Discovery Management

Further Analysis of the

Civil Justice Reform Act

Evaluation Data

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Deborah R. Hensler
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The Institute for Civil Justice
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RAND

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PREFACE

In 1996, RAND completed the independent evaluation mandated by the Civil Justice Reform Act (CJRA) of 1990. The four reports that constitute that evaluation are:

*Just, Speedy, and Inexpensive? An Evaluation of Judicial Case Management under the Civil Justice Reform Act*, RAND, MR-800-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996. This executive summary summarizes three technical reports that document RAND’s evaluation of the CJRA of 1990. It provides an overview of the purpose of the CJRA, the basic design of the evaluation, the key findings, and their policy implications. It was prepared for the Judicial Conference of the United States.

The three summarized reports are:

*Implementation of the Civil Justice Reform Act in Pilot and Comparison Districts*, RAND, MR-801-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996. This document traces the stages in the implementation of the CJRA in the study districts: the recommendations of the advisory groups, the plans adopted by the districts, and the plans actually implemented.

*An Evaluation of Judicial Case Management Under the Civil Justice Reform Act*, RAND, MR-802-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996 (hereinafter referred to as “the main evaluation report”). This document presents the main descriptive and statistical evaluation of how the CJRA case management principles implemented in the study districts affected cost, time to disposition, and participants’ satisfaction and views of fairness.
An Evaluation of Mediation and Early Neutral Evaluation Under the Civil Justice Reform Act, RAND, MR-803-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996. This document discusses the results of an evaluation of mediation and neutral evaluation designed to supplement the alternative dispute resolution assessment contained in the main CJRA evaluation.

After we completed the main evaluation report, the Advisory Committee on Civil Rules of the Judicial Conference of the United States asked RAND's Institute for Civil Justice to conduct further analyses of the CJRA evaluation data to see if additional light could be shed on discovery management, to assist the committee in its consideration of possible changes in the Federal Rules of Civil Procedure related to discovery. The committee also asked the Federal Judicial Center to conduct a major new survey of lawyers to gather additional information about discovery.

This report is intended for use by those involved with the rule-making process and by other policymakers, as well as by litigants, lawyers, judges, and others interested in civil case discovery management.

The additional RAND analyses reported here are funded in part by a special contribution from the American Bar Association Section on Litigation and in part by Institute for Civil Justice core funds which come from a broad range of contributors.

Views and conclusions expressed herein do not necessarily represent the policies or opinions of the Judicial Conference or the American Bar Association Section on Litigation.

For more information about the Institute for Civil Justice contact:

Dr. Deborah Hensler, Director
Institute for Civil Justice
RAND
1700 Main Street, P. O. Box 2138
Santa Monica, CA 90407-2138
TEL: (310) 451-6916
FAX: (310) 451-6979
Internet: Deborah_hensler@rand.org
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CONTENTS

PREFACE ................................................................. v
TABLES .................................................................. xi
SUMMARY ............................................................... xv

1. DISCOVERY MANAGEMENT: BACKGROUND AND FRAMEWORK FOR DISCUSSION ... 1
   Introduction ................................................................ 1
   Overview of the CJRA .................................................. 1
       The Six Case Management Principles ......................... 2
       The Six Case Management Techniques ....................... 2
   Features of the RAND Evaluation ................................. 3
       Data Sources .......................................................... 3
       Analytic Approach ................................................... 5
   Outline of This Report ............................................... 8
   A Brief History of Empirical Research on Discovery and Its
     Relationship to Litigation Costs and Delay .................... 8
   A Brief History of Discovery Reform ............................ 11
   Options for Reform .................................................... 14
       Standardized Rules Limiting the Scope, Amount, or Timing
         of Discovery ......................................................... 14
       Mandatory Early Disclosure ..................................... 16
       Sanctions ................................................................ 17
       Providing Assistance with Discovery Planning ............. 18
       Cost and Fee Shifting ............................................... 19
       Closer Management of Attorneys by Parties .................. 19
       Judicial Discovery .................................................... 20
   Some Obstacles to Reform ............................................ 21
   A Word About the Future ............................................. 23

2. DESCRIPTION OF DISCOVERY COSTS AND OTHER INFORMATION FOR VARIOUS
   TYPES OF CASES ....................................................... 24
   Case Closure Point .................................................... 25
   How Lawyers Spend Their Time .................................. 28
   Case Complexity ....................................................... 28
   Discovery difficulty ................................................... 29
   Plaintiffs’ and Defendants’ Attorneys ......................... 32
   Hourly and Contingent Fee Attorneys ......................... 32
   Size of Law Firm or Legal Department ......................... 32
   Size of Monetary Stakes ............................................. 33
   Nature of Suit .......................................................... 34
   Cases with Most Lawyer Work Hours ......................... 36

3. EVALUATION OF VARIOUS DISCOVERY MANAGEMENT POLICIES ............. 39
   Introduction ........................................................... 39
   Early Case Management and Discovery Planning .......... 40
       Lawyer Work Hours ............................................... 41
       Time to Disposition ................................................ 40
       Attorney Satisfaction .............................................. 45
Attorney Views on Fairness ........................................ 46
Information by Type of Early Management and Discovery Plan
Policy ................................................................. 46
Early Disclosure ..................................................... 47
Lawyer Work Hours ............................................... 48
Time to Disposition ............................................... 50
Attorney Satisfaction ............................................. 51
Attorney Views on Fairness ....................................... 52
Information by Early Disclosure Policy ......................... 52
Good-Faith Efforts in Resolving Discovery Disputes .......... 53
Lawyer Work Hours ............................................... 53
Time to Disposition ............................................... 53
Attorney Satisfaction ............................................. 55
Attorney Views on Fairness ....................................... 55
Limiting Interrogatories .......................................... 55
Lawyer Work Hours ............................................... 56
Time to Disposition ............................................... 56
Attorney Satisfaction ............................................. 57
Attorney Views on Fairness ....................................... 57
Information by Interrogatory Limitation Policy ............... 57
Shortening Discovery Cutoff Time ............................... 59
Lawyer Work Hours ............................................... 59
Time to Disposition ............................................... 60
Attorney Satisfaction ............................................. 60
Attorney Views on Fairness ....................................... 60
Information on Discovery Cutoff Time Policy ................. 60
Summary of Effects on Lawyer Work Hours ...................... 62
Summary of Effects on Time to Disposition ..................... 64
Summary of Effects on Attorney Satisfaction ................... 65
Summary of Effects on Attorney Views on Fairness .......... 66

4. POLICY FINDINGS .................................................. 67
Findings on Early Case Management and Discovery Planning .... 67
Findings on Early Disclosure ..................................... 69
Findings on Good-Faith Efforts to Resolve Discovery Disputes .. 72
Findings on Limiting Interrogatories ............................. 72
Findings on Shortening Discovery Cutoff Time .................. 72
Interpreting Effects and Generalizing to Other Cases, Judges,
and Districts ......................................................... 73
General Policy Implication ........................................ 74

Appendix: DETAILS OF STATISTICAL ANALYSES ..................... 77

Bibliography ......................................................... 125

ICJ Publications ................................................... 129
### TABLES

**S.1.** Information by Case Closure Point for General Civil Cases

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1. Information by Case Closure Point: 1992-93 Sample, Closed General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>26</td>
</tr>
<tr>
<td>2.2. How Lawyers Spend Their Work Hours: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>29</td>
</tr>
<tr>
<td>2.3. Information by Category of Case Complexity: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>30</td>
</tr>
<tr>
<td>2.4. Information by Category of Discovery Difficulty: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>31</td>
</tr>
<tr>
<td>2.5. Information by Type of Attorney: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>33</td>
</tr>
<tr>
<td>2.6. Information by Type of Private Attorney Fee: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>34</td>
</tr>
<tr>
<td>2.7. Information by Size of Firm or Legal Department: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>35</td>
</tr>
<tr>
<td>2.8. Information by Size of Monetary Stakes: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>36</td>
</tr>
<tr>
<td>2.9. Information by Nature of Suit: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>37</td>
</tr>
<tr>
<td>2.10. Information by Category of Total Lawyer Work Hours: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported</td>
<td>38</td>
</tr>
</tbody>
</table>
3.1. Information by Type of Early Management and Discovery Plan Policy: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported ........................................ 46

3.2. Information by Early Disclosure Policy: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported ........................................ 54

3.3. Information by Interrogatory Limit Policy: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported ........................................ 58

3.4. Information by Shorter and Longer Time to Discovery Cutoff: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported ........................................ 61

A.1. Control Variables Used for Modeling Time to Disposition ..... 83
A.2. Policy Variables Used in Modeling Time to Disposition ....... 87
A.3. Model for Time to Disposition: 1992-93 Sample, General Civil Cases with Issue Joined, with Time to Disposition over 270 Days .................................................. 90
A.4. Model for Time to Disposition: Subsets of 1992-93 Sample, General Civil Cases with Issue Joined, with Time to Disposition over 270 Days .................................................. 92
A.5. Estimating Effect Size in Days: Values Used for Predicting TTD Assuming the Case Receives the Policy ...................... 94
A.6. Estimating Effect Size in Days: Values Used for Predicting TTD Assuming the Case Does Not Receive the Policy .............. 95
A.7. Estimated Effect Sizes in Days for Selected Policy Variables for the over 270 Day Sample ........................................ 97
A.8. Additional Control Variables Used for Modeling Lawyer Work Hours .................................................. 102
A.9. Model for Lawyer Work Hours: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days .................................................. 105
A.10. Model for Lawyer Work Hours: Subsets of 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days .................................................. 106
A.11. Model for Lawyer Work Hours on Discovery When Greater Than Zero: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days ...... 108
A.12. Model for Lawyer Work Hours on Discovery When Greater Than Zero: Subsets of 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days .................................................. 109
A.13. Estimated Effect Sizes in Hours for Selected Policy Variables for the over 270 Days Sample .......................... 112

A.14. Model for Attorney Satisfaction: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days ................................. 118

A.15. Model for Attorney Satisfaction: Subsets of 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days ................................. 119

A.16. Model for Attorney Views on Fairness: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days ................................. 123
SUMMARY

Curbing civil discovery abuse has been high on the agenda of the court reform movement for more than two decades. Concern about excessive and inappropriate discovery in the federal courts led to amendments to the Federal Rules of Civil Procedure in 1980, in 1983, and again in 1993, contributed to the passage of the Civil Justice Reform Act of 1990, and stimulated the adoption of local court rules concerning discovery in many federal jurisdictions. Similar concerns in the state court system have led to the adoption of state and local court rules regulating discovery, as well as statutory reform in many jurisdictions.

Much of the concern about discovery abuse is based on anecdotal data. Empirical research has not produced evidence of widespread abuse of discovery. However, because researchers have focused on the quantity of discovery, rather than its quality, the available studies do not speak to one central issue in the discovery debate--namely, the appropriateness of discovery for the issues in controversy in individual cases. Further, even if discovery is appropriate in quantity and quality for the general run of civil litigation, it may be a legitimate source of public policy concern in particular types of litigation--for example, high-stakes cases and complex litigation.

The study described in this report was undertaken at the request of the Advisory Committee on Civil Rules of the Judicial Conference of the United States. Based on further analyses of data assembled in the course of RAND’s evaluation of the Civil Justice Reform Act, the study was designed to assist the committee in its consideration of possible changes in the Federal Rules of Civil Procedure related to discovery. To that end, we assembled descriptive information about a random sample of cases, focusing on discovery. We then analyzed the efficacy of the following types of discovery management policies in reducing lawyer work

---

1The RAND evaluation of the Civil Justice Reform Act of 1990 was completed in 1996. The results are documented in Kakalik et al. (1996a, 1996b, 1996c, and 1996d).
hours and time to disposition, and the effects of these management policies on lawyer satisfaction and views on fairness.

- Early case management and discovery planning,
- Early disclosure,
- Good-faith efforts in resolving discovery disputes,
- Limiting interrogatories, and
- Shortening discovery cutoff time.2

BACKGROUND AND SCOPE OF THIS STUDY

The Civil Justice Reform Act (CJRA) of 1990 required each federal district court to develop a plan for civil case management to reduce costs and delay. Ten district courts, denoted “pilot” district courts, were required to adopt plans that incorporated certain case management principles through December 1995. The evaluation of the CJRA, which was mandated in the legislation, focused on the consequences of that pilot program. RAND’s evaluation focused on the 10 pilot districts and 10 other districts selected for comparison. Together the 20 districts had about one-third of the civil caseload in the nation.

Several of the management policies encompassed in the CJRA evaluation focused on discovery. They included early judicial control of pretrial processes, requiring lawyers to jointly prepare a discovery/case management plan early in the case, disclosing information early without formal discovery, requiring good-faith efforts to resolve discovery disputes before filing motions, and limiting interrogatories and other forms of discovery.

We further evaluated the results of these policies, focusing on general civil cases3 filed in 1992-93, because the CJRA made substantial

2Due to lack of sufficient data, we could not evaluate policies limiting the number or length of depositions, limiting document discovery, or dealing with issues of privilege. We also had insufficient data to evaluate methods lawyers use to manage discovery outside the court’s purview or to evaluate the quality and appropriateness of discovery on the study cases.

3In practice, federal district courts split the civil caseload into two categories—those types of cases that usually receive minimal or no management, and those general civil litigation cases to which the district’s standard case management policies and procedures apply (and
changes in how discovery was managed in some districts. We also focused on cases closed after issue was joined, because most discovery occurs after that point.

As in the main evaluation, we used both descriptive tabulations and statistical techniques to assess policy effects. In addition in this current study, we evaluated the management policies when used in various combinations, such as early management used in combination with discovery plans and early scheduling of a trial date. We also separately analyzed subsets of cases or lawyers, such as high complexity cases only, high stakes cases only, contingent fee lawyers only, or tort cases only. For each type of case, data include time to disposition, lawyer satisfaction with judicial case management, lawyer views on the fairness of judicial case management, total lawyer work hours per litigant, lawyer work hours on discovery, and the number of discovery motions filed.

We consider lawyer work hours to be the best available measure of how case management affects litigation costs because it has uniform meaning regardless of attorney fee structure or geographic variations in attorney fee rates and can be used consistently for both in-house lawyers and outside counsel. Consequently, in the statistical analyses we use lawyer work hours as our measure of costs. We present information on both total lawyer work hours and lawyer work hours on discovery, and those two measures are highly correlated. However, we think the total is a better measure than the lawyer hours spent on discovery because our interviews suggest that some types of discovery management may reduce discovery hours by shifting lawyer work to other types of activity (disclosure as a substitute for some discovery, or an alternative dispute resolution session as a substitute for some discovery, for example). In addition, lawyers may differ in whether or not they report a given type of work activity as discovery-related (interviewing experts in direct preparation for trial, for example).

which are of primary concern for evaluation of discovery management principles and techniques). Minimal management is usually applied to prisoner cases (other than death penalty cases), administrative reviews of Social Security cases, bankruptcy appeals, foreclosure, forfeiture and penalty, and debt recovery cases.
We also note that, in addition to the cost of lawyers, the cost of the time litigants and their staff spend can be substantial, and much of that time is spent on discovery. Litigants must prepare for and give depositions, search for documents, and screen documents and computerized files for privileged information, for examples. This time is not reflected in the lawyer work hours we analyzed, although we did ask for the amount of time the litigants spent when we surveyed the litigants. However, because of the low 13 percent response rate from litigants, we are not comfortable that the responses received are representative of all litigants. Hence, we did not analyze litigant time spent on the cases.

We note that we are measuring time and cost objectively by using time to disposition and lawyer work hours. Our main evaluation surveys, and some other research studies, also asked for lawyers’ subjective opinions about whether time and cost were increased or decreased when a particular case management technique was used. It is important to note that the objective and subjective data do not always agree, and we believe that the objective data are more reliable measures of how policy actually affects time to disposition and lawyer work hours. The subjective data are really measuring perceptions, which are different from what the objective data measure. Also, subjective data from surveys in general tend to have a “positivity bias.”

In our main evaluation, we obtained discovery management policy information at the district level from court documents, local rules, and interviews with judges and clerks in each of the 20 study districts. We gathered discovery management information, case and lawyer characteristics, time to disposition, stakes, cost, lawyer work hours, satisfaction, fairness, and other detailed information at the case level from court dockets and from lawyer and judge surveys for 5,222 cases filed in 1992-93 after the CJRA was passed. For those 5,222 cases, we received survey responses from 57 percent of the judges (3,280) and 47 percent of the lawyers (4,051 out of 9,423 surveyed).
DESCRIPTIVE INFORMATION ABOUT LAWYER WORK HOURS ON VARIOUS TYPES OF CASES

About a fourth of the general civil cases close before issue is joined, another fourth close after issue is joined and within 270 days after filing, and nearly half close after issue is joined and more than 270 days after filing.

As shown in Table S.1, the likelihood of lawyers working on discovery is very low for cases that close before issue is joined, and high for cases that last more than 270 days. The median time lawyers reported spending on discovery for cases with issue joined4 that close

<table>
<thead>
<tr>
<th>Table S.1</th>
<th>Information by Case Closure Point for General Civil Cases</th>
</tr>
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<tbody>
<tr>
<td>Variable</td>
<td>Case Closure Point</td>
</tr>
<tr>
<td></td>
<td>Before Issue Joined</td>
</tr>
<tr>
<td>Percent in category</td>
<td>28</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>20</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>72</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>0</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>0</td>
</tr>
<tr>
<td>% of total lawyer work hours on all cases</td>
<td>13</td>
</tr>
<tr>
<td>% of discovery lawyer work hours on all cases</td>
<td>8</td>
</tr>
</tbody>
</table>

4Issue is considered joined after the defendants have answered the complaint in accordance with F.R.Civ.P. Rule 12(a) or as mandated otherwise by the court (Administrative Office of the United States Courts, 1995).
within 270 days is only three hours, whereas the median is 20 hours for those cases that close more than 270 days after filing. In fact, cases that last more than 270 days require about three-quarters of all total lawyer work time, and about 80 percent of all lawyer work time on discovery.

Overall, lawyer work hours on discovery are zero for 38 percent of general civil cases, and low for the majority of cases. Discovery is not a pervasive litigation cost problem for the majority of cases. The empirical data show that any problems that may exist with discovery are concentrated in a minority of the cases, and the evidence indicates that discovery costs can be very high in some cases.

Since we are concerned with discovery management policies in this report, we will focus the remainder of this summary on these 1,624 general civil cases that closed at least 270 days after filing and consumed the vast majority of lawyer work time on discovery. We developed a general profile of how lawyers spent their time on this category of cases, as shown in Table S.2.

Time spent on discovery is moderate for the majority of cases. The average lawyer work hours per litigant is 232, of which an average of 36 percent or 83 hours is spent on discovery including discovery motions. The median discovery hours as a percentage of total lawyer work hours is 25 percent. Whether we consider median or average percentages, discovery accounts for approximately one-fourth to one-third of total lawyer work hours per litigant for general civil litigation. Discovery accounted for less than half the lawyer work hours in all the subsets of general civil cases that we examined.

We looked at various types of cases and lawyers separately and found:

- High complexity cases consume about four times as many median lawyer work hours as low complexity cases, but the median percentage of total lawyer work time devoted to discovery is about the same.
- Cases in which the difficulty of discovery was reported to be "high" consume about three times as many total lawyer work hours and five times as many lawyer work hours on discovery as
Table 8.2
How Lawyers Spend Their Work Hours: General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Average Lawyer Work Hours per Litigant</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trials, including direct preparation for trial</td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>Alternative dispute resolution after filing</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Discovery after filing, including motions</td>
<td>83</td>
<td>36</td>
</tr>
<tr>
<td>Motion practice, excluding discovery</td>
<td>36</td>
<td>16</td>
</tr>
<tr>
<td>Other pretrial conferences or talks with judicial officer</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Other time worked after filing federal case: on research, investigation, writing, talking with parties and lawyers outside court, or anything else related to the litigation</td>
<td>55</td>
<td>24</td>
</tr>
<tr>
<td>All time worked before filing federal case, in preparation for filing case</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Total work hours per litigant</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

NOTE: Columns may not sum exactly due to rounding and missing data.

cases for which the difficulty of discovery was “low.”
However, even for the cases with “high” difficulty discovery, the median percentage of the total lawyer work time devoted to discovery is still only about one-third.

- There is a significant difference between plaintiffs’ and defendants’ attorneys in terms of total work hours. The former reported spending a median of 100 total work hours per

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5Lawyers and judges were asked “When this litigation began, how would you have rated this case in terms of . . . difficulty of discovery . . . .” It is possible that some people filling out the survey after the litigation was closed reported greater difficulty of discovery because they knew lawyer work hours were high, rather than reporting their initial view when the litigation began.
litigant; the latter spent a median of 75. However, these two
groups did not differ significantly in the amount of work time
spent on discovery per litigant.

• We did not find a significant difference between hourly and
contingent fee lawyers in lawyer work hours.

• Attorneys from larger firms (more than five attorneys) work
significantly more hours per litigant, in total and on
discovery, than their counterparts from smaller firms;\textsuperscript{6}
however, the fraction of time they spend on discovery is about
the same.

• Higher stakes cases are associated with significantly higher
lawyer work hours, both in total and on discovery, and the
fraction of total hours spent on discovery is higher.

• We found no statistically significant difference in lawyer work
hours between tort, contract, or other types of cases.
However, we believe that the tort and contract categories are
too aggregated, with too heterogeneous a composition within
each category, to be meaningful in studying lawyer work hours.\textsuperscript{7}

• Finally, we categorized lawyers on cases by their total work
hours: bottom 75 percent, top 25 percent, and top 10 percent.
The top 10 percent had a median of 950 total work hours per
litigant, but the median percentage of lawyer work hours spent
on discovery was still only 35 percent.

EVALUATION OF DISCOVERY POLICIES

Findings on Early Case Management and Discovery Planning

In the main evaluation report, we found that early case management
predicted significantly reduced time to disposition; coupling early
management with setting a trial schedule early predicted significant
further time reductions. We further analyzed these two early management
and trial scheduling policies, both with and without the requirement for

\textsuperscript{6}These data may reflect some systematic bias because litigants may
prefer to hire large firms to handle more complex and more costly cases.

\textsuperscript{7}Smaller, more narrowly defined categories should be studied, but
we had too few cases in our sample to do subcategories within tort,
contract, and other types of cases in detail.
a discovery plan. We again found significant reductions associated with early management, and further reductions associated with early scheduling of a trial date. There was little difference in time to disposition with or without a discovery plan if a trial was scheduled early; however, cases closed significantly earlier if discovery planning took place in the absence of an early trial schedule.

We estimate that early management with a mandatory discovery management planning policy is associated with a 104-day reduction when a trial schedule is set early, and with about an 85-day reduction for early management with a mandatory planning policy but without setting a trial schedule early. The estimated effect for early management with neither mandatory planning nor setting a trial schedule early is much smaller--only about 29 days.

We also examined the consequences of these various policy mixes on subsets of cases. In general, the policies have consistent effects across various types of cases. However, we did find that the 25 percent most costly cases appear to especially benefit from the early setting of a trial schedule; indeed, early management of those cases without scheduling a trial date did not significantly reduce their time to disposition. Cases that are high in complexity, high in discovery difficulty, or high in stakes appear to especially benefit from the use of discovery/case management plans.

Our analysis of total lawyer work hours (our measure of costs) further supports the efficacy of requiring discovery/case management plans. Early case management reduces time to disposition, but this policy also tends to increase lawyer work hours. We estimate that early management without a mandatory planning policy increases lawyer work hours between 26 or 31 hours for the typical case depending on whether or not early management includes trial setting. However, if the district also requires discovery/case management plans in combination with early management, there is not a significant increase in lawyer work hours. We estimate an hour or less change in lawyer work hours for the typical case with early management that includes a mandatory planning policy.
Our interviews suggested reasons why early management may increase lawyer work hours. Lawyers need to respond to a court’s management—for example, by talking to the litigant and to the other lawyers in advance of a conference with the judge, by traveling, and by spending time waiting at the courthouse, meeting with the judge, and updating the file after the conference. In addition, once judicial case management has begun, a discovery cutoff date has usually been established, and attorneys may feel an obligation to begin discovery. Doing so could shorten time to disposition, but it may also increase lawyer work hours on cases that were about to settle when the judge began early management. The CURA data indicate that cases that are managed early have a higher likelihood of having lawyer hours spent on discovery.

However, when a district requires discovery/case management plans, the increase in lawyer work hours associated with early management appears to be offset by benefits associated with the required planning, and the net effect is no significant increase in lawyer work hours. There are at least two plausible explanations for this outcome. First, the planning itself may produce the benefit. The requirement that the lawyers jointly meet and prepare a discovery/case management plan for submission to the court may result in more efficient litigation with less lawyer work hours. Another plausible explanation is that the judges in districts that require plans may also manage cases differently and better (in ways that we did not measure) than judges in districts that do not require plans.

When we looked at various subsets of cases, we found no strong evidence that the effects of early management and discovery planning were restricted to certain types of cases. Nor did we find that early management, setting a trial schedule early in the case, or requiring a discovery plan had any statistically significant effect on lawyer satisfaction or views on fairness.

**Findings on Early Disclosure**

Our data and analyses do not strongly support the policy of mandatory early disclosure as a means of significantly reducing lawyer work hours and thereby reducing the costs of litigation, or as a means
of reducing time to disposition. We find that cases in districts with some type of mandatory disclosure policy had lawyer work hours and time to disposition that are not significantly different from cases in districts without any type of mandatory disclosure policy. Regardless of whether early disclosure actually occurs, cases from districts with mandatory early disclosure policies tend to have similar estimated lawyer work hours as cases from districts without a mandatory disclosure policy that had no early disclosure. The confidence intervals are large so there is a possibility that mandatory early disclosure policies could reduce or increase lawyer work hours, but our best estimate is a small eight-hour increase if early disclosure is conducted and no effect if no early disclosure occurs in districts with a mandatory disclosure policy. Our estimated effects for early disclosure on time to disposition indicate a reduction of about 20 days or less for a typical case.

Some people suggested that if we had looked at subsets of cases, such as those that were more or less complex or had more or less difficulty with discovery, we might have found a subset of cases for which this policy was effective. We have explored many different subsets of cases, including subsets based on stakes, complexity, and discovery difficulty. We found no strong evidence that a policy of early mandatory disclosure reduced time to disposition or lawyer work time on any of the subsets of cases examined.

It should be noted, however, that in our main evaluation report we found that attorney work hours were significantly lower for the three districts that had a particular type of mandatory disclosure: early mandatory disclosure of information bearing on both sides of the dispute. With only three districts using this particular type of mandatory disclosure policy, however, it is difficult to generalize this statistical finding.

We also note that we could not evaluate the mandatory disclosure prescribed under the December 1993 amendments to F.R.Civ.P. 26(a)(1) because our sample of cases was selected well before that amendment took effect, and none of our study districts had a mandatory disclosure policy that was exactly the same as the amended Rule 26(a)(1) when our
sample cases were selected. Hence, the "empirical" story of the effects of Rule 26(a)(1) remains to be told.

In districts where early disclosure is voluntary, attorneys who choose it have significantly lower work hours. Cases with voluntary early disclosure tended to require about 14 fewer work hours than cases without voluntary disclosure. However, this result appears to reflect selection bias, i.e., these attorneys who voluntarily disclose may be less contentious or may be on less contentious cases and hence spend fewer total work hours on the case. If early disclosure were effective in reducing lawyer work time, we would expect to see evidence of this effect on mandatory disclosure cases too.

One of the difficulties with early disclosure that may help explain its lack of a significant effect is compliance; lawyers report that when disclosure is done on a mandatory basis, it is full disclosure for about half of the cases and only pro forma disclosure for the other half.

Findings on Good-Faith Efforts to Resolve Discovery Disputes

We found no significant relationship between any of the variables studied and reported good-faith efforts to resolve discovery disputes before filing a motion.

Findings on Limiting Interrogatories

Our analysis lends support to the policy of limiting interrogatories as a way to reduce lawyer work hours and thereby reduce litigation costs. We estimate that limiting interrogatories will reduce lawyer work by about 16 hours for the typical case. There is no statistical evidence that limiting interrogatories increases litigation costs, and it appears to have significant benefits for several subsets of cases.

Findings on Shortening Discovery Cutoff Time

Shortening discovery cutoff significantly reduces lawyer work hours and thus litigation costs, and reduces time to case disposition. We estimate that a 60-day reduction in the district median discovery cutoff (from 180 days to 120 days) will reduce lawyer work by 15 hours and we are quite confident that this policy will lead to at least some
reduction in work hours. For a typical case, we estimate that a 60-day reduction in the median discovery cutoff (from 180 days to 120 days) would correspond to about a 55-day reduction in time to disposition.

When we looked at subsets of cases, these significant decreases in lawyer work hours and time to disposition remain in most instances, with some exceptions such as low complexity cases which are less likely to be affected by shortening discovery cutoff because they require less discovery.

Generalizing to Other Cases, Judges, and Districts

Our analysis provides a reasonable estimate of the effects of policy for the cases, judges, and districts that we observed in the CJRA data. However, it is more difficult to determine the outcomes of policy if implemented on different cases, or by different judges in the same or different districts. Judges who choose to implement certain policies and management procedures may differ from other judges in their basic approach to case management or in their personalities. These differences could affect the way a policy is implemented, and, consequently, the policy’s effect. For example, enthusiastic managerial judges may set trial schedules early, require meaningful discovery plans, and work hard on settlement, thus leading to early case closure or reduced costs; however, having less enthusiastic non-managerial judges set trial schedules early and require discovery plans may not engender a similar effect.

General Policy Implication

Overall, lawyer work hours on discovery are zero for 38 percent of general civil cases, and low for the majority of cases. Discovery is not a pervasive litigation cost problem for the majority of cases. The empirical data show that any problems that may exist with discovery are concentrated in a minority of the cases, and the evidence indicates that discovery costs can be very high in some cases. Subjective information from our interviews with lawyers also suggests that the median or typical case is not “the problem.” It is the minority of the cases with very high discovery costs that are the problem, and that generate the
anecdotal “parade of horribles” that dominates much of the debate over discovery rules and discovery case management.

These findings suggest that policymakers consider focusing discovery rule changes and discovery management on the types of cases likely to have high discovery costs, and the discovery practices that are likely to generate those high costs. More attention is clearly needed on how to identify those high discovery cost cases early in their life, and how best to manage discovery on those cases.
1. DISCOVERY MANAGEMENT: BACKGROUND AND FRAMEWORK FOR DISCUSSION

INTRODUCTION

The Civil Justice Reform Act (CJRA) of 1990 required each federal district court to develop a plan for civil case management to reduce costs and delay. To provide an empirical basis for assessing new procedures adopted under the act, the legislation also provided for an independent evaluation. Ten district courts, denoted “pilot” district courts, were required to adopt plans that incorporated certain case management principles through December 1995. The evaluation focused on the consequences of that pilot program.

The Judicial Conference and the Administrative Office of the U.S. Courts asked RAND’s Institute for Civil Justice to evaluate the implementation and the effects of the CJRA in these districts. The RAND reports on that main evaluation were completed in 1996 and are listed in the preface.

After we completed our main CJRA evaluation, the Advisory Committee on Civil Rules of the Judicial Conference of the United States asked RAND’s Institute for Civil Justice to conduct further analyses of the Civil Justice Reform Act evaluation data to see if additional light could be shed on discovery management, to assist the committee in its consideration of possible changes in the Federal Rules of Civil Procedure related to discovery. The committee also asked the Federal Judicial Center to conduct a major new survey of lawyers to gather additional information about discovery.

This report contains RAND’s further analyses of the CJRA evaluation data, focusing on discovery management.

OVERVIEW OF THE CJRA

The CJRA created a pilot program that required ten federal district courts to incorporate certain case management principles into their plans and to consider incorporating certain other case management techniques. The evaluation included ten other districts to permit
comparisons; these districts were not required to adopt any of the case management principles or techniques.

The ten pilot districts selected by the Committee on Court Administration and Case Management of the Judicial Conference of the United States were California (S), Delaware and Georgia (N), New York (S), Oklahoma (W), Pennsylvania (E), Tennessee (W), Texas (S), and Utah and Wisconsin (E). The Judicial Conference, with advice from RAND, also selected the following ten comparison districts: Arizona and California (C), Florida (N), Illinois (N), Indiana (N), Kentucky (E), Kentucky (W), Maryland and New York (E), and Pennsylvania (M). Using several methods, we confirmed that the pilot and comparison districts are comparable and adequately represent the range of districts in the United States. Together, the 20 study districts have about one-third of all federal judges and one-third of all federal case filings.

The Six Case Management Principles

The act directs each pilot district to incorporate the following principles into its plan:

1. Differential case management;
2. Early judicial management;
3. Monitoring and control of complex cases;
4. Encouragement of cost-effective discovery through voluntary exchanges and cooperative discovery devices;
5. Good-faith efforts to resolve discovery disputes before filing motions; and
6. Referral of appropriate cases to alternative dispute resolution (ADR) programs.

Pilot districts must incorporate these principles, while other districts may do so.

The Six Case Management Techniques

The act directs each district to consider incorporating the following techniques into its plan, but no district is required to incorporate them:
1. Joint discovery/case management plan;
2. Party representation at each pretrial conference by an attorney with authority to bind that party regarding all matters previously identified by the court for discussion at the conference;
3. Required signature of the attorney and the party on all requests for discovery extensions or trial postponements;
4. Early neutral evaluation;
5. Party representatives with authority to bind to be present or available by telephone at settlement conferences; and
6. Other features that the court considers appropriate.

FEATURES OF THE RAND EVALUATION

The main CJRA evaluation is designed to provide a quantitative and qualitative basis for assessing how the case management principles and techniques identified in the CJRA affect litigants’ costs (measured in both attorney work hours and money), time to disposition, participants’ satisfaction with the process, views of fairness of the process, and judge work time required.

Our main descriptive and statistical evaluation of how the CJRA case management principles affected cost, time to disposition, and participants’ satisfaction and views on fairness are presented in An Evaluation of Judicial Case Management Under the Civil Justice Reform Act, RAND, MR-802-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996 (hereinafter called “main evaluation report”).

Data Sources

The evaluation is based on extensive and detailed case-level data from January 1991 through December 1995. Data sources include:

- Court records;
- Records, reports, and surveys of CJRA advisory groups;
- The districts’ cost and delay reduction plans:
- 4 -

• Detailed case processing and docket information on a sample of cases;
• Surveys of judicial officers on their activities, time expenditures, and views of CJRA;
• Mail surveys of attorneys and litigants about costs, time, satisfaction, and views of the fairness of the process; and
• Interviews in person with judges, court staff, and lawyers in each of the 20 districts.

We used CJRA advisory group reports, documents, and meeting minutes to assess the advisory group process and findings; we used the districts’ plans and proposed local rule changes to assess what the district said it would do under CJRA; we used the dockets for a large sample of cases to help us understand what was actually done on cases and when (such as schedule setting, assignment to management tracks, or referral to ADR); we used court records to assess the basic characteristics of the cases and court actions, such as referral to ADR, that were not always on the court docket; we used the judicial surveys on our sample of cases to get judges’ views on whether they had changed how they manage cases as a result of CJRA; we used extensive mail surveys of thousands of lawyers and litigants on our sample of cases to get their views on how the case was managed and information on litigation costs, satisfaction, and views of fairness; and we used extensive semi-structured interviews with judges, court staff, advisory group members, and lawyers to better understand both the implementation of CJRA and case management in the districts before and after CJRA.

In total, more than 10,000 cases were selected for intensive study in the main evaluation, half closed before CJRA and half filed in 1992-93 after the CJRA was passed. This current report focuses on the sample of 5,222 cases filed in 1992-93 after the CJRA was passed. For those 5,222 cases, we received survey responses from 67 percent of the judges (3,280), from 47 percent of the lawyers (4,051 out of 9,423 surveyed), and from 13 percent of the litigants (2,264 out of 20,272 surveyed). Because of the low litigant response rate, we were limited in our
ability to analyze litigants' hours spent, satisfaction, and views of fairness.

Analytic Approach

We use both descriptive tabulations and multivariate statistical techniques to analyze time to disposition, costs, and participants’ satisfaction and views of fairness.

We analyze time to disposition, rather than delay, since the latter cannot be defined without reference to some currently unavailable standard of how long civil cases should take to resolve.

We present information on litigation cost in the main evaluation report, measured in both monetary and work hour terms.\(^1\) Our reports provide data on monetary costs to litigants, litigant hours spent, and lawyer work hours spent. However, we consider lawyer work hours to be the best available measure of how case management affects litigation costs because it has uniform meaning regardless of attorney fee structure\(^2\) or geographic variations in attorney fee rates and can be used consistently for both in-house lawyers and outside counsel.\(^3\)

Consequently, in the statistical analyses we use lawyer work hours as our measure of costs. We present information on both total lawyer work hours and lawyer work hours on discovery, and those two measures are highly correlated. However, we think the total is a better measure than

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\(^1\)Our main evaluation report included information on total judge work minutes on cases. We have not included the judge work minutes in the present analysis of discovery for two reasons: (1) The portion of judge work minutes specific to discovery could not be reliably identified within the total judge work minutes, and (2) more importantly, although most judges cooperated with the study and provided their work minutes on each case, some judges did not and this could lead to biased statistical results because we strongly suspect that the choice by judges to cooperate with the judge time study was correlated with the judge's attitude toward and use of case management.

\(^2\)Under some fee structures, such as contingent fees, changes in lawyer work hours that may result from changes in court management are not necessarily reflected in the fees charged to clients.

\(^3\)Lawyer work hours do not explicitly capture the "out of pocket" costs of litigation such as filing fees, travel, and investigator or expert witness fees, but those costs typically are less than 10 percent of the total litigation costs. Costs associated with lawyers' work constitute the vast majority of total transaction costs.
the lawyer hours spent on discovery because our interviews suggest that some types of discovery management may reduce discovery hours by shifting lawyer work to other types of activity (disclosure as a substitute for some discovery, or an alternative dispute resolution session as a substitute for some discovery, for examples). In addition, lawyers may differ in whether or not they report a given type of work activity as discovery-related (interviewing experts in direct preparation for trial, for example).

We also note that, in addition to the cost of lawyers, the cost of the time litigants and their staff spend can be substantial, and much of that time is spent on discovery. Litigants must prepare for and give depositions, search for documents, and screen documents and computerized files for privileged information, for examples. This time is not reflected in the lawyer work hours we analyzed, although we did ask litigants for the amount of time spent. However, because of the low 13 percent response rate from litigants, we are not comfortable that the responses received are representative of all litigants. Hence, we did not analyze litigant time spent on the cases.

We note that we are measuring time and cost objectively by using time to disposition and lawyer work hours. Our main evaluation report, and some other research studies, also asked for lawyers’ subjective opinions about whether time and cost were increased or decreased when a particular case management technique was used. It is important to note that the objective and subjective data do not always agree, and we believe that the objective data are more reliable measures of how policy actually affects time to disposition and lawyer work hours. The subjective data are really measuring perceptions, which are different from what the objective data measure. Also, subjective data from surveys in general tend to have a “positivity bias.”

Our assessment of satisfaction and views of fairness is subjective and drawn from the results of our surveys.4

4Satisfaction and views of fairness were measured by responses to the following questions: How satisfied were you with the court management and procedures for this case for your party or parties? How fair do you think the court management and procedures were for this case for your party or parties?
In the main evaluation report, we based our assessment of case management policies and procedures on data from general civil litigation cases with issue joined. We also analyzed the subset of these cases that took longer than nine months to disposition.

In this further evaluation of the CJRA data focusing on discovery management, we again focus on general civil litigation cases closed after issue is joined. We also focus exclusively on the post-CJRA portion of the data, those cases filed in 1992-93, because the CJRA made substantial changes in how discovery was managed in some districts. We also focus predominantly in our further analyses on the 1,524 cases that took longer than nine months to disposition. About half the general civil cases close after nine months, but they consume about three-fourths of all lawyer work hours, and 80 percent of lawyer work hours spent on discovery.

In this further evaluation of discovery and its management, our methods of statistical analysis are the same as in the main evaluation report, with three major exceptions: (1) We explicitly evaluate combinations of various management policies (such as early management used in combination with discovery plans and early scheduling of a trial date, versus early management used without discovery plans and without early scheduling of a trial date); (2) we explicitly and separately analyze the data for various categories of cases or lawyers (such as high complexity cases only, high stakes cases only, contingent fee lawyers only, or tort cases only); and (3) in addition to our analysis

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5 In practice, federal district courts split the civil caseload into two categories—those types of cases that usually receive minimal or no management, and those general civil litigation cases to which the district's standard case management policies and procedures apply (and which are of primary concern for evaluation of CJRA case management principles and techniques). Minimal management is usually applied to prisoner cases (other than death penalty cases), administrative reviews of Social Security cases, bankruptcy appeals, foreclosure, forfeiture and penalty, and debt recovery cases.

6 Issue is considered joined after the defendants have answered the complaint in accordance with F.R.Civ.P. Rule 12(a) or as mandated otherwise by the court (Administrative Office of the United States Courts, 1995).
of total lawyer work hours, we also explicitly analyze lawyer work hours on discovery.

OUTLINE OF THIS REPORT

This report has two dimensions, designed for different audiences. The main text is intended for policymakers and policy-users and focuses on descriptive information about discovery, and on discovery management policy evaluation. The extensive appendix, which focuses on the details of our statistical analyses behind the policy evaluation, is intended for those who want to know methodological and empirical details of how we reached our conclusions.

The discussion is organized as follows. In the remainder of Section 1 we provide more background and a framework for the discovery discussion in the rest of this report. In Section 2 we provide descriptive information about discovery and other aspects of categories of cases defined by level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, or the top 25 percent most costly cases among general civil litigation that has time to disposition over 270 days after filing. Section 3 contains our evaluation of various discovery management policies, and Section 4 summarizes our policy findings. The appendix provides technical details of our statistical analyses.

A BRIEF HISTORY OF EMPIRICAL RESEARCH ON DISCOVERY AND ITS RELATIONSHIP TO LITIGATION COSTS AND DELAY

Despite the widespread belief that discovery is to blame for much of the delay and costliness of civil case processing, there have been few empirical data available on the magnitude of discovery, patterns of use across case types, or direct or indirect costs associated with discovery or various different discovery management policies. Nor has there been much effort in the past to measure the effect of adopting different discovery reforms or discovery management policies on time to disposition or costs.
In one of the most extensive previous studies, researchers at the Federal Judicial Center (FJC) selected 3,000 civil cases terminated in 1975 from six federal district courts and examined the extent and pattern of discovery in those cases. The FJC researchers found substantial variation in discovery among cases. Half had no discovery at all; among the remainder, 20 percent averaged 1.7 requests per case; 60 percent averaged 5 requests per case, and the remaining 20 percent averaged 17 requests per case. The FJC concluded that:

[D]iscovery abuse, to the extent it exists, does not permeate the vast majority of federal filings. In half the filings, there is no discovery-abusive or otherwise. In the remaining half of the filings, abuse—to the extent that it exists—must be found in the quality of the discovery requests, not in the quantity, since fewer than 5 percent of the filings involved more than ten requests [emphasis in the original].

The FJC found that the amount of discovery likely in a case could be predicted based on knowing “the subject matter of the case, the number of parties, the presence of counterclaims or cross claims, and, to a lesser extent, the amount in controversy . . . .” They also found significant differences across courts.

In the same study, the FJC also investigated the effects of limiting elapsed time for discovery on time to disposition and amount of discovery activity. They found that restricting the amount of time for discovery reduced the overall time to disposition, but actually increased the amount of discovery, perhaps because attorneys had less time to carefully consider their discovery options.

A subsequent empirical study of about 1,600 cases in federal and state court, the Civil Litigation Research Project, also found that “. . . relatively little discovery occurs in the ordinary lawsuit. We found no evidence of discovery in over half our cases. Rarely did the records reveal more than five separate discovery events.” That same

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7Connolly, Holleman, and Kuhlman (1978), p. 35.
study found that on average about 17 percent of lawyer time is devoted to discovery.

More recently, in a study of California’s Trial Court Delay Reduction Act, the National Center for State Courts found that courts that adopted procedures for managing pretrial activities, including discovery, achieved significant reductions in case disposition times.\textsuperscript{10} Courts that introduced early status conferences (at which various case activities were scheduled) achieved somewhat greater reductions in average case disposition times, compared to courts that used rule-based schedules (establishing and monitoring various checkpoints in a case’s history).\textsuperscript{11}

In the early 1990s, the National Center for State Courts (NCSC) conducted an empirical study of discovery in about 2,000 court cases in five states. Their findings affirmed those of the earlier ROE and Civil Litigation Research Project studies. The NCSC found that 42 percent of general civil litigation cases did not have recorded discovery, and that 37 percent of those with discovery had three or fewer pieces of discovery.\textsuperscript{12}

Other empirical studies concerning discovery have measured subjective attitudes, rather than objective case data. A 1986 study of attorneys’ attitudes in 12 federal districts that had adopted local rules limiting the number of interrogatories and requests for admissions found that a majority approved of these rules. Support for such limits did not vary by type of practice (size of firm, case specialization, plaintiff versus defendant) or by degree of litigation experience.\textsuperscript{13} A study of federal and state judges conducted by Louis Harris and Associates in 1987 found that 45 percent of federal judges surveyed, and

\begin{footnotes}
\item[12] Keilitz, Hanson, and Dales (1993).
\item[13] Shapard and Seron (1986), p. v. Based on the attorneys’ self-reports of their use of interrogatories in recent cases, the researchers also concluded that in most cases, activity was not actually constrained by the rules, both because the limitations were set high enough so as not to effectively limit the average case and because a significant fraction of attorneys either ignored the rules or received formal waivers from the court.
\end{footnotes}
34 percent of state judges, cited "abuse of the discovery process" as among the most serious causes of civil case delay in their courts.\textsuperscript{14} One-third of the federal and state judges said that there were "a lot of problems" with the discovery process in their jurisdictions.\textsuperscript{15} When asked what approaches might best solve these problems, federal judges called for changes in the informal practices of the bar and greater exercise of judicial discretion, rather than further changes in the rules. State judges' opinions on solutions were divided among the three options (changing informal practices, greater use of judicial discretion, and rule changes).\textsuperscript{16}

In 1997, the Federal Judicial Center conducted a major new survey of lawyers to gather additional information about discovery, and the results are forthcoming.

While the majority of the civil cases have either no discovery or limited discovery, a great deal of attention is paid to perceived discovery problems in the literature and by judges and lawyers. These findings are consistent with one another when we understand that the perceived discovery problems can be substantial for the minority of the cases in which they occur.

**A BRIEF HISTORY OF DISCOVERY REFORM**

The modern history of discovery practice began with the adoption of the Federal Rules of Civil Procedure in 1938. A key element of the philosophy behind those Rules was "notice" pleading with facts of cases to be developed through discovery. The new Rules expanded the scope of discovery and relaxed prior limitations on the amount and timing of discovery.\textsuperscript{17} Although the Rules are often cited as laying the basis for contemporary judicial control over the litigation process,\textsuperscript{18} in practice they appear to have placed control over the discovery process.

\textsuperscript{14}Louis Harris and Associates (1987), p. 37.
\textsuperscript{17}Connolly, Holleman, and Kuhlman (1978), p. 9.
\textsuperscript{18}Connolly, Holleman, and Kuhlman (1978), p. 10.
predominantly in the attorneys’ hands. Indeed, amendments in 1946 and 1970 further relaxed limitations on attorneys’ discovery activities.\textsuperscript{19}

By the mid-1970s, however, confidence in attorneys’ abilities to efficiently manage discovery had begun to erode. After the 1975 National Conference on the Causes of Popular Dissatisfaction with the Administration of Justice (convened by Chief Justice Warren Burger and known as the Pound Conference), and the issuance of a report on discovery abuse by an American Bar Association (ABA) Special Committee that was established as a follow-on to the conference,\textsuperscript{20} support mounted for increasing judicial control over discovery. When dissension within the bar diluted the force and scope of amendments to the Rules that were adopted in 1980, a second set of stronger amendments was adopted in 1983. The new amendments prohibited redundant discovery, required that discovery be proportional to the magnitude of the case, and mandated court sanctions for violation of the rules. They also explicitly provided for judicial discussion of discovery plans at pretrial conferences and for the judge’s issuance of an order scheduling discovery and other pretrial events.\textsuperscript{21} In the following years, many federal jurisdictions adopted local court rules limiting the amount and timing of discovery.

Notwithstanding these rule changes, concern about discovery abuse continued through the 1980s and contributed to the passage of the Civil Justice Reform Act of 1990 (CJRA). That act, a product of a task force set up by Senator Joseph Biden to consider options for reducing delay and costs associated with civil case processing,\textsuperscript{22} required each federal district court to submit a plan for improving civil case management. The act encouraged courts to consider changes in discovery, including limitations on timing and amount of discovery and special programs to assist attorneys in better planning discovery activities.

\textsuperscript{19}Cornolly, Holleman, and Kuhlman (1978). The 1970 amendments were intended in part to reduce judicial time spent on managing civil litigation. See Cohr (1979), p. 254.
\textsuperscript{21}Cavanagh (1985), pp. 792-793.
\textsuperscript{22}See The Brookings Institution (1989).
In December 1993, partially in response to the Civil Justice Reform Act, a number of changes to the Federal Rules of Civil Procedure were made. Those changes included a requirement that parties meet and prepare a proposed discovery plan before a scheduling conference is held or a scheduling order is due, a requirement for disclosure of certain basic relevant information without waiting for a discovery request, discretionary sanctions for Rule 11 violations rather than mandatory sanctions, and a limitation on the number of depositions and interrogatories. Districts were allowed to opt out of some of these changes, in part to enable them to continue their CJRA mandated cost and delay reduction plans unchanged.

By the late 1970s, many state court systems were experimenting with limitations on discovery activity. In a survey conducted in 1981, RAND's Institute for Civil Justice found that 29 states and 23 of the nation's largest metropolitan trial courts had adopted one or more measures to expedite pretrial discovery, including using mail and telephone to expedite pretrial motions processing, requiring attorneys to attempt to settle their discovery disputes before requesting judicial intervention, assigning parajudicial personnel to hear discovery motions, limiting the number of interrogatories, limiting the time allowed for discovery, holding conferences to schedule discovery, and authorizing sanctions for frivolous discovery motions.23

For example, California, which had eliminated prior restrictions on discovery in 1957, reinstated some limitations in the Civil Discovery Act of 1986.24 The act restricts the number of special interrogatories to 35, the number of requests for admission to 35, and the number of depositions of any one witness to one. The act defines discovery abuse and authorizes sanctions, including monetary fines, for such abuse.25 In addition, under the Trial Court Delay Reduction Act of 1986, some California courts experimented with schedules for case disposition that mandated completion of discovery by a specified number of days after

case filing, and in other courts, discovery schedules tailored to the specifics of individual cases were set at judicial status conferences.\textsuperscript{26}

OPTIONS FOR REFORM

As a result of ongoing concern about discovery abuse, many federal and state courts now have in place some sort of limitations on the extent, timing, or manner of discovery. Some federal district courts adopted new procedures for managing discovery as part of their required plans for reducing civil case delay and expense under the CJRA. In addition, the Judicial Conference Advisory Committee on the Federal Rules is currently holding exploratory discussions to consider the development of proposals for additional modifications to the Federal Rules of Civil Procedure.

The major options for reform can be grouped into seven categories: (1) adopting standardized rules limiting the scope, amount, or timing of discovery activity; (2) mandating early disclosure of key information; (3) imposing monetary or other sanctions for violation of court-enunciated practice standards; (4) assisting attorneys in more efficient management of discovery; (5) cost and fee shifting; (6) closer management of attorneys by clients; and (7) shifting responsibility for conducting discovery to judges, as is common in some European systems. Below we discuss each of these in turn.

Standardized Rules Limiting the Scope, Amount, or Timing of Discovery

As indicated by the discussion above, the most frequent response to concern about discovery abuse has been adoption of rules limiting the amount or timing of discovery activity. Limitations on timing appear to have the desired effect of reducing total time to disposition, but severe restrictions on the elapsed time for pretrial activities are frequently met with opposition from the bar.\textsuperscript{27} Moreover, limitations on

\textsuperscript{26}Judicial Council of California (1991).

\textsuperscript{27}In its report to the Legislature on the Trial Court Delay Reduction Act, the Judicial Council noted: “Despite bar involvement in planning the programs in all counties and despite the support of a majority of lawyers for judicial control of the pace of litigation, there is substantial discontent among lawyers with the program’s operation.” Judicial Council of California (1991), p. II-4.
elapsed time for discovery do not necessarily reduce the magnitude of
discovery activity and therefore may have little effect on discovery
costs. Whether imposing limitations on the amount of discovery (e.g.,
number of interrogatories, number of requests for admission, number or
length of depositions, or volume and nature of document requests) has
the desired effect of limiting the overall magnitude of discovery
activity is unclear. It may be that to satisfy attorney concerns about
the need for extensive discovery in some cases, courts set these limits
so high as to have little effect on most cases. Our interviews suggest
that attorneys sometimes can evade these standards, either by simply
ignoring them, by obtaining judicial waivers, or by switching to some
other formal or informal method of discovery. Numerical limitations
also raise the question of how to define a single interrogatory,
deposition, or other request.

Courts may have more success in implementing numerical and time
limits when these are coordinated with differentiated case management
(DCM) plans, if those plans are fully implemented. Incorporating
numerical limits on discovery activity into differentiated case
management plans may also permit courts to specify more modest amounts
of activity for ordinary cases, while preserving higher limits for more
complex cases.

A relatively new approach to limiting discovery activity is “phased
discovery,” in which attorneys, on their own or with the court’s
assistance, develop plans for sequencing discovery.28 Sequencing may be
by subject matter, party, or type of evidence, and may be prescribed by
a broadly applicable rule or on a case-by-case basis. Phased discovery
may be linked to specific case milestones—for example, attorneys may be
permitted to conduct only a modest amount of discovery before an early
neutral evaluation or an early status conference is conducted. The goal
is to focus parties on those aspects of discovery that are most helpful
to evaluating the case, as early in the litigation process as possible.

28“Phased discovery” is suggested in the Manual for Complex
Litigation (Third) (1995) and was advocated for a broad range of civil
cases by Judge Robert Peckham of the Northern District of California.
See American Bar Association Litigation Section (1992), pp. 10-15, and
thereby contributing to settlement before high litigation costs are incurred.\footnote{Some jurisdictions have implemented a form of phased discovery, by limiting the amount of discovery permitted prior to court-administered arbitration. See Barkai and Kassebaum (n.d.), p. 3.}

The discussion above concerns attempting to control discovery without changing the general scope of allowable discovery. However, the scope of discovery itself is another major area for potential reform to limit whatever discovery problems may exist. As recently as 1970, the scope of discovery was expanded by rule change. Subsequent rule changes have not narrowed the general scope of discovery, but the American College of Trial Lawyers is currently recommending the amendment of discovery Rule 26(b)(1) to narrow the scope and breadth of civil discovery by changing the language from \"... any matter, not privileged, which is relevant to the subject matter involved in the pending action, whether it relates to the claim or defense of the party seeking discovery or to the claim or defense of any other party \ldots\" to new language \"... any matter, not privileged which is relevant to the claim or defense of the party seeking discovery or to the claim or defense of any other party \ldots\".\footnote{Proposal presented to the Judicial Conference Advisory Committee on Civil Rules by the American College of Trial Lawyers, Irvine, CA, at a January 16, 1997, Advisory Committee meeting (n.d.).}

\textbf{Mandatory Early Disclosure}

CJRA brought about substantial change in early disclosure of information without a formal discovery request. Only one district required it before CJRA;\footnote{At least one other district required attorneys to confer before the first pretrial conference to attempt to agree on a scheduling order.} after CJRA, all pilot and comparison districts in the RAND evaluation adopted one of five approaches providing either voluntary or mandatory exchange of information by lawyers, sometimes only for specified types of cases. Three pilot and two comparison districts adopted the voluntary exchange model, which encourages lawyers to cooperate in exchanging information. Three pilot districts and one comparison district followed a mandatory exchange model for a limited subset of cases and a voluntary model on other
cases. Two pilot districts and one comparison district required lawyers to mandatorily disclose certain information, including anything bearing significantly on their sides' claims or defenses. Two other pilot districts and one other comparison district have a similar mandatory requirement, but they apply it to all information bearing significantly on both sides' claims or defenses.

After our sample cases were selected, four pilot districts switched from their initial early disclosure procedure to follow the December 1993 revised F.R.Civ.P. 26(a)(1), which requires the mandatory exchange of information relevant to disputed facts alleged with particularity in the pleadings, plus information on damages and insurance. Six comparison districts also are following the revised Rule 26(a)(1). The ten other pilot and comparison districts have decided to “opt out” and are not following the revised Rule 26(a)(1). Some districts opted out to retain their pilot program disclosure rules, some of which were more stringent in their disclosure requirements than the revised Rule 26(a)(1). Because our sample cases were selected well before the revised Rule 26(a)(1) went into effect, we could not use our data to evaluate that revised rule.

Sanctions

Increasingly, proposals for restrictions on discovery are accompanied by calls for monetary or preclusionary sanctions against those who violate the standards. The 1983 amendments to the Federal Rules explicitly authorized sanctions, including attorney fees, for discovery abuse, as did California’s Civil Discovery Act of 1986. Empirical research on sanctions suggests that courts and individual judges vary considerably in their use of sanctions. But courts may be becoming more willing to impose sanctions as caseload pressure increases.

32 The Advisory Committees Notes to the 1983 Amendments to Rule 26 cite this research as a motivation for making judicial sanctioning authority explicit. But as late as 1988, the General Accounting Office found substantial variation in the use of sanctions. See U.S. General Accounting Office (1988), pp. 28-29.
Providing Assistance with Discovery Planning

Courts also are increasingly becoming involved in assisting attorneys in planning discovery. The 1993 amendments to Rule 16 provided for the inclusion of key discovery events in the judge’s scheduling order to be issued after the pretrial conference. In federal courts, magistrate judges and special masters have assisted attorneys in managing discovery in complex litigation. Most federal district courts require that attorneys make a good-faith effort to resolve discovery disputes before filing motions. And the 1993 Federal Rules amendments required that the parties meet and prepare a proposed discovery plan before a scheduling conference is held or a scheduling order is due, although individual districts could exempt some or all types of cases from this requirement.

One relatively new alternative dispute resolution mechanism that may have the added benefit of assisting attorneys in developing discovery plans is mandatory early neutral evaluation (ENE). First adopted in the Northern District of California, ENE was conceived by the bench and bar at least in part to help attorneys identify the issues that are central to their disputes, so that they could focus their pretrial efforts on these issues. Under the Northern District’s plan, an attorney volunteer (the “neutral”) meets with the attorneys and their clients early in the litigation process to discuss the case. The neutral evaluator then delivers his or her assessment of the case to each side, and this ENE can include advice on discovery planning. We do not have sufficient data on cases that received ENE to evaluate its potential effect on discovery.

It is important to note that court efforts to assist attorneys in developing more efficient discovery plans are not cost-free. Unless increased judicial management time directed toward the pretrial process translates into substantial savings at later pretrial or trial stages, the net effect on court budgets could be an increase in costs borne by taxpayers. If this were the case, public policymakers would have to decide whether these increased costs are justified by cost savings and other benefits to individual and corporate litigants. Alternatively, turning to attorney volunteers to assist in discovery management, as is
contemplated in most early neutral evaluation programs, imposes an additional burden on the bar.

Cost and Fee Shifting

Under the "American Rule," each side bears the costs of its own litigation, including both the costs of initiating discovery of information in its opponent's possession and the costs of responding to an opponent's requests for information. Under certain circumstances, for public policy reasons, legislatures have provided for "one-way" cost shifting, permitting prevailing plaintiffs to recover legal fees from defendants. Federal and state discovery rules have also provided for limited shifting of discovery costs, in cases where the court finds that a motion was frivolous or intended for an improper purpose, such as to unnecessarily delay the proceedings or harass the opposing party. Federal Rule 11 states that the court "may" impose sanctions on inappropriate behavior, by ordering the offending party to pay some or all of the reasonable expenses incurred by the other side as a result of this behavior, including attorney fees.

Although some of the options outlined above have proved controversial, all involve modifications in existing court rules or procedures. Two other options for reform require more extensive rethinking of the civil litigation process: one, by rethinking and perhaps, restructuring, the lawyer-client relationship, the other, by redefining the role of the judge.

Closer Management of Attorneys by Parties

In response to rising legal costs, many large corporations have begun restructuring their relationships with legal service providers. Eighty percent of Fortune 1000 corporations surveyed by Louis Harris and Associates said that they have brought more of their legal work in-house in recent years.\textsuperscript{33} Bringing work in-house provides an opportunity for corporations to more closely examine the costs and benefits of litigation strategies, including discovery. Almost all of the corporate legal officers surveyed by Louis Harris (95 percent) said they involve

\textsuperscript{33}Hensler (1992), p. 7.
in-house counsel in planning strategy on major matters, and 60 percent said that they require litigation budgets, including resources allocated for discovery, to be submitted for major work. Almost all of these corporations (98 percent) now require their outside counsel to submit detailed bills.\textsuperscript{34} These changes in policies concerning corporate client/outside counsel relationships have the potential to heighten corporate parties' attention to the costs (and benefits) of alternative discovery strategies. However, it may be more difficult for smaller corporations, with fewer resources for managing their legal services, to implement such policies.

Some critics of discovery allege that some attorneys engage in excessive discovery to run up their bills. Because corporate attorneys typically are paid on an hours and expenses basis, it is often said that they have an incentive to "keep their meters running." Some corporations are experimenting with alternative billings practices intended to change these incentives. For example, some corporate legal officers are requesting that outside counsel charge flat rates for certain cases or for certain litigation activities ("menu billing"). Others are agreeing to fees with contingency factors—sometimes called "premium" billing.\textsuperscript{35} Because these alternative fee arrangements reduce dependence on hourly billing, they should reduce the incentives of attorneys to engage in discovery as a means of fee enhancement.

**Judicial Discovery**

The American civil litigation system relies on an adversarial process to investigate ("discover") and present the facts that are relevant to resolving a dispute. Each side is assumed to have the incentives to bring out those facts that would support its case. In principle, if the parties have equal resources and equally skilled representatives, these incentives should assure that all of the relevant facts are presented to the fact-finder. By excluding the judge from the investigatory process, the American system also assures that final judgment on the case will be withheld until all of the appropriate facts

\textsuperscript{34}Hensler (1992), p. 15.
\textsuperscript{35}Hensler (1992), pp. 11-14.
have been developed. The increasing adoption of a "managerial judging" style, including increased involvement in managing discovery, has affected the judge's role as a purely neutral umpire. But the American system continues to rely on the parties' attorneys to develop the facts of the case.

Under European "inquisitorial" systems, the role of the judge in developing the facts of the case is far greater; indeed, the judge may be wholly responsible for deciding what issues are central to the dispute, at what stage of the process to hear these issues, and what evidence should be brought to bear. For example, under the German system, there is no sharp demarcation between pretrial proceedings and trial: The judge hears the issues in the order that he or she feels is most likely to assist in resolving the case. The parties' representatives identify witnesses to appear before the judge, but apparently do not engage in any extensive pretrial questioning of these witnesses. Nor do they engage in any extensive investigation of the facts, beyond the information they obtain from their clients.36

Shifting the conduct of discovery to judges in the United States would require a radical rethinking of the virtues of the adversarial process; it would also require a rethinking of court organization. But as an alternative to patchwork reforms of discovery that inexorably draw the judge deeper into the investigatory process, perhaps without sufficient evaluation of the larger consequences for civil case disposition, it may be appropriate to undertake such a systematic rethinking.

SOME OBSTACLES TO REFORM

One of the obstacles to effective discovery reform has been the failure of reformers to carefully identify the problem they are seeking to remedy and the sources of that problem. For example, is the problem that there is too much discovery overall, or too much in some specific types of cases? If it is the latter, in what types of cases is discovery problematic? Answering these questions is important because it is difficult to set overall limits on the quantity of discovery that

are both effective for large numbers of cases and do not impair equity in particular subsets of cases.

Is the problem that discovery prolongs litigation, or that it costs too much? If both are of concern, which matters more? Answering this question is important, because some mechanisms for limiting the elapsed time for discovery may actually increase the amount of discovery.

With regard to costs, is the problem that, regardless of its merits, discovery costs too much, or that the costs are disproportionate to the merits in too many cases? Discovery might cost too much because lawyers’ hourly fees are too high, because lawyers bill too many hours for discovery activities that could be done more efficiently in less time, or because lawyers engage in more discovery than is necessary. Court rules may affect the latter, but court rules alone will not reduce lawyer fees and lawyer hours.

Are the costs that are problematic the direct costs of the litigation (e.g., legal fees) or the indirect burdens on parties (e.g., employee time spent responding to discovery)? Or are these costs of equal concern? Limiting burdens on the parties may require somewhat different strategies than are required to limit direct litigation costs (such as limiting party burdens by focusing more on ways to make document discovery more efficient, and focusing more on reducing the amount of time parties need to spend on identifying which information is privileged).

Not only has there been insufficient attention to the nature of the problem that needs to be “fixed,” there has also been insufficient attention to the source of the problems. Understanding the source of the problems is important because without such an understanding reformers run the risk that the “fixes” they choose will be ineffective. For example, if the absence of sanctions invites excessive discovery and judges have incentives not to impose sanctions, one cannot fix this problem simply by writing more rules about sanctions into the code. Instead one needs to invest in understanding why judges do not use the sanctioning power they already have. If attorneys engage in excessive discovery because they obtain lucrative fees from this practice, it might be more effective for clients to institute controls on fees—for
example, through alternative fee arrangements—than to include new restrictions on the amount of discovery into the code.

Alternatively, if attorneys engage in overly aggressive discovery because they believe that is what their clients expect of them, perhaps those clients need to be educated as to the relationship between their expectations of their counsel and their litigation costs. If the local legal culture sometimes includes the use of overly aggressive discovery for strategic purposes of imposing costs and delay on opposing parties, which may sometimes drive inappropriate settlements or be a problem for poorer parties, perhaps the local judiciary needs to become more actively involved in managing discovery and signaling displeasure with inappropriate discovery behavior by lawyers and parties.

A WORD ABOUT THE FUTURE

Although we do not know of any major empirical research on the correlation between the information technology explosion and discovery, it seems reasonable to assume that the character and magnitude of discovery is shaped in part by the availability of information technologies. All of us have observed the proliferation of paper and contacts that have flowed from the availability of paper-copiers, faxes, and electronic communication. Now computer technologies also facilitate the storage and retrieval of information, which can now be accessed from multiple databases with a relatively few keystrokes. The implications for discovery are truly mind-boggling. At the same time, many courts, strapped for financial resources, are still struggling to move into the computer age. Any consideration of discovery reforms must include an assessment of how new information technologies are likely to affect lawyers, clients, and the courts.
2. DESCRIPTION OF DISCOVERY COSTS AND OTHER INFORMATION FOR VARIOUS TYPES OF CASES

Discovery is a major factor influencing both the length and the cost of litigation.

Our main evaluation report contains information about general civil cases in the aggregate and about litigation costs measured in terms of total lawyer work hours, but there has been considerable interest expressed in having more detailed information about various types of cases and about how total lawyer work hours are broken down between discovery and other types of activities. This section addresses those interests.

The data come from our sample of cases filed in 1992-93 after the CJRA was enacted and include closed general civil cases for which we had at least one lawyer providing information. We provide various types of information on each category of case, including time to disposition, lawyer satisfaction with judicial case management, lawyer views on the fairness of judicial case management, total lawyer work hours per litigant, percentage of cases with zero discovery lawyer work hours, lawyer work hours on discovery per litigant, the fraction of total lawyer work hours devoted to discovery matters, and the number of discovery motions filed.

The various types of cases on which we provide information here are categorized separately by:

- Case closure point: before issue joined, after issue joined and closed in 270 days or less after filing, or after issue joined and closed over 270 days after filing.
- Case complexity: high, medium, or low (highest subjective rating by any lawyer or judge on the case).
- Discovery difficulty: high, medium, or low (highest subjective rating by any lawyer or judge on the case).
- Type of attorney: represented plaintiff or defendant.
• Type of private attorney fee: hourly or contingent (other types of fee structures are not included here).
• Number of lawyers in firm or legal department of the organization: more than five, or less.
• Monetary stakes: over $500,000, or less.
• Nature of suit: tort, contract, or other.
• Category of total lawyer work hours: bottom 75 percent, top 25 percent,\textsuperscript{1} or top 10 percent.\textsuperscript{2}

We present information on medians (half the cases have less than the median, and half have more than the median) as the best available measure of a “typical” case. We also present information on the average total lawyer work hours and the average discovery lawyer work hours as the best available measure of the expected cost of the average case. However, we caution that litigation in general is composed of many cases without great costs, and a small fraction of cases with very high costs. This high cost tail of the distribution of cases can contain a few very big cases that strongly affect the average, but not the median. Consequently, when comparing different types of cases the median is a more stable measure, and too much emphasis should not be placed on interpreting differences in the averages between subcategories of cases.

\textbf{CASE CLOSURE POINT}

In Table 2.1 we present information by case closure point. Note that about a fourth of the general civil cases close before issue is joined, about another fourth close after issue is joined and within 270 days after filing, and nearly half close after issue is joined and more than 270 days after filing.

\textsuperscript{1}For general civil cases from the CJRA 1992-93 sample with issue joined, that closed with time to disposition over 270 days and had lawyer work hours reported, the top 25 percent had total lawyer work hours per litigant of more than 188.
\textsuperscript{2}For general civil cases from the CJRA 1992-93 sample with issue joined, that closed with time to disposition over 270 days and had lawyer work hours reported, the top 10 percent had total lawyer work hours per litigant of more than 450.
Table 2.1
Information by Case Closure Point: 1992-93 Sample, Closed General Civil Cases with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Case Closure Point</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>After Issue Joined, in</td>
</tr>
<tr>
<td></td>
<td>Before Issue</td>
</tr>
<tr>
<td>Percent in category</td>
<td>28</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>122</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>65</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>82</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>20</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>65</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>72</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>0</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>13</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>0</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>0.1</td>
</tr>
<tr>
<td>% of total lawyer work hours on all cases</td>
<td>13</td>
</tr>
<tr>
<td>% of discovery lawyer work hours on all cases</td>
<td>8</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

About three-fourths of the cases that close before issue is joined have no lawyer work hours spent on discovery and 37 percent of those with issue joined that close within 270 days after filing have no lawyer work hours on discovery. However, only 15 percent of those that close at least 270 days after filing have no discovery costs. The median time lawyers spend on discovery per litigant for cases with issue joined and closed within 270 days after filing is only three hours, whereas the median is 20 hours for those cases that close more than 270 days after filing.
Overall, lawyer work hours per litigant on discovery are zero for 38 percent of general civil cases and low for the majority of cases. The nearly half of the cases that close more than 270 days after filing consume about three-quarters of all lawyer work time, and about 80 percent of all lawyer work time on discovery. Since we are most concerned with discovery management policies in this report, we will focus the remainder of the report on these general civil cases that close at least 270 days after filing and consume the vast majority of lawyer work time on discovery.³

Discovery is not a pervasive litigation cost problem for the majority of cases. The empirical data show that any problems that may exist with discovery are concentrated in a minority of the cases, and the evidence indicates that discovery costs can be very high in some cases. Subjective information from our interviews with lawyers also suggests that the median or typical case is not "the problem." It is the minority of the cases with high discovery costs that generate the anecdotal "parade of horrors" that dominates much of the debate over discovery rules and discovery case management. These findings suggest that policymakers consider focusing discovery rule changes and discovery

³Policies that significantly reduce time to disposition in long cases (cases with time to disposition greater than 270 days) might not affect time to disposition for the entire population of cases in the same way. Hence our analyses on only cases with time to disposition greater than 270 days might not generalize to the entire population of cases. However, we feel that because the courts and others are most concerned with reducing delay in long cases, exploring the effects of case management policy on long cases is appropriate even if these effects might differ somewhat for cases that close in less than 270 days.

Furthermore, additional analyses we conducted demonstrate that the policies of early management are associated with shorter time to disposition across the entire population of cases, not only for cases that lasted over 270 days. In our main evaluation report, we compared the percentage of a district’s cases receiving early management to the percentage lasting over 270 days and found that more early management was associated with fewer cases lasting over 270 days. In addition, we explored survival curves (Miller, 1981) and found that they also suggest that early management policies will have effects on the entire population. Combining all this evidence, we feel that policies with large effects on the long cases are also likely to have effects on the entire population of cases.
management on the types of cases likely to have high discovery costs, and the discovery practices that are likely to generate those high costs. More attention and research is clearly needed on how to identify those high discovery cost cases early in their life, and how best to manage discovery on those cases.

**HOW LAWYERS SPEND THEIR TIME**

In Table 2.2 we present information on how lawyers spend their work hours on general civil cases that close at least 270 days after filing. The average lawyer work hours per litigant is 232 hours, of which an average of 36 percent or 83 hours is spent on discovery, including discovery motions. In Table 2.1 we saw that the median percentage discovery hours of total lawyer work hours is 25 percent. So, whether we consider average or median percentages, discovery is about one-fourth to one-third of total lawyer work hours per litigant. Discovery accounted for less than half the lawyer work hours in all the subsets of general civil cases that we examined.

**CASE COMPLEXITY**

In Table 2.3 we present information on differences among cases that are of high, medium, or low complexity, based on the highest subjective complexity rating by any lawyer or the judge on the case. Note that high complexity cases consume about four times as many lawyer work hours as low complexity cases, but that the median percentage of total lawyer work time that is devoted to discovery is about the same.

We conducted multivariate statistical analyses that included case complexity as a factor in predicting time to disposition, total lawyer work hours, lawyer work hours on discovery, lawyer satisfaction, and lawyer views of fairness (see the appendix). Higher complexity cases take significantly longer to close and require significantly more lawyer work hours than lower complexity cases, but there is not a significant difference in lawyer satisfaction or views on fairness of judicial case management for cases of different complexity.
Table 2.2

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Average Lawyer Work Hours per Litigant</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trials, including direct preparation for trial</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>Alternative dispute resolution after filing</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Discovery after filing, including motions</td>
<td>83</td>
<td>36</td>
</tr>
<tr>
<td>Motion practice, excluding discovery</td>
<td>36</td>
<td>16</td>
</tr>
<tr>
<td>Other pretrial conferences or talks with judicial officer</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Other time worked after filing federal case: on research, investigation, writing, talking with parties and lawyers outside court, or anything else related to the litigation</td>
<td>55</td>
<td>24</td>
</tr>
<tr>
<td>All time worked before filing federal case, in preparation for filing case</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Total work hours per litigant</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

NOTE: Lawyers were asked the following question after case closure: “Approximately how many of the total number of hours worked for your party or parties were spent on each of the activities listed below? Again do not include activity related to state court, any government administrative proceeding, or appellate litigation.” Columns may not sum exactly due to rounding and missing data.

DISCOVERY DIFFICULTY

In Table 2.4 we present information on differences among cases that are of high, medium, or low discovery difficulty, based on the highest subjective rating by any lawyer or the judge on the case.\(^4\) Not

\(^4\)Lawyers and judges were asked “When this litigation began, how would you have rated this case in terms of . . . difficulty of discovery . . . ?” It is possible that some people filling out the survey after the litigation was closed reported greater difficulty of
Table 2.3
Information by Category of Case Complexity: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Case Complexity</th>
<th>Significant Difference Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent in category</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Median days to disposal</td>
<td>594</td>
<td>463</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>72</td>
<td>73</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>86</td>
<td>89</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>150</td>
<td>78</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>432</td>
<td>201</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>147</td>
<td>76</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>1.9</td>
<td>0.8</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

Surprisingly, high discovery difficulty cases consume about three times as many total lawyer work hours and five times as many lawyer work hours on discovery as low discovery difficulty cases consume. However, the discovery because they knew lawyer work hours were high, rather than reporting their initial view when the litigation began.
### Table 2.4
Information by Category of Discovery Difficulty: 1992-93 Sample,
General Civil Cases with Issue Joined, Closed with
Time to Disposition over 270 Days and
with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Difficulty of Discovery</th>
<th>Significant Difference Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent in category</td>
<td>High: 19</td>
<td>Medium: 53</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

median percentage of total lawyer work time that is devoted to discovery on high discovery difficulty cases is still only 33 percent.

We conducted multivariate statistical analyses that included discovery difficulty as a factor in predicting time to disposition.
total lawyer work hours, lawyer work hours on discovery, lawyer satisfaction, and lawyer views of fairness (see the appendix). Higher discovery difficulty cases have significantly higher lawyer work hours, both in total and on discovery, but there is not a significant difference in lawyer satisfaction or views on fairness of judicial case management for cases of different discovery difficulty. Discovery difficulty was not a significant predictor of time to disposition, after the analysis accounted for the other multiple factors that are significant in predicting time to disposition.

PLAINTIFFS' AND DEFENDANTS' ATTORNEYS

In Table 2.5 we present information on differences between plaintiffs' and defendants' attorneys. Plaintiffs’ attorneys reported spending a median of 100 total work hours per litigant, whereas defendants' attorneys reported spending a median of 75 total lawyer work hours per litigant, and the difference is statistically significant. There is not a significant difference between plaintiffs’ and defendants' attorneys on lawyer work hours spent on discovery or on any of the other variables that we tested.

HOURLY AND CONTINGENT FEE ATTORNEYS

In Table 2.6 we present information on hourly and contingent fee attorneys (other types of fee structures are not included here because of the limited amount of data we had about them). We did not find a statistically significant difference between hourly and contingent fee lawyers in predicting any of the time to disposition, total lawyer work hours, lawyer work hours on discovery, satisfaction, or fairness measures that we analyzed statistically.

SIZE OF LAW FIRM OR LEGAL DEPARTMENT

In Table 2.7 we present information on differences between attorneys based on the size of the law firm or legal department: more than five or less. Attorneys from larger firms work significantly more hours per litigant, in total and on discovery, than their counterparts from smaller firms, although the fraction of time they spend on discovery is about the same. In studying the data, we suspect there may
Table 2.5
Information by Type of Attorney: 1992-93 Sample, General Civil Cases
with Issue Joined, Closed with Time to Disposition over
270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Attorney</th>
<th>Significant Difference Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent in category</td>
<td>Plaintiff 42</td>
<td>Defendant 58</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>Plaintiff 459</td>
<td>Defendant 471</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>Plaintiff 72</td>
<td>Defendant 74</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>Plaintiff 88</td>
<td>Defendant 89</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>Plaintiff 100</td>
<td>Defendant 75</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>Plaintiff 271</td>
<td>Defendant 204</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>Plaintiff 13</td>
<td>Defendant 16</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>Plaintiff 20</td>
<td>Defendant 20</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>Plaintiff 95</td>
<td>Defendant 74</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>Plaintiff 25</td>
<td>Defendant 29</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>Plaintiff 0.9</td>
<td>Defendant 1.0</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

be some systematic bias by litigants in favor of hiring larger firms to handle the more complex and more costly cases.

SIZE OF MONETARY STAKES

In Table 2.8 we present information on the size of the monetary stakes, which we categorized into stakes over or under $500,000 in the table. Our statistical analysis was conducted on the log of stakes, as described in the appendix. We found that higher stakes are associated with significantly higher total lawyer work hours, significantly higher
Table 2.6
Information by Type of Private Attorney Fee: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Private Attorney Feea</th>
<th>Significant Difference Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>% lawyers satisfied with management</td>
<td>72</td>
<td>No</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>89</td>
<td>No</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>83</td>
<td>No</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>259</td>
<td></td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>107</td>
<td>46</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>1.0</td>
<td>0.9</td>
</tr>
</tbody>
</table>

aPercentages in rows may not add to 100 due to rounding and missing data. Types of attorneys and fees not shown in the table include prepaid legal insurance attorneys, government attorneys who were an employee of a party, private attorneys who were full time employees of a party, attorneys with mixed fee arrangements, and attorneys who charged no fee.

lawyer work hours on discovery, and significantly longer time to disposition, but that stakes are not significantly related to satisfaction or fairness. Even for cases with stakes over $500,000, the median percentage of lawyer work hours spent on discovery was only 30 percent.

NATURE OF SUIT

In Table 2.9 we present information on the nature of suit, categorized as tort, contract, or other. We found no statistically
Table 2.7
Information by Size of Firm or Legal Department: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Lawyers in Firm or Legal Department</th>
<th>Significant Difference Shown in Multivariate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>More Than Five</td>
<td>Five or Less</td>
</tr>
<tr>
<td>Percent in category</td>
<td>68</td>
<td>31</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>460</td>
<td>473</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>73</td>
<td>75</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>90</td>
<td>66</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>275</td>
<td>137</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>101</td>
<td>44</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>1.0</td>
<td>0.8</td>
</tr>
</tbody>
</table>

*NOTE:* Percentages in rows may not add to 100 due to rounding and missing data.

A significant difference between those three categories of cases on any of the time to disposition, lawyer work hours, satisfaction, or fairness measures. We believe that the tort and contract categories are too aggregated, with too heterogeneous a composition within each category, to be meaningful in studying lawyer work hours and time to disposition. Smaller, more narrowly defined categories should be studied, but we had too few cases in our sample to do subcategories within tort, contract, and other types of cases in detail.
Table 2.8
Information by Size of Monetary Stakes: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Monetary Stakes</th>
<th>Significant Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Over $500,000</td>
<td>Less, Greater Than Zero</td>
</tr>
<tr>
<td>Percent in category</td>
<td>28</td>
<td>61</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>537</td>
<td>447</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>68</td>
<td>77</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>89</td>
<td>90</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>172</td>
<td>68</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>483</td>
<td>126</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>48</td>
<td>17</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>190</td>
<td>36</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>1.5</td>
<td>0.8</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

CASES WITH MOST LAWYER WORK HOURS

Finally, in Table 2.10 we present information by category of total lawyer work hours: bottom 75 percent, top 25 percent, and top 10 percent of closed cases. The top categories of the cases with the most total lawyer work hours were obviously significantly more costly and had

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5About 8 percent of our sample of cases remained open at the conclusion of our data collection. They are not included in this analysis.
Table 2.9  
Information by Nature of Suit: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Nature of Suit</th>
<th>Significant Difference Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent in category</td>
<td>Tort 26</td>
<td>Contract 24</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>477</td>
<td>430</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>76</td>
<td>73</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>91</td>
<td>88</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>147</td>
<td>312</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>48</td>
<td>104</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

significantly higher lawyer work hours spent on discovery, but they did not have statistically significantly longer time to disposition after other variables such as complexity and stakes were factored into the multivariate analysis. The top 10 percent had a median of 950 total work hours per litigant, a median of 300 lawyer work hours on discovery, and a median percentage of lawyer work hours spent on discovery of 36.
Table 2.10
Information by Category of Total Lawyer Work Hours: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category of Total Lawyer Work Hours</th>
<th>Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bottom 75%</td>
<td>Top 25%</td>
</tr>
<tr>
<td>Percent in category</td>
<td>75</td>
<td>25</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>442</td>
<td>578</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>76</td>
<td>64</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>90</td>
<td>83</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>55</td>
<td>375</td>
</tr>
<tr>
<td>Average total lawyer work hours per litigant</td>
<td>66</td>
<td>730</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Average lawyer work hours on discovery per litigant</td>
<td>19</td>
<td>280</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>Average number of discovery motions on case</td>
<td>0.6</td>
<td>2.0</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding, missing data, and inclusion of top 10 percent within numbers shown for top 25 percent.

percent. These top categories of the most costly cases in terms of lawyer work hours also had significantly lower lawyer satisfaction with the judicial case management and a significantly lower percentage of the lawyers who felt the judicial case management was fair.
3. EVALUATION OF VARIOUS DISCOVERY MANAGEMENT POLICIES

INTRODUCTION

Discovery management policies include the CJRA principles of early and ongoing judicial control of pretrial processes such as discovery, requiring lawyers to jointly prepare a discovery/case management plan early in the case, exchanging information early without formal discovery, requiring good-faith efforts to resolve discovery disputes before filing motions, and limiting interrogatories and other forms of discovery.¹

To conduct this further evaluation of discovery management policies, discovery management policy information was obtained at the district level from court documents, local rules, and interviews with judges and clerks in each of the 20 study districts. In addition, discovery management information was obtained at the case level from over 5,000 court docket files and from lawyer surveys for cases filed in 1992-93 after the CJRA was passed. For each case, we learned when the judge started managing the case, if a trial schedule had been set, if a discovery schedule had been set, and if so when and how much time was allowed between the date the schedule was set and the date of discovery cutoff. From the docket, we also learned if any discovery motions had been filed. However, details of discovery management at the case level, such as limitations on depositions or requirements for sequencing of discovery, are usually not recorded on the docket and so were not available. We also surveyed the lawyers on each case to learn how much time they worked on the case and how much of that work time was devoted to discovery, to learn if early disclosure of information was made without a formal discovery request, and to learn if good-faith efforts had been made to resolve discovery disputes before a motion was filed.

The remaining five subsections of this section contain our evaluation of the following five types of discovery management policies:

¹For details of each district's CJRA plan and its implementation, see Kakalik et al. (1995a).
- 40 -

- Early case management and discovery planning,
- Early disclosure,
- Good-faith efforts in resolving discovery disputes,
- Limiting interrogatories, and
- Shortening discovery cutoff time.

Due to lack of sufficient data, we could not evaluate policies limiting the number or length of depositions, limiting document discovery, or dealing with issues of privilege. We also had insufficient data to evaluate methods lawyers use to manage discovery outside the court’s purview.

For details of our multivariate statistical analyses, refer to the appendix.

**EARLY CASE MANAGEMENT AND DISCOVERY PLANNING**

All of the 20 study courts’ CJRA plans accepted the principle of early and ongoing judicial control of the pretrial process. However, case management styles varied considerably between districts and between judges in a given district.

Four of the ten pilot districts required that counsel jointly present a discovery/case management plan at the initial pretrial conference, and nine of the other pilot and comparison districts later adopted this management technique after our sample cases were selected when the December 1993 Federal Rules changes were made.

In our statistical analyses, we defined early judicial case management as any schedule, conference, status report, joint plan, or referral to ADR within 180 days of case filing. This definition gives time for nearly all cases to have service and answer or other appearance of the defendants (which legally can take up to six months), so issue is joined, and it is appropriate to begin management if the judge wants to do so. We also explored alternative definitions of “early” using time periods other than six months, with results similar to those reported here.
Lawyer Work Hours

In our main evaluation report, we estimated a statistically significant increase in total lawyer work hours from early management. There were no consistent statistically significant differences for any of the components of early management considered separately.

Our main evaluation report showed that attorneys shown on the docket to have filed status reports or joint discovery/case management plans before day 180 in the life of the case did not have significantly different work hours than attorneys on cases with other forms of early management. On the other hand, we found that attorneys from districts with a policy that required early status reports or joint plans did report statistically significantly fewer work hours than attorneys from other districts.²

We explored this difference in our findings between case-level and district-level data in some depth in our further analysis of judicial discovery management policies, and learned that the case-level data are not reliable because of major differences in docketing practices between districts that require plans or status reports. The dockets that say a discovery plan was submitted are generally accurate, but the dockets that are silent on the subject of a discovery plan can mean either no plan was submitted, or a plan was submitted to the court but that fact was not separately shown on the docket. The case-level information on whether or not a discovery plan had been submitted was dropped from this further study because the docketing practices regarding the submission of those plans or reports were found to vary markedly between districts, making that case-level variable undesirable for statistical analyses across districts.

In our further analysis of judicial discovery management policies, we find that early management is associated with significantly increased total lawyer work hours if the district does not require discovery/case management plans. We estimated that early management without a mandatory planning policy increases work hours between 26 or 31 hours

²This result holds when we use either the intra-district correlation-adjusted or unadjusted standard errors.
depending on whether or not early management includes trial setting.\textsuperscript{3} However, early management is not associated with significantly increased total lawyer work hours if the district requires discovery/case management plans. We estimate almost no effect on lawyer work hours for the typical case with early management that includes a mandatory planning policy.\textsuperscript{4} This lends strong support for the continuation of a requirement of discovery/case management planning. That is, it appears that doing early management without planning increases lawyer work hours, but early management coupled with planning does not increase lawyer work hours.

Our interviews suggested reasons why early management may increase lawyer work hours. Lawyers need to respond to a court's management—for example, talking to the litigant and to the other lawyers in advance of a conference with the judge, traveling, and spending time waiting at the courthouse, meeting with the judge, and updating the file after the conference. In addition, once judicial case management has begun, a discovery cutoff date has usually been established, and attorneys may feel an obligation to begin discovery. Doing so could shorten time to disposition, but it may also increase lawyer work hours on cases that were about to settle when the judge began early management. The CJRA data indicate that cases that are managed early have a higher likelihood of having at least some lawyer hours spent on discovery.

However, when a district requires discovery/case management plans, the increase in lawyer work hours associated with early management appears to be offset by benefits associated with the required planning, and the net effect is no significant increase in lawyer work hours. There are at least two plausible explanations for this outcome. First, the planning itself may produce the benefit. The requirement that the lawyers jointly meet and prepare a discovery/case management plan for

\textsuperscript{3}See Table A.13.

\textsuperscript{4}Although the estimated effect is an hour or less, our 95 percent confidence intervals range from -19 to 18 hours if early setting of a trial schedule is included, and -20 to 28 hours if early setting of a trial schedule is not included in the policy applied to the case. These confidence intervals indicate that although we estimate almost no effect, there is a possibility that the policy might reduce lawyer work or might increase lawyer work by as much as about 3 days.
submission to the court may result in more efficient litigation with less lawyer work hours. Another plausible explanation is that the judges in districts that require plans may also manage cases differently and better (in ways that we did not measure) than judges in districts that do not require plans.

When we looked at various subsets of cases, we found no strong evidence that the effects of early management and discovery planning were systematically concentrated on certain types of cases based on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, or the top 25 percent most costly cases among general civil litigation that has time to disposition over 270 days after filing.\(^5\)

In addition to the further analysis that we did on total lawyer work hours, we also analyzed lawyer work hours on discovery. The policy implications and findings of statistical significance emerging from our analysis of lawyer work hours on discovery are very similar to those from our analysis of total lawyer work hours.

**Time to Disposition**

In our main evaluation report, using only cases with time to disposition over 270 days, we found that early management predicted significantly shorter time to disposition. We explored the component procedures of early management separately in our main evaluation report, and fit a separate model for each component. This model includes both a flag for early management as well as a flag for the particular early management procedure. For example, to explore the specific effect of setting a trial schedule prior to the 180th day of the case, we fit a model that includes our early management flag and a flag that is 1 if the case received a trial schedule before day 180 and 0 otherwise. The estimated coefficient for the trial schedule flag estimates the difference between cases that receive early management that includes

\(^5\)These cases had total lawyer work hours per litigant of more than 188.
setting the trial schedule and those that receive early management but do not include setting the trial schedule early. Using this approach we found that cases where a trial schedule was set before day 180 had statistically significantly shorter time to disposition than did cases receiving other types of early management. We found no statistically significant differences for conferences or mandatory arbitration, and we had mixed results for schedules in general and status reports or joint discovery/case management plans. Hence we concluded that there was not strong evidence that this joint discovery/case management plan policy was an important predictor of time to disposition.

In our further analysis of judicial discovery management policies, we again find that a statistically significant reduction in time to disposition is associated with early management without setting a trial schedule early, and a significantly larger reduction is associated with early management that includes setting a trial schedule early. In our further analysis we considered those two early management and trial scheduling policies used both with and without a discovery plan requirement, and the results were statistically significant. There was little difference in time to disposition with or without a discovery plan if a trial was scheduled early, but cases closed earlier if discovery planning took place in the absence of an early trial schedule.\textsuperscript{6} Thus, our further analysis suggests that the requirement of a discovery/case management plan is beneficial in reducing time to disposition, especially if a trial schedule is not set early. And we indicated above that the use of discovery plans appears to have beneficial effects in controlling lawyer work time.

We estimate that early management with a mandatory discovery planning policy on a typical case is associated with a 104-day reduction in time when a trial schedule is set early, and with an 85-day reduction for early management with a mandatory planning policy but without setting a trial schedule early. The estimated reduction for early

\textsuperscript{6}If we use the standard errors adjusted for intra-district correlation as discussed in the appendix, then early management without an early scheduling of a trial and without a discovery plan does not significantly reduce time to disposition (coefficient = -0.002, p = 0.169 for cases that close over 270 days after filing).
management with neither mandatory planning nor setting a trial schedule early is much smaller—only about 29 days.\footnote{See Table A.7.}

Our statistical analysis of subsets of cases does not lead to any suggestions for focusing these management policies only on certain types of cases. Our statistical results are consistent for most subsets of cases analyzed, although the top 25 percent most costly cases appear to especially benefit from the early setting of a trial schedule (early management of those top 25 percent of the costly cases without a trial date scheduled was not associated with significantly reduced time to disposition). And cases that are high in complexity, high in discovery difficulty, or high in stakes appear to especially benefit from the use of discovery/case management plans.

**Attorney Satisfaction**

In our main evaluation report, we found no statistically significant effects on attorney satisfaction for early case management in our model with cases closed over 270 days after filing. Furthermore we found no statistically significant differences in attorney satisfaction for cases receiving any of the components of early management (such as requiring a status report or discovery/case management plan or an early setting of a trial date) compared to cases not receiving the component.

In our further analysis of judicial discovery management policies, we again find no statistically significant effect on lawyer satisfaction from early management, setting a trial schedule early in the case, and requiring a discovery plan. We considered those three policies used in various combinations and did not find any significant difference in satisfaction, although as noted previously, some of those policies do significantly affect time to disposition and lawyer work hours.

Our statistical analysis of subsets of cases does not lead to any suggestions for focusing these management policies on certain types of cases. Our statistical results are consistent for nearly all subsets of cases analyzed, including the top 25 percent most costly cases.
Attorney Views on Fairness

We find no statistically significant effects for any of the policy variables on attorney views on fairness.

Information by Type of Early Management and Discovery Plan Policy

Table 3.1 presents information on time to disposition, lawyer work hours, satisfaction, and views on fairness for cases that were and were

Table 3.1

<table>
<thead>
<tr>
<th>Type of Early Management and Discovery Plan Policy</th>
<th>Significant Difference for Policy Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Manage, with Early Trial Set, Mandatory Policy Plan</td>
<td>448</td>
</tr>
<tr>
<td>Early Manage, without Early Trial Set, Mandatory Policy Plan</td>
<td>398</td>
</tr>
<tr>
<td>Early Manage, with Early Trial Set, Mandatory Policy Plan</td>
<td>495</td>
</tr>
<tr>
<td>Early Manage, without Early Trial Set, Mandatory Policy Plan</td>
<td>480</td>
</tr>
<tr>
<td>Early Manage, with Early Trial Set, Mandatory Policy Plan</td>
<td>525</td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.
not subject to an early management and joint discovery/case management plan. The numbers in the table, which reflect actual survey responses from the sample cases, generally corroborate the results of the statistical analysis. However, we caution that the districts and the cases from those districts differ on factors other than the policy on early disclosure. Our multivariate analyses adjust for those other factors, and the bivariate Table 3.1 does not.

EARLY DISCLOSURE

CJRA brought about substantial change in early disclosure among our study districts. Only one district required it before CJRA; after CJRA, all pilot and comparison districts have adopted one of five approaches providing either voluntary or mandatory exchange of information by lawyers, sometimes only for specified types of cases. Three pilot and two comparison districts adopted the voluntary exchange model, which encourages lawyers to cooperate in exchanging information. Three pilot districts and one comparison district followed a mandatory exchange model for a limited subset of cases and a voluntary model on other cases. Two pilot districts and one comparison district required lawyers to mandatorily disclose certain information, including anything bearing significantly on their sides’ claims or defenses. Two other pilot districts and one other comparison district have a similar mandatory requirement, but they apply it to all information bearing significantly on both sides’ claims or defenses.

The December 1993 revised F.R.Civ.P. 26(a)(1), which requires the mandatory exchange of information relevant to disputed facts alleged with particularity in the pleadings plus information on damages and insurance, was implemented after our sample of cases was selected, and hence can not be evaluated with our CJRA data. After our sample cases were selected, four pilot districts switched from their initial early disclosure procedure, and six comparison districts decided to follow the revised Rule 26(a)(1). The ten other pilot and comparison districts decided to opt out and are not following the revised Rule 26(a)(1).

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8At least one other district required attorneys to confer before the first pretrial conference to attempt to agree on a scheduling order.
Some districts opted out to retain their pilot program disclosure rules, some of which were more stringent in their disclosure requirements than the revised Rule 26(a)(1).

RAND’s lawyer surveys indicate that when early disclosure was made for cases in the 1992-93 sample, it was “full disclosure” 57 percent of the time, and “pro forma” disclosure 43 percent of the time. For general civil cases with issue joined, lawyers report more disclosure when it is mandatory (60 percent of the cases in mandatory disclosure districts, versus 45 percent in voluntary disclosure districts and 40 percent in districts with no disclosure policy). Part of the problem with a mandatory early disclosure requirement is compliance; lawyers report that when disclosure is done on a mandatory basis, it is full disclosure for 50 percent of the cases and pro forma disclosure for the other half of the cases.

When one party does not comply with mandatory early disclosure, the other side’s lawyer may ignore the problem, make a formal discovery request, or file a motion requesting the court to force compliance. According to our analysis of dockets on over 5,000 cases, and according to judges we have interviewed in pilot and comparison districts that implemented their plans in December 1991, such compliance motions are extremely rare. Despite the dire warnings of critics of early mandatory disclosure, we did not find any explosion of ancillary litigation and motion practice related to disclosure in any of the pilot or comparison districts using mandatory disclosure.

**Lawyer Work Hours**

In our main evaluation report, we found no statistically significant difference in lawyer work hours between cases where the attorneys reported disclosure of relevant information and cases where there was no early disclosure. We also found that attorneys representing cases in districts with some type of mandatory disclosure policy had work hours that were not statistically significantly different from hours worked by attorneys in other districts. It should be noted, however, that in our main evaluation report we found that attorney work hours were significantly lower for the three districts
that had a particular type of mandatory disclosure: early mandatory disclosure of information bearing on both sides of the dispute. With only three districts using this particular type of mandatory disclosure policy, however, it is difficult to generalize this statistical finding.

We could not evaluate the mandatory disclosure prescribed under the December 1993 amendments to F.R.Civ.P. 26(a)(1) because our sample of cases was selected well before that amendment took effect, and none of our study districts had a mandatory disclosure policy that was exactly the same as the amended Rule 26(a)(1) when our sample cases were selected. Hence, the “empirical” story of the effects of Rule 26(a)(1) remains to be told.

We found that a district policy encouraging voluntary early disclosure had no statistically significant effect on attorney work hours. We found small and not statistically significant differences in work hours between lawyers on cases from districts with a voluntary early disclosure policy compared to lawyers from districts with no general policy on early disclosure.9

In our current analysis of judicial discovery management policies, we again find that mandatory early disclosure requirements are not associated with significantly reduced lawyer work hours. Regardless of whether early disclosure occurs, cases from districts with mandatory early disclosure policies tend to have similar estimated lawyer work hours as cases from districts without a mandatory disclosure policy that had no early disclosure. The confidence intervals are large so there is a possibility that mandatory early disclosure policies could reduce or increase lawyer work hours,10 but our best estimate is a small 8 hour increase if early disclosure is conducted and no effect if no early disclosure occurs in districts with a mandatory disclosure policy. Some people suggested that if we had looked at subsets of cases, such as those that were more or less complex or had more or less difficulty with discovery, we might have found a subset of cases for which this policy was effective. We have explored many different subsets of cases,

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9Coefficient = 0.236, p = 0.129 for cases closed over 270 days after filing.
10See Table A.13.
including subsets based on stakes, complexity, and discovery difficulty. We found no strong evidence that a policy of early mandatory disclosure reduced lawyer work time on any of the subsets of cases examined.

However, attorneys who voluntarily choose to do early disclosure, in districts where such disclosure is voluntary, have significantly lower work hours. Cases with voluntary early disclosure required an estimated 14 fewer work hours than cases without voluntary disclosure. It may be that lower work hours among voluntary disclosing attorneys reflects a type of "choice or selection bias," i.e., attorneys on cases for which they voluntarily choose to disclose may be less contentious attorneys or may be on less contentious cases and hence spend fewer total work hours on the case, but not necessarily because of the early disclosure.

In addition to the further analysis that we did on total lawyer work hours, we also analyzed lawyer work hours on discovery. The policy implications and findings of statistical significance emerging from our analysis of lawyer work hours on discovery are very similar to those from our analysis of total lawyer work hours. However, we focus our discussion on the total lawyer work hours because we think the total is a better measure of the cost of litigation than the lawyer hours spent on discovery because our interviews suggest that some types of discovery management may reduce discovery hours by shifting lawyer work to other types of activity (disclosure as a substitute for some discovery, for example).

Time to Disposition

In our main evaluation report, we found no statistically significant difference in time to disposition between cases from districts that have a policy of mandatory disclosure and those that do not. Furthermore, in separate model runs we found that cases from districts with a policy of mandatory disclosure of information bearing on both sides of the case did not differ significantly in terms of time to disposition from other cases.\textsuperscript{11} Also, we found that cases where the

\textsuperscript{11}Coefficient = 0.04, p = 0.37 for cases closing over 370 days after filing.
attorneys reported an early disclosure of relevant information were not statistically significantly different than other cases in terms of time to disposition.\textsuperscript{12} We also found that a district policy encouraging voluntary early disclosure had no statistically significant effect on time to disposition. Cases from districts with a voluntary early disclosure policy were compared to cases from districts with no general policy on early disclosure.\textsuperscript{13}

In our current analysis of judicial discovery management policies, we again find that early disclosure requirements are not associated with significantly reduced time to disposition. Our estimated effects for early disclosure indicate that the policies reduce time to disposition by about 20 days or less for a typical case. For all three early disclosure policies, the confidence intervals cross zero.\textsuperscript{14}

Since some people suggested that if we had looked at subsets of cases, such as those that were more or less complex or had more or less difficulty with discovery, we might have found a subset of cases for which this policy was effective. We have explored many different subsets of cases, including subsets based on stakes, complexity, and discovery difficulty. We found no strong evidence that a policy of early mandatory disclosure shortened time to disposition on any of the subsets of cases examined.

\textbf{Attorney Satisfaction}

In our main evaluation report, we found that a district policy of mandatory early disclosure corresponded to statistically significantly lower attorney satisfaction. However, for cases in which the attorneys report the actual early disclosure of information, they also report significantly higher satisfaction than attorneys from other cases.

\textsuperscript{12}We imputed the missing values of our early disclosure variable and found that our result was not sensitive to the particular imputed values.

\textsuperscript{13}Coefficient = 0.045, \textit{p} = 0.416 for cases closed over 270 days after filing. Some districts had policies on early disclosure for a limited number of cases. We considered these districts to have no general policy of early disclosure and included them in our comparison group for studying the effects of voluntary and mandatory early disclosure.

\textsuperscript{14}See Table A.7.
A district policy of voluntary early disclosure is associated with fewer satisfied attorneys, but our estimated effects are small and not statistically significant.\footnote{Coefficient = -0.070, p = 0.835 for cases that close over 270 days after filing.} Our model compared attorney responses from districts with a policy of voluntary early disclosure to the responses from attorneys from districts with no general policy on early disclosure.

In our current analysis of judicial discovery management policies, we again find that attorneys from districts with a mandatory disclosure policy are less satisfied, but their level of satisfaction is not significantly different from the level of satisfaction for attorneys who do not do early disclosure in voluntary disclosure districts. However, attorneys who voluntarily choose to do early disclosure, in districts where such disclosure is voluntary, are significantly more satisfied. Since most districts had a voluntary disclosure policy at the time of the study, this explains the overall finding in our main evaluation report that disclosing attorneys were more satisfied. It may be that greater satisfaction among voluntary disclosing attorneys reflects a type of "choice or selection bias," i.e., attorneys on cases for which they voluntarily choose to disclose may be less contentious attorneys or may be on less contentious cases and hence more satisfied, but not necessarily because of the early disclosure.

Our statistical analysis of subsets of cases does not lead to any suggestions for focusing these management policies on certain types of cases. Our statistical results are consistent for most subsets of cases analyzed, including the top 25 percent most costly cases.

**Attorney Views on Fairness**

We find no statistically significant effects for any of the policy variables on attorney views on fairness.

**Information by Early Disclosure Policy**

Table 3.2 presents information on time to disposition, lawyer work hours, satisfaction, and views on fairness for cases that were and were
not subject to an early disclosure policy. The numbers in the table, which reflect actual survey responses from the sample cases, generally corroborate the results of the statistical analysis. However, we caution that the districts and the cases from those districts differ on factors other than the policy on early disclosure. Our multivariate analyses adjust for those other factors, and the bivariate Table 3.2 does not.

GOOD-FAITH EFFORTS IN RESOLVING DISCOVERY DISPUTES

Before CJRA, all but one district in the study had rules requiring good-faith efforts to resolve disputes before filing discovery motions; these rules have been continued or strengthened as required by the CJRA. Since our main evaluation report did not find any significant relationship between good-faith efforts and the variables studied, we did not do any further investigation of this policy in this report. However, our main evaluation report findings on good-faith efforts are summarized below.

Lawyer Work Hours

In our main evaluation report, we explored the effects of good-faith efforts in resolving discovery disputes before filing motions using only cases with at least one motion. We found no statistically significant effects of good-faith efforts on work hours among attorneys from these cases.\(^\text{16}\) It could be that by restricting our attention to only cases with motions we miss the helpful effect of good-faith effort on avoiding motions; however, the positive effects we observe (i.e., good-faith effort increases work hours, but not significantly) do not suggest any reduction in work hours from good-faith motions.

Time to Disposition

In our main evaluation report, we found no evidence of significant effects on time to disposition from good-faith efforts to resolve discovery disputes before filing motions. Looking at cases with at

\(^{16}\)Coefficient = 0.27, p = 0.06 for cases closed over 270 days after filing.
### Table 3.2

**Information by Early Disclosure Policy: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Early Disclosure Policy</th>
<th>Significant Difference for Policy Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mandatory and Disclosure Was Made</td>
<td>Mandatory and Disclosure Was Not Made</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>447</td>
<td>477</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>71</td>
<td>63</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>87</td>
<td>88</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>28</td>
<td>19</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>% of disclosures that were full rather than pro forma</td>
<td>50</td>
<td>57</td>
</tr>
</tbody>
</table>

**NOTE:** Percentages in rows may not add to 100 due to rounding and missing data.
least one discovery motion, we found no statistically significant difference between cases where the attorney reported good-faith efforts and other cases.\textsuperscript{17}

We did not do any further investigation of this policy in this report.

**Attorney Satisfaction**

In our main evaluation report, we explored the effects of good-faith efforts in resolving discovery disputes using only cases with at least one motion. We found that case-level-reported good-faith effort in resolving discovery disputes had no statistically significant effects on lawyer satisfaction.

**Attorney Views on Fairness**

We estimated the effects of good-faith efforts in resolving discovery disputes using a subsample of cases that had at least one discovery motion in our main evaluation report. Using this sample there was no statistically significant effect for cases with one or more discovery motions.\textsuperscript{18}

**LIMITING INTERROGATORIES**

Before CJRA, most districts left court control of the volume of discovery to the judge in each case; CJRA had little effect on this arrangement. Before CJRA, most pilot and comparison districts had a local rule that limited the number of interrogatories and requests for admission, but none limited the number of depositions and only one limited the time per deposition. After CJRA, one pilot and one comparison district adopted a new limit on deposition length, and two comparison districts adopted new limits on the number of depositions. Given the small number of districts who had a policy limiting depositions, we have insufficient data to evaluate that policy. Hence this subsection focuses on limits on interrogatories.

\textsuperscript{17}Coefficient = -0.01, p = 0.81 for cases closed over 270 days after filing.
\textsuperscript{18}Coefficient = 0.45, p = 0.23 for cases that had time to disposition over 270 days.
Lawyer Work Hours

In our main evaluation report, a district policy on limiting interrogatories predicted fewer lawyer work hours; however, this difference was not statistically significant.

In our current and more detailed analysis of judicial discovery management policies, we found a significant reduction in total lawyer work hours in districts with interrogatory limitations. We estimate that limiting interrogatories will reduce lawyer work by about 16 hours.\textsuperscript{19}

Looking at subsets of cases, the significant reductions appeared for hourly fee attorneys, defense attorneys, contract cases, and medium complexity cases. These findings support the policy of limiting interrogatories as a means of limiting lawyer work hours because there is no statistical evidence that interrogatory limitations hurt, and they may help for several subsets of cases.

In addition to the further analysis that we did on total lawyer work hours, we also analyzed lawyer work hours on discovery. The policy implications and findings of statistical significance emerging from our analysis of lawyer work hours on discovery are very similar to those from our analysis of total lawyer work hours.

Time to Disposition

In our main evaluation report, we found that a district policy on limiting interrogatories was not a statistically significant predictor of shorter time to disposition for cases closed over 270 days after filing. Thus we concluded that our data provided almost no evidence of an effect of district policies of limiting interrogatories on time to disposition.

In our current analysis of judicial discovery management policies, we found a significant reduction in time to disposition using unadjusted standard errors, but there was not a significant reduction when we use the standard errors adjusted for intra-district correlation as discussed\textsuperscript{19}.

\textsuperscript{19}See Table A.13. This estimate has rather large confidence bounds, which are the result of the small variation in the data, because only 4 of our 20 study districts did not have limits on interrogatories during the study time period.
in the appendix. Our estimated effect for a district policy limiting the number of interrogatories is relatively small with large confidence bounds. Analyses on subsets of cases also showed no significant effects for nearly all subsets. Consequently, we again conclude that our data provide almost no evidence of an effect of district policies of limiting interrogatories on time to disposition.

**Attorney Satisfaction**

In our main evaluation report, we found no statistically significant effect for a district policy limiting interrogatories for all cases with issue joined. On the other hand, in our analysis of cases closed over 270 days after filing, attorneys from districts with a policy of limiting interrogatories report being significantly more satisfied with case management.

In our current analysis of judicial discovery management policies, we again find that districts with a policy of limiting interrogatories have attorneys who report significantly higher satisfaction. This finding also is true for most subsets of cases analyzed, and there is no indication of a significant negative effect for any subset of cases.

**Attorney Views on Fairness**

We find no statistically significant effects for any of the policy variables on attorney views on fairness.

**Information by Interrogatory Limitation Policy**

Table 3.3 presents information on time to disposition, lawyer work hours, satisfaction, and views on fairness for cases that were and were not subject to a district policy of limiting the number of interrogatories. The numbers in the table, which reflect actual survey responses from the sample cases, generally corroborate the results of the statistical analysis. However, one is not able to see the reduction in lawyer work hours predicted by a policy of limiting interrogatories.

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20 Coefficient = -0.068, p = 0.386 for cases that close over 270 days after filing.

21 See Table A.7.
Table 3.3
Information by Interrogatory Limit Policy: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Interrogatory Limitation Policy</th>
<th>Significant Difference for Policy</th>
<th>Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>District Policy to Limit Interrogatories</td>
<td>No Interrogatory Limit Policy</td>
<td></td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>468</td>
<td>455</td>
<td>No</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>74</td>
<td>68</td>
<td>Significantly more satisfied</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>89</td>
<td>88</td>
<td>No</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>80</td>
<td>66</td>
<td>Significantly less hours (not able to see in this bivariate table)</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>14</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>20</td>
<td>15</td>
<td>Significantly less hours (not able to see in this bivariate table)</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>26</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Percentages in rows may not add to 100 due to rounding and missing data.

In the bivariate tables, because the districts and the cases from those districts differ on factors other than the limitation on interrogatories. Our multivariate analyses adjust for those other factors, and the bivariate Table 3.3 does not.
SHORTENING DISCOVERY CUTOFF TIME

Discovery clearly was subject to more management in 1992-93 after CJRA was passed. In addition to the new mandatory early disclosure requirements in some districts, the median district times to discovery cutoff were shortened in some districts. For example, in 1991 the fastest and slowest districts’ median days from schedule to discovery cutoff were 100 and 274 days, respectively, for all general civil cases closed after issue was joined. In 1992-93, these medians had fallen to 83 and 217 days, respectively.

Lawyer Work Hours

In our main evaluation report, we found that reported lawyer work hours significantly decrease as the district median days from the setting of a discovery schedule to the discovery cutoff date gets shorter.

In our current analysis of judicial discovery management policies, we again find that reported total lawyer work hours significantly decrease as the number of district median days to discovery cutoff gets smaller. We estimate that a 60-day reduction in the district median discovery cutoff (from 180 days to 120 days) will reduce lawyer work by 15 hours and we are quite confident that this policy will lead to at least some reduction in work hours.\textsuperscript{22} When we looked at subsets of cases, this significant decrease occurs for most subsets, with some exceptions such as low complexity and low discovery difficulty cases (which are unlikely to require as much time for discovery as more complex or more difficult cases).

In addition to the further analysis that we did on total lawyer work hours, we also analyzed lawyer work hours on discovery. The policy implications and findings of statistical significance emerging from our analysis of lawyer work hours on discovery are very similar to those from our analysis of total lawyer work hours.

\textsuperscript{22}See Table A.13.
Time to Disposition

In our main evaluation report, we found that the district's median days to discovery cutoff is a statistically significant predictor of time to disposition; shorter cutoff predicts shorter time to disposition.\(^{23}\)

In our current analysis of judicial discovery management policies, we again find that the district’s median days to discovery cutoff is a statistically significant predictor of time to disposition. We estimate that reducing median discovery cutoff time has a large effect. We expect that for a typical case, a 60-day reduction in the median discovery cutoff (from 180 days to 120 days) would correspond to about a 55-day reduction in time to disposition.\(^{24}\) In our analysis of subsets of cases, we find that reducing time to discovery cutoff significantly reduces time to disposition on most subsets of cases analyzed.

Attorney Satisfaction

In our main evaluation report, we found no statistically significant relationship between the district median days to discovery cutoff and attorney satisfaction.

In our current analysis of judicial discovery management policies, we again find no statistically significant relationship between the district median days to discovery cutoff and attorney satisfaction.

Attorney Views on Fairness

We find no statistically significant effects for any of the policy variables on attorney views on fairness.

Information on Discovery Cutoff Time Policy

Table 3.4 presents information on time to disposition, lawyer work hours, satisfaction, and views on fairness for cases from districts with shorter and longer times from discovery scheduling to cutoff. “Shorter”

\(^{23}\)The statistical significance holds even if we use adjusted standard errors.

\(^{24}\)See Table A.7.
Table 3.4
Information by Shorter and Longer Time to Discovery Cutoff:
1992-93 Sample, General Civil Cases with Issue Joined,
Closed with Time to Disposition over 270 Days
and with Lawyer Work Hours Reported

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category of District</th>
<th>Significant Difference for Policy Shown in Multivariate Analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Districts with Shorter Median Time to Discovery</td>
<td>Districts with Longer Median Time to Discovery</td>
</tr>
<tr>
<td>Median days to discovery cutoff in 10 districts</td>
<td>83-177</td>
<td>178-217</td>
</tr>
<tr>
<td>Median days to disposition</td>
<td>455</td>
<td>473</td>
</tr>
<tr>
<td>% lawyers satisfied with management</td>
<td>68</td>
<td>78</td>
</tr>
<tr>
<td>% lawyers view management as fair</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td>Median total lawyer work hours per litigant</td>
<td>83</td>
<td>75</td>
</tr>
<tr>
<td>% with zero discovery work hours</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Median lawyer work hours on discovery per litigant</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Median percent discovery hours of total lawyer work hours</td>
<td>28</td>
<td>25</td>
</tr>
</tbody>
</table>

NOTE: Days to discovery cutoff in district means days from first schedule to first discovery cutoff, without consideration of continuances. Percentages in rows may not add to 100 due to rounding and missing data.
means the cases in the ten study districts with the shortest median
discovery time to cutoff. The numbers in the table, which reflect
actual survey responses from the sample cases, generally corroborate the
results of the statistical analysis. However, one is not able to see
the reduction in lawyer work hours predicted by a policy of shorter time
to discovery cutoff in the bivariate tables, because the districts and
the cases from those districts differ on factors other than the median
time to discovery cutoff. Our multivariate analyses adjust for those
other factors, and the bivariate Table 3.4 does not.

SUMMARY OF EFFECTS ON LAWYER WORK HOURS

In our main evaluation report, our analyses for total lawyer work
hours show that cases with early management tend to require greater work
hours and cases from districts with shorter median discovery cutoff tend
to require fewer hours. There were no other clearly consistent policy
variable effects on lawyer work hours per party represented. Thus, of
all the policy variables we investigated as possible predictors of
reduced lawyer work hours, only judicial management of discovery seemed
to produce the desired effect.

We found that several attorney and case characteristics were
important predictors of lawyer work hours. These control variables
tended to be far better at explaining variance in lawyer work hours than
did the policy variables. For example, of the total variance explained
by our model, about 95 percent was explained by the control variables.
This means that lawyer work hours seem to be driven primarily by factors
other than case management policy. Case stakes and case complexity are
the most important predictors of lawyer work hours, and these two case
characteristics alone explained about half of the variance in our
models. In contrast, of the total variance in our time to disposition
models, only about half was explained by the control variables and the
other half was explained by the policy variables.

In our current analysis of judicial discovery management policies,
we find that early management is associated with significantly increased
total lawyer work hours if the district does not require discovery/case
management plans. However, early management is not associated with
significantly increased total lawyer work hours if the district requires discovery/case management plans. This lends strong support for the continuation of a requirement of discovery/case management planning. That is, it appears that doing early management without planning increases lawyer work hours, but early management coupled with planning does not increase lawyer work hours.

In our current analysis, we again find that mandatory early disclosure requirements are not associated with significantly reduced lawyer work hours. We have explored many different subsets of cases, including subsets based on stakes, complexity, and discovery difficulty. We found no strong evidence that a policy of early mandatory disclosure reduces lawyer work time on any of the subsets of cases examined. However, attorneys who voluntarily choose to do early disclosure, in districts where such disclosure is voluntary, have significantly lower work hours. It may be that lower work hours among voluntary disclosing attorneys reflects a type of “choice or selection bias,” i.e., attorneys on cases for which they voluntarily choose to disclose may be less contentious attorneys or may be on less contentious cases and hence spend fewer total work hours on the case, but not necessarily because of the early disclosure.

We find a significant reduction in total lawyer work hours in districts with interrogatory limitations. Looking at subsets of cases, the significant reductions appeared for hourly fee attorneys, defense attorneys, contract cases, and medium complexity cases. These findings support the policy of limiting interrogatories as a means of limiting lawyer work hours because there is no statistical evidence that interrogatory limitations hurt, and they may help for several subsets of cases.

In our current analysis of judicial discovery management policies, we again find that reported total lawyer work hours significantly increase as the number of district median days to discovery cutoff gets larger. When we looked at subsets of cases, this significant increase occurs for most subsets, with some exceptions such as low complexity and low discovery difficulty cases (which are unlikely to require as much time for discovery as more complex or more difficult cases).
In addition to the further analysis that we did on total lawyer work hours, we also analyzed lawyer work hours on discovery. The policy implications and findings of statistical significance emerging from our analysis of lawyer work hours on discovery are very similar to those from our analysis of total lawyer work hours.

Details of our statistical analysis of total lawyer work hours and lawyer work hours on discovery are presented in the appendix.

**SUMMARY OF EFFECTS ON TIME TO DISPOSITION**

In our main evaluation report, we found four policies that showed consistent statistically significant effects on time to disposition: (1) early judicial management, (2) setting the trial schedule early, (3) reducing discovery cutoff (median days to discovery cutoff in a district), and (4) having litigants at or available on the telephone for settlement conferences. Other policies and procedures we studied were either not statistically significant or not consistently significant.

In our current analysis of judicial discovery management policies, we again find a statistically significant reduction in time to disposition from early management without setting a trial schedule early, and a significantly larger reduction from early management that includes setting a trial schedule early. We considered those two early management and trial scheduling policies used both with and without a discovery plan requirement, and the results were statistically significant. There was little difference in time to disposition with or without a discovery plan if a trial was scheduled early, but cases closed earlier if discovery planning took place in the absence of an early trial schedule. Thus, our analysis suggests that the requirement of a discovery/case management plan is beneficial in reducing time to disposition, especially if a trial schedule is not set early.

Our statistical analysis of subsets of cases does not lead to any suggestions for focusing these management policies only on certain types of cases. Our statistical results are consistent for most subsets of cases analyzed, although the top 25 percent most costly cases appear to especially benefit from the early setting of a trial schedule (early management of those top 25 percent of the costly cases without a trial
date scheduled did not significantly reduce their time to disposition). And cases that are high in complexity, high in discovery difficulty, or high in stakes appear to especially benefit from the use of discovery/case management plans.

Early mandatory disclosure again was not statistically significant, and limiting interrogatories was not consistently significant in predicting reduced time to disposition.

Details of our statistical analysis of time to disposition are presented in the appendix.

**SUMMARY OF EFFECTS ON ATTORNEY SATISFACTION**

In our main evaluation report, we found that the policies that had the greatest effects on time to disposition and lawyer work hours—i.e., early management, median days to discovery cutoff, and setting a trial schedule early in the case—had no statistically significant effect on lawyer satisfaction. Attorneys with cases where early disclosure occurs report significantly greater satisfaction. However, attorneys from districts with a policy of requiring mandatory early disclosure were significantly less likely to report satisfaction with case management. Districts with policies of limiting interrogatories had attorneys who were significantly more satisfied, but the district median time to discovery cutoff did not significantly affect attorney satisfaction.

In our current analysis of judicial discovery management policies, we again find no statistically significant effect on lawyer satisfaction from early management, setting a trial schedule early in the case, and requiring a discovery plan. We considered those three policies used in various combinations and did not find any significant difference in satisfaction, although as noted previously, some of those policies do significantly affect time to disposition and lawyer work hours.

Our current analysis of early disclosure found that attorneys in districts with a mandatory disclosure policy were less satisfied, but their level of satisfaction is not significantly different from the level of satisfaction for attorneys who do not do early disclosure in voluntary disclosure districts. However, attorneys who voluntarily choose to do early disclosure, in districts where such disclosure is
voluntary, are significantly more satisfied. Since most districts had a voluntary disclosure policy at the time of the study, this explains the overall finding in our main evaluation report that disclosing attorneys were more satisfied. It may be that greater satisfaction among voluntary disclosing attorneys reflects a type of “choice or selection bias,” i.e., attorneys on cases for which they voluntarily choose to disclose may be less contentious attorneys or may be on less contentious cases and hence more satisfied, but not necessarily because of the early disclosure.

Districts with policies of limiting interrogatories again had attorneys who were significantly more satisfied, but the district median time to discovery cutoff still did not significantly affect attorney satisfaction even when subsets of cases were analyzed.

Details of our statistical analysis of attorney satisfaction with judicial case management are presented in the appendix.

**SUMMARY OF EFFECTS ON ATTORNEY VIEWS ON FAIRNESS**

In our main evaluation report, we found no consistent statistically significant effects of judicial case management on attorney views on fairness.

In our current analysis of judicial discovery management policies, we find no statistically significant effects for any of the policy variables on attorney views on fairness.

A very high percentage of attorneys report that case management is fair, about 90 percent. There is little variability in our data and it is not surprising that we do not find statistically significant effects of judicial case management on attorney views on fairness.

Details of our statistical analysis of attorney views on fairness are presented in the appendix.
4. POLICY FINDINGS

When judges were asked their opinions about discovery management on the cases in our 1992-93 sample, the vast majority responded that such management was generally desirable (96 percent in favor of setting discovery limits; 89 percent in favor of requiring early disclosure; and 98 percent in favor of good-faith efforts before filing discovery motions).

When lawyers were asked their opinions on discovery management on those same cases, a majority responded that such management was generally desirable (86 percent in favor of setting discovery limits; 71 percent in favor of requiring early disclosure; and 96 percent in favor of good-faith efforts before filing discovery motions).

Given that judges and lawyers are generally favorably inclined toward judicial management of discovery, and given that discovery is often cited in anecdotes as being a problem leading to excessive cost and delay, we analyzed the efficacy of various discovery management policies in reducing lawyer work hours and time to disposition.

FINDINGS ON EARLY CASE MANAGEMENT AND DISCOVERY PLANNING

Our multivariate statistical analysis supports the policy of early management and early scheduling of a trial date as a means of reducing time to disposition. Our current analysis also supports the requirement of discovery/case management plans as a means of reducing the time to disposition, limiting lawyer work hours, and thereby limiting the costs of litigation in cases that are managed early.

Early management without setting a trial schedule early predicts a statistically significant reduction in time to disposition, and early management that includes setting a trial schedule early predicts a significantly larger reduction. We considered those two early management and trial scheduling policies used both with and without a discovery plan requirement, and the results were statistically significant. There was little difference in time to disposition with or without a discovery plan if a trial was scheduled early, but cases
closed significantly earlier if discovery planning took place in the absence of an early trial schedule. Thus, our analysis suggests that the requirement of a discovery/case management plan is beneficial in reducing time to disposition, especially if a trial schedule is not set early.

Our statistical analysis of subsets of cases does not lead to any suggestions for focusing these management policies only on certain types of cases. Our statistical results are consistent for most subsets of cases analyzed, although the top 25 percent most costly cases\(^1\) appear to especially benefit from the early setting of a trial schedule (early management of those top 25 percent of the costly cases without a trial date scheduled did not significantly reduce their time to disposition). And cases that are high in complexity, high in discovery difficulty, or high in stakes appear to especially benefit from the use of discovery/case management plans.

In our analysis of judicial discovery management policies, we find that early management is associated with significantly higher total lawyer work hours if the district does not require discovery/case management plans. However, early management is not associated with significantly higher total lawyer work hours if the district requires discovery/case management plans, and this lends strong support for the continuation of a requirement of discovery/case management planning. That is, it appears that doing early management without planning increases lawyer work hours, but early management coupled with planning does not increase lawyer work hours.

Our interviews suggested reasons why early management may increase lawyer work hours. Lawyers need to respond to a court's management—for example, by talking to the litigant and to the other lawyers in advance of a conference with the judge, by traveling, and by spending time waiting at the courthouse, meeting with the judge, and updating the file after the conference. In addition, once judicial case management has begun, a discovery cutoff date has usually been established, and attorneys may feel an obligation to begin discovery. Doing so could

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\(^1\) These cases had total lawyer work hours per litigant of more than 188.
shorten time to disposition, but it may also increase lawyer work hours on cases that were about to settle when the judge began early management. The CJRA data indicate that cases that are managed early have a higher likelihood of having lawyer hours spent on discovery.

However, when a district requires discovery/case management plans, the increase in lawyer work hours associated with early management appears to be offset by benefits associated with the required planning, and the net effect is no significant increase in lawyer work hours. There are at least two plausible explanations for this outcome. First, the planning itself may produce the benefit. The requirement that the lawyers jointly meet and prepare a discovery/case management plan for submission to the court may result in more efficient litigation with less lawyer work hours. Another plausible explanation is that the judges in districts that require plans may also manage cases differently and better (in ways that we did not measure) than judges in districts that do not require plans.

When we looked at various subsets of cases, we found no strong evidence that the effects of early management and discovery planning were systematically concentrated on certain types of cases based on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, or the top 25 percent most costly cases among general civil litigation that has time to disposition over 270 days after filing.

We find no statistically significant effect on lawyer satisfaction or views on fairness from early management, setting a trial schedule early in the case, and requiring a discovery plan.

FINDINGS ON EARLY DISCLOSURE

Our data and analyses do not strongly support the policy of mandatory early disclosure as a means of significantly reducing lawyer work hours and thereby reducing the costs of litigation, or as a means of reducing time to disposition. We find that cases in districts with some type of mandatory disclosure policy had lawyer work hours and time
to disposition that are not significantly different from cases in districts without any type of mandatory disclosure policy. Regardless of whether or not early disclosure actually occurs, cases from districts with mandatory early disclosure policies tend to have similar estimated lawyer work hours as cases from districts without a mandatory disclosure policy that had no early disclosure.

Some people suggested that if we had looked at subsets of cases, such as those that were more or less complex or had more or less difficulty with discovery, we might have found a subset of cases for which this policy was effective. We have now explored many different subsets of cases, including subsets based on stakes, complexity, and discovery difficulty. We found no strong evidence that a policy of early mandatory disclosure reduced lawyer work time or time to disposition on any of the subsets of cases examined. However, attorneys who voluntarily choose to do early disclosure, in districts where such disclosure is voluntary, have significantly lower work hours. It may be that lower work hours among voluntary disclosing attorneys reflects a type of “choice or selection bias,” i.e., attorneys on cases for which they voluntarily choose to disclose may be less contentious attorneys or may be on less contentious cases and hence spend fewer total work hours on the case, but not necessarily because of the early disclosure. If the early disclosure is effective in reducing lawyer work time, then we would have expected to see some evidence of the effect on mandatory disclosure cases, not just on cases with voluntary disclosure.

It should be noted, however, that in our main evaluation report we found that attorney work hours were significantly lower for the three districts that had a particular type of mandatory disclosure: early mandatory disclosure of information bearing on both sides of the dispute. With only three districts using this particular type of mandatory disclosure policy, however, it is difficult to generalize this statistical finding.

We also note that we could not evaluate the mandatory disclosure prescribed under the December 1993 amendments to F.R.Civ.P. 26(a)(1) because our sample of cases was selected well before that amendment took effect, and none of our study districts had a mandatory disclosure
policy that was exactly the same as the amended Rule 26(a)(1) when our sample cases were selected. Hence, the "empirical" story of the effects of Rule 26(a)(1) remains to be told.

RAND's lawyer surveys indicate that when early disclosure was made for cases in the 1992-93 sample, it was "full disclosure" 57 percent of the time, and "pro forma" disclosure 43 percent of the time. For general civil cases with issue joined, lawyers report more disclosure when it is mandatory (60 percent of the cases in mandatory disclosure districts versus 45 percent in voluntary disclosure districts and 40 percent in districts with no disclosure policy). Part of the problem with a mandatory early disclosure requirement is compliance; lawyers report that when disclosure is done on a mandatory basis, it is full disclosure for 50 percent of the cases and pro forma disclosure for the remaining half of the cases.

Findings from a recent survey of about 1,000 attorneys by the American Bar Association's Litigation Section were similar to ours:

Analysis of the survey results suggests that Rule 26(a)(1) disclosure has not had a significant impact on federal civil litigation. To the extent that it has had any measurable effects, most are negative. The survey provided no evidence that, at the one year mark, disclosure had reduced discovery costs or delays. Nor do the responses suggest that disclosure has reduced conflict between adversaries during the discovery process. Consequently, during its first year of implementation, disclosure has not resulted in the systemic improvements for which its proponents had hoped.2

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2Blaner et al. (1996), p. 1. The PA(E) advisory group also conducted a survey of about 4,000 lawyers regarding the early mandatory disclosure procedures in that district, with results that were very similar to ours. This district's procedures stay discovery until both sides have completed mandatory disclosure of information likely to "bear significantly on the claims and defenses," plus other items such as names of individuals with information and any insurance. Of the 1,000 plus attorneys responding, over 60 percent felt that some rule mandating self-executing disclosure should remain in effect. Judges were 85 percent in favor of such disclosure. When asked about compliance, over 90 percent of lawyers said they themselves had complied more than minimally, and that over two-thirds of their opponents had complied more than minimally (Landis et al., 1996).

The NY(E) advisory group also surveyed lawyers regarding early mandatory disclosure for cases filed after the plan was adopted (wesely
FINDINGS ON GOOD-FAITH EFFORTS TO RESOLVE DISCOVERY DISPUTES

Our multivariate statistical analysis found no significant relationship between any of the variables studied and reported good-faith effort to resolve discovery disputes before filing a motion.

FINDINGS ON LIMITING INTERROGATORIES

Our multivariate statistical analysis supports the policy of limiting interrogatories as a means of significantly limiting lawyer work hours and thereby reducing the costs of litigation. There is no statistical evidence that interrogatory limitations hurt, and they appear to help significantly for several subsets of cases.

FINDINGS ON SHORTENING DISCOVERY CUTOFF TIME

Our multivariate statistical analysis supports the policy of shorter times to discovery cutoff as means of significantly limiting lawyer work hours and thereby reducing the costs of litigation, and as a means of reducing the time to case disposition. When we looked at subsets of cases, these significant decreases in lawyer work hours and time to disposition occur for most subsets, with some exceptions such as low complexity and low discovery difficulty cases (which are unlikely to require as much time for discovery as more complex or more difficult cases).

et al., 1994, pp. 5-6.) Their annual report indicated: “Survey results at this stage are neither a ringing endorsement, nor a condemnation, of mandatory disclosure. About half the respondents said that mandatory disclosure improved pretrial discovery, and about half said that there was no change. A majority also said that mandatory disclosure had made either no contribution or a slight contribution to easing the problems of undue cost and unnecessary delay. On the other hand, an overwhelming majority said that mandatory disclosure had no negative effects on pretrial discovery.” “A majority (55 percent) would make mandatory disclosure a permanent part of the local rules, and an additional 23 percent would make mandatory disclosure a permanent part of the local rules if modifications were made.” “It appears from these data that the parade of horribles predicted by some critics of mandatory disclosure has not come to pass. On the other hand, it is not clear the extent to which mandatory disclosure has improved the operation of pretrial discovery, if at all. The vast majority of respondents have had little experience with mandatory disclosure.”
INTERPRETING EFFECTS AND GENERALIZING TO OTHER CASES, JUDGES, AND DISTRICTS

Although the predicted effects discussed in this report serve as a useful gauge of our statistical model estimates, they might present the temptation to interpret them as the exact size of a causal effect. That is, one might incorrectly treat these estimates as if expanding the use of a particular case management procedure will reduce time to disposition or lawyer work hours a certain amount for each and every new case that receives the management. This almost assuredly will not happen in exactly the same way.

There are reasons why our observed effect might not generalize in exactly the same way to other cases, judges, or districts.

One reason is that the cases in our data that receive the policies might be different from those that do not receive the policies in some way not accurately measured by our control variables. Despite the fact that we have more and better data than have been available to previous studies, and we have been as careful as possible in constructing our many models, one must still interpret the results carefully.

We believe that we have provided a reasonable estimate of the effects of policy for the cases, judges, and districts we observed in our data. It is much more difficult to determine the effect of the policy if implemented on different cases or by different judges in the same or different districts.

Judges who choose to implement policies and management procedures often do so at their discretion. These judges may differ from other judges in their basic approach to case management or because of personality. These differences between judges could affect the implementation of policy, and this could change the policy’s effect. For example, if enthusiastic managerial judges currently set trial schedules early and also work hard on settlement and this leads to early closure, then having less enthusiastic non-managerial judges setting trial schedules early may not have the same effect that we observed.

Similarly, districts that choose to implement policies and procedures do so because of the characteristics of the district and the judicial officers. Because policies were not assigned to cases at
random in our data, we cannot fully untangle the relationship between district characteristics and the use of policies. Hence, it is hard to determine exactly how the policies will affect time to disposition or lawyer work hours if implemented on a wider scale.

We stress that statistical models do not show cause and effect. Causation must be interpreted in light of understanding how the underlying civil justice system that generated the data operates.

Given our understanding of how the civil justice system operates, we believe that the policies we identified as important predictors of shorter time to disposition or lower lawyer work hours are likely to reduce time and work hours if implemented, but that our estimated effect should be treated as an upper bound to the effects that would occur if the policies were implemented in all districts by all judges for all cases.

We stress that there is a difference between adopting a policy at the district level and implementation in practice at the case level. For policy to have an effect on time to disposition or lawyer work hours, it must not just be adopted “on paper” but must also be implemented in practice at the case level. Using our attorney-level data, we have estimated the effect conditional on a policy or procedure actually being implemented.

**GENERAL POLICY IMPLICATION**

Overall, lawyer work hours per litigant on discovery are zero for 38 percent of general civil cases, and low for the majority of cases. Discovery is not a pervasive litigation cost problem for the majority of cases. The empirical data show that any problems that may exist with discovery are concentrated in a minority of the cases, and the evidence indicates that discovery costs can be very high in some cases. Subjective information from our interviews with lawyers also suggests that the median or typical case is not “the problem.” It is the minority of the cases with very high discovery costs that are the problem, and that generates the anecdotal parade of horribles that dominates much of the debate over discovery rules and discovery case management.
These findings suggest that policymakers consider focusing discovery rule changes and discovery management on the types of cases likely to have high discovery costs, and the discovery practices that are likely to generate those high costs. More attention is clearly needed on how to identify those high discovery cost cases early in their life, and how best to manage discovery on those cases.
Appendix

DETAILS OF STATISTICAL ANALYSES

INTRODUCTION

Our main descriptive and statistical evaluation of how the CJRA case management principles affected cost, time to disposition, and participants’ satisfaction and views on fairness are presented in An Evaluation of Judicial Case Management Under the Civil Justice Reform Act, RAND, MR-802-ICJ, by James S. Kakalik, Terence Dunworth, Laural A. Hill, Daniel McCaffrey, Marian Oshiro, Nicholas M. Pace, and Mary E. Vaiana, 1996 (hereinafter called the main evaluation report).

Appendices to that main evaluation report provide extensive details on the case sample selection design and weighting (Appendix A), surveys conducted and nonresponse weighting (Appendix B), statistical analysis of time to disposition (Appendix D), statistical analysis of lawyer work hours (Appendix E), analysis of satisfaction (Appendix F), analysis of views on fairness (Appendix G), and the survey questionnaires (Appendixes I through K).

Because this report’s analyses are further statistical analyses that begin where that main report ended and explore discovery management policy variables in more depth, this appendix repeats only enough information from the main report to permit understanding the definitions of the variables used in the main report, and those new variables added to the analyses in this report. Readers are referred to the above noted appendixes in that main evaluation report if more details are desired than those presented below.

Our evaluation of discovery management policies focuses on estimating their effects on four primary outcomes: (1) time to disposition, (2) total lawyer work hours (and the subset of total lawyer hours devoted to discovery), (3) attorney satisfaction with the case management, and (4) attorney perceptions of fairness of the case management.
Control and Policy Variables

In modeling the effects of case management policies and procedures on the four primary outcomes, we considered two types of predictor variables: control variables and policy variables.

Control variables consist of case and district characteristics that could explain differences in case length. For example, we considered case complexity and stakes as controls in our models. District characteristics thought to possibly affect our primary outcomes included the number of civil and criminal filings per judicial officer in the district. A more complete listing of control variables that we considered is presented below.

Policy variables are those that measure the district case management policies and the particular case-level management procedures applied to each case. For example, we included variables for whether or not a case received early management (before the 180th day after filing) and whether or not the district enacted a mandatory early disclosure policy.

Modeling Effects on General Civil Cases with Issue Joined

As discussed in Section 2, after reviewing the discovery data and the case management policies and procedures, we concluded that the effects of those policies and procedures could be best estimated using data from general civil litigation cases with issue joined that close at least 270 days after case filing.\(^1\)

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\(^1\)In practice, federal district courts split the civil caseload into two categories--those types of cases that usually receive minimal or no management, and those general civil litigation cases to which the district’s standard case management policies and procedures apply. Minimal management categories of cases are not subject to the scheduling order requirements of Rule 16 of the Federal Rules of Civil Procedure, for example. The definition of minimal management cases varies from district to district based on local rules and local practice, but minimal management is usually applied to prisoner cases, administrative reviews of Social Security cases, bankruptcy appeals, foreclosure, forfeiture and penalty, and debt recovery cases. For consistency among districts in our analysis, we use a uniform definition of minimal management categories of cases that includes the six categories listed above.

Our primary analyses do not include minimal management types of cases because in practice almost none of these cases are managed using
Issue is considered joined after the defendants have answered the complaint in accordance with F.R.Civ.P. Rule 12(a) or as mandated otherwise by the court. Cases that are not joined usually do not receive judicial case management, and judicial discovery management policies and procedures are not relevant to them.

As indicated in Section 2, we focused our analyses on cases that close at least 270 days after filing because about 80 percent of all lawyer work hours spent on discovery are devoted to cases that last at least that long. Another reason for focusing on these cases that last at least 270 days is that this focus eliminates the statistical problem of endogeneity. In non-statistical terms, if we were to include cases that close in less than 270 days and before judges have the opportunity to apply discovery management policies, then the comparison of the outcomes for cases that are subject to discovery management with cases that are not managed would be distorted. In fact, if a case closed very early, before it could be managed, then that case provides little information about the effect of management.

We chose the 270-day cutoff because we defined early management as occurring within the first 180 days and wanted a window between the periods to avoid over-interpreting transitional effects following management. We found in a sensitivity analysis, in which we varied the 270-day period, that our main results were robust with respect to the 270-day cutoff period, and hence we report the findings using these data.

the discovery management policies and procedures that apply to general civil litigation, and hence they could not inform our evaluation of discovery policies and procedures.  


3Policies that significantly reduce time to disposition in long cases (cases with time to disposition greater than 270 days) might not affect time to disposition for the entire population of cases in the same way. Hence our analyses on only cases with time to disposition greater than 270 days might not generalize to the entire population of cases. However, we feel that because the courts and others are most concerned with reducing delay in long cases, exploring effects of case management policy on long cases is appropriate even if these effects might differ somewhat for cases that close in less than 270 days.
We focused our further analyses of discovery on the post-CJRA sample of cases filed in 1992-93 because those cases had a much richer set of discovery management policies in some districts, such as mandatory early disclosure and mandatory discovery planning.

In the next four major sections of this appendix, we provide the details of our analyses of the effects of discovery management policies and procedures on the four primary outcomes.

ANALYSIS OF TIME TO DISPOSITION

Time to disposition is defined as the number of days between the first filing of the case and the final disposition of the case in federal district court. If a case reopens in the same district after disposition, the time to disposition is the time from the first opening to the last closing. Time to disposition is known for all closed cases and is measured uniformly across all districts.

Multivariate Regression Models on Case-Level Data

To estimate the effects of case management policies and procedures, we used multivariate regression models fit to case-level data where time to disposition was our outcome and the policy and control variables were our predictors. Multivariate regression allows us to estimate the unique effects of each policy variable while controlling for the effect of the other policy and control variables.

Furthermore, additional analyses we conducted demonstrate that the policies of early management are associated with shorter time to disposition across the entire population of cases, not only for cases that lasted over 270 days. In our main evaluation report we compared the percentage of a district's cases receiving early management to the percentage lasting over 270 days and found that more early management was associated with fewer cases lasting over 270 days. In addition, we explored survival curves (Miller, 1981) and found that they also suggest that early management policies will have effects on the entire population. Combining all this evidence, we feel that policies with large effects on the long cases are also likely to have effects on the entire population of cases.

4As discussed in detail in Appendix D of our main evaluation report, one possible shortcoming of this approach is that the standard error estimator is derived under the assumption of the independence of cases. Most likely there is unexplained heterogeneity among districts and this results in correlation among the residual errors from cases within a district. The estimator can be adjusted to allow for
Open Cases

Although we followed our 1982-93 sample of cases for over three years, there remained a small percentage of open cases (8.5 percent) in our sample of general civil litigation cases with issue joined. We included the open cases in our time to disposition analyses; however, the presence of open cases required that we use methods other than Ordinary Least Squares (OLS) regression. In particular, we used a censored regression approach that estimated the parameters using an iterative approach. At the first iteration, the parameters were estimated using only the closed cases. Using these estimates, we predicted the time to disposition for open cases. Now, using these predictions and the data from the closed cases, we re-estimated the model parameters. The new estimates provided new predictions, and the procedure was repeated until convergence.

Time to disposition is a highly skewed variable. To avoid the bias and other problems associated with skewed data, we used a transformation of time to disposition. We explored various possible transformations in our preliminary analyses and determined that the fourth root transformation proved best—i.e., had the most symmetric, normal residual errors.

correlation among cases within a district by using an alternative estimator for the variance matrix of the outcomes (e.g., time to disposition). This estimator is again commonly referred to as the Huber correction or a "robust" estimator of standard error because it is appropriate even if the model is misspecified.

The precision of this correlation-adjusted standard error estimator is determined by the number of districts. With only 20 districts, our estimate is relatively imprecise. Thus, we expect that the unadjusted standard errors (unadjusted for intra-district correlation) will tend to underestimate the standard error of our coefficients, and we also expect that correlation-adjusted estimates might be rather imprecise and lead to variable test statistics. As a compromise, we provide the unadjusted standard errors in the tables given below. However, we note that the significance of our variables changes when we use the correlation-adjusted standard errors. For case-level predictors, the bias will tend to be small and the unadjusted standard errors will probably be most appropriate. For district-level variables, the bias could be larger, and more attention should be paid to the adjusted standard errors, even though these could be imprecise.
Control Variables

Many characteristics of cases, other than case management policies and procedures applied to them, affect the time to disposition. We need to control for such case characteristics when we estimate the effects of policy. Otherwise, case differences that are not controlled for might be partially reflected in policy variable coefficients. This might lead us to make inaccurate conclusions about the effect of policy. This might occur if the distribution of a control variable differs between those cases that receive a particular management practice and those that do not.

Our multivariate analysis accounted for these control variables by including them in our model so that our regression coefficients represent the effects of policy after controlling for the case and district characteristics represented by the control variables. However, we had many control variables to consider and needed to select the best subset of these variables so as to ensure that we controlled for confounding factors without saturating our model with uninformative predictors. Table A.1 lists the complete set of control variables we explored for our models of time to disposition. We also considered many other variables related to the variables shown in the table and selected the ones that appeared substantively best for exploration in our models.

As shown in Table A.1, our control variables included subjective case-level predictors, such as stakes and complexity as determined by the attorneys or judges. The controls also included objective measures such as the jurisdiction, nature of suit, and presence of a bankruptcy mentioned in the docket. We included variables such as number of litigants, number of attorneys, and the presence of motions as additional measures of case complexity. We used a careful docket analysis to identify each of these measures. Our docket analysis also provided us with class action status. We included the four case-level motion variables (any dispositive motions, any discovery motions, any motions, and five or more motions) as control variables, even though these variables might be influenced to some degree by management policies. We reviewed these motion variables extensively and determined that motions were largely independent of case management. However, to
### Table A.1
Control Variables Used for Modeling Time to Disposition

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class action certification</td>
<td>Class action information from the docket; 0 is no mention of class action, 1 is alleged, 2 is denied, 3 is certified class action.</td>
</tr>
<tr>
<td>Nature of suit category</td>
<td>Nature of suit in broad categories; 1 is tort, 2 is contract, 3 is prisoner, 4 is other.</td>
</tr>
<tr>
<td>Average judicial work time category (shown as</td>
<td>Average judicial work time category for case type; 1 is high, 2 is moderate, 3 is low (see App. A).</td>
</tr>
</tbody>
</table>
| "case type has xxxxx"
average judicial work" in statistical model tables) |                                                                                                                                               |
| Jurisdiction                                  | Jurisdiction in federal court; 1 is U.S. plaintiff, 2 is U.S. defendant, 3 is federal question, 4 is diversity.                             |
| Bankruptcy mention                            | Bankruptcy mentioned in docket for other than bankruptcy nature of suit cases; 1 if there is a mention, 0 otherwise.                          |
| Removed case from state court                 | Case was removed from state court; 1 if removed, 0 otherwise.                                                                                |
| Any government parties                        | Any government (local, state, or federal) litigant in the case; 1 is government parties, 0 otherwise. Available only in 1992-93 data.          |
| Any private organizations                     | Any private organization litigant in the case; 1 is at least one litigant is a private organization, 0 otherwise.                              |
| Any pro se litigants                          | Any pro se litigant on the case; 1 is at least one pro se litigant, 0 otherwise.                                                            |
| Any litigant without an attorney              | Any litigant without attorney listed in the docket; 1 is at least one litigant without an attorney (not pro se), 0 otherwise.                 |
| Any dispositive motion                        | Any dispositive motion filed on the docket; 1 if there is a motion, 0 otherwise.                                                             |
| Discovery motion                              | Any discovery motion filed on the docket; 1 if there is a motion, 0 otherwise.                                                               |
| Any motions                                   | Any motions filed on the docket (discovery, dispositive, other, except for those related to appearance of attorney); 1 if there is at least one motion, 0 otherwise. |
| Five or more motions                          | Presence of five or more motions filed on the docket, except appearance of attorney; 1 if there is at least five motions, 0 otherwise.       |
| Number of lawyers                             | Number of attorneys involved on the case, counting no more than one per litigant; square root was used in model.                            |
| Number of litigants                           | Number of litigants on the case; square root was used in the model.                                                                          |
| Maximum stakes (if zero, shown “zero stakes" in | Natural log of the maximum stakes (best likely or worst likely outcome) reported by any attorney or statistical model tables)           |
| Nonmonetary stakes                            | Case involved nonmonetary stakes; 1 if at least one attorney or litigant said case involved nonmonetary stakes, 0 otherwise.                 |
Table A.1 (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related case</td>
<td>Attorney or litigant responded that additional time or money was spent on the case because of its effects on other cases; 1 if at least one attorney or litigant said yes, 0 otherwise.</td>
</tr>
<tr>
<td>State case</td>
<td>Also was state case concerning the same dispute; 1 if at least one attorney or litigant responded that there was a state case, 0 otherwise.</td>
</tr>
<tr>
<td>Administrative proceeding</td>
<td>Also was a federal or state administrative proceeding prior to filing the case; 1 if at least one attorney or litigant said yes, 0 otherwise.</td>
</tr>
<tr>
<td>Any contingent fee attorney</td>
<td>Any attorney working for a contingent fee; 1 if at least one attorney or litigant said yes, 0 otherwise.</td>
</tr>
<tr>
<td>Any hourly fee attorney</td>
<td>Any attorney working for an hourly fee; 1 if yes, 0 otherwise.</td>
</tr>
<tr>
<td>Case complexity</td>
<td>Highest level of case complexity as reported by any lawyer or judge; 1 is high complex, 2 is medium complex, 3 is low complex.</td>
</tr>
<tr>
<td>Difficulty of discovery</td>
<td>Highest level of difficulty of discovery as reported by any lawyer or judge; 1 is high difficulty, 2 is medium difficulty, 3 is low difficulty.</td>
</tr>
<tr>
<td>Difficulty in relations</td>
<td>Highest level of difficulty of relations between the parties and/or lawyers, as reported by any lawyer or judge; 1 is high difficulty, 2 is medium difficulty, 3 is low difficulty.</td>
</tr>
<tr>
<td>Dispute began after filing date</td>
<td>For at least one party the attorney responded that the date the dispute began was after the filing date; 1 if yes, 0 otherwise.</td>
</tr>
<tr>
<td>Old dispute</td>
<td>For at least one party the attorney responded that the dispute began more than a year before the filing date; 1 if yes, 0 otherwise.</td>
</tr>
</tbody>
</table>

District-Level Variables

<table>
<thead>
<tr>
<th>Judges</th>
<th>Number of full-time-equivalent judges, including senior judges, in the district.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judicial officers</td>
<td>Number of full-time-equivalent judicial officers, including judges, senior judges, and magistrate judges in the district.</td>
</tr>
<tr>
<td>Civil filings</td>
<td>Annual civil filings per FTE judicial officer.</td>
</tr>
<tr>
<td>Criminal filings</td>
<td>Annual criminal filings per FTE judicial officer.</td>
</tr>
<tr>
<td>Total filings</td>
<td>Annual civil plus criminal filings per FTE judicial officer.</td>
</tr>
<tr>
<td>Offices</td>
<td>Number of geographically different offices in the district.</td>
</tr>
<tr>
<td>Days to answer</td>
<td>Median days to answer for all cases in the district.</td>
</tr>
<tr>
<td>Percent dispositive motions</td>
<td>Percent of cases in the district with a dispositive motion filed on the docket.</td>
</tr>
<tr>
<td>Percent discovery motions</td>
<td>Percent of cases in the district with a discovery motion filed on the docket.</td>
</tr>
<tr>
<td>Percent any motions</td>
<td>Percent of cases in the district with at least one motion on the docket, other than attorney appearance-related motions.</td>
</tr>
<tr>
<td>Percent five or more motions</td>
<td>Percent of cases in the district with five or more motions on the docket.</td>
</tr>
<tr>
<td>Number of motions</td>
<td>Median number of motions per case for all cases in the district.</td>
</tr>
</tbody>
</table>
the extent that motions may be influenced by policy, the inclusion of these controls could introduce some bias. On the other hand, motions were one of our best predictors of case complexity and were important for improving the precision of our estimated effects, and any small bias introduced may be offset by this increase in precision.

Attorney responses (augmented by litigant and judge responses) supplied us with case complexity, stakes (value of monetary, presence of nonmonetary), presence of related cases, fee arrangements, timing of litigant involvement (before filing, after filing), presence of related state cases, and the presence of administrative proceedings. We derived the remaining variables from the Federal Courts Integrated Database (IDB).

Several of the candidate control variables that we explored were highly correlated. These included the various measures related to motions (any motions in case, dispositive, discovery, or five or more motions) and the number of litigants and attorneys. To prevent problems of multi-collinearity we selected the best predictor of time to disposition from each group and included these in our models. The four motions variables naturally split into two subgroups (many motions and discovery motions were in one group) and one predictor from each group was included.

Because we used attorney survey responses to generate some of our control variables and because we had less than perfect attorney response, we were missing control variables for some cases. In the 1992–93 data, we imputed values from missing controls using the remaining predictors in our model. We used imputed values because the lower response rate on open cases created a possibility of bias from including missing data flags. Sensitivity analyses run using only cases without missing data confirmed that our results are robust to this choice and that any bias is small.

In the main evaluation report, our model selection procedure identified the following as important control variables, without accounting for the effects of policy variables:
- 25 -

- Class action certification,
- Average judicial work level (moderate),
- Bankruptcy mention,
- Removed,
- Nature of suit category (tort, contract),
- Any government parties,
- Discovery motions,
- Any motions,
- Number of lawyers,
- Case complexity (high or moderate), and
- Maximum stakes.

In this further analysis of discovery management, we added the following discovery-related control variables because of their a priori expected importance in predicting the outcome variables of interest when discovery policies are varied. These two variables were considered to be subsumed under the overall case complexity variable in the main evaluation report, but our further analysis revealed them to be potentially significant in their own right even when they are included in the same model with the overall case complexity variable:

- Discovery difficulty (high or moderate), and
- Difficulty in relations between the parties and/or lawyers (high or moderate).

Policy Variables

Table A.2 lists the policy variables we explored in our models for time to disposition.

We selected these policy variables because they explicitly represent the principles and techniques that were mentioned in CJRA (for example, a district policy of mandatory disclosure), or serve as measures of the policies and procedures mentioned in the act (for example the particular forms of early judicial case management that we explored). Each variable is well measured using our various sources of data. Also, each variable pertains to a particular, well formed
Table A.2
Policy Variables Used in Modeling Time to Disposition

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early management on case</td>
<td>Judicial case management (set schedule, hold conference, refer to ADR, require status report or joint plan before the 160th day after filing, as reported in docket; 1 if received early management, 0 otherwise.</td>
</tr>
<tr>
<td>Early schedule on case</td>
<td>Provided a discovery, trial, or other schedule before the 160th day after filing, as reported in the docket; 1 if schedule, 0 otherwise.</td>
</tr>
<tr>
<td>Early setting of trial schedule on case</td>
<td>Provide a trial schedule before the 160th day after filing as reported in the docket; 1 if schedule, 0 otherwise.</td>
</tr>
<tr>
<td>Early conference on case</td>
<td>Hold a conference (status, scheduling, case management, or Rule 16(b) before the 160th day after filing, as reported in the docket; 1 if held, 0 otherwise.</td>
</tr>
<tr>
<td>Early ADR referral on case</td>
<td>Case referred to arbitration, mediation, or neutral evaluation before the 160th day after filing, as reported in the docket; 1 if referred, 0 otherwise.</td>
</tr>
<tr>
<td>Management level</td>
<td>Intensity of case management as reported by the attorney; 1 if high, 0 otherwise (for case-level analyses this is the highest level reported by any attorney).</td>
</tr>
<tr>
<td>Early disclosure of information</td>
<td>Parties made an early disclosure of relevant information without formal discovery request as reported by attorney; 1 if yes for at least one attorney, 0 otherwise.</td>
</tr>
<tr>
<td>Good-faith effort to resolve discovery dispute before filing motion</td>
<td>Lawyer report of whether good-faith effort was made to resolve dispute before filing discovery motion; 1 if yes for at least one attorney, 0 otherwise.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases managed (district %)</td>
<td>% of cases in a district that receive a schedule, a conference, file a status report or plan, or are referred to ADR.</td>
</tr>
<tr>
<td>Cases with trial schedule set early (district %)</td>
<td>% of cases in a district that receive a trial schedule before the 180th day after filing.</td>
</tr>
<tr>
<td>Early disclosure district policy</td>
<td>District policy on early disclosure. For 1991, 1 if district has mandatory early disclosure without formal discovery request for any cases, 0 otherwise. For 1992-95, 1 if district has mandatory disclosure for general civil litigation, 0 otherwise.</td>
</tr>
<tr>
<td>Joint plan district policy</td>
<td>District policy on whether attorneys must prepare a joint discovery or case management plan early in the case; 1 if yes; 0 otherwise.</td>
</tr>
<tr>
<td>Litigants at settlement conference (district %)</td>
<td>% of cases in a district with litigants present at settlement conferences in person or available on the telephone (as reported by the attorney).</td>
</tr>
<tr>
<td>Limits on interrogatories (district)</td>
<td>District policy on limitations on interrogatories; 1 if the district has a policy limiting them, 0 otherwise.</td>
</tr>
<tr>
<td>Days to discovery cutoff (district median)</td>
<td>Median days to discovery cutoff for cases with cutoff in a district.</td>
</tr>
<tr>
<td>Continuances (district %)</td>
<td>% of cases in a district that have a continuance, of those cases that have a schedule set.</td>
</tr>
<tr>
<td>Magistrate judge activity (district mean)</td>
<td>Number of civil proceedings performed by magistrate judges per civil termination in the district (e.g., motions, conferences, hearings); the square root of the number was used in the model.</td>
</tr>
<tr>
<td>Judicial control over trial (district &amp; firm)</td>
<td>% of trials in a district that had firm active judicial control, of those cases for which lawyers reported judicial control of trial was either firm or minimal.</td>
</tr>
</tbody>
</table>

NOTE: We also considered information from the dockets about whether a joint discovery/case management plan or status report had been submitted. That variable was dropped from this further study because the docketing practices regarding the submission of these plans or reports was found to vary markedly between districts, making that case-level variable undesirable for statistical analyses across districts.

Our hypothesis about the effect of policies and procedures on time to disposition. We did not pick these variables after exploratory analyses. Rather, we chose each policy variable because it pertained to...
a particular policy or procedure of interest that had been hypothesized as a predictor of time to disposition (and other outcomes).

We were limited in our choice of predictors to those variables that could be identified via the docket analysis, via explicitly known district policies, or via information on variables that could be obtained from the attorney surveys and judge surveys in the 1992-93 sample.

We were further limited because we had only 20 districts and some procedures were not widely implemented across the districts, for example, a district policy limiting the number or length of depositions.

For some procedures, we used district averages (or medians) to measure the effects of the typical use of procedures in the district, thereby avoiding selection bias that would occur at the case level. For example, we used the district median days to discovery cutoff to measure the effects of discovery cutoff. We do not use the case-level measure because we expect that for individual cases discovery cutoff will be tailored to the needs of the case. After reviewing the cases, a judge will assign a discovery cutoff that he or she feels is appropriate for the needs of the case. Difficult cases may receive more discovery time and take longer to settle; straightforward cases may receive less discovery time and require less time to settle. However, this difference in time to disposition may be more a characteristic of the case than the management. By using the district median, we hoped to average across the case characteristics that may influence the specific discovery cutoff and identify districts that typically choose shorter or longer cutoff times regardless of case characteristics.

In our main evaluation report, we did not consider explicitly model interactions among the policy variables. In this further discovery management policy modeling, we did explicitly use the following seven variables that represent interactions among the discovery-related case management policy variables:

- Early management, with early setting of trial date, and with mandatory planning policy (IETM);
• Early management, with early setting of trial date, and without mandatory planning policy (IETV);
• Early management, without early setting of trial date, and with mandatory planning policy (IEM);
• Early management, without early setting of trial date, and without mandatory planning policy (IEV);
• Early mandatory disclosure policy, and disclosure was made on this case (IMANDO);
• Early mandatory disclosure policy, and disclosure was not made on this case (IMANNOT); and
• No early mandatory disclosure policy, and disclosure was made on this case (IVOLDO).

Models for Time to Disposition

Table A.3 gives the results of our model for time to disposition using the entire sample of general civil cases closed after issue was joined and more than 270 days after filing, for our 1992-93 sample of filings. Interpretations of the results for the discovery management policy variables in the model are provided in Section 3 of this report. The significance of the discovery-related policy variables was the same whether we used the unadjusted standard errors or adjusted the standard errors for intra-district correlation, with two exceptions, which are discussed in Section 3.

The following control variables remained statistically significant after including our policy variables in the model. Each of these predictors is positively correlated with time to disposition:

• Class action certification,
• Bankruptcy mention,
• Discovery motions,
• Any motions,
• Case complexity (high), and
• Maximum stakes.
Table A.3
Model for Time to Disposition: 1992-93 Sample, General Civil Cases with Issue Joined, with Time to Disposition over 270 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>T-Stat.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.098</td>
<td>30.251</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Policy Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-0.234</td>
<td>-5.174</td>
<td>0.000</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>-0.257</td>
<td>-6.992</td>
<td>0.000</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>-0.188</td>
<td>-3.461</td>
<td>0.000</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>-0.061</td>
<td>-2.026</td>
<td>0.042</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-0.045</td>
<td>-1.129</td>
<td>0.258</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>-0.040</td>
<td>-1.067</td>
<td>0.285</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-0.037</td>
<td>-1.237</td>
<td>0.194</td>
</tr>
<tr>
<td>Litigants at settlement conf. (district %)</td>
<td>-0.009</td>
<td>-4.010</td>
<td>0.000</td>
</tr>
<tr>
<td>Limits on interrogatories (district)</td>
<td>-0.068</td>
<td>-2.117</td>
<td>0.034</td>
</tr>
<tr>
<td>Days to discovery cutoff (district median)</td>
<td>0.002</td>
<td>5.002</td>
<td>0.000</td>
</tr>
<tr>
<td>Continuances (district %)</td>
<td>-0.002</td>
<td>-1.720</td>
<td>0.085</td>
</tr>
<tr>
<td>Magistrate judge activity (district mean)</td>
<td>0.211</td>
<td>4.204</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class action certified</td>
<td>0.257</td>
<td>2.284</td>
<td>0.022</td>
</tr>
<tr>
<td>Case type has moderate avg. judicial work</td>
<td>-0.031</td>
<td>-1.093</td>
<td>0.274</td>
</tr>
<tr>
<td>Bankruptcy mention</td>
<td>0.241</td>
<td>2.948</td>
<td>0.003</td>
</tr>
<tr>
<td>Removed case</td>
<td>-0.001</td>
<td>-0.026</td>
<td>0.978</td>
</tr>
<tr>
<td>Nature of suit (tort)</td>
<td>-0.017</td>
<td>-0.572</td>
<td>0.567</td>
</tr>
<tr>
<td>Nature of suit (contract)</td>
<td>-0.049</td>
<td>-1.333</td>
<td>0.182</td>
</tr>
<tr>
<td>Any government parties</td>
<td>0.053</td>
<td>1.912</td>
<td>0.055</td>
</tr>
<tr>
<td>Discovery motion</td>
<td>0.139</td>
<td>5.193</td>
<td>0.000</td>
</tr>
<tr>
<td>Any motion</td>
<td>0.101</td>
<td>2.593</td>
<td>0.009</td>
</tr>
<tr>
<td>Number of lawyers (square root)</td>
<td>0.043</td>
<td>0.869</td>
<td>0.332</td>
</tr>
<tr>
<td>Discovery difficulty (high)</td>
<td>0.100</td>
<td>1.878</td>
<td>0.060</td>
</tr>
<tr>
<td>Discovery difficulty (moderate)</td>
<td>0.023</td>
<td>0.731</td>
<td>0.464</td>
</tr>
<tr>
<td>Discovery difficulty (missing)</td>
<td>0.077</td>
<td>1.037</td>
<td>0.299</td>
</tr>
<tr>
<td>Difficulty in relations (high)</td>
<td>-0.028</td>
<td>-0.778</td>
<td>0.436</td>
</tr>
<tr>
<td>Difficulty in relations (moderate)</td>
<td>-0.009</td>
<td>-0.331</td>
<td>0.740</td>
</tr>
<tr>
<td>Difficulty in relations (missing)</td>
<td>0.105</td>
<td>1.534</td>
<td>0.124</td>
</tr>
<tr>
<td>Case complexity (high)</td>
<td>0.131</td>
<td>2.649</td>
<td>0.008</td>
</tr>
<tr>
<td>Case complexity (moderate)</td>
<td>0.001</td>
<td>0.037</td>
<td>0.970</td>
</tr>
<tr>
<td>Zero stakes</td>
<td>-0.054</td>
<td>-1.142</td>
<td>0.253</td>
</tr>
<tr>
<td>Maximum stakes (log)</td>
<td>0.034</td>
<td>4.163</td>
<td>0.000</td>
</tr>
<tr>
<td>N=1,624</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A.4 summarizes the results for discovery management policy variables when that same model is applied to subsets of the cases based on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, and the top 25 percent most costly cases among general civil litigation that has time to disposition over 270 days after filing. Interpretations of the results for policy variables in these models are provided in Section 3 of this report.

**Estimating Effect Size in Days**

We fit our models for time to disposition on the “fourth root of days” scale. Although this was appropriate for model fitting and statistical inference, it makes the estimated effects difficult to interpret. To aid in the interpretation of these effects, we convert our results from the “fourth root of days” scale to the “days” scale. We provide standardized differences on the “days” scale for our most important policy predictors: early management with early setting of a trial date and with a mandatory planning policy (IETM), early management with early setting of a trial date and without a mandatory planning policy (IETV), early management without early setting of a trial date and with a mandatory planning policy (IEM), early management without early setting of a trial date and without a mandatory planning policy (IEV), early mandatory disclosure policy and disclosure was made on this case (IMANDO), early mandatory disclosure policy and disclosure was not made on this case (IMANNOT), no early mandatory disclosure policy and disclosure was made on this case (IVOLDO), limits to interrogatories (XDLIMI), and median days to discovery cutoff (XMDDCUT).

We used the following procedure to estimate our standardized effect in days.

---

5 These cases had total lawyer work hours per litigant of more than 188.
<table>
<thead>
<tr>
<th>Data subset used in model</th>
<th>Number of data records used</th>
<th>Median time to disposition (days)</th>
<th>Early manage, with early trial set, with mand. plan</th>
<th>Early manage, without early trial set, without mand. plan</th>
<th>Early manage, with early trial set, without mand. plan</th>
<th>Early manage, without early trial set, with mand. plan</th>
<th>Mand. disclose, policy, and disclose was made</th>
<th>Mand. disclose, policy, and disclose was not made</th>
<th>Limits on interrog. (district %)</th>
<th>Days to discovery cutoff (district median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1624</td>
<td>463.234(.000) -.257(.000) -.188(.000) -.061(.042) -.045(.258) -.040(.295) -.037(.194) -.068(.034) -.002(.000)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Case complexity: high</td>
<td>264</td>
<td>594.395(.006) -.326(.001) -.588(.000) -.116(.214) -.051(.650) -.010(.928) -.036(.674) -.004(.970) -.002(.119)</td>
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</tr>
<tr>
<td>Case complexity: medium</td>
<td>783</td>
<td>463.177(.003) -.277(.000) -.116(.077) -.100(.012) -.012(.808) -.062(.230) -.051(.138) -.074(.059) -.002(.000)</td>
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</tr>
<tr>
<td>Case complexity: low</td>
<td>315</td>
<td>392 -.175(.080) -.289(.001) -.269(.044) -.032(.843) -.091(.278) -.041(.609) -.022(.741) -.070(.334) -.002(.014)</td>
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</tr>
<tr>
<td>Discovery difficulty: high</td>
<td>231</td>
<td>581.642(.000) -.268(.014) -.291(.077) -.073(.502) -.012(.927) -.165(.278) -.026(.787) -.070(.669) -.000(.778)</td>
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</tr>
<tr>
<td>Discovery difficulty: medium</td>
<td>678</td>
<td>465 -.230(.000) -.319(.000) -.256(.000) -.068(.114) -.059(.257) -.034(.525) -.053(.152) -.073(.082) -.003(.000)</td>
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</tr>
<tr>
<td>Discovery difficulty: low</td>
<td>431</td>
<td>420 -.012(.891) -.284(.001) -.098(.388) -.106(.044) -.038(.576) -.002(.998) -.030(.581) -.017(.758) -.001(.369)</td>
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<td></td>
</tr>
<tr>
<td>Stakes &gt;$500,000</td>
<td>318</td>
<td>459 -.331(.001) -.145(.073) -.254(.052) -.061(.354) -.129(.123) -.167(.020) -.059(.344) -.155(.023) -.003(.003)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Stakes &lt;=$500,000</td>
<td>719</td>
<td>471 -.192(.002) -.350(.000) -.285(.000) -.091(.024) -.050(.313) -.079(.187) -.085(.019) -.021(.612) -.003(.000)</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Nature of suit: tort</td>
<td>360</td>
<td>477 -.327(.000) -.377(.000) -.295(.015) -.154(.003) -.137(.046) -.058(.339) -.052(.328) -.058(.344) -.002(.001)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Nature of suit: contract</td>
<td>350</td>
<td>430 -.049(.614) -.251(.001) -.126(.314) -.027(.733) -.082(.388) -.158(.070) -.102(.095) -.073(.332) -.002(.009)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of suit: other</td>
<td>893</td>
<td>477 -.268(.000) -.214(.000) -.180(.008) -.051(.200) -.010(.846) -.014(.784) -.008(.856) -.067(.119) -.002(.001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top 25% most costly cases</td>
<td>233</td>
<td>570 -.195(.050) -.193(.021) -.240(.115) -.037(.600) -.015(.857) -.137(.133) -.071(.279) -.025(.757) -.002(.039)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Numbers shown in columns under model variables are "coefficient (p-value)". Bold type highlights those significant at p-value <= .050 level.
1. For every case in the sample, we used our estimated regression model shown in Table A.3 to predict the expected time to disposition (TTD) assuming that the case receives the policy regardless of what really happened on the case. We call this prediction \( y_1 \).

Table A.5 gives the values of the predictor variables used to make this prediction of TTD for each of our policies. For each policy effect that we are evaluating, all control variables are set to the observed values for every case. Most of the other policy variables are also set to the observed values. However, for some policy effects, the policy we are evaluating is not independent of other policies. For example, a case cannot have both IBTM and IETV or IEM or IEV. Hence, when we estimate the effect of IBTM, we must set IETV, IEM, and IEV to 0 as well as setting IBTM to 1 and leave all other policy variables at their observed values. Analogous logic applies to IETV, IEM, and IEV as well. The policies of IMANDO, IMANNOT, and IVOLDO are also interdependent, i.e., a case can have at most one of these policies. When estimating the effect of IMANDO, we set IMANDO to 1 and both IMANNOT and IVOLDO to 0. Estimation of the effect for IMANNOT and IVOLDO requires analogous procedures.

For district median days to discovery cutoff, “with the policy” refers to a low median--120 days, which is about the lower quartile in our data—and “without the policy” refers to a high median--180 days, which is about the upper quartile in our data.

2. For every case in the sample, we used our estimated regression model shown in Table A.3 to predict the expected TTD assuming that the case does not receive the policy. Table A.6 gives the values of the predictor variables used to make this prediction. This table looks like Table A.5 with all the 1s replaced with 0s and 120 median days to discovery cutoff replaced by 180 days. We call these predictors \( y_2 \).
<table>
<thead>
<tr>
<th>Variable</th>
<th>IETM</th>
<th>IETV</th>
<th>IEM</th>
<th>IEV</th>
<th>IMANDO</th>
<th>IMANNOT</th>
<th>IVOLDO</th>
<th>XDLIMI</th>
<th>XMDCUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IETM</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IETV</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IEM</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IEV</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IMANDO</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IMANNOT</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>IVOLDO</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>XDLIMI</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>1</td>
<td>Observed</td>
</tr>
<tr>
<td>XMDCUT</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>120</td>
</tr>
<tr>
<td>Control Variables</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
<tr>
<td>Other Policy Variables</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
<td>Observed</td>
</tr>
</tbody>
</table>
Table A.6
Estimating Effect Size in Days: Values Used for Predicting TTD
Assuming the Case Does Not Receive the Policy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Policy Being Evaluated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IETM</td>
</tr>
<tr>
<td>IETM</td>
<td>0</td>
</tr>
<tr>
<td>IETV</td>
<td>0</td>
</tr>
<tr>
<td>IEM</td>
<td>0</td>
</tr>
<tr>
<td>IEV</td>
<td>0</td>
</tr>
<tr>
<td>IMANDO</td>
<td>Observed</td>
</tr>
<tr>
<td>IMANNOT</td>
<td>Observed</td>
</tr>
<tr>
<td>IVOLDO</td>
<td>Observed</td>
</tr>
<tr>
<td>XDLIMI</td>
<td>Observed</td>
</tr>
<tr>
<td>XMDDCUT</td>
<td>Observed</td>
</tr>
<tr>
<td>Control Variables</td>
<td>Observed</td>
</tr>
<tr>
<td>Other Policy Variables</td>
<td>Observed</td>
</tr>
</tbody>
</table>
3. We convert the predicted TTD values ($y_i$ and $y_j$) to the days scale (raise to the 4th power). We call these new variables $z_i$ and $z_j$, respectively. For each case in our sample we now have two estimates on the "days" scale, $z_i$ and $z_j$. In our statistical model, we assume that each observed case in our sample is a random draw from a distribution of possible cases. The distribution of possible cases is determined by our case's control and policy predictor characteristics. The estimate $z_i$ represents our best estimate of the median time to disposition for the unobserved distribution of cases with our case's characteristics with the policy. And $z_j$ represents our best estimate of the median time to disposition for the unobserved distribution of cases with our case's characteristics without the policy.

4. We now take the difference of $z_i$ and $z_j$ and call this $d$. We now have a sample of $d$s, which represent our best estimate of the effect of policy on each case in our sample.

5. We summarize this sample of $d$s by taking the median. This median of the differences is our estimate of the effect size. Again we take the median because the distribution of $d$s tend to be skewed. Hence our estimate of the effect size might be described as the "typical effect we would expect to see on the typical case."

We repeated this process for each of the nine policies listed at the start of this subsection. Table A.7 gives the standardized effect estimates and 95 percent confidence intervals. We used bootstrap procedures\(^6\) to estimate the confidence intervals.

Early management with a mandatory discovery management planning policy has the greatest effects, a 104-day reduction when a trial schedule is set early, and about an 85-day reduction for early management with a mandatory planning policy but without setting a trial schedule early. The estimated effect for early management with neither

\(^6\)Efron and Tibshirani (1993).
Table A.7

Estimated Effect Sizes in Days for Selected Policy Variables for the over 270 Day Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lower Bound of Effect in Days</th>
<th>Upper Bound of Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-104</td>
<td>-57</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>-113</td>
<td>-78</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>-95</td>
<td>-28</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>-39</td>
<td>0</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-20</td>
<td>23</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>-18</td>
<td>24</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-17</td>
<td>9</td>
</tr>
<tr>
<td>Limits on interrogatories</td>
<td>-31</td>
<td>11</td>
</tr>
<tr>
<td>Median days to discovery cutoff</td>
<td>-55</td>
<td>-23</td>
</tr>
</tbody>
</table>

NOTES: The early management policies each are compared to no early management. The early disclosure policies each are compared to no mandatory early disclosure policy and no disclosure on the case. The median discovery cutoff of 120 days is compared to a median of 180 days. Correlation in the regression coefficient estimates and small differences in variance estimation methods resulted in the confidence interval for limits on interrogatories crossing zero even though the variable is significant in our main model shown in Table A.3.

mandatory planning nor setting a trial schedule early is much smaller—only about 29 days.

We estimate that early disclosure has much smaller effects than the methods of early management that we explored. Our estimated effects for early disclosure indicate that the policies reduce time to disposition
by about 20 days or less for a typical case. For all three early disclosure policies, the confidence intervals cross zero.

Our estimated effect for a district policy limiting the number of interrogatories is relatively small with large confidence bounds. The large confidence bounds are the result of the small variation in the data because only 4 of our 20 study districts did not have limits on interrogatories during the study time period.

We estimate that reducing median discovery cutoff time has a large effect. We expect that for a typical case, a 60-day reduction in the median discovery cutoff (from 180 days to 120 days) would correspond to about a 55-day reduction in time to disposition.

ANALYSIS OF LAWYER WORK HOURS

Lawyer work hours are our most informative measure of litigation costs, since they do not need adjustment for interdistrict differences in the hourly fees and lawyers' salaries paid, and since they are not confounded by differences in the fee arrangement. For example, contingent fee percentages are not immediately responsive to differences in judicial management of discovery, but hours worked by the lawyers may change as a result of such judicial management.

In this subsection we discuss our analyses of total lawyer work hours on general civil litigation cases with issue joined that close over 270 days after filing, and the effects of judicial discovery management policies on those hours.

We also provide information on our analyses of lawyer work hours spent on discovery.

Multivariate Regression Models on Attorney-Level Data

To estimate the effects of policy on lawyer work hours, we used multivariate regression models fit to attorney-level data. That is, we used data with one record per each responding attorney from our sample of general litigation cases with issue joined. Work hours can differ among lawyers within cases and we use attorney-level characteristics to explain some of this variability in our model.
Our model is analogous to the time to disposition model presented
above in this appendix, except that we now have responses from attorneys
within cases.

Since lawyers may represent more than one litigant on a case, and
since some litigants may have more than one lawyer working on the case,
it is necessary to sort out the method of handling these multiple
relationships before describing the analysis.

For each litigant on a case, we initially surveyed only one
attorney and asked that one attorney for the number of hours “worked by
you and ALL attorneys for your party or parties on this case.” If the
first attorney could not supply information for all attorneys for their
party or parties, then we surveyed a second attorney. If we ended up
surveying more than one attorney for a party, then we combined the two
work hour responses into one total work hours variable before analysis.
If we had only partial lawyer work hours for a party, then we did not
include them because we knew they were incomplete.

Some attorneys represented multiple clients on the same case, and
we found that work hours grew as a function of the number of litigants
the attorney represented. Hence we modeled attorney work hours per
party represented. We explored both total work hours by the lawyer and
hours per party represented by the lawyer and found qualitatively
similar results. However, we had the best fitting model (no obvious
residual lack of fit) when we used hours per party represented and
included the square root of the number of parties represented as a
predictor variable to allow for economies of scale.

We include lawyer work hours for attorneys with all types, no
matter how they are paid (e.g., contingent fee, hourly fee, government
attorney, and in-house private organization attorney).7

Our sample distribution of lawyer work hours per party represented
was highly skewed, and it is not appropriate to model highly skewed data
using additive linear regression models. Using exploratory analyses we

7Even if an in-house or government attorney does not “bill” for
services, there is still a cost to the litigant incurred for salary,
fringe benefits, and overhead and hence the hours worked by those
attorneys on litigation are not “free” over the long term, even if some
attorneys may currently have slack time.
determined that by using the natural log of lawyer work hours per party represented we removed the skew from our data and could fit linear additive models without obvious lack of fit. It is important to note that no attorneys should report zero hours spent on a case so we could use the natural log transformation on all data without worrying about transforming zero. When modeling work hours spent on discovery, we used only lawyers with positive time spent on discovery; the percentage reporting zero discovery work time is detailed in Section 2 of this report for various subsets of cases and lawyers.

In the remainder of this subsection we will refer to the natural log of lawyer work hours per party represented as lawyer work hours.

Open Cases and Missing Data

As discussed above for time to disposition, 8.5 percent of our cases from our 1992-93 general civil litigation sample remained open at the end of our study. Although we had lawyer responses from a fraction of these open cases, we do not feel that we should use data from these open cases in exploring the effects of policy on lawyer work hours. The partial data provided by these open cases would not be comparable to complete data on closed cases because work hours tend to be unevenly spent with a potentially major portion of work time coming near settlement or trial. Also, few of the attorney respondents from open cases provided data on work hours. Thus, our models are fit only to data from respondents from closed cases. This is likely to introduce some bias into our estimated coefficients, but because we are dealing with only 8.5 percent open cases, we expect this bias to be limited.

Because lawyer work hours were reported by lawyer survey responses, we do not have data for all attorneys in the sample. About 50 percent of attorneys did not respond to our survey. Of responding attorneys, about 75 to 80 percent provided data on lawyer work hours. Attorneys without reported work hours were excluded from our sample for the purposes of fitting these models. We used nonresponse weights in our analysis to offset the effects of differential nonresponse, as discussed in Appendix B of the main evaluation report. However, missing
information is problematic and could introduce some bias into our estimates of policy effects.

Control and Policy Variables

Our methodology for modeling the effects of policy and procedures on lawyer work hours is analogous to that used for analyzing time to disposition. We again considered both control variables and policy variables. Control variables consisted of case, district, and attorney characteristics that could explain differences in work hours, and policy variables measured the district and case-level management policies and procedures. We added some attorney characteristics to the list of control variables used for time to disposition. The policy variables used in our analysis of work hours are the same as those used for modeling time to disposition.

In our search for control variables, we considered all the case- and district-level controls that we explored in our models for time to disposition (see Table A.1 for details). We also considered additional attorney-level characteristics that we expected may help explain variation in work hours. The additional control variables we considered are given in Table A.8. The variables are particular characteristics of the attorney (years in practice) or the attorney-client relationship (fee structure) that cannot be considered characteristics of the case as a whole.

Even though time to disposition and work hours are moderately correlated, we did not include time to disposition as a control variable in our model for lawyer work hours. As we demonstrated above, many of our policy variables are correlated with time to disposition. Had we included time to disposition in our model of lawyer work hours, we would not fully capture the effects of case management policy on work hours. With time to disposition in the model, indirect effects, such as the effect of policy on time to disposition that results in effects on lawyer work hours, would not be captured in our model. We decided to estimate the “total effect” (both the indirect effect through time to disposition and the direct effect) of case management policy on lawyer work hours and did not include time to disposition in our model.
Table A.8

Additional Control Variables Used for Modeling Lawyer Work Hours

<table>
<thead>
<tr>
<th>Attorney-Level Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>Years practicing law</td>
</tr>
<tr>
<td>Percent practice</td>
<td>Percentage of practice devoted to federal district court litigation in past five years</td>
</tr>
<tr>
<td>federal</td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>Square root of the number of lawyers in law office or legal department</td>
</tr>
<tr>
<td>Contingent fee</td>
<td>Primary fee arrangement was a contingent fee; 1 if contingent fee, 0 otherwise</td>
</tr>
<tr>
<td>Government attorney</td>
<td>Attorney was a government attorney; 1 if yes, 0 otherwise</td>
</tr>
<tr>
<td>Defense attorney</td>
<td>Attorney represented a defendant; 1 if yes, 0 otherwise</td>
</tr>
<tr>
<td>Number of parties</td>
<td>Square root of the number of parties represented by the attorney in the dispute</td>
</tr>
</tbody>
</table>

We explored the same policy variables in our models of lawyer work time as we did in our analysis of time to disposition. These policy variables represent the important policies and procedures endorsed by the CJRA and are appropriate for use with all our outcomes.

In the main evaluation report, our model selection procedure identified the following as important control variables before accounting for the effects of policy variables:

- No mention of class action on the case docket,\(^8\)
- Average judicial work level (high),
- Jurisdiction (diversity),
- Discovery motion,
- Any motion,
- Related state case,
- Any government parties,

\(^8\)Because there were so few class action cases in our sample and we were analyzing subsets of the cases that often had no class actions in the subset, we dropped this variable from the list of those used as controls.
• Any litigant without an attorney,
• Any pro se litigants,
• Case complexity (high or moderate),
• Maximum stakes,
• Contingent fee,
• Government attorney,
• Percent practice federal,
• Firm size,
• Defense attorney, and
• Number of parties.

In this further analysis of discovery management, we added the following discovery-related control variables because of their hypothetical importance in predicting the outcome variables of interest when discovery policies are varied. These two variables were considered to be subsumed under the overall case complexity variable in the main evaluation report, but our further analysis revealed them to be potentially significant in their own right even when they are included in the same model with the overall case complexity variable:

• Discovery difficulty (high or moderate), and
• Difficulty in relations between the parties and/or lawyers (high or moderate).

In the main evaluation report, we also found that some types of fee structure interacted with some of the other important predictors of lawyer work hours such as stakes and complexity, but those interactions variables were not statistically significant when policy variables were added to the model. We have dropped those interactions from the set of control variables used in this further analysis of discovery/case management, to maintain model parsimony by reducing the number of variables in the model as we explore smaller subsets of the sample. Two of those subsets explored are contingent fee lawyers and hourly fee lawyers, so that we could directly explore the effects of policy on those two different types of fee arrangements.
Models for Lawyer Work Hours

Table A.9 gives the results of our model for total lawyer work hours using the entire sample of general civil cases closed after issue was joined and more than 270 days after filing, for our 1992-93 sample of filings. Interpretations of the results for the discovery management policy variables in the model are provided in Section 3 of this report. The significance of the discovery-related policy variables was the same whether we used the unadjusted standard errors or adjusted the standard errors for intra-district correlation.

The following control variables remained statistically significant after including our policy variables in the model:

- Number of parties,
- Discovery motion,
- Any litigant without an attorney,
- Government attorney,
- Case complexity (high or moderate),
- Discovery difficulty (high or moderate),
- Maximum stakes,
- Percent practice federal,
- Firm size,
- Defense attorney, and
- State case.

Higher stakes, complexity, and discovery difficulty are all significant predictors of higher lawyer work hours. There appear to be some economies of scale, i.e., lawyer work hours per litigant decrease as the number of litigants increases. Similarly, cases with a related case in state court lead to fewer work hours. Also in our data we find that defense attorneys and government attorneys report fewer work hours per litigant than do other attorneys.

Table A.10 summarizes the results for discovery management policy variables when that same model is applied to subsets of the cases based on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the
### Table A.9

Model for Lawyer Work Hours: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>T-Stat.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>1.386</td>
<td>3.788</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Policy Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-0.016</td>
<td>-0.140</td>
<td>0.889</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>0.301</td>
<td>3.096</td>
<td>0.002</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>0.006</td>
<td>0.042</td>
<td>0.966</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>0.349</td>
<td>4.481</td>
<td>0.000</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>0.087</td>
<td>0.890</td>
<td>0.374</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>-0.006</td>
<td>-0.058</td>
<td>0.954</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-0.176</td>
<td>-2.438</td>
<td>0.015</td>
</tr>
<tr>
<td>Litigants at settlement conf. (district %)</td>
<td>0.006</td>
<td>0.901</td>
<td>0.363</td>
</tr>
<tr>
<td>Limits on interrogatories (district)</td>
<td>-0.190</td>
<td>-2.077</td>
<td>0.038</td>
</tr>
<tr>
<td>Days to discovery cutoff (district median)</td>
<td>0.003</td>
<td>3.227</td>
<td>0.001</td>
</tr>
<tr>
<td>Continuances (district %)</td>
<td>-0.007</td>
<td>-2.475</td>
<td>0.013</td>
</tr>
<tr>
<td>Magistrate judge activity (district mean)</td>
<td>-0.045</td>
<td>-0.324</td>
<td>0.746</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of litigants (square root)</td>
<td>-0.972</td>
<td>-13.999</td>
<td>0.000</td>
</tr>
<tr>
<td>Case type has high avg. judicial work</td>
<td>0.120</td>
<td>1.734</td>
<td>0.083</td>
</tr>
<tr>
<td>Diversity jurisdiction</td>
<td>0.136</td>
<td>1.779</td>
<td>0.075</td>
</tr>
<tr>
<td>Discovery motion</td>
<td>0.506</td>
<td>7.186</td>
<td>0.000</td>
</tr>
<tr>
<td>Any motion</td>
<td>0.196</td>
<td>1.922</td>
<td>0.055</td>
</tr>
<tr>
<td>Any government party</td>
<td>-0.145</td>
<td>-1.688</td>
<td>0.091</td>
</tr>
<tr>
<td>Any litigant without an attorney</td>
<td>-0.208</td>
<td>-2.246</td>
<td>0.025</td>
</tr>
<tr>
<td>Any pro se litigant</td>
<td>-0.199</td>
<td>-1.300</td>
<td>0.194</td>
</tr>
<tr>
<td>Case complexity (high)</td>
<td>0.457</td>
<td>3.633</td>
<td>0.000</td>
</tr>
<tr>
<td>Case complexity (moderate)</td>
<td>0.241</td>
<td>2.738</td>
<td>0.006</td>
</tr>
<tr>
<td>Discovery difficulty (high)</td>
<td>0.373</td>
<td>3.218</td>
<td>0.001</td>
</tr>
<tr>
<td>Discovery difficulty (moderate)</td>
<td>0.305</td>
<td>2.672</td>
<td>0.008</td>
</tr>
<tr>
<td>Difficulty in relations (high)</td>
<td>0.138</td>
<td>1.633</td>
<td>0.102</td>
</tr>
<tr>
<td>Difficulty in relations (moderate)</td>
<td>0.092</td>
<td>1.300</td>
<td>0.194</td>
</tr>
<tr>
<td>Zero stakes</td>
<td>-0.279</td>
<td>-2.650</td>
<td>0.008</td>
</tr>
<tr>
<td>Maximum stakes (log)</td>
<td>0.234</td>
<td>9.516</td>
<td>0.000</td>
</tr>
<tr>
<td>Missing fee</td>
<td>-0.321</td>
<td>-2.175</td>
<td>0.030</td>
</tr>
<tr>
<td>Contingent fee</td>
<td>-0.097</td>
<td>-0.900</td>
<td>0.368</td>
</tr>
<tr>
<td>Government attorney</td>
<td>-0.417</td>
<td>-3.047</td>
<td>0.002</td>
</tr>
<tr>
<td>Missing percent practice federal</td>
<td>0.350</td>
<td>0.827</td>
<td>0.408</td>
</tr>
<tr>
<td>Percent practice federal</td>
<td>0.006</td>
<td>4.646</td>
<td>0.000</td>
</tr>
<tr>
<td>Missing firm size</td>
<td>-0.068</td>
<td>-0.181</td>
<td>0.855</td>
</tr>
<tr>
<td>Firm size (square root)</td>
<td>0.045</td>
<td>6.183</td>
<td>0.000</td>
</tr>
<tr>
<td>Defense attorney</td>
<td>-0.230</td>
<td>-2.640</td>
<td>0.008</td>
</tr>
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<td>State case</td>
<td>-0.250</td>
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<tr>
<td>N=1,122</td>
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Table A.10
Model for Lawyer Work Hours: Subsets of 1992-93 Sample,
General Civil Cases with Issue Joined, Closed with Time to Disposition Over 270 Days

<table>
<thead>
<tr>
<th>Data subset used in model</th>
<th>Number of data records used</th>
<th>Median lawyer work hours per litigant</th>
<th>Early manage, with early trial set, with mand. plan</th>
<th>Early manage, with early trial set, without mand. plan</th>
<th>Early manage, without early trial set, with mand. plan</th>
<th>Early manage, without early trial set, without mand. plan</th>
<th>Mand. disclose, policy, and disclose was made</th>
<th>Mand. disclose, policy, and disclose was not made</th>
<th>No mand. disclose, policy, and disclose was made</th>
<th>Limits on interrog. (district %)</th>
<th>Days to discovery cutoff (district median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1122</td>
<td>80 .016(889)</td>
<td>.301(002)</td>
<td>.006(96)</td>
<td>.349(000)</td>
<td>.087(374)</td>
<td>.006(954)</td>
<td>.176(015)</td>
<td>.190(036)</td>
<td>.003(001)</td>
<td></td>
</tr>
<tr>
<td>Case complexity: high</td>
<td>269</td>
<td>150 .166(499)</td>
<td>.411(055)</td>
<td>.433(987)</td>
<td>.363(056)</td>
<td>.190(388)</td>
<td>.055(825)</td>
<td>.483(002)</td>
<td>.080(741)</td>
<td>.009(25)</td>
<td></td>
</tr>
<tr>
<td>Case complexity: medium</td>
<td>680</td>
<td>78 .003(886)</td>
<td>.225(077)</td>
<td>.025(897)</td>
<td>.436(000)</td>
<td>.204(112)</td>
<td>.081(535)</td>
<td>.126(157)</td>
<td>.304(009)</td>
<td>.003(020)</td>
<td></td>
</tr>
<tr>
<td>Case complexity: low</td>
<td>173</td>
<td>40 .198(452)</td>
<td>.227(249)</td>
<td>.389(103)</td>
<td>.056(743)</td>
<td>.046(634)</td>
<td>.267(231)</td>
<td>.149(437)</td>
<td>.114(564)</td>
<td>.000(973)</td>
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<tr>
<td>Discovery difficulty: high</td>
<td>224</td>
<td>140 .549(057)</td>
<td>.314(167)</td>
<td>.058(822)</td>
<td>.344(009)</td>
<td>.057(812)</td>
<td>.002(992)</td>
<td>.597(000)</td>
<td>.286(411)</td>
<td>.004(041)</td>
<td></td>
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<tr>
<td>Discovery difficulty: medium</td>
<td>599</td>
<td>96 .184(254)</td>
<td>.279(043)</td>
<td>.031(878)</td>
<td>.403(000)</td>
<td>.087(512)</td>
<td>.096(531)</td>
<td>.268(006)</td>
<td>.181(122)</td>
<td>.003(033)</td>
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<tr>
<td>Discovery difficulty: low</td>
<td>298</td>
<td>49 .048(792)</td>
<td>.190(265)</td>
<td>.042(893)</td>
<td>.191(101)</td>
<td>.096(570)</td>
<td>.064(736)</td>
<td>.212(116)</td>
<td>.032(823)</td>
<td>.002(216)</td>
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<tr>
<td>Plaintiff attorney</td>
<td>470</td>
<td>100 .216(244)</td>
<td>.416(004)</td>
<td>.040(832)</td>
<td>.517(000)</td>
<td>.017(911)</td>
<td>.135(426)</td>
<td>.215(043)</td>
<td>.002(990)</td>
<td>.003(101)</td>
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<tr>
<td>Defense attorney</td>
<td>652</td>
<td>75 .824(097)</td>
<td>.202(109)</td>
<td>.030(881)</td>
<td>.245(011)</td>
<td>.155(206)</td>
<td>.088(491)</td>
<td>.149(115)</td>
<td>.265(011)</td>
<td>.004(002)</td>
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<tr>
<td>Hourly fee</td>
<td>639</td>
<td>83 .096(526)</td>
<td>.241(051)</td>
<td>.140(377)</td>
<td>.389(000)</td>
<td>.040(757)</td>
<td>.015(912)</td>
<td>.286(003)</td>
<td>.223(047)</td>
<td>.005(000)</td>
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<tr>
<td>Contingent fee</td>
<td>205</td>
<td>95 .165(313)</td>
<td>.009(60)</td>
<td>.333(138)</td>
<td>.161(287)</td>
<td>.093(115)</td>
<td>.430(054)</td>
<td>.038(769)</td>
<td>.268(175)</td>
<td>.000(030)</td>
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<tr>
<td>Firm size &gt; 5</td>
<td>764</td>
<td>90 .166(393)</td>
<td>.152(212)</td>
<td>.243(161)</td>
<td>.277(004)</td>
<td>.035(773)</td>
<td>.062(600)</td>
<td>.234(011)</td>
<td>.107(330)</td>
<td>.002(038)</td>
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<tr>
<td>Firm size &lt;=5</td>
<td>345</td>
<td>66 .074(839)</td>
<td>.502(002)</td>
<td>.327(169)</td>
<td>.453(000)</td>
<td>.327(047)</td>
<td>.175(514)</td>
<td>.180(120)</td>
<td>.315(057)</td>
<td>.005(005)</td>
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<tr>
<td>Stakes $&gt;500,000</td>
<td>314</td>
<td>172 .334(162)</td>
<td>.218(343)</td>
<td>.143(580)</td>
<td>.247(218)</td>
<td>.062(765)</td>
<td>.171(456)</td>
<td>.600(001)</td>
<td>.179(355)</td>
<td>.006(002)</td>
<td></td>
</tr>
<tr>
<td>Stakes $&lt;500,000</td>
<td>692</td>
<td>66 .132(369)</td>
<td>.167(144)</td>
<td>.230(157)</td>
<td>.352(000)</td>
<td>.254(037)</td>
<td>.017(892)</td>
<td>.092(279)</td>
<td>.217(060)</td>
<td>.003(014)</td>
<td></td>
</tr>
<tr>
<td>Nature of suit: tort</td>
<td>277</td>
<td>80 .264(254)</td>
<td>.212(187)</td>
<td>.231(258)</td>
<td>.085(541)</td>
<td>.041(811)</td>
<td>.119(539)</td>
<td>.029(821)</td>
<td>.042(800)</td>
<td>.001(402)</td>
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</tr>
<tr>
<td>Nature of suit: contract</td>
<td>270</td>
<td>100 .239(388)</td>
<td>.218(239)</td>
<td>.233(497)</td>
<td>.342(049)</td>
<td>.310(076)</td>
<td>.299(189)</td>
<td>.377(014)</td>
<td>.422(033)</td>
<td>.001(625)</td>
<td></td>
</tr>
<tr>
<td>Nature of suit: other</td>
<td>575</td>
<td>70 .187(244)</td>
<td>.218(147)</td>
<td>.135(526)</td>
<td>.368(001)</td>
<td>.063(649)</td>
<td>.003(982)</td>
<td>.127(243)</td>
<td>.059(571)</td>
<td>.005(000)</td>
<td></td>
</tr>
<tr>
<td>Top 25% most costly cases</td>
<td>276</td>
<td>375 .016(938)</td>
<td>.050(663)</td>
<td>.110(571)</td>
<td>.118(161)</td>
<td>.125(327)</td>
<td>.176(303)</td>
<td>.163(977)</td>
<td>.164(183)</td>
<td>.001(184)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Numbers shown in columns under model variables are "coefficient (p-value)". Bold type highlights those significant at p-value <= .050 level.
law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, and the top 25 percent most costly cases among general civil litigation that have time to disposition over 270 days after filing.\textsuperscript{9} Interpretations of the results for policy variables in these models are provided in Section 3 of this report.

Table A.11 gives the results of our model for lawyer work hours on discovery. Interpretations of the results for the discovery management policy variables in the model are provided in Section 3 of this report. The significance of the discovery-related policy variables was the same whether we used the unadjusted standard errors or adjusted the standard errors for intra-district correlation.

The following control variables remained statistically significant after including our policy variables in the model:

- Number of parties,
- Case type has high average judicial work,
- Discovery motion,
- Any litigant without an attorney,
- Government attorney,
- Discovery difficulty (high or moderate),
- Maximum stakes,
- Percent practice federal,
- Firm size, and
- State case.

While both complexity of the case and discovery difficulty are significant for predicting total lawyer work hours, when predicting discovery work hours the discovery difficulty variable has a much larger and significant coefficient while overall case complexity is not significant.

Table A.12 summarizes the results for discovery management policy variables when that same model is applied to subsets of the cases based

\textsuperscript{9}These cases had total lawyer work hours per litigant of more than 138.
Table A.11
Model for Lawyer Work Hours on Discovery When Greater Than Zero: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>T-Stat.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.067</td>
<td>0.150</td>
<td>0.880</td>
</tr>
<tr>
<td><strong>Policy Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-0.040</td>
<td>-0.265</td>
<td>0.791</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>0.377</td>
<td>3.301</td>
<td>0.001</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>-0.101</td>
<td>-0.568</td>
<td>0.570</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>0.473</td>
<td>4.561</td>
<td>0.000</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-0.164</td>
<td>-1.411</td>
<td>0.158</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>-0.182</td>
<td>-1.370</td>
<td>0.171</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disclosure was made on this case</td>
<td>-0.351</td>
<td>-3.871</td>
<td>0.000</td>
</tr>
<tr>
<td>Litigants at settlement conf. (district %)</td>
<td>0.003</td>
<td>0.334</td>
<td>0.738</td>
</tr>
<tr>
<td>Limits on interrogatories (district)</td>
<td>-0.273</td>
<td>-2.532</td>
<td>0.011</td>
</tr>
<tr>
<td>Days to discovery cutoff (district median)</td>
<td>0.003</td>
<td>2.108</td>
<td>0.035</td>
</tr>
<tr>
<td>Continuances (district %)</td>
<td>-0.006</td>
<td>-1.597</td>
<td>0.110</td>
</tr>
<tr>
<td>Magistrate judge activity (district mean)</td>
<td>0.078</td>
<td>0.461</td>
<td>0.645</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of litigants (square root)</td>
<td>-1.066</td>
<td>-11.679</td>
<td>0.000</td>
</tr>
<tr>
<td>Case type has high avg. judicial work</td>
<td>0.186</td>
<td>2.245</td>
<td>0.025</td>
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<tr>
<td>Diversity jurisdiction</td>
<td>0.099</td>
<td>1.057</td>
<td>0.290</td>
</tr>
<tr>
<td>Discovery motion</td>
<td>0.599</td>
<td>6.900</td>
<td>0.000</td>
</tr>
<tr>
<td>Any motion</td>
<td>0.154</td>
<td>1.198</td>
<td>0.231</td>
</tr>
<tr>
<td>Any government party</td>
<td>-0.203</td>
<td>-1.947</td>
<td>0.052</td>
</tr>
<tr>
<td>Any litigant without an attorney</td>
<td>-0.331</td>
<td>-3.839</td>
<td>0.047</td>
</tr>
<tr>
<td>Any pro se litigant</td>
<td>-0.322</td>
<td>-1.745</td>
<td>0.081</td>
</tr>
<tr>
<td>Case complexity (high)</td>
<td>0.176</td>
<td>1.145</td>
<td>0.252</td>
</tr>
<tr>
<td>Case complexity (moderate)</td>
<td>0.021</td>
<td>0.194</td>
<td>0.846</td>
</tr>
<tr>
<td>Discovery difficulty (high)</td>
<td>0.720</td>
<td>4.827</td>
<td>0.000</td>
</tr>
<tr>
<td>Discovery difficulty (moderate)</td>
<td>0.409</td>
<td>4.090</td>
<td>0.000</td>
</tr>
<tr>
<td>Difficulty in relations (high)</td>
<td>0.024</td>
<td>0.221</td>
<td>0.825</td>
</tr>
<tr>
<td>Difficulty in relations (moderate)</td>
<td>-0.021</td>
<td>-0.253</td>
<td>0.801</td>
</tr>
<tr>
<td>Zero stakes</td>
<td>-0.190</td>
<td>-1.140</td>
<td>0.251</td>
</tr>
<tr>
<td>Maximum stakes (log)</td>
<td>0.271</td>
<td>2.791</td>
<td>0.000</td>
</tr>
<tr>
<td>Missing fee</td>
<td>-0.401</td>
<td>-2.355</td>
<td>0.018</td>
</tr>
<tr>
<td>Contingent fee</td>
<td>-0.306</td>
<td>-1.742</td>
<td>0.062</td>
</tr>
<tr>
<td>Government attorney</td>
<td>-0.371</td>
<td>-2.335</td>
<td>0.020</td>
</tr>
<tr>
<td>Missing percent practice federal</td>
<td>0.364</td>
<td>1.153</td>
<td>0.245</td>
</tr>
<tr>
<td>Percent practice federal</td>
<td>0.007</td>
<td>4.879</td>
<td>0.000</td>
</tr>
<tr>
<td>Missing firm size</td>
<td>0.215</td>
<td>1.056</td>
<td>0.291</td>
</tr>
<tr>
<td>Firm size (square root)</td>
<td>0.025</td>
<td>2.452</td>
<td>0.014</td>
</tr>
<tr>
<td>Defense attorney</td>
<td>-0.031</td>
<td>-0.318</td>
<td>0.750</td>
</tr>
<tr>
<td>State case</td>
<td>-0.324</td>
<td>-3.356</td>
<td>0.001</td>
</tr>
<tr>
<td>N=907</td>
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Table A.12
Model for Lawyer Work Hours on Discovery when Greater than Zero: Subsets of 1992-93 Sample,
General Civil Cases with Issue Joined, Closed with Time to Disposition Over 270 Days

<table>
<thead>
<tr>
<th>Data subset used in model</th>
<th>Median lawyer work hours on discovery when greater than zero</th>
<th>Early manage, with early trial set, with mand.</th>
<th>Early manage, without early trial set, without mand.</th>
<th>Early manage, without early trial set, with mand.</th>
<th>Mand. disclose, policy, and disclose was made</th>
<th>Mand. disclose, policy, and disclose was not made</th>
<th>No mand. disclose, policy, and disclose was made</th>
<th>Limits on interrog (district %)</th>
<th>Days to discovery cutoff (district median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>907</td>
<td>20 .040(.791)</td>
<td>.377(.001)</td>
<td>.101(.570)</td>
<td>.473(.000)</td>
<td>.164(.158)</td>
<td>.162(.171)</td>
<td>.351(.000)</td>
<td>.273(.011)</td>
</tr>
<tr>
<td>Case complexity: high</td>
<td>226</td>
<td>42 .258(.411)</td>
<td>.465(.055)</td>
<td>.243(.489)</td>
<td>.467(.076)</td>
<td>.570(.023)</td>
<td>.182(.496)</td>
<td>.646(.003)</td>
<td>.071(.806)</td>
</tr>
<tr>
<td>Case complexity: medium</td>
<td>544</td>
<td>20 .181(.406)</td>
<td>.334(.024)</td>
<td>.160(.497)</td>
<td>.605(.001)</td>
<td>.047(.758)</td>
<td>.218(.209)</td>
<td>.358(.002)</td>
<td>.491(.000)</td>
</tr>
<tr>
<td>Case complexity: low</td>
<td>137</td>
<td>10 .188(.570)</td>
<td>.360(.129)</td>
<td>.403(.306)</td>
<td>.016(.941)</td>
<td>.182(.467)</td>
<td>.168(.567)</td>
<td>.149(.507)</td>
<td>.220(.336)</td>
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<tr>
<td>Discovery difficulty: high</td>
<td>196</td>
<td>50 .426(.223)</td>
<td>.458(.083)</td>
<td>.007(.985)</td>
<td>.583(.022)</td>
<td>.407(.134)</td>
<td>.277(.262)</td>
<td>.743(.000)</td>
<td>.008(.024)</td>
</tr>
<tr>
<td>Discovery difficulty: medium</td>
<td>491</td>
<td>25 .016(.937)</td>
<td>.326(.045)</td>
<td>.081(.728)</td>
<td>.475(.001)</td>
<td>.159(.321)</td>
<td>.211(.263)</td>
<td>.462(.000)</td>
<td>.001(.561)</td>
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<tr>
<td>Discovery difficulty: low</td>
<td>219</td>
<td>9 .125(.659)</td>
<td>.220(.299)</td>
<td>.434(.206)</td>
<td>.381(.015)</td>
<td>.073(.718)</td>
<td>.386(.139)</td>
<td>.019(.920)</td>
<td>.074(.717)</td>
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<tr>
<td>Plaintiff attorney</td>
<td>390</td>
<td>20 .343(.137)</td>
<td>.435(.014)</td>
<td>.037(.862)</td>
<td>.640(.000)</td>
<td>.238(.163)</td>
<td>.423(.044)</td>
<td>.475(.000)</td>
<td>.031(.838)</td>
</tr>
<tr>
<td>Defense attorney</td>
<td>517</td>
<td>20 .351(.085)</td>
<td>.292(.046)</td>
<td>.156(.573)</td>
<td>.350(.007)</td>
<td>.039(.800)</td>
<td>.022(.897)</td>
<td>.255(.037)</td>
<td>.421(.002)</td>
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<td>Hourty fee</td>
<td>510</td>
<td>21 .047(.823)</td>
<td>.492(.001)</td>
<td>.108(.661)</td>
<td>.659(.000)</td>
<td>.086(.545)</td>
<td>.073(.669)</td>
<td>.390(.002)</td>
<td>.423(.002)</td>
</tr>
<tr>
<td>Contingent fee</td>
<td>182</td>
<td>20 .052(.776)</td>
<td>.003(.999)</td>
<td>.168(.595)</td>
<td>.154(.447)</td>
<td>.131(.582)</td>
<td>.178(.529)</td>
<td>.182(.296)</td>
<td>.046(.837)</td>
</tr>
<tr>
<td>Firm size &gt; 5</td>
<td>624</td>
<td>21 .207(.271)</td>
<td>.284(.042)</td>
<td>.511(.012)</td>
<td>.370(.003)</td>
<td>.241(.082)</td>
<td>.156(.312)</td>
<td>.320(.003)</td>
<td>.217(.082)</td>
</tr>
<tr>
<td>Firm size &lt;= 5</td>
<td>271</td>
<td>15 .306(.197)</td>
<td>.615(.004)</td>
<td>.635(.042)</td>
<td>.812(.000)</td>
<td>.100(.635)</td>
<td>.235(.380)</td>
<td>.561(.001)</td>
<td>.289(.200)</td>
</tr>
<tr>
<td>Stakes &lt; $500,000</td>
<td>272</td>
<td>48 .396(.201)</td>
<td>.076(.771)</td>
<td>.404(.219)</td>
<td>.077(.759)</td>
<td>.136(.575)</td>
<td>.098(.745)</td>
<td>.322(.138)</td>
<td>.120(.602)</td>
</tr>
<tr>
<td>Stakes &lt;= $500,000</td>
<td>564</td>
<td>17 .258(.154)</td>
<td>.229(.094)</td>
<td>.337(.105)</td>
<td>.485(.000)</td>
<td>.022(.871)</td>
<td>.198(.191)</td>
<td>.347(.001)</td>
<td>.225(.077)</td>
</tr>
<tr>
<td>Nature of suit: tort</td>
<td>240</td>
<td>25 .395(.192)</td>
<td>.428(.036)</td>
<td>.263(.371)</td>
<td>.374(.043)</td>
<td>.183(.372)</td>
<td>.212(.317)</td>
<td>.108(.529)</td>
<td>.266(.187)</td>
</tr>
<tr>
<td>Nature of suit: contract</td>
<td>217</td>
<td>25 .332(.394)</td>
<td>.053(.804)</td>
<td>.251(.507)</td>
<td>.197(.362)</td>
<td>.285(.170)</td>
<td>.226(.471)</td>
<td>.588(.001)</td>
<td>.609(.007)</td>
</tr>
<tr>
<td>Nature of suit: other</td>
<td>441</td>
<td>17 .187(.351)</td>
<td>.340(.046)</td>
<td>.212(.402)</td>
<td>.562(.000)</td>
<td>.338(.046)</td>
<td>.247(.170)</td>
<td>.271(.046)</td>
<td>.028(.856)</td>
</tr>
<tr>
<td>Top 25% most costly cases</td>
<td>221</td>
<td>100 .152(.533)</td>
<td>.030(.872)</td>
<td>.142(.619)</td>
<td>.006(.869)</td>
<td>.133(.397)</td>
<td>.030(.884)</td>
<td>.272(.018)</td>
<td>.012(.930)</td>
</tr>
</tbody>
</table>

Note: Numbers shown in columns under model variables are "coefficient (p-value)". Bold type highlights those significant at p-value <= .050 level.
on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, and the top 25 percent most costly cases in terms of discovery among general civil litigation that have time to disposition over 270 days after filing.\textsuperscript{10} Interpretations of the results for policy variables in these models are provided in Section 3 of this report.

\textbf{Estimating Effects in Hours}

We fit our models for lawyer work hours on the natural log scale. Although this was appropriate for model fitting and statistical inference, it makes the estimated effects difficult to interpret. To aid in the interpretation of these effects we provide standardized differences in hours for our most important policy variables: early management with early setting of a trial date and with a mandatory planning policy (IETM), early management with early setting of a trial date and without a mandatory planning policy (IETV), early management without early setting of a trial date and with a mandatory planning policy (IEM), early management without early setting of a trial date and without a mandatory planning policy (IEV), early mandatory disclosure policy and disclosure was made on this case (IMANDO), early mandatory disclosure policy and disclosure was not made on this case (IMANOT), no early mandatory disclosure policy and disclosure was made on this case (IVOLDO), limits to interrogatories (XDLIMI) and district median days to discovery cutoff (XMDDCUT). These are the same policies that we evaluated for time to disposition above in this appendix.

Our standardized effect was constructed using the procedure discussed above for time to disposition. For every attorney in the sample we used the model in Table A.9 and predicted the lawyer work hours under the assumption that the attorney’s case received the management practice, and we also predicted lawyer work hours assuming

\textsuperscript{10}These cases had lawyer discovery work hours per litigant of 59 or more.
that the case did not receive the policy. Tables A.5 and A.6 present the values of the variables used to make these predictions.

After calculating the predicted values, we exponentiated these predictions to convert to hours, and calculated the difference between the two exponentiated predictions of hours. This provided us with a sample of differences and our standardized effect is the median of these differences in hours.

Table A.13 contains the estimated effects along with 95 percent confidence intervals for each effect. We again used the bootstrap procedures discussed above in this appendix to estimate the confidence intervals.

We estimate almost no effect on lawyer work hours for the typical case with early management that includes a mandatory planning policy. Although the estimated effect is an hour or less, our 95 percent confidence intervals range from -19 to 18 hours if early setting of a trial schedule is included, and -20 to 28 hours if early setting of a trial schedule is not included in the policy applied to the case. These confidence intervals indicate that while we estimate almost no effect, there is a possibility that the policies might reduce lawyer work or might increase lawyer work by as much as about three days.

We also found that early management without a mandatory planning policy tends to increase work hours between 28 or 31 hours depending on whether early management includes trial setting. This finding supports the inclusion of mandatory discovery and case management planning as part of early judicial management of cases.

Regardless of whether early disclosure occurs, cases from districts with mandatory early disclosure policies tend to have similar estimated lawyer work hours as cases from districts without a mandatory disclosure policy that had no early disclosure. The confidence intervals are large so there is a possibility that mandatory early disclosure policies could reduce or increase lawyer work hours, but our best estimate is a small eight-hour increase if early disclosure is conducted and no effect if no early disclosure occurs in districts with a mandatory disclosure policy. Cases with voluntary early disclosure tended to require about 14 fewer work hours than cases without voluntary disclosure. However, this could
Table A.13
Estimated Effect Sizes in Hours for Selected Policy Variables
for the over 270 Days Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect in Lawyer Work Hours</th>
<th>Lower Bound of Confidence Interval</th>
<th>Upper Bound of Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-1</td>
<td>-19</td>
<td>18</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>25</td>
<td>9</td>
<td>43</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>0</td>
<td>-20</td>
<td>28</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>31</td>
<td>16</td>
<td>43</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>8</td>
<td>-13</td>
<td>31</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>-1</td>
<td>-22</td>
<td>24</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and disclosure was made on this case</td>
<td>-14</td>
<td>-25</td>
<td>-3</td>
</tr>
<tr>
<td>Limits on interrogatories</td>
<td>-16</td>
<td>-40</td>
<td>3</td>
</tr>
<tr>
<td>Median days to discovery cutoff</td>
<td>-15</td>
<td>-27</td>
<td>-1</td>
</tr>
</tbody>
</table>

NOTES: The early management policies each are compared to no early management. The early disclosure policies each are compared to no mandatory early disclosure policy and no disclosure on the case. The median discovery cutoff of 120 days is compared to a median of 180 days. Correlation in the regression coefficient estimates and small differences in variance estimation methods resulted in the confidence interval for limits on interrogatories crossing zero even though the variable is significant in our main model shown in Table A.9.

be due to self-selection; the lawyers, parties, and/or the cases are less contentious or more eager to settle, and hence less costly to litigate.

We estimate that limiting interrogatories will reduce lawyer work by about 16 hours. The large confidence bounds are the result of the small variation in the data because only 4 of our 20 study districts did not have limits on interrogatories during the study time period.
We estimate that a 60-day reduction in the district median discovery cutoff (from 180 days to 120 days) will reduce lawyer work by 15 hours and we are quite confident that this policy will lead to at least some reduction in work hours.

**ANALYSIS OF ATTORNEY SATISFACTION**

It is important to understand whether discovery/case management policies and procedures affect the participants’ perceived satisfaction with case management and their sense of fairness or justice. Policies and procedures that have little effect on objective outcomes such as time to disposition or lawyer work hours might substantially improve subjective outcomes such as perceived satisfaction and sense of fairness. Hence, one might wish to use these policies even if they do not affect litigation time and costs. Conversely, a procedure that reduces time to disposition or litigation costs might have such adverse effects on perceptions of fairness and satisfaction that one might not want to use the procedure.

To investigate such issues, we explore the effects of management policies and procedures on attorneys’ satisfaction with case management and their opinions on the fairness of case management. As the professionals who have repeated contacts with the court system, and who guide disputing parties through the system, attorneys’ views are important. And attorneys are in a good position to see any beneficial or adverse effects of changes in case management.

It also would be useful to determine the effects of policy on litigant satisfaction and views on fairness. However, because of the low response rate to our litigant survey as discussed in Appendix E of the main evaluation report, our litigant data cannot be assumed to provide accurate unbiased statistical estimates. We prefer to be cautious and believe that our litigant survey data should not be used for inferential statistical analyses.

We measured attorney satisfaction using Item 21 from our Attorney Questionnaire which is shown in Appendix F of the main evaluation report. The attorneys were asked to report their satisfaction with the “court management and procedures for this case” for their party or
parties. The survey item gave the attorney five response categories: (1) very satisfied; (2) somewhat satisfied; (3) neutral; (4) somewhat dissatisfied; and (5) very dissatisfied. Because we did not feel we could clearly interpret differences between the very satisfied and the somewhat satisfied attorneys, we dichotomized the responses into reported satisfied (very or somewhat) or not reported satisfied (neutral or somewhat or very dissatisfied). To ensure ourselves that we did not lose too much information by using only the dichotomous outcome we ran some models using all five outcomes. The results from using all five outcomes were qualitatively very similar to the results of our models with a dichotomous outcome and thus we report only the results from the latter models.

Multivariate Logistic Regression Analysis on Attorney-Level Data

To estimate the effects of case management policies and procedures on attorney satisfaction, we used multivariate logistic regression models fit to attorney-level data. That is, we used data with one record per each responding attorney from our sample of general civil litigation cases with issue joined. As with lawyer work hours, using attorney-level data allowed us to control for possible attorney characteristics that could affect satisfaction and help explain the variability in the responses, yielding more precise estimates of policy effects. Using only case- or district-level data would not allow for such exact lawyer control variables and would provide less appealing estimates of the policy effects.

Because we modeled satisfaction as dichotomous response (1 or 0, where 1 is satisfied and 0 is not), it would have been inappropriate to use linear regression models, such as the models used for time to disposition and lawyer work hours, to model satisfaction. The appropriate model is a logistic regression model. Logistic regression models are analogous to linear regression models, but they account for the dichotomous nature of the outcome being studied.

The coefficients from our logistic regression model have the following interpretation. The coefficient represents the log odds-ratio between cases with a policy and cases without, or the log odds-ratio of
a single unit change for a predictor (e.g., a change of one day in the median days to discovery cutoff).

The odds are the ratio of the probability of an attorney reporting satisfaction to the probability of an attorney reporting dissatisfaction. The odds-ratio is the ratio of the odds for a case with a policy to the odds of a case without a policy. The odds are a standard measure of the relative probability. If the odds are 10-to-1, then an attorney on a case with the given set of characteristics is 10 times more likely to be satisfied than dissatisfied with management. The odds-ratio tells us how much of an increase (or decrease) in the odds is associated with a given policy. An odds-ratio of one implies that the policy has no effect; an odds-ratio of greater than one implies that the policy increases the odds (and the probability of satisfaction); and an odds-ratio of less than one implies that the policy decreases the odds (and the probability of satisfaction). We will interpret an odds-ratio that is close to one as having a small effect. Odds-ratios between 1.5 and 3 (or two-thirds and one-third) we will consider moderate, and those greater than 3 (or less than one-third) we will consider large.

The log odds-ratio is the natural logarithm of the odds-ratio. A log odds-ratio of 0 corresponds to an odds-ratio of one and implies no effect. Log odds-ratios around zero will be considered small. We will consider log odds-ratios in the range of about 0.41 to 1.10 (-0.41 to -1.10) as moderate and log odds-ratios of greater than 1.10 (less than -1.10) as large. We report the log odds-ratio in our tables and the odds-ratio can be recovered by exponentiating the reported coefficient.11

Open Cases and Missing Data

As discussed above for time to disposition, about 8.5 percent of the general civil cases in our 1992-93 sample remained open at the conclusion of our data collection. From these cases we cannot obtain a measure of lawyer satisfaction that is comparable to our measure from

11See Hosmer and Lemeshow (1989) for a full discussion on the log odds-ratio.
closed cases. An open case has not, necessarily, received the full array of management procedures that it will receive before closure. For example, if the case is headed for trial, then any intermediate measures of satisfaction will not include the lawyers’ views on satisfaction with the trial. On the other hand, attorney responses from closed cases will reflect their assessment of all management policies and procedures applied to the case. For this reason we do not include data from open cases in our sample when fitting our satisfaction models. This places some limitations on interpreting our models, but it does provide us with a comparable measure for all sample cases being analyzed.

Because we are using attorney responses for this analysis, we are again missing reported satisfaction from the approximately half of surveyed attorneys who did not respond to our survey. However, over 90 percent of responding attorneys provided us with their views on satisfaction. Missing data could be problematic and we use nonresponse weights to offset the possible biasing effects of nonresponse.

Control and Policy Variables

Our study of satisfaction with case management used methods analogous to those used in our studies of time to disposition and lawyer work hours. We explored the effects of specific case management policies and procedures by comparing the responses of attorneys from cases that were managed using a particular policy or procedure to the responses of attorneys from other cases. We used attorney, case, and district variables in the analyses to control for variation other than case management. The control and policy variables considered in our satisfaction models are the same variables considered for time to disposition and lawyer work hours.

In the main evaluation report, our model selection procedure identified the following as important control variables before accounting for the effects of policy variables:

- Nature of suit category (tort, contract),
- Five or more motions,
- Any pro se litigants,
• Percentage of cases within district with dispositive motions, and
• Total filings per FTE judicial officer.

Just as we did for time to disposition and lawyer work hours models, we again added the following discovery-related control variables because of their hypothetical importance in predicting the outcome variables of interest when discovery policies are varied:

• Discovery difficulty (high or moderate), and
• Difficulty in relations between the parties and/or lawyers (high or moderate).

**Models for Attorney Satisfaction**

Table A.14 gives the results of our model for attorney satisfaction using the entire sample of general civil cases closed after issue was joined and more than 270 days after filing, for our 1992-93 sample of filings. Interpretations of the results for the discovery management policy variables in the model are provided in Section 3 of this report. The significance of the discovery-related policy variables was the same whether we used the unadjusted standard errors or adjusted the standard errors for intra-district correlation.

The following control variables remained statistically significant after including our policy variables in the model:

• Any pro se litigant,
• Difficulty in relations between the parties and/or lawyers (high), and
• Total filings per FTE judicial officer.

We find that districts with a high number of filings per FTE judicial officer tend to have lower reported satisfaction than do other districts.

Table A.15 summarizes the results for discovery management policy variables when that same model is applied to subsets of the cases based
Table A.14
Model for Attorney Satisfaction: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>T-Stat.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.991</td>
<td>3.195</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Policy Variables

| Early management, with early setting of trial date, and with mandatory planning policy | -0.022 | -0.081 | 0.934 |
| Early management, with early setting of trial date, and without mandatory planning policy | -0.339 | -1.532 | 0.125 |
| Early management, without early setting of trial date, and with mandatory planning policy | -0.319 | -0.963 | 0.335 |
| Early management, without early setting of trial date, and without mandatory planning policy | -0.248 | -1.399 | 0.161 |
| Early mandatory disclosure policy, and disclosure was made on this case | -0.086 | -0.401 | 0.687 |
| Early mandatory disclosure policy, and disclosure was not made on this case | -0.412 | -1.577 | 0.114 |
| No early mandatory disclosure policy, and disclosure was made on this case | 0.564 | 3.435 | 0.000 |
| Litigants at settlement conf. (district %) | -0.015 | -1.060 | 0.288 |
| Limits on interrogatories (district) | 0.574 | 3.115 | 0.001 |
| Days to discovery cutoff (district median) | 0.003 | 1.244 | 0.213 |
| Continuances (district %) | -0.006 | -0.851 | 0.394 |
| Magistrate judge activity (district mean) | 0.936 | 3.069 | 0.002 |

Control Variables

| Nature of suit (tort) | 0.299 | 1.733 | 0.083 |
| Nature of suit (contract) | 0.157 | 0.934 | 0.350 |
| Five or more motions | -0.254 | -1.595 | 0.110 |
| Any pro se litigant | 0.865 | 2.532 | 0.011 |
| Discovery difficulty (high) | 0.268 | 1.167 | 0.243 |
| Discovery difficulty (moderate) | 0.008 | 0.049 | 0.950 |
| Difficulty in relations (high) | -0.603 | -3.071 | 0.002 |
| Difficulty in relations (moderate) | -0.074 | -0.423 | 0.657 |
| Dispositive motions (district percent) | -0.010 | -1.285 | 0.198 |
| Total filings per FTE judicial officer | -0.004 | -3.217 | 0.001 |

N=1,473

on level of complexity, level of discovery difficulty, plaintiff or defendant side of the case, contingent or hourly fee lawyer, size of the law organization in which the lawyer worked, case stakes, tort or contract or other nature of suit categories, and the top 25 percent most
Table A.15
Model for Attorney Satisfaction: Subsets of 1992-93 Sample,
General Civil Cases with Issue Joined, Closed with Time to Disposition Over 270 Days

<table>
<thead>
<tr>
<th>Date subset used in model</th>
<th>Number of data records used</th>
<th>Early manage, with early trial set, with mand. plan</th>
<th>Early manage, with early trial set, without mand. plan</th>
<th>Early manage, without early trial set, with mand. plan</th>
<th>Early manage, without early trial set, without mand. plan</th>
<th>Mand. disclose, policy, and disclose was made</th>
<th>Mand. disclose, policy, and disclose was not made</th>
<th>No mand. disclose, policy, and disclose was made</th>
<th>Limits on interrog.</th>
<th>Days to discovery cutoff (district median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1473</td>
<td>73 (.022(.334))</td>
<td>.339(.129)</td>
<td>.319(.356)</td>
<td>.248(.161)</td>
<td>.088(.687)</td>
<td>.412(.114)</td>
<td>.564(.000)</td>
<td>.574(.001)</td>
<td>.005(.219)</td>
</tr>
<tr>
<td>Case complexity: high</td>
<td>362</td>
<td>72 -.246(.639)</td>
<td>-.063(.875)</td>
<td>-.261(.739)</td>
<td>-.341(.412)</td>
<td>-.361(.399)</td>
<td>-.455(.437)</td>
<td>.602(.031)</td>
<td>.317(.419)</td>
<td>.006(.206)</td>
</tr>
<tr>
<td>Case complexity: medium</td>
<td>874</td>
<td>73 .183(.657)</td>
<td>-.681(.019)</td>
<td>-.292(.476)</td>
<td>-.465(.048)</td>
<td>-.618(.034)</td>
<td>-.646(.065)</td>
<td>.506(.019)</td>
<td>.905(.000)</td>
<td>.009(.974)</td>
</tr>
<tr>
<td>Case complexity: low</td>
<td>237</td>
<td>74 -.828(.225)</td>
<td>-.403(.539)</td>
<td>-.232(.821)</td>
<td>-.096(.827)</td>
<td>-.831(.146)</td>
<td>-.687(.301)</td>
<td>.534(.211)</td>
<td>-.180(.705)</td>
<td>.011(.106)</td>
</tr>
<tr>
<td>Discovery difficulty: high</td>
<td>307</td>
<td>73 .159(.800)</td>
<td>.248(.588)</td>
<td>-.978(.247)</td>
<td>.369(.410)</td>
<td>.385(.426)</td>
<td>.247(.719)</td>
<td>.227(.566)</td>
<td>.471(.300)</td>
<td>.004(.409)</td>
</tr>
<tr>
<td>Discovery difficulty: medium</td>
<td>781</td>
<td>72 -.276(.481)</td>
<td>-.449(.156)</td>
<td>.306(.938)</td>
<td>-.634(.013)</td>
<td>-.634(.031)</td>
<td>-.726(.038)</td>
<td>.854(.000)</td>
<td>.787(.003)</td>
<td>.000(.844)</td>
</tr>
<tr>
<td>Discovery difficulty: low</td>
<td>384</td>
<td>75 .140(.811)</td>
<td>.858(.095)</td>
<td>-.622(.346)</td>
<td>.119(.720)</td>
<td>.931(.062)</td>
<td>-.100(.859)</td>
<td>.415(.194)</td>
<td>.388(.283)</td>
<td>.010(.066)</td>
</tr>
<tr>
<td>Plaintiff attorney</td>
<td>599</td>
<td>72 -.193(.656)</td>
<td>.120(.699)</td>
<td>-.191(.700)</td>
<td>.049(.852)</td>
<td>.078(.818)</td>
<td>-.175(.685)</td>
<td>.604(.018)</td>
<td>.575(.048)</td>
<td>.002(.613)</td>
</tr>
<tr>
<td>Defense attorney</td>
<td>874</td>
<td>74 -.112(.767)</td>
<td>.591(.019)</td>
<td>-.457(.319)</td>
<td>-.442(.063)</td>
<td>-.336(.243)</td>
<td>-.738(.032)</td>
<td>.448(.042)</td>
<td>.602(.012)</td>
<td>.002(.340)</td>
</tr>
<tr>
<td>Hourly fee</td>
<td>850</td>
<td>72 .065(.867)</td>
<td>-.616(.091)</td>
<td>-.450(.325)</td>
<td>-.637(.009)</td>
<td>-.216(.441)</td>
<td>-.536(.123)</td>
<td>.444(.045)</td>
<td>.749(.002)</td>
<td>.000(.992)</td>
</tr>
<tr>
<td>Contingent fee</td>
<td>274</td>
<td>73 -.215(.742)</td>
<td>-.381(.510)</td>
<td>-.339(.688)</td>
<td>-.370(.403)</td>
<td>.810(.190)</td>
<td>-.1128(.104)</td>
<td>.451(.242)</td>
<td>.695(.110)</td>
<td>.011(.049)</td>
</tr>
<tr>
<td>Firm size &gt; 5</td>
<td>1006</td>
<td>73 -.026(.942)</td>
<td>-.656(.015)</td>
<td>-.300(.493)</td>
<td>-.430(.051)</td>
<td>-.328(.200)</td>
<td>-.597(.057)</td>
<td>.656(.001)</td>
<td>.521(.026)</td>
<td>.004(.128)</td>
</tr>
<tr>
<td>Firm size &lt;=5</td>
<td>451</td>
<td>73 -.419(.377)</td>
<td>.181(.699)</td>
<td>-.589(.280)</td>
<td>-.013(.967)</td>
<td>.450(.299)</td>
<td>-.409(.427)</td>
<td>.187(.510)</td>
<td>.857(.007)</td>
<td>.001(.818)</td>
</tr>
<tr>
<td>Stakes &gt;$300,000</td>
<td>426</td>
<td>68 .020(.984)</td>
<td>.292(.154)</td>
<td>.375(.953)</td>
<td>.276(.415)</td>
<td>.023(.954)</td>
<td>-.1287(.015)</td>
<td>.275(.414)</td>
<td>1.039(.001)</td>
<td>.005(.241)</td>
</tr>
<tr>
<td>Stakes &lt;=$999,999</td>
<td>884</td>
<td>77 -.397(.302)</td>
<td>-.293(.305)</td>
<td>-.597(.263)</td>
<td>-.116(.620)</td>
<td>-.132(.641)</td>
<td>-.058(.864)</td>
<td>.573(.008)</td>
<td>.420(.092)</td>
<td>.001(.869)</td>
</tr>
<tr>
<td>Nature of suit: tort</td>
<td>374</td>
<td>76 .522(.398)</td>
<td>.220(.660)</td>
<td>.382(.607)</td>
<td>.259(.192)</td>
<td>-.194(.714)</td>
<td>-.411(.492)</td>
<td>.658(.052)</td>
<td>.040(.925)</td>
<td>.002(.581)</td>
</tr>
<tr>
<td>Nature of suit: contract</td>
<td>249</td>
<td>73 .067(.899)</td>
<td>-.173(.726)</td>
<td>-.753(.249)</td>
<td>-.672(.108)</td>
<td>.030(.848)</td>
<td>-.1307(.044)</td>
<td>1.092(.004)</td>
<td>1.040(.014)</td>
<td>.008(.120)</td>
</tr>
<tr>
<td>Nature of suit: other</td>
<td>730</td>
<td>71 -.213(.572)</td>
<td>-.504 (.988)</td>
<td>-.224 (.643)</td>
<td>-.364 (.118)</td>
<td>.031 (.815)</td>
<td>-.328 (.336)</td>
<td>.514 (.023)</td>
<td>.560 (.007)</td>
<td>.006 (.136)</td>
</tr>
<tr>
<td>Top 25% most costly cases</td>
<td>255</td>
<td>64 .696 (.268)</td>
<td>-.200 (.679)</td>
<td>1.279 (.144)</td>
<td>-.066 (.886)</td>
<td>.663 (.150)</td>
<td>-.701 (.281)</td>
<td>1.581 (.000)</td>
<td>.780 (.122)</td>
<td>.002 (.698)</td>
</tr>
</tbody>
</table>

Note: Numbers shown in columns under model variables are "coefficient (p-value)". Bold type highlights those significant at p-value <= .050 level.
costly cases. Interpretations of the results for policy variables in these models are provided in Section 3 of this report.

ANALYSIS OF ATTORNEY VIEWS ON FAIRNESS

In this subsection we discuss the effects of court management policies and procedures on attorney views on fairness for general civil cases with issue joined. Attorney views on fairness serve as a measure of perceived justice in the federal courts.

We measured views on fairness as a dichotomous (0-1) outcome variable. Either the lawyer responded that the management was somewhat fair or very fair (outcome=1) or the lawyer viewed the management as somewhat unfair or very unfair (outcome=0). We measured attorneys’ views on fairness using Item 22 from our Attorney Questionnaire. The attorneys were asked how fair they thought the “court management and procedures” were for their cases for their parties. The survey item provided the attorney with four response categories: (1) very fair; (2) somewhat fair; (3) somewhat unfair; and (4) very unfair. Because we did not feel that we could clearly interpret differences between a response of very fair or somewhat fair (or very unfair and somewhat unfair), we dichotomized the response into fair (very or somewhat) and unfair (very or somewhat). Overall we found that about 90 percent of attorneys report that they viewed the case management as fair on general civil cases with issue joined.

Multivariate Logistic Regression Analysis on Attorney-Level Data

To explore the effects of policy and control variables on views on fairness, we fit multivariate logistic regression models using attorney-level data. As discussed above for attorney satisfaction modeling, multivariate logistic regression is the analog of linear regression for models of data with dichotomous outcomes. Also, the use of attorney-level data allows us to control for attorney-level characteristics and improves the precision of our estimates of the effects of policy on views on fairness.
Open Cases and Missing Data

About 8.5 percent of the cases in our 1992-93 sample of general litigation cases remained open at the end of our data collection. For these cases we cannot obtain a measure of fairness that is comparable to our measure from closed cases. For this reason we do not include data from such cases in our analysis of views on fairness. Excluding open cases could lead to bias in our resulting estimates of policy effects. However, because we have relatively few open cases we expect any bias to be small. Hence we feel it better to run our analysis on a set of comparable data than to mix measures from open and closed cases.

Not only are we missing data from the small fraction of the cases that are still open, but we are missing data from the approximately 50 percent of nonresponding attorneys on closed cases. Because nonrespondents and respondents who skipped our fairness item (approximately 10 percent of the respondents) provide no data on this outcome, these attorneys are also excluded from our analysis. We use nonresponse weights to offset possible bias introduced by nonresponse.

Control and Policy Variables

We used analogous methods to study views on the fairness of case management as we did in our study of satisfaction with case management. We explored the effects of specific case management policies and procedures by measuring their effect on the responses of attorneys from cases that received the management procedure compared to the responses of attorneys from other cases. We included attorney, case, and district-level characteristics as control variables in our model so as to control for variation due to factors other than case management.

The control and policy variables considered in our fairness models are the same variables considered in all our previously discussed models.

In the main evaluation report, our model selection procedure identified the following as important control variables before accounting for the effects of policy variables:
• Any motion,
• Discovery motion,
• Case complexity (high or moderate),
• Maximum stakes,
• Dispute began after filing date,
• Nonmonetary stakes, and
• Total filings per FTE judicial officer.

We also include a flag for missing or zero stakes and a flag for missing data for when the dispute started for this attorney’s party or parties.

Just as we did for time to disposition and lawyer work hours models, we again added the following discovery related control variables because of their hypothetical importance in predicting the outcome variables of interest when discovery policies are varied:

• Discovery difficulty (high or moderate), and
• Difficulty in relations between the parties and/or lawyers (high or moderate).

Model for Attorney Views on Fairness

Table A.16 gives the results of our model for attorney views on fairness using the entire sample of general civil cases closed after issue was joined and more than 270 days after filing, for our 1992-93 sample of filings. Since overall about 90 percent of attorneys report that they viewed the case management as fair on general civil cases with issue joined, and since none of the policy variables used in the overall model shown in Table A.16 are statistically significant, we chose not to apply the model to subsets of cases. Interpretations of the results for the discovery management policy variables in the model are provided in Section 3 of this report. The significance of the discovery-related policy variables was the same whether we used the unadjusted standard errors or adjusted the standard errors for intra-district correlation.

After controlling for policy variables, we find that the presence of a motion, a dispute that began after a party after the filing date, a
Table A.16

Model for Attorney Views on Fairness: 1992-93 Sample, General Civil Cases with Issue Joined, Closed with Time to Disposition over 270 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>T-Stat.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.938</td>
<td>3.252</td>
<td>0.001</td>
</tr>
<tr>
<td>Policy Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and with mandatory planning policy</td>
<td>-0.274</td>
<td>-0.605</td>
<td>0.544</td>
</tr>
<tr>
<td>Early management, with early setting of trial date, and without mandatory planning policy</td>
<td>-0.256</td>
<td>-0.717</td>
<td>0.473</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and with mandatory planning policy</td>
<td>-0.238</td>
<td>-0.439</td>
<td>0.660</td>
</tr>
<tr>
<td>Early management, without early setting of trial date, and without mandatory planning policy</td>
<td>-0.204</td>
<td>-0.689</td>
<td>0.490</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was made on this case</td>
<td>0.239</td>
<td>0.706</td>
<td>0.480</td>
</tr>
<tr>
<td>Early mandatory disclosure policy, and disclosure was not made on this case</td>
<td>0.521</td>
<td>1.302</td>
<td>0.192</td>
</tr>
<tr>
<td>No early mandatory disclosure policy, and disclosure was made on this case</td>
<td>0.439</td>
<td>1.667</td>
<td>0.095</td>
</tr>
<tr>
<td>Litigants at settlement conf. (district %)</td>
<td>0.008</td>
<td>0.361</td>
<td>0.718</td>
</tr>
<tr>
<td>Limits on interrogatories (district)</td>
<td>0.310</td>
<td>1.033</td>
<td>0.301</td>
</tr>
<tr>
<td>Days to discovery cutoff (district median)</td>
<td>0.005</td>
<td>1.313</td>
<td>0.189</td>
</tr>
<tr>
<td>Continuances (district %)</td>
<td>0.008</td>
<td>0.775</td>
<td>0.433</td>
</tr>
<tr>
<td>Magistrate judge activity (district mean)</td>
<td>-0.227</td>
<td>-0.515</td>
<td>0.606</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any motion on case</td>
<td>-1.066</td>
<td>-2.112</td>
<td>0.034</td>
</tr>
<tr>
<td>Discovery motion on case</td>
<td>-0.137</td>
<td>-0.586</td>
<td>0.557</td>
</tr>
<tr>
<td>Case complexity (high)</td>
<td>0.374</td>
<td>0.847</td>
<td>0.396</td>
</tr>
<tr>
<td>Case complexity (moderate)</td>
<td>0.257</td>
<td>0.702</td>
<td>0.482</td>
</tr>
<tr>
<td>Discovery difficulty (high)</td>
<td>-0.237</td>
<td>-0.528</td>
<td>0.596</td>
</tr>
<tr>
<td>Discovery difficulty (moderate)</td>
<td>-0.248</td>
<td>-0.682</td>
<td>0.494</td>
</tr>
<tr>
<td>Difficulty in relations (high)</td>
<td>-1.511</td>
<td>-5.039</td>
<td>0.000</td>
</tr>
<tr>
<td>Difficulty in relations (moderate)</td>
<td>-0.368</td>
<td>-1.181</td>
<td>0.237</td>
</tr>
<tr>
<td>Zero or missing stakes on case</td>
<td>0.051</td>
<td>0.159</td>
<td>0.873</td>
</tr>
<tr>
<td>Maximum stakes on case (log)</td>
<td>-0.001</td>
<td>-0.022</td>
<td>0.981</td>
</tr>
<tr>
<td>Missing dispute began after filing</td>
<td>-0.429</td>
<td>-1.470</td>
<td>0.141</td>
</tr>
<tr>
<td>Dispute began after filing date</td>
<td>0.800</td>
<td>2.719</td>
<td>0.006</td>
</tr>
<tr>
<td>Nonmonetary stakes on case</td>
<td>-0.275</td>
<td>-1.271</td>
<td>0.203</td>
</tr>
<tr>
<td>Total filings per FTE judicial officer</td>
<td>-0.005</td>
<td>-2.365</td>
<td>0.018</td>
</tr>
<tr>
<td>N=1,443</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
high difficulty of relations between the lawyers and/or parties, and total filings per FTE judicial officer are statistically significant predictors of reported views on fairness. Of these only the “dispute began after filing date” variable predicts a greater probability of viewing management as fair. Each of the other significant control variables predict a decreased probability of viewing management as fair.


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