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JUSTICE DELAYED... AN OVERVIEW OF THE OPTIONS TO SPEED UP FEDERAL JUSTICE

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This paper examines the current situation of delay in the federal district courts and proposes ways to reduce it. District Courts are increasingly overwhelmed by the demand for judicial services. This trend is likely to continue in the absence of future action because none of the underlying causes will cease to exist. This article presents a detailed quantitative analysis of the main determinants of judicial services demand, followed by an overview of the options to increase its supply: changing the method to assess the need for judges is worth considering; modifying the procedure—the strategy adopted so far—seems to offer little marginal benefit; and finally, introduction of good management practices and digital information management seems to be an innovative and promising approach.¹

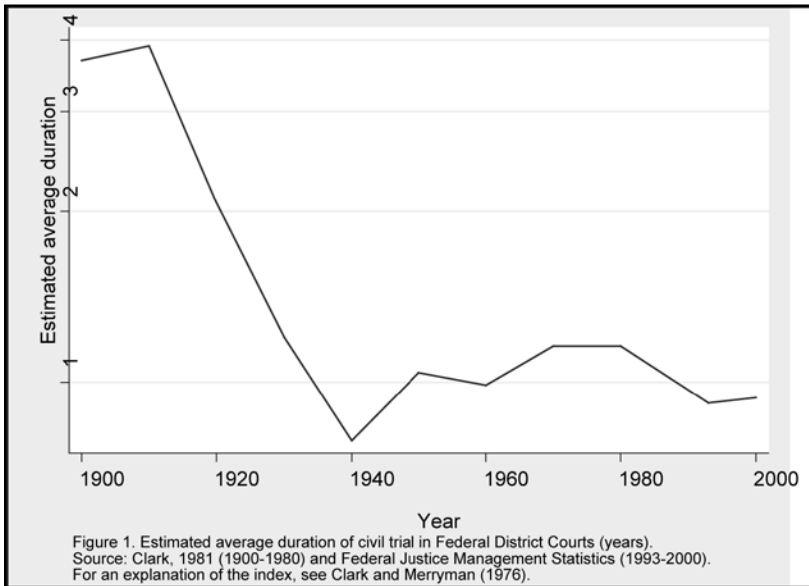
INTRODUCTION

One of the chronic problems of the federal justice system of the United States of America is the length of the civil trial.² The average duration of a civil case (from the filing to the disposition by the judge, be it a default, a settlement, or a decision) has remained more or less constant from 1940 until today at about one year (see Figure 1). One may be convinced that twelve months is too long based on an examination of the scholarly literature of the last thirty years and by the frequent publication of policy reports on the topic of court delay (ABA 1984, NCSC 1989, RAND 1996

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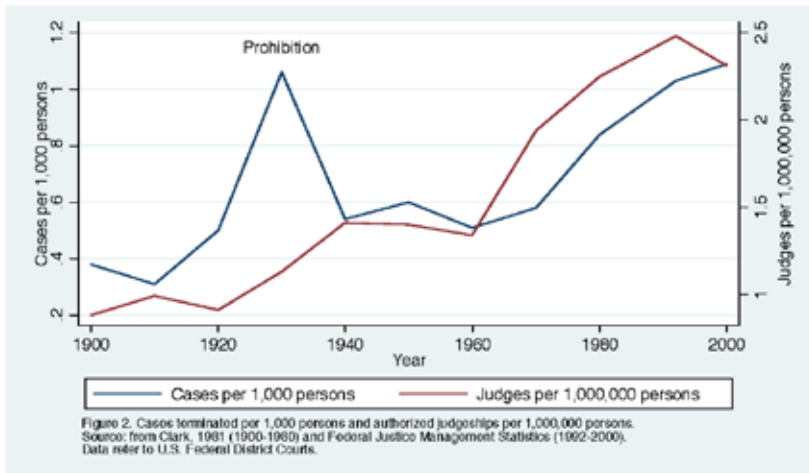
and 1998); by the fact that, in his farewell address, the former president of the American Bar Association stated that people “are terrified of going to court” because of the length and expense involved, and “stunned by the length of time it takes to serve on a jury” (Eugene Thomas, reported in NCSC 1988, 1); and, finally, by the fact that attorney fees range from \$150 to \$250 per hour (Hadfield 2000, 957), hence a more expedited trial would decrease the total cost.

A related issue is the so-called “vanishing” of the civil trial. Fewer and fewer civil cases end during or after the trial (1.8 percent in 2002, down from 11 percent in 1962). Some legal scholars identify more trials with a more thorough adjudication process (Clark 1981; Heydebrand and Seron



1990; Resnik 2000 and 2004); others argue that, in fact, the phenomenon represents an improvement from the past (Chase 1988; Weinstein 1989; Galanter 2004).³ There seems to be no dissent, however, on the fact that the civil trial is so long and costly that clients of federal courts are increasingly corporations rather than individuals (Hadfield 2000, 962). Yet, there are very few studies (and apparently no recent studies) on the causes of court delay and ways to minimize it. This article is a first attempt to use comparable data for ninety of the ninety-four U.S. district courts to give some insight into the reasons for delay and to analyze some options for reducing it.

The data confirm the trends described above. The median time to civil disposition (i.e., the median duration of a civil case from the moment a case is filed) has remained stable at around nine months between 1992 and 2005,⁴ but the median time to trial (i.e., the duration of proceedings before the trial starts, if it does) has increased in the same time frame from



about seventeen to over twenty-three months, and the percent of cases going to trials has almost halved.

Such facts lead to pressing questions: is it possible to make the judicial system speedier? Will hiring more judges resolve the problem? Is there room left for management and technological improvements? This article will try to answer these three questions. The first part will review the current situation and debate. The second part will try to assess the determinants of the increase in the courts' caseload, providing a clear outlook on the future of the problem. The third part will analyze the available policy options, with a specific quantitative evaluation of the impact of introducing new technology. Based on the empirical analysis, the last section will provide concrete policy recommendations.

BACKGROUND

The Growing Need for Judicial Services

Some time has passed since the judges of the first courts of appeals visited each of the courts in their "circuit" riding horseback (U.S. Courts Administration 2006a). Today, attorneys project PowerPoint slides in

the courtroom and prisoners' claims are evaluated in a video-conference without them leaving the prison.

Outside the courtroom, technology has increased both prosperity and the complexity of dealings between people, increasing the frequency of civil litigation. Within a context of increasing pages of regulations and government employees, the judiciary has grown more slowly than other government agencies, keeping the number of judges proportional to the number of cases terminated (see Figure 2) and a very low budget profile.⁵ The increasing complexity of cases, however, made it necessary to resort increasingly to hiring non-life-tenured judges (such as magistrate judges) and law personnel (Resnik 2000, 967-983), to procedural adaptation and bureaucratization (better case management, increasing the likelihood of a settlement between the parts), to harmonization and standardization of procedures at the national level (Clark 1981, 76-77; RAND 1996; Resnik 2000), and to technological advance (see Withers 2000; Heintz 2002).

In the last decade, the federal judiciary has adopted a policy of even slower growth (as seen in Figure 2) allowing the number of cases terminated per judgeship to grow to 485, a figure last reached during the Prohibition era. The number of judgeships, however, does not include either senior judges (retired judges who work) or non-tenured magistrate judges. While the former do not constitute a large percentage of the total judiciary, the latter have recently become more numerous than life-tenured judges (Resnik 2000, 990).

Saving Judges' Time

Scholars who see a crisis in the "vanishing" of the civil trial also point out that the thoroughness of legal proceedings has been significantly reduced because more civil trials end without a judgment, and more end with a settlement between the parties. Between 1980 and 2000, somewhere between 4 and 8 percent of cases filed ended with a trial, while between 1940 and 1970, the share was between 10 and 20 percent.⁶ The fact that more cases settle with mutual consent might seem an achievement. A critique to this vision is found in Clark (1981, 67):

In civil cases, "consent" may be a defendant's default or a plaintiff's failure to prosecute a legally weak or expensive lawsuit.... Since adjudication involves a final, coercive, binary decision, subject, of course, to revision on appeal, theorists have argued for special procedural safeguards to guarantee the fairness of the process. On the other hand, since administration as defined here emphasizes consent, reached by bringing the

parties to an agreement that both “willingly” (even if reluctantly or by default) accept, elaborate safeguards are generally believed unnecessary.

Other scholars, on the other hand, maintain that if the parties reach settlement rather than go to trial, there is a saving for everyone involved and the overall effect on the parties is positive. After all, justice is not identified with the procedure, but with the outcome. If a different procedure best serves the interest of the public, it should be adopted without hesitation.

In any event, the expectation of a three-year trial—or of a settlement after a year of battle—is more likely to discourage parties who have less financial resources, especially individuals. The market is probably allocating scarce resources in the most efficient way; fairness, however, and not efficiency, is the primary concern of justice. The current system for the allocation of scarce resources, therefore, does not represent a conscious policy—rather the absence of it.

METHODOLOGY

Data

This article focuses on the federal justice system, rather than on state courts, because of the better availability and comparability of data. The main problem with quantitative research on the federal justice system is that, beside the Federal Justice Management Statistics offered by the U.S. Courts Administration, there are no aggregate data at the district level. The United States has ninety-four federal District Courts (see Appendix A for a map) and each spans multiple counties. As counties in time rise, fall, and merge, one must exercise great caution in aggregating county data.

This paper uses county data from the U.S. Census Bureau and from the Bureau of Economic Analysis, in addition to the U.S. Courts data. The dataset so created allows one to measure the effect of a series of variables on the demand for judicial services and to gauge the effect of recently introduced improvements in court management technology. Other historical data in the text are from Heydebrand and Seron (1990) and from Clark (1981).

The data is relatively uniform and well-balanced, spanning fourteen years and ninety districts. Table 1 reports a summary of the features of the data. The districts are deeply diverse across all variables. The resident population varies between 500,000 and 18 million in 2004. There has been a significant convergence in time to civil disposition and time to civil trial.⁷ The range between the minimum and the maximum decreased from

twenty-four to thirteen months for generic disposition and from thirty to twenty-four months for a trial.

The mean across districts of the time to civil disposition oscillated around nine months across the whole period. However, the mean of the time to civil trial has been steadily increasing, from 16.9 months in 1992, to 19.3 months in 1998, to 23.3 months in 2005 (up 38 percent). The time to criminal disposition has also been steadily increasing, from 6.1 to 7.2 to 8.9 months (up 46 percent). Defendants in criminal cases have less choice of whether to go to trial: the increase in criminal time to disposition could be a consequence of an increase in trial time; hence, the phenomenon seems not to be limited to the civil administration of justice. In the same period, the population of all districts together has increased from 257 million to 296 million people, a 15 percent increase.

Analytical Techniques

The main analytical technique is multivariate regression on panel data, with district fixed effects. Fixed effects regression allows controlling for specific time-invariant characteristics of each district. The panel data lend themselves particularly well to this task because for each court there are multiple observations at different times. By reporting fixed-effects and between-effects estimates (i.e., the analog of an ordinary regression on the mean values for each district across the given time period), one can show different types of determinants of the number of cases filed.

To evaluate the impact of the Court Management/Electronic Case Files (CM/ECF), a panel cannot be used because the implementation of the program has just been completed. A second-best choice is a cross-sectional ordinary least squares regression for the year 2005—the first year where a sufficient number of districts had the program in place for enough time, and the last year for which data are available.

ARE PEOPLE REALLY INFLUENCED BY DELAY?

In order to assess the magnitude of the problem and have an idea of potential future developments, the first step is to understand what factors influence the number of cases filed in a given time period. Such analysis provides an understanding of what kind of caseload each district court can expect for the future, and whether the expected duration of a lawsuit influences the decision to undertake it.

Basic economic theory suggests that the expected length of a lawsuit has an effect on the willingness of people to initiate litigation, since the longer the expected time of litigation, the longer the expected associated

cost. Moreover, the farther in time the expected reward, the higher the risk perceived by the decision-maker. Another important issue is the probability of a trial. If only 4 percent of cases go to trial as opposed to, say, 8 percent, this could have a decisive influence on the individual or the firm's decision to initiate litigation.

The number of cases on the docket of a court is determined by a series of factors. Heydebrand and Seron (1990) attempt to determine the "environmental" factors associated with an increase in people's willingness to litigate.⁸ Their book, using data from the years 1950, 1960, and 1970, finds that an increase in population density is associated with an increase in per-capita litigation rates. An analysis of the number of yearly filings, moreover, shows that the more government employees there are in a given district, the higher that district's litigation rate. Heydebrand and Seron speculate that higher population density means more occasions for contact among people, increasing the probability of litigation. They also infer that litigation is partially a consequence of legislative activity—more laws imply more occasions for disagreement and consequently more cases filed.⁹ Both theories may have been true in the context of the 1950-1970s, but have not been verified in today's context (e.g., "de-concentration" of the population and smaller government).

What follows is the outcome of a similar analysis, using an up-to-date methodology (panel data analysis) and data set (data for ninety district courts for 1992-2005).¹⁰ The regression uses the variables used by Heydebrand and Seron (except the number of government employees by district, which was not available), plus the expected length of a lawsuit, the probability of a trial, and the growth rate of per-capita income. The results are relatively independent of the chosen statistical model.

The between-effects regression reveals that *population size* is obviously correlated with the number of cases filed. A 10 percent increase in population is correlated with an 8 to 11 percent increase in number of cases filed (it is not possible to exclude a relationship of one-to-one growth). District surface is negatively correlated with the number of cases filed. This may mean that where population is more concentrated, there are more occasions for litigation.¹¹

Per-capita income, as a measure of business activity, does not show a significant association with the number of cases filed. The sign on the coefficient is negative. This is rather counterintuitive, as one would expect more business activity to bring to more litigation. Perhaps agents in a wealthier economy face a higher opportunity cost in pursuing judicial remedies because their time is worth more. The coefficient on the growth

Table 1

	1992			2004		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum
<i>Authorized Judgeships</i>	7.1	1.3	28	7.4	1.5	28
<i>Filed</i>	406.3	152	698	497.1	186	2,452
<i>Pending</i>	390.1	140	731	483.9	160	3,065
<i>Terminated</i>	398.2	143	624	459.1	184	760
<i>Trials Completed</i>	33	16	66	20.7	7	44
<i>Population</i>	2,850,158	466,251	15,657,773	3,262,382	505,887	18,137,617
<i>Per-capita Income</i>	19,626	13,671	34,064	31,361	21,643	53,628
<i>Overall Filings</i>	2,917	455	12,302	3,958	557	24,510
<i>Overall Pending</i>	2,875	347	15,270	3,755	329	24,228
<i>Per-capita Filings</i>	114	36	597.4	126.6	34.6	583.9
<i>Criminal Disposition</i>	6.1	2.5	11.9	8.3	3.3	14.9
<i>Civil Disposition</i>	9.6	4	28	9.4	1	14
<i>Complete Civil Trial</i>	16.9	5	35	23.2	9.2	43
<i>Median time (months)</i>						

Table 1. Summary statistics for chosen variables. District surface (mean: 39,399 sq. mi.; min: 63; max: 577,167) not reported because does not vary through time. Sources discussed in the text (US Courts, US Census Bureau, BEA).

of income, instead, is positive but again not significant

Per-capita income is not significant in the fixed (within) effect regression as well. While the between-effects regression shows factors that determine the number of civil filings across districts, the fixed-effects regression allows us to focus on factors that influence the number of civil filings across time within the district. Here, population is put in the denominator of civil filings, because it would exhibit a time trend. To take care of possible trends, the other variables enter the regression in first difference.

The *expected time of litigation* (represented by the median time to civil disposition in a given year) has a clear and strong negative association with the number of cases filed. A 10 percent increase in expected duration is associated with a 2.6 percent reduction in filings, a rather solid finding.¹²

Interestingly, the *probability of going to trial* (expressed as a number from

Table 2

Fixed effects panel data regressions			
<i>Between regression - determinants of inter-district differences</i>			
Civil filings (n=1080)	Coefficient	Standard error	P-value
Population	0.942	0.0680	0.000
Time to civil disposition	-0.233	0.216	0.284
P.C. income	-0.713	0.598	0.236
P.C. income growth	0.424	0.413	0.307
District surface	-0.155	0.0393	0.000
	Within	Between	Overall
R-squared	0.0108	0.7806	0.6884
<i>Within regression - determinants of change within a district</i>			
P.C. civil filings (n=1080)	Coefficient	Standard error	P-value
P.C. income	-0.0348	0.285	0.903
Time to civil disposition	-0.261	0.0250	0.000
Probability of trial	-0.880	0.364	0.016
	Within	Between	Overall
R-squared	0.1103	0.0146	0.1075

Table 2. (1) "Between" fixed-effects regression on 90 federal District Courts (excluding DC and other candidate outliers had no major effect on estimates). Variables are in logarithm (P/C Income growth is log first difference). (2) "Within" regression. All variables except probability of trial and growth of P.C. income in logarithmic form; all variables in first difference to eliminate time trends.

0 to 1) also has a strong negative relationship with the number of cases filed, so that when it increases by one percentage point (.01), the number of cases filed decreases by 0.9 percent.

The results above per se do not prove any relationship of causation; yet, they do allow drawing some conclusions. The trend of increasing pressure on courts will further increase in the future. The population of the United States is projected by the Census Bureau to pass the 400 million mark before 2050, increasing both population density and population size. Real per-capita production has grown by a compound rate of 2 percent a year for the last fifty years, with increasing stability. In a likely scenario, more cases will be filed, judges will be under pressure to decide cases faster, leaving the time to disposition at the current level but prolonging further the time to trial for the cases that do go to trial. If the trend described above continues, even less cases will go to trial and more parties will reach settlements.

From this and other regressions, on the other hand, it is hard to draw a picture of the relationship between the expectations of the parties and their behavior. The negative effect of time to disposition on filings does not by itself show the direction of causality. It could be that where a lawsuit is longer, people are discouraged from initiating one, or that judges with a large caseload tend to dispose of cases faster than those who do not. A similar argument can be made for the probability of going to trial. Where the caseload is greater, judges might have a greater incentive to terminate cases before they go to trial. An important conclusion is that (a) a high caseload forces judges to give less time to each case and to rely more heavily on mediation, which means that they adjudicate less cases, and/or (b) the prospect of a long proceeding and a higher probability of a trial work as a disincentive to potential plaintiffs who are considering whether to file a lawsuit. The evidence from other unreported regressions suggests that the first hypothesis is at least as likely as the second: the same findings hold in the case of criminal trials, the demand for which should be much less sensitive to economic considerations. The same findings also hold on a per-judge basis, hence confirming that the per-judge caseload is related to the time to civil disposition. The two hypotheses, in any event, are not mutually exclusive and could both explain part of the phenomenon. As we will see below, there is qualitative evidence for the plausibility of the second as well.

POLICY OPTIONS

The findings of the previous section suggest that improving the productivity

of courts would reduce the judges' need to make trade-offs and would make courts more user-friendly. There are at least three possible ways to improve the output of court services. The first would be to hire more judges. The second would be to improve procedures, decreasing further the number of trials and improving the likelihood that the parties reach a settlement. Finally, the third would be to improve the process by introducing time-saving technology and better management practices.

Hiring More Judges

Since the 1922 creation of the Judicial Conference of the United States, judges often actively influence policy regarding the allocation of their scarce time, both in terms of intervening in the definition of federal jurisdiction and driving the enlargement of their ranks (or lack thereof). Resnik (2000, 992) maintains that in recent years

...the judiciary¹³ has developed the views that (a) it is too busy from too high a volume of cases; (b) it is important and should be reserved for special assignments; (c) it should not expand its own numbers too much in response to demands for more judging; (d) adjudication by non-life-tenured judges should be a presumptive substitute for adjudication by life-tenured judges; and (e) less judging and more settling is appropriate in general.

Increasing the number of judges (beyond the trend shown in Figure 1) therefore presents a series of obstacles. First, it would not meet the favor of the judges themselves, who are trying to limit the size of their ranks and their jurisdiction. Second, hiring non-life-tenured judges already leads to a situation where in some districts, the majority of the judiciary does not fall under the constitutional protection of life tenure.¹⁴ Simply increasing the number of judges, moreover, would not necessarily reduce delays. At least for the period 1992—2005, unreported results show that the per-judge caseload explains only a very small part (about 3 percent) of the difference between districts.

A second, perhaps more important, consideration is that, as we saw above, a district's total number of filings is *negatively* correlated with the average time to civil disposition. Also, Figure 2 shows that the number of authorized judgeships roughly follows the number of cases. This leads one to conclude that a demand-independent criterion for determining the number of judgeships to be authorized would perform better, in terms of meeting the need for judicial services, than a criterion based on an endogenous measure such as the number of cases filed. In other words,

since the number of cases filed might depend on the duration of the proceedings, and the duration of the proceedings might be made longer by a high caseload per judge, there is a risk of underestimating demand.

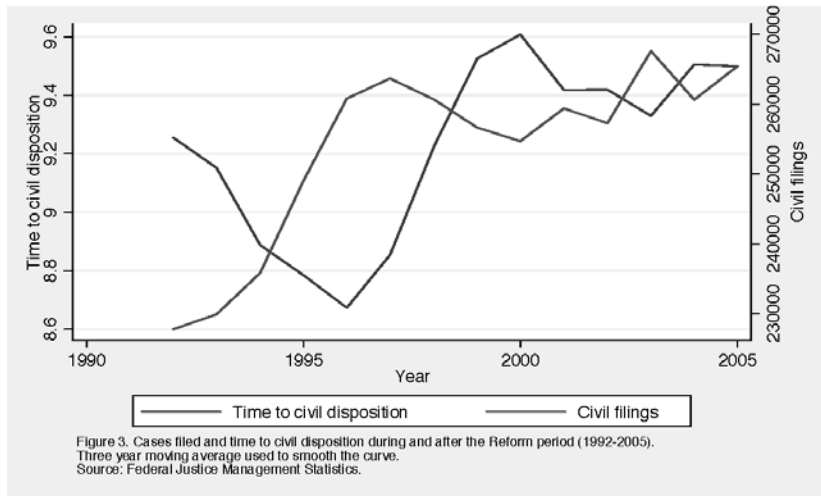
Procedural Improvement and the Civil Justice Reform Act

President Bill Clinton's 1996 Civil Justice Reform Act (CJRA) was meant, among other things, to "...improve access to justice for all persons who wish to avail themselves of court and administrative adjudicatory tribunals to resolve disputes" (Federal Register 1996). The origins of the CJRA trace back to 1990 when an independent organization, the Task Force on Civil Justice Reform, proposed new legislation that introduced judicial management and policy changes in the hope of speeding up the civil process. The RAND Corporation's Institute for Civil Justice carried out a pilot project in ten district courts for five years to assess the impact of the reform (RAND 1996).

The reform, described in the above-mentioned study, promotes the following six case management principles:

1. Differential case management: different types of cases need different types and levels of judicial management.¹⁵
2. Early judicial management: essentially, a further shift of focus on the pre-trial phase where the judge can help the parties to settle the litigation.
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.
6. Referral of appropriate cases to alternative dispute resolution programs (ADR).

According to the report, judicial policy measures had no quantitatively appreciable effects on "time to disposition, costs, or attorneys' satisfaction or views of fairness". For example, recommending the use of alternative dispute resolution methods simply sanctioned an already existing trend. If in 1992, the cases going to trial were 8.6 percent of all the cases terminated,



the share had decreased to 7.5 percent in 1995 and it decreased further to 4.7 percent in 2005. On the other hand, management measures such as early setting of a trial date and early discovery cutoff (in general, early scheduling) promised to reduce the time of a case from nine months to about five months.

The reform was enacted in 1996 for all district courts. After nine years, there seems to have been no improvement in the median time to civil disposition. The graph in Figure 3 shows, however, that during the pilot project (1990-1996) there was a relatively large decrease in time to disposition; the time jumped up again to nine months when the reform was extended to all districts. At the same time, we see a sudden surge in the number of cases filed. Assuming that the demand for judicial services actually responds to the expected length of the proceedings, the surge might have been caused by the decrease in expected time; in turn, the increased number of cases would have led to an increase in the time to disposition.¹⁶

After the 1996 reform, judicial management improvements seem to be already stretched to the limit. Looking at the wide differences in time to disposition that remain across the ninety districts, however, there is further room for improvement in terms of case management.

Using Technology to Increase Court Productivity¹⁷

It is difficult to picture a major role for technology in the civil process. The core activity of judging is typically human; a priori, it is impossible to program a machine with rules that allow it to decide a case where other

rules have failed. Before the introduction of e-commerce, however, one could have said the same about shopping. Much of the legwork has been eliminated by the introduction of trusted brands, public key cryptography, and digital image transmission.

The same analytical framework can be applied to justice. Besides judging, the current procedure responds to a need for transparency, certainty, ensuring an informed decision, and guaranteeing a level playing field. None of these requirements—unlike that of a just decision—is outside the reach of a machine, and the U.S. judiciary has already taken a few first, important steps to bring technology into the process by introducing technological advancements that reduce legwork without impairing legal certainty or compromising procedural fairness.

Electronics has found application in at least three ways: technologies to improve courtroom functionality, digital management of case files, and technologies to improve judges' chambers' functionality.

Courtroom technologies. Some devices improve the quality of the evidence brought to the courtroom, such as multimedia presentation capabilities, wireless headsets for the hearing-impaired and language interpreters. Other devices improve the efficiency of the procedure, such as videoconferencing equipment for virtual courtroom testimony and viewing depositions, and the ability of attorneys to download a real-time transcript of the proceedings onto their computers. Finally, the judge may completely override any evidence presented on the screen using a “kill switch,” which has the potential of increasing the fairness of the proceedings by preventing the jury from seeing such evidenc.

Electronic case files. Federal District Courts allow the electronic filing of

Table 3

Year	Number of districts	2005 Caseload per judge	
		Min	Max
1998	4	Min	389
1999	4	Max	3615
2000	4	Mean	987.7
2001	5	2005 Time to civil disposition	
2002	7		
2003	16		
2004	39	Min	1
2005	70	Max	18.8
2006	73	Mean	9.6

Table 3: Descriptive statistics for the Case Management / Electronic Court Files program (CMIECF)

documents in civil cases. Implementation of the Case Management/Electronic Court Filing (CM/ECF) program started in 2001 and by December 2006, the system had been introduced in most District Courts. Implementation in the Circuit Courts began in 2005 (U.S. Courts Administration 2006b). The system has dramatically increased access to information and process efficiency through 24/7 availability of case documents using standard software, immediate docket updating and automatic notice of filings to the opposing counsel. Among other things, the system will allow thorough real-time statistics on court activity (Burbank 2004, 581).

Chambers technology. The judge's chamber has been equipped with a series of instruments, including real-time chat capabilities, to enable communication between the bench and chambers while the court is in session. This feature has proven to be invaluable: not only can the judge ask questions to the law clerks during the session, but the clerks can also hear the proceedings in real time through speakers.

Assessing the effect of court technology

The CM/ECF program, probably the most important advance of those described above, was introduced in four courts in 1998; by 2007, all courts will use electronic case management (see Table 3). An evaluation of the effect of CM/ECF is difficult for a series of reasons. The full potential of the instrument might not be in effect yet. The new technology is not compulsory and, though relatively simple, it must be assimilated by the users. Second, as we saw above with the Civil Justice Reform Act, any actual improvement might be immediately offset by increased demand.

Using the data on the introduction of CM/ECF as a proxy for the introduction of new technologies discussed above, and matching them with

Table 4

OLS regression			
2003-2005 change in time to civil disposition	Coefficient	Standard error	P-value
Caseload per judge	0.000960	0.000623	0.127
Had CM/ECF for two years	-1.001	0.526	0.060
Constant	-0.563	0.611	0.359
n=84		R-squared	0.0602

Table 4. Estimate of the effect of the Case Management / Electronic Court Filing program (CM/ECF).

the trial duration data, this section tries to assess whether at this early stage, there are any visible improvements for those courts which adopted the system first. A cross sectional regression on 2005 data (displayed in Table 4) shows that the sixteen districts (out of ninety) that had the program in place for at least two years in 2005 had a median time to civil disposition that, compared with the respective 2003 time, was about one month less than that of the other districts.¹⁸ The regression also controls for the number of cases per judge, the only variable of those available which is, although weakly, connected to the median duration of a case. In one or two years, reliable data for all districts should become available, which will yield more precise figures.

Challenges brought by technology

The systems described above—especially the CM/ECF program—have been designed with access in mind. The major objection to the introduction of technology in the courtroom is that it could favor litigants with abundant economic resources and large firms that can afford expensive software solutions. In fact, small firms and solo practitioners are favored by not having to invest in technological infrastructure. In the case of multimedia projection, for instance, the projection facilities are already there and all the attorney needs is a laptop computer (Heintz 2002, 580-582). For a counsel to enroll in the CM/ECF program, the required software can be obtained on-line for less than \$400.

More significant challenges come from the so-called “computer-based discovery” (Withers 2000). The discovery part of a trial involves an exchange of documents between the parties. Sometimes, this is a simple exchange of floppy disks. In other cases, however, the required information has to be extracted from the digital records of one of the parties, which can generate extraordinary costs. First, the sheer amount of information that anyone can control using modern technologies can be staggering. Second, computer-based discovery often generates disputes around the extent of disclosure. For instance, if a person has used the same email address for both business and personal communications, there is no obvious way of disclosing business-related emails without violating the privacy of the individual. Third, information stored in a computer is more volatile than paper and can be overwritten or deleted incidentally. Attorneys have a heightened responsibility to make sure that their clients do not destroy evidence accidentally. In addition, the problem of costs in computer-based discovery is more than trivial because the judge will have to determine whether the plaintiff or the defendant will have to sustain them.

RECOMMENDATIONS AND CONCLUSION

A few recommendations follow from the analysis and findings above:

- On the basis of the identified determinants of the demand of judicial services, *Congress should review the criteria that determine the authorized number of judgeships in each district.* Although there is scarce evidence for the relationship between cases per judge and time to disposition, an objective criterion would have two benefits. First, it would help reduce the large differences between districts: the number of judges per million persons varies between 0.7 (Wisconsin Western) to 7.0 (Louisiana Eastern). New criteria could explicitly include population, as well as income and population density. Second, the analysis hints at an endogenous relationship between demand and supply of judicial services: an objective criterion would eliminate such a problem. Currently, the number of judgeships authorized in each district is roughly proportional to that district's case filings. As suggested above, there is the possibility that the number of filings is kept artificially low by the long expected time to obtain a civil disposition (varying from one month to eighteen months in 2005). This might discourage individuals and firms from initiating litigation, creating a false impression of less demand for judges.
- *Congress should not pass legislation mandating further procedural change,* meaning an increased focus on alternative dispute resolution as opposed to trial. The number of cases that go to trial is constantly declining in absolute and relative terms (Galanter 2004, Table 1). Not only has the latest reform been ineffective in terms of curbing time to disposition, but there remains very little to improve upon.
- *The judiciary should work with the other branches to introduce improvements in management practices and digital information management.* The RAND (1996) study showed that there are large differences in case-flow management among district courts. Moreover, courts with similar caseload per judge differ widely in terms of median time to civil disposition, showing potential for improvement.¹⁹ In accordance with previous literature (e.g., NCSC 1989), the greatest benefits could possibly be gained by introducing early scheduling of case deadlines. Also, improvements in digital information management seem to be promising. On the basis of the preliminary results, CM/ECF reduces somewhat the time to disposition and the attorney

costs, besides having other advantages. The implementation of the CM/ECF program will soon be completed in all federal courts. Given the wide array of possibilities for further introduction of technology, a further recommendation is to *keep surveying the effects of CM/ECF*, trying to measure not only the effect on time to civil disposition, but also other variables as measured by the RAND study, such as the satisfaction and the perception of fairness of attorneys, clients, and judges, and the impact on the final costs of legal proceedings for the client.

- Traditional ways to improve and speed up the administration of justice seem to offer little marginal benefits. Procedure is stretched to the limit; only a small percentage of cases filed actually go to trial, leading some scholars (Resnik 2000, Heydebrand and Seron 1990, Clark 1981) to discuss whether the judge is still a judge or more of a mediator. In this framework, it is necessary to experiment with new technologies and techniques that improve the administration of justice without compromising fairness.

NOTES

¹Thanks to Prof. Thomas Taylor for his encouragement; to Prof. Joseph Tham and Emily Grenzke for their excellent review work; and of course to my wife for supporting me during the effort of putting this study together.

²The United States is no worse off than most other countries. For an international comparison, see Dakolias (1999).

³In fact, both Galanter (2004) and Resnik (2004) are published in a special issue of the Journal of Empirical Legal Studies dedicated to the “vanishing” of the civil trial.

⁴This figure is consistent with the one-year figure for the mean duration, since a case cannot be shorter than zero months, but can be (in theory) one hundred years long.

⁵Perhaps, the fact that the whole third branch commits only 0.2 percent of the annual federal budget (Resnik 2000 p. 954) is another reason why policy scholars are relatively uninterested in the topic.

⁶Pre-trial procedures, and hence the opportunity for the parties to settle before the trial, were introduced in 1938. Historical data here are from Heydebrand and Seron (1990).

⁷The definition of time to civil disposition in the Federal Justice Management Statistics is the number of months between the filing of the case and its reso-

lution, be it a settlement between the parts or a decision by the judge or the jury. The time to civil trial is the time it takes for the parties to begin a trial for those cases that do.

⁸Apart from this study, there seems not to be any other empirical study using district-level data.

⁹Moreover, the government itself is one of the court's best clients, because of its involvement in many lawsuits both as an initiator and as a defendant.

¹⁰There are another four: Guam, Northern Marianas, Puerto Rico and Virgin Islands. They have been excluded from the analysis because of lack of data. D.C., a potential outlier, has also been excluded in some unreported specifications.

¹¹District surface is fixed and hence not reported in a fixed-effect regression. In an alternative random-effects specification, however, district surface was significant at the 99% level. The finding should be taken with a grain of salt, as it may simply mean that Northeasterners are greater troublemakers and live in denser districts.

¹²The finding holds, with very little change, both using the first difference and the original series, with fixed and random effects, using per-capita filings or absolute filings.

¹³In this context, judiciary refers to the life-tenured judges of federal District Courts.

¹⁴The consequences of judges lacking the constitutional protection of life tenure are the object of a separate discussion not reported here because it falls beyond the scope of this paper.

¹⁵For example, by creating a number of separate tracks, each of which prescribes a structured approach to case scheduling and management, and to assign cases early to these tracks.

¹⁶This is, of course, qualitative evidence which does not replace a serious econometric analysis in any way. It is, however, consistent with all the other findings and worthy of further consideration.

¹⁷This section owes largely to ME Heintz (2002).

¹⁸For years prior to 2005, few districts had CM/ECF in place for at least two years, making the standard errors too large to measure anything. The result is significant only at the 90% level, but running over ten different specifications the sign of the coefficient is always negative, varying between -.5 and -1.2 and with a p-value between 1.4 and 2. Considering that the regression is on the whole population of district courts, the result should not be underestimated.

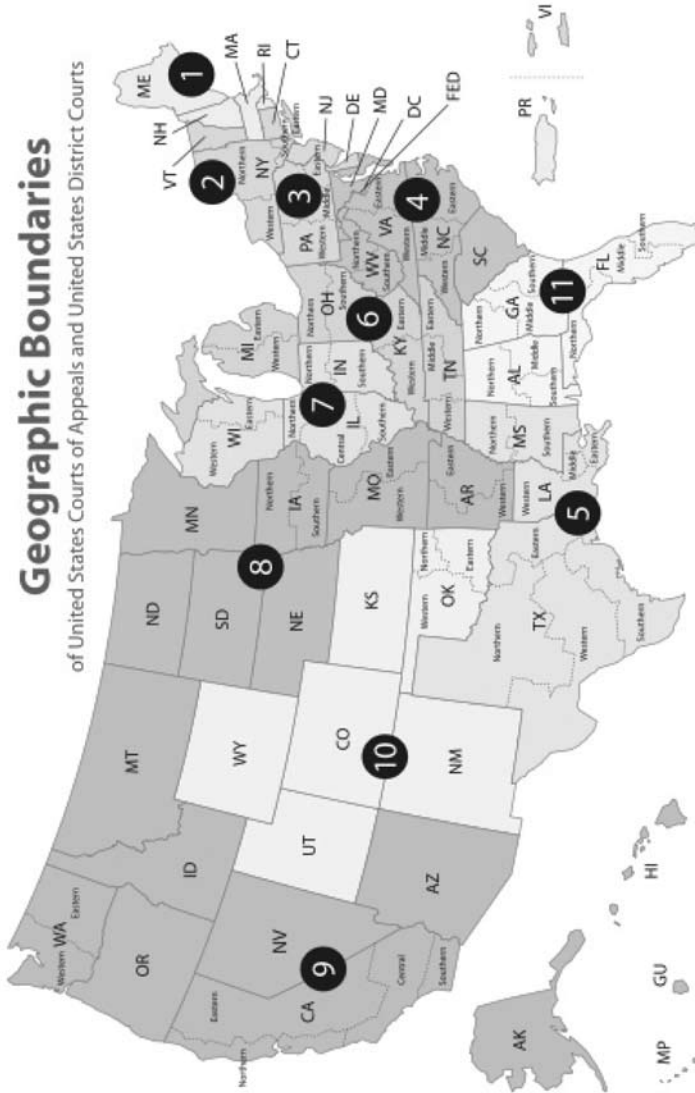
¹⁹For example, North Carolina Middle and Wisconsin West differ by eight months, despite having very similar caseload per judge ratios.

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Appendix A. Map of the Federal Judicial System



Source: This map, created by the Federal Government of the United States, is in the public domain.

Before I start I would like to highlight something about the origin of the quoted line "Justice delayed is justice denied." This line was written by William Ewart Gladstone (1809 - 1898). He was one of the greatest of English Politicians and also former British Prime Minister.