMATES OF JUDGE TIME CONSUMED PER CASE (INCLUDING TIME CONSUMED BY RELATED ADVERSARY PROCEEDINGS) BY CASE TYPE, ADJUSTED TO ACCOUNT FOR CASES OLDER THAN TWENTY-ONE MONTHS

Case Type Number	Case Type	Judge Time Consumed in Hours
1	Chapter 7 business, scheduled debts of less than $100,000	0.95
2	Chapter 7 business, scheduled debts of at least $100,000	2.55[a]
3	Chapter 7 nonbusiness, scheduled debts of less than $50,000	0.31
4	Chapter 7 nonbusiness, scheduled debts of at least $50,000	0.79
5	Chapter 11, scheduled debts of less than $500,000	16.17[a]
6	Chapter 11, scheduled debts of at least $500,000	24.93[a]
7	Chapter 13, scheduled debts of less than $50,000	0.89[a]
8	Chapter 13, scheduled debts of at least $50,000	2.52[a]
	Aggregate average[b]	1.02

[a]The estimate for this case type has been adjusted to account for time spent on cases older than twenty-one months. This case type is one of those assumed to include cases that consume time beyond twenty-one months after filing.

[b]This average is based on the aggregate of all judge time reported for all cases and proceedings; it is not an average of the estimates for the eight case types. The average has been adjusted, but because it does not account for differences between case types, the adjustment is based on adding 1.6 hours to the 5.1 hours spent on all cases, an increase of 31 percent.

have identified. Table 7 presents estimates of annual filing rates for three fairly typical districts as of May 1981. Because bankruptcy filing rates increased continuously from October 1979 through early 1981, these estimates are based on annualized aver-

age filing rates from March through July of 1981, the latest months for which we have filing data.

Second, we simply multiply each annual filing rate in table 7 by the estimated average judge time (from table 5) consumed by cases of the corresponding case type. Each of the resulting products suggests how many judge-hours per year will be consumed by each case type, and the total over all fourteen case types suggests how many judge-hours per year will be consumed by the total caseload (see table 7).

Finally, the total judge-hours consumed per year by the caseload can be divided by an estimate of the number of case-related hours available per judge per year in order to estimate the number of judges required by that caseload. Table 7 includes estimates of the number of judges required in each of the three districts,[22] on the basis of an assumption that each judge can provide 1,296 case-related hours per year.

The method illustrated in table 7 can be used to evaluate similar data, such as might be computed from projected caseloads for 1984 and adjusted estimates of judge time consumed per case. Two aspects of table 7 are particularly helpful in this regard.

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22. We must emphasize that we use the term required very cautiously here. The number of judges required by the caseloads of these courts should be interpreted in light of the limitations we have mentioned. Our estimates of average judge time consumed by cases of various types tend to be underestimates of how much time these cases actually are consuming, and we do not mean to suggest that the amount of judge time now being provided to cases is adequate; we recognize that rational persons may regard the present supply of judicial manpower as very inadequate.

TABLE 7

ANNUAL CASE FILING RATES FOR THREE TYPICAL DISTRICTS AS OF MAY 1981

Case Type Number	District A		District B		District C	
	Cases	Hours	Cases	Hours	Cases	Hours
1	169	93	214	118	209	115
2	22	28	65	81	113	141
3	2,850	542	2,088	397	1,956	372
4	164	57	250	88	218	76
5	276	3,127	94	1,065	31	351
6	7	116	10	166	7	116
7	1,956	1,545	643	508	372	294
8	16	28	120	211	46	81
9	804	1,085	408	551	266	359
10	39	80	26	53	14	29
11	78	53	132	90	2	1
12	72	133	108	200	74	137
13	267	334	223	279	103	129
14	60	132	14	31	7	15
Total weighted hours[1]		7,353		3,838		2,216
Total cases	6,780		4,395		3,418	
Total unweighted hours[2]		5,492		3,560		2,768
No. of judges needed at 1,296 hours per year	5.7		3.0		1.7	

[1]The figures for weighted hours are totals of the number of judge-hours consumed by cases in each of the fourteen case types (based on the estimated averages in table 5).

[2]The figures for unweighted hours were computed by multiplying the total number of cases filed per year by .81 hours, the estimate in table 5 for the aggregate average of judge time consumed over all cases.

First, recall that the estimates of the average number of judge-hours consumed by cases are dependent on our assumption that the average judge provides eighteen office working days per

month. Had we assumed that they worked twenty such days per month, all the figures for hours in table 7 would be approximately 20/18 (111 percent) of those shown. The estimates for the number of judges required, however, are dependent only on the assumption that each judge does 6 hours of case-related work per office working day; they are independent of the assumption of eighteen office working days per month. The reason is that the figure eighteen affects both the total judge-hours required by the caseload and the estimate of 1,296 case-related hours per judge per year--the numerator and denominator, respectively, of the formula for estimating the number of judges required.[23] Thus, if judicial manpower needs are estimated in a manner analogous to that employed in table 7, no bias results from our assumption of eighteen office working days per month.

Second, table 7 shows both a weighted and an unweighted estimate of the number of judge-hours required per year by the caseload of each of the three districts. The unweighted caseload estimates are important aids for interpreting the weighted caseload estimates. Note that the weighted estimate for district A

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23. The estimate of 1,296 case-related hours per judge per year is simply 6 hours per office working day (see table 1) multiplied by 18 office working days per month and 12 months per year. Had we chosen 20 instead of 18 as the key assumption, we would have obtained 1,440 instead of 1,296 (20/18 x 1,296 = 1,440), but the estimates for hours consumed per case (and hours consumed by a given caseload) would also have been higher by the factor of 20/18. The estimated number of judges required would remain the same, being dependent only on the assumption that judges work an average of 6 hours on cases and proceedings each office working day.

in table 7 is significantly larger than the corresponding unweighted estimate. This implies that the district has a comparatively large proportion of high-burden cases in its caseload and thus a relatively small proportion of low-burden cases. Because the estimates of judge time consumed by different case types are particularly likely to be understated for high-burden cases,[24] it follows that in this type of district the weighted caseload, and thus the number of judges required, are probably underestimated. In district C, by contrast, the weighted caseload is considerably smaller than the unweighted caseload. This implies that the caseload of district C contains a comparatively small proportion of high-burden cases. In this district, the underestimation of judge time consumed by high-burden cases has less effect on the weighted caseload estimate, so the estimate of judges required can be assumed to be more accurate (or possibly somewhat overestimated). The weighted and unweighted estimates for district B are quite close, which implies that the caseload in this district is very close to average in proportions of high- and low-burden cases; for district B, therefore, the effect of underestimation of time consumed by high-burden cases is less significant than in district A but more significant than in district C.

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24. Although the adjustments employed to produce the estimates in table 5 minimize the possibility that those estimates are systematically biased toward underestimation, the adjustments do not correct for problems associated with misidentification of case type (see note 12 supra) and reduced trial activity during the summer months (see chapter 2). Both of these problems tend to result in underestimation of time consumed by high-burden cases and overestimation of time consumed by low-burden cases.

This study was undertaken with an understanding that the limitations we have mentioned would preclude us from generating definitive estimates of the judge time consumed by particular case types or of the judge time required by particular court caseloads. Only after litigation under the new bankruptcy code has completed the "learning curve" transitions that always accompany major institutional changes will it be possible to conduct a study that we could recommend as the principal basis for decisions about manpower needs in the bankruptcy courts.

This study was undertaken nevertheless, as the best that could be done under the circumstances to provide objective guideposts for such decisions. Because the necessarily subjective judgments that must be made in applying the results of the present study are not the province of researchers, we have merely illustrated how our results can be employed.

We believe that the methods used in this study will produce much more definitive results if they are used again in a similar study conducted in a few years, after code litigation has stabilized. We strongly recommend that such a study be undertaken at the earliest practicable time.

Part 2

IV. DATA COLLECTION

The data employed in this study are of two distinct but closely related kinds. One set of data consists of information provided on standard reporting forms to the Statistical Analysis and Reports Division of the Administrative Office of the United States Courts regarding every bankruptcy case or adversary proceeding filed in the United States bankruptcy courts between October 1, 1978, and July 31, 1981 (excluding only those filed in the Eastern District of Pennsylvania during July 1981). The other set of data consists of daily time logs provided by 102 participant judges who recorded their work-related time expenditures from May 18, 1981, to August 7, 1981. This chapter explains the contents and procedures for collection of each of these data sets. Chapter 5 explains how the data were processed and analyzed to produce the results presented in part 1 of this report.

The information reported to the Statistical Analysis and Reports Division (hereafter referred to as the AO data) is among the information provided routinely to the Administrative Office by each bankruptcy court for management information purposes. The data are recorded by the clerks of court on forms in accordance with instructions provided by the Administrative

Office.[25] The information recorded differs for cases and adversary proceedings.

For purposes of this time study, we extracted the following information for each case and each adversary proceeding.

For Each Case:

a. The district and office in which the case was filed

b. The date of filing

c. The docket number assigned to the case

d. The identity of the judge to which the case was initially assigned

e. The number of creditors, the total assets of the debtor, and the total priority, secured, and unsecured obligations of the debtor, all as scheduled in the petition

f. The chapter (or section) under which the case was commenced

g. Whether the debtor was a business or an individual

h. Whether the petition was filed jointly by spouses or not, filed pro se or not, and filed voluntarily or involuntarily

i. Whether the case had been disposed of and, if so, the date of disposition (termination).

For Each Adversary Proceeding:

a. The district and office in which the proceeding was filed

b. The date of filing

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25. The instructions and forms can be found in Statistical Analysis and Reports Division, Administrative Office of the United States Courts, Bankruptcy Statistical Instructions (Pursuant to Public Law 95-598, November 6, 1978) Effective October 1, 1979.

c. The docket number assigned to the proceeding

d. The district, office, and docket number of the bankruptcy case to which the proceeding related

e. The identity of the judge to which the proceeding was initially assigned

f. A coded indicator of the nature of the action (nature-of-suit code).

The district, office, and docket number together served to uniquely identify each case or proceeding (although there were occasional duplications, presumably as a result of clerical error) and enabled us to match case-related time expenditures reported by a participant judge to the AO data associated with the cases or proceedings the judge had worked on.

The time logs maintained by the judges were developed especially for the purposes of this study. The data collection effort itself is best explained by reference to the data collection form and instructions reproduced in the appendix. First, however, it is important to explain how the participant judges were selected.

The 102 judges who participated in the time study were recruited in a manner intended to result in a group that would be as representative as possible of the bankruptcy judiciary as a whole. For two reasons, we chose to recruit only about one-half of the bankruptcy judges to participate in the study. First, we recognized that participating in the study would be a significant imposition on the judges, and we believed that a group of approximately 100 judges participating for twelve weeks would produce a

sufficiently large sample of data to permit statistically reliable conclusions. Second, presuming that another time study would be called for in the next few years, we wanted to ensure that the demands of participation would not be imposed on the same judges twice in a short span of time.

Practical considerations dictated that we exclude a few judges from the pool of potential participants. First, we did not include any part-time bankruptcy judges, both because it did not appear that there would be any part-time judges after the changes in judicial appointments in 1984 and because it was not clear how a part-time judge's work should be counted (whether we could assume that a part-time judge works exactly half as much time as a full-time judge, or more or less than half as much). Second, anticipating the serious difficulty that might arise in trying to identify the individual cases worked on by a participant who was assigned to more than one judicial district, we excluded all judges who were assigned to more than one district. (Our method for uniquely identifying a case depended on identifying the district in which the case was filed.) The total pool of approximately 245 individuals then serving as bankruptcy judges was thus reduced to 218 judges whom we counted as candidates for participation in the study.

The 218 candidates were listed in order by circuit and district. For districts with more than one judge, the judges were further placed in an arbitrary order, on the basis of their telephone numbers. Every other judge on the list (starting with the

first, as dictated by a coin flip) was then chosen to be invited to participate. This selection procedure ensured that each circuit and district would be represented among the invitees in the same proportions as they occurred on the list of 218 candidates.

Letters of invitation were sent to 109 invitees on May 4, 1981 (see the appendix). Of those 109, 99 agreed to and did in fact participate in the study. Three of those who declined to participate recruited colleagues to replace them, bringing to 102 the total number of participants. Because of the high rate of participation by the initial group of 109 invitees, we can be confident that the sample of participants is a reasonably accurate cross section of the population of full-time, single-district bankruptcy judges. The names of the 102 participants are listed below.

Stephen B. Coleman	Northern District of Alabama
William R. Vance	Northern District of Alabama
Leon J. Hopper	Middle District of Alabama
William G. Caffey, Jr.	Southern District of Alabama
Vincent D. Maggiore	District of Arizona
William A. Scanland	District of Arizona
James R. Dooley	Central District of California
Peter M. Elliott	Central District of California
Richard Mednick	Central District of California
David N. Naugle	Central District of California
Robert L. Ordin	Central District of California
Joseph W. Hedrick, Jr.	Eastern District of California
Robert E. Woodward	Eastern District of California
Conley S. Brown	Northern District of California
Warren C. Moore	Northern District of California
Cameron W. Wolfe	Northern District of California
James W. Meyers	Southern District of California
Ross M. Pyle	Southern District of California
John F. McGrath	District of Colorado
John P. Moore	District of Colorado
Alan H.W. Shiff	District of Connecticut
George L. Proctor	Middle District of Florida
Thomas C. Britton	Southern District of Florida

Sidney M. Weaver	Southern District of Florida
A. David Kahn	Northern District of Georgia
Robert F. Hershner	Middle District of Georgia
Max J. Lipkin	Central District of Illinois
Robert L. Eisen	Northern District of Illinois
Thomas W. James	Northern District of Illinois
Charles B. McCormick	Northern District of Illinois
Richard L. Merrick	Northern District of Illinois
James D. Trabue	Southern District of Illinois
Russell H. Nehrig	Northern District of Indiana
Michael H. Kearns	Southern District of Indiana
Nicholas W. Sufana	Southern District of Indiana
Richard F. Stageman	Southern District of Iowa
James A. Pusateri	District of Kansas
Stewart E. Bland	Western District of Kentucky
Thomas M. Brahney III	Eastern District of Louisiana
LeRoy Smallenberger	Western District of Louisiana
Frederick A. Johnson	District of Maine
Harvey M. Lebowitz	District of Maryland
James N. Gabriel	District of Massachusetts
Harold Lavien	District of Massachusetts
Harry G. Hackett	Eastern District of Michigan
Lawrence E. Howard	Western District of Michigan
Jacob Dim	District of Minnesota
Hartley Nordin	District of Minnesota
Barney E. Eaton III	Southern District of Mississippi
James J. Barta	Eastern District of Missouri
Robert E. Brauer	Eastern District of Missouri
Joel Pelofsky	Western District of Missouri
Dennis J. Stewart	Western District of Missouri
David L. Crawford	District of Nebraska
Lloyd D. George	District of Nevada
D. Joseph DeVito	District of New Jersey
William Lipkin	District of New Jersey
Amel Stark	District of New Jersey
Robert A. Johnson	District of New Mexico
C. Albert Parente	Eastern District of New York
Manual J. Price	Eastern District of New York
Leon J. Marketos	Northern District of New York
Roy Babitt	Southern District of New York
Burton R. Lifland	Southern District of New York
Edward J. Ryan	Southern District of New York
Howard Schwartzberg	Southern District of New York
John W. Creahan	Western District of New York
Beryl E. McGuire	Western District of New York
Thomas M. Moore	Eastern District of North Carolina
Rufus W. Reynolds	Middle District of North Carolina
John F. Ray, Jr.	Northern District of Ohio
Richard L. Speer	Northern District of Ohio
Harold F. White	Northern District of Ohio
Charles A. Anderson	Southern District of Ohio
Duane J. Kelleher	Southern District of Ohio

Burton Perlman	Southern District of Ohio
Grady L. Pettigrew	Southern District of Ohio
William E. Rutledge	Northern District of Oklahoma
Robert L. Berry	Western District of Oklahoma
Henry L. Hess, Jr.	District of Oregon
C.E. Luckey	District of Oregon
Emil F. Goldhaber	Eastern District of Pennsylvania
Thomas C. Gibbons	Middle District of Pennsylvania
Joseph L. Cosetti	Western District of Pennsylvania
Antonio Hernandez-Rodriguez	District of Puerto Rico
J. Bratton Davis	District of South Carolina
Clive W. Bare	Eastern District of Tennessee
Russell H. Hippe, Jr.	Middle District of Tennessee
David S. Kennedy	Western District of Tennessee
Ernest J. Flowers	Northern District of Texas
John C. Ford	Northern District of Texas
Edward H. Patton, Jr.	Southern District of Texas
William M. Schultz	Southern District of Texas
Joseph C. Elliott	Western District of Texas
Hal J. Bonney, Jr.	Eastern District of Virginia
H. Clyde Pearson	Western District of Virginia
Robert W. Skidmore	Western District of Washington
Samuel J. Steiner	Western District of Washington
Edwin F. Flowers	Southern District of West Virginia
Howard W. Hilgendorf	Eastern District of Wisconsin
Robert D. Martin	Western District of Wisconsin
Harold L. Mai	District of Wyoming

We also acknowledge our debt to the judges whose participation in a two-week pretest of the judges' daily log form and instructions was of invaluable assistance in the design of the study. These were Judges Babitt of Southern New York, Blinn of Southern Texas, Eaton of Southern Mississippi, Kamlowsky of Northern West Virginia, Keller of Colorado, Kelley of Eastern Tennessee, Mai of Wyoming, McGuire of Western New York, Parente of Eastern New York, Paskay of Middle Florida, and Russell of Central California.

V. DATA ANALYSIS

This chapter describes the process by which the AO data and the judges' time-log data (both of which are described in chapter 4) were used to produce the estimates of judge time expended on cases shown in tables 2 and 3. The discussion is separated into three parts. The first part deals with data processing and adjustment, procedures that were determined by the form and context of this particular time study. The second part explains the mathematical method employed to estimate judge time consumed by cases. The third part presents a limited set of statistical analyses of the results.

Although 102 judges participated in the time study, only 98 were included in our calculations. Data from one judge were not included because of very infrequent reporting (only ten of the fifty-eight working days covered by the study); data from another judge were excluded because the judge resigned during the course of the study, creating concern that the work patterns reflected on his time logs might be abnormal. Data from a third judge were excluded because the average total time logged per day stood out as abnormally higher than that of any other participant and because several of this participant's daily logs showed a total of more than twenty-four hours worked. To balance out any bias we might have introduced by the third exclusion, we also excluded

data from the judge who reported the lowest daily average. Although the results would not have been noticeably different had we chosen not to exclude data from any participant, we felt the exclusions were warranted to help ensure against anomalous results in future analyses of the data.

Data Processing and Adjustment

This section explains how we refined the raw data provided by the participant judges and the Administrative Office to produce the basic information required for our method of estimating judge time consumed by cases. This process involved several conceptually difficult steps that have important bearing on the results. We therefore offer the following synopsis as an aid to comprehending the detailed discussions that follow.

> To determine the average rate of judge-time consumption by cases of a given type and age, we need to know both (a) the number of cases of the given type and age that is to be taken as accounting for judges' time expenditures and (b) the amount of judge time expended on these cases.
>
> Determining the number of cases. The analytic method required that we ignore case terminations and take account of all cases that might have reached any given age. For example, for cases of a given type and of age fifteen months, we must take account of all cases of that type filed fifteen months prior to the time study. The AO data, however, do not permit us to determine which cases filed fifteen months ago are or were on the dockets of the time study participants. Thus we estimate the number of cases pertaining to the participants' time expenditures by reference to the case filings in the district of each participant. For example, if one hundred cases of a given type were filed fifteen months ago in a district with n judges, we attribute $100/n$ such cases to each participant from that district. All cases thus attributed to the participants were aggregated as the caseload to which all participants' time expenditures pertained.

Identifying the cases associated with time-log entries. The judges' time logs identified cases only by docket number, requiring that cases be identified in the AO data in order to determine their type and date of filing. The sheer volume of this task made inevitable some instances in which a time-log entry could not be matched to any case in the AO data and other instances in which the entry was matched to the wrong case. (Matching of time-log entries to the wrong case tends to blur the distinctions between cases that consume relatively large and relatively small amounts of judge time--the larger amounts tend to be underestimated, while the smaller amounts tend to be overestimated.) Time-log entries accounting for 5.7 percent of case-related time expenditures could not be matched to any case recorded in the AO data, requiring that each time-log entry that could be matched to a case in the AO data be increased by 6.1 percent to compensate for the unmatched time data.

Time adjustments based on judges' level of participation in the study. To correct for problems arising from the summer timing of the study as well as from incomplete time data for some participants, it was necessary to adjust each time entry in accordance with the number of "office working days" reported by the participant. Thus, each participant's time entries were adjusted so that they totaled the equivalent of a typical month's work, namely, eighteen office working days. The adjustment was made by dividing each time entry by OWD/18, where OWD is the number of office working days reported by the participant.

Time adjustments based on case filing date. To mitigate the complexity of the data analysis, cases were treated as though they did not age during the twelve-week course of the time study. As a consequence, estimates of the average rate of time consumption for cases of a given type and age are based on moving averages of the underlying data. Treating each case as having a fixed age throughout the study required making an adjustment to account for the fact that cases filed during the course of the study were not observed for a full twelve weeks.

As explained in part 1, our method for estimating judge time consumed by cases calls for generation of patterns of judge time expended as a function of case age, for each of a number of case types. For a particular case type, the pattern is composed of a series of rates of judge-time consumption, namely, the average

amount of judge time consumed in the first month after filing, in the second month after filing, and so on, until the age is reached at which no cases consume any judge time (i.e., the age at which all cases have been disposed of). It should be understood that this method does not require that we have any actual knowledge of case terminations. Indeed, the method requires that we ignore case terminations, since the approach involves estimating the average amount of time consumed by cases each month after filing. To find the average at nineteen months after filing, for example, we must count all cases filed nineteen months ago--whether or not they have terminated.[26]

Two pieces of information are required to generate these patterns of judge-time consumption: To estimate the average time consumed per case of type A during the first month after filing, we need to know how many cases of that type and age were ever filed before the time study participants as well as the total time spent per month by the participant judges on cases of that type and age.

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26. The need to disregard case terminations is a corollary to the fundamental assumption of our case-weighting method. That assumption is simply that there exists some average amount of time consumed by cases of a particular type such that one can predict with fair accuracy the total amount of time that will be consumed by some relatively large group of cases of that type. Cases of a given type might consume an average of two hours each, although many might consume only a few minutes and a few might consume many hours. Even though it is difficult to predict how much time a single case will consume, one might very reliably predict that one thousand such cases will consume a total of two thousand hours. Merely knowing that every case eventually stops consuming judge time is sufficient for making such a prediction; one need not know why cases stop consuming judge time, and so one need not know anything about case terminations.

It is theoretically straightforward to determine how many cases of a given type and age were ever filed before the participants. For case type A of age two months, we can simply refer to the AO data and count the number of cases of type A that were filed two months prior to the time study and assigned to one of the participant judges. However, it is inexpedient to rely on the AO data to indicate the judge to whom a case was assigned. All the AO data purport to do is to indicate the judge to whom the case was initially assigned; cases are often transferred from one judge to another, for a variety of reasons including illness and changes in judicial personnel. Yet because cases are not often transferred from one district to another, one can assume without significant risk of error that a case originally filed in one district still remains in that district.

Accordingly, we chose to estimate how many cases of a given type and age were filed before the participants by reference to the district filings. If a three-judge district had ninety cases of type A filed n months ago, then we assumed that a participant from that district had thirty such cases. Because the final computations were based on the aggregate time expenditures and aggregate caseloads of the participants, we believe that this approach produced an accurate approximation of the actual aggregate of cases ever filed before the ninety-eight individual participants.

Judge time expended per month on cases of a given type and age was also measured as the aggregate of the time expenditures of the ninety-eight participants. This was a more complicated

task than that of estimating the number of cases in the participants' aggregate docket. It involved three distinct steps: identifying the cases that the judges actually worked on (and making adjustment for time spent on cases that could not be identified), adjusting the reported time expenditures according to the number of working days reported by the participant, and adjusting the time expenditures according to the age of the case worked on.

The judges' daily logs indicated both the amount of time expended and the docket number for the majority of the cases worked on during the study. For several reasons, some cases were not identified. First, the instructions permitted the judge to provide only one or a few docket numbers when a relatively brief time expenditure applied to a large number of cases (e.g., time spent signing a batch of orders or conducting discharge hearings en masse). Some of the cases identified by docket number were therefore mere surrogates for a larger group of cases. Thus, when we identified a case as being of a particular type and age and associated the corresponding time expenditure with that subset of the participants' aggregate docket, we were engaging in an approximation akin to that employed to estimate the aggregate docket. Second, the instructions permitted the judge to omit the docket number in certain circumstances, and participants occasionally failed to provide a docket number or provided one that was illegible. Finally, we were unable to locate in the AO data some of the docket numbers recorded by the participants, a prob-

lem that could have been caused by typographical errors in our data as well as in the AO data. The net consequence of these problems was that we could not identify cases for 5.7 percent of the reported total of 23,012 hours spent on code cases. We therefore adjusted each time expenditure associated with an identified case (the remaining 94.3 percent of time spent on code cases) by 6.1 percent so that the adjusted total of time spent on identified cases would equal the reported total of 23,012 hours.

Once these steps were completed, we were able to associate each time record with a particular case type and case age. It was then necessary to make two additional types of adjustment. First, each time record was adjusted according to the number of office working days[27] reported by the judge who provided the record, on the basis of an assumption that the average judge provides eighteen office working days per month. To illustrate, suppose that a judge who reported thirty-six office working days spent a total of two hours working on a particular case. The thirty-six days represents two months' of work (36/18), and so the case that consumed two hours of judge time is regarded as consuming time at a rate of one hour per month, thus contributing one hour to the total rate of judge time consumed per month by cases of that type and age. Thus, each time expenditure was divided by OWD/18, where OWD is the number of office working days reported by the participant.

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27. See the definition of "office working days" at 24-25.

A second adjustment was necessary to account for the fact that cases filed during the course of the twelve-week time-logging effort were not actually "observed" for a full twelve weeks. All cases filed prior to the start of the time-logging effort, in contrast, were observed for a full twelve weeks, in the sense that all such cases might have been worked on by a study participant at any time during the twelve-week period. To illustrate, if cases of a particular type and age consume judge time at an average rate of five minutes per week, each such case filed prior to the start of the logging effort would consume one hour of judge time over the course of the study, contributing about twenty-two minutes per month to the aggregate rate of judge-time consumption by all such cases (twenty-two because one month is four and one-third weeks). The same cases filed six weeks after the study began, however, would consume an average of thirty minutes each over the course of the study. Without making an adjustment to account for the shorter period of observation, each such case would appear to contribute only about eleven minutes per month to the aggregate rate of judge-time consumption. For this reason, adjustments were made to the time expenditures reported for each case filed after the start of the twelve-week logging effort. Because case age and time of filing were measured solely by reference to the month of filing, these adjustments reflect approximate rather than exact proportions of the twelve-week logging period.

The adjustments were as follows:[28] Time spent on cases filed prior to May 1981 was not adjusted. Time spent on cases filed in May 1981 was multiplied by 1.043 (i.e., increased by 4.3 percent). Time spent on cases filed in June 1981 was multiplied by 1.5. Time spent on cases filed in July 1981 was multiplied by 4.0. (Although the study continued until August 7, 1981, we did not have AO data for cases filed in August and so did not take direct account of any time spent on cases filed in that week. Any time reported for such cases was included in the 5.7 percent of time spent on cases not identifiable in AO data.)

Analysis of Judge Time Consumed by Cases of Various Types

Once the data-processing and data-adjustment steps explained above were completed, we had a data set that approximated what would have resulted from a simplified, idealized time study--one in which all participants reported all of their case-related time expenditures in the course of a "typical" work month (exactly eighteen office working days), in which every case was observed for exactly one month, and in which complete information was available about every case ever filed before the participants.

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28. The adjustments were determined by assuming that equal numbers of cases were filed in each week of the particular month, computing the average number of weeks cases filed in that month would have been observed, and then calculating the ratio of 12 weeks to that average. For instance, cases filed in the first 2 weeks of May were observed for 12 weeks, those filed in the third week of May were observed for an average of 11.5 weeks, and those filed in the fourth week were observed for 10.5 weeks. The average observation period for all cases filed in May was 11.5 weeks, and 12/11.5 = 1.043.

With such a data set, it is a straightforward matter to compute the average rate of judge-time consumption for each type of case at each case age and then to estimate the average total time consumed over the life[29] of a case of each designated case type.

It is not such a straightforward matter, however, to identify the set of case types to be used in the computations. The fourteen case types we studied were selected from an initial set of case types suggested by persons familiar with bankruptcy litigation, which was revised on the basis of a preliminary analysis of judge-time estimates. The result is a group of case types in which each type is reasonably different from the others in total time consumption, in pattern of time consumption, or in both. But it is by no means the only suitable taxonomy of bankruptcy cases and proceedings, nor may we assume that is it the best taxonomy possible for the purposes of a time study such as this.

Where the purpose of a time study is to aid decisions about the judicial manpower required to handle particular caseloads, making distinctions between different types of cases is useful only when, and to the extent that, two conditions are met. First, cases of different types must differ in the average amount of judge time each type consumes. Second, the caseloads of interest (e.g., the caseloads of different courts) must contain different proportions of cases of the designated types. If

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29. In this study, of course, the maximum case age was twenty-one months, so the estimates are limited to time consumed during the first twenty-one months after filing.

either one of these conditions is not met to some extent, then the taxonomy of case types and associated expenditures of judge time will be no better in distinguishing between caseloads than simple counts of total cases filed (i.e., results based on a "taxonomy" in which there is only one case type). Consequently, the potential usefulness of the estimates we have produced from this time study is totally dependent on the extent to which those conditions are met by the fourteen case types we chose to analyze. We believe these fourteen case types do permit significant distinctions to be made between the amounts of time consumed by cases of different types and between the caseloads of the various United States bankruptcy courts.

It is quite possible that statistical techniques could be employed to identify a better taxonomy for bankruptcy cases.[30] The timetable for completion of this project, however, did not permit us to pursue more sophisticated approaches.

Given the data from an idealized time study as mentioned above, we estimate the judge time consumed by the average case of a particular type by constructing the pattern of judge-time consumption as a function of case age. Consider, for example, case

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30. In fact, it is theoretically possible to devise a formula that would estimate judge time consumed as a function of various characteristics of a case or proceeding, without the artificial constraints imposed by any finite set of distinct case types. For example, one might be able to estimate the time consumed by a chapter 11 case without using the arbitrary distinction between those involving more and those involving less than $500,000 in debts, but instead including total debts in a formula that estimates judge-time consumption as a function of debts.

type 1, chapter 7 business bankruptcies with total scheduled secured and unsecured obligations of less than $100,000. Our processed and adjusted data show that the participants spent 46.3 hours per month (adjusted hours, as explained above) on cases of this type filed in July 1981 and that 1,526 such cases were filed before the participants in that month. Cases filed in July are regarded as being in their first month (zero months old) during the time study, so we infer that cases of type 1 consume judge time at the average rate of .0303 hours per month in the first month after filing. Similarly, we estimate that 1,550 cases of type 1 were filed before the participants in June 1981 and that they spent 114.4 hours per month on this group of cases. We therefore estimate the average time consumption to be .0738 hours per month at the age of one month. Rates of judge-time consumption are estimated in the same manner for each possible case age from zero through twenty-one months. The monthly rates of time consumption for case type 1 are illustrated graphically in Curve A of figure 1 infra. Curve A in figures 2 through 14 infra shows the patterns for case types 2 through 14, respectively.

Once we have estimated the rates of judge-time consumption by cases of type 1 at ages zero and one month, the sum of the two rates (.0303 + .0738 = .1041) indicates the average total amount of time consumed by a case of type 1 within two months after filing. Similarly, the sum of the rates for the first three months gives the total time consumed within three months, and so on. These sums are illustrated graphically by Curve B of figure 1

(and, for case types 2 through 14, by Curve B of figures 2 through 14). The sum of all rates from age zero through twenty-one months--the highest point reached by Curve B--estimates the total time consumed by the average case of type 1 within twenty-two months after filing. The maximum points reached by Curve B in figures 1 through 14 are the estimates reported in table 2 for case types 1 through 14, respectively. Figure 15 infra illustrates analogous computations made for cases of all types combined (i.e., the simplest situation, where the group of cases consists of only one case type) and provides the estimate for time consumed by the aggregate average case or proceeding.

We also computed estimates of judge-time consumption for a different set of case types. (The estimates are shown in table 3.) This "case-only" set includes the eight types of bankruptcy cases (corresponding to case types 1 through 8 of the set of fourteen types) and does not consider adversary proceedings as distinct from the cases in which those proceedings arose. The data processing and computations were exactly like those explained for the larger set of case types, although a few qualifications should be mentioned. First, because time reported as spent on an adversary proceeding was attributed to the case to which the proceeding related, no adjustments were made to account for proceedings filed after the start of the twelve-week logging effort (the adjustments were determined only according to case filing dates; see page 62). An additional adjustment was required, however, to account for 1,023 hours spent on proceedings

for which we could not identify the associated case. This time represented 4.8 percent of all case-related judge time. The logic of the adjustment is analogous to that employed for time spent on cases that could not be identified (see page 60) and involved increasing each time expenditure associated with an identifiable case by 5 percent (the 95.2 percent of time spent on identifiable cases must be increased by 5 percent to bring the total to 100 percent). Curves A and B for the case-only estimates are shown in figures 16 through 23 infra.

Inspection of Curves A and B can afford significant insight into the accuracy of the results shown in tables 2 and 3. Consider figure 1, for case type 1. Were we not limited in this study to cases of age twenty-one months or less, we could extend Curve A indefinitely, until we reached an age at which no cases still consumed judge time. The corresponding extension of Curve B would increase asymptotically, toward a maximum point that would indicate the average time consumed over the life of a case of type 1. Curves A and B are thus different representations of the same information, and Curve B cannot reach a maximum until Curve A is extended to a case age at which the rate of judge-time consumption is zero. Keep in mind that these curves represent a composite picture of judge-time consumption by cases of type 1; no single case of that type is likely to consume some small amount of judge time every month for twenty-two months after filing. Most cases probably consume all the judge time they ever consume on one or two isolated occasions. A graph analogous to

Curve A for a single typical case would show one or two isolated bursts of time expenditure and values of zero at all other points. As a composite, Curve A represents the average of a large number of curves for individual cases, whose bursts of time expenditure are of varying height and occur at varying lengths of time after filing. If we had an infinite number of cases to "observe" in a time study, including cases as old as any cases ever become, and an infinite supply of judges' daily logs to analyze, Curves A and B would be perfectly smooth and Curve B would eventually become perfectly horizontal at a value that we could confidently assert was the average amount of judge time consumed per case.

The degree of smoothness or roughness of Curves A and B indicates the statistical accuracy or inaccuracy, respectively, of the results given in tables 2 and 3. The extent to which Curve A fails to reach zero--and, correspondingly, the extent to which Curve B fails to level off at a maximum--indicates the extent to which the results in tables 2 and 3 are underestimated because of the study's limitation to cases not older than twenty-one months.[31] The next section offers some additional insight into the statistical characteristics of the data.

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31. These characteristics of the curves afford no insight into the extent to which the results are biased by a reduced rate of trial-like activity in the summer months or by any limitations other than those mentioned here.

FIGURE 1: Judge-Time Consumption as a Function of Case Age for Case Type 1

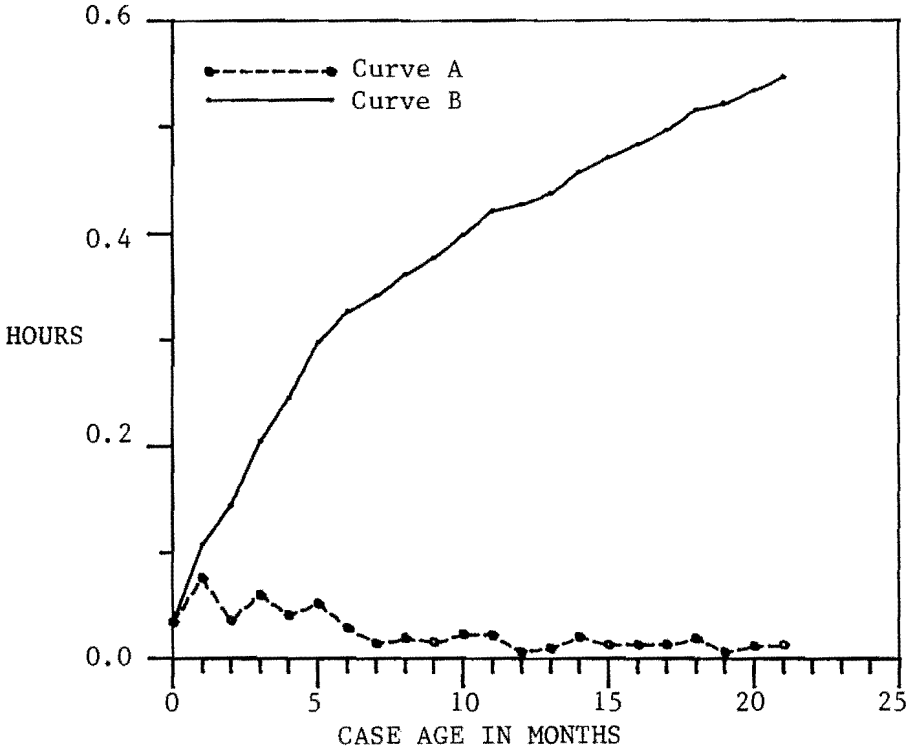
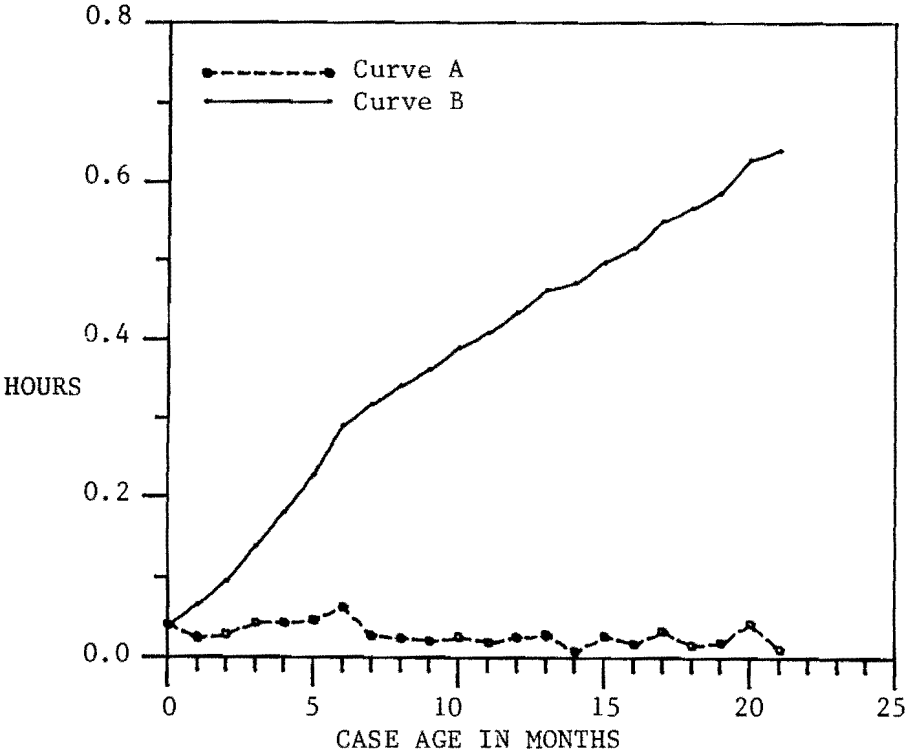


FIGURE 2: Judge-Time Consumption as a Function of Case Age for Case Type 2



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 3: Judge-Time Consumption as a Function of Case Age for Case Type 3

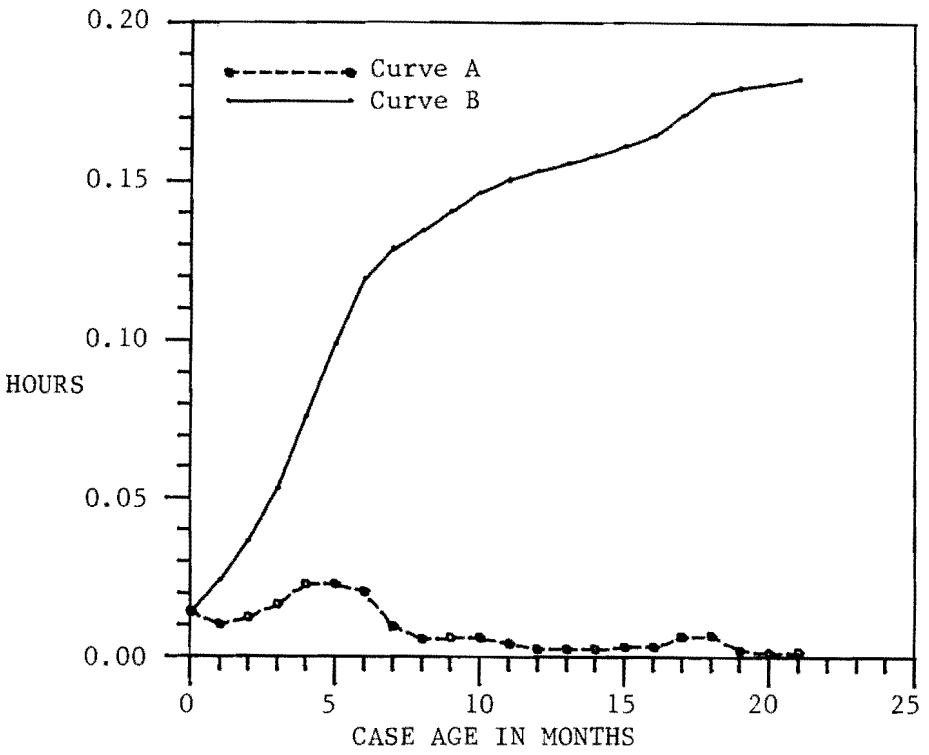
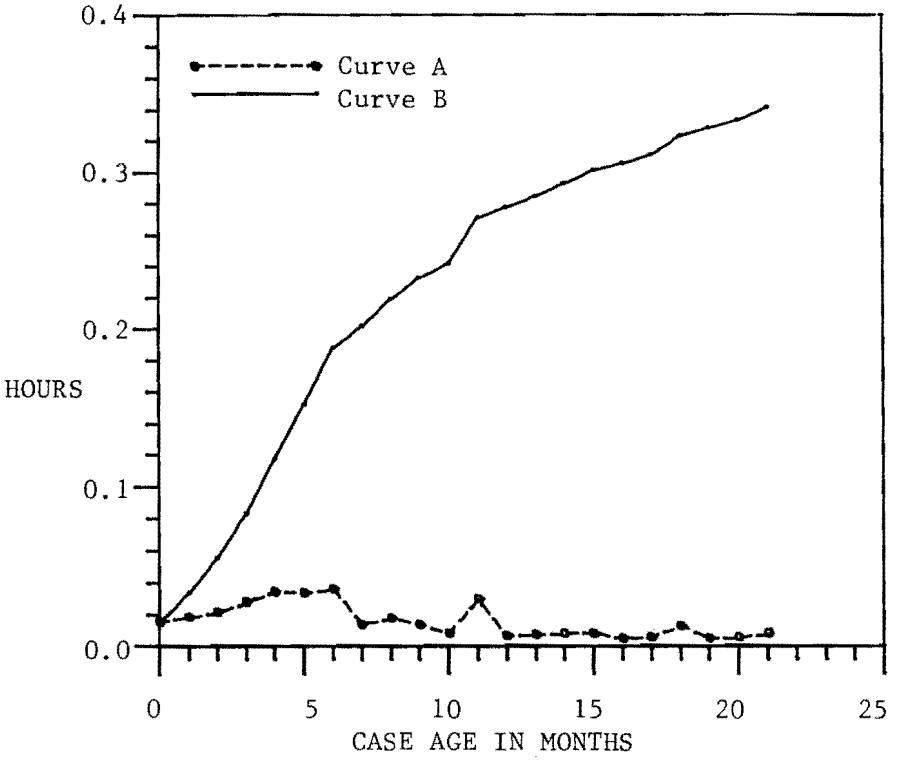


FIGURE 4: Judge-Time Consumption as a Function of Case Age for Case Type 4



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 5: Judge-Time Consumption as a Function of Case Age for Case Type 5

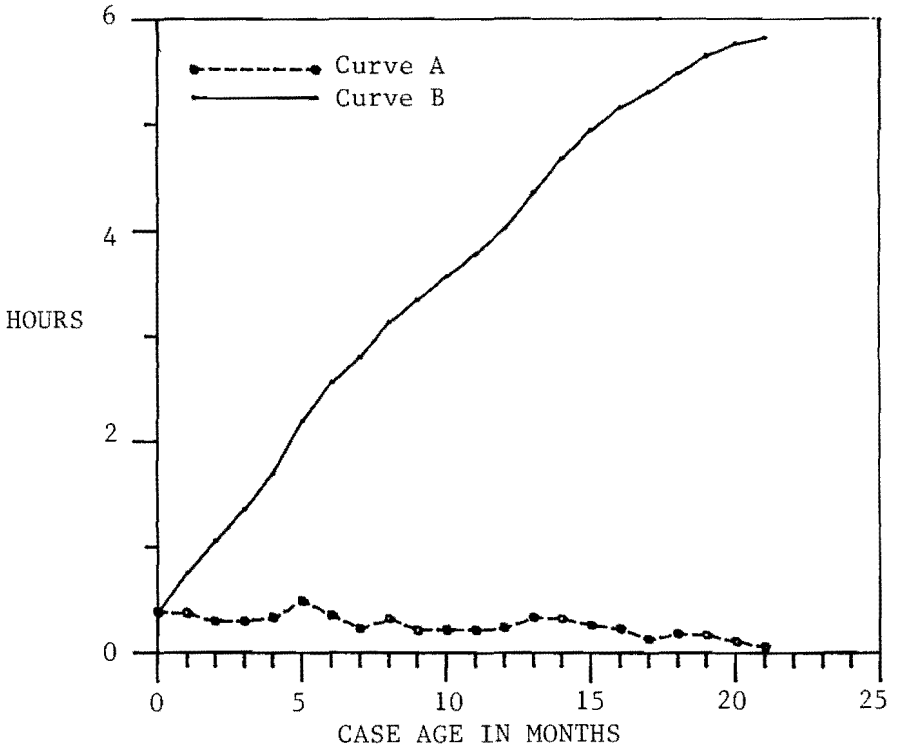
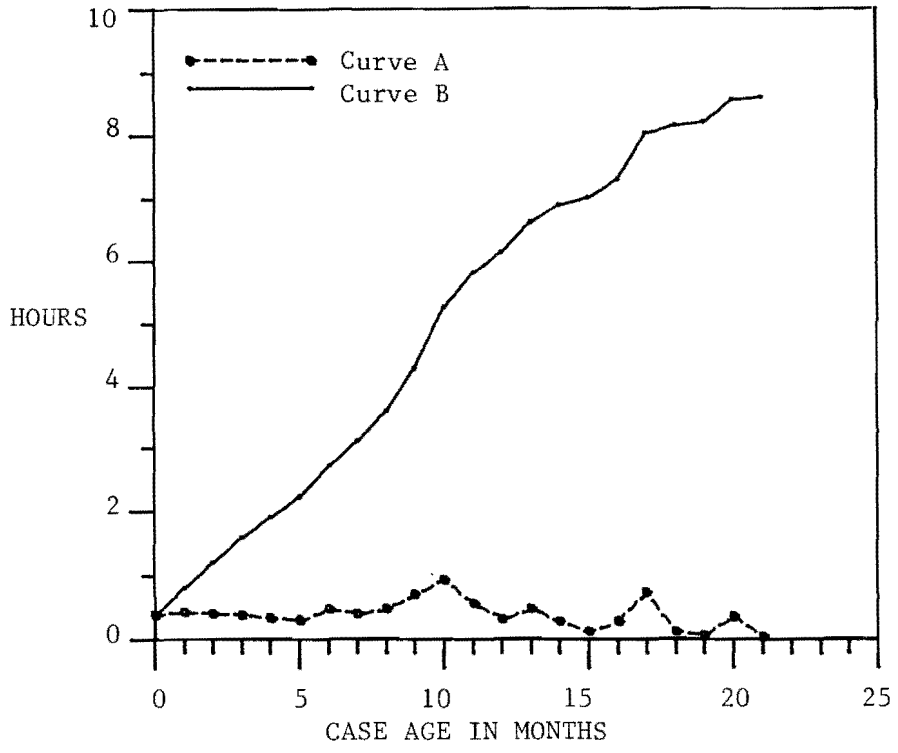


FIGURE 6: Judge-Time Consumption as a Function of Case Age for Case Type 6



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 7: Judge-Time Consumption as a Function of Case Age for Case Type 7

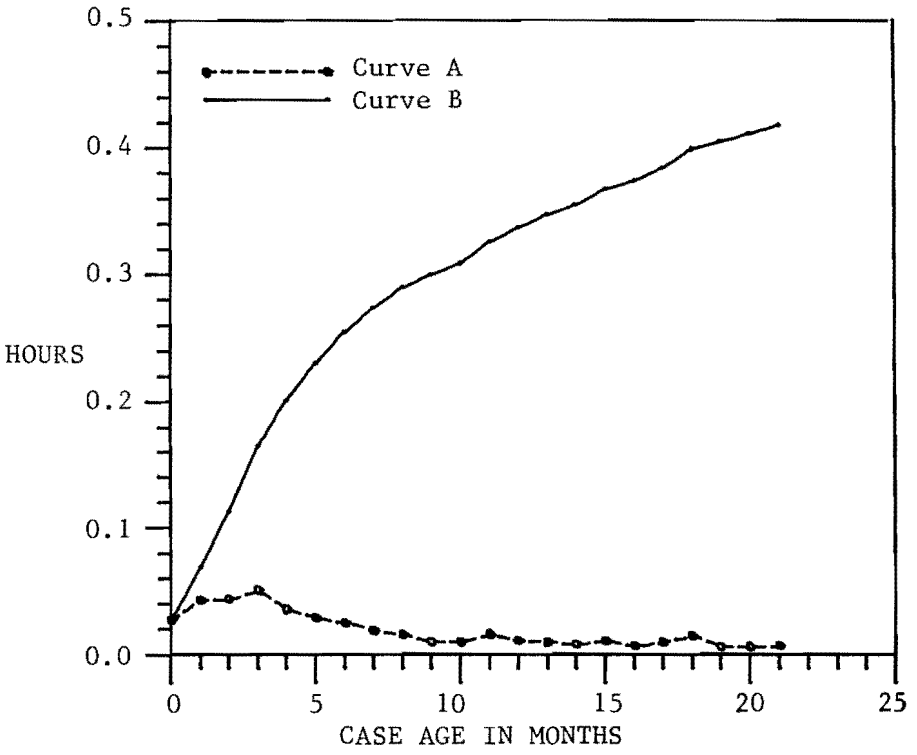
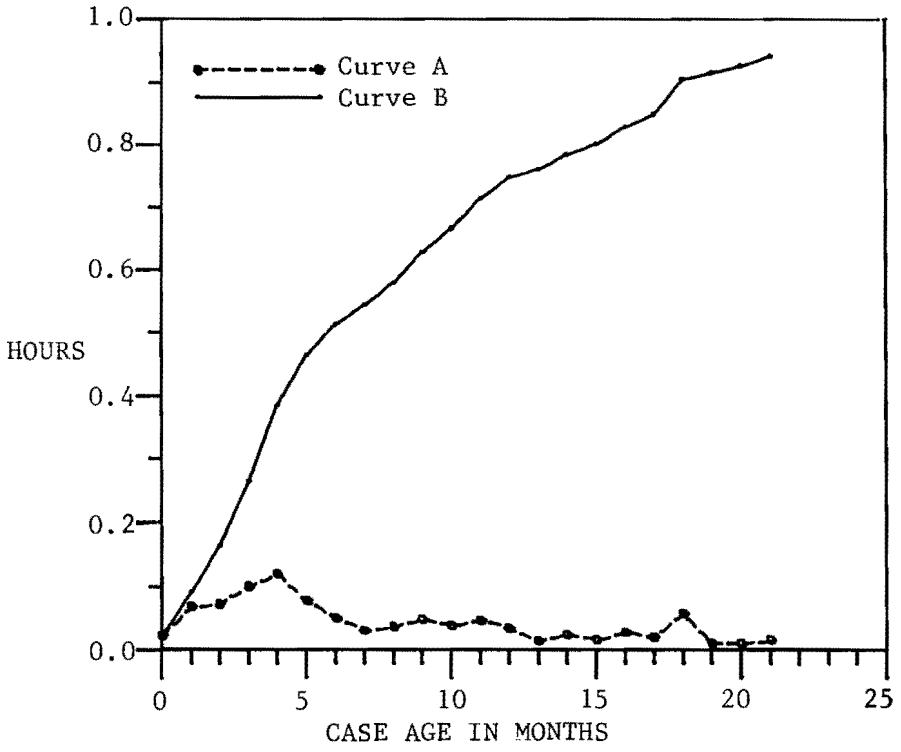


FIGURE 8: Judge-Time Consumption as a Function of Case Age for Case Type 8



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 9: Judge-Time Consumption as a Function of Case Age for Case Type 9

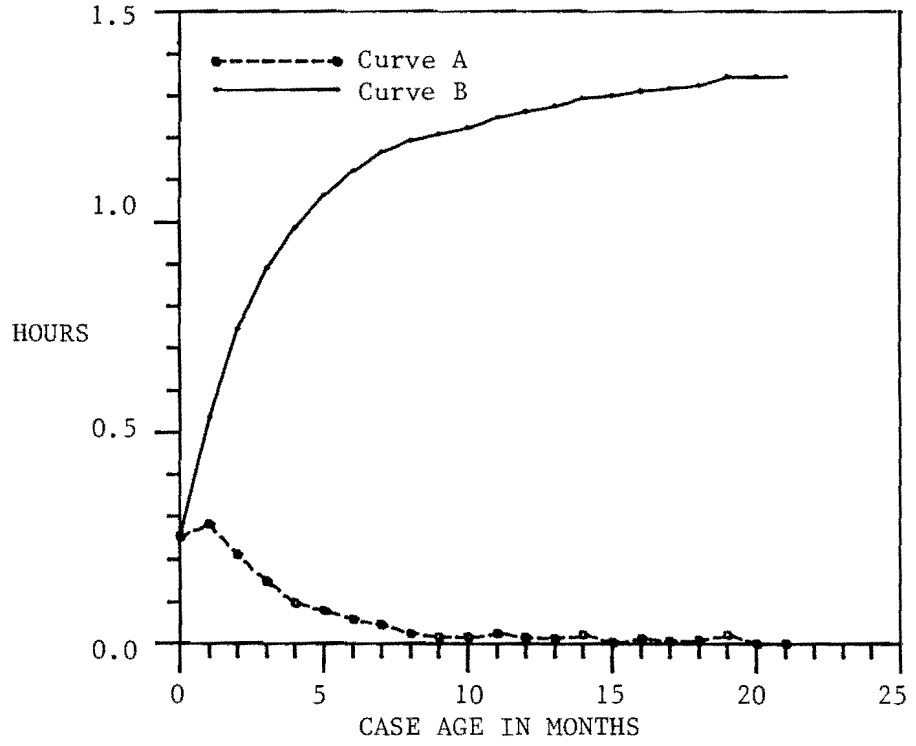
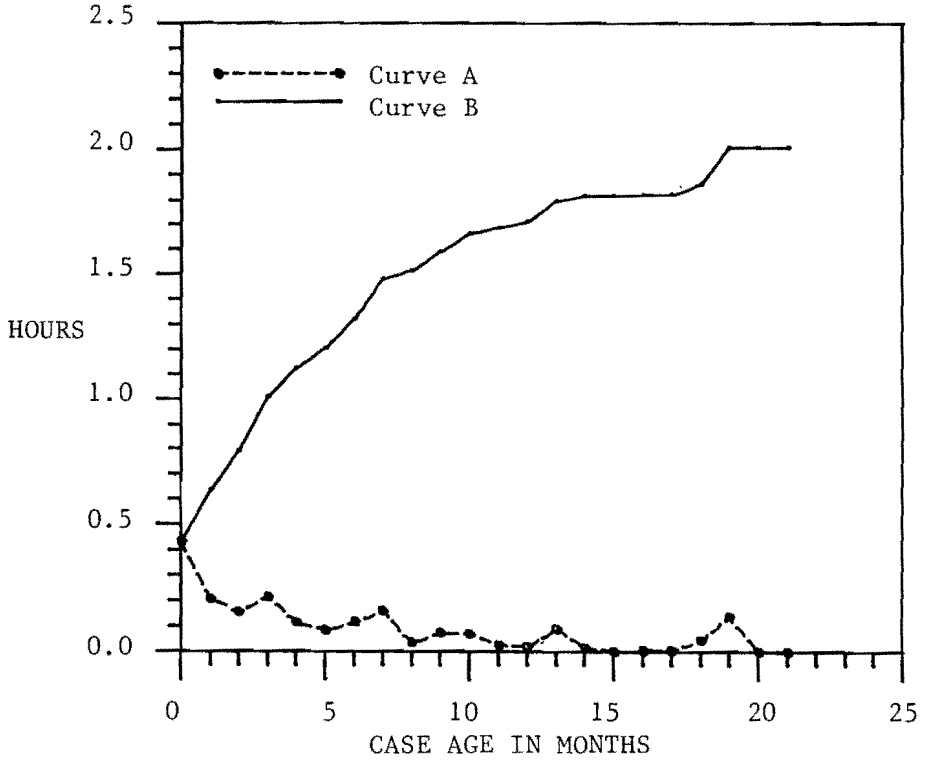


FIGURE 10: Judge-Time Consumption as a Function of Case Age for Case Type 10



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 11: Judge-Time Consumption as a Function of Case Age for Case Type 11

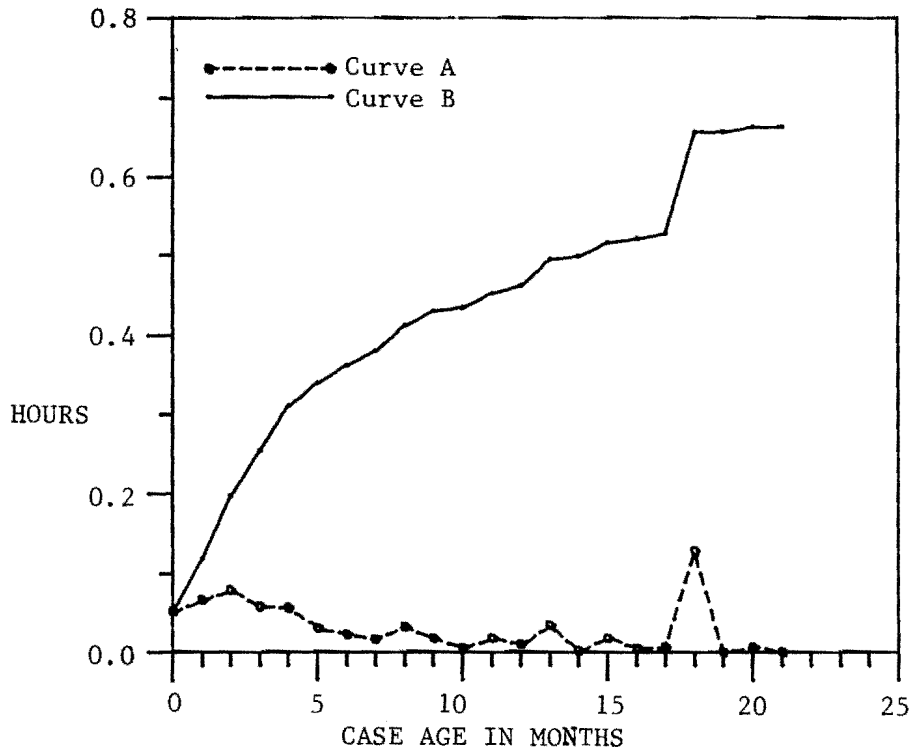
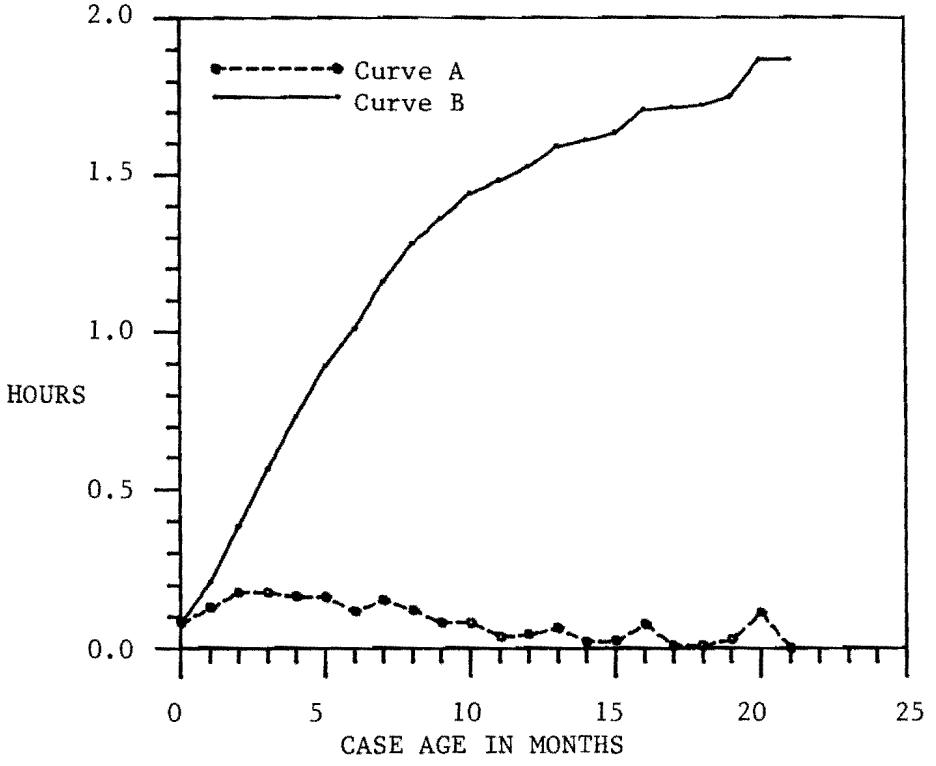


FIGURE 12: Judge-Time Consumption as a Function of Case Age for Case Type 12



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 13: Judge-Time Consumption as a Function of Case Age for Case Type 13

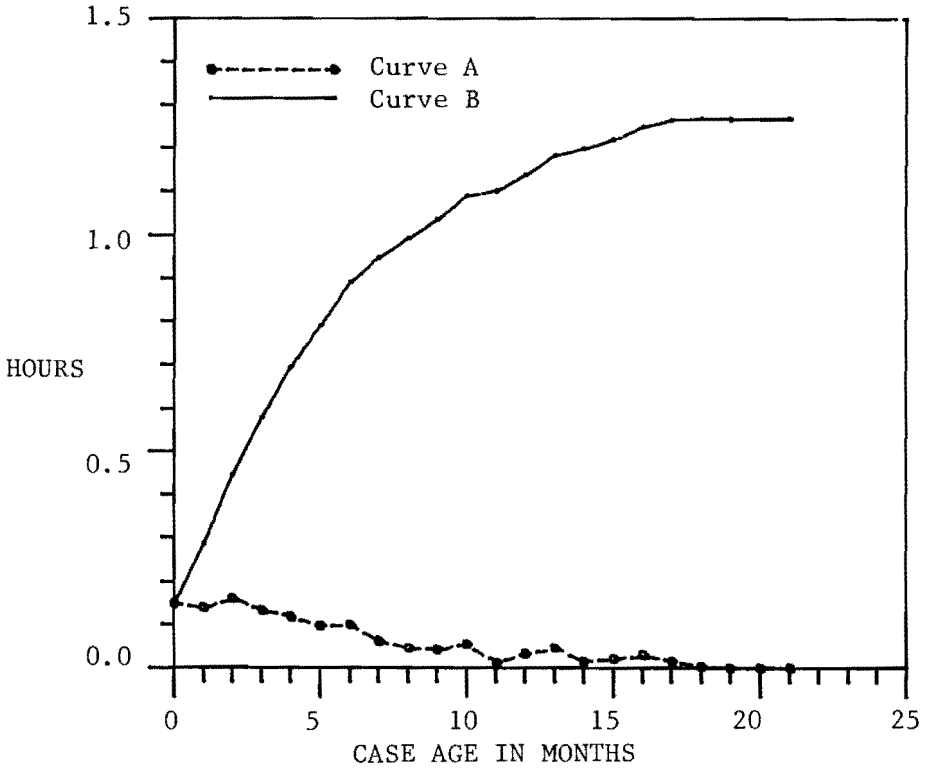
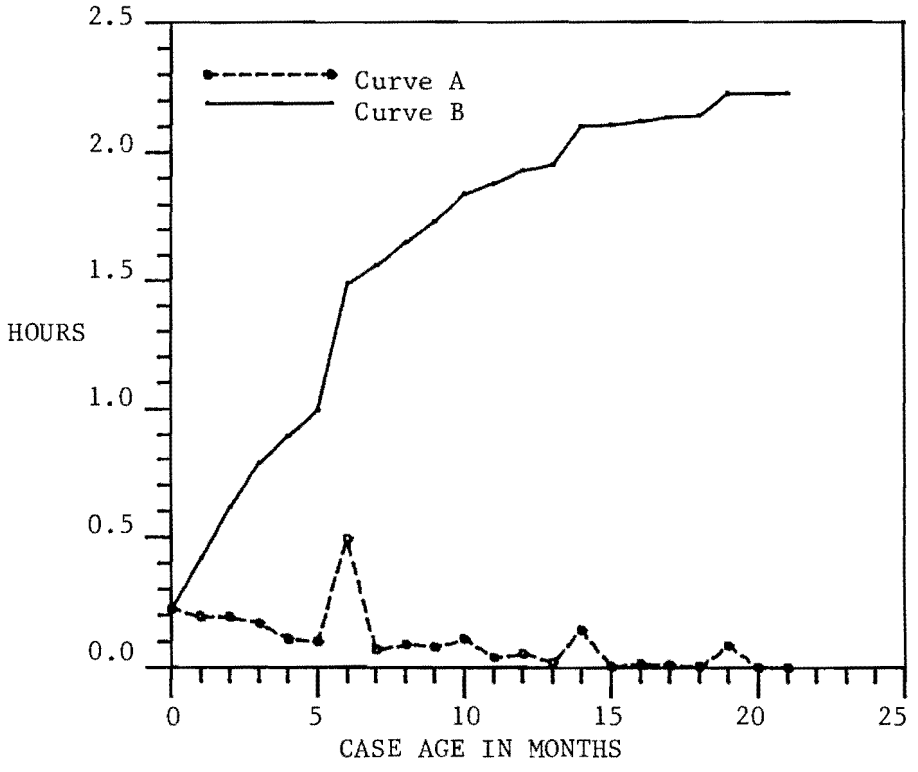


FIGURE 14: Judge-Time Consumption as a Function of Case Age for Case Type 14



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 15: Judge-Time Consumption as a Function of Case Age for the Average Case (Aggregate Average)

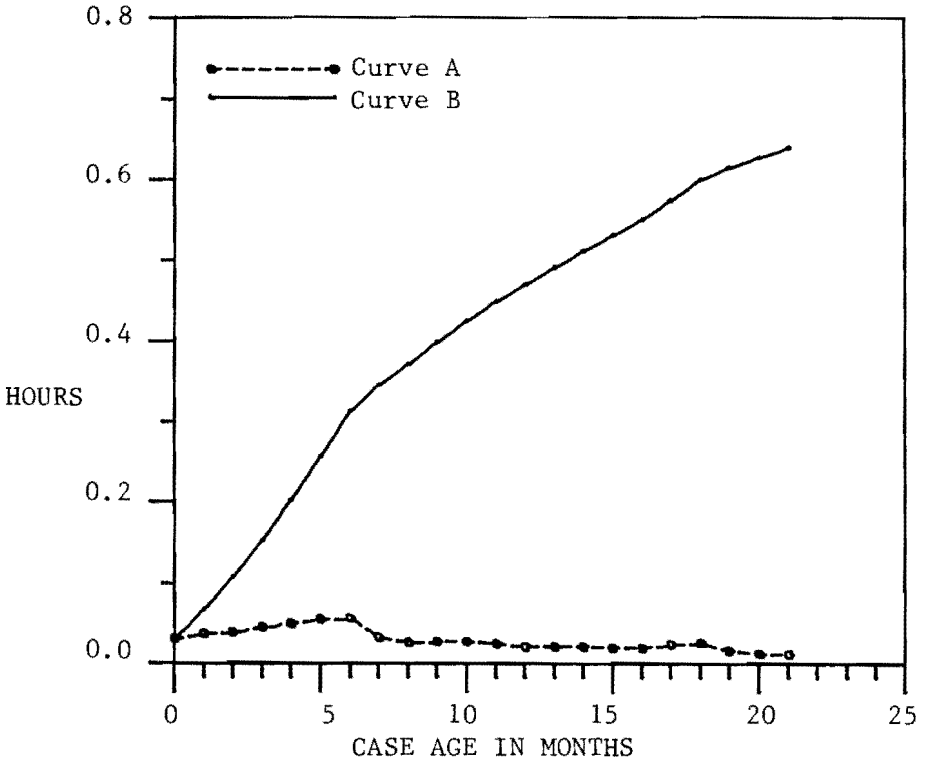
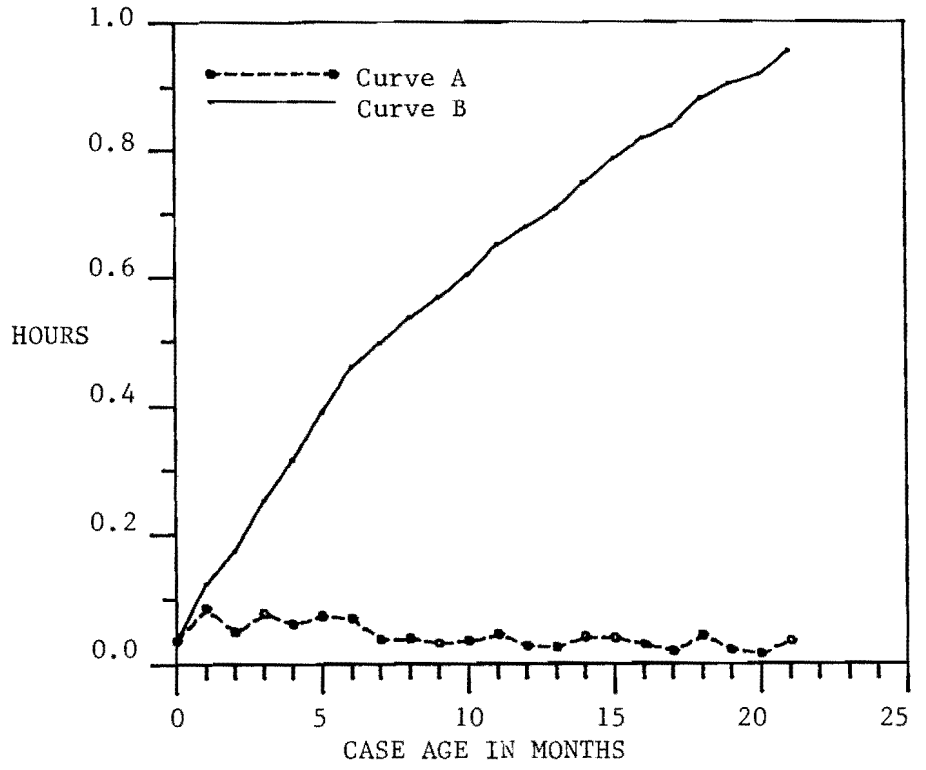


FIGURE 16: Judge-Time Consumption as a Function of Case Age for Case Type 1 (Case-Only Estimates)



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 17: Judge-Time Consumption as a Function of Case Age for Case Type 2 (Case-Only Estimates)

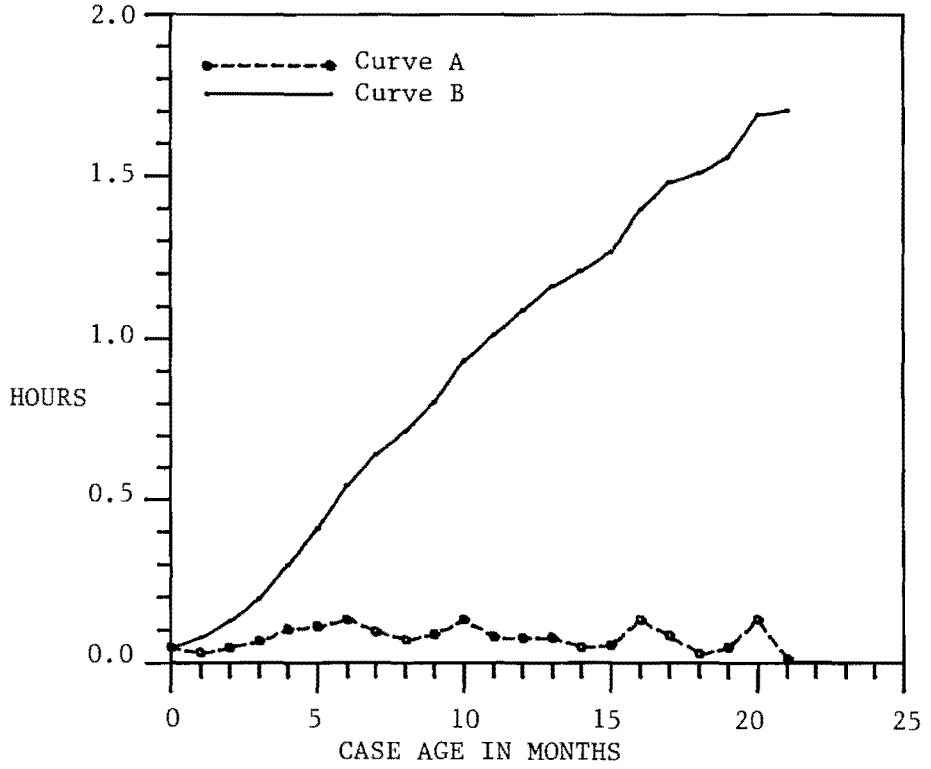
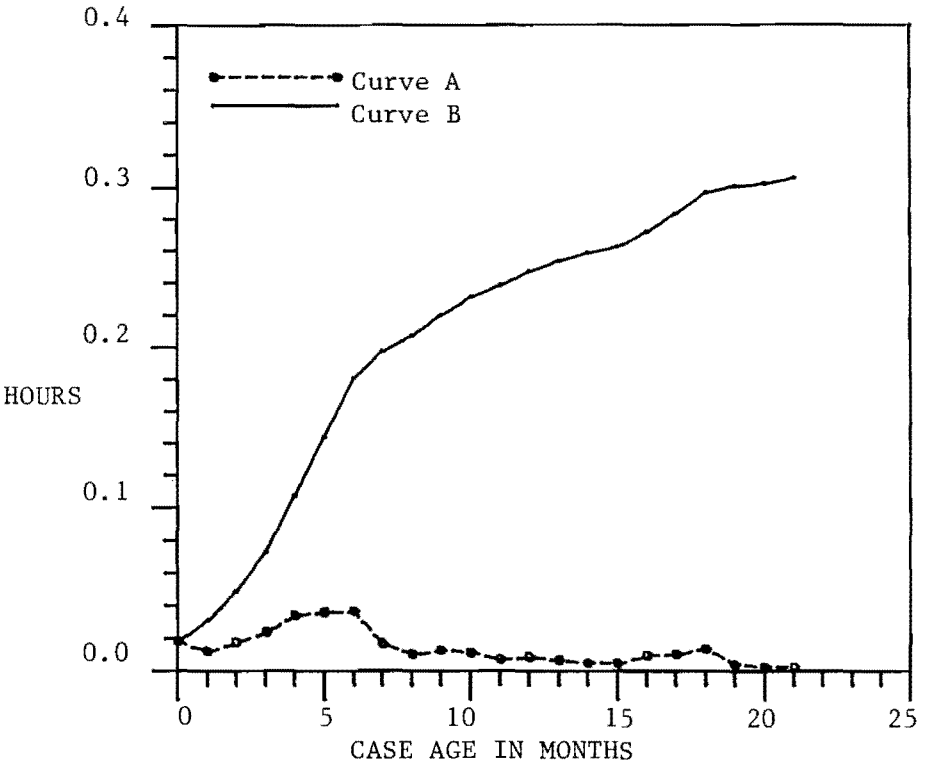


FIGURE 18: Judge-Time Consumption as a Function of Case Age for Case Type 3 (Case-Only Estimates)



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 19: Judge-Time Consumption as a Function of Case Age for Case Type 4 (Case-Only Estimates)

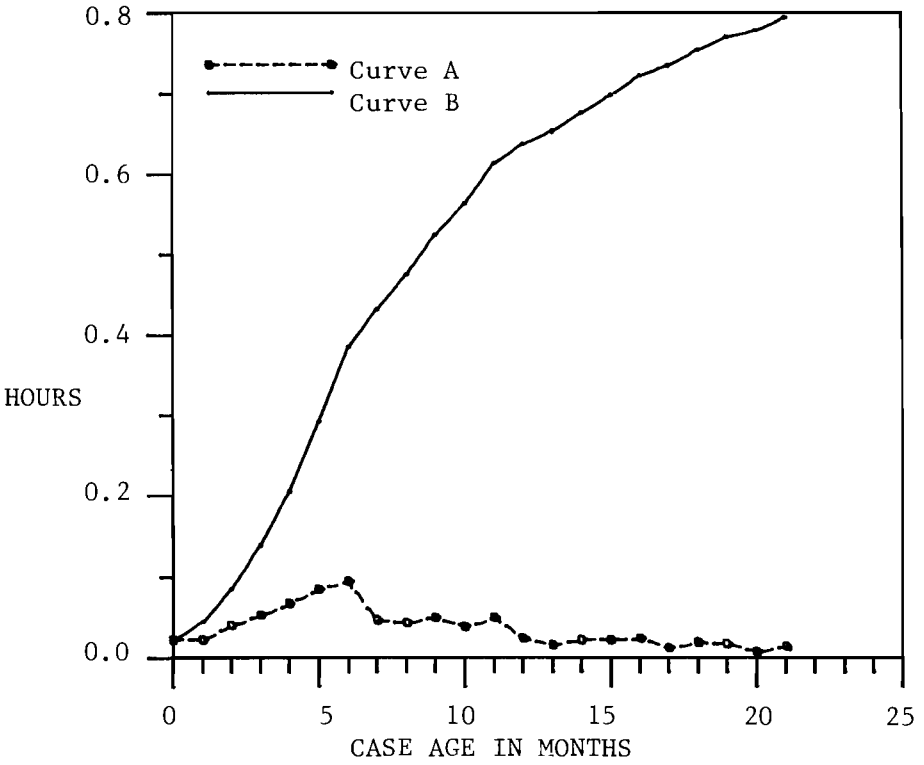
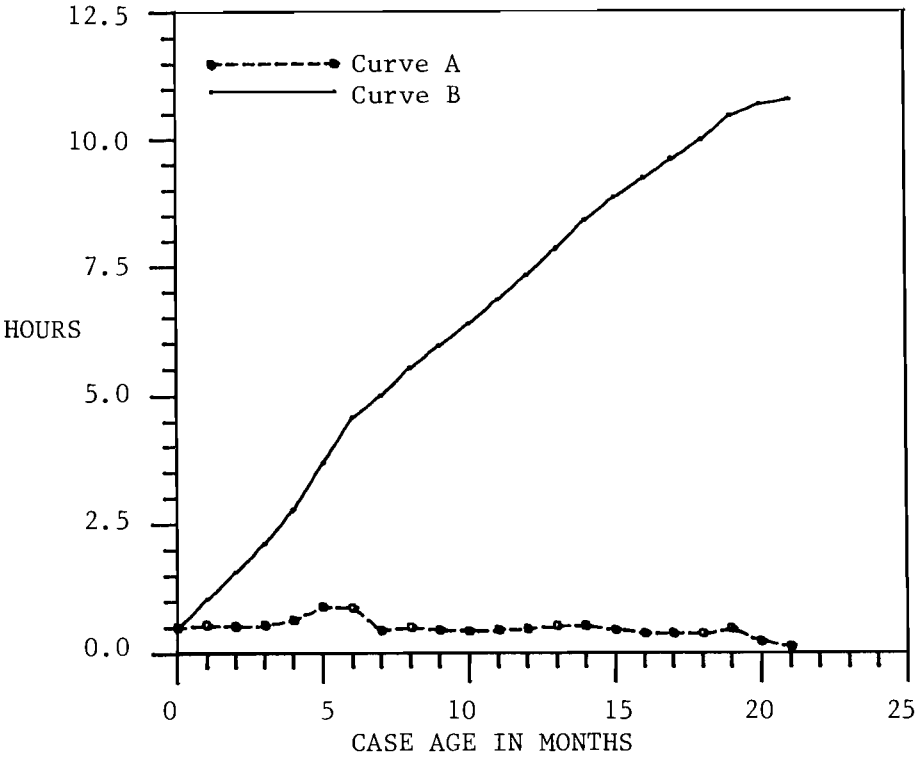


FIGURE 20: Judge-Time Consumption as a Function of Case Age for Case Type 5 (Case-Only Estimates)



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 21: Judge-Time Consumption as a Function of Case Age for Case Type 6 (Case-Only Estimates)

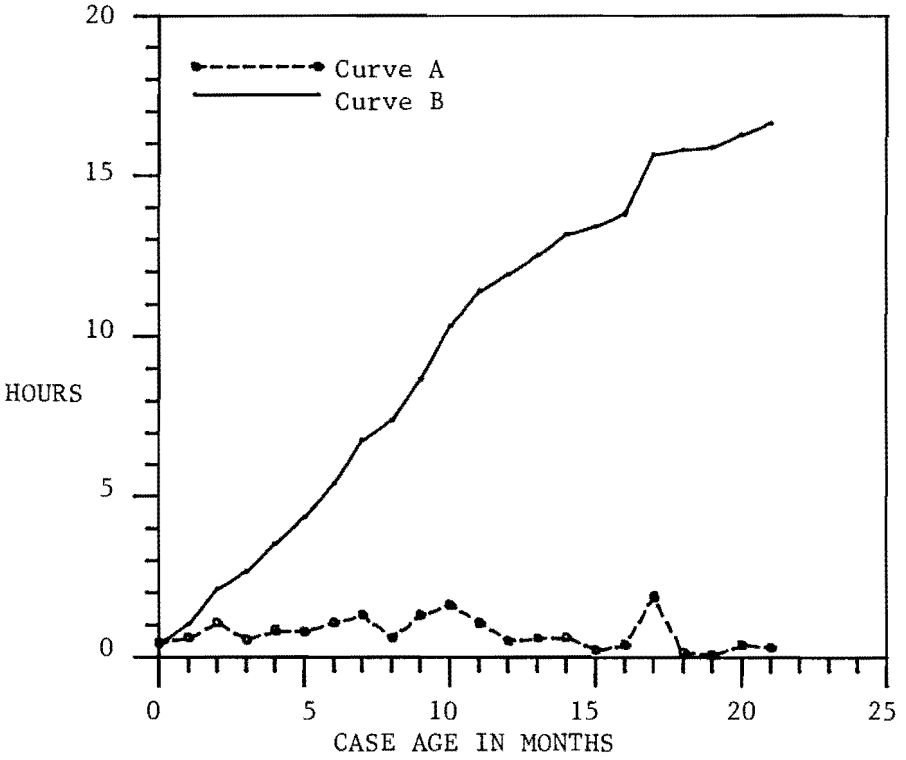
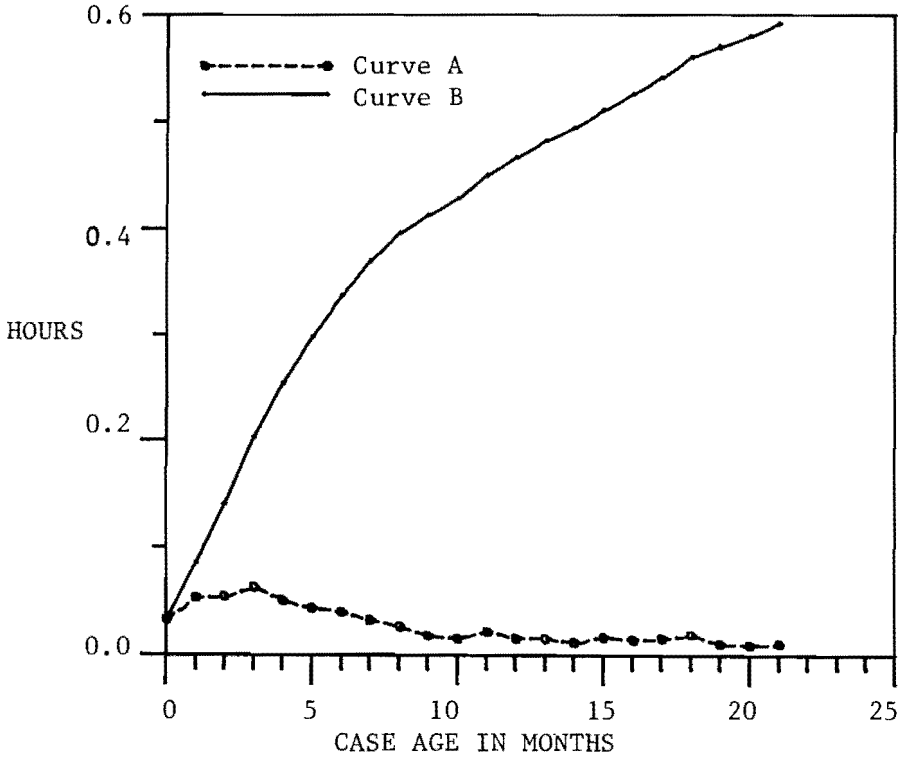
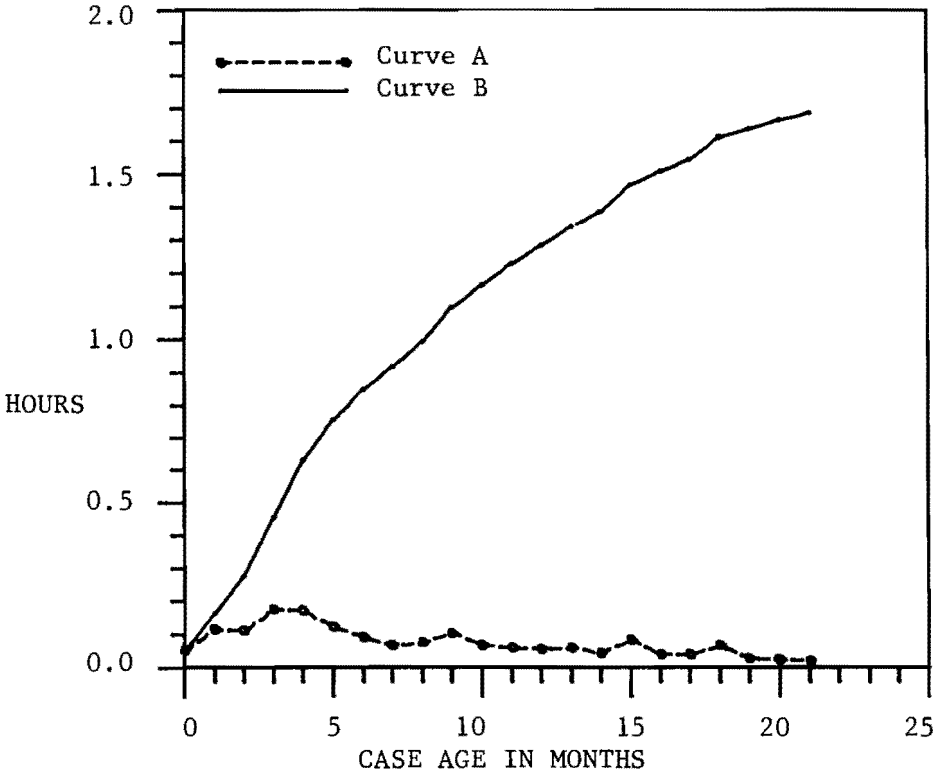


FIGURE 22: Judge-Time Consumption as a Function of Case Age for Case Type 7 (Case-Only Estimates)



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

FIGURE 23: Judge-Time Consumption as a Function of Case Age for Case Type 8 (Case-Only Estimates)



NOTE: Vertical axis shows rate of time consumption in hours per month for Curve A, total hours consumed for Curve B.

Statistical Analyses

Time studies such as the present one might well be called "snapshot" studies of long-term events. They permit us to make inferences about the judge time consumed over the life of an average case from data that reveal only a portion of the events in the life of any single case. Consequently, the methods employed in such a study to estimate time consumed by cases do not to our knowledge lend themselves to analysis of the results by standard statistical techniques. Had we been able to observe the judge time consumed by large numbers of cases from the time of filing until termination, we could have estimated average times by the most straightforward arithmetic and evaluated the probable accuracy of the results using standard statistical techniques. Because it was considered infeasible to obtain detailed data about judge-time expenditures other than with the snapshot technique, we had to employ methods for estimating averages that require complex methods of statistical analysis. Although we intend to develop refined methods of statistical analysis that can guide the design of future judicial time studies, here we can only offer a variety of insights into the statistical behavior of the present results. We cannot offer a definitive analysis of these results.

The results shown in table 1--the average amounts of time spent by the participant judges on various types of activity--are amenable to standard techniques of statistical analysis. Table 8 shows the averages reported in table 1, along with associated

standard deviations. The standard deviation (SD) is a measure of variability that can indicate the representativeness of the estimated averages. SD_1 is the standard deviation taken over all days and indicates the combined day-to-day and judge-to-judge variation in time expenditures. SD_2 is the standard deviation of the average values for individual judges, an indication of the judge-to-judge variation alone.

The method for computing average judge time consumed by cases of particular types that was used to produce the estimates shown in tables 2 and 3 is one of several possible methods that might be employed for the same purposes. Comparison of the results shown in table 2 with those obtained from two alternative computation methods lends assurance that the results are not particularly dependent on the method we have chosen.

TABLE 8

STATISTICS FOR AVERAGE DAILY TIME EXPENDITURES

	Hours per Day		
Activity	Mean	SD_1	SD_2
Work on act cases	0.9	1.3	0.57
Work on code cases or proceedings	5.1	2.5	1.30
Travel	0.3	1.0	0.33
Court administration	1.0	1.2	0.62
Other	0.9	1.2	0.61
Total	8.1	2.3	1.40

NOTE: SD = standard deviation; SD_1 indicates day-to-day and judge-to-judge variation combined, and SD_2 indicates judge-to-judge variation alone.

The alternative that is most analogous to the method employed in this study involves a complementary way of applying the adjustments to account for different levels of reporting by the participants and to estimate the numbers of cases filed before the participants. In the method outlined earlier in this chapter, the caseload of each participant was assumed to be the judge's proportional share of the cases of each case type in the caseload of the district, and the time expenditures reported by each participant were adjusted to a standardized month's worth of work (eighteen office working days). The data provided by each participant therefore contributed equally to the aggregate estimates of caseload and time expenditure. A judge who reported fifty office working days did not have twice the influence on the aggregate values as a judge who reported twenty-five days. Since the participants were selected in proportion to the number of judges in each district, each district (among the sixty-two districts with participants in the study) influenced the results in approximate proportion to its number of judges.

The alternative approach is to apply the adjustments in inverse fashion--to the caseloads of the participants rather than to the time expenditures reported. Instead of halving each time expenditure recorded by a judge who reported thirty-six office working days (two months' worth of work), we can double the estimated caseload of that judge. In effect, we treat the participant as contributing the equivalent of two judge-months to the data, regard the data as though they represented a single month's

work on the part of two judges, and treat the time expenditures as applying to twice the per-judge caseload from the district. When the adjustments are applied in this fashion, the effect is that each district influences the results in proportion to the level of participation by judges in the district. Our point here is simply to suggest that the two approaches are identical in an abstract sense; they would produce different results only as a consequence of random variation or of systematic differences among judges in the time spent on cases of the same type and age. The results of this alternative method are shown in table 9, under the heading "Inverse Adjustment Method." That the two methods produce very similar results can be taken as evidence (but not as strong proof) that the results are statistically reliable.

The second alternative method is that which has been employed in previous Center time studies. This method results in measures of the relative burden associated with different case types. For each case type, the weight is simply PT/PL, where PT is the percentage of all judge time spent on cases of the given type and PL is the percentage of such cases in the caseload. Weights computed using this method can be compared with those shown in table 2 by multiplying each PT/PL weight by the amount of time consumed by the average case (average across all case types). We performed these computations, using the total filings for each case type since October 1979 as the relevant caseload. The results achieved by this method of computation are shown in

TABLE 9

COMPARISON OF ESTIMATES OF JUDGE TIME CONSUMED (IN HOURS) BY CASE TYPE FOR THREE METHODS OF COMPUTATION

Case Type	Present Method	Inverse Adjustment Method	PT/PL Method
1	0.55	0.55	0.56
2	0.66	0.60	0.66
3	0.19	0.18	0.18
4	0.35	0.34	0.36
5	5.92	5.87	5.86
6	8.80	8.81	8.91
7	0.42	0.42	0.41
8	0.94	0.94	1.04
9	1.35	1.33	1.50
10	2.05	1.90	2.11
11	0.68	0.71	0.81
12	1.85	1.80	2.01
13	1.25	1.24	1.38
14	2.20	2.26	2.29

table 9, under the heading "PT/PL Method." Again, the estimates of judge time spent on different types of cases do not differ substantially from the results shown in table 2. The similarity of the results produced by this method suggests very little about statistical reliability because the two methods would be expected to produce different results under circumstances in which the magnitude of the filings for different types of cases is changing at different rates.[32] Nonetheless, the similarity is reassuring because it suggests that varying rates of filing are not a factor of major significance.

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32. The fundamental difference between the method employed in this study and that employed in past Center studies is that the present method takes partial account of the influence of

TABLE 10

NUMBER OF JUDGE-HOURS SPENT ON CASES
AND NUMBER OF CASES WORKED ON

Case Type	Hours	Cases
1	1,051.7	2,226
2	565.5	1,403
3	3,033.1	11,558
4	814.6	2,525
5	2,982.9	2,205
6	792.7	470
7	2,613.0	7,594
8	618.7	1,172
9	3,223.8	4,257
10	586.3	576
11	1,017.5	2,228
12	2,102.0	2,271
13	2,010.0	2,360
14	959.1	825
Total	22,370.9	41,670

The information in table 10 provides further insight into the accuracy of the results given in table 2. Table 10 shows, for each case type, the total number of hours spent on cases by the participants and the total number of cases worked on. In general, we would expect the estimates in table 2 to be most accurate among the case types for which large numbers of cases were worked on and least accurate among the case types for which relatively few cases were worked on during the study. This is simply

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changing filing rates, whereas the past method was theoretically appropriate only under conditions of unchanging filing rates. Complex problems are presented by the dynamics of case filings and the interaction between caseload and median times from filing to termination. We expect to explore these matters as we develop refined methods for application to future time studies.

a matter of the size of the sample of data from which the table 2 estimates were derived.[33]

Although the data in table 10 may be of interest to the reader, the smoothness and roughness of the curves in figures 1 through 23 are more useful keys to the statistical reliability of the study's results.

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33. Because each case worked on contributed only a small "fragment" to the relevant pattern of judge-time consumption, sample size is a misleading term. For example, the 470 cases of type 6 that were worked on by the participants were used to provide estimates of judge-time consumption as a function of case age over twenty-two different ages (ages zero through twenty-one months). So each of the twenty-two fragments of the patterns illustrated by Curves A and B of figure 6 was based on time spent on an average of about twenty-one cases (470/22). This suggests that any individual fragment of the pattern--the estimated rate of judge-time consumption for a given case age in months--could be quite unreliable. But the estimate in table 2, which is the sum of all twenty-two fragments, can be expected to be considerably more reliable.

APPENDIX

Materials Used to Enlist Study Participants and to Collect Study Data

LETTER OF INVITATION TO BANKRUPTCY JUDGES

Dear Judge _____,

Possibly the most important responsibility of the director of the Administrative Office during the transition period under the Bankruptcy Reform Act is the study to determine the number of bankruptcy judges that will be needed for the bankruptcy courts after March 31, 1984.

Over the past two decades, we have found that in assessing the needs of the district courts, the conduct of time studies to establish "case weights" has been essential to both the judiciary and Congress. Case weights are objective measurements of the demands on judge time for various kinds of cases and activities. They enable us to evaluate the number of judges needed to handle properly the different caseloads of the federal judicial districts.

The Administrative Office and the Federal Judicial Center, which has gained considerable experience in the conduct of time studies for the district courts, have designed a study tailored to the specialized nature of bankruptcy cases, proceedings, and activities.

We are asking you, as one of a selected group of bankruptcy judges, to participate in the study for twelve weeks by keeping a log of the time you devote to various matters. The study has been designed to be as little work as possible for the participants. We have no doubt, however, that participation will impose an additional burden on you, and we recognize that it comes at a time when you may be severely overburdened by your current caseload. But it is precisely because so many of you are so severely burdened by increasing workloads that a reliable time study is needed. The information gathered will be reliable only if virtually all of the judges who are asked agree to participate.

The study method aims to create a large aggregate of data about the amount of judge time spent on various kinds of cases, proceedings, and non-case-related activities. The large volume of detailed data permits computation of accurate averages regarding demands on judge time. There is no purpose to evaluate the information in respect to individual judges. The logs you provide in the course of the study will be kept confidential by the Judicial Center and will not be tabulated on an individual basis.

Please do not be concerned about your participation skewing the results because of present unique circumstances--at any chosen time, some of the more than 200 bankruptcy judges will be in an abnormal situation (due, for instance, to illness, a need to cover for an absent colleague, or work on an extraordinarily burdensome case). For the judiciary as a whole, this is normal and needs to be reflected in the time study. Summer vacation plans need not interfere with your participation; the study will take account of seasonal variations in vacation leave.

The enclosed fact sheet explains the project in more detail. Also enclosed are sufficient log sheets to get the survey under way, with instructions and envelopes for return of the forms. We would like you to commence keeping your daily log on Monday, May 18, 1981, and continue to do so through Friday, August 7, 1981. If you have any questions regarding the study, please call William Trencher of the Bankruptcy Division (FTS 633-6233) or John Shapard of the Federal Judicial Center (FTS 633-6341).

We are deeply appreciative of the consistently high level of cooperation accorded by the judiciary when we have had to seek the judges' direct assistance. We are in your debt. Without minimizing the burdens imposed by the present survey, we hope that the benefit to the entire federal judiciary will provide a manifold return.

Sincerely,

William E. Foley
Director, Administrative Office
of the United States Courts

A. Leo Levin
Director, Federal Judicial Center

1981 BANKRUPTCY COURT TIME STUDY
FACT SHEET

by

John Shapard
Technical Supervisor

This may help answer questions you have about the time study. I will be happy to answer any other questions you may have, by phone or mail.

General

The 1981 Bankruptcy Court Time Study is patterned after the 1979 Federal District Court Time Study,* the latest of several such studies undertaken in the district courts over the past fifteen years. The time study is the only feasible method for constructing a reliable index of the burdens on judges' time imposed by the variety of cases coming before the federal courts. Measures of the burden associated with different kinds of cases are usually called case weights. Case weights derived from time studies have played an important role in Judicial Conference recommendations and congressional decisions regarding the need for judgeships in the district courts. The purpose of this time study is to generate case weights that will inform similar decisions regarding the number of judgeships needed for the bankruptcy courts after March 31, 1984.

An illustration of a simplified case-weighting system may be helpful. Suppose (for the sake of simplicity) that all cases coming before a particular court could be classified as being of type A, B, or C. Suppose further that, on the average, cases of type A consume 1 hour of judge time from filing to disposition (this is just an average; some cases consume much more time, while others are terminated with almost no need for the judge's attention). Cases of type B consume an average of 2 hours, and those of type C consume 10 hours. Suppose further that the 1,600

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*Flanders, The 1979 Federal District Court Time Study (Federal Judicial Center 1980), available on request from the Center's Information Services Office, Dolley Madison House, 1520 H Street, N.W., Washington, D.C. 20005.

yearly filings include 1,000 type A cases, 500 type B cases, and 100 type C cases. Then we can conclude that the caseload demands about 3,000 case-related judge-hours (1,000 x 1 hour + 500 x 2 hours + 100 x 10 hours = 3,000 hours). If another court had annual filings of 500 cases of each type, we would know that its caseload, although smaller in number, demanded more than twice as much time (namely, 500 x 1 + 500 x 2 + 500 x 10 = 6,500 hours).

The new expanded jurisdiction of the bankruptcy courts has naturally created uncertainty about the manpower requirements of the bankruptcy courts and an urgent need for reliable information of the kind that accurate case weights can provide.

The case weights to be derived from the 1981 Bankruptcy Court Time Study will be based on two kinds of information. First is an extensive set of records of the time expenditures of a randomly selected sample of about one hundred full-time bankruptcy judges. Critical in these records are notations of the time spent on particular cases and adversary proceedings, identified by docket number. The second source of information is the Administrative Office's computerized file of data on the cases and adversary proceedings filed, terminated, and pending in the bankruptcy courts. Critical in these data is information that can be used to identify cases and proceedings by docket number and to classify them according to a variety of factors that may be correlated with the time the case will demand of the bankruptcy judge (e.g., nature of matters and proceedings in the case, chapter under which a case is commenced, whether petition is voluntary or involuntary, total scheduled assets, etc.). Taken together, this massive set of information can be used to compute useful estimates of the weight associated with different kinds of bankruptcy cases and adversary proceedings.

Specific Questions

What is involved in participation in the time study?

Participating judges will fill out a time-log form each day for twelve weeks, showing the amount of time they spent on each of their judicial activities during the study period. For time spent on cases or adversary proceedings arising under the Bankruptcy Reform Act ("code-case-related activities"), the judge will also be asked to provide relevant docket numbers. The forms will be coded by keypunch operators, the docket numbers will be related by computer to Administrative Office statistical records of cases and adversary proceedings, and totals will be produced for the amount of judge time devoted to each type of activity and each type of case and adversary proceeding (e.g., total time spent on chapter 7 voluntary business cases, including adversary proceedings). All tabulations will be made at the national level, with the exception of time spent traveling between places

of holding court (a factor that should vary depending on the geographic size and number of judges in the district).

What is the purpose of the survey?

The purpose is to help the Administrative Office, the Judicial Conference, and the Congress in determining the number of judgeships for bankruptcy courts after March 31, 1984, on a district-by-district basis. Because the caseloads of the various districts differ in the mix of cases they contain, it is important that this kind of evaluation recognize differences in the amount of judge time required by different cases and adversary proceedings. The time study method permits calculation of different weights for different kinds of cases, at whatever level of specificity is needed to accurately reflect different demands on judge time. The study also enables us to account for the amount of time judges must spend in activities not related to specific cases, such as administrative duties and travel.

The objectivity and accuracy of this kind of study make resulting projections of judgeship needs both reliable and persuasive.

The case weights produced by the study, as well as the underlying time-log data, may also be used to evaluate the impact on the bankruptcy courts of potential changes in law or economic circumstances.

Why must the forms be completed by the judge rather than by a clerk or secretary?

Large and important portions of a judge's work are done outside the courtroom and cannot be accurately known to anyone but the judge. To rely exclusively on courtroom activity as a basis for measuring the expenditure of judge time would be to ignore time spent on non-case-related tasks and to risk serious underweighting of matters that require substantial research or writing work on the part of the judge.

Why ask so many judges to participate?

Accuracy of the results of the study requires a large and representative sample of participating judges. Although the mathematics of the time study method are very complicated in terms of statistical analysis, the statistical problem is essentially the same as that of any random sample: A random sample of five chapter 7 cases is far less certain to provide an accurate picture of the average chapter 7 case than is a random sample of one hundred such cases. This problem is exacerbated, rather than

eased, by the fact that the time study provides a large sample of segments of time spent on a wide variety of cases.

Statistics can be misleading. Will the case weights lock a court into only the number of judges specified by the national statistics?

This might indeed result if those who rely on the case-weight measurements fail to appreciate their limitations. Experience has taught, however, that there is little risk of this in the case of judges and the Congress. Case weights are offered for their ability to reflect differences between districts only insofar as those differences are reflected in relative numbers of chapter 7 cases, chapter 11 cases, section 362 hearings, and the like. We have and will continue to caution that the weights do not account for differences that surely do exist in the difficulty of specific kinds of cases arising in different districts. Case weights have been used only as a starting point for determining judgeship needs in the district courts, with special local conditions being factored in to arrive at final recommendations.

What happens if a judge declines to participate?

The validity of the case weights derived from the study depends on the random selection of participant judges, which ensures that the participants are representative of the range of practices and caseload burdens in the bankruptcy judiciary as a whole. Judges who decline to participate will be replaced by other judges randomly chosen. The judge who declines is removing his practices and circumstances from the view of the time study, thus increasing the possibility of inaccurate results and jeopardizing the work of judges who do participate.

Can't the figures be distorted?

One of the reasons weighted caseload figures have been influential in demonstrating needs for additional judges is the immunity of the time study method from any effective manipulation. There is no identifiable profile for the data from any particular judge or court that would have an effect on the national average case weights sufficient to measurably help or hurt that particular court. Of course, there will be human fallibility in estimating time, causing some to underestimate and others to overestimate their time expenditures. The large volume of information contained in the time logs, however, affords maximum insurance that these errors will balance out in the computations.

Information reported to the Administrative Office on case filings originates with counsel and is often very misleading, particularly regarding such things as scheduled assets and nature of suit in an adversary proceeding. Won't this result in misleading case weights?

Errors in the case filing data undoubtedly serve to somewhat reduce the accuracy of case weights derived on the basis of those data. But such errors do not render the weights wholly misleading. The weights are both derived from and applied to the same reported caseload data. A particular weight actually applies, for example, to cases in which counsel claim scheduled assets of less than $10,000, not necessarily to cases in which assets actually are less than $10,000. As long as the data are only misleading in modest and consistent ways, the weights will be more reliable than any other means for measuring caseload burden.

Similarly, we are aware of varying practices regarding what matters are required to be brought on by complaint. This too will undoubtedly limit the accuracy of the weights, since judge time that is attributed to the bankruptcy case in some courts will in other courts be attributed to an adversary proceeding. But the study permits the flexibility of treating time spent on adversary proceedings either independently or as part of the time spent on the relevant case. This allows us to correct for known variations in local practices.

It should perhaps be emphasized here that, for the purposes of the time study, adversary proceedings are of interest simply because they are separately docketed and therefore capable of being weighted as separate entities. This in turn enhances our ability to identify the most useful case-weighting system that can be derived from the time logs and associated Administrative Office data on filings and terminations. The fact that certain matters of an adversary nature are brought on by motion rather than complaint is not of special consequence for purposes of the time study.

Who is conducting the time study?

The study is being conducted jointly by the Bankruptcy Division of the Administrative Office and the Research Division of the Federal Judicial Center. John Shapard, of the Judicial Center, is responsible for the technical aspects of the project; the staff of the Bankruptcy Division is responsible for general administration; and Berkeley Wright, chief of the Bankruptcy Division, is the project supervisor. Questions may be addressed to Bill Trencher of the Bankruptcy Division at (FTS) 633-6233, Berkeley Wright at (FTS) 633-6231, or John Shapard at (FTS) 633-6341.

INSTRUCTIONS FOR COMPLETING DAILY TIME LOG

Please review these general instructions and the specific steps outlined below before you commence keeping your time log.

A. Please complete one line of the log for each work-related task you undertake, wherever and whenever performed. You are encouraged to note even the briefest of tasks, although it is permissible to ignore a task that takes less than five minutes if the task is not a regular or recurring activity.

B. You are urged to fill out the form yourself, daily, because your secretary or clerk is unlikely to know as accurately as you how much of your time is consumed on matters such as research in chambers or reading advance sheets at home. Please record time and activity as soon as the event is completed, if possible.

Steps for Completing the Daily Log

1. Start a new log sheet each day and enter the date. If more than one sheet is needed for a day, please be sure to enter the date on each. Please use only the log sheets provided to you (or photocopies)--these have been preprinted with a code number assigned to you for the project.

2. As soon as each activity is completed, enter the time expended, as accurately as possible.

3. Record the type of activity by encircling one and only one of the possible types of activity that describes the task completed. These activities are defined as follows:

AC = act case. This category includes any task related to a particular bankruptcy act (as opposed to code) case.

TR = travel. This category pertains exclusively to the time you spend traveling (and returning) to hold court somewhere other than your regular headquarters office. Should you travel solely for administrative purposes, this should be reported as administrative activity (see below). Should you travel exclusively for case-related purposes, e.g., to view immobile evidence, this should be reported as case-related activity.

AD = administrative. This category pertains to tasks that arise from your position as a bankruptcy judge and that are re-

quired to be done by you but that are not related to a particular case or cases. Examples are meetings with court personnel, approving leave time, scheduling a calendar, answering non-case-related inquiries by telephone or correspondence, revising local rules of court, etc.

OTH = other. This category pertains to all tasks that arise from your position as a bankruptcy judge, other than travel (as defined), administration, and activities related to specific cases. This category includes speaking at bar association meetings, attending seminars, reading legal periodicals and advance sheets, etc. Although purely personal activities should not be included, any activities you regard as incumbent on you as a bankruptcy judge should be recorded.

CCR = code case related. This category should be used to report all of your time expenditures that are associated with particular code cases and adversary proceedings. This includes not only time spent on the bench but also time spent in chambers or at home doing research, writing opinions, or thinking about a case or proceeding. If, and only if, you encircle this activity designator, you must also complete the case docket number and (if applicable) the adversary proceeding docket number on the right side of the log. If an adversary proceeding arises out of a case filed in a district or office other than the one in which you preside, also indicate that district and office number.

The time you spend on "CCR" tasks, as well as the docket numbers of the cases and adversary proceedings, is the most important information in the study. Accurate recording of time and docket numbers cannot be overemphasized.

"Case or adversary proceeding (AP) now completed" box. Check this box if, and only if, you anticipate that the time expenditure recorded represents the end of significant judge involvement in the case or proceeding. For some kinds of cases and proceedings, the judge's work may be essentially complete long before the matter is formally terminated. Your mark in this box will provide us with notice that the the case has been disposed of in terms of its demand for judge time, information we might not otherwise learn until the case is formally terminated months later. Do not check this box for a condensed entry, as discussed below.

Note: Single Activities That Involve More Than One Case or Proceeding

Certain of your code-case-related activities may involve more than one case or proceeding. Examples are conducting discharge hearings en masse for several debtors and reviewing and signing numerous orders in one sitting. It is always preferred

that you report these activities by using one line of the log sheet for each case, providing the docket number of each and allocating the total time among the cases or proceedings as you deem appropriate. If this requirement would be unduly burdensome because of the number of cases or proceedings involved, however, it is permissible to condense the entries by allocating the total time among one or more cases that are representative of the larger group. This kind of condensed entry is acceptable because the case-weight computations involve determining the total judge time expended on each specific type of case or proceeding. We may compute, for example, the total time expended on chapter 7 voluntary nonbusiness cases with more than $10,000 scheduled assets, the total time on section 523(a)(2) dischargeability matters, etc. What is important to note is that we will distinguish different types of cases and proceedings in a very detailed way. Therefore, you should not condense entries by attributing time spent on a number of cases to a single representative case unless the cases are of the same very specific type. It is not sufficient that all cases are of the same general type, such as chapter 7 cases. If different specific types of cases are involved in a single activity, you should either attribute the total time among several cases, each being representative of one of the specific types (e.g., one chapter 7 voluntary business case, one chapter 7 voluntary nonbusiness case) or simply allocate the time among all of the cases, without condensing the entry. Whenever you allocate time in the condensed manner, indicate the number of cases involved in parentheses following the docket number chosen for the entry.

A sample daily log with a description of entries is attached.

Returning the Forms

Please return the completed forms weekly to John Shapard of the Federal Judicial Center in the enclosed return envelopes, mailing them at the end of the day Friday or on Monday, if possible. To ensure against losses in the mail, please make photocopies of the forms before you mail them, and retain these at least until the study is complete and we notify you that all your log sheets have been received.

If you will be away from your office for a week or more on vacation, at a seminar, or the like, please return a single form in advance, noting the nature and anticipated length of your absence. We will be keypunching the time logs as they are received, correlating them by docket numbers to computer data on the relevant cases and proceedings, and performing preliminary data analysis. We need to stay fully current with the influx of data in order to be able to perform case-weight computations and

statistical analysis promptly after your time-logging effort is complete.

If you are ever uncertain of how to proceed, please call one of the following persons for assistance:

Bill Trencher, Bankruptcy Division	(FTS) 633-6233
Frank Szczebak, Bankruptcy Division	(FTS) 633-6215
John Shapard, Federal Judicial Center	(FTS) 633-6341

1981 BANKRUPTCY COURT TIME STUDY
SAMPLE DAILY LOG

DATE: 5 / 1 /81

Time Expended Hrs.	Min.	Activity	If CCR Indicate Docket Numbers:	Check Box if Case or AP Now Completed
a) 1	15	AC (TR) AD OTH CCR	CASE#: ADV PROC#:	☐
b) 1	25	(AC) TR AD OTH CCR	CASE#: ADV PROC#:	☐
c)	45	AC TR AD OTH (CCR)	CASE#: 80-00749 ADV PROC#:	☐
d)	45	AC TR AD OTH (CCR)	CASE#: 80-12145 (15) ADV PROC#:	☐
e)	03	AC TR AD OTH (CCR)	CASE#: 80-02325 ADV PROC#:	☐
f)	03	AC TR AD OTH (CCR)	CASE#: 80-01132 ADV PROC#:	☐
g)	03	AC TR AD OTH (CCR)	CASE#: 80-12023 ADV PROC#:	☐
h)	03	AC TR AD OTH (CCR)	CASE#: 80-12334 ADV PROC#:	☐
i)	03	AC TR AD OTH (CCR)	CASE#: 80-00549 ADV PROC#:	☐
j) 1	05	AC TR AD OTH (CCR)	CASE#: 81-00097 ADV PROC#: 81-0021	☒
k) 1	30	AC TR AD (OTH) CCR	CASE#: ADV PROC#:	☐
l)	15	AC TR (AD) OTH CCR	CASE#: ADV PROC#:	☐
m) 1	25	AC (TR) AD OTH CCR	CASE#: ADV PROC#:	☐
n)	55	AC TR AD OTH (CCR)	CASE#: 80-01350 ADV PROC#:	☐
o) 1	00	AC TR AD OTH (CCR)	CASE#: 80-00874 ADV PROC#: 80-0091	☐
p)	45	AC TR (AD) OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐
		AC TR AD OTH CCR	CASE#: ADV PROC#:	☐

NOTE: See description of entries on pages 105-6.

DESCRIPTION OF ENTRIES ON SAMPLE DAILY LOG

(a) The judge travels from his residence to a designated place of holding court to conduct hearings in another city. The travel time of one hour and fifteen minutes is entered and TR is encircled as the activity.

(b) The judge hears an adversary proceeding in an act case. The time necessary to hear this proceeding (one hour and twenty-five minutes) is entered and AC is encircled as the activity. As this activity does not relate to a code case, the case number and adversary proceeding number are not entered.

(c) The judge conducts a confirmation hearing in a chapter 13 code case. This activity consumes forty-five minutes. The time is entered and CCR is encircled. Because this is a code case, the case number is entered.

(d) - (i) The judge spends one hour conducting a discharge hearing pursuant to section 524(d) en masse for a group of twenty debtors. Fifteen are chapter 7 nonbusiness, no-asset cases. Time spent on these cases is allocated to a single case in the group. Entry (d) shows forty-five minutes attributed to code case 80-12145, the "(15)" indicating that fifteen cases are represented by the one entry. The remaining five cases were not clearly of the same specific type, so they have been listed separately, with three minutes being allocated to each (entries (e) through (i)).

(j) The judge conducts a hearing on a complaint to lift the automatic stay pursuant to section 362. This matter took an hour and five minutes to hear and dispose of. The time is entered and CCR is encircled as the activity. As this was an adversary proceeding in a code case, both the case number and the adversary proceeding number are entered. Since the proceeding was disposed of at this point, the box at the right margin is checked.

(k) The judge delivers a luncheon address to a local bar association meeting on the impact of the new code. The time necessary to travel to the luncheon, deliver the speech, and return to court consumed an hour and a half. The time is entered and OTH is encircled.

(l) The judge receives a telephone call from an editor of a local newspaper, who inquires about the recent increase in bankruptcy filings. The judge and the editor discuss this matter for

fifteen minutes. The time is entered and AD is encircled as the activity.

(m) The judge travels from the designated place of holding court back to his headquarters office. The time is entered and TR is encircled as the activity.

(n) The judge reviews the final report of a trustee and his application for allowances in a code case. This activity takes fifty-five minutes. The time is entered, CCR is encircled as the activity, and the case number is entered.

(o) The judge works on a preliminary draft of an opinion in chambers of a matter heard as an adversary proceeding in a code case. The time spent is entered, CCR is encircled as the activity, and the case number and the adversary proceeding number are entered.

(p) After dining at his residence that evening, the judge reviews resumes of candidates for his law clerk position. The time spent is entered and AD is encircled as the activity.

FOLLOW-UP LETTER TO PARTICIPANTS
IN 1981 BANKRUPTCY COURT TIME STUDY

I enclose a supply of additional daily log sheets and return envelopes, which I hope will be adequate to see you to the end of the study. Should it appear that you will need more, please let me know.

The cooperation shown by those invited to participate in the study has been nothing short of astounding. One hundred eight judges were asked to participate, and it appears that we have 106 participants. This level of participation, along with the faithful record keeping evidenced on the forms so far returned, goes far to ensure that the results of the study will be highly reliable. Thank you for your gracious assistance.

Although twelve judges undertook a preliminary test of the log form before the full study began, new questions have inevitably occurred. I will offer clarifications to procedures as the need arises. The first of these are as follows:

1. You need not return the forms to us more frequently than every week, but if you find it more convenient to return them more frequently, by all means do so. Please remember to retain photocopies to ensure against losses in the mail.

2. The comments accompanying the sample log form were intended to clarify the instructions; you need not provide similar comments.

3. Questions have arisen about recording case-related time when a large number of matters are handled in a relatively brief period, as in an order-signing session where the average time spent on each order is less than a minute. If the cases or proceedings involved are not of like kind and thus not suited to the type of condensed entry explained in the instructions, you may record the time as you would a condensed entry, but without providing a docket number. That is, record the time, circle CCR, and show the number of cases or proceedings involved in parentheses in the space for the docket number, but do not enter a docket number. Please use this method only when (a) the average time expended on each case is less than one minute, making listing of each case unworkable, and (b) it is infeasible to attribute the time to one or more representative cases in the group.

Sincerely,

John Shapard

*U.S. GOVERNMENT PRINTING OFFICE : 1982 O-393-845/BID

THE FEDERAL JUDICIAL CENTER

The Federal Judicial Center is the research, development, and training arm of the federal judicial system. It was established by Congress in 1967 (28 U.S.C. §§ 620-629), on the recommendation of the Judicial Conference of the United States.

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