Courts, Congress, and Public Policy, Part I: The FDA, the Courts, and the Regulation of Tobacco*

Jeffrey R. Lax**
Mathew D. McCubbins***

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** Department of Political Science, Columbia University, JRL2124@columbia.edu.

*** Department of Political Science, University of California, San Diego, mmccubbins@ucsd.edu.

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I. INTRODUCTION

How powerful are courts in the making of public policy? Sorting out the relative power of courts in a system of shared powers is not easy. Judging the power within the judicial hierarchy is similarly difficult. It is not easy to tell when a court's decisions (or the actions of any political actor) are decisive, that is, when they are necessary and sufficient for changing or blocking policy, and when they are not. One way that scholars have sought to untangle the threads of causality is through in-depth case studies as to how policy has changed over decades, trying to find the smoking gun behind any change in policy.

In this Article, we present an alternative way to sort out the issue of decisiveness. We do not analyze policy effects directly. Rather, we use the *event study* approach, testing policy impact by showing significant changes in the prices of politically sensitive stocks immediately following agency and court decisions. This is a well-known and well-developed methodology in the finance literature, but one perhaps underused within political science[1] (despite being a natural application

1. In the finance/economics literature, it has been applied to everything from merger regulations to hurricanes. *See* Katherine Schipper & Rex Thompson, *The Impact of Merger-Related Regulations on the Shareholders of Acquiring Firms*, 21 J. ACCT. RES. 184 (1983); Lazarus A. Angbazo & Ranga Narayanan, *Catastrophic Shocks in the Property-Liability Insurance Industry: Evidence on Regulatory and Contagion Effects*, 63 J. RISK & INS. 619 (1996). Brian E. Roberts, *A Dead Senator Tells No Lies: Seniority and the Distribution of Federal Benefits*, 34 AM. J. POL. SCI. 31 (1990) [herinafter Roberts, *A Dead Senator Tells No Lies*]. Within the political science literature, we are aware of only a few applications, despite some notable successes: on the death of Senator Jackson, on the 1980 election, on legislative rules and energy tax legislation, on the 1887 Interstate Commerce Act, on the 1934 Reciprocal Trade Agreements Act, and on the 1992 presidential election. Brian E. Roberts, *Political Institutions, Policy Expectations, and the 1980 Election: A Financial Market Perspective*, 34 AM. J. POL. SCI. 289 (1990) [hereinafter Roberts, *Political Institutions*]; Thomas W. Gilligan & Keith Krehbiel, *Complex Rules and Congressional Outcomes: An Event Study of Energy Tax Legislation*, 50 J. POLITICS 625 (1988); Thomas W. Gilligan, William J. Marshall, & Barry R. Weingast, *The Economic Incidence of the Interstate Commerce Act of 1887: A Theoretical and Empirical Analysis of the Short-Haul Pricing Constraint*, 21 RAND J. ECON. 189 (1990); Karen R. Schnietz, *The Reaction of Private Interests to the 1934 Reciprocal Trade Agreements Act*, 57 INT'L ORG. 213 (2003); Michael C. Herron et al., *Measurement of Political Effects in the United States Economy: A Study of the 1992 Presidential Election*, 11 ECON. & POL. 51 (1999). Event studies not yet published include a dissertation on party control of Congress, one on the 1996 congressional elections, and one on the value of judicial independence in 1988. *See* Brian E. Roberts, The Redistributive Consequences of Changing Majority Control in the U.S. House of Representatives (Paper read at the Annual Meeting of the Midwest Political Science

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of standard research designs[2]). We extend this approach to study the relative impact of court decisions within public policymaking.

Our case study is the attempt by the Food and Drug Administration (FDA) to regulate tobacco products and tobacco advertising in the 1990s after eight decades of public denials of such jurisdiction (by the FDA itself, the Surgeon General, and others) and despite a lack of clear intent by Congress to delegate such jurisdiction to the FDA.[3] The courts struck this down, but with Congress lurking in the background, it is difficult to tell whether these court decisions were truly decisive, or whether this policy initiative was going to die on the Hill anyway. If Congress or the President would have blocked regulation in the end, then the court decisions cannot be said to have been truly decisive. It can also be difficult to allocate causal impact between the judges and courts that handled the case. The basic question is how much control individual

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Association (Apr. 27-30, 2000)) (on file with author) [hereinafter Roberts, Redistributive Consequences]; Daniel M. Klerman & Paul Mahoney, *The Value of Judicial Independence: Evidence from 18th Century England* (The University of Virginia Law School & Economics Working Paper Series, Paper No. 03-12; The University of Southern California Law School Law & Public Policy Research Paper Series, Paper No. 04-2; The University of Southern California Law School & Economics Research Paper Series, Paper No. 04-2, 2004), *available at* http://papers.ssrn.com/sol3papers.cfm?abstract id=495642. Nathan W. Monroe, Partisan Dividends: Event Studies of Political Change (May 3, 2003) (unpublished Ph.D. dissertation, University of California, San Diego) (on file with author). Some event studies have looked at court decisions (though again not in the political science literature), specifically at the 1951 *Schwegmann* decision (finding little evidence of significant effects) and at antitrust litigation and the computer industry (finding significant effects). *See* Schwegmann Bros. v. Calvert Distillers Corp., 341 U.S. 384 (1951); Philip L. Hersch, *The Effects of Resale Price Maintenance on Shareholder Wealth: The Consequences of* Schwegmann, 62 J. INDUS. ECON. 205 (1994); William L. Huth & Don N. McDonald, *The Impact of Antitrust Litigation on Shareholder Wealth*, 37 J. INDUS. ECON. 411 (1989). This Article uses the event study approach to investigate court battles over the attempts of the FDA to regulate tobacco.

2. Specifically, we are employing multiple single-group regression point displacement tests. William M.K. Trochim, *The Research Methods Knowledge Base*, (August 02, 2000), http://trochim.human.cornell.edu/kb/index.htm. The pre-test is the stock return preceding the event, the event is the treatment, and the post-test is the stock return following the event.

3. *Compare* John E. Jevicky, *FDA's Regulation of Tobacco Products: A Flagrant Disregard of Congressional Intent*, 24 N. KY. L. REV. 535 (1997) (arguing that Congress did not delegate tobacco regulation to the FDA), *with* James T. O'Reilly, *Tobacco and the Regulatory Earthquake: Why the FDA Will Prevail After the Smoke Clears*, 24 N. KY. L. REV. 509 (1997) (arguing that Congress did delegate regulatory authority to the FDA).

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judges themselves had over the *probability* that tobacco would ultimately be regulated in this way.

Our hypothesis is simply that judges were indeed very powerful players in this policy struggle, and that their decisions significantly affected the chances of regulation. Obviously, their decisions blocked regulation, but their decisions were only powerful if regulation would have succeeded in the end, in the context of the latent power of Congress to act. If Congress had been set to block regulation, then the court decisions were actually irrelevant, despite appearances.

This is not a run-of-the-mill case in which to analyze court power. The stakes were quite high, economically,[4] politically,[5] and socially.[6] Moreover, while the stakes involved in this particular case are far greater than in the average district court case, the power of the courts to interpret statutes is a recurring and important one in our constitutional system.

In this Article, we show that court decisions significantly and independently affected the probability that tobacco regulation would pass or be blocked. We rule out presidential or executive dominance of this policy area—if the president or the FDA were the one decisive actor in tobacco regulation, we should not observe the results that we do. In what follows, we briefly place our research question in context. In Part III, we lay out the timeline of the FDA's attempt to regulate tobacco. In

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4. The tobacco industry is hundreds of years old and predates the founding of the U.S. itself. The publicly traded tobacco companies have a market capitalization of approximately $150 billion (market capitalization measures the size of a security or set of securities as the price multiplied by the number of shares outstanding). The tobacco industry spent $6 billion on marketing alone in 1993. Cigarette sales total nearly $40 billion in the U.S. annually and U.S. companies are responsible for approximately 10% of the world's tobacco exports. Anthony Ramirez, *Advertising: Proposed Regulations May Mean Trouble for Industries Hooked on Tobacco Marketing Dollars*, N.Y. TIMES, Aug. 14, 1995, at D6.

5. In 2000, tobacco lobbyist expenditures totaled more than $20 million (Phillip Morris alone spent over $11 million) and campaign contributions totaled $8,610,638 ($5,318,039 in soft money). Open Secrets Lobbying Database, http://www.opensecrets.org/lobbyists.indusclient.asp?code=A02&year=2000 (last visited Apr. 5, 2006). The largest contributors were Phillip Morris ($3,490,438), U.S. Tobacco ($1,621,652), R. J. Reynolds ($1,026,427), and Brown and Williamson at ($1,000,782). *Id.* Elections—perhaps even control of Congress—can be swung by the politics of tobacco (since 1994, 75% of tobacco company campaign contributions went to Republican candidates). Open Secrets Industry Totals: Tobacco, http://www.opensecrets.org/industries/indus.asp?Ind=A02 (last visited Apr. 5, 2006).

6. Tobacco regulation affects the lifestyle and health (not to mention the wallets) of more than 45 million Americans on a day-to-day basis. Smoking is thought to cause the premature death of hundreds of thousands of Americans each year, but one out of every four Americans still smokes. Marc Kaufman, *Smoking In U.S. Declines Sharply: Cigarette Sales At a 54-Year Low*, WASH. POST, Mar. 9, 2006, at A01.

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Part IV, we explain the methodology of event studies and their application to studying judicial impact. In Part V, we discuss the key events, our predictions, the data, and our results. Part VI discusses our findings and Part VII concludes.

II. JUDICIAL IMPACT

How powerful are courts relative to the other branches of government? Two centuries ago, Alexander Hamilton labeled the judiciary the "least dangerous branch," arguing it possessed neither "the purse nor the sword."[7] More recent analyses run the gamut from those that see judges as policy-makers, unconstrained by the other branches or by legal concepts or norms,[8] to those that recognize constraints in the form of "the law" and legal norms,[9] to those who argue that judges and courts have profoundly changed American law,[10] and to those that recognize severe constraints on the abilities of courts to make policy.[11]

According to a recent summary of the judicial impact literature,[12] scholars of judicial impact "generally assume that judicial decisions have an important impact on the political, the economic, and to some extent the social structures of the nation;" little has been done to measure impact; findings have been "contradictory;" and "claims of extensive influence are quite controversial." Obviously there are

7. THE FEDERALIST No. 78 (Alexander Hamilton).

8. *See generally* JEFFREY A. SEGAL & HAROLD J. SPAETH, THE SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED (2002); *see generally HAROLD* J. SPAETH & JEFFREY A. SEGAL, MAJORITY RULE OR MINORITY WILL: ADHERENCE TO PRECEDENT ON THE U.S. SUPREME COURT (1999).

9. Jack Knight & Lee Epstein, *The Norm of Stare Decisis*, 40 AM. J. POL. SCI. 1018 (1996). Howard Gillman, *Separating the Wheat from the Chaff in the Supreme Court Attitudinal Model*, 13 LAW & CTS. 12 (2003), *available at* http://www.law.nyu.edu/lawcourts/pubs/newsletter/index.html; Jack Knight, *Symposium: The Supreme Court and the Attitudinal Model*, 4 LAW & CTS. 5 (1994), *available at* http://www.law.nyu.edu/lawcourts/pubs/newsletter/index.html.

10. *See generally* MARTIN GARBUS, COURTING DISASTER: THE SUPREME COURT AND THE UNMAKING OF AMERICAN LAW (2002); MARK TUSHNET, A COURT DIVIDED: THE REHNQUIST COURT AND THE FUTURE OF CONSTITUTIONAL LAW (2005).

11. *See generally* ALEXANDER M. BICKEL, THE LEAST DANGEROUS BRANCH: THE SUPREME COURT AT THE BAR OF POLITICS (1962); GERALD N. ROSENBERG, THE HOLLOW HOPE: CAN COURTS BRING ABOUT SOCIAL CHANGE? (1991).

12. *See generally* BRADLEY C. CANON & CHARLES A. JOHNSON, JUDICIAL POLICIES: IMPLEMENTATION AND IMPACT (2d ed. 1999).

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exceptions.[13] Still, there are relatively few empirical studies actually testing the impact of courts on policy, and these have usually been limited to Warren Court civil liberties cases.[14] One reason is that data following court decisions are rare, and pre-decision data even rarer, making it difficult or impossible to sort out causal impact directly.

There have thus emerged two competing pictures of court power, one in which the courts lack important policymaking capacity and one in which courts have considerable policymaking independence and capacity.[15] At the same time, scholars have debated the relative power of courts and Congress.[16] Another group of scholars have studied the strategic interaction between courts, Congress, and the President to explain how the different branches interact.[17]

The largest problem faced by both arguments is the attribution of causality. Event studies have an advantage in this regard, in that they help to isolate causal impact very narrowly.[18] So long as the policy can be tied (even indirectly) to the profits of publicly traded firms, the event study approach can be used to isolate the probabilistic policy impact of an event. We can thus separate judicial impact from other events and even differentiate between different stages of the judicial process.

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13. *See, e.g.*, MALCOLM M. FEELEY & EDWARD L. RUBEN, JUDICIAL POLICY MAKING AND THE MODERN STATE: HOW THE COURTS REFORMED AMERICA'S PRISONS (1998) (prison reform); *see generally* MICHAEL W. MCCANN, RIGHTS AT WORK: PAY EQUITY REFORM AND THE POLITICS OF LEGAL MOBILIZATION (1994) (pay equity reform); DOUGLAS S. REED, ON EQUAL TERMS: THE CONSTITUTIONAL POLITICS OF EDUCATIONAL OPPORTUNITY (2001) (school finance reform).

14. Bradley C. Canon, *Courts and Policy: Compliance, Implementation, and Impact*, *in* THE AMERICAN COURTS: A CRITICAL ASSESSMENT 435 (John B. Gates & Charles A. Johnson eds., 1991).

15. *See generally* Bradley C. Canon, *The Supreme Court and Policy Reform: The Hollow Hope Revisited*, *in* LEVERAGING THE LAW: USING THE COURTS TO ACHIEVE SOCIAL CHANGE (David A. Schultz ed., 1998).

16. *See, e.g.*, Mario Bergara, Barak D. Richman & Pablo T. Spiller, *Modeling Supreme Court Strategic Decision Making: The Congressional Constraint*, 28 LEGIS. STUD. Q. 247 (2003); SEGAL & SPAETH, *supra* note 8, at 312-56.

17. John Ferejohn & Charles Shipan, *Congressional Influence on Bureaucracy*, 6 J. L. ECON. & ORG. 1 (1990); Rafael Gely & Pablo T. Spiller, *The Political Economy of Supreme Court Constitutional Decisions: The Case of Roosevelt's Court-Packing Plan*, 12 INT'L REV. L. & ECON. 45 (1992); McNollgast, *Politics and the Courts: A Positive Theory of Judicial Doctrine and the Rule of Law*, 68 S. CAL. L. REV. 1631 (1995); William N. Eskridge, Jr., & John Ferejohn, *Making the Deal Stick: Enforcing the Original Constitutional Structure of Lawmaking in the Modern Regulatory* State, 8 J.L. ECON. & ORG. 165 (1992).

18. The disadvantage is that they do not delve into other aspects of policy impact such as smoking rates, health impact, etc. We thus present this methodology to stand in conjunction with other forms of evidence as to policy impact.

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III. TOBACCO TIMELINE

The battle over tobacco regulation provides an excellent case study to reconsider these conflicting pictures of court power over policy.[19] We now present a brief account of this battle,[20] from which we derive our list of events to test. Interestingly, it even appeared to contemporaneous observers that the tobacco market moved in response to some of these events.

On February 25, 1995, David Kessler, the head of the FDA, released a letter announcing that the FDA was considering regulating tobacco, with cigarettes designated as drug (nicotine) delivery devices. This letter had been kept a secret, known to only to a select few until its release, and was issued without clearance by the White House. Such regulation violated the 80-year-old doctrine (previously reaffirmed by Kessler himself) that the FDA did not have jurisdiction over cigarettes.

After much investigation, the FDA gave official notice of proposed rule-making, now with the explicit approval of President Clinton.[21] The new regulations included the categorization of nicotine as a drug, which would give the FDA authority over the sale, distribution, and use of tobacco products. Other proposals outlawed cigarette vending machines and restricted advertising aimed at younger audiences.[22] The big tobacco companies and an advertising agency immediately filed suit in federal district court to block tobacco regulation, on the grounds that the Federal Food, Drug, and Cosmetic Act (FFDCA) did not extend to tobacco products.[23]

Meanwhile, many analysts speculated that the regulations would be tied up in the courts for years and eventually blocked by Congress, while

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19. Tobacco policy and the FDA might not fit under Rosenberg's narrow definition of significant policy change, as this case only deals with the "functioning of a single bureaucracy" (though this case would meet many of the other parts of the definition). *See* ROSENBERG, *supra* note 11, at 4.

20. For a more detailed account, *see, e.g.,* DAVID KESSLER, A QUESTION OF INTENT: A GREAT AMERICAN BATTLE WITH A DEADLY INDUSTRY (2001).

21. This followed upon weeks of reports that Clinton would let the FDA proceed. *See, e.g., Clinton to Unveil Today Plans for Regulating Tobacco Products*, AFP-Extel New Ltd. AFX News, Aug 10, 1995. To the extent that the proposal was anticipated, we cannot measure impact using an event study, but until the actual announcement, doubts remained and the details were unknown.

22. U.S. Advertising Industry to Sue FDA Over Plan to Restrict Tobacco Ads, AFP-Extel News Ltd. AFX news, Aug. 10, 1995.

23. Coyne Beahm Joins Major Cigarette Manufacturers in Lawsuit Against the FDA. PR Newswire Assoc., Aug 10, 1995.

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congressional Democrats boldly announced that Republicans lacked the support to block this new initiative.[24] The success of the proposed regulation was thus far from clear, but the courts were seen as a major obstacle to the FDA's plans. President Clinton approved the new regulations (61 FR 44396) on August 23, 1996, and they were issued on August 28th, to begin taking effect exactly one year later.[25]

Arguments in the lawsuit, *Coyne Beahm, Inc. v. FDA*,[26] were held on February 10, 1997 before Judge Osteen of the U.S. District Court for the Middle District of North Carolina, who was predicted by most observers to be hostile to the FDA's assertion of jurisdiction.[27] Instead, on April 25, he shocked the tobacco industry—and market traders—by ruling that the FDA could in fact regulate tobacco, although they could not regulate tobacco advertising as proposed.[28] He held that there was no evidence that Congress had intended to withhold authority over tobacco products and that these products fit within the appropriate definitions of "drug" and "device."[29] Tobacco company stock prices fell, losing nearly 5% of their market capitalization, a one-day loss of over six billion dollars to stock traders, trumping the 2% loss after the FDA's notice of regulation (almost 2 billion dollars). Advertising stocks, meanwhile, gained in value.

Both sides appealed their respective losses in *Brown & Williamson Tobacco Corp. v. FDA*.[30] On August 11, 1997, oral arguments were held in the Fourth Circuit before a panel consisting of Judges Michael, Russell, and Hall. Judges Michael and Russell continuously undercut the FDA's argument with frequent, hostile interruptions, leaving little hope that either would vote to sustain the lower court's ruling.[31] But, on February 22, 1998, before he could sign the decision reversing the lower court, Judge Russell died and the expected win for tobacco became less certain, as the two remaining votes were split.[32] This was bad news for

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24. Another speculation was that Clinton would simply negotiate to drop the regulations in exchange for voluntary curbs on advertising and vending-machine sales. *Id.*

25. KESSLER, *supra* note 20, at 353.

26. Coyne Beahm, Inc. v. U.S. Food & Drug Admin., 966 F. Supp. 1374 (M.D.N.C. 1997).

27. Judge Osteen's family owned a tobacco farm, he had represented a tobacco heir as a lawyer, and he had made previous decisions in favor of tobacco growers. KESSLER, *supra* note 20, at 355.

28. KESSLER, *supra* note 20, at 358.

29. *Id.*

30. Brown & Williamson Tobacco Corp. v. Food & Drug Admin., 153 F.3d 155 (4th Cir. 1998).

31. KESSLER, *supra* note 20, at 364-66.

32. *Id.* at 366.

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the tobacco industry (not to mention for Judge Russell), and the market capitalization suffered a one-day loss of $1.8 billion.[33] (It was also bad news for advertising interests in that it raised the possibility of a reversal of their previous victory.)

Initially, it was unclear as to whether Judge Russell's cases would be reheard or decided by the remaining two judges, but new oral arguments were scheduled for June 9, with Judge Widener as his replacement.[34] The Department of Justice predicted that Widener would be unsympathetic to the FDA cause, which turned out to be correct.[35] On August 14, the appellate panel reversed the district court ruling on tobacco and affirming the decision as to advertising, holding that the FDA's interpretation of its statutory jurisdiction could not stand, as Congress had intended to reserve such jurisdiction.[36] This decision had the added effect of strengthening tobacco's hand in the ongoing settlement negotiations. The FDA appealed for rehearing en banc, but this was denied on November 10th.[37] This was the last point at which major doubts remained about the ultimate fate of tobacco regulation.

The FDA then appealed to the Supreme Court.[38] Despite expectations that the court would not take the case,[39] the justices granted certiorari on April 26, 1999, and held oral arguments on December 1st.[40] Kessler himself was sure that the FDA would lose,[41] and he was right—on

33. *See infra* tbl.3 (noting losses and gains of tobacco stocks after various events); *see generally* Roberts, *A Dead Senator Tells No Lies, supra* note 3. One might compare the impact of Judge Russell's death to the impact of Senator Jackson's death. *Id.*

34. KESSLER, *supra* note 20, at 358.

35. *Id.*

36. In *Chevron v. Natural Resource Defense Council*, 367 U.S. 837 (1984), the Supreme Court established that agency interpretations of statutes in the absence of clear congressional intent would be accepted so long as they were reasonable.

37. Brown & Williamson Tobacco Corp. v. Food & Drug Admin., 161 F.3d 764 (4th Cir. 1998), *aff'd*, 529 U.S. 120 (2000).

38. Food & Drug Admin. v. Brown & Williamson Tobacco Corp., 529 U.S. 120 (2000).

39. The Wall Street Journal ran a story that options traders were betting that the Supreme Court would deny cert and thus provide a boon to tobacco stocks. Steven M. Sears, Abstract, *Options Traders Bet High Court Will Decide Against Reviewing Tobacco Ruling on FDA*, WALL ST. J., Apr. 26, 1999, at C24. The decision to grant cert was thus a clear surprise and a potential blow to both sets of stocks.

40. FDA. v. Brown & Williamson, 529 U.S. 120.

41. KESSLER, *supra* note 20, at 379.

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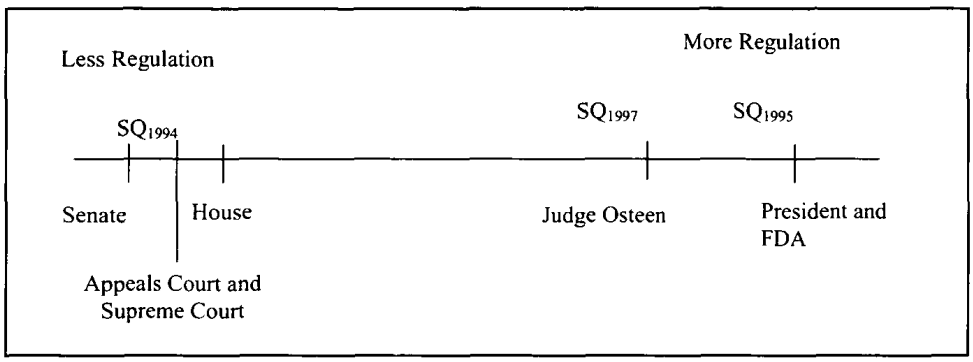
March 21, 2000, the Court affirmed the Fourth Circuit's decision and ruled against the FDA.[42]

IV. IDEALIZED MODEL AND PREDICTIONS

To test how the various actors in the above timeline influenced public policy we present a simple spatial model in Figure 1 that is designed to capture the key strategic considerations between actors. From the idealized model we derive predictions that correspond to each of the following possibilities: congressional dominance, executive dominance, Supreme Court dominance and federal court dominance. Before we offer our predictions, however, we describe the model and how it relates to the timeline laid out above.

FIGURE 1: GAME BETWEEN CONGRESS, EXECUTIVE AND COURTS



In the above idealized game, the Senate, the House, the executive branch (President and FDA), and the various court actors are modeled as having policy preferences over the amount of regulation of tobacco production and advertising.[43] The House and Senate preferred the policy in place at time SQ_{1994}, but when the FDA issued its intent to regulate tobacco and advertising it moved policy to SQ_{1995}, which involved regulation of tobacco advertising and production/sales. In this case, Congress could not, by itself, move policy back to SQ_{1994} because the

42. FDA. v. Brown & Williamson, 529 U.S. 120

43. This simple model is borrowed from Eskridge and Ferejohn, and Spiller and Gely and assumes: 1) information is complete, in that the preferences of the players, the structure of the game, and the rationality of the actors are all common knowledge, 2) players perfectly anticipate the future course of play, 3) that no one is able to commit to future courses of action, 4) and that all the actors in the model prefer that their decisions not be overturned. *See* Eskridge, *supra* note 18; Gely, *supra* note 18.

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President would veto such a move. However, Judge Osteen ruled that the FDA cannot regulate advertising but can regulate tobacco, which effectively moved the status quo to SQ_{t+1}. The status quo created by Judge Osteen is marginally closer to the ideal points of the House and Senate than SQ_{1995}, but the executive branch still preferred SQ_{1997} to SQ_{1994}, because such a policy is closer to its ideal policy than Congress' policy would be. Absent any further court action the status quo would have remained at this point.

However, when the Fourth Circuit and then later the Supreme Court ruled that the FDA does not have the authority to regulate tobacco, the status quo essentially returned to SQ_{1994}, which is the policy preferred by Congress. The return of policy to this point marks the end of this game between Congress, the Executive and the Courts, as neither the FDA nor the President can now move policy from SQ_{1994} as there is no such move that would make the House and Senate better off.

In general, when policy is near the President's ideal location, the House and Senate will be irrelevant because they cannot move policy away from the President. The courts have the ability to move policy along the regulatory dimension without the consent of Congress or the executive.[44] As a result of the inability of Congress to act independently, either the President/FDA or courts will be the decisive players in the above game.

Our model does not imply that the Supreme Court is the only relevant judicial actor. In this model the district and appeals courts are both assumed to have their own policy preferences, and the decisions they make are assumed to have policy impact. As our model makes clear, each time a court acts, it affects the status quo, which then empowers either Congress or the President, and this therefore makes the courts powerful players in the game.

From the above model we derive predictions for the four possible models of policy making—congressional dominance, presidential and FDA dominance, Supreme Court dominance, and courts as decisive player. The predictions are specified in Part VI.A.

V. RESEARCH DESIGN

An event study, rather than focusing on direct policy measures, tests

44. Robert B. Horowitz, *Judicial Review of Regulatory Decisions: The Changing Criteria*, 109 POL. SCI. Q. 133, 133-69 (1994).

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the impact of an event by showing significant changes in relevant stock values immediately following the event and ruling out alternative causes. By focusing on firms whose profits will be affected by the policy changes at stake in a court case, we can use event studies to test the impact of judicial decisions on policy.

We can summarize our argument as follows:

1. Court decisions have a significant and independent impact within public policy making.
2. Public policy affects the profits of firms.
   Therefore, court decisions affect the profits of firms.
3. Stock values represent expected future profits (the Efficient Markets Hypothesis).
   Therefore, court decisions affect stock values.
   Therefore, changes in stock values following court decisions demonstrate an effect on policy.

Our argument rests on the links between court decisions and policy, between policy and the profits of firms, and between profits and stock prices—and thus between court decisions and stock prices. The first link is the hypothesis we test, that judges were decisive actors in the policy making process. The null hypothesis would be that courts did not have a true impact in the policy making process, that Congress would have blocked policy change anyway, making the courts' decisions irrelevant (although apparently causal).

The policy-profits link is the argument that public policy affects the profits of firm, by affecting supply and demand, production and consumption, and the "rules of the game." (Our research design implicitly tests this link as well.) Given this, our hypothesis implies that court decisions that meaningfully affect public policy will affect the profits of firms associated with that area of policy. Specifically, it implies that if court decisions were decisive over tobacco regulatory policy, then court decisions affect the expected profitability of tobacco and tobacco-advertising firms.

The profits-prices link is actually the Efficient Markets Hypothesis (EMH)—that a stock price reflects all relevant and available information as to future profits for that stock, given the decisions of well-informed and rational market traders.[45] Restated, a stock price represents the

45. Different strengths of this hypothesis exist. Event studies only assume relative market efficiency, not absolute efficiency (whether the market as a whole is overpriced or underpriced).

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current value of the expected stream of future profits.[46] The EMH is standard in the finance and economics literature.[47] Given that policy changes will affect future profits, then the EMH means that policy changes (current or future) will affect current prices. The change in current prices serves as a proxy for the expected change in expected profits, and the change in expected profits serves as a proxy for policy change.[48] Combining this with our hypothesis yields the inference that, if court decisions affect policy, even probabilistically, they will affect current prices. If they do not affect policy, then they should not affect current prices.

To accept this approach one must believe that, in the aggregate, market traders use publicly available information to make unbiased (though not perfect) predictions about the effects of policy change on profits and that they take action (buy or sell) on this basis. They have very strong financial incentives to do. Under the EMH, "the market" may make mistakes, but it may not *systematically* do so. So long as the market is not systematically biased, then event study tests are valid. Why should we study the decisions of market traders? Our answer is that market traders

46. One might think to use declared profits directly. Unfortunately, these are not very good indicators of true performance, not least of which because the are highly manipulable, at least in the short run, by the firms themselves. Stock prices, on the other hand, are far less manipulable and are publicly available. *See* Abigail McWilliams & Donald Siegel, *Event Studies in Management Research: Theoretical and Empirical Issues*, 40 ACAD. MGMT. J. 626 (1997).

47. *See, e.g.*, John H. Cochrane, *Volatility Tests and Efficient Markets: A Review Essay*, 27 MONETARY ECON. 463 (1991); Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1971); Eugene F. Fama, *Efficient Capital Markets: II*, 46 J. FIN. 1575 (1991); Michael C. Jensen, *Some Anomalous Evidence Regarding Market Efficiency*, 6 J. FIN. ECON. 95 (1979); J. S. Jordan, *On the Efficient Markets Hypothesis*, 51 ECONOMETRICA 1325 (1983); A. Craig MacKinlay, *Event Studies in Economics and Finance*, 35 J. ECON. LITERATURE 13 (1997).

48. Direct measurement of ultimate policy effects might have the advantage of eliminating the need for a proxy for policy such as profits (greater construct validity). The tradeoff is the passage of time necessary for the observation of policy outcomes, which creates problems of inference (history threats), given that other politically relevant events might have occurred in the interim. Rosenberg seems to suggest that the passage of time is a virtue for his case studies: "Each movement spans a sufficient length of time to allow for variance. Covering decades, the debate over these issues has been affected by political, social, and economic variables." ROSENBERG, *supra* note 11, at 4. Passage of time might be a virtue for tracking policy changes but not for isolating the causes of those changes.

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are "voters on steroids"—they are everything we want the ideal voter to be, with powerful incentives to be informed and behave rationally.[49]

Given the EMH, prices will change as soon as expectations change as to future profits, and thus as soon as expectations change as to future policy. When new information as to future policy and profits is revealed, market traders quickly update their beliefs about future profits and their resulting trading behavior updates the stock price accordingly. While media coverage of the stock market might suggest otherwise, it is simply false that all news affects the market—both economic theory and evidence come down firmly as showing that only meaningful news does so.

To the extent that future events are predictable or expected, their impact will already be included in stock prices, which can make it difficult to identify the impact of events. Price changes will only occur with respect to deviations from market expectations. This implies that only surprising events—events which reveal new information about policy and profits—can be tested. This also implies that the significance of events can only be measured using *changes* in stock prices, not the absolute levels thereof.[50] (To be clear, surprise is not enough: to affect prices, the event or outcome has to have the power to affect profits.)

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49. The reactions of the stock market are thus at least as deserving of our attention as public opinion polls, wherein the incentives for obtaining information and behaving rationally are minimal. Market traders cannot afford to be consistently wrong. To be clear, we are not arguing that market traders individually can do better than political scientists at understanding or predicting the aggregate impact of judicial decisions. Rather, we argue that market traders and industry experts are narrow, but deep experts, specializing in how events will affect the profits of a specific firm (or perhaps an industry) and making use of all information available to them. It is the aggregation of very large numbers of these individual narrowly expert reactions that should lead to reliable estimates of impact. There are some very good examples of investors correctly predicting political events and their consequences. See Gilligan & Krehbiel, *supra* note 1; Complex Rules and Congressional Outcomes: A Study of Energy Tax Legislation, 50 J. of Politics 625-54; Roberts, Redistributive Consequences, *supra* note 1; G. William Schwert, *Using Financial Data to Measure the Effects of Regulation*, 24 J.L. & ECON. 121, 131 (1981).

50. A frequently asked question: What if the prices change after an event but then rebound? Assuming no other events occur or information is revealed in the meantime, then the answer is that such a pattern would be a violation of the EMH, as prices would not be unbiased predictors of future profits. If investors routinely overreact to events (judicial decisions), or if prices always correct for initial reactions, then even marginally clever traders could make a large profit simply by buying or selling in opposition to these trends (skeptics are invited to try this following judicial decisions—using their own money, of course). Furthermore, we control for trends over time statistically using a model of the market. If events always lead to reactions and corrections, then the variance of abnormal returns will be high and we should not find significant results.

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A final implication of the EMH is that to test the impact of an event, one must identify not so much the historical date on which an event occurred, but rather the timeframe of the release of the information that is relevant for future profits—the *event window*. If this occurs very gradually, the event window would have to be large, such that the impact of the event of interest might be drowned out by the noise of other events. Event windows "should be long enough to capture the significant effect of the event, but short enough to exclude confounding effects."[51] That is, since event studies do not specify causal chains, alternative causalities must be completely ruled out. There must be no *confounding events*—other (surprising) events that might have affected prices at the same exact time as the event of interest.[52]

Putting all this together, we can only test an event if it reveals new information, if the timing of the release of this information (the event window) can be identified and isolated, and if this window is not too prolonged. Given these requirements and the nature of the judicial process, judicial decisions are strong candidates for event studies (perhaps even more than many subjects of such studies).[53] Judicial decisions have clear, short event windows: the judges' deliberations are private, the decisions themselves are kept secret until officially announced (leaks are almost unheard of), and the decision dates are part

51. McWilliams & Siegel, *supra* note 46, at 636. McWilliams and Siegel consider event window size "possibly the most crucial research design issue" and argue that it is hard to reconcile the market efficiency assumption itself with long event windows. *Id.* They note that short windows have been shown to be sufficient for capturing impact. *Id.* Lengthy event windows (some use event windows many years in length) would imply that either that the market was incredibly slow at incorporating information or that information was released incredibly slowly. The longer the event window is, of course, the harder it will be to control for confounding events and the more noise in the sample.

52. Should such events occur outside the event window but during the sample period, they will not bias the results, though they may inflate the standard errors. Adding controls for other important events during the estimation period does indeed (trivially) reduce the standard errors in our tests.

53. We thus disagree with the comment that "judicial decisions are not 'events' except to the litigants for whom a decision affects a wealth transfer." Sanjai Bhagat & Roberta Romano, *Event Studies and the Law: Part II, Empirical Studies of Corporate Law* 12 (Yale International Center for Finance, Working Paper No. 00-33; Yale Law School Program for Studies in Law, Economics, and Public Policy, Research Paper No. 260, 2001) (on file with author). First, this is a rather large exception, particularly where the litigants are major political actors with stages in the billions of dollars. Second, the implications of judicial decisions often reach far beyond those present in the courtroom itself.

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of the public record. While the decision itself is a nearly instantaneous event, the case as a whole percolates over a longer period of time—allowing "the market" the time to explore the implications of the possible decisions and then quickly react when the result is clear. The reaction is nearly instantaneous. The analysis and planning need not be.

If judicial decisions decisively affect policy and are surprising, then they should affect stock prices. Finding a significant effect following a decision implies both surprise and impact; finding no significant effect implies either that surprise was lacking (any effects were already incorporated into prices) or that there was no impact (the event did not affect future profits)—but not necessarily both. Thus, the event study methodology only captures the lower bound of policy effects, and the results may very well understate these effects.

The general event study design is not controversial. We add only the hypothesis on the power of court decisions, so that the final implication—that surprising decisions produce market reactions in the predicted direction—allows for a clean test of our hypothesis. Since event study tests are unclouded by the impact of both prior and subsequent events, we can isolate the specific impact of judicial decisions to a far greater degree of confidence than other approaches.

To put all this in the context of our tobacco case study, consider the situation faced by market traders as the regulatory battle developed. Future tobacco-related profits would certainly be affected by the degree to which the FDA would be allowed to regulate tobacco products. The market's baseline predictions are incorporated into current prices at the start. A trader must keep a running tally of the probability that regulatory changes will be made and her profits affected: buying (selling) a tobacco stock is a bet that regulation will not go through (will go through). If an event is relevant to this probability, and thus to expected profits, she will update her tally and trade accordingly—which in the aggregate will affect current stock prices.

If judicial decisions are irrelevant for this calculus, if courts lack independent policymaking capacity, if congressional actions will trump all, then judicial decisions reveal no information about future policy or profits. A rational market trader will ignore the courts and concentrate on Congress. Court decisions, no matter how "shocking," would not affect tobacco prices. If, on the other hand, court decisions can significantly and independently affect tobacco regulatory policy, if judges have the potential to be decisive players in the policymaking game, then judicial decisions are relevant for future profits, and market traders (at least in the aggregate) must act accordingly. As judicial decisions resolve residual uncertainty as to future tobacco policy, prices will change in a

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predictable fashion. Though Hamilton's analysis portrayed the courts as having neither the power of the purse nor the sword, we use the power over the purse to demonstrate the power of the sword.

A. The Statistical Model

While there are some variations between statistical models used to conduct event studies, the basic approach remains the same. There is a "normal" (expected) rate of return (change in total value)[54] to a stock based on 1) the movement of the market as a whole, 2) the sensitivity of this stock to the market as a whole, and 3) the market-independent rate of return for that stock. This defines the standard "market model."[55]

The "abnormal" return is the difference between the normal return we would expect on the basis of the market model and the return we actually observe.[56] (See, for example, Figure 1, showing the normal and abnormal returns surrounding the district court decisions.) The central question is whether the abnormal return is significantly different from zero in the predicted direction. Given that we are interested in a set of stocks, the question is whether there is a significant pattern of such abnormal returns.

We use a generalized least squares (GLS) approach, as this has clear advantages for inference in event studies.[57] The multivariate GLS

54. More precisely, the rate of return is the change in the total value of an investment in a security, here over the period of one day, expressed as a percentage of the total amount invested.

55. One alternative is the Capital Asset Pricing Model (CAPM), but models such as this have not been shown to perform better than the market model and are not recommended by the event study literature. MacKinlay, *supra* note 47, at 19. The market model is "the best available model" for event studies. McWilliams & Siegal, *supra* note 46, at 636.

56. Consider an analogy to an electoral study with a "normal vote," the vote we predict based on prior voting patterns and sensitivity to national vote swings, and an "abnormal vote," the difference from the observed vote to the expected vote. *See* Angbazo & Narayanan, *supra* note 1, at 622; Paul H. Maltesta, *Measuring Abnormal Performance: The Event Parameter Approach Using Joint Generalized Least Squares*, 21 J. FIN. QUANTITATIVE ANALYSIS 27, 35 (1986); McWilliams & Segal, *supra* note 46.

57. The GLS approach explicitly takes into account the cross-sectional correlation of the returns of related firms. The non-contemporaneous covariances must be zero, but the contemporaneous covariances can be nonzero. The disturbances are assumed to be independent and identically distributed within each firm, but can vary across firms (heteroscedasticity). GLS also makes more efficient use of the data and allows for more powerful hypothesis testing.

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regression model is

$$\tilde{R}_{it} = \beta_{i0} + \beta_{im}\tilde{R}_{mt} + \sum_{k=1}^{K} \beta_{ik} D_{kt} + \tilde{\varepsilon}_{it} \quad (1)$$

where $\tilde{R}_{it}$ = rate of return[58] for firm i on day t ($i = 1, 2, \ldots, N$)

$\tilde{R}_{mt}$ = rate of return for the market index on day t

β_{i0} = market-independent rate of return on firm i

β_{im} = sensitivity of firm i's rate of return to changes in the market's rate of return

β_{ik} = sensitivity of firm i's rate of return to event k ($k = 1, 2, \ldots, K$)

D_{kt} = dummy variable only equal to one if event k occurred on day t

$\tilde{\varepsilon}_{it}$ = error term (assumed normally distributed and serially independent) for firm i on day t

On the left is the observed rate of return. On the right, the first and second terms constitute the market model, and the dummy variable interaction captures the abnormal return (the impact of the event). Each firm has its own impact coefficient.

Were we interested in only one particular firm, we could simply test its impact coefficient (size and magnitude), but our focus is on a set of related stocks. There are two standard ways to test the impact of an event on a set of stocks, focusing on *joint impact* and *aggregate impact*. Each is sensitive to somewhat different patterns of impact, and are best used in conjunction with each other.[59]

The joint impact hypothesis is that the event had a significant impact on each individual firm in the sample. This test is non-directional, however, and could be satisfied by large abnormal returns in the "wrong" direction. A directional test of overall impact is the aggregate impact hypothesis, testing whether the net abnormal return summed over the stocks in the sample is significantly different from zero and in the

58. $\tilde{R}_{it} = \left(\left(p(t)\cdot f(t) + d(t)\right)/p(t')\right) - 1$, where $p(t)$ is the last sale price at time t, $f(t)$ is the factor to adjust the price at t (so that the current and previous prices are adjusted to account for any "splits"—increases in the number of outstanding shares maintaining proportional equity among shareholders), $d(t)$ is the dividend amount, $p(t')$ is the last sale price at the time of the last available price before t.

59. An additional test, a portfolio test (which considers an equally-weighted portfolio of the relevant stocks), yields almost exactly the same results.

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predicted direction. Abnormal returns in the "wrong" direction will cancel out those in the "right" direction. Aggregate impact tests the sum of the individual impact coefficients, while the joint test aggregates the set of individual test results into one F-test. While the joint test is better at capturing the breadth of impact across the set of stocks, the aggregate test better captures the magnitude of the impact (while also incorporating the direction of the abnormal returns).

We test these hypotheses on appropriate sets of tobacco and advertising stocks. We now turn to the definition of these stocks and our data.

VI. PREDICTIONS, DATA, AND RESULTS

A. Events and Predictions

The tobacco timeline we sketched in Part III suggests a number of key events to study along the road to the Supreme Court's final blow to the FDA's attempts to regulate tobacco. We look at the effects of seven of these on stock returns, concentrating, of course, on those that were surprising. For each, we make a pair of directional predictions and rule out confounding events. To define the appropriate event windows and to rule out confounding events, we performed Lexis searches around the event dates for articles or reports mentioning tobacco, the FDA, or advertising.[60] We are confident that none of our inferences are undercut by confounding events.

In the list below, we indicate the events we study as well as our (positive or negative) predictions for impact (based on the previous discussion of the tobacco regulatory battle and the idealized game between the Executive, Congress, and the courts):

60. We do not cite individually the multitudes of news articles on tobacco available for each event. There is generally no industry-wide news about advertising.

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	CONGRESSIONAL DOMINANCE[61]	EXECUTIVE DOMINANCE[62]	SUPREME COURT DOMINANCE	COURT SYSTEM DOMINANCE
EVENT	PREDICTIONS FOR TOBACCO/ADVERTISING			
1. FDA notice	-/-	-/-	0/0	0/0
2. District court decision	-/-	0/0	0/0	-/-
3. Death of Judge Russell	0/0	0/0	0/0	-/-
4. Fourth Circuit panel reverses	+/+	0/0	0/0	+/+
5. En banc review denied	0/0	0/0	0/0	+/+
6. Supreme Court grants cert	0/0	0/0	-/-	-/-
7. Supreme Court affirms	0/0	0/0	+/+	+/+

Our event windows are single days for the tests on the tobacco stocks and two days for advertising stocks (given the less direct connection to the court decisions). We are focusing on the instantaneous reactions of the market to news as to policy changes. The chance that there exist unnoticed confounding events on these exact days is vanishingly small. Furthermore, our predictions vary in sign by event and by stock.

The key events—those that were clearly surprising and thus should have strongly affected calculations of the probability that tobacco regulation would stand—are the FDA notice, the district court decision, the death of Judge Russell, and the denial of en banc review (while we consider these the key tests, we present the results for all seven events). The reversal by the Second Circuit court panel was not much of a surprise given the long path from the original panel hearing to the replacement of Judge Russell to the subsequent oral arguments. Furthermore, close

61. Congressional dominance can only be tested under unified government. Under divided government, as in this case, Congress cannot change the status quo and the courts act to reestablish the status quo.

62. Executive dominance implies that Congress cannot overturn decisions of these actors.

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attention to the Supreme Court over the period preceding its decision revealed that it would likely affirm the circuit court, and it did. It was somewhat surprising that it granted certiorari, however.

B. Data

We focus primarily on tobacco stocks and secondarily on advertising stocks. We also look more closely at the five major tobacco companies.[63] The market's rate of return is taken from the standard source, the Center for Research in Securities Prices' (CRSP)[64] equally-weighted index of all NYSE/AMEX stocks on the given day.[65] The list of tobacco and advertising stocks comes from the U.S. Department of Labor's Standard Industrial Classification (SIC) codes, with minor exceptions.[66] Tables 1A and 1B show which stocks were included for

63. These are Phillip Morris, British American Tobacco, R.J. Reynolds, Lorillard, and Liggett.

64. This is the standard data; citations to the CRSP data number in the thousands.

65. While it is possible to use an index with size-weighted returns with little change in the results, the equally-weighted index is the recommended choice. *See* Stephen Brown & Jerome B. Warner, *Using Daily Stock Returns: The Case of Event Studies*, 14 J. FIN. ECON. 3 (1985); Chuck C. Y. Kwok & LeRoy D. Brooks, *Examining Event Study Methodologies in Foreign Exchange Markets*, 21 J. INT'L BUS. STUD. 189, 219 (1990). When the sample contains firms of only one size (which is not the case here), the equally-weighted index can bias against finding significant results using *t*-tests. *See* S. P. Kothari & Charles E. Wasley, *Measuring Security Price Performance in Size-Clustered Samples*, 64 ACCT. REV. 228, 247 (1989); G. William Schwert, *Size and Stock Returns and Other Empirical Regularities*, 12 J. FIN. ECON. 3 (1989).

66. First, we selected all of the stocks from the CRSP database with "tobacco" SIC codes (those with "tobacco" in the description) that had complete trading data for at least one of our event windows. This yielded 16 stocks from major group 21 (Tobacco Products), three stocks with SIC code 5159 (Farm-product raw materials) that were tobacco-related, and one stock with SIC code 5194 (Tobacco and Tobacco Products). (The two exceptions are Loews Corp., whose subsidiary is Lorillard, and Vector Group, whose subsidiary, is Liggett. Because both Lorillard and Liggett are named in *Beahm v. FDA* and *Brown & Williamson v. FDA*, and are well known to be two of the major tobacco companies in the U.S., we searched out and added each of these specifically. They were not caught in our initial SIC sweep given their status as holding companies with diverse subsidiaries. The 26 advertising stocks were chosen in similar fashion (code 731 is Advertising). We then omitted two—Clear Channel and Westwood—as tobacco advertising is not allowed on television or radio. Note that Coyne Beahm, despite being a named party to the district court case, is not in the CRSP data, as it is a partnership, not a publicly held firm. For an overview and listing of SIC codes, *see* U.S. Dept. of Labor, Occupational Safety & Health Admin., *available at* http://www.osha.gov/pls/imis/sicsearch.html.

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which windows (stocks were only included in a given window if they existed during the year[67] surrounding the event).

C. Results

Tables 2A and 2B present, respectively, the tobacco and advertising results. Table 3 presents the total gains and losses to the market capitalization on the event days (not controlling for the normal returns). We give results for the full sets of stocks as well as for the five biggest tobacco companies separately.[68]

All effects for all events were in the predicted directions, though not equally significant. Overall, the key results for both tobacco and advertising stocks were the FDA notice, the district court ruling, the death of Judge Russell, and the en banc denial (events 1, 2, 3, and 5). Not surprisingly, the advertising stocks, none of which are purely tobacco driven, show a lesser effect than the tobacco stocks themselves, even with longer event windows. In context, the most important result is the dramatic impact of the most surprising event in our sample, the district court decision upholding tobacco regulation.

1. Event 1: FDA Notice

The 2% loss to the market cap following the FDA notice was significant. We show a negative impact on the set of tobacco stocks in the aggregate test, with a larger and more significant impact on the major tobacco companies using either test.[69] The effect on the advertising stocks is weaker.

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67. This period ran from either January to December or July to June depending on which span best centered the event. The results should be robust so long as the span is representative of the variances of the time series. Events 4 and 5 fall in the same time period and are run in the same regression (results are unchanged if they are run individually); other events are run individually.

68. We also confirmed that our major results were not driven by outliers using a non-parametric test of sign percentages. *See* Angbazo & Narayanan, *supra* note 1, at 623-34; MacKinlay, *supra* note 47, at 32; McWilliams, *supra* note 46, at 635. This tests whether the proportion of positive to negative abnormal returns exceeds that to be expected from the market model. If the event truly has no effect, then on average half the firms should have positive abnormal returns and half negative. The non-parametric test statistic is given by $(G - pN)/\sqrt{pN(1-p)}$, where G is the number of negative sample coefficients, N is the total number of sample coefficients, and p is the probability of a negative estimate under the null hypothesis (.05).

69. Note that the FDA's proposals meant that the information they used to determine the status of nicotine as a drug would be released and thus provide useful evidence for the numerous law suits filed against the industry. Thus, we are perhaps over-estimating the effects of the FDA's proposed rule-making itself on asset values.

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2. Event 2: The District Court Decision

Figure 1 shows the abnormal returns averaged over the big five tobacco companies around the district court ruling (recall that the market cap for the entire industry dropped six billion dollars). The district court decision has a clearly significant (negative) effect regardless of the test used. (We present the full set of GLS coefficients used to generate these tests in Table 4.[70]) The advertising stocks, meanwhile, show a significant positive effect (as predicted).

3. Event 3: Judge Russell Dies

The impact of Judge Russell's death is statistically weaker than the results above. 88% of the tobacco stocks (and all of the five major tobacco stocks) dropped on the event day. The joint impact on the advertising stocks is significant.

4. Event 4: The Fourth Circuit Reverses

No significant surprises are shown.

5. Event 5: The Fourth Circuit Denies En Banc Review

Regardless of the test used, the en banc denial had a significant positive effect (the market capitalization climbed $3.5 billion, or 2.2%)—the strongest (both joint tests and the aggregate test on the five main tobacco stocks) are significant at .001. The joint test for the advertising stocks shows a significant effect at .03.

6. Event 6: The Supreme Court Grants Certiorari

There is a significant result for the joint impacts on the five main tobacco stocks and on the advertising stocks.

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70. We also ran an ordinary least squares regression to explain the sizes of the abnormal returns of the tobacco stocks, predicting correctly that being one of the "big five" and being a pure tobacco company (as compared to a conglomerate) would mean a larger impact due to the event. We had the necessary data for only 12 firms. The respective coefficients (*p*-values in parentheses) for "big five" and "pure tobacco" respectively were -.0248 (.03) and -.0287 (.05), with a constant of .0000 (.5).

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7. *Event 7: The Supreme Court Affirms*

The joint tests show significant effects on the tobacco stocks.

VII. DISCUSSION

If the Efficient Markets Hypothesis is accepted, if the event windows are properly designed, and if confounding events are ruled out, then the observed reactions of market traders represent anticipated policy effects due to court decisions, which must in equilibrium represent unbiased predictions of actual policy effects. What we would emphasize in the results is that we have tested a complex pattern of predictions (positive for some stocks and negative for others) and many of them yield highly significant results.[71] Our conclusions do not rest on any one test, but rather a pattern of results, making the overarching test for judicial impact a powerful one.[72] On the other hand, even if the Efficient Markets Hypothesis is not accepted in full, despite the evidence for it, our results still demonstrate the rather substantial impact of individual judges over stock prices.

The test results suggest the following. The sharp turnaround in FDA policy over tobacco jurisdiction did come as a shock, despite the warning signs that this was in the works. Until the actual notice was given, there was always the chance that the Clinton administration or Congress would stop the FDA. Even once the decision was made, it was likely the courts would block the FDA, which made Judge Osteen's decision a shock. The test results suggest the power of even a lone district court judge to affect public policy, as Judge Osteen's decision clearly had the potential to be decisive as to the future of tobacco regulation. The information revealed over the next few months would reduce the probability of such regulation considerably. The tobacco companies might have had reasonable hopes of winning on appeal, but such hopes would be restrained by the fear that the Supreme Court's rules for statutory interpretation might justify the FDA's decision. Meanwhile, the chance that advertising regulation would be reinstated was much smaller than the chances that tobacco regulation would go through. The reversal by the appellate panel gave confidence to tobacco investors, while not coming as a particular shock given the composition of the panel and the circuit as a whole. The en banc denial gave a

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71. Thus, our results could not be explained by the aphorism that, to the stock market, "all news is bad."

72. Trochim, *supra* note 2.

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semblance of finality to the verdict. At this point, the granting of certiorari by the Supreme Court was somewhat of a surprise to tobacco investors, given that the Court tends to reverse far more decisions than it affirms. The Supreme Court's ultimate decision to affirm was only the final nail in the FDA's regulatory coffin (and not too surprising at the time of the final decisions itself).

VIII. CONCLUSION

The simple spatial model we introduced in Part IV provided us with a way to test a variety of theories about policymaking. Our primary conclusion is that the courts did wield decisive power over tobacco regulation and their decisions had a major impact on the probability that tobacco would ultimately be regulated by the FDA. Investors were clearly not confident that Congress would block the FDA, that the FDA would cave in, or that President Clinton would call the FDA off—so that when the courts acted, their decisions significantly changed the policymaking calculus. In fact, our results show that the lower bound on the impact of the district court decision is greater than that of any other event in our sample. Hamilton may be right that the judicial branch lacks force and will, having merely "judgment"—but it would be foolish to dismiss such judgments when $6 billion dollars can go up in smoke in a single day due to the decision of a single district court judge. Whether or not the judiciary is the *least* dangerous branch, it is indeed a "dangerous" branch within the policymaking process. Our results also suggest that the event study method is a viable method for sorting out causality and judicial impact more broadly.

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TABLE 1A: LIST OF TOBACCO STOCKS INCLUDED IN EACH EVENT WINDOW

Tobacco Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Philip Morris Inc.*	X	X	X	X	X	X	X
Loews Corp. (Lorillard)*	X	X	X	X	X	X	X
Vector Group (Liggett)*	X	X	X	X	X	X	X
RJ Reynolds Tobacco*	X	X	X	X	X		X
British American Tobacco*	X	X	X	X	X	X	X
Standard Comm. Corp.	X	X	X	X	X	X	X
Dimon Inc.	X	X	X	X	X	X	X
Universal Corp.	X	X	X	X	X	X	X
Savia Sa De CV	X	X	X	X	X	X	X
UST Inc.	X	X	X	X	X	X	X
Culbro Corp.	X						

* Indicates the five biggest tobacco companies.

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TABLE 1A: LIST OF TOBACCO STOCKS INCLUDED IN EACH EVENT WINDOW CON'T

Tobacco Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Pacific Greystone Stone		X					
Caribbean Cigar Co.		X	X				
Consolidated Cigar Hldgs.		X	X	X			
Swedish Match Co.		X	X	X	X	X	X
Amcon Distributing Co.		X	X	X	X	X	X
General Cigar Hldgs. Co.			X	X	X	X	
Gallaher Group PLC			X	X	X	X	X
Swisher Int. Group Inc.			X	X	X		
Premium Cigars Inc.				X	X		
Imperial Tobacco							X
Star Scientific							

* Indicates the five biggest tobacco companies.

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TABLE 1B: LIST OF ADVERTISING STOCKS INCLUDED IN EACH EVENT WINDOW

Advertising Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Advanced Promotion Inc.	X						
Metrovision N. Amer. Inc.	X						
Mickelberry Comm. Inc.	X						
Site Holdings Inc.	X						
U.S. Delivery Systs. Inc.	X	X					
True North Comm. Inc.	X	X	X	X	X	X	X
Grey Global Group Inc.	X	X	X	X	X	X	X
Unico Inc.	X	X					
W.P.P Group PLC	X	X	X	X	X	X	X
Greenstone Roberts Inc.	X	X	X				
Interpublic Group Inc.	X	X	X	X	X	X	X

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TABLE 1B: LIST OF ADVERTISING STOCKS INCLUDED IN EACH EVENT WINDOW

Advertising Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Omnicom Group Inc.	X	X	X	X	X	X	X
Bull Run Corp.	X	X	X	X	X	X	X
Cordiant Comm. PLC	X	X	X	X	X	X	X
Catalina Marketing Corp.	X	X	X	X	X	X	X
Ackerley Group Inc.	X	X	X	X	X	X	X
Valassis Comm. Inc.	X	X	X	X	X	X	X
Ariely Advertising LTD		X					
Alternate Marketing Inc.		X	X	X	X	X	X
Food Court Entmt. Inc.		X					
Digital Generation Inc.		X	X	X	X	X	X
Universal Outdoor Inc.		X					

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TABLE 1B: LIST OF ADVERTISING STOCKS INCLUDED IN EACH EVENT WINDOW

Advertising Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Lamar Advertising Co.		X	X	X	X	X	X
Leapnet Inc.		X	X	X	X	X	X
M.D.C. Corp.		X	X	X	X	X	X
Outdoor Systems Inc.		X	X	X	X	X	
Advantage Media Group	X	X	X	X	X	X	
Healthworld Corp.				X	X	X	
Saatchi & Saatchi PLC				X	X	X	X
Young and Rubicam, Inc.						X	X
Atplan Inc.							X
The Globe Com.							X
Genesisintermedia, Inc.							X

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TABLE 1B: LIST OF ADVERTISING STOCKS INCLUDED IN EACH EVENT WINDOW

Advertising Stocks	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Obie Media Corp			X	X	X	X	X
TMP Worldwide Inc			X	X	X	X	X
Doubleclick, Inc						X	X
24 7 Real Media							X
Verticalnet, Inc							X
RH Donnelley Corp						X	X
Modem Media Inc							X

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HYPOTHESIS TESTS FOR TOBACCO STOCKS

	ALL TOBACCO STOCKS		THE FIVE MAJOR TOBACCO STOCKS	
Event	**Aggregate Impact**	**Joint Impact**	**Aggregate Impact**	**Joint Impact**
1. FDA Notice	-1.51* (.07)	12.98 (.15)	-1.84** (.03)	8.40* (.07)
2. District Court Decision	-1.58* (.06)	27.37** (.03)	-2.10** (.02)	19.30*** (.01)
3. Judge Russell Dies	-1.32* (.09)	6.17 (.99)	-0.84 (.20)	1.61 (.45)
4. 4th Circuit Reverses	.21 (.42)	13.22 (.72)	0.28 (0.39)	1.75 (.88)
5. En Banc Denied	1.49* (.07)	30.56*** (.01)	2.93*** (.01)	18.6*** (.01)
6. Supreme Court Grants Cert	-0.95 (.17)	18.54 (.14)	-0.69 (.24)	9.39** (.05)
7. Supreme Court Affirms	0.62 (.26)	23.41** (.05)	0.16 (.48)	14.17*** (.01)

* significant at 10%level ** significant at 5% level ***significant at 1% level.

Notes: Key surprising events are in bold. The coefficients for the aggregate test are the *z*-stats and for the joint test are the χ^2-values. The *p*-values in parenthesis (one-tailed for the directional predictions of the aggregate tests and two-tailed for the joint tests). All event windows are single days.

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TABLE 2B: HYPOTHESIS TESTS FOR ADVERTISING STOCKS

Event	Aggregate Impact	Joint Impact
1. FDA Notice	-0.59 (0.28)	8.85 (.88)
2. Dist Court Decision	2.28*** (.01)	43.72*** (.001)
3. Judge Russell Dies	-0.38 (.35)	83.77*** (.01)
4. 4th Circuit Reverses	.10 (.46)	11.35 (.94)
5. En Banc Denied	.28 (.38)	34.88** (.03)
6. Sup Court Grants Cert	-1.00 (.16)	31.61* (.07)
7. Sup Court Affirms	.10 (.46)	26.80 (.47)

* significant at 10%level ** significant at 5% level ***significant at 1% level

Notes: Key surprising events are in bold. The coefficients for the aggregate test are the *z*-stats and for the joint test is the χ^2-values. The *p*-values in parenthesis (one-tailed for the directional predictions of the aggregate tests and two-tailed for the joint tests). The event window for event 1 goes from five trading days before the event to one day after. The event window for event 2 goes from the day of the event to 4 days after. Other event windows are single days. Two stocks were dropped for event 1 given missing data.

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TABLE 3: LOSSES AND GAINS OF TOBACCO STOCKS

Event	Dollars[A]	% of Market Capitalization[B]
1. FDA Notice	- $1,801,050,000	- 2.1%
2. Dist Court Decision	- $6,134,796,000	- 4.7%
3. Judge Russell Dies	-$1,810,155,000	-1.3%
5. En Banc Denied	$3,550,530,000	2.2%

A Using all tobacco stocks included in the event window, as listed in Table 1A, this is calculated as [(number of shares outstanding on day *t*) x (price on day *t*)] – [(number of shares outstanding on day *t*-1) x (price on day *t*-1)], where *t* is the event day.

B This is calculated by dividing the figure in the Dollars column by the summed market capitalization of the stocks in each event window.

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TABLE 4: INDIVIDUAL GLS COEFFICIENTS FOR EVENT 2
(DISTRICT COURT RULING IN *BEAHM V. FDA*)

Firm Name	Firm Constant β_{i0}	Firm Sensitivity β_{im}	Firm Event Coefficient β_{ik}
Philip Morris	-0.0013 (0.0013)	2.4709*** (0.3205)	-0.0399** (0.0201)
Loews Corp. (Lorillard)	-0.0009 (0.0009)	2.0701*** (0.2207)	-0.0071 (0.0138)
Vector Group (Liggett)	0.0024 (0.0031)	-0.5011 (0.7470)	-0.0301 (0.0468)
RJ Reynolds	-0.0009 (0.0013)	2.1717*** (0.3192)	-0.0774*** (0.0200)
British American Tobacco	-0.0002 (0.0011)	1.2901*** (0.2656)	0.0017 (0.0166)
Standard Comm. Corp.	0.0009 (0.0018)	0.5476 (0.4348)	0.0013 (0.0272)
Dimon Inc.	-0.0009 (0.0013)	1.9086*** (0.3208)	-0.0271* (0.0201)
Universal Corp.	0.0006 (0.0011)	0.9261*** (0.2757)	-0.0141 (0.0173)
Savia Sa De CV	-0.0012 (0.0010)	1.4209*** (0.2480)	0.0069 (0.0155)
UST Inc.	-0.0018* (0.0013)	1.8330*** (0.3031)	0.0140 (0.0190)
Pacific Greystone Corp.	0.0007 (0.0015)	1.7250*** (0.3713)	-0.0028 (0.0233)
Caribbean Cigar Co.	-0.0030 (0.0026)	0.4829 (0.6282)	-0.0427 (0.0393)
Consolidated Cigar Hldgs.	0.0000 (0.0014)	1.0978*** (0.3359)	-0.0126 (0.0210)
Swedish Match Co.	-0.0003 (0.0009)	0.5813*** (0.2074)	-0.0051 (0.0130)
Amcon Distributing	0.0054 (0.0058)	0.1052 (1.4087)	-0.0049 (0.0882)
Wald - χ^2	434.70*** Observations 3795 (16 stocks x 253 days)		

* Significant at 10% ** significant at 5% *** significant at 1% (standard errors in parentheses).

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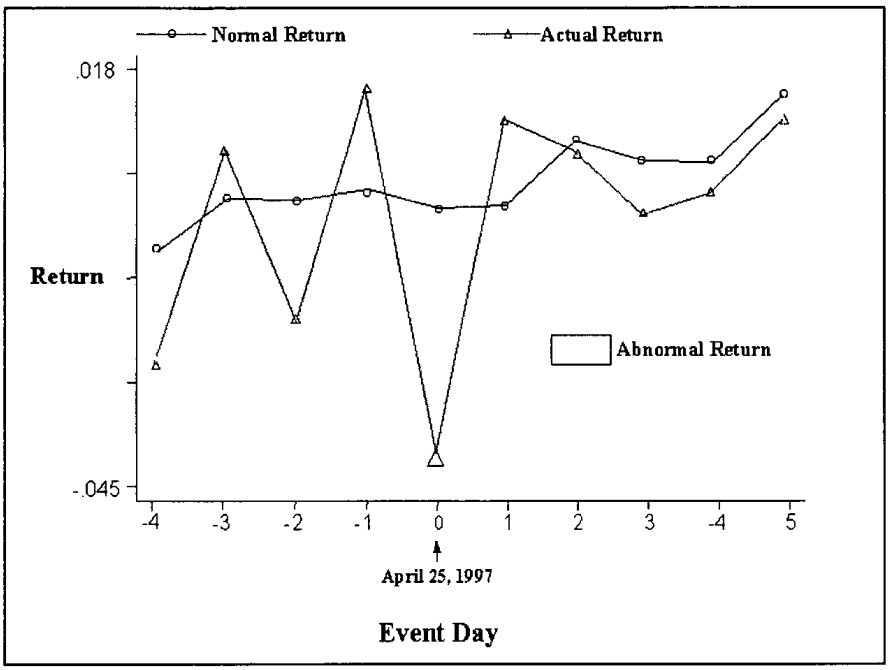
FIGURE 1: EVENT 2
AVERAGED NORMAL AND ACTUAL RETURNS FOR THE FIVE MAJOR TOBACCO COMPANIES AROUND THE *BEAHM V. FDA* DISTRICT COURT RULING



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