E-RULEMAKING: BRINGING DATA TO THEORY
AT THE FEDERAL COMMUNICATIONS COMMISSION

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ABSTRACT

This paper examines the theoretical promise of e-rulemaking with an examination of data about all filings at the Federal Communications Commission (FCC) from 1999 to 2004. The paper first reviews the theoretical and empirical literature on e-rulemaking. It then analyzes a dataset of all filings at the FCC using descriptive statistics and regression analysis to determine what drives e-filings and whether the theoretical promise of e-rulemaking is being realized six years into the experiment. The paper finds that though there has indeed been a long-term trend away from paper filings and toward electronic filings, citizen participation seems not to have increased from earlier time periods. Rather, e-filing has become a marginal change to the rulemaking process and merely another avenue by which interested parties file comments.

INTRODUCTION

With the advent of the Internet, the federal government sought to computerize and digitize administrative agencies’ documents and the rulemaking process in the United States. Plans were laid out1 and money appropriated to begin the process of computerizing rulemaking to reduce paper in the bureaucracy,2 increasing citizen

1 See Barbara H. Brandon & Robert D. Carlitz, Online Rulemaking and Other Tools for Strengthening Our Civil Infrastructure, 54 ADMIN. L. REV. 1421, 1478 (2002) (arguing that the Internet could fundamentally change how the American public participates in federal policymaking).

participation and deliberation in the rulemaking process, and speeding and enhancing the subsequent creation of administrative rules across the entire administrative apparatus.³

Beginning in the late 1980s, the federal government began commissioning studies to examine the application of information technology to different aspects of government record-keeping and rulemaking.⁴ In 1998, with much fanfare, the Department of Transportation rolled out the first online, department-wide, regulatory docket, providing full access to all studies, comments, and other documents contained in the agency’s rulemaking records. This system also allowed the public to submit comments on all rules proposed by the department.⁵ Later, the Federal Communications Commission (FCC), Environmental Protection Agency (EPA), and a host of other agencies developed their

³ See, e.g., U.S. GEN. ACCOUNTING OFFICE, ELECTRONIC RULEMAKING: EFFORTS TO FACILITATE PUBLIC PARTICIPATION CAN BE IMPROVED 1 (2003) (“Information technology (IT) can greatly enhance the public’s ability to accomplish each of these comment-related tasks, and can also improve federal agencies’ ability to analyze and respond to those comments.”); OFFICE OF MGMT. & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, THE PRESIDENT’S MANAGEMENT AGENDA 25 (2002) (identifying the expected results of electronic rulemaking as “provid[ing] high quality customer service regardless of whether the citizens contact the agency by phone, in person, or on the Web; reduc[ing] the expense and difficulty of doing business with the government; cut[ting] government operating costs; provid[ing] citizens with readier access to government services; increas[ing] access for persons with disabilities to agency web sites and E-government applications; and mak[ing] government more transparent and accountable; Stephen M. Johnson, The Internet Changes Everything: Revolutionizing Public Participation and Access to Government Information Through the Internet, 50 ADMIN. L. REV. 277, 320 (1998) (“The Internet could be used to revolutionize each step of the process that agencies must follow under the APA by supplementing, rather than replacing, those processes.”); Letter from Richard D. Otis, Jr., eRulemaking Initiative, Program Manager and Deputy Assistant Adm’r, to Victor S. Rezendes, Managing Dir., Strategic Issues, U.S. Gen. Accounting Office 37 (Apr. 28, 2003) (“Increasing and simplifying public access to government services and strengthening participatory democracy through a more citizen-centric government are major goals of the President’s Management Agenda. The Administration launched an interagency eRulemaking initiative to overcome barriers to public participation in the federal regulatory process.”).⁴ CARY COGLIANESE, E-RULEMAKING: INFORMATION TECHNOLOGY AND REGULATORY POLICY, NEW DIRECTIONS IN DIGITAL GOVERNMENT RESEARCH 13 (2004), http://www.ksg.harvard.edu/press/E-Rulemaking_Report.pdf (last visited May 28, 2006). A series of initiatives and acts were passed between 1990 and 1998 to increase the role of information technology in administrative agencies. These included: The Clinton Administration’s National Performance Review (later known as the Gore Commission on Reinventing Government); the digitization of the Federal Register and the Code of Federal Regulations and their availability on the Internet; the Paperwork Reduction Act; and the Freedom of Information Act. Many agencies used email and information technology to edit documents. Other agencies used scanning technology, and the FDA allowed email comments as well. Id. at 13.⁵ Id. at 14.
own systems for computerizing the deliberative rulemaking process. Thus was born electronic rulemaking, or “e-rulemaking.”

Since the 1990s, the federal government at all levels has expressed a commitment to electronic rulemaking as a way to cut costs, enhance the deliberative process, and democratize the regulatory process with increased citizen participation. Congress has appropriated money, agencies have dedicated personnel, and task forces have been created. Indeed, a recent initiative has sought to integrate and streamline e-rulemaking through interagency working groups, standardized electronic interfaces, and common back-office systems.6

This article will evaluate whether e-rulemaking has made progress toward achieving its goals seven years into the experiment. Although the theoretical promise of e-rulemaking has been great, it is difficult to determine the success of electronic efforts because papers that have examined much more than case-study data are scarce.7 Those that have examined larger data sets are of two types: either they are confined to one or

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6 This has been a large effort. To cite just a few key milestones: The E-Government Act was passed in 2002, directing agencies to create electronic dockets and electronic interfaces for public comment; President Bush developed an E-Government Action Plan; the OMB selected the EPA to be the interagency team leader in the administration’s e-rulemaking projects; the Regulations.gov portal was created as a centralized gateway to all agency rulemaking; and the EPA’s EDOCKET became a template for a standardized public electronic interface for docket management. Id. at 14–15. See Beth Simone Noveck, The Electronic Revolution in Rulemaking, 53 EMORY L.J. 433, 466–94 (2004) (providing an in-depth discussion of the recent trends in e-rulemaking policy).

7 See CORNELIUS M. KERWIN, RULEMAKING: HOW GOVERNMENT AGENCIES WRITE LAW AND MAKE POLICY 192 (1st ed., 1994) (noting that good empirical studies “are as rare as hens’ teeth”); Brandon & Carlitz, supra note 1, at 1444 (“At present, little good data exists showing both who is participating in rulemaking and what influence parties exert.”); Stuart W. Shulman, E-Rulemaking: Issues in Current Research and Practice, 28 INT’L J. PUB. ADMIN. 621, 625 (2005) (“To date, and perhaps not surprisingly given the recent and sporadic nature of the change, there has been little systematic documentation of the effect of this digital transformation on either citizens or agencies.”); STUART W. SHULMAN, THE INTERNET STILL MIGHT (BUT PROBABLY WON’T) CHANGE EVERYTHING: STAKEHOLDER VIEWS ON THE FUTURE OF ELECTRONIC RULEMAKING 35 (2004), http://erulemaking.ucsur.pitt.edu/doc/reports/e-rulemaking_final.pdf (“Much of what has been written and said about electronic rulemaking over the last three years has been forward-looking and highly speculative. [There has been a] dearth of empirical studies . . . .”).
two dockets, or they rely upon survey data. While these papers use valid research methods, these methods have drawbacks. Papers that examine only one or two dockets usually select a docket where there have been thousands of comments filed. Unfortunately, these types of dockets are not representative of the average docket before an agency—which may receive only tens of filings. It thus may be difficult to make generalizations from these single-docket studies. Papers that rely upon survey data face a different challenge. Researchers ask parties a series of questions about a comment many months after the filing has been made, creating a problem of hindsight bias. What both of these methods do offer, however, is an evaluation of the influence of e-rulemaking at a very microscopic level of data, which is difficult using other methods.

This paper has the opposite goal. Rather than examine each comment in a single docket through, for example, content analysis, this article explores the general trends in the electronic filing and digitization process in administrative agencies over thousands of dockets and millions of filings. In particular, it examines comprehensive data available from the FCC on its entire computerization and digitization process at monthly time

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9 Three pieces of data suggest that most dockets receive few comments. First, a cursory review of dockets before the FCC, using the ECFS search and query system, shows that few dockets receive more than tens of comments. Second, the number of ex parte meetings and filings, which are highly correlated with the number of formal comments and replies, skew strongly toward a small number of filings. John M. de Figueiredo & Emerson H. Tiller, The Structure and Conduct of Lobbying: An Empirical Analysis of Corporate Lobbying at the Federal Communications Commission, 10 J. ECON. & MGMT. STRATEGY 91, 97–99 (2001). Finally, informal interviews with officials at the FCC corroborate this assertion. See also . Brandon & Carlitz, supra note 1, at 1452 n.129 (quoting a former Assistant Secretary for the Department of Health and Human Services as stating that “the great majority of government rulemakings generate only a few hundred or thousand comments”).
periods over a six-year period. An analysis of the trends and regularities in the data can help to reveal whether e-rulemaking has met the vision, at the macro-data level, articulated by its architects.

Part I very briefly reviews the rulemaking process and advances made in e-rulemaking on the ground. Part II discusses the theoretical promise of e-rulemaking. Part III describes the electronic and digitization initiatives at the FCC and reviews the data in some detail. Part IV examines how the data line up with the theoretical promise of e-rulemaking. The implications for the data in the e-rulemaking process and with respect to both interest group strategy in administrative agencies and judicial review of agency decisions are discussed in Section V.

I. ADMINISTRATIVE RULEMAKING

The Administrative Procedure Act of 1946 (APA)\textsuperscript{10} and the enabling statutes for various agencies outline the rulemaking “notice and comment” procedures, adjudication process, and judicial review process for administrative agencies.\textsuperscript{11} The details of rulemaking are outlined in Section 553 of the APA.\textsuperscript{12} The APA calls for agencies to publish notice of proposed rulemakings in the Federal Register, to include the written data, views, or arguments, of interested parties in the rulemaking process, and to publish the rule thirty days before it is to take effect.\textsuperscript{13}


\textsuperscript{12} 5 U.S.C. § 553 (2000); see also Strauss, supra note 11, at 1335–36.

\textsuperscript{13} 5 U.S.C. § 553; see also Jane E. Fountain, Prospects for Improving the Regulatory Process Using E-Rulemaking, 46 Comm. of the ACM 43, 43 (2003); Letter from Michael Brostek, Assoc. Dir., Fed. Mgmt. and Workforce Issues, to Representative Henry A. Waxman, Ranking Minority Member, Comm. on Gov’t
A typical rulemaking when an agency posts a Notice of Proposed Rulemaking (NPRM) that is filed in the Federal Register. The NPRM usually sets out the parameters of policy under consideration, an initial timetable for the rulemaking, and, in some cases, the agency’s current knowledge and thinking on the issue. Once notice is provided, a comment and reply timetable is outlined by the agency for interested parties to provide input on the issue and respond to other parties’ inputs. After consideration of the comments, replies, ex parte communications, data, studies, and other factors, the agency will usually issue one or more orders or rules regarding the NPRM. Many times, on major and complex issues, the NPRM will spawn a series of regulations or orders, sometimes over a multi-year period.\textsuperscript{14}

Within this basic structure there have been a number of points where the “e” has entered into the rulemaking process. There are initiatives to make all NPRMs accessible electronically. More recently, a move has been made to facilitate fast and efficient keyword, or “hot topic” searches for NPRMs across multiple agencies. There are also efforts to facilitate the electronic filing and storage of comments and replies during the formal rulemaking process. Finally, technologies have been employed to make final rules accessible to everyone by posting them on the Internet. With this base of infrastructure and e-rulemaking, agencies have experimented with other avenues to facilitate deliberation. These include discussion groups, blogs, and real-time response

\textsuperscript{14} See generally COGLIANESE, supra note 4, at 5–11 (discussing the rulemaking process and its timing).
capabilities. Together with an effort to digitize paper files, e-rulemaking has attempted to employ digital technology at many points in the administrative process.

II. E-RULEMAKING IN THEORY

The goals of e-rulemaking have generally been the same across agencies. The first goal of e-rulemaking is to reduce paper and costs for agencies in the rulemaking process. It is claimed that by digitizing the administrative workload, agencies can more efficiently process electronic dockets, thereby reducing costs to the agency. This cost savings may be measured in reductions in the cycle time to produce final rules, reduction in the number of full-time-equivalent staff members required in the rulemaking process, and savings in budget costs related to rulemaking.

The second goal of e-rulemaking is to increase the level of participatory democracy. This is also called the mobilization hypothesis, where electronic rulemaking so lowers the cost of participation, that it opens up the administrative process to citizen individuals. This goal is founded in literature that argues that participation enhances the democratic process in rulemaking which, in turn, increases bureaucratic legitimacy and

16 See supra notes 2–5 and accompanying text for a discussion of the efforts.
17 See supra note 2 for evidence from two agencies.
18 COGLIANESE, supra note 4, at 21.
19 Id.
20 Stanley & Weare, supra note 15, at 506.
21 Roger C. Cramton, The Why, Where and How of Broadened Public Participation in the Administrative Process, 60 GEO. L.J. 525, 525 (1972) (arguing that “broadened public participation will improve administrative decisions and give them greater legitimacy and acceptance”).
federal government credibility, and strengthens individual autonomy and rights of self-governance, increases public understanding of rulemaking, and enhances the accountability of administrative agencies to other branches of government. Underlying this is an objective to increase the quantity of comments and general participation levels of individuals in the rulemaking process.

A third goal of e-rulemaking is to increase deliberation in the rulemaking process, and thus not only promote democratic discussion, but also to improve policy decisions. The logic is roughly as follows: increased participation results in better rules through more informed deliberation which in turn leads to better assessments of impacts and cost-effectiveness of rules; in addition, deliberation also confers more legitimacy on the rules, accounting for broader scope and consideration of all viewpoints. This process is said to enhance the deliberative process and thus result in better rulemaking.

This paper will not evaluate whether these theoretical goals are exhaustive, comprehensive, or even desirable. Rather it takes these goals as given and explores the extent to which the macro-data analyzed suggest these goals are being met. In particular, this paper explores the democracy-enhancing goals of increased participation and focused deliberation articulated above, with a focus on data provided by the FCC.

23 Noveck, supra note 6, at 38.
24 COGLIANESE, supra note 4, at 19.
25 Id.
26 See supra notes 2–5 and accompanying text.
27 Brandon & Carlitz, supra note 1, at 1470–71.
28 COGLIANESE, supra note 4, at 20.
30 For a more general discussion of these various democratic ideas, see Noveck, supra note 6 (arguing that technology can make it easier to form and maintain deliberative communities), and Shulman, supra note 7 (exploring whether the Internet will usher in a new era of more inclusive deliberation or reinforce existing inequalities).
Contemporaneous with the legislative and bureaucratic focus on e-rulemaking, the FCC, as early as 1992, began tracking its electronic workload. Although paper was pervasive at the agency, there was a steady shifting of workload to a digital format. A system was developed, for example, as an internal document storage and viewing system for documents that either came in electronic form or could be scanned into electronic form. In early 1996, building upon prior information technology efforts such as the FCC website and the FCC computerized document system, Record Image Processing System (RIPS), the Commission launched its electronic comment filing initiative. By April 1998, the FCC had amended its rules to allow the public to file comments and other pleadings via the Internet in most notice and comment rulemaking proceeding, most proceedings involving petitions for rulemaking, most Notice of Inquiry proceedings, and most petitions for reconsiderations in these proceedings. The Electronic Comment and Filing System (ECFS) allowed members of the public to file, review, and print documents online through the Internet, rather than having to rely on paper copies. It folded all RIPS documents into the ECFS system from 1992 onward.

The FCC Reference Information Center has kept a variety of data regarding various electronic initiatives at the agency. The data presented here are available at this office and were used for the purposes of this paper.

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31 RIPS maintained all public pleadings in rulemaking proceedings.
33 Id.
Since 1992, the FCC has kept annual statistics on the number and size of filings it received. Figures 1a and 1b show that by two measures--the total number of filings and the total number of pages of these filings--there has been an upward trend in participation in rulemakings by interested parties.\textsuperscript{34} Taken together the data suggest that because the number of filings is increasing faster than the number of pages, the average length of filing is getting shorter over time.\textsuperscript{35}

Figure 1a: Number of Filings per Year at the Federal Communications Commission, 1992-2004

\textsuperscript{34} One note of caution must be sounded about the data. When the FCC receives a mass filing (many identical or similar form letters), it does not report each filing individually. There are two processes the FCC follows. First, in order to be considered a filing, the form letter must contain the docket number. Second, the FCC takes representative form letters and scans them into the electronic system. The mass filing appears as one filing, with many pages (a page for each representative form letter).

\textsuperscript{35} Data not presented here, but available from the FCC, show that electronic storage requirements has remained relatively constant, on an annual basis, since about 1998. This data is on file with the author.
How do these filings reach the FCC? There are three main avenues citizens and interest groups can use to file comments, critiques, data, and reports with the FCC. Since 1999, the FCC Office of Reference Information has kept monthly statistics on these three avenues. The first method is paper filings. Going back to the creation of the FCC in 1934, the filing of paper comments and replies by interest groups has been a vital, and for some groups, the only, way in which interest group participation occurred. In 1999, the FCC started keeping monthly records as to the number of filings which were made on paper and then subsequently scanned into the electronic databases of the FCC for general access. Figure 2 presents this data.
Strikingly, there has been a long-term decrease in the number of paper filings. That number has dropped from nearly 1,750 filings per month in 1998 to fewer than 500 filings per month by the end of 2004, or less than 30 percent of the 1998 levels. Most of this drop occurred between 2001 and 2004. Combined with the number of overall filings increasing, the data suggest that there has indeed been a shift in interest group filing behavior away from paper, as intended by the FCC.  

In transitioning the workload from paper to the digital media, one major goal of the e-rulemaking initiatives would seem to be trending toward success.

A second method of filing is through the ECFS, the Electronic Comment Filing Systems found at the FCC website. Since 1998, the ECFS has evolved to include more advanced features, and has become the dominant mode of filing comments by the

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36 See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. at 24,121, for a discussion of the FCC’s desire to move away from paper.
37 The ECFS can be accessed at http://www.fcc.gov/cgb/ecfs. This method of filing is done through completing a form on the website. The data presented for this filing method do not include comments emailed into the Agency.
38 For example, until 2003, one needed to know the precise docket number to make a filing. One could search for the issue, match the docket number, and then insert that docket number to make a filing on an
public. Figure 3a graphs the number of filings by month via the ECFS. The most striking feature of the graph is that there is a small spike in the number of ECFS filings in November 2002, and an enormous spike in the number of ECFS filings in October 2004. Other than these two anomalies, the number of ECFS filings is relatively flat.

Figure 3a: Number of Monthly ECFS Filings, 1999-2004

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issue. Recently, however, the FCC introduced “ECFS Express,” which lists the top 20 dockets. One can click on the chosen “hot docket” and then make a filing on that docket almost immediately.

39 The FCC records each separate ECFS filing separately, regardless whether it is part of mass filing or not. Provided each commentor uses the ECFS system for filing his/her comment, the ECFS system will record each filing separately.
The first question that comes to mind is, “What happened in October 2004?” A review of the composition of filings shows that the nearly twenty-fold increase in the number of Internet filings during October 2004 are due almost entirely to the FCC’s proceedings on the media ownership rules. The Third Circuit Court of Appeals held that parts of the rules were arbitrary and capricious, in part, and remanded the case back to the FCC for further consideration in light of its decision.\footnote{Prometheus Radio Project v. FCC, 373 F.3d 372, 411 (3d Cir. 2004).} The FCC started new proceedings on the issue. During these new proceedings, there were literally thousands of comments filed through the ECFS, which in October 2004 amounted to over twenty times the average number of ECFS comments the FCC had ever received in any single month. By November and December, the number of filings returned to trend level.

One challenge in examining Figure 3a is that the number of filings in October 2004 causes the vertical scale of graph to be so high, that one cannot view the detail of
the data in other months. Figure 3b remedies this by simply omitting the October 2004 observation and then re-scaling the graph. This then tells a richer story.

From 1999 to 2001, the introduction of electronic filings capabilities had little effect on the number of filings via the Internet. In late 2001, however, there was a five-fold increase in the number of filings. This was due largely to the Anthrax scare of late 2001 and early 2002. The public, fearful of contracting Anthrax through the mail or contact with the mail, opted to file comments electronically. Subsequent to the Anthrax scare, two issues arose at the FCC which created many e-filings. The first was the Telecommunications Protection Act of 2002, or the do not call list, which enjoined telemarketers from calling numbers registered on a federal list. This was largely responsible for the spike in e-filings in late 2002. The second rise in 2003 was primarily due to the media ownership rules review by the Commission. Note that after the initial rise, the number of Internet filings at the FCC stayed high.

The claims that the Anthrax scare and other issues affected filings can be tested with a statistical analysis of monthly ECFS data. To do this, an ordinary least squares (OLS) regression is run where the dependent variable is the number of log of ECFS filings in a given month, beginning in January 1999. The dependent variable is log of ECFS filings (\( \ln(\text{ECFS}) \)) instead of the actual number because, as Figure 3a demonstrates, the distribution of ECFS filings is highly skewed. If this is not taken into account, researchers may tend to overweight the outliers, such as October 2004, and

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42 This was actually the second review of the media ownership rules. For a synopsis of FCC and judicial action on the media ownership rules, see the FCC website page on the media ownership rules at: http://www.fcc.gov/ownership/documents.html.
43 The results presented here are highly similar to results if the dependent variable in the statistical analysis is the number of ECFS documents or the size of the files.
underweight all other observations. Taking a natural log transformation of the variable is a common technique in statistics to address this problem.

Regression analysis allows examination of the effect of multiple independent variables on the number of ECFS filings. Three main independent variables are examined. The first independent variable, \textit{Terror}, is an indicator variable which is equal to one for the three months after the September 11 terror attacks, and zero otherwise. It is designed to measure how these attacks affected ECFS filing behavior. The second independent variable, \textit{Anthrax}, is an indicator variable which is equal to one for the months December 2001 to May 2002, when the country was gripped by the Anthrax scare, and zero otherwise. It is designed to measure how the Anthrax scare affected ECFS filing behavior. The final variable, \textit{Issues}, in an indicator variable which is equal to one for the months in which the do not call list and media ownership rules (first and second review) were being considered by the Commission, and zero otherwise. It is designed to measure the effect that these issues had on ECFS filing behavior.

In addition to these variables of interest, the statistical analysis includes a constant term, and a variable (or covariate) called \textit{Trend}, which is a count variable starting with 1 in the first month of the sample and counting each additional month. This variable is designed to control for variables that are increasing over time, such as more issues before the Commission, more inherent participation by interested parties in issues, and the rise of e-advocacy and information technology over time.\footnote{An alternative way to conduct this exercise is a correlation analysis. A correlation analysis, however, will not account for the trend, which is generally required in time series data to mitigate spurious correlation, and will also not allow the analysis of multiple variables at once.} The sample frame used is all
months beginning in January 1999 and ending in December 2004. The results of the analysis are presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend</td>
<td>0.034***</td>
</tr>
<tr>
<td></td>
<td>(0.0029)</td>
</tr>
<tr>
<td>Terror</td>
<td>-0.100</td>
</tr>
<tr>
<td></td>
<td>(0.2742)</td>
</tr>
<tr>
<td>Anthrax</td>
<td>0.537***</td>
</tr>
<tr>
<td></td>
<td>(0.2002)</td>
</tr>
<tr>
<td>Issues</td>
<td>1.099***</td>
</tr>
<tr>
<td></td>
<td>(0.1607)</td>
</tr>
<tr>
<td>Constant</td>
<td>5.329***</td>
</tr>
<tr>
<td></td>
<td>(0.1105)</td>
</tr>
</tbody>
</table>

n = 71
r-squared = 0.828
F-Statistic = 79.22

***99% statistical significance;
Standard errors are presented beneath the estimated coefficients

Table 1: Statistical Analysis of ECFS Filings, January 1999 to December 2004
Dependent Variable: Ln(Number of ECFS Filings) In A Given Month

Table 1 presents the results of this analysis with the variables included in the OLS regression in the left column and their coefficients (with standard errors below in parenthesis) in the second column. The standard errors are in parentheses below the estimated coefficients and their statistical significance noted at the 99 percent level of significance.

47 The coefficient on the Trend variable indicates how much filing increased on average every month during this time period, controlling for the other effects.
confidence.\textsuperscript{48} Below these parameter estimates are estimated test statistics that give some indication of the robustness of the statistical analysis. The F-statistic shows that the coefficients are jointly statistically significant at the 99 percent level of confidence, despite the relatively small number of observations. The r-squared measures the amount of variance in the model explained by the independent variables in the regression. As can be seen in Table 1, these five variables explain over 82 percent of the variance in the outcome variable.

In Table 1, the coefficient on the dummy variables (the 0-1 variables) shows how, with a log transformation of the dependent variable, that filings increase with a change in the regime. The coefficients on Trend, Anthrax, Issues, and the Constant are all positive and statistically significant at the 99 percent level. The coefficient on the Trend variable means that with each passing month, the FCC sees, on average, a 3.4 percent increase in electronic filings. Controlling for this trend effect, one can now see how much these other factors mattered to the ECFS filings. The coefficient on Anthrax means that in the months during the Anthrax scare, there was a 71 percent increase in filings. The coefficient on Issues means that there was a 200 percent increase in filings when a key issue was before the Commission. Note, however, that the effect of the Terror variable has no statistically significant effect on the number of filings at the FCC in this specification. Thus, although some practitioners believe that Terror attacks did make a difference, a more discerning statistical analysis shows little impact of this variable on ECFS filings. Further statistical analysis, however, shows that this result may not be

\textsuperscript{48} A coefficient at the 99 percent level of significance means that if one draws the variable from the distribution, 99 percent of the time the coefficient will be estimated to be different from zero.
extremely robust and that Terror may result in more electronic filings.\footnote{An alternative way to specify the regression models is to conduct three separate regressions. For each ordinary least squares regression, the sample frame is all months preceding the variable of interest and the months with the variable of interest. For example, the impact of Terror on ECFS filing behavior is measured. Included in the sample frame are all months preceding the September 11 terror attacks (January 1999 to September 2001) and the three months immediately after the terror attacks (October 2001 to December 2001). One variable is included at a time. This method has two virtues. The first is that by separating out each variable one can determine if an event causes an increase in the number of filings, given the entire history of filings. All other events will be captured in the history of filings rather than independently measured as part of the history. The second is that Terror and Anthrax have very few observations (n=3 and n=5 respectively). This will cause the econometrics to lack identification in a long time series that has all the variables included. In addition, the robustness of the model is examined with the dependent variable of the number of e-filings rather than ln(efilings). The full results of this analysis are available from the author. Here, the results are described in brief. In all of these extended models, the F-statistic shows that the coefficients are jointly statistically significant at the 99 percent level of confidence, despite the relatively small number of observations. In the model with only the Trend and Terror variables the coefficients on Trend and Terror are both positive and statistically significant. The coefficient on Terror means that in the months after the September 11 attack, there was an increase of 263 monthly filings on the ECFS system. In the model with only Trend and Anthrax, coefficients on both variables are positive and statistically significant. According to this model, the months during the Anthrax scare resulted in an increase of 769 monthly ECFS filings after controlling for other factors. Finally, in the model with only Trend and Issues, the coefficient on Issues is statistically significant. A “key” issue before the Commission results in an increase in monthly ECFS filings of 6,796.} Nevertheless, in all statistical analyses Anthrax and Issues show a statistically and substantively significant increase in filings even when we include the Trend variable.\footnote{This result casts some doubt on the assertion that it is merely e-advocacy or “improved IT over time” that drives the increase in filings.}

The third main avenue the public uses to provide input into the rulemaking process at the FCC is email. In this realm of public comment, the FCC accepts emails for particular dockets in one of two formats: (1) those that use the FCC SGML email-interface, or (2) those that follow the more recent FCC procedures for filing comments via email. The FCC includes only these formats as email filings\footnote{To review the email filing procedure, see ECFS Email Filing Instructions, \url{http://www.fcc.gov/cgb/ecfs/email.html} (last visited May 28, 2006).} In the remainder of this paper, references to email are to the FCC email formats.

Since 1999, the FCC has kept records on the number of emails it receives regarding its docketed proceedings. Figure 4 provides graphs of the monthly number of emails over time. Like the ECFS, there are almost no emails from 1998 to 2001. After
September 2001, and largely in response to the anthrax scare and do not call list proceedings, the number of emails increases substantially. However, the interest in the media ownership rules that was evident in the ECFS filings in 2003 does not appear in the email filings at the same time. Rather, email commentary on docketed proceedings remains almost non-existent, averaging one to two emails a day on all dockets that the agency faced.

Figure 4: Number of Monthly SGML Emails Received on Dockets Before the Commission, 1999-2004

That is, until February and March 2004, when the number of comments arriving by email exploded, hitting an all-time high. The average number of comments rose from fifty emailed comments a month to 15,000 a month. What caused this 300-fold rise in the citizen interest in FCC dockets? These emails were largely generated by the Janet Jackson “wardrobe malfunction” at the 2004 Super Bowl. This incident caused individuals and interest groups to file comments on other docketed proceedings before the FCC, referencing the Janet Jackson wardrobe malfunction as the reason for when and

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52 See supra tbl. 1 and accompanying text.
how the FCC should act on these (at times, quite unrelated) proceedings before the Commission.53

There was a final spike in email commentary to the FCC in mid-2004. This was due largely to the reconsideration of the media ownership rules which were remanded by the Court of Appeals that same year. Although the earlier proceedings on the issue had not engendered much email comment, the remand did cause interested parties to email commentary to the agency.

IV. INTERPRETING THE DATA; BRINGING BACK THE THEORY

Has e-rulemaking fundamentally changed the way in which the bureaucratic process works? Or have such systems been a bust for government? Based on the data presented here, the answer is not affirmative in either regard.

What causes parties to either shift to the electronic medium or become more engaged through electronic media? The data suggest that a “build it and they will come” attitude is not sufficient. Indeed, it took completely unforeseen events, such as the Anthrax scare and, to a lesser extent, the September 11 hijackings to catalyze interest groups to shift their comments to electronic media.54 The FCC’s previous commitment to and investment in electronic filing systems had only a marginal effect on the willingness of interest groups to change their filing behavior from 1998 to 2001. Once these catalyzing events occurred, though, there was a gradual shift toward electronic rulemaking—fewer comments arrive on paper, more in electronic media.

53 It is important to note that complaints about the Janet Jackson wardrobe malfunction are not included in these numbers. Complaints are not considered a filing in this context. Indeed, the FCC received more than 500,000 complaints regarding the Super Bowl incident. JERRY KANG, COMMUNICATIONS LAW AND POLICY 270 (2d ed. 2005).
54 See supra Part III.
Nevertheless, almost all paper filings are now done by large Washington law firms representing large, repeat players at the FCC.55 These attorneys are strategic in their use of paper instead of electronic filings.56 Most comment and reply proceedings are on a schedule determined by the commission. Because it takes five to seven days for a paper document to be processed, scanned, and then posted to the electronic database, this is five to seven fewer days that opponents to the viewpoint have to work on a reply.57 This type of strategic behavior pervades this hybrid process in which interest groups can choose whether to submit on paper or electronically.

The next question to pose is whether e-rulemaking enhances democracy with an increase in individual participation in the rulemaking process. This is a difficult question to answer with certainty because the counterfactual needs to be addressed: what is the level of individual participation in the same rulemaking when there is no electronic option? This question cannot be answered in this paper because the counterfactual data does not exist. What can be done, however, is to examine filing behavior in the average FCC docket and filing behavior in the outlier FCC dockets and explore whether participation is largely individual based or interest group based.58

Other than the anthrax scare, there were two dockets and one event that together, caused the majority of filings at the FCC during this time: the do not call list, media

55 FCC Interviews, September and November 2004 and February 2005. Given the choices of electronic avenues that one can follow and the fact that nearly 80 percent of filings now come electronically, why does the FCC still allow paper filings? Paper filings persist at the FCC because of the perception of the agency that individuals still use paper to participate in the filing process. If one wishes to encourage the democratic process, the argument goes, then one should allow individuals to participate however they can, including through paper filings.


57 This rationale affects only the timing of comments that are scheduled to receive a reply.

58 The assumption is that interest group based participation would have happened even without the electronic rulemaking.
ownership rules, and Janet Jackson wardrobe malfunction. Before these three issues are addressed, note that almost all other issues received limited commentary from individuals. Most of the other proceedings were dominated by interest group participation and had little, if any, individual interest. This quite important point has frequently been overlooked by other studies. By examining outlier dockets, these previous studies may draw conclusions based on outlier data. In fact, in 99 percent of dockets, the e-filing does not seem to cause an increase in individual or interest group participation—rather it is business as it was before the ECFS. To this extent, the promises for robust increases in participation by interest groups in a democratic process of rulemaking have largely been overblown.

Nevertheless, this section, in order to be consistent with previous studies’ methodology, follows previous papers and examines the three issues that have indeed attracted substantial interest at the FCC. One can begin to think about the catalysts and levels of individual and organized interest in the issues. The do not call list, for example, received substantial attention from individuals. Individuals wanted to stop the interruptions caused by telemarketers at their dinner hour. Organized interests also had substantial interest in the issue, as many firms’ livelihoods and marketing plans depended upon the telemarketing freedom. The spike in comments was from both individuals and

59 Interviews with FCC, September and November 2004 and February 2005. Note that Walton Francis, former Assistant Secretary for HHS, made the same comment about HHS docketed proceedings. See Brandon & Carlitz, supra note 1, at 1452 n.129 (quoting Mr. Francis as stating that “the great majority of government rulemakings generate only a few hundred or thousand comments”).

60 Popular “outlier” dockets that have been examined in other papers are National Emission Standards for Air Pollutants (Mercury)–EPA docket; Roadless Area Conservation (Snowmobiles)–U.S. Forest Service docket; National Organic Standards (Organic Food)–USDA docket.

61 Note that there seem to very few dockets that engender public interest. To the extent they do, these three dockets may be somewhat representative.

62 It is clear ex post that the do not call list was of substantial importance to individuals. Over 100 million numbers have signed up for the list. Press Release, Deborah Platt Majoras, Chairman, FTC, On the 100 Millionth Number on the National Do Not Call Registry (Aug. 15, 2005), http://www.ftc.gov/opa/2005/08/dncstatment.htm.
firms. This can be contrasted to the wardrobe malfunction, where many comments were
from citizens were taken aback by the exposure of Ms. Jackson’s breast before hundreds
of millions of people. This caused the FCC to receive hundreds of thousands of
complaints from individuals.63 But our data on the topic show that the number of
comment or reply filings on other issues before the FCC (other than complaints)
increased substantially because of the breast-baring incident. A cursory look at the data
suggests that both individuals and interest groups exploited the Janet Jackson incident for
their own positions in various related and unrelated proceedings before the Commission.
Whether these individual comments were a true registration of preferences or not is
unclear because sometimes intermediaries are involved.

The media ownership rules illustrate this point perhaps best—that a spike in
comments should not necessarily be interpreted as demonstrating heightened interest
from individuals. Media ownership caps had a substantial effect on the business of large
and some smaller media firms. However, individuals were not only largely unaware of
the issue, but could not navigate or comprehend this complex proceeding. Yet this single
issue received the most filings of any issue before the Commission during this time
period. Many of these comments were largely identical texts, mass electronic mailings,
and simple click-throughs.64 In one instance, the FCC actually identified the source of the

63 It is important to note that firms were indeed interested in subsequent legislation that would have raised
the fine for indecent broadcast during daytime hours from $27,500 to $275,000 per violation with a $3
houses of Congress passed and the President signed a bill that raised the maximum fine to $325,000 per
firms lobbied Congress heavily on this legislation. See Frank Ahrens, Congress Agrees to Raise
Broadcast-Indecency Fines, WASH. POST, May 20, 2006, at D01 (concluding that lobbying by the cable and
satellite industries was successful since they remain exempt from FCC’s prohibition on “‘patently
offensive’ material of a sexual or excretory nature”). The FCC fined twenty CBS stations $27,500 each, or
$550,000 total in the Janet Jackson incident. Id.
64 FCC Interviews, September and November 2004 and February 2005.
mass e-mailings and asked this mass marketer to slow their mass mailings to the FCC because it was overwhelming the communications bandwidth at the agency.\textsuperscript{65} This is an instance where a spike in comments actually reflected strategic behavior by interest groups rather than sincere individual preferences.

There are numerous technologies—mass mailings, click-throughs on the web, and click-throughs in emails to name just a few—each with a different cost to individuals in registering their opinions and each with a different impact on the regulator’s decision-making process. The key message is that an increase in filings does not necessarily mean that there is an increase in individual interest.\textsuperscript{66} Strategic behavior by interest groups can make it seem that individuals are participating in the rulemaking when really organized interests are pulling the strings.\textsuperscript{67}

This then raises an important problem: it is difficult for regulators to know if each of these individual comments is an authentic expression of preferences by an individual, is merely part of a mass mailing of some type from an organized interest, or some combination of both.\textsuperscript{68} The former would support the idea that e-rulemaking is increasing the participation of citizens in a democratic process. The latter means that organized interests will continue to lead the discussion of issues before an agency.

\begin{footnotes}{\footnotesize
\textsuperscript{65} Id.
\textsuperscript{66} This raises the interesting question of how we should think about intermediaries encouraging citizens to register their preferences. It is well known that in the area of complaints, intermediaries can be quite important. For example, in 2003, the Parent Television Council was responsible for 99.8 percent of all FCC television complaints. Kang, supra note 53, at 270.
\textsuperscript{67} This is known as “astroturfing.” For a discussion of this problem in other agencies when there is an explosion of comments, see Brandon & Carlitz, supra note 1, at 1444 n.96, 1452. See also Joab Jackson, E-Government Run Amok!, GOVERNMENT COMPUTING NEWS, June 27, 2005, (noting that in one EPA proceeding, 173,000 electronic form letters were sent from one organization—Moveon.org). For a further discussion of this issue, see Schulman, The Internet Still Might (but Probably Won’t) Change Everything, supra note 7, at 12.
\textsuperscript{68} Efforts are currently underway to separate authentic e-filings from disingenuous ones. See, for example, Hui Yang & Jamie Callan, Near-Duplicate Detection for e-Rulemaking, 89 ACM INT’L CONF. PROC. SERIES (2005), available at http://www.cs.cmu.edu/~huiyang/publication/dgo2005.pdf.
\end{footnotes}
A final issue is whether e-rulemaking results in more deliberation. Because this paper considers only aggregate data, it is difficult to determine which, if any, of these comments have substance that impinge upon the details of rulemaking. Anecdotal evidence suggests that individual comments, to the extent they are authentic, are more an expression of preferences rather than actionable suggestions. For example, citizen comments on the do not call list register support or opposition to the list, but do not deal with issues of implementability. Thus, on the whole, the deliberative process gains little with these thousands of individual comments outside of registering citizen preferences.

One way to measure interest group deliberation is to measure how often interest groups access the comments of others in the docketed proceedings of an agency. One might expect that a rise in the number of comments accessed suggests that groups are reading and considering other viewpoints. Figure 5 provides the number of ECFS hits from 1998 to 2004. This represents the number of hits the public has made per month on the ECFS to view comments and documents on a docketed proceeding. Figure 5 shows, between January 1998 and December 2004, the number of ECFS hits did increase 50.4 percent, but the number of filings increased 287 percent during this same time period. So even though there was a rise in the number of comments accessed electronically between 1998 and 2004, that rise was far less than the increase in the total number of comment filed. This suggests interest groups simply did not electronically review comments and

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69 FCC Interviews, September 2004. For a more general discussion of this point, see Shulman, supra note 7.

70 Hits may not be a completely reliable indicator of page views in many cases, because spiders and other little monsters may be lurking that cause the hits measures to possess a lot of noise. In this case, though, hits may be a good measure because the number of hits is relatively low, relatively consistent over time (except for 2003), and there is little commercial reason to have spiders roaming the ECFS website.
replies on the ECFS system in 2004 at a higher rate than they did in 1998, which provides one piece of evidence that deliberation did not necessarily increase.

Figure 5: Number of ECFS hits per month, 1998-2004

That said, it should be made clear that, to the extent comments are authentic, the registering of citizen preferences for or against a certain policy may help policy makers craft regulations which take into account the preferences of individuals. 71 Overwhelming support for the do not call list allowed regulators to take this into account when creating the list. Finally, expressions of citizen preferences might be useful for democratic institutions, such as Congress, in their oversight of the bureaucratic apparatus. 72

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71 Theoretically, there is a decreased cost to filing comments electronically versus via mail. If this is true, then the e-rulemaking may obtain a larger swath of comments from the public, further down the distribution, than it would using only paper. Testing this, unfortunately, is beyond the scope of this paper.

72 This phenomenon is much like “calling your Senator,” where citizens express their preferences. Some of these calls are facilitated by intermediaries and interest groups. To this extent, we see a similar behavior occurring in the electronic media.
V. EXTENSIONS

Given the inroads e-rulemaking has made, and limitations e-rulemaking has encountered, what does this suggest for the way in which interest groups behave and judges should respond? It is clear that interest groups are strategic in their behavior in administrative agencies.\textsuperscript{73} This extends to the medium in which they participate in filings—they choose the medium that promotes their cause. The effects of strategic behavior by interest groups can be bad for the agency in a number of ways. It can lead to suboptimal policies, misallocation of agency resources to both attenuate the behavior and rectify policy, and poor investment decisions in new information technology infrastructure.

The FCC, therefore, should take this strategic behavior into account when crafting rules and regulations and considering comments and replies. Taking away avenues for this strategic action may help the FCC streamline its process and obtain better decisions. For example, in response to large law firms filing paper comments, the FCC has a number of options open to it. One is to eliminate paper filings altogether. This would eliminate the large firm strategic behavior, but it might also harm those few individuals who actually use the paper filing system. A second possibility is to invest in speeding up the paper document processing. While this certainly would yield benefits all around, it is unlikely that the FCC will see budget increases to support this effort. A third option is to lengthen the reply cycle so as to minimize the effect of strategic behavior in the timing of

\textsuperscript{73} For simple examples of this strategic behavior at the FCC, see generally John M. de Figueiredo, Strategic Plaintiffs and Ideological Judges in Telecommunications Litigation, 21 J.L. ECON. \\ & ORG. 501 (2005) (examining the effect of judicial ideology on the selection and outcome of regulatory cases); John M. de Figueiredo \\ & James K. Kim, When Do Firms Hire Lobbyists? The Organization of Lobbying at the Federal Communications Commission, 13 INDUS. \\ & CORP. CHANGE 883 (2004) (evaluating “the explanatory power of transaction cost economics to explain vertical integration decisions of lobbying firms”).
filings. Unfortunately, delaying the filings only serves to slow the already cumbersome and sluggish rulemaking process. A fourth method is to eliminate paper filings for all commentators except small business and individuals. This would force interested parties with large resources to file electronically, eliminating the strategic advantage to delayed filings, while still protecting those few individuals who do file by paper. Thinking through problems such as these with foresight would help the FCC to respond to the strategies of interest groups.

A final question is whether the courts should treat judicial review differently in the presence of e-rulemaking. E-rulemaking to date has not appreciably changed the filing behavior of interested parties. However, there are initial indications that electronic filings and email may make it cheaper for parties to express preferences. To the extent that preferences are authentic and are relevant to a question of administrative law, then e-rulemaking stands to have an advantageous position for the court relative to the paper system because it provides more information to the bench to enhance the court’s decision-making process. In addition, to the extent that the FCC is flooded with comments that are largely mass mailings, the court will have to consider if the FCC has meaningfully responded to the key arguments for and against the proposed rule under the arbitrary and capricious standard. Overall, though, it would seem that courts’ obligations under e-rulemaking remain relatively unchanged.

CONCLUSION

When e-rulemaking was first implemented, it promised to transform the democratic process in administrative rulemaking. Unfortunately, a review of data from
the FCC has shown that much of that promise has not been realized. This paper, unlike previous papers, has examined macroscopic data and the long-term trends in electronic filing at the FCC using a new database.

This analysis has found that there is indeed a long-term trend to move away from paper and into electronic filings. However, individual citizen participation via electronic media is scant at best. Over 99 percent of dockets at the FCC show only minimal action. In fact, two dockets (the do not call list and media ownership rules) and one incident (wardrobe malfunction) dominate filings in number. Citizens seemed to express preferences for or against a position, but provided little in the way for deliberation on the substance of the rules being considered. Thus, future researchers must proceed with caution when drawing general inferences about e-rulemaking from case studies of extreme dockets. Some of these dockets did have significant citizen expression of preferences, while others were merely mass filings. Indeed, many times, exogenous events such as September 11, the anthrax scare, and the wardrobe malfunction may change public behavior in the administrative agency nearly as much as administrative actions such as the media ownership rules and do not call list.

The macro data at the FCC indicate that overall, other than by shifting comments to the electronic system at a noticeable rate, e-rulemaking seems to have become yet another marginal change to the rulemaking process—another avenue to file comments, replies, opinions, and preferences. Micro and macro-data studies in other agencies would help us to know if this finding is generalizable.