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Can the Dark Arts of the Dismal Science Shed Light on the Empirical Reality of Civil Procedure?

Jonah B. Gelbach

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CAN THE DARK ARTS OF THE DISMAL SCIENCE SHED LIGHT ON THE EMPIRICAL REALITY OF CIVIL PROCEDURE?

Jonah B. Gelbach*

ABSTRACT

Litigation involves human beings, who are likely to be motivated to pursue their interests as they understand them. Empirical civil procedure researchers must take this fact seriously if we are to adequately characterize the effects of policy changes. To make this point concrete, I first step outside the realm of civil procedure and illustrate the importance of accounting for human agency in empirical research. I use the canonical problem of demand estimation in economics to show how what I call the “urn approach” to empirical work fails to uncover important empirical relationships by disregarding behavioral aspects of human action.

*I then show how these concerns permeate a prominent empirical issue in contemporary civil procedure debates: the changes in pleading policy wrought by *Bell Atlantic, Corp. v. Twombly* and *Ashcroft v. Iqbal*. Revisiting my own earlier work, I embed the question of how changes in the pleading standard will affect case outcomes in a broad behavioral framework that takes parties’ agency seriously. In the process, I address recent critiques, both of the very idea of using behavioral frameworks to understand civil litigation policy changes, and of certain aspects of my use of real-world litigation data collected by the Federal Judicial Center. As I show, these criticisms are straightforwardly refuted on the merits.*

*The alternative to taking seriously the behavioral context created by the civil justice system—what has occurred so far in too much of the debate over *Twombly* and *Iqbal*—is, as one critic of early 20th-century empirical research by legal scholars once put it, “a mindless amassing of statistics without reference to any guiding theory whatsoever.” To do better, we will need to take behavior seriously in studying civil litigation.*

INTRODUCTION.....	225
I. TWOMBLY AND IQBAL: WHY THEY MATTER, AND WHY EMPIRICAL RESEARCH CONCERNING THEIR EFFECTS PROVIDES A GOOD LENS	229

* Associate Professor, University of Pennsylvania Law School. I thank Steve Burbank, Joe Cecil, David Freeman Engstrom, Joshua Fischman, Jacob Goldin, William Hubbard, Jon Klick, Bruce Kobayashi, Zach Liscow, Alex Reinert, David Schleicher, Judge Anthony Scirica, Cathie Struve, Margaret Williams, and Tobias Barrington Wolff for helpful discussions.

224	A. The Grant Rate-Based Empirical Literature on Twombly <i>STANFORD JOURNAL OF COMPLEX LITIGATION</i>	IV, 232
	B. A Brief Description of Locking the Doors.....	234
	II. BEHAVIORALLY INDIFFERENT EMPIRICS HAS URNED ITS RETIREMENT	236
	A. Behavioral Challenges Illustrated: Estimating a Demand Function	239
	B. The Absence of Party Selection as a Behavioral Restriction	246
	III. A CASE STUDY: THE <i>LOCKING THE DOORS</i> BEHAVIORAL FRAMEWORK AND EMPIRICAL IMPLEMENTATION.....	250
	A. Potential Outcomes	250
	B. Using an Economic Model as Behavioral Framework Eliminates the Possibility of Some Dispute Types, But Not Enough to Make Grant Rate Differences Informative.....	255
	C. Mapping Potential Outcomes into a Measure of Negatively Affected Cases	261
	D. Empirical Implementation.....	266
	E. Empirical Evidence: Estimates of Alternative Lower Bounds	267
	F. Robustness of the Empirical Lower Bound Results	269
	1. Setting fire to straw men: Priest & Klein and the 50- percent hypothesis.....	270
	2. Are there major problems with the model’s behavioral assumptions?.....	273
	a. Other Rule 12(b) motions.....	273
	b. Leave to amend.....	274
	c. Multiple claims.....	274
	d. Multiple parties	275
	3. The Proper Unit of Analysis: Claims, Cases, or Plaintiffs?.....	276
	a. The “wrong denominator” problem	277
	b. A feasible alternative version of Engstrom’s approach yields results that buttress the qualitative conclusions in <i>Locking the Doors</i>	281
	G. Potential Confounding Factors, and a Previously Unnoted Data Issue.....	284
	1. Ruling Out Confounding Factors.....	285
	2. “Type Z” Disputes	286
	CONCLUSION.....	288
	APPENDIX: A ROUGH GUIDE TO THE EMPIRICAL IMPORTANCE OF TYPE Z DISPUTES.....	290

Spring 2014] *DARK ARTS AND EMPIRICAL REALITY* Claims abound in 215
 civil procedure arena:

- “[T]he success of judicial supervision in checking discovery abuse has been on the modest side.”¹
- “[A]mendments to the Federal Rules and changes in various judicial practices have been designed, for more than a quarter century, to contain or control discovery and enhance the power of judges to manage cases throughout the pretrial process. . . . [S]ome believe [these developments have] enabled defense interests to employ the procedural system to avoid, or at least delay, reaching an adjudication of a dispute’s merits.”²
- “All fair observers acknowledge the skyrocketing cost of discovery.”³
- “[E]mpirical research on discovery conducted over thirty years has not demonstrated that it has been a problem in more than a small slice of litigation.”⁴

Yet empirical research in civil procedure is vulnerable to a charge directed at the field of empirical legal studies more generally, that it sometimes involves “a mindless amassing of statistics without reference to any guiding theory whatsoever.”⁵ This quotation is drawn from an important recent paper by Joshua B. Fischman, which advocates *Reuniting ‘Is’ and ‘Ought’ in Empirical Legal Scholarship*.⁶ As Fischman sees things, “[t]he fundamental problem is that empirical legal methodology lacks frameworks for connecting empirical findings with normative conclusions.”⁷ Concentrating his fire on studies of judicial citation counts, reversal rates, and interjudge disparities, Fischman argues that such studies “conflate the measureable with the good, justifying policy proposals on the basis of the measureable objects.”⁸ In the present Article, I both apply and build on Fischman’s critique with respect to one important strand of research in civil procedure—pleading standards and the effects of *Bell*

1. *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 559 (2007).

2. Arthur R. Miller, *From Conley to Twombly to Iqbal: A Double Play on the Federal Rules of Civil Procedure*, 60 *DUKE L.J.* 1, 12 (2010).

3. Mark Herrmann, James M. Beck & Stephen B. Burbank, Debate Opening Statement, *Plausible Denial: Should Congress Overrule Twombly and Iqbal?*, 158 *U. PA. L. REV. PENNUMBRA* 141, 146 (2009), available at <http://www.pennlawreview.com/debates/index.php?id=24>.

4. *Id.* at 151 (rebuttal of Burbank).

5. Joshua B. Fischman, *Reuniting ‘Is’ and ‘Ought’ in Empirical Legal Scholarship*, 162 *U. PA. L. REV.* 117, 119 (2013) (quoting S.N. Verdun-Jones, *Cook, Oliphant, and Yntema: The Scientific Wing of American Legal Realism*, 5 *DALHOUSIE L.J.* 3, 43 (1979)).

6. Fischman, *supra* note 5, at 119 (2013).

7. *Id.* at 154.

8. *Id.* at 121.

First, the Supreme Court's decisions in *Twombly* and *Iqbal* touched off a firestorm of controversy, much of it centered on empirical questions such as whether *Twombly* and *Iqbal* closed off access to court by making it harder to get to discovery. Whether for better or worse, that was the *point* of *Twombly*, at least with respect to antitrust cases.¹¹ Policy makers and stakeholders in the civil justice system care about the effects of *Twombly* and *Iqbal*—and they should. Second, pleading standard changes provide an excellent field for understanding how researchers might meet Fischman's entreaty to "be more explicit about how they are combining objective findings with contestable assumptions in order to reach normative conclusions."¹² Contemporary applied economics is all about making such combinations in systematic ways, and there are some straightforward ways in which the study of *Twombly* and *Iqbal*'s empirical effects could be improved using methodological insights from this field.

Third, most empirical studies of whether *Twombly* and *Iqbal* have reduced plaintiffs' access to court have fallen into just the trap that Fischman describes. As I shall discuss, these studies focus primarily on how one or another measure of the Rule 12(b)(6) grant rate has changed. Unfortunately, measuring this outcome does not answer the question authors seem to think it does—in Fischman's terms, the measurable object is disconnected from what even those measuring it see as the policy-relevant one. Much ink has spilled in debates over such details as:

- whether it is acceptable to use electronic data bases such as Westlaw, or whether cases studied must be drawn directly from administrative sources (such as PACER-hosted docket reports or a data base to which only FJC authors have had access);¹³

9. 550 U.S. 544 (2007).

10. 556 U.S. 662 (2009).

11. *Id.* at 559 ("It is no answer to say that a claim just shy of a plausible entitlement to relief can, if groundless, be weeded out early in the discovery process through careful case management, . . . given the common lament that the success of judicial supervision in checking discovery abuse has been on the modest side. . . . the threat of discovery expense will push cost-conscious defendants to settle even anemic cases before reaching those proceedings.") (citations and quotation marks omitted).

12. Fischman, *supra* note 5, at 154.

13. See, e.g., Joe S. Cecil, *Of Waves and Water: A Response to Comments on the FJC Study Motions to Dismiss for Failure to State a Claim after Iqbal* (2012) [hereinafter CECIL, *Waves*], available at <http://ssrn.com/abstract=2026103>. This paper also critiques work by several other authors: Raymond H. Brescia, *The Iqbal Effect: The Impact of New Pleading Standards in Employment and Housing Discrimination Litigation*, 100 KY. L.J. 235 (2012); Patricia Hatamyar Moore, *The Tao of Pleading: Do Twombly and Iqbal Matter Empirically?*, 59 AM. U. L. REV. 553 (2010) [hereinafter: Moore, *Tao of Pleading*]; Lonny Hoffman, *Twombly and Iqbal's Measure: An Assessment of the Federal Judicial Center's Study of Motions to Dismiss*, 2012 FED. CTS. L. REV. 1 (2012); Patricia Hatamyar Moore, *An Updated Quantitative Study of Iqbal's Impact on 12(b)(6) Motions*, 46 U. RICH. L. REV. 603

- whether *pro se* cases should be included;¹⁴
- whether prisoner cases should be included,¹⁵
- and how one should account for the possibility that Rule 12(b)(6) motions might be granted with leave to amend.¹⁶

But those engaged in these arguments about the trees have sped right past the forest. As I have previously argued, rational parties can be expected to change their litigation behavior in response to perceived changes in the pleading standard.¹⁷ One consequence is that changes in the grant rate by themselves generally tell us nothing at all about how judicial behavior has changed as a result of *Twombly* and *Iqbal*.¹⁸

Another important consequence of party selection is that changes in judicial behavior aren't the only factor of normative interest, because party selection can have direct effects on litigation outcomes. For example, an elevated pleading standard might cause a defendant to file a Rule 12(b)(6) motion that she wouldn't have filed under the more liberal *Conley v. Gibson*¹⁹ standard. If such a motion is granted, the plaintiff will lose at the pleading stage under *Twombly/Iqbal*, but not under *Conley*. That is an effect we should want to measure in order to understand the full normatively relevant scope of *Twombly* and *Iqbal*'s effects.

(2012) [hereinafter Moore, *Updated Quantitative Study*]. Beyond those stated in the text herein, I take no positions on either these studies or Cecil's criticisms of them. See also, e.g., Cecil, *Waves*, *supra* at 3-4 (acknowledging that the FJC authors missed some motions and promising to "reanalyze the data to determine what effect this has on our original findings"); Cecil, *Waves*, *supra* at 27-31 (arguing that electronic databases likely cause biases); David Freeman Engstrom, *The Twiqbal Puzzle and Empirical Study of Civil Procedure*, 65 STAN. L. REV. 1203, 1214-17 (2013) [hereinafter Engstrom, *Twiqbal Puzzle*]. Engstrom considers and critiques an even larger set of *Twombly/Iqbal*-related empirical studies than does Cecil. See, e.g., Engstrom, *Twiqbal Puzzle*, *supra* at 1245 (considering twelve studies, including *Locking the Doors*). I take no position on Engstrom's arguments except insofar as the text herein states. See also Hoffman, *supra* at 35 (showing that the database search conducted by the authors of the FJC INITIAL REPORT missed at least some Rule 12(b)(6) motions); Moore, *Updated Quantitative Study*, *supra* at 608 ("[D]istrict court orders ruling on 12(b)(6) motions in Westlaw are fairly representative of the universe of all such district court orders") (emphasis in original)).

14. See, e.g., Cecil, *Waves*, *supra* note 13, at 21-22; Hoffman, *supra* note 13, at 32-34; Moore, *Updated Quantitative Study*, *supra* note 13, at 639-40.

15. See, e.g., Cecil, *Waves*, *supra* note 13, at 23; Hoffman, *supra* note 13, at 32-34; Moore, *Updated Quantitative Study*, *infra* note 13, at 639-40.

16. See, e.g., Engstrom, *Twiqbal Puzzle*, *supra* note 13, at 1221-22 (characterizing as "strange research design choices" authors' failure to "adequately distinguish between 12(b)(6) grants with and without leave to amend").

17. See Jonah B. Gelbach, *Locking the Doors of Discovery?* 121 YALE L.J. 2270 (2012) [hereinafter Gelbach, *Locking the Doors*]; and Jonah B. Gelbach, *Selection in Motion: A Formal Model of Rule 12(b)(6) and the Twombly-Iqbal Shift in Pleading Policy* (2012) [hereinafter Gelbach, *Selection in Motion*], available at <http://ssrn.com/abstract=2138428>.

18. See Part III, *infra*.

19. 355 U.S. 41, 45-46 (1957).

238 Thus, those who base policy suggestions—whether to reverse or stay the course—STANFORD JOURNAL OF COMPLIANCE & ETHICS, Vol. 2, No. 2, 2010, at 238. Fischman's voice is about “conflat[ing] the measureable with the good, justifying policy proposals on the basis of the measureable objects.”²⁰ Ironically, despite the widely recognized normative relevance of changes in pleading policy, the overwhelming majority of studies that seek to measure *Twombly* and *Iqbal*'s effects fail Barry Friedman's well-taken admonition: “Normative bite ought to define the problem, not be an afterthought. Falsifiable hypotheses should be about something of consequence.”²¹ In the empirical literature on *Twombly* and *Iqbal*, the grant rate has been the object about which falsifiable hypotheses have been constructed. Yet authors have failed to take seriously the question of whether changes in the grant rate tell us anything about the issues of normative concern. As to this point, Fischman could not be more on point when he writes that “research should focus on what is important, not what is easily measureable.”²²

The fundamental problem with such civil procedure empiricism, then, is not that it lacks normative *motivation*. Rather, such empiricism fails to adequately represent the behavioral determinants of normatively *relevant* positive objects. If parties change their behavior when procedural rules change, then understanding the empirical effects of rules changes requires treating party behavior as a fundamental aspect of the conceptual framework that guides empirical work. In short, the facts of litigation are behaviorally and socially generated, and such facts cannot be usefully studied by pretending they simply involve the classical statistics teaching tool of drawing balls from an urn.²³

A core objective of this Article is to show how approaches widely used by applied economists can help increase the relevance—both positive and normative—of empirical civil procedure research. The point here is not to make civil procedure an object of methodological economics imperialism. Rather, it is to take to heart the counsel provided by Fischman and by Friedman. Empirical questions in civil procedure are too important to study as if human behavior weren't involved, just as they are too important to study with data or statistical methods that obscure rather than illuminating.²⁴

In Part I, I provide a brief refresher on the Supreme Court's pleading jurisprudence, as well as on the empirical literature that has attempted to study *Twombly* and *Iqbal*'s effects. In Part II, I characterize and criticize the a-

20. Fischman, *supra* note 5, at 121.

21. Barry Friedman, *Taking Law Seriously*, 4 PERSP. ON POL. 261, 263 (2006). The irony is that in writing these sentences, Friedman was actually criticizing positive scholarship concerning the law for failing to take seriously law's internal norms and concerns, a deficiency that hardly can be pinned to *Twombly/Iqbal* researchers.

22. Fischman, *supra* note 5, at 122.

23. See Part II, *infra*, for the relevance of this analogy.

24. At a minimum, we should avoid winding up feeling like Karl Llewellyn, who described his response to early legal empiricism thusly: “I read all the results, but I never dug out what most of the counting was good for.” Karl N. Llewellyn, *On What Makes Legal Research Worth While*, 8 J. LEGAL EDUC. 399, 403 (1956).

theoretical, behavior-neutral approach to empirical research that most such Spring 2014 DANKARTS AND EMPIRICAL REALITY 229 examples—sampling balls from an urn and the estimation of a demand function in economics. These examples allow me to abstract from issues that are contested in the civil procedure arena, while still illustrating how a failure to take social and behavioral facts seriously can doom the usefulness of empirical work from the get-go. I then circle back to the challenge of measuring *Twombly* and *Iqbal*'s effects, and the extant literature's general failure to take changes in party behavior seriously.

In Part III, I adopt the conceptual framework used in my earlier work, *Locking the Doors to Discovery*.²⁵ That paper takes party selection behavior seriously and develops a measure that is empirically informative as to *Twombly* and *Iqbal*'s effects. Finally, I conclude.

I. *TWOMBLY* AND *IQBAL*: WHY THEY MATTER, AND WHY EMPIRICAL RESEARCH CONCERNING THEIR EFFECTS PROVIDES A GOOD LENS

Pleading, it is said, is the gateway to the courts.²⁶ And since *Twombly* and *Iqbal*, it has certainly become a controversial gateway. *Twombly* and *Iqbal* (in?)famously replaced *Conley v. Gibson*'s "no set of facts" standard for determining when a district court judge should grant a defendant's Rule 12(b)(6) motion for failure to state a claim.²⁷ In place of this logical-possibility test for a complaint's legal sufficiency, *Twombly* and *Iqbal* have substituted the much-debated plausibility standard. Under the plausibility standard, a judge is meant to examine the complaint's non-conclusory allegations to "determine whether they plausibly give rise to an entitlement to relief,"²⁸ and this inquiry is supposed to be controlled by judges' "judicial experience and common sense."²⁹

Changes in the pleading standard could easily work substantial changes on access to court, the extent of frivolous litigation, and the mix of disputes that are litigated. The Supreme Court's decisions in *Twombly* and *Iqbal* spawned

25. Gelbach, *Locking the Doors*, *supra* note 17, at 2270.

26. See, e.g., Kevin M. Clermont & Stephen C. Yeazell, *Inventing Tests, Destabilizing Systems*, 95 IOWA L. REV. 821, 824 (2010) ("Pleading serves as the gatekeeper for civil litigation.").

27. *Conley v. Gibson*, 355 U.S. 41, 45-46 (1957) ("In appraising the sufficiency of the complaint we follow, of course, the accepted rule that a complaint should not be dismissed for failure to state a claim unless it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief.").

28. *Ashcroft v. Iqbal*, 556 U.S. 662, 679 (2009) ("In keeping with these principles a court considering a motion to dismiss can choose to begin by identifying pleadings that, because they are no more than conclusions, are not entitled to the assumption of truth. While legal conclusions can provide the framework of a complaint, they must be supported by factual allegations. When there are well-pleaded factual allegations, a court should assume their veracity and then determine whether they plausibly give rise to an entitlement to relief.").

29. *Id.*

widespread concern³⁰ and attempts at congressional override,³¹ as well as challenges to the Twombly/Iqbal standard of pleading. The importance of Twombly/Iqbal empirics is the genesis of two reports issued by authors affiliated with the Federal Judicial Center (“FJC”).³³ These reports arose from requests by the Advisory Committee on Rules of Civil Procedure that the FJC “assess changes in motions to dismiss and decisions on such mo-

30. See, e.g., *Evaluating the Supreme Court’s Decisions in Twombly and Iqbal: Hearing Before the S. Comm. on the Judiciary*, 111th Cong. 11 (2009), available at <http://www.judiciary.senate.gov/imo/media/doc/12-02-09%20Burbank%20Testimony.pdf> (statement of Stephen B. Burbank); Elizabeth M. Schneider, *The Changing Shape of Federal Civil Pretrial Practice: The Disparate Impact on Civil Rights and Employment Discrimination Cases*, 158 U. PA. L. REV. 517 (2010); Alexander A. Reinert, *The Costs of Heightened Pleading*, 86 IND. L.J. 119 (2011); Miller, *supra* note 2, at 1; Clermont & Yeazell, *supra* note 26, at 821; Colleen McMahon, *The Law of Unintended Consequences: Shockwaves in the Lower Courts After Bell Atlantic Corp. v. Twombly*, 41 SUFFOLK U. L. REV. 851 (2008); Robert G. Bone, *Plausibility Pleading Revisited and Revised: A Comment on Ashcroft v. Iqbal*, 85 NOTRE DAME L. REV. 849 (2010); Joshua Civin & Debo P. Adegbile, *Restoring Access to Justice: The Impact of Iqbal and Twombly on Federal Civil Rights Litigation*, AM. CONST. SOC’Y L. & POL’Y 2 (2010), available at http://www.aacslaw.org/sites/default/files/Civin_Adegbile_Iqbal_Twombly.pdf.

31. See Notice Pleading Restoration Act of 2009, S. 1504, 111th Cong. (2009); Open Access to Courts Act of 2009, H.R. 4115, 111th Cong. (2009).

32. See, e.g., Herrmann, Beck & Burbank, *supra* note 3, at 145; *Barriers to Justice and Accountability: How the Supreme Court’s Recent Rulings Will Affect Corporate Behavior: Hearing Before the S. Comm. on the Judiciary*, 112th Cong. 2 (2011), available at <http://judiciary.senate.gov/pdf/11-6-29%20Pincus%20Testimony.pdf> (statement of Andrew Pincus, Partner, Mayer Brown LLP); *Evaluating the Supreme Court’s Decisions in Twombly and Iqbal: Hearing Before the S. Comm. on the Judiciary*, 111th Cong. 11 (2009), available at <http://judiciary.senate.gov/pdf/12-02-09%20Garre%20Testimony.pdf> (statement of Gregory G. Garre, Partner, Latham & Watkins LLP, and former Solicitor Gen. of the United States); *Access to Justice Denied: Ashcroft v. Iqbal: Hearing Before the Subcomm. on the Constitution, Civil Rights, and Civil Liberties, H. Comm. on the Judiciary*, 111th Cong. 31 (2009), available at http://judiciary.house.gov/hearings/printers/111th/111-36_53090.pdf (statement of Gregory C. Katsas, former Assistant Att’y Gen.); Daniel R. Karon, “*Twos Three Years After Twombly and All Through the Bar, Not a Plaintiff Was Troubled from Near or From Far*”—*The Unremarkable Effect of the U.S. Supreme Court’s Re-Expressed Pleading Standard in Bell Atlantic Corp. v. Twombly*, 44 U.S.F. L. REV. 571 (2010); Richard Marcus, *Still Confronting the Consolidation Conundrum*, 88 NOTRE DAME L. REV. 557, 591 (2012) (citing *Locking the Doors* and erroneously stating that “[t]he premise behind this title is that discovery is some sort of universal right, perhaps even a human right,” evidently overlooking the epigraph to *Locking the Doors* quoting Justice Kennedy in *Ashcroft v. Iqbal*: “Rule 8 [of the Federal Rules of Civil Procedure] marks a notable and generous departure from the hyper-technical, code-pleading regime of a prior era, but it does not unlock the doors of discovery for a plaintiff armed with nothing more than conclusions. . . 129 S. Ct. 1937, 1950 (2009).”).

33. See JOE S. CECIL ET AL., FED. JUDICIAL CTR., MOTIONS TO DISMISS FOR FAILURE TO STATE A CLAIM AFTER IQBAL: REPORT TO THE JUDICIAL CONF. ADVISORY COMM. ON CIVIL RULES (2011) [hereinafter FJC INITIAL REPORT], available at <http://www.uscourts.gov/uscourts/RulesAndPolicies/rules/Publications/motioniqbal.pdf>; JOE S. CECIL ET AL., FED. JUDICIAL CTR., UPDATE ON RES. OF RULE 12(B)(6) MOTIONS GRANTED WITH LEAVE TO AMEND: REPORT TO THE JUDICIAL CONF. ADVISORY COMM. ON CIVIL RULES (2011) [hereinafter FJC UPDATED REPORT], available at [http://www.fjc.gov/public/pdf.nsf/lookup/motioniqbal2.pdf/\\$file/motioniqbal2.pdf](http://www.fjc.gov/public/pdf.nsf/lookup/motioniqbal2.pdf/$file/motioniqbal2.pdf). The FJC is the research and education arm of the judicial branch; it was established pursuant to 28 U.S.C. §620 (2006).

tions over time in broad categories of civil cases.”³⁴

Spring 2014] DARK ARTS AND EMPIRICAL REALITY 231
Even the prominent role that pleading plays in litigation, it is no surprise that *Twombly* and *Iqbal* have been cited gajillions of times—in more than 90,000 and 70,000 cases, respectively, as of this writing. Moreover, a forest of trees surely must have been hacked down to print all the scholarly articles written about them in the last several years, including many that attempt to measure empirical effects of *Twombly* and *Iqbal* using the change in the share of Rule 12(b)(6) motions that are granted (according to one measure or another of “grant”).³⁵

And the Supreme Court’s interest in pleading is not over. For example, one of the two questions presented in *Wood v. Moss*, argued at the Court on March 26, 2014, directly concerns the factual sufficiency of a complaint in a constitutional civil rights case.³⁶ Finally, discussions related to *Twombly* and *Iqbal* plug into a broader debate about the extent and nature of litigation, discovery costs, and judicial policy. As just one example, consider the August 2013 promulgation by the Advisory Committee on Rules of Civil Procedure of a Preliminary Draft of Proposed Amendments to the Federal Rules of Civil Procedure.³⁷ Included in these amendments are various changes to the discovery rules, including ones related to proportionality that are directed at reducing the cost of discovery—a major issue in both the Supreme Court’s opinions in *Twombly* and *Iqbal* and the debates that have followed them. Over 2,000 public comments on the proposed amendments were submitted,³⁸ and many of these raise the issue of empirical evidence.³⁹

34. FJC INITIAL REPORT, *supra* note 33, at vii; FJC UPDATED REPORT, *supra* note 33, at 1.

35. *See infra* note 40.

36. Brief for Petitioners at I, *Wood v. Moss*, 134 S. Ct. 677 (No. 13-115), 2014 WL 173484.

37. *See* COMMITTEE ON RULES OF PRACTICE AND PROCEDURE OF THE JUDICIAL CONFERENCE OF THE UNITED STATES, PRELIMINARY DRAFT OF PROPOSED AMENDMENTS TO THE FEDERAL RULES OF BANKRUPTCY AND CIVIL PROCEDURE, *available at* <http://www.uscourts.gov/uscourts/rules/preliminary-draft-proposed-amendments.pdf>. The Advisory Committee has voted to adopt a number of the proposed amendments; *see* THOMAS Y. ALLMAN, ADVISORY COMMITTEE ON RULES OF CIVIL PROCEDURE, THE 2013 CIVIL RULES PACKAGE AS ADOPTED (April 18, 2014), *available at* <http://www.scribd.com/doc/220077053/The-2013-Civil-Rules-Package-as-Adopted-Thomas-Allman>.

38. *See* PROPOSED AMENDMENTS TO THE FEDERAL RULES OF CIVIL PROCEDURE, *available at* <http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;D=USC-RULES-CV-2013-0002>.

39. A search of the comments submitted indicates that ninety separate comments include the word “empirical” (search conducted using string <http://www.regulations.gov/#!docketBrowser;rpp=25;po=25;s=empirical;dt=PS;D=USC-RULES-CV-2013-0002>). For one example, *see* Stephen B. Burbank, Comment on the Proposed Amendments to the Federal Rules of Civil Procedure, <http://www.regulations.gov/contentStreamer?objectId=0900006481556e36&disposition=attachment&contentType=pdf> (emphasizing repeatedly the importance of the methodologically sound use of empirical evidence).

There is by now a sizable number of papers that have sought to measure the effects of *Twombly* and *Iqbal*.⁴⁰ The most frequent object of measurement has been the change in one measure or another of the outcome of Rule 12(b)(6) motions. Sometimes the Rule 12(b)(6) outcome has been measured such that a motion is coded as granted if it is granted as to one or more claims,⁴¹ sometimes only grants that eliminate at least one plaintiff are counted,⁴² and sometimes only case terminations count.⁴³ Studies also differ as to how much attention they pay to whether motions were granted without leave to amend or with prejudice.

Studies have focused on a wide array of case types, though constitutional civil rights and discrimination-related cases have received special attention.⁴⁴ There has been substantial debate over whether prisoner and *pro se* cases should be included or excluded.⁴⁵ Some studies present only raw grant rate data,⁴⁶ while others report estimates from multivariate models intended to control for variation in factors other than *Twombly* and *Iqbal*.⁴⁷ Different studies

40. FJC INITIAL REPORT, *supra* note 33; FJC UPDATED REPORT, *supra* note 33; Victor D. Quintanilla, *Beyond Common Sense: A Social Psychological Study of Iqbal's Effect on Claims of Race Discrimination*, 17 MICH J. RACE & L. 1 (2011); Raymond H. Brescia, *The Iqbal Effect: The Impact of New Pleading Standards in Employment and Housing Discrimination Litigation*, 100 KY. L.J. 235 (2011-2012); Kendall W. Hannon, Note, *Much Ado About Twombly? A Study on the Impact of Bell Atlantic Corp. v. Twombly on 12(b)(6) Motions*, 83 NOTRE DAME L. REV. 1811 (2008); Scott Dodson, *A New Look: Dismissal Rates of Federal Civil Claims*, 96 JUDICATURE 127 (2012); William H. J. Hubbard, *A Theory of Pleading, Litigation, and Settlement*, (Univ. of Chicago Coase-Sandor Inst. for Law & Econ. Research Paper No. 663, 2014), available at <http://ssrn.com/abstract=2360723> (January 23, 2014) [hereinafter: *Theory of Pleading*]; Joseph A. Seiner, *Pleading Disability*, 51 B.C. L. REV. 95 (2010) [hereinafter Seiner, *Pleading Disability*]; Raymond H. Brescia and Edward J. Ohanian, *The Politics of Procedure: An Empirical Analysis of Motion Practice in Civil Rights Litigation Under the New Plausibility Standard* (May 7, 2013), forthcoming in 46 AKRON L. REV. (forthcoming 2013-2014), available at <http://ssrn.com/abstract=2262068>; William H. J. Hubbard, *Testing for Change in Procedural Standards, with Application to Bell Atlantic v. Twombly*, 42 J. LEGAL STUD. 35 (2013) [hereinafter: Hubbard, *Testing for Procedural Change*]; Joseph A. Seiner, *The Trouble with Twombly: A Proposed Pleading Standard for Employment Discrimination Cases*, 2009 U. ILL. L. REV. 1011 (2009) [hereinafter Seiner, *Trouble with Twombly*]; Moore, *Tao of Pleading*, *supra* note 13; Moore, *Updated Quantitative Study*, *supra* note 13.

41. See, e.g., Moore, *Updated Quantitative Study*, *supra* note 13; Dodson, *supra* note 40; FJC INITIAL REPORT, *supra* note 33, at 13-15; FJC UPDATED REPORT, *supra* note 33, at 7-8, Tables A-1 and A-2.

42. See, e.g., FJC INITIAL REPORT, *supra* note 33, at 17-19; FJC UPDATED REPORT, *supra* note 33, at 7-8, Tables A-1 and A-2.

43. See, e.g., Hubbard, *Testing for Procedural Change*, *supra* note 40; FJC INITIAL REPORT, *supra* note 33, at 16; FJC UPDATED REPORT, *supra* note 33, at 10, Table A-4.

44. See, e.g., Brescia, *supra* note 40; Moore, *Updated Quantitative Study*, *supra* note 40.

45. See studies cited *supra* notes 14 and 15.

46. See, e.g., Seiner, *Pleading Disability*, *supra* note 40; Seiner, *Trouble with Twombly*, *supra* note 40; Brescia, *supra* note 40.

47. See, e.g., FJC INITIAL REPORT, *supra* note 33; FJC UPDATED REPORT, *supra* note

While authors generally have not been entirely clear about the point of studying these changes in grant rates, one relatively explicit declaration comes from William Hubbard, who indicates his focus is in “[q]uantifying change in legal standards—in the sense of change in the propensity of judges to decide cases a certain way.”⁴⁹ This characterization suggests that Hubbard has in mind what I call the “judicial behavior effect.”⁵⁰ By this term, I mean the difference in the probability that a movant would win on a Rule 12(b)(6) motion that is but-for caused by *Twombly* and *Iqbal* (however one measures winning). As I shall discuss in detail in Parts III.B and III.C, *infra*, the critical problem is the potential presence of various types of party selection effects.⁵¹ Judicial behavior effects seem to be the focus not only of Hubbard’s work, but of other studies as well.⁵²

As I discuss in Part III.B, *infra*, these studies’ estimates of the change in grant rates generally would represent judicial behavior effects only under the implausible assumption that there are no changes in party behavior in response to *Twombly* and *Iqbal*. Thus, none of these studies should be viewed as providing a credible estimate of the judicial behavior effect of *Twombly* and *Iqbal* on any identifiable set of cases.

Moreover, even if some measure of judicial behavior effects *could* be identified empirically, the possibility of party selection effects requires us to know

33; Moore, *Tao of Pleading*, *supra* note 13; Hubbard, *Theory of Pleading*, *supra* note 40; Hubbard, *Testing for Procedural Change*, *supra* note 40; Moore, *Updated Quantitative Study*, *supra* note 13.

48. See, e.g., Quintanilla, *supra* note 40, at 5 (reporting an increase of thirty-four percentage points in the rate at which black plaintiffs’ claims of race discrimination are dismissed in employment discrimination cases); FJC INITIAL REPORT, *supra* note 33, at 14, Table 4 (reporting increase of 3.2 percentage points in the share of employment discrimination cases granting some or all relief to Rule 12(b)(6) movants); FJC UPDATED REPORT, *supra* note 33, at 7, Table A-1 (reporting change of only 0.2 percentage points for employment discrimination cases after following up cases with amended complaints); FJC UPDATED REPORT, *supra* note 33, at 7, Table A-1 (finding increase of 6.2 percentage points in share of cases in which Rule 12(b)(6) movant prevailed on some or all claims, after accounting for any amended complaints, with much of this difference apparently driven by increase of forty-two percentage points among financial instruments cases, which might have been due in part to the financial and housing crisis rather than to changes in the pleading standard).

49. Hubbard, *Testing for Procedural Change*, *supra* note 40, at 35.

50. See Part III.A, *infra*.

51. As I discuss in Parts III.B and III.C, *infra*, Hubbard’s studies are not immune to this problem, despite his claims to the contrary. See Hubbard, *Testing for Procedural Change*, *supra* note 40, at 38 (“This paper addresses both the selection of disputes into lawsuits and the selection of lawsuits into adjudication.”); Hubbard, *Theory of Litigation*, *supra* note 40, at 16 (“By limiting my analysis to cases filed before the decision, I was able to control for selection effects.”).

52. See Cecil, *Waves*, *supra* note 13, at 46 (in characterizing the FJC authors’ updated report and the outcomes-oriented parts of their initial report, for example, Cecil states that their purpose was “to assess the reaction of the courts” to *Twombly* and *Iqbal*).

more to meet Fischman's exhortation to "prioritize normative questions."⁵³ From the perspective of legal policy, the probability that a Rule 12(b)(6) motion would be successful—however that is measured—might be the only question of interest. But from the normative perspective of legal policy—of the design of the civil justice system—that is surely not the only question of interest, because changes in party behavior can themselves affect parties' welfare. To even begin to understand the normative consequences of *Twombly* and *Iqbal*, we must take account of these effects, too.⁵⁴

That brings me back to the FJC authors' initial report, which is the only study to date that provides direct evidence on *Twombly/Iqbal*-induced changes in the filing of Rule 12(b)(6) motions.⁵⁵ As I discuss *infra*, pre-*Twombly* and post-*Iqbal* information on the change in filings can be used with grant rate data to at least partially illuminate the effects of *Twombly* and *Iqbal*—even without assuming there is no party selection.

B. A Brief Description of Locking the Doors

In my recent work on this topic, *Locking the Doors to Discovery?* ("Locking the Doors"),⁵⁶ I sought to recast the discussion of *Twombly* and *Iqbal*'s empirical effects away from the overly simplistic metric of grant rate changes.

I argued in *Locking the Doors* that we should expect a perceived change in pleading standards to induce changes in parties' lawsuit-filing, Rule 12(b)(6) motion-filing, and settlement behavior. Without unpalatable and empirically untestable assumptions, such party selection effects render even the direction of change in the grant rate uninformative about how judges have responded to the change. However counter-intuitively, a drop in the grant rate is consistent with a pro-defendant judicial behavior change. And an increase in the grant rate is consistent with the absence of any change in judicial behavior. What's more, party selection effects don't just obscure changes in judicial behavior—they have direct effects on case outcomes, too.⁵⁷

53. Fischman, *supra* note 5, at 154.

54. Note that even the broader accounting of the effects of *Twombly* and *Iqbal* proposed here does not exhaust the normatively relevant domain of questions related to pleading changes. For one thing, it cannot measure all the negatively affected plaintiffs. And even if many plaintiffs are negatively affected by *Twombly* and *Iqbal*, in the sense I define *infra*, *Twombly* and *Iqbal* might be socially beneficial on net: if the negatively affected cases have low enough merit, then it is a good thing for them not to get to discovery. The question of how *Twombly* and *Iqbal* have affected case quality is the subject of my work in process, which will use case outcomes after the answer and Rule 12(b)(6) stage to try to measure case quality effects.

55. FJC INITIAL REPORT, *supra* note 33, at 8-12.

56. Gelbach, *Locking the Doors*, *supra* note 17.

57. For example, consider a case in which a Rule 12(b)(6) motion would be filed, and then granted, under *Twombly/Iqbal*, but in which that motion would not be filed in the first place pre-*Twombly*. Obviously the plaintiff would be worse off—and the defendant better off—if this case were litigated under *Twombly/Iqbal* than if it were litigated under *Conley*. Yet I have said nothing about what would have happened if the defendant were to file a Rule

In *Locking the Doors* I showed how existing data could be used to place a Spring 2014) — a DARK ARTS AND EMPIRICAL REALITY the magnitude of Twombly and Iqbal’s negative effects on those plaintiffs who actually face Rule 12(b)(6) motions under Twombly and Iqbal.⁵⁸ Using data published in the two FJC reports,⁵⁹ I showed that plaintiffs were negatively affected—a term I define precisely in *Locking the Doors* and revisit below—in a non-trivial share of such cases.

Two relatively detailed critiques of *Locking the Doors* have since appeared. One is Joe Cecil’s *Of Waves and Water* (“Waves”).⁶⁰ Cecil is the lead author of the two FJC-released reports, and while his critique is unpublished at present, his views, arguments, and empirical claims are very important to civil litigation policy, as he is a senior researcher at the FJC who frequently provides detailed empirical analysis to members of the Advisory Committee on Rules of Civil Procedure. The second critique was published by Professor David Engstrom in an issue of the Stanford Law Review dedicated to the 2012 Conference on Empirical Legal Studies.⁶¹

Engstrom generously lauds the behavioral framework introduced in *Locking the Doors*.⁶² And Cecil professes “awe” at my purported “skill in extending a common theoretical economic model to the pretrial litigation setting.”⁶³ But Engstrom suggests that the empirical work in *Locking the Doors* “is less sure-footed” than the paper’s conceptual framework,⁶⁴ and Cecil launches a broadside not just against my use of the data in the two FJC reports he co-authored, but also against the very idea of using a model-guided framework for understanding the effects of Twombly and Iqbal.

To engage all of these critiques in detail here would render this Article un-

12(b)(6) motion under *Conley*—perhaps such a motion would be granted, even though the defendant would choose not to file one. Thus even when the judge would do the same thing in a given case under the two pleading standards, it is possible that Twombly and Iqbal have effects on the parties’ well-being through the channel of party selection effects.

58. See Part III, *infra*, for more details.

59. See FJC INITIAL REPORT, *supra* note 33; FJC UPDATED REPORT, *supra* note 33.

60. Cecil, *Waves*, *supra* note 13. This paper also critiques works by several other authors: Hoffman, *supra* note 40; Moore, *Tao of Pleading*, *supra* note 13; Moore, *Updated Quantitative Study*, *supra* note 13; and Brescia, *supra* note 40. Beyond those stated in the text herein, I take no positions on either these studies or Cecil’s criticisms of them.

61. Engstrom, *Twiqbal Puzzle*, *supra* note 13. Engstrom considers and critiques an even larger set of Twombly/Iqbal-related empirical studies than does Cecil (see, e.g., the table in his Appendix, which is titled “Empirical Studies of Twiqbal’s Effect on 12(b)(6) Grant Rates at a Glance” and considers twelve studies, including *Locking the Doors*). I take no position on Engstrom’s arguments except insofar as the text herein states.

62. Engstrom, *Twiqbal Puzzle*, *supra* note 13, at 1225, 1229 (“Gelbach offers an impressive theoretical framework. . .”); *id.*, at 1229 (“Gelbach’s framework is plainly a huge methodological step forward.”).

63. Cecil, *Waves*, *supra* note 13, at 38; one does pause to ponder Cecil’s sincerity when he characterizes this endeavor as one of the “dark arts.” *Id.*

64. Engstrom, *Twiqbal Puzzle*, *supra* note 13, at 1226.

wieldy, so I shall not do so.⁶⁵ However, I shall respond to Cecil's critiques of various aspects of the modeling approach. I shall do so with my focus on the broader methodological importance of taking motivated behavior seriously. As I discuss, Cecil's attack on the idea of using a model of litigant behavior to guide empirical work is marred by two apparent misunderstandings. First, *contra* Cecil, the model is not a knock-off of the Priest-Klein framework, as Cecil claims.⁶⁶ But more importantly, I shall show that Cecil mistakenly equates expositional assumptions that are made to simplify the *discussion* of the model with substantive limitations on the framework's *empirical implementation*. I shall also respond to one aspect of Engstrom's critique, concerning the proper unit of analysis in studying the empirical effects of *Twombly* and *Iqbal*. Before I address these critiques, however, I shall nail down some key methodological points.

II. BEHAVIORALLY INDIFFERENT EMPIRICS HAS URNED ITS RETIREMENT⁶⁷

Generations of statistics students have been introduced to ideas related to statistical sampling using one form or another of an "urn problem."⁶⁸ In a simple example of such a problem, a collection of B blue balls and R red balls are contained in an urn; see Figure 1 for a picture of an urn. For some reason a statistician is interested in determining the fraction—call it π —of balls that are blue.⁶⁹ A ball is selected—sampled, to be more clinical—from the urn, its color is recorded, it is put back into the urn, and this procedure is repeated N times. It is usually assumed that sampling of balls from the urn is done (i) randomly, so that every ball has the same probability of selection on every draw, and (ii) independently, so that what happens on one draw provides no information about what will happen on the next draw, given the numbers of red and blue balls in the urn. The recorded data are used to estimate π , usually by taking the number of sampled balls that are blue, and dividing it by the total number of draws from the urn. This estimator, known as the sample proportion, has desirable properties: it is unbiased⁷⁰ and consistent⁷¹ for the true proportion π , as-

65. Interested readers should see Jonah B. Gelbach, *Can We Learn Anything About Pleading Changes From Existing Data?* INTL. REV. L. & ECON. (forthcoming), where I respond to these arguments in detail.

66. See Cecil, *Waves*, *supra* note 13, at 38 & n.137, 44 (citing George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984)) (stating that *Locking the Doors* "is derived" from the "Priest/Klein model of litigation" and that *Locking the Doors* "adapts a common economic model of litigation").

67. Cf. *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 563 (2007) ("[A]fter puzzling the profession for 50 years, [*Conley v. Gibson*'s 'no set of facts language'] has earned its retirement.").

68. See, e.g., *Urn Problem*, WIKIPEDIA, http://en.wikipedia.org/wiki/Urn_problem (last visited May 26, 2014) (discussing urn problems).

69. That is, $\pi = B/(B+R)$.

70. An estimator $\hat{\pi}$ is unbiased for population value π if $E(\hat{\pi}) = \pi$, i.e., if the estimator's expected value equals the population value. This means that on average, the estimator equals the population value.

Figure 1: An Urn



Source: Maya Funerary Urn, http://en.wikipedia.org/wiki/File:Maya_funerary_urn.jpg (last visited June 2, 2014).

71. Roughly speaking, an estimator $\hat{\pi}$ is consistent for population value π if it is asymptotically unbiased, which means that as the sample size grows without bound, the probability converges to 0 that $\hat{\pi}$ and π will differ by more than a stated magnitude, for any choice of that magnitude (formally, $P(|\hat{\pi} - \pi| > \epsilon) \rightarrow 0$). Consistency is a frequently used property because, while many estimators are biased in finite samples, it can be shown that their bias converges to zero as the sample size grows. An implication is that when the sample size is large enough, bias will be trivially small. How large is large enough is a tricky question, and one that is beyond the scope of this paper. The sample proportion is a special case in which consistency follows because of unbiasedness. More generally, consistency of estimators follows, when it does, from artful application of one or another law of large numbers. See, e.g., HALBERT WHITE, ASYMPTOTIC THEORY FOR ECONOMETRICIANS (2001).

72. An estimator $\hat{\pi}$ is asymptotically normal if, when its mean is π , the probability distribution of $X = \sqrt{N}(\hat{\pi} - \pi)$ converges to a normal (bell curve) distribution as the sample size N increases without bound. Roughly speaking, this means that for large enough sample sizes, one can use the normal distribution to analyze the behavior of the statistic X even when $\hat{\pi}$ itself is not normally distributed for any given sample size N . Asymptotic normality of an estimator usually follows, when it does, from artful application of one or another central limit theorem. See, e.g., *id.*

73. An estimator is efficient in a class if it has the least variance among all estimators in that class. An estimator such as the statistic X in note 72, *supra*, is asymptotically efficient in a class if, as the sample size increases without bound, its variance converges to a value that is the least such convergent value among all estimators in the class in question. Under simple random sampling, the asymptotic efficiency of the urn sample proportion follows from the fact that the sample proportion can be shown to equal the maximum likelihood estimator, which is well known to achieve the lowest possible asymptotic variance in the class of all consistent estimators. See, e.g., WILLIAM H. GREENE, ECONOMETRIC ANALYSIS 493 (2008).

238 One useful point of emphasis is that even in the simple urn-sampling case, we needed some assumptions about the selection mechanism used to choose balls to say much of anything statistically sensible.⁷⁴ On the other hand, *with* the assumptions of random and independent sampling, we can say quite a lot about this proportion. A first lesson, then, is that *statistical assumptions*—by which I mean assumptions about the way observed data find their way into the analysts’ sights—can be very important.

When the commonly used baseline assumption of random sampling cannot be maintained, learning much at all about the object of estimation requires some knowledge concerning the actual way in which observations wind up in the researchers’ hands. For example, there are good reasons to believe that those researchers who create their *Twombly/Iqbal* study samples using searches of electronic databases may be sampling in nonrandom ways.⁷⁵ Violations of the independence assumption also can have important effects, though I shall not dwell on them here.⁷⁶

A second question, though, is: so what—who cares how many balls in an urn are blue or red? The urn problem almost invariably is a modeling construct. Just as law professors, practicing lawyers, and judges use fanciful hypotheticals to isolate legal issues of special interest, good statisticians use the urn problem, and others like it, to abstract from aspects of complex and contextualized real-world questions that are not fundamentally statistical in nature, in order to focus on the aspects of those questions that *are* amenable to statistical analysis. No one really cares about blue balls in urns. Rather, we represent real-world objects of interest, many of them abstract, using simple statistical analogues, because doing so clarifies the aspects of an empirical study that involve randomness, estimation, and inference. But human beings are not blue or red balls. They have motivations, and they have agency, and that has important implications for empirical research, including empirical research on legal pol-

74. To be precise, even without the random-sampling assumption, we can definitely say at least one thing, and possibly two things. First, if a blue ball is drawn at least one time, then we can say for sure that the true fraction of blue balls in the urn is at least as great as $1/(1+R)$. Second, if at least one red ball is drawn, then we can say for sure that the true fraction of blue balls is no greater than $B/(B+1)$. These values operate, respectively, as lower and upper bounds on the true proportion π . The example as I laid it out involved sampling with replacement (we put the selected ball back in the urn after recording the result of each draw). If sampling had been done *without* replacement, then lower and upper bounds would be more informative, since the minimum number of blue balls in the urn would have to be at least the number of selected blue balls, and analogously for the number of red balls.

75. See FJC INITIAL REPORT, *supra* note 33; Cecil, *Waves*, *supra* note 13; Moore, *Updated Quantitative Study*, *supra* note 13; Engstrom, *Twiqbal Puzzle*, *supra* note 13.

76. See, e.g., A. Colin Cameron, Jonah B. Gelbach, & Douglas L. Miller, *Bootstrap-Based Improvements for Inference with Clustered Errors*, 90 REV. ECON. & STAT. 414 (2008); Marianne Bertrand, Esther Duflo, & Sendhil Mullainathan, *How Much Should We Trust Differences-In-Differences Estimates?* 119 Q.J. ECON. 249 (2004); A. Colin Cameron, Jonah B. Gelbach & Douglas L. Miller, *Robust Inference With Multiway Clustering*, 29 J. BUS. & ECON. STAT. 238 (2011).

Spring 2014 DARK ARTS AND EMPIRICAL BEAUTY 239
icy. Thus, failing to take human behavior's motivated agency into account—
can be fatal to the relevance of empirical research concerning legal rules and
institutions.

To be clear, I do not mean to criticize the classical urn approach to *statistical* analysis. The vast majority of quantitative empirical work will have some irreducibly statistical component. Part of the art of doing good empirical work is figuring out where the behavioral model stops and the purely statistical work takes over.⁷⁷ But a failure to take seriously the behavioral nature of data on humans can be disastrous in empirical research. To illustrate this point, I now turn to a classic example that every student of econometrics confronts.

A. Behavioral Challenges Illustrated: Estimating a Demand Function

Suppose the price of some good is given by P and the logarithm of quantity demanded is given by Q_D ,⁷⁸ and suppose the good's demand function is

$$Q_D = \alpha + P \times \beta + \varepsilon_D.$$

Here, α and β are, respectively, the demand function's intercept and slope parameters, and ε_D is a random element that captures variation in quantity demanded arising from unobserved factors. The theory of demand tells us that, except in freak cases, the parameter β can be expected to be negative—when a good's price rises, people generally want to buy less.⁷⁹ Let us further assume

77. I suspect that every empirical study can be viewed as dividing its analysis into separable components that involve purely statistical and purely substantive, non-statistical aspects even though users of statistics of course study more than urns. They also study things like the estimation of the population mean of a continuous random variable—something that is relevant when estimating the average level of income in a country, or the average level of damages awarded to prevailing tort plaintiffs in litigation. See, e.g., David A. Hyman, Bernard Black, Charles Silver, & William M. Sage, *Estimating the Effect of Damages Caps in Medical Malpractice Cases: Evidence from Texas*, 1 J. LEGAL ANALYSIS 355 (2009). And many questions that involve discrete random variables, such as the binary outcome of whether an appellate judge votes for the plaintiff or defendant, usually are modeled as involving numerous covariates—not just the simple up-or-down outcome that could be directly analogized to the urn problem. See e.g., Christina L. Boyd, Lee Epstein, & Andrew D. Martin, *Untangling the Causal Effects of Sex on Judging*, 54 AM. J. POLI. SCI. 389 (2010); Joshua B. Fischman, *Interpreting Circuit Court Voting Patterns: A Social Interactions Framework*, J.L. ECON. & ORG. (forthcoming).

78. Economists sometimes use the logarithm of quantity for a variety of reasons. Here I do so since it allows the measure of quantity to take on any real-number value, allowing the random element to have a normal distribution; this assumption is purely for exposition—dropping it would complicate the discussion without changing any substantive conclusion.

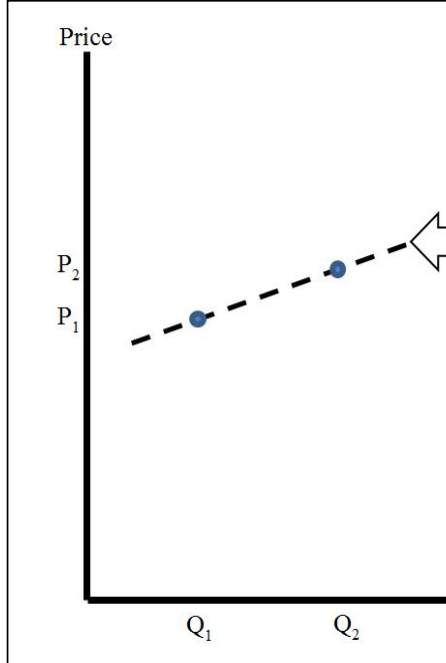
79. The freak cases are those in which the good is a Giffen good. See Alfred Marshall, 3 PRINCIPLES OF ECONOMICS Ch.VI, ¶ III.VI.17 (1895). In contemporary terms, imagine a poor law student with \$21 to spend per week on dinner. He eats ramen noodles 6 nights a week, at a price of \$2 per box, and on the seventh night he eats a \$9 pizza. Now imagine a labor strike in the ramen industry causes a supply constriction, raising the price of ramen

that all data are observed at the market level—say, by counties—and that the random element ϵ_D is normally and independently distributed across counties, with mean zero. Finally, let us assume that we have a random sample of county-level data on the quantity and price of our good.

Along comes a statistician well-trained in the urn approach—the approach of modeling observed data in terms that (i) fit textbook statistical models but (ii) do not account for the human, behavioral factors that help determine the values of observed variables. Such a statistician might use the ordinary least squares estimator—sometimes called “running a regression”—to estimate α and β , noting on the side that she is making the usual assumption that the random element ϵ_D is uncorrelated with the independent variable (here, price). For simplicity, suppose the statistician observes data for just two types of counties. In counties of type 1, observed quantity and price are given by Q_1 and P_1 , as in Figure 2. In counties of type 2, observed quantity and price are given by Q_2 and P_2 . The result of our statistician’s use of ordinary least squares would be to determine that the estimated relationship between quantity and price is given by the dashed line in Figure 2. Assuming the estimated slope is statistically significant, our statistician would probably conclude that the data reject the theory of demand, since the estimated line has a positive slope, which is the wrong sign under the theory. And our statistician would be committing a major mistake.

noodles to \$3 per box. After purchasing 6 boxes of ramen noodles at this price, our law student now has only \$3 left for the seventh night—not enough for a pizza, but just enough for another box of ramen. Thus, an increase in the price of ramen noodles from \$2 to \$3 causes the student’s quantity demanded to rise from 6 boxes to 7. (Notice that this example depends importantly on the absence of some alternative to ramen—if mac ’n cheese were \$2 per box and unaffected by the ramen strike, perhaps our student would shift demand from ramen to mac ’n cheese when the former’s price rose.)

Anuja Thatte 6/2/14 2:43 PM
 Comment:



The problem is that demand is just half the story. Economists assume that supply matters, too, and that prices and quantities are determined jointly by supply and demand. Suppose, again for exposition only, that the supply function is also log-linear:

$$Q_s = \gamma + P \times \delta + \epsilon_s,$$

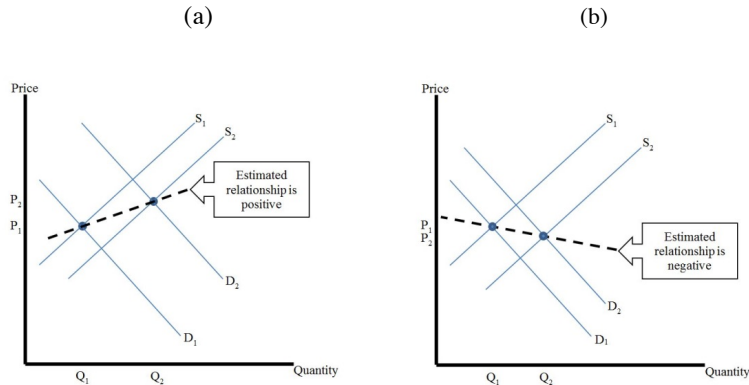
where Q_s is the logarithm of the quantity supplied, γ and δ are, respectively, the supply function's intercept and slope parameters, and ϵ_s is a random element that captures variation in quantity demanded arising from unobserved causes.

If market forces are allowed to determine price and quantity, then the price will be determined where the quantities demanded and supplied are equal. After setting quantity demanded and quantity supplied equal, it can be shown that among other things, *the equilibrium price depends on the random element ϵ_D* .⁸⁰

80. Specifically, it can be shown that whenever $Q_D = Q_S$, we will have

In particular, when quantity demanded is higher for random reasons — when ϵ_D is greater — the demand curve shifts out, pushing up both equilibrium price and equilibrium quantity, as illustrated in Panel (a) of Figure 3. In this graph, the demand curve is negatively sloped, but there is a positive relationship between observed price and quantity because county 2's demand curve has shifted out more than its supply curve, by comparison to county 1.

Figure 3: Two Hypothetical Cross-Market Relationships Between Quantity and Price, in Which the Relationships Between Price and Quantity Supplied/Demanded Are the Same



Now consider Panel (b) of Figure 3. There, we see the opposite situation from Panel (a): county 2's supply curve has shifted out more than the demand curve has. Consequently, in Panel (b) we observe a negative relationship between price and quantity. But notice that all demand curves in the two Panels have the same slope, as do all supply curves. Thus, *neither* Panel's observed relationship between price and quantity tells us anything useful about the parameters of the demand and supply curves.⁸¹ It simply makes no sense to use this sort of approach to test the theory of demand, or to estimate demand and supply curves.

There are really two aspects of the problem here. First, our statistician's objective is poorly defined. It is unclear what it means to study "the causal re-

$$P = \frac{\alpha - \gamma}{\delta - \beta} + \frac{\epsilon_D - \epsilon_S}{\delta - \beta},$$

so that greater values of the demand shock ϵ_D are associated with greater values of equilibrium price, while greater values of the supply shock ϵ_S are associated with lower equilibrium price values.

81. That is, about α , β , γ , or δ .

relationship between price and quantity” in the absence of a behavioral framework. This problem is addressed by adopting a model within the theory of supply and demand—or, perhaps, some other behavioral model that the researcher is willing to defend in explicit terms.

The second aspect of the problem is evident once we posit a clear behavioral framework—in this case, the theory of demand and supply in competitive markets. The discussion above—and especially Figure 3—show that the simple relationship between observed county-level quantity on observed county-level price cannot identify *either* the demand curve *or* the supply curve. Only by finding a way to deal with unobserved heterogeneity in supply and demand—the ε_D and ε_S terms above—can an empirical researcher hope to validly estimate the demand and supply curves in a competitive market. Since these curves work together to determine price and quantity, only an approach that accounts for *both* supply and demand can uncover the actual causal relationships that connect the observed variables of price and quantity.

To be clear, the problem here isn’t that demand and supply are never estimable; economists long ago devised methods to deal with the unobserved heterogeneity problem, and these methods have been among the core techniques taught in econometrics courses for many decades.⁸² Instead, the problem is a mismatch between the urn approach to statistical analysis and the human, behavioral choices that determine the values of the observed variables. The take-away point here is that properly understanding the empirical determinants of price and quantity requires more than just a theoretical statistical analysis—it requires serious attention to the behavioral origins of data on humans.

Similarly, empirical facts about the civil justice system may fail the relevance test if they are not interpreted within a behavioral framework. Thus, a critical step in policy-relevant empirical work is to consider clearly what behavioral possibilities are analytically admissible. In the foregoing discussion, for example, the behavioral possibilities include the possibility (to most economists, the inevitability) that a good’s price and quantity will be determined together by the interaction of producers and consumers as reflected by supply and demand. Similarly, in the case of studying the effects of *Twombly* and *Iqbal*, as I shall discuss in the next Part, the general set of possibilities includes the specific possibility that parties will change their behavior in response to perceived changes in the pleading standard.

When a researcher allows for a particular behavioral possibility, she signs up for the obligation to develop an *identification strategy* that is capable of un-

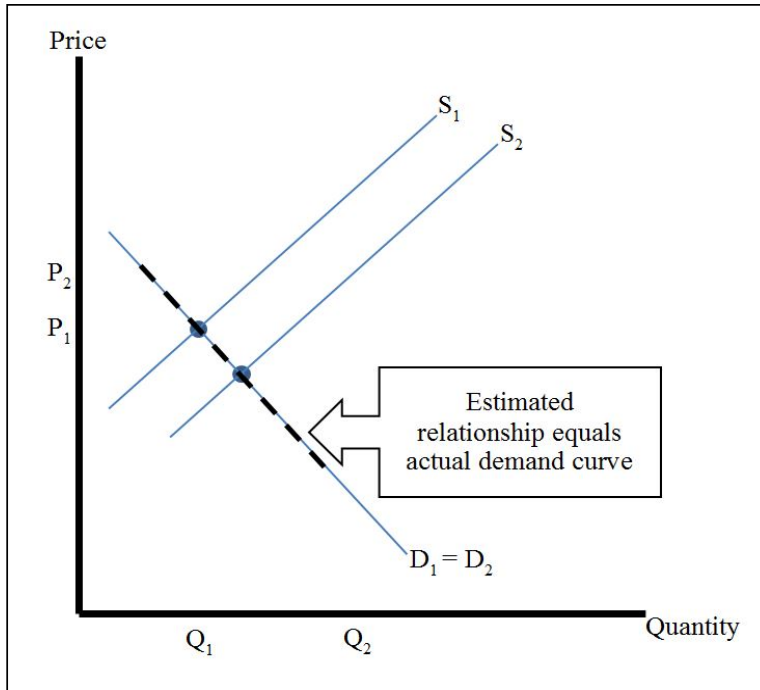
82. The usual approach is to find observable *instrumental variables*, each of which plausibly shifts either the demand curve or the supply curve, but not both. An instrument that shifts the demand curve helps identify the parameters of the supply curve, while one that shifts the supply curve helps identify the parameters of the demand curve. See, e.g., Joshua D. Angrist & Alan B. Krueger, *Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments*, 15 J. ECON. PERSP. 69 (2001), for an accessible discussion of instrumental variables in this context.

covering useful empirical information when the behavioral possibility in question might be identified. The identification strategy used in applied econometrics, but so far as I know it does not have a widely agreed formal definition. To be clear, by “identification strategy” I shall mean a set of behavioral assumptions, statistical assumptions,⁸³ data sources, and estimation methods that can be used together to estimate an empirical object of interest.

It is important to recognize that stronger behavioral assumptions may allow researchers to claim identification of more objects of empirical interest. Conversely, it often is the case that a researcher’s claims of identification rely on strong behavioral assumptions. This latter point is especially important to recognize because the key behavioral assumptions are all too often left unstated. Consider again our hypothetical statistician who wants to estimate the causal relationship between price and quantity. As we saw above, when the theory of demand and supply is correct, the observed relationship between price and quantity generally will not identify *either* the demand curve *or* the supply curve. Once again, the problem is that observed co-movements in quantity and price are affected by unobservable factors causing market-level variation in the location of *both* curves: variation in the intensity of potential buyers’ desires for the good shift the demand curve, while variation in production costs shift the supply curve.

There are, however, special cases under which the statistician’s estimation approach described above *does* yield valid estimates of something of interest. For example, suppose there is no unobserved heterogeneity across counties in the location of the demand curve—which is to say, no variation in ϵ_D . In that case, the only source of variation in price and quantity must be cross-county shifts in the supply curve. As Figure 4 illustrates, the observed relationship between price and quantity identifies the demand curve in this situation. Thus, a statistician who claims to test the theory of demand by using only data on the observed cross-market price-quantity relationship could justify this approach by clearly embracing the assumption that the location of the demand curve does not vary across counties. In general, few would consider such an assumption reasonable. And that is one reason why it is so important to be clear about behavioral assumptions: strong and even unreasonable assumptions are often hidden, lurking just beneath the veneer of an intuitive-seeming empirical approach.

83. To be even clearer, by “statistical assumptions” I mean assumptions that characterize “all of the random influences that combine together to lead to individual observations” (this specific quotation comes from *Data Generating Process*, WIKIPEDIA, http://en.wikipedia.org/wiki/Data_generating_process (last visited May 8, 2014)).



Consider William Hubbard’s two studies on *Twombly* and *Iqbal*. Hubbard claims to estimate the effect of *Twombly* and *Iqbal* on dismissal rates—what I call judicial behavior effects—and he claims to do so while “control[ling] for selection effects.”⁸⁴ In his first study, Hubbard attempts to study the effects of *Twombly* alone (i.e., he does not try to study *Iqbal*’s effects) by comparing (i) measures of the grant rate using only cases filed in the forty-five-day period just before the Supreme Court released the *Twombly* decision to (ii) measures of the outcomes for cases filed in the same calendar period a year earlier.⁸⁵ Hubbard’s reason for isolating these “straddle cases”⁸⁶ is that “if the plausibility standard announced in *Twombly* led many plaintiffs not to file suit at all, it is possible that the share of filed cases being dismissed may not change, even though many (potential) plaintiffs are nonetheless losing their day in court.”⁸⁷

84. See Hubbard, *Testing for Procedural Change*, *supra* note 40; Hubbard, *Theory of Pleading*, *supra* note 40, at 16.

85. See Hubbard, *Testing for Procedural Change*, *supra* note 40, at 55-56.

86. So far as I know, the term “straddle cases” was coined by Engstrom, *supra* note 61, at 1224.

87. Hubbard, *A Theory of Pleading*, *supra* note 40, at 15-16.

But Hubbard's approach does nothing to eliminate the problems of defendant selection and settlement selection, since *Twombly*'s occurrence was knowable to all parties within a short period of time after case filing.⁸⁹ As I show in Part III.B, *infra*, these types of selection are themselves sufficient to render the change in the grant rate generally uninformative about changes in judicial behavior. In other words, eliminating plaintiff selection is an insufficient identification strategy, on its own, to tell us anything of interest about *Twombly* and *Iqbal*'s effects.

As appealing as Hubbard's approach might seem, it controls for *only* plaintiff selection effects. Thus Hubbard's claim to having identified judicial behavior effects relies on the important, unstated assumption that defendant selection and settlement selection effects either don't exist or don't matter empirically if they do. This example illustrates the dangers of failing to clearly consider and state the assumptions guiding empirical work generally, and thus also in civil procedure: the fact that assumptions aren't discussed doesn't mean they aren't doing important work.

B. The Absence of Party Selection as a Behavioral Restriction

The problem of hidden assumptions in estimating the effects of *Twombly* and *Iqbal* is certainly not limited to the point I have just made about Hubbard's work. Any identification strategy directed at learning something meaningful about pleading standard changes using only the change in the grant rate necessarily includes behavioral restrictions on the extent of party selection. Consequently, researchers who claim that changes in the grant rate, on their own, tell us something useful about the effects of *Twombly* and *Iqbal* must shoulder the burden of explaining the behavioral restrictions on party selection effects on which they are relying. Unfortunately, this has not generally been the way of things in the literature on *Twombly* and *Iqbal*. I have already noted, for example, that William Hubbard's approach plausibly eliminates only plaintiff selection effects, leaving implicit his apparent assumption that there are neither defendant selection nor settlement selection effects.⁹⁰

Cecil takes an even more problematic approach. He states that he has "no quarrel" with the proposition that there is defendant selection,⁹¹ and he also al-

88. That said, it plaintiffs could voluntarily dismiss their suits via Rule 41 when faced with Rule 12(b)(6) motions that they did not expect to face at the time they filed suit; thus it is possible that some plaintiff selection effects remain even in Hubbard's data.

89. I provide a detailed discussion of "surprise" cases, in which the parties are surprised to find a new pleading standard in place after the plaintiff files suit, in Part V of Jonah B. Gelbach, *Can We Learn Anything About Pleading Changes from Existing Data?* INTL. REV. L. & ECON. (forthcoming).

90. See Part A, *supra*.

91. Cecil, *Waves*, *supra* note 13, at 42.

Spring 2014] Cecil, *Waves*, *supra* note 13, at 42 & nn. 138-39 (“[A]n increase in motions by defendants may be caused by a drop in the rate at which cases settle. . . . [O]ur ‘filings’ dataset would also include any plaintiff selection effects. . . . Sorting out the contributions of the ‘plaintiff selection effect’ and the ‘settlement selection effect’ is a difficult task.”).⁹² Here one can only cry, foul. Given that one has accepted the empirical correctness of a premise, logic dictates that one must also accept as sound the conclusion of any valid argument starting from that premise. Something must go: either Cecil must withdraw his endorsement of grant rate comparisons, or he must endorse a set of restrictions on party selection strong enough to make such comparisons informative.

For readers who are unfamiliar with thinking through the role of behavioral assumptions in identifying empirical objects of interest, perhaps it will be helpful to be a bit more concrete. Here is a simple statement of one possible behavioral restriction: parties do not change their behavior following perceived changes in the pleading standard. That is, the pleading standard has no impact on whether plaintiffs file suit, nor on whether defendants file Rule 12(b)(6) motions in cases plaintiffs have filed, nor on whether cases settle before the Rule 12(b)(6) stage. As I discuss in Part III.B, if this restriction is true, the change in the grant rate *could* tell us something important—namely, how judicial behavior has changed as a result of *Twombly* and *Iqbal*.⁹⁴ I do not think anyone seriously believes this “no-selection” behavioral restriction to be accurate; certainly, no one has proudly pledged allegiance to it.

To be clear, I do not mean to suggest that behavioral restrictions are unacceptable—quite the contrary. Such restrictions are *unavoidable* if we are to use data to learn about the world: if absolutely any behavioral response to a change in the pleading standard could happen, then there will be no way to learn anything about its effects from any data. Behavioral assumptions are necessary, and we all make them all the time in our daily lives. For example, you cross a heavily trafficked street when the walk sign is illuminated because you think that motorists will not run a red light. That is a behavioral assumption, and an obviously important one—if you’re wrong, very bad things very possibly will happen to you.

One strand of the discussion here may be summarized using what I call the “no blood from a behavioral stone” principle of empirical work. Without any assumptions on human behavior, one simply cannot learn anything of policy

92. Cecil, *Waves*, *supra* note 13, at 42 & nn. 138-39 (“[A]n increase in motions by defendants may be caused by a drop in the rate at which cases settle. . . . [O]ur ‘filings’ dataset would also include any plaintiff selection effects. . . . Sorting out the contributions of the ‘plaintiff selection effect’ and the ‘settlement selection effect’ is a difficult task.”).

93. Cecil, *Waves*, *supra* note 13, at 46.

94. To be sure, other assumptions would still be necessary, such as that the case mix did not change, in empirically important ways, for reasons unrelated to changes in the pleading standard.

importance. Of course researchers should strive to make the least restrictive assumptions that can be empirically used to answer normatively relevant questions. But statements like “that method requires assumptions” are beside the point, because *any* empirically informative approach requires assumptions. The alternative to one set of assumptions is not *no assumptions*, but rather some *other assumptions*. We need more clarity from researchers about the behavioral restrictions and assumptions embedded in their mapping of empirical facts into normatively relevant ones, because the appropriateness of often untestable behavioral assumptions can be productively debated only when these assumptions are allowed out in the open.

The second strand of this discussion is a bit more subtle, and is actually prior to the no blood from a stone principle. One might call it the “understand which question you’re studying” principle. There’s little point in arguing over whether an estimate is large or small, or larger or smaller than some other estimate, if no one has a clear understanding of the *estimand*—i.e., the object of estimation. It seems likely that most authors of empirical studies of *Twombly/Iqbal* have had in mind estimating something like what Hubbard has called the “true effect on dismissal rates.”⁹⁵

Using this phrase makes it seem like all researchers are trying to estimate some particular parameter’s value, and that any problems in so doing are the result of some sort of estimation challenge, whether due to party selection effects or other factors such as changes in the economy that change litigation behavior. Yet that can’t be right, for at least two reasons. First, there is surely variation across cases in the probability of dismissal: some complaints are stronger than others; some cases are assigned to judges who may be more defendant- or plaintiff-friendly. Moreover, as a practical matter some cases will never face Rule 12(b)(6) motions, since plaintiffs in those cases will have no problem pleading plausibly. Since we never observe such cases facing Rule 12(b)(6) motions, we have no way (*other* than via assumption) to learn anything at all about “the true” dismissal rate for cases such as these.⁹⁶ In the applied econometrics literature, much attention has been paid in recent decades to what has come to be known as treatment effect heterogeneity. The issues can get very technical and notationally dense, but roughly speaking, the end result

95. Hubbard, *A Theory of Pleading*, *supra* note 40, at 15.

96. James Heckman has made the point that certain types of overall effects are neither policy relevant nor interesting to observe. *See, e.g.*, James J. Heckman, *Instrumental Variables: A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations*, 32 J. HUM. RESOURCES 441, 443-44 (1997) (“Picking a millionaire at random to participate in a training program for low skilled workers, or making an idiot into a PhD may be intriguing thought experiments but are usually neither policy relevant nor feasible. They are not policy relevant because interest centers on the effects of programs on intended recipients—not on persons for whom the program was never intended. It is not a feasible random-assignment strategy because millionaires would never agree to participate in such a training program even if they were offered the chance to do so, and few idiots would be able to attain the PhD in most fields.”).

has been an agreement that what researchers typically are estimating in such
Spring 2014 — DARK ARTS AND EMPIRICAL REALITY 249
estimates—their estimate of the effect among users
that could be affected by the policy change at issue.⁹⁷

Thus it is important to understand that even if Hubbard's "true effect on dismissal rates" could be identified empirically, it would be some sort of average of the true effect on the probability of dismissal for *some subset* of all disputes. In Hubbard's context, that subset would be something like "the set of disputes that would turn into lawsuits if the parties expected one pleading standard to govern when the plaintiff filed suit but then found out some other standard would govern." At best, Hubbard's approach identifies an average effect among such disputes, which might differ importantly from other disputes of interest. To be sure, the negatively affected share measure I discuss in Part III.C, *infra*, also concerns only a subset of cases (those that would have a Rule 12(b)(6) motion filed under the post-*Iqbal* pleading standard). Thus I do not mean to criticize Hubbard, or anyone else, for using a method that could identify policy impact for only some types of cases; without further assumptions that ensure homogeneity of policy effects, this is simply a fact of empirical life.

Second, and at least as important, is the fact that "the probability of dismissal" is itself a problematic and incomplete object of study. As I argued in *Locking the Doors* and shall discuss in Part III, *infra*, a change in the pleading standard can be expected to affect parties' welfare through direct selection-related channels, not just through the change in the probability that any given case would be dismissed. Thus, it is a mistake to compare the results in *Locking the Doors*—which self-consciously considered a broader array of effects than simply changes in judicial behavior—directly to others in the literature.⁹⁸ This example shows that it is important not only to be clear about the behavioral framework in which an estimate is to be interpreted, but also to be clear about *what object* is being estimated, and why that object is of interest.

97. See, e.g., James Heckman & Richard Robb, *Alternative Methods For Evaluating the Impact of Interventions*, in LONGITUDINAL ANALYSIS OF LABOR MARKET DATA 156-245 (James Heckman & Burton Singer eds., 1985); Guido W. Imbens & Joshua D. Angrist, *Identification and Estimation of Local Average Treatment Effects*, 62 *ECONOMETRICA* 467 (1994). For studies seeking to identify distributional effects, rather than simply mean impacts, see, e.g., John DiNardo, Nicole M. Fortin, & Thomas Lemieux, *Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach*, 64 *ECONOMETRICA* 1001 (1996); James J. Heckman, Jeffrey Smith & Nancy Clements, *Making the Most Out of Programme Evaluations and Social Experiments: Accounting for Heterogeneity in Programme Impacts*, 64 *REV. ECON. STUDIES* 487 (1997); Marianne P. Bitler, Jonah B. Gelbach, & Hilary W. Hoynes, *What Mean Impacts Miss: Distributional Effects of Welfare Reform Experiments*, 96 *AM. ECON. REV.* 988 (2006).

98. For example, Hubbard commits this error when he writes that *Locking the Doors* "account[s] for selection effects in estimating the effects of *Twombly* or *Iqbal* on dismissal rates." Hubbard, *Testing for Change*, *supra* note 40, at 45.

In this Part I discuss the behavioral framework I built and explored in *Locking the Doors*, as well as its connection to the empirical results reported there. A key building block in *Locking the Doors* is the idea that for any pleading standard, each dispute has a *potential outcome* that *would* obtain in that dispute *if* the pleading standard in question governed.⁹⁹ It is critical to recognize that potential outcomes are counterfactual objects. Regardless of what *does* happen, potential outcomes tell us something about what *would* happen *if* a state of the world *were* to occur.

In discussing the behavioral framework in *Locking the Doors*, I assumed that each case involves a single plaintiff with a single claim against a single defendant, that Rule 12(b)(6) motions are the only type of motion to dismiss, and that any time such a motion is granted, it is granted without allowing the plaintiff leave to amend her complaint. For exposition's sake, I shall at first retain these assumptions; in Part III.F.1, *infra*, I explain why their importance is only expositional—no qualitative differences arise when I relax these assumptions.

A. *Potential Outcomes*

In *Locking the Doors*, I noted that we can separate cases into several categories of potential outcomes:

- “D” disputes: those that are dropped without the plaintiff’s filing a complaint;
- “S” disputes: those that involve an agreed settlement before the defendant files either an answer or a motion to dismiss (these cases might be settled either before or after the plaintiff files her complaint);
- “A” disputes: those in which the plaintiff files a complaint and the defendant files an answer without filing a motion to dismiss;
- “M” disputes: those in which the plaintiff files a complaint and the defendant files a motion to dismiss.

I then observed that since each dispute has a unique potential outcome under a given pleading standard, we can further categorize disputes according to the sixteen logically possible pairs of these potential outcomes that might obtain under the *Conley* and *Twombly/Iqbal* pleading standards. The matrix in Figure 5 illustrates these sixteen possible dispute types, with potential outcomes under *Conley* represented in the matrix’s rows and potential outcomes under *Twombly/Iqbal* represented in its columns.

99. For an early discussion of the role of potential outcomes in defining and estimating causal effects, see Donald B. Rubin, *Estimating Causal Effects of Treatments in Randomized and Nonrandomized Studies*, 66 J. EDUC. PSYCOL. 688 (1974).

Figure 3.14 Taxonomy of Cases and Terms of Potential Outcomes Under the Conley and Twombly/Iqbal Pleading Regimes

		Outcome under <i>Twombly/Iqbal</i> Standard			
		Dropped	Settled	Answered	MTD Filed
Outcome under <i>Conley</i> Pleading Standard	Dropped	DD	DS	<i>DA</i>	<u>DM</u>
	Settled	SD	SS	SA	SM
	Answered	<i>AD</i>	AS	AA	<u>AM</u>
	MTD Filed	<u>MD</u>	MS	<u>MA</u>	MM

Legend
 Shaded — Non-selection disputes
Bold — Settlement selection disputes
Underlined — Defendant selection disputes
Italicized — Plaintiff selection disputes

Thus, for example, a dispute of type DD is one that would be dropped by the plaintiff under *Conley* (the first “D”) and also dropped under *Twombly/Iqbal* (the second “D”), while an AA dispute is one in which, under both pleading standards, the plaintiff would file suit and the defendant would file an answer; similarly, SS disputes are settled under both pleading standards and MM disputes involve a plaintiff’s filing suit and a defendant’s filing a motion to dismiss. These four types of disputes—whose potential outcome is the same under the two pleading standards, and which are represented with shaded cells on the top-left to bottom-right diagonal part of the Figure 5 matrix—are what I term “non-selection” cases. Disputes with different potential outcomes under the two pleading standards are those that involve some sort of selection, since parties do different things in these disputes as a function of the governing pleading standard. These dispute types are represented by the cells that lie off the diagonal that runs from the top-left to the bottom-right of Figure 5’s matrix. I define settlement selection to include any dispute that would be settled under one pleading standard but not the other. For example, in SM disputes, the parties would settle under *Conley*, but under *Twombly/Iqbal* the plaintiff would file suit and the defendant would file a Rule 12(b)(6) motion; thus SM disputes in-

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involve settlement selection. All told, the dispute types that involve settlement selection are represented in Figure 5 using bold font in the cell labels.

Dispute types that do not involve settlement selection but do involve a change in whether the defendant files a Rule 12(b)(6) motion are those that I term defendant selection disputes. For example, AM disputes involve defendant selection, because while the plaintiff would file suit under either standard, the defendant would file an answer under *Conley* but file a motion to dismiss under *Twombly/Iqbal*. In Figure 5, defendant selection disputes are represented with underlined cell labels. Finally, I say that disputes involve plaintiff selection if they do not involve settlement selection but do involve a change in whether the plaintiff files suit. Thus plaintiff selection occurs in disputes of type AD, MD, DA, and DM. Dispute types in which there is plaintiff selection are represented with italic font in the cell labels in Figure 5.¹⁰⁰

The next step in *Locking the Doors* was to divide “M” cases into two more refined potential outcome sub-categories:

- “M_D” cases: those M cases in which the defendant’s motion to dismiss would be *denied*;
- “M_G” cases: those M cases in which the defendant’s motion to dismiss would be *granted*.

Now we have five, rather than four, potential outcomes for each pleading standard. Since each dispute has one potential outcome under each pleading standard, there are 25 logically possible dispute types: each of the five types of potential outcome under *Conley*, paired with each of the five types under *Twombly/Iqbal*, as depicted in the expanded matrix in Figure 6. The matrix retains Figure 5’s approach of using different shading and fonts to highlight which dispute types are which.

100. Notice that dispute types DM and MD involve both plaintiff and defendant selection.

Figure 6: Expanded Taxonomy of Cases in Terms of Potential Outcomes Under the *Conley* and *Twombly/Iqbal* Pleading Regimes

		Outcome under <i>Twombly/Iqbal</i> Standard					
		Dropped	Settled	An- swer-ed	MTD Filed		
					Denied	Grant-ed	
Outcome under <i>Conley</i> Standard	MTD Filed	Dropped	DD	DS	DA	<u>DM_D</u>	<u>DM_G</u>
		Settled	SD	SS	SA	SM_D	SM_G
		Answered	AD	AS	AA	<u>AM_D</u>	<u>AM_G</u>
	Not Filed	Denied	<u>M_DD</u>	M_DS	<u>M_DA</u>	M _D M _D	M _D M _G
		Granted	<u>M_GD</u>	M_GS	<u>M_GA</u>	M _G M _D	M _G M _G
		Not Reached					

Legend
 Shaded — Non-selection disputes
Bold — Settlement selection disputes
Underlined — Defendant selection disputes
Italicized — Plaintiff selection disputes

One feature of Figure 6 is that it helps clarify which judicial behavior effects might possibly be identified empirically. Formally, I define a given dispute’s *judicial behavior effect* to be (i) the probability that a judge would grant a Rule 12(b)(6) motion in that dispute under *Twombly/Iqbal* if the dispute were to reach the Rule 12(b)(6) stage of litigation under that pleading standard, minus (ii) the corresponding probability of a Rule 12(b)(6) grant under *Conley*, again if the dispute were to reach the Rule 12(b)(6) stage under that pleading standard.

254 THE STRAIGHT DOPE: JOURNAL OF COMPLEX LITIGATION

Thus, the judicial behavior effect is defined for every dispute, even if the dispute was never actually litigated. For example, consider a dispute over who won a round of Rochambeau,¹⁰¹ with stakes equal to \$1, between a single plaintiff and a single defendant. Assuming neither party cares about the principle involved, this dispute would obviously never lead to a federal lawsuit, much less a Rule 12(b)(6) motion.¹⁰² But the question of what *would* happen under each pleading standard, if such a dispute were litigated to the Rule 12(b)(6) stage, is logically prior to whether the event *will* happen. So it is proper to speak of the judicial behavior effect for this dispute—and, indeed, for any dispute. That said, observe that the only dispute types in Figure 6 that would see Rule 12(b)(6) motions filed under both pleading standards are, by definition, those involving disputes that are Type M under both pleading standard. We can define the judicial behavior effect among these dispute types as

$$JBE_{MM} = \frac{M_D M_G}{MM}$$

This parameter tells us the share of MM cases in which a Rule 12(b)(6) motion is granted *only* because of the switch to the *Twombly/Iqbal* pleading standard—that is, it tells us the share of MM cases in which *Twombly/Iqbal* but-for cause a Rule 12(b)(6) motion grant. Thus, JBE_{MM} is the kind of parameter that authors in the empirical literature seem to have in mind. In the next section, I analyze the circumstances under which JBE_{MM} can be identified empirically and conclude that these circumstances are unlikely.

First, though, we should take note of another important point: even if JBE_{MM} could be identified, this judicial behavior effect parameter would tell us the judicial behavior effect *only among MM disputes*. It is entirely possible that the effect would be different among other dispute types.¹⁰³ This is important to recognize because it is parties' *perceived* changes in judicial behavior that will be the driving force in changing party behavior. And many cases might involve party selection, placing them outside the MM set. Thus, even if we could learn the judicial behavior effect among MM cases, we would be missing much of the landscape that is relevant to understanding how party behavior changes. This is an example in which it is important to keep in mind Fischman's admonition to "think more carefully about how empirical findings generalize from a research setting to a policy-relevant context."¹⁰⁴

101. See, e.g., *What's the Origin of "Rock, Paper, Scissors?"* THE STRAIGHT DOPE, available at <http://www.straightdope.com/columns/read/1936/whats-the-origin-of-rock-paper-scissors>.

102. Civil procedure mavens might wonder at subject matter jurisdiction here. Posit, then, the hypothetical federal question jurisdiction-conveying Federal Rock, Paper, Scissors Fairness Act.

103. See *supra* discussion of treatment effect heterogeneity at notes 96-96.

104. Fischman, *supra* note 5, at 154.

The discussion in section A, *supra*, imposed no particular behavioral framework: it considered all logically possible dispute types in terms of their pair of potential outcomes under the two pleading standards. Here I follow the approach in *Locking the Doors*: I sketch a simple economic model of pretrial litigation whose key foundations are the assumptions (i) that parties behave rationally, in the sense that each party pursues her self-interest as she understands it, and roughly speaking, and (ii) that litigation activity occurs if and only if at least one party expects to be better off litigating than either settling or allowing the case to move to the next stage.¹⁰⁵

One payoff from using this model is that we can eliminate from consideration the possibility that there are disputes of certain of the types discussed above. First, because there is no reason to think *Twombly/Iqbal* actually *reduce* defendants' chances of winning on a motion to dismiss, we can rule out $M_G M_D$ disputes; in such disputes a judge would grant the Rule 12(b)(6) motion under *Conley* but deny it under *Twombly/Iqbal*. Second, we can rule out $M_D A$ and $M_G A$ disputes: a defendant who would find it worth filing a motion to dismiss when her adversary files suit under *Conley* will never find it worthwhile to back down and file an answer under *Twombly/Iqbal*. We can rule out the presence of DS , DA , DM_D , and DM_G disputes for essentially the same reason: whatever the precise effect of *Twombly* and *Iqbal*, they hardly could improve plaintiffs' assessment of the returns to litigating. In Figure 7, I repeat the taxonomy from Figure 6, except that I indicate the dispute types whose presence is ruled out under the economic model by blacking out the cells that represent them.

105. I work out the details of this model in considerable mathematical detail in Gelbach, *Selection in Motion*, *supra* note 17.

Figure 7: Expanded Taxonomy of Cases, with Model of Eliminated Dispute Types Indicated

		Outcome under <i>Twombly/Iqbal</i> Standard					
		Dropped	Settled	Answered	MTD Filed		
					Denied	Granted	
Outcome under <i>Conley</i> Standard	MTD Filed	Dropped	DD				
		Settled	SD	SS	SA	<u>SM_D</u>	<u>SM_G</u>
		Answered	AD	AS	AA	<u>AM_D</u>	<u>AM_G</u>
		Denied	<u>M_DD</u>	M _D S		M _D M _D	M _D M _G
		Granted	<u>M_GD</u>	M _G S			M _G M _G

Legend

Blacked out — Model implies no disputes of type
 Shaded — Non-selection disputes
Bold — Settlement selection disputes
Underlined — Defendant selection disputes
Italicized — Plaintiff selection disputes

It can be shown, however, that all dispute types whose cells in Figure 7 are not blacked out might occur even when parties are rational in the way discussed above.¹⁰⁶ An important consequence is that the change in the Rule 12(b)(6) grant rate is broadly uninformative about any effect of interest. Observe the following:

106. See Gelbach, *Selection in Motion*, *supra* note 17.

- The dispute types that have a Rule 12(b)(6) motion *granted* under *Conley* are $M_G M_G$, $M_G S$, and $M_G D$.
- The dispute types that have a Rule 12(b)(6) motion *filed* under *Conley* are those that have grants under *Conley*, as well as $M_D M_G$, $M_D M_D$, $M_D S$, and $M_D D$ disputes.¹⁰⁸
- Thus, using the convention that the number of disputes of each type is represented by the dispute type's label, the grant rate under *Conley* is:

$$g_C = \frac{M_G M_G + M_G S + M_G D}{MM + MS + MD}$$

- The dispute types that have a Rule 12(b)(6) motion *granted* under *Twombly/Iqbal* are $M_G M_G$, $M_D M_G$, AM_G , and SM_G .¹⁰⁹
- The dispute types that have a Rule 12(b)(6) motion *filed* under *Twombly/Iqbal* are those that have grants under *Twombly/Iqbal*, as well as $M_D M_D$, AM_D , and SM_D disputes.¹¹⁰
- Again using the convention that the number of disputes of each type is represented by the dispute type's label, the grant rate under *Twombly/Iqbal* is:

$$g_{\pi} = \frac{M_G M_G + M_D M_G + A M_G + S M_G}{MM + AM + SM}$$

Obviously all this is a bit of a mess. And the *difference* between the grant rates g_C and g_{π} is even worse; it certainly does not seem that anything simple can be learned by measuring the difference in the grant rate across pleading standards. With a bunch of boring algebra, it can be shown that the difference in the grant rates equals:

107. Thus the disputes that have a Rule 12(b)(6) motion granted under *Conley* include non-selection disputes ($M_G M_G$), settlement selection disputes ($M_G S$), and plaintiff selection disputes ($M_G D$).

108. Thus, in addition to the dispute types with Rule 12(b)(6) motions granted under *Conley*, the disputes that have a Rule 12(b)(6) motion filed under *Conley*—whether the motion is granted or denied—include additional non-selection disputes ($M_D M_G$ and $M_D M_D$), additional settlement selection disputes ($M_D S$), and additional plaintiff selection disputes ($M_D D$).

109. Thus, the disputes that have a Rule 12(b)(6) motion granted under *Twombly/Iqbal* include non-selection disputes ($M_G M_G$ and $M_D M_G$), defendant selection disputes (AM_G), and settlement selection disputes (SM_G).

110. Thus, in addition to the dispute types with Rule 12(b)(6) motions granted under *Twombly/Iqbal*, the disputes that have a Rule 12(b)(6) motion filed under *Twombly/Iqbal*—whether the motion is granted or denied—include additional non-selection disputes ($M_D M_D$), additional settlement selection disputes (SM_D), and additional defendant selection disputes (AM_D).

where B_{TI} , B_C , and B_Δ all depend on the numbers of disputes of various types.¹¹¹ It can be shown that both B_{TI} and B_C are positive and no greater than 1, and that either can be the greater of the two. It can also be shown that B_Δ can be either positive or negative.

I shall now illustrate the pathologies that inhere in using the difference in grant rates to measure the judicial behavior effect parameter JBE_{MM} . First suppose that *Twombly* and *Iqbal* have no impact on judicial behavior at all, so that JBE_{MM} is zero. In that case, the change in the grant rate equals the term in square brackets just above. It is easy to construct examples in which this term is positive, negative, or zero.¹¹² And even if the judicial behavior effect is positive—so that judges dismiss more MM cases under *Twombly/Iqbal* than they would under *Conley*—it is possible to construct examples in which the difference of the grant rate takes on any sign.¹¹³ Consequently, observed values of the change in the grant rate carry no information even about the sign of judicial behavior effects. In other words: by itself, *the change in the grant rate tells us nothing at all about the judicial behavior effect among MM cases.*¹¹⁴ The

111. The B_{TI} , B_C , and B_Δ terms are given by the following:

$$B_{TI} = \frac{MM}{MM + AM + SM}, \quad B_C = \frac{MM}{MM + MS + MD},$$

$$\text{and } B_\Delta = \frac{AM_C + SM_C}{MM + AM + SM} - \frac{M_C S + M_C D}{MM + MS + MD}$$

The B_{TI} term tells us the share of cases with Rule 12(b)(6) motions filed under *Twombly/Iqbal* in which there is *not* party selection, and the B_C term tells us the corresponding fact for cases with Rule 12(b)(6) motions filed under *Conley*. The first part of the B_Δ term measures the importance of party selection among cases with Rule 12(b)(6) motions granted under *Twombly/Iqbal*, as a share of the number of cases with such motions filed under *Twombly/Iqbal*; the second part of the B_Δ term measures the analogous fact under *Conley*. Thus, B_Δ is positive when selection is a proportionately more important factor in driving grants under *Twombly/Iqbal* than it is under *Conley*, with importance calculated proportionately to the number of motions filed under each respective pleading standard.

112. Recall that $(B_C - B_{TI})$ may have any sign, as can B_Δ ; it is also possible to show that neither the sign of $(B_C - B_{TI})$ nor the sign of B_Δ restricts the other. By setting both $(B_C - B_{TI}) > 0$ and $B_\Delta > 0$, we get a positive square-bracket term (since the grant rate under *Conley* is always positive). By reversing the inequalities, we get a negative square-bracket term, and by replacing them with “=” we get a zero square-bracket term.

113. See Table 1 of Gelbach, *Locking the Doors*, *supra* note 17 at 2313 (providing an example of each type, with a true judicial behavior effect among MM cases of 20 percentage points).

114. In fact, I go further than this in other draft work. See Gelbach, *Selection in Motion*, *supra* note 17 (showing that both the presence and absence of judicial behavior effects is consistent with any combination of (i) change in the grant rate, (ii) change in the share of filed cases that face Rule 12(b)(6) motions, and (iii) number of cases filed).

change in the grant rate is just like our hypothetical statistician's attempt to test ~~Spring 2014~~ ~~of demand by Regressing Equilibrium Price~~ ~~Part II.A, supra~~ ~~259~~, where any empirical finding would have been consistent with the empirical correctness of the theory.

A quick look at equation (1) shows that the difference in the grant rate *does* identify JBE_{MM} when $B_{TI}=1$, $B_C=1$, and $B_\Delta=0$ all hold. What are the conditions under which these three conditions all are satisfied? Precisely the conditions under which there is no party selection. This can be seen by inspecting note 111, *supra*, and observing that

- $B_{TI}=1$ if and only if there are no AM or SM cases (so that there is no selection *into* Rule 12(b)(6) motion filing);
- $B_C=1$ if and only if there are no MS or MD cases (so that there is no selection *out of* Rule 12(b)(6) motion filing);
- $B_\Delta=0$ if each of the first two conditions holds.¹¹⁵

Thus, just as our statistician from Part II can claim her regression results estimate the demand curve if she is willing to assume away variation in demand, so, too, can a civil procedure researcher claim to identify the judicial behavior effect among MM cases if she is willing to assert the absence of defendant selection (which eliminates AM disputes), plaintiff selection (which eliminates MD disputes), and settlement selection (which eliminates SM and MS disputes); notice that when there are no party selection effects of these types, there is no party selection *at all*.

I have made no bones about my view that it is entirely unreasonable to make this assumption. In part, that is because the empirical evidence decisively rejects the assumption that there is no party selection. For example, the FJC authors' initial report shows that the rate at which Rule 12(b)(6) motions are filed rose substantially among filed cases.¹¹⁶ All else equal, such a result can be observed only if there are some disputes whose pair of potential outcomes has an "M" at the end but not at the front. In other words, it can be observed only if there is either defendant selection—AM cases—or settlement selection—SM cases.¹¹⁷

This discussion shows that the assumption of no selection is rejected by the data. But that assumption was only a sufficient condition for the difference in the grant rate to identify the judicial behavior effect among MM cases. It is natural to wonder whether there are other assumptions that would yield identification of the judicial behavior effect parameter JBE_{MM} . Formally, the answer is yes, but for practical purposes it is no, because the required assumptions both

115. Notice that B_Δ can equal 0 even when B_{TI} and B_C are not both 1. However, I do not pursue this point since $B_{TI}=1$ and $B_C=1$ both require the absence of selection.

116. See FJC INITIAL REPORT, *supra* note 33, at 9 tbl.1.

117. Under the restrictions of the economic model, there will be no DM cases.

are very strong and appear impossible to motivate in an intuitive way.¹¹⁸ Con-
 260 quently, TABLE 4 appears to be a result of complex litigation. Judicial behavior effects
 261 among MM cases are out of luck: the assumptions necessary to do so are
 too strong to accept.

This admonition applies to all empirical studies that have concentrated on
 using *Twombly* and *Iqbal*'s effects on Rule 12(b)(6) outcomes to measure judi-
 cial behavior effects.¹¹⁹ That includes Hubbard's work, even though, as dis-
 cussed *supra*, it plausibly eliminates plaintiff selection effects.¹²⁰ In the
 framework discussed here, eliminating plaintiff selection effects means elimi-
 nating M_D and M_G cases. But this restriction has no effect on our B_{TI} term,
 and while it does limit the types of cases that might be represented in our B_C
 and B_Δ terms, it does not do so in a way that provides any more useful informa-
 tion about the relative magnitude of these terms.¹²¹

118. After a lot of tedious algebra, it can be shown that when B_{TI} and B_C are not both
 1, the difference in the grant rate equals the judicial behavior effect among MM cases if and
 only if

$$JBE_{MM} = (1 - B_{TI})^{-1} \left[\frac{(MS + MD) - (AM + SM)}{(MM + AM + SM)(MM + MS + MD)} M_G M_G + B_\Delta \right].$$

The most important thing to note is that this high-level condition places a restriction on
 JBE_{MM} , the object of measurement itself: only when the judicial behavior effect happens to
 equal a complicated function of various selection-related effects will the grant rate identify
 JBE_{MM} . It might seem that some headway could be made via the assumption that , which
 implies that the same number of cases select out of, and into, the state of having Rule
 12(b)(6) motions as a result of *Twombly* and *Iqbal*. Under this restriction, the first term in
 square brackets would be zero. Even then, though, the difference in the grant rate identifies
 JBE_{MM} only if JBE_{MM} itself just happens to equal $B_\Delta / (1 - B_{TI})$, and it can be shown that this
 implies the restriction that JBE_{MM} equals the ratio $[(AM_G + SM_G) - (M_G S + M_G D)] \div (AM + SM)$,
 which isn't even possible when the numerator term is negative; more generally, there is just
 no reason to believe it should be true.

119. Alexander A. Reinert, *The Costs of Heightened Pleading*, 86 IND. L.J. 119 (2011)
 is an exception, but only because he considers only cases from the pre-*Twombly* period, and
 in this sense his is a completely different approach.

120. Here I focus on Tables 4 and 5 of Hubbard, *Testing for Procedural Change, su-
 pra* note 40, at 54 and 55, respectively (these tables report results from linear regressions,
 which can be viewed functionally as estimated changes in the grant rate after partialing out
 variation due to covariates included in Hubbard's models). Tables 6 and 7 of his paper, at 56
 and 57, respectively, use a different denominator—all filed cases, rather than all cases in
 which a Rule 12(b)(6) motion was filed. The resulting outcome variable, which equals the
 ratio of the number of measured Rule 12(b)(6) grants divided by the number of all cases
 filed, can be written as the product of (i) the conventional grant rate discussed here and (ii)
 the Rule 12(b)(6) filing rate among all filed cases. As discussed in *supra* note 114, I show in
 Jonah B. Gelbach, *Selection in Motion, supra* note 17, that both the presence and absence of
 judicial behavior effects is consistent with any combination of (i) change in the grant rate
 and (ii) change in the share of filed cases that face Rule 12(b)(6) motions. This means that,
 like his Table 4 and 5 results, Hubbard's Table 6 and 7 results are consistent with both the
 presence and the absence of changes in judicial behavior as a result of *Twombly* and *Iqbal*.

121. For example, if there is enough settlement selection in the form of MS cases, B_C
 might exceed B_{TI} even with no plaintiff selection; if there is enough defendant selection or

Thus, Hubbard's results for the change in the grant rate are consistent with Spring 2014 presence of DARK ARTS AND EMPIRICAL REALITY among MM cases (i.e., non-selection cases that face Rule 12(b)(6) motions). In terms of its claim to identification, then, Hubbard's approach has no more payoff than any of the other grant rate-comparing approaches in the literature. This conclusion shows just how important it is to embed one's analysis in a clear behavioral framework. Hubbard does provide a high-level discussion of litigation selection models, but he fails to make that discussion sufficiently operational to recognize that controlling for plaintiff selection alone is insufficient to identify any effect of interest. As with the rest of the empirical *Twombly/Iqbal* literature, Hubbard's estimates identify a meaningful parameter only under the implausible assumption that there is neither defendant selection nor settlement selection.

C. Mapping Potential Outcomes into a Measure of Negatively Affected Cases

The foregoing discussion shows that judicial behavior effects cannot be identified without assumptions that no one should be willing to make. In *Locking the Doors* I showed how, even so, we can learn something of real empirical interest without making such assumptions. I reprise that demonstration in this section.

As discussed in Part III.B, the total number of cases that would have a motion to dismiss granted under *Twombly/Iqbal* equals the sum of the numbers of $M_G M_G$, $M_D M_G$, AM_G , and SM_G disputes. Of these four types of disputes, the last three involve plaintiffs that are negatively affected by a change from *Conley* to *Twombly/Iqbal*, as I define the concept of "negatively affected" in *Locking the Doors*: the plaintiff doesn't get to discovery under *Twombly/Iqbal*, while she would either get to discovery or receive a settlement under *Conley*. The set of negatively affected cases on which I focus attention equals the total number of $M_D M_G$, AM_G , and SM_G disputes.¹²² If we could observe this num-

settlement selection in the form of SM cases, the opposite will occur; see *supra* note 111. Similar points can be made about the sign of the B_A term.

122. I emphasize that these are not the only disputes with negatively affected plaintiffs, given my definition of "negatively affected." For example, plaintiffs in AM_D and SM_D disputes have to litigate Rule 12(b)(6) motions under *Twombly/Iqbal* that they would not face under *Conley*. See also Cecil, *Waves*, *supra*, at 13 (stating that "a plaintiff also may be 'negatively affected' by having to respond to a motion to dismiss, even if the motion is denied").

Observe that the number of AM_D and SM_D disputes equals the number of disputes with Rule 12(b)(6) motions denied post-*Twombly/Iqbal* minus the number of $M_D M_D$ disputes. Meanwhile, the number of disputes with a Rule 12(b)(6) motions denied under *Conley* is at least as great as the number of $M_D M_D$ disputes. It follows that the number of AM_D and SM_D disputes is at least as great as the change in the number of Rule 12(b)(6) denials. Table 1 of the FJC INITIAL REPORT, see *supra* note 40, at 9, reports that Rule 12(b)(6) motions were filed in 6.9% of 3,795, or 262, pre-*Twombly* employment discrimination cases and in 9.0% of 3,871, or 348, post-*Iqbal* cases. These statistics together imply an increase of 86 Rule 12(b)(6) filings in employment discrimination cases. Table A-1 of the FJC UPDATED REPORT, see *supra* note 33, at 7, indicates that respondents prevailed in roughly 39% of the

ber, we could determine the fraction of negatively affected cases among all those that have a Rule 12(b)(6) motion filed. The denominator of this *negatively affected share* is observable, because the total number of cases that *would* have Rule 12(b)(6) motions filed *if Twombly/Iqbal were* the operative pleading standard is necessarily the total number of cases that *do* have Rule 12(b)(6) motions filed under *Twombly/Iqbal when* that pleading standard governs. Thus, the negatively affected share in question may be written

$$NAS = \frac{M_D M_G + AM_G + SM_G}{MM + AM + SM}$$

We can observe the number of cases in which a Rule 12(b)(6) motion is granted under *Twombly/Iqbal*, but this number includes both cases in which plaintiffs are negatively affected—the $M_D M_G$, AM_G , and SM_G cases discussed above—and cases in which plaintiffs are unaffected. The latter category is composed of $M_G M_G$ disputes—those that would have a motion to dismiss filed and granted under either pleading standard. Because it is impossible to observe the same case adjudicated at the same time by the same court under different pleading standards, we can never directly observe more than one potential outcome of any case.¹²³ Unfortunately, cases do not come with convenient labels indicating what would have happened had they faced a different set of legal rules. Thus we have no way to tell which cases with Rule 12(b)(6) motions granted under *Twombly/Iqbal* also would have had such motions granted under *Conley*—which cases, in other words, are $M_G M_G$ cases. In terms of Figure 8, we would like to know the number of disputes that occupy the middle three cells of the final column—those that involve Rule 12(b)(6) grants that occur under *Twombly/Iqbal* but would not occur under *Conley*—but all we can observe directly is the number of disputes that occupy all *four* cells of this column, including the $M_G M_G$ cell.

Rule 12(b)(6) motions that the FJC coded in both the pre-*Twombly* and the post-*Iqbal* periods. Using a denial rate of 39% in each of the pre-*Twombly* and post-*Iqbal* periods implies that the number of AM_D and SM_D disputes must have increased by at least 34. This figure implies that *Twombly* and *Iqbal* caused what might be called negative litigation effects on plaintiffs—forcing them to litigate motions they would win but would not face under *Conley*—in at least 13% (34 out of 262) of employment discrimination cases in which a Rule 12(b)(6) motion was filed in the post-*Iqbal* period. Thus, negative litigation effects might well have been nontrivial.

123. The problem that causal effects are defined in terms of multiple potential outcomes, whereas at most one potential outcome can be observed for any unit of interest, is sometimes called the fundamental evaluation problem; see Gelbach, *Locking the Doors*, *supra* note 17, at 2296. It is an unavoidable fact that this problem can be solved *only* via assumptions.

**Figure 8: Taxonomy of Cases with Rule 12(b)(6) Motions Granted Under
 at Least One Pleading Standard**

		Outcome under <i>Twombly/Iqbal</i> Standard					
		Dropped	Settled	Answered	MTD Filed		
					Denied	Granted	
Outcome under <i>Conley</i> Standard	MTD Filed	Dropped					
		Settled					SM_G
		Answered					<u>AM_G</u>
		Denied					M _D M _G
		Granted	<u>M_GD</u>	M_GS			M _G M _G
	Granted						

Legend

Blacked out — Model implies no disputes of type
 Shaded — Non-selection disputes
Bold — Settlement selection disputes
Underlined — Defendant selection disputes
Italicized — Plaintiff selection disputes
 Empty — No Rule 12(b)(6) grant under either pleading standard

Here is where the lower bound part comes into play. Even though there is no way to count the exact number of M_GM_G cases, there is a way to identify a number that must equal *at least* the number of M_GM_G cases. This is true because the number of cases that would have Rule 12(b)(6) motions granted under the *Conley* pleading standard necessarily equals the total number of cases of

types $M_G M_G$, $M_G D$, and $M_G S$,¹²⁴ and there can never be negative numbers of $M_G D$ or $M_G S$ cases. The total number of $M_G M_G$ cases that *would* have Rule 12(b)(6) motions granted if *Conley* governed must exceed the total number of $M_G M_G$ cases. And the total number of cases that *would* have Rule 12(b)(6) motions granted under *Conley* if *Conley* governed is observable, because it is the number of cases that *actually* have motions granted *when Conley* governed. In terms of Figure 8, the number of disputes with Rule 12(b)(6) motions granted under *Conley* is the number of disputes occupying any of the cells in the bottom row. This number includes the number of disputes in the $M_G M_G$ cell, as well as any disputes in the $M_G D$ and $M_G S$ cells. Thus, the number of cases observed with Rule 12(b)(6) grants under *Conley* must equal at least the number of disputes in the $M_G M_G$ cell.

Consequently, subtracting the number of cases with motions granted under *Conley* from the number with motions granted under *Twombly/Iqbal* identifies a floor beneath—known as a *lower bound* on—the number of cases in which plaintiffs are negatively affected, among those that face Rule 12(b)(6) motions. That is, the actual number of negatively affected cases must always be at least as great as this lower bound. Since the number of cases with Rule 12(b)(6) motions filed under *Twombly/Iqbal* is observable, this means that observable data can be used to determine a lower bound on the negatively affected share.¹²⁵ To do so, one need only take the increase in the number of cases with a Rule 12(b)(6) motion granted¹²⁶ and divide it by the number of cases in which a Rule 12(b)(6) motion is filed.¹²⁷

(2) Lower bound on Negatively Affect Share for post-*Iqbal* Cases with 12(b)(6) Motions =

$$\frac{\text{Increase in Grants}}{\text{Number of Motions Filed after Twombly/Iqbal}}$$

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124. Recall from section B, *supra*, that the existence of MA suits can be ruled out; this conclusion eliminates the possibility of observing any $M_G A$ disputes. The same is true of $M_D M_G$ cases.

125. One exception to this statement relates to the nature of the FJC authors' coding in the updated report. See Part IV.D, *infra*, on Type Z disputes.

126. See section D, *infra*, for a discussion of the empirical counterpart to "granted" motions as I have used that term in the present discussion.

127. A point I did not discuss in *Locking the Doors* is that there is also an identifiable *upper* bound. Since there can never be a negative number of $M_G M_G$ disputes, the total number of cases with Rule 12(b)(6) grants under *Twombly/Iqbal* is an upper bound on the number of negatively affected cases defined above. When we divide the former number by the number of Rule 12(b)(6) motions filed under *Twombly/Iqbal*, the result is the observed grant rate under *Twombly/Iqbal*. Thus, the observed post-*Iqbal* grant rate is itself an upper bound on the share of cases with negatively affected plaintiffs, as I have defined that term. Measures of the grant rate are relatively high—typically in the 60% range—so this upper bound is not very informative. Thus the identifiability of this upper bound appears to have primarily academic significance in the *Twombly/Iqbal* context.

Spring 2014 Joint DARK ARTS AND EMPIRICAL RESEARCH DISCUSSION back to the 265
of behavioral assumptions. The behavioral framework introduced in section A,
supra, was strong enough to allow us to rule out several dispute types. But
even if disputes of these types were not eliminated—i.e., even if I did not im-
pose an economic model that implies there will be no disputes of these types—
the lower bound in formula (2) would still be valid.¹²⁸ Ironically, then, Cecil
has it exactly backward when he suggests that my empirical conclusions are
“closely tethered” to important behavioral assumptions.¹²⁹ In fact, the primary
function of the behavioral framework here is to show the analytical shortcom-
ings of other studies: as discussed above, unreasonably strong assumptions,
such as the absence of party selection, would be necessary to justify use
changes in the grant rate to measure even the judicial behavior effect among
MM cases. By contrast, the power of my lower bound approach is its *weak* as-
sumptions: it is empirically informative without making any assumptions at all
on the pattern of party selection effects.¹³⁰

128. The seven eliminated dispute types are DS, DA, $M_G M_D$, $M_D A$, $M_G A$, DM_D , and DM_G . The first two types do not involve a Rule 12(b)(6) motion under either pleading stan-
dard, so allowing them would not affect any of my analysis. Of these, only the DM_G dis-
putes would be included in the observed number of post-*Iqbal* grants. Plaintiffs in such
cases would be negatively affected by *Twombly* and *Iqbal*, since they would spend resources
litigating under *Twombly/Iqbal*, only to lose at the Rule 12(b)(6) stage, whereas they would
avoid all litigation costs under *Conley*. The $M_D A$ and DM_D dispute types do not involve a
Rule 12(b)(6) motion being granted under either pleading standard. Consequently, the pres-
ence of these disputes would not affect the numerator of formula (2). If my economic model
were wrong in ruling out the presence of such case types, then, the only effect would be to
enlarge the number of dispute types over which both the negatively affected share and my
lower bound on it are defined: my empirical estimates would apply to a broadened set of
cases, but the estimates would be correct for that set.

Finally, $M_G M_D$ and $M_G A$ disputes would be included in the number of cases with Rule
12(b)(6) motions granted under *Conley*. Thus if there were any of these dispute types, they
would function only to reduce my lower bounds even further below the actual negatively
affected share (to put it differently, one would need to add the number of $M_G M_D$ and $M_G A$
disputes to the numerator in formula (2) just to get to the lower bound formula provided in
that formula).

129. Cecil, *Waves*, *supra* note 13, at 38-39 (“I am in awe of Professor Gelbach’s skill
in extending a common theoretical economic model to the pretrial litigation setting. Not be-
ing a practitioner of such dark arts, I will leave it to others to critique the economic model
itself. But, I do know enough to recognize that such models are closely tethered to the as-
sumptions that underlie their development, and I have a number of concerns about the as-
sumptions on which Professor Gelbach erects his model. I am particularly concerned about
the manner in which Professor Gelbach incorporates the findings of our studies into his eco-
nomic model and the validity of his conclusion regarding the extent to which *Twombly* and
Iqbal have restricted access to discovery and the opportunity to pursue their claims in
court.”) (footnote omitted).

130. It appears that part of Cecil’s problem here is due to his mistaken belief that the
model I use in *Locking the Doors* is an adaptation of Priest and Klein’s famous model. I ad-
dress this issue further in section III.F.1, *infra*.

As explained in Part IV.B, *infra*, the FJC authors collected their data on Rule 12(b)(6) motion filing and motion outcomes in different ways. Consequently, using formula (2) directly would require imputation of either the numerator or the denominator of formula (2). In *Locking the Doors*, I took the alternative approach of using a re-written version of formula (2). Simple if tedious algebra can be used to show that the following formula is mathematically equivalent to formula (2):

(3) Lower Bound in formula (2) =

Change in grant rate + (Pre-*Twombly* grant rate) x m ,

$$\text{where } m = \frac{\text{Increase in number of motions filed}}{\text{Number of motions filed after Twombly/Iqbal}}$$

This is a useful version of the lower bound formula for two reasons. First it allows me to use separate data source on grants and filings—an issue to which I shall return. Second, it allows one to see how the lower bound relates to the change in the grant rate. The lower bound formula equals that change, plus an additional term involving (i) the pre-*Twombly* grant rate and (ii) the relative numerosity of Rule 12(b)(6) motions before and after *Twombly/Iqbal*. Thus, whenever the number of Rule 12(b)(6) motions filed is greater after *Twombly/Iqbal* than before, the term m will be positive, so that the lower bound must exceed the simple change in the Rule 12(b)(6) grant rate. Notice that if there were no party selection effects, then (all else equal) there would be no change in the number of motions filed, and the second term in formula (3) would equal zero. In other words, in the absence of party selection, my lower bound formula simplifies to the simple change in the grant rate.¹³¹

131. Indeed, it is easy to see that in the absence of party selection effects, the negatively affected share NAS from formula (1)—and not just a lower bound on it—would equal the simple change in the grant rate. With no party selection, the only cases that would exist would be DD, SS, AA, and MM cases. Since there would be no difference in the number of Rule 12(b)(6) motions filed under the two pleading standards, the numerator of m in formula (3) would be zero, making the correction term zero. Note also that the pre-*Twombly* number of cases with granted Rule 12(b)(6) motions would equal the number of $M_G M_G$ cases, while the post-*Iqbal* number would equal the number of $M_G M_G$ cases since there would be no $M_G M_D$ cases (see text following note 105, *supra*) plus the number of $M_D M_G$ cases. Since the number of cases with Rule 12(b)(6) motions filed would be the same, the difference in the grant rates would equal the number of $M_D M_G$ cases divided by the number of MM cases and this is precisely the negatively affected share in the absence of party selection effects.

Finally, note that as an empirical matter, the converse of the claim in the text is not true. That is, finding empirical evidence that the lower bound and the change in the grant rate are equal does *not* generally imply the absence of selection. This is true because equality be-

As I discuss in section E, *infra*, though, the initial FJC report shows that Spring 2004 of Rule 23(b)(6) motions *EMPIRICAL REALITY* between 2006 and 2010. Consequently, my lower bounds on the negatively affected share will necessarily exceed the simple change in the grant rate that. Thus, the second term in formula (3) is a useful measure of the empirical importance of party selection effects.

This fact reflects an important part of my argument: when party behavior changes, there are additional routes to negative effects on cases besides the changes in judicial behavior that are incorporated in $M_D M_G$ cases. We should want to measure these effects. It is critical to recognize, then, that I am not arguing that the lower bound expressed in either formula (2) or formula (3) is a better measure, or a selection-corrected measure, of Hubbard's "true effect on dismissal rates,"¹³² or some judicial behavior effect more generally. Rather, I am offering a different answer to the which-question-are-you-studying query¹³³ from the one other authors in the literature have posed. Whereas other authors have sought to estimate only changes in judicial behavior, my approach is directed at learning something about *both* the effects of judicial behavior changes *and* effects due to changes in party behavior, because both types of effects impact parties. Thus, the approach set forth in *Locking the Doors*, and expanded on here, is sensitive to Fischman's call for empirical researchers to increase the relevance of their research: this approach "allow[s] substantive questions to drive the[] choice of methods," and it is "more explicit about how [it] combin[es] objective findings with contestable assumptions in order to reach normative conclusions."¹³⁴

E. Empirical Evidence: Estimates of Alternative Lower Bounds

In Table 1, I provide the data necessary to calculate the selection-related term for the three categories of cases I consider in *Locking the Doors*, which are civil rights; employment discrimination; and most other cases, to which I shall here refer as contract, tort and "other" cases.¹³⁵ The first and second col-

tween the lower bound and the change in the grant rate is also consistent with the situation in which the effects of selection into and out of motion filing are in equipoise.

132. Hubbard, *A Theory of Pleading*, *supra* note 40, at 15.

133. See text accompanying *supra* note 95-96.

134. Fischman, *supra* note 5, at 154.

135. All data provided in this table were provided in Table 5 of *Locking the Doors*, at 2333, which draws data from Table 1 of the initial report, *supra* note 33, at 9, and Table A-1 of the updated report, *supra* note 33, at 7, as well as from supplemental tables generously provided to me by Joe Cecil. The civil rights category excludes ADA cases due to statutory changes in ADA law that took effect in 2008; see *id.*, at 2288, n. 69, for details. Financial instruments cases are excluded due to concerns about the role of the financial crisis in changing the composition of these cases in unmeasurable ways; see *id.*, at 2327. The contract, tort, and "other" cases includes all case categories analyzed by the FJC reports except ADA cases, employment discrimination cases, financial instruments cases, and those in my civil rights category.

268 columns present the increase in Rule 12(b)(6) motions filed between 2006-2010 the STANFORD JOURNAL OF COMPLEX LITIGATION, column report by the 2:2 ratio of the first column to the second, which yields m from formula (3). This ratio is substantial for all three case types, varying from 0.17 to 0.37.

Table 1: Calculating the Selection-Related Term in Formula (3)

	Rule 12(b)(6) Motions Filed		Ratio of first col- umn to second	2006 per- centage of movants prevailing	Second term in formula (3) ^a
	Increase, 2006-2010	Filed in 2010			
Civil rights	78	454	0.17	60.3	10.3
Employment discrimination	87	349	0.25	60.9	15.2
Contracts, tort and other	727	1968	0.37	55.2	20.4

Source: Table 5 of *Locking the Doors*, at 2333.

^a Product of third and fourth columns.

The fourth column of Table 1 reports the measure of the pre-*Twombly* grant rate that I used in *Locking the Doors*, which is the percentage of movants ultimately prevailing as to one or more claims in cases with adjudicated motions that were included in the updated report’s pre-*Twombly* (2006) period.¹³⁶ The product of the third and fourth columns is the selection-related term, which I report in the final column of Table 1.

The selection-related term ranges from a low of 10.3 percentage points, for civil rights cases, to a high of 20.4 points, for contract, tort and “other” cases. These are substantial values, indicating that party selection effects are empirically important.

The remaining part of formula (3) involves only the change, between the pre-*Twombly* and post-*Iqbal* periods, in an appropriate measure of the Rule 12(b)(6) grant rate. The first two columns of Table 2 provide the pre-*Twombly* and post-*Iqbal* percentages of movants prevailing, while the third column provides the change. The fourth column repeats the selection-related terms calculated in Table 1, and the fifth column provides my lower bound.

136. The FJC Updated Report’s authors coded a movant as having prevailed in a case if “the court granted the last motion to dismiss in whole or in part and no opportunity to amend the complaint remained.” FJC UPDATED REPORT, *supra* note 33, at 3. For each of several case types, and in each of the pre- and post-*Twombly/Iqbal* periods for which the FJC collected data, I calculated the share of cases with Rule 12(b)(6) motions in which the movant prevailed according to this definition. The relevant data come from Table A-1 of the updated report, *supra* note 33, at 7 tbl.1, together with some supplemental data generously provided by Joe Cecil; the raw data used in *Locking the Doors* appear in Appendix A, Table 4 of that paper, at 2347.

Table 2. The Change in the Percentage of Movants Prevailing and the Lower bound on My Negatively Affected Share

	Percentage of Movants Prevailing			Selection-related term ^b	Lower bound ^c
	2006 ^a	2010 ^a	Change		
Civil rights	60.3	68.1	7.8	10.3	18.1
Employment discrimination	60.9	61.1	0.2	15.2	15.4
Contracts, tort and other	55.2	56.3	1.1	20.4	21.5

^a Source: Table 4 of *Locking the Doors*, at 2331.

^b Source: Table 1, *supra*.

^c Sum of third and fourth columns.

Table 2 indicates that *Twombly* and *Iqbal* negatively affected a substantial share of post-*Iqbal* cases in which a Rule 12(b)(6) motion was filed. This conclusion holds for both civil rights and employment discrimination cases, for which the lower bounds are 18.1% and 15.4%, as well as the category of contract, tort and other cases, for which the lower bound is 21.5%. Importantly, less than half of the lower bounds' magnitude comes, as an algebraic matter, from the change in the grant rate; for both employment discrimination cases and contract, tort, and "other" cases, virtually all of the lower bound is due to accounting for selection effects via the selection-related term in formula (3). These findings indicate that the accounting for selection is a very important part of understanding *Twombly* and *Iqbal*'s effects.

F. Robustness of the Empirical Lower Bound Results

In this section, I address some criticisms that have been offered by Joe Cecil of the FJC and Professor David Engstrom in separate papers.¹³⁷ Section 1 explains and responds to a grab-bag of reasons that Cecil has offered as reasons to reject the link between my behavioral framework and the data I use. Some of Cecil's criticisms are prosaic, while others go to the very core of the idea of using a clearly stated behavioral framework to guide empirical study of civil litigation. As I explain below, none of Cecil's criticisms is compelling.

Section 2 addresses Engstrom's view (shared by Cecil) that my approach in *Locking the Doors* was overinclusive and should have considered only those cases in which plaintiffs lose on all—rather than one or more—of their claims as a consequence of *Twombly* and *Iqbal*. But Engstrom's alternative lower

137. See Cecil, *Waves*, *supra* note 13, and Engstrom, *Twiqbal Puzzle*, *supra* note 13.

bound estimates, which are noticeably lower than those in *Locking the Doors*, suffer from a wrong denominator problem. My model renders them more comparable to the estimates in *Locking the Doors*. I show how to construct two further alternative measures—one that follows Engstrom’s suggestion that only entirely dismissed plaintiffs should be considered negatively affected, and one that follows the approach in *Locking the Doors*—that do not suffer from the wrong denominator problem and do allow a direct comparison. The alternative Engstrom-type measures are substantial in magnitude and, for two of the three case-type categories considered, they are statistically significant and exceed the alternative *Locking the Doors*-type estimates. These findings suggest the general robustness of the substance of my results to alternative units of analysis.

1. *Setting fire to straw men: Priest & Klein and the 50-percent hypothesis*

Cecil kicks off his discussion by stating that I adapt the model in George Priest and Benjamin Klein’s famous paper on selection in litigation.¹³⁸ The model I sketch in *Locking the Doors* and the one that Priest and Klein build do share an important methodological similarity, in that they are both examples of what are sometimes called divergent expectations (“DE”) models.¹³⁹ The key aspect of such models is that settlement is assumed to happen whenever there is positive surplus from settlement, which means whenever the parties’ subjective beliefs make it possible for a settlement to leave each party better off than she expects to be in the event of litigation. “Beliefs” here involve the parties’ subjective expectations concerning the probability the plaintiff would prevail if litigation occurred; the value of any relief the plaintiff would realize if she prevailed;¹⁴⁰ and the various costs—both pecuniary and psychic—involved in litigating and negotiating a settlement.

But Cecil is wrong when he states that my model “is derived” from Priest and Klein’s.¹⁴¹ In fact, I do not “adapt”¹⁴² the Priest & Klein model. Priest and Klein impose considerable mathematical structure on the distribution of parties’

138. Cecil, *Waves*, *supra* note 13, at 38, n. 137 (citing George L. Priest and Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984)).

139. As noted in, e.g., Keith N. Hylton, *Asymmetric Information and the Selection of Disputes for Litigation*, 22 J. LEGAL STUD. 187 (1993), formulation of divergent expectations models can be traced to work of William Landes, Richard Posner, and John Gould published in the early 1970s. See William M. Landes, *An Economic Analysis of the Courts*, 14 J.L. & ECON. 61 (1971); Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399 (1973); John P. Gould, *The Economics of Legal Conflicts*, 2 J. LEGAL STUD. 279 (1971). Other terms are also sometimes used; see, e.g., Abraham L. Wickelgren, *Law and Economics of Settlement*, in RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS, Jennifer Arlen, ed. (2014) (referring to such models as ones involving “mutual optimism”).

140. Such relief could be either monetary or injunctive; what matters isn’t the form of relief but rather that the parties are capable of developing subjective beliefs concerning its cost (defendant) and value (plaintiff).

141. Cecil, *Waves*, *supra* note 13, at 44.

142. Cecil, *Waves*, *supra* note 13, at 38.

mutual beliefs concerning the plaintiff's likelihood of winning and the actual
Spring 2014 By contrast, *Locking the Doors* and *Empirical Reality* issue their own inter-
ests as they understand them and that these beliefs are logically possible.¹⁴³
These are more than academic points. Cecil attempts to tar *Locking the Doors*
with the brush others have used to criticize Priest & Klein's work, but the criti-
ques he endorses are based alternatively (i) on assumptions that Priest & Klein
make, but that I do not, or (ii) on predictions that Priest & Klein make concern-
ing litigation selection, but that I do not.

Cecil first cites to Theodore Eisenberg for the proposition that Priest &
Klein's "model does not describe civil litigation when the issue in dispute is the
extent of damages, or when an institutional litigant is worried about the effect
of the outcome of the case on other litigation."¹⁴⁴ But a quick look at the part
of Eisenberg's paper to which Cecil cites shows that Eisenberg there is discuss-
ing not the presence of a selection effect generally, but rather the "clearly distin-
guishable . . . so-called 50 percent hypothesis."¹⁴⁵ As Eisenberg writes, this
hypothesis "posits that the set of tried cases culled from the mass of underlying
disputes will result in 50 percent victories for the plaintiff."¹⁴⁶ Eisenberg is
quite clear in stating that it is the 50 percent hypothesis in particular, rather than
anything general about litigation selection models, that fails to hold when the
extent of damages is disputed or when an institutional litigant worries about ef-
fects on other litigation. This is an important point because *Locking the Doors*
never claims or implies that the 50 percent hypothesis should hold.¹⁴⁷

Cecil's second appeal in his criticism of Priest & Klein is to Steven Shav-
ell's well-known demonstration that, as his article is titled, *Any Frequency of*

143. A detailed discussion of Priest & Klein's assumptions would require delving into
unnecessarily technical detail. But it is sufficient to note that their assumptions concerning
parties' beliefs imply that the parties' beliefs about case quality are highly positively corre-
lated not only with each other, but also with true case quality. As I discuss in other work in
progress, there is nothing about the DE framework that requires such assumptions. Jonah B.
Gelbach, *Is Everything You Know About Litigation Selection and the Plaintiff's Win Rate
Wrong?* (January 20, 2014) (unpublished manuscript) (on file with author).

144. Cecil, *Waves*, *supra* note 13, at 38, n. 141 (citing Theodore Eisenberg, *Testing
the Selection Effect: A New Theoretical Framework with Empirical Tests*, 19 J. LEGAL STUD.
337, 338-39 (1990)).

145. Eisenberg, *supra* note 144, at 338.

146. *Id.*

147. Unlike Cecil, Eisenberg himself is careful to distinguish bases for rejecting the 50
percent hypothesis and the general relevance of selection in litigation. *See, e.g., id.* at 340
("The 50 percent hypothesis may be rejected while the basic selection effect is retained."). It
is also worth noting that Priest and Klein themselves viewed the 50 percent hypothesis only
as a limiting case, *see* George L. Priest and Benjamin Klein, *The Selection of Disputes for
Litigation*, 13 J. LEGAL STUD. 1, 20 (1984) ("Although the model has demonstrated a ten-
dency toward 50 percent plaintiff victories in litigation which is independent of the shape of
the underlying distribution of disputes, the 50 percent success rate will actually be achieved
only near the limit."), and also that they themselves discuss a variety of conditions under
which the 50 percent hypothesis will not hold—including, for example, when damages are
disputed, *see id.*

372 STANFORD JOURNAL OF COMPLEX LITIGATION

Plaintiff Victory at Trial Is Possible.¹⁴⁸ But like the appeal to Eisenberg, this model has been respected to the point of orthodoxy. Since the model in *Locking the Doors* does not rely on or endorse this hypothesis, Shavell's results are no more problematic for my model than Eisenberg's observations. In fact, as I elaborate in related work in progress, the model undergirding *Locking the Doors* is consistent with a plaintiff's win rate anywhere between 0 and 100% — just as Shavell demonstrates in his own model.¹⁵⁰

Cecil next flags Samuel Gross and Kent Syverud's "finding that data on outcomes of trials depart from the prediction of the Priest-Klein model."¹⁵¹ Gross and Syverud's report both that "the fifty percent hypothesis . . . thoroughly fail[s] to describe [the litigation] outcomes" that Gross and Syverud study,¹⁵² and that "our data, both for the entire set of trials and for the dominant subset of personal injury trials, are even more inconsistent with Priest and Klein's general model as applied to cases with disputed damages than with the simple fifty percent hypothesis."¹⁵³ But neither finding is problematic for my approach, which does not impose the structural assumptions that yield the Priest & Klein predictions at issue. Cecil's final basis for questioning my model is to cite to a paper "reviewing empirical support for and against the Priest-Klein model."¹⁵⁴ Once again for good measure: empirical support for and against the Priest-Klein model is beside the point.

In sum, whatever the merits of the criticisms Cecil marshals against Priest & Klein's work on its own terms, these criticisms are non sequiturs as applied to the model I used in *Locking the Doors* and reprise in the present Article. I do not place the mathematical structure either on party beliefs, or on the distri-

148. Cecil, *Waves*, *supra* note 13, at 38, n. 141 (citing Steven Shavell, *Any Frequency of Plaintiff Victory at Trial Is Possible*, 25 J. LEGAL STUD. 493 (1996)).

149. Shavell, *supra* note 148, at 495 ("Although there are no errors of logic in the Priest Klein model and it is to be praised for its general and original conclusion that cases that go to trial are unrepresentative of settled cases the assumptions of the model that lead to the 50 percent tendency [for success at trial] appear to be special, and they implicitly rule out a general range of plausible situations.").

150. See Jonah B. Gelbach, *Selection in Motion: A Formal Model of Rule 12(b)(6) and the Twombly-Iqbal Shift in Pleading Policy* 22 (August 29, 2012), <http://ssrn.com/abstract=2138428>. Among cases that actually have Rule 12(b)(6) motions filed, the grant rate can be zero, 100%, or any percentage in between." For more on the methodological import of Shavell's critique of Priest and Klein, see Gelbach, *supra*, at 23-24, which provides a simple explanation of why DE models are consistent with any win rate between zero and one—thus undermining the view that Shavell's demonstration in an asymmetric information model is a *per se* reason to reject use of DE models.

151. Cecil, *Waves*, *supra* note 13, at 339 n.141 (citing Samuel R. Gross and Kent D. Syverud, *Getting to No: A Study of Settlement Negotiations and the Selection of Cases for Trial*, 90 MICH. L. REV. 319, 341 (1991)).

152. Gross & Syverud, *supra* note 151, at 341.

153. Gross & Syverud, *supra* note 151, at 341.

154. Cecil, *Waves*, *supra* note 13, at 39 n.141 (citing Keith N. Hylton & Haizhen Lin, *Trial Selection Theory and Evidence: A Review* (Bos. Univ. Sch. of Law Working Paper No. 09:27, May 20, 2009), available at <http://www.bu.edu/law/faculty/scholarship/workingpapers/2009.html>).

bution of case quality, that Priest & Klein's model does. None of the criticisms from the literature on MTDs and empirical reality cause not one of the results demonstrated in the papers he cites is inconsistent with any prediction my model makes.

2. *Are there major problems with the model's behavioral assumptions?*

Cecil argues that economic models "are closely tethered to the assumptions that underlie their development" and expresses concerns about a number of the expositional assumptions that I make in sketching the model underlying *Locking the Doors*.¹⁵⁵ He lists the following supposedly problematic assumptions:

- "Rule 12(b)(6) is the only type of MTD that can be filed";¹⁵⁶
- "when MTDs are granted, they are always granted without leave to amend";¹⁵⁷
- "each case involves a single claim";¹⁵⁸
- "each case involves a single plaintiff and a single defendant."¹⁵⁹

Cecil's contention evinces a misreading of *Locking the Doors* and a misunderstanding of the role these assumptions play not only in that paper's analysis, but also, by extension, in behavioral modeling in general. As I shall discuss, the role of the assumptions Cecil criticizes is expositional,¹⁶⁰ rather than substantive: these assumptions function not to restrict the set of qualitative outcomes that must be dealt with, but rather to sharpen and focus the methodological discussion.

a. *Other Rule 12(b) motions*

As Cecil notes, Rule 12(b) does allow other bases for dismissal. But when Cecil interprets the FJC data as he prefers to do, he does not worry that the two FJC reports he co-authored also ignore these other motions. Of course that fact does not imply that Cecil has made assumptions inconsistent with his data: it simply suggests that he and his co-authors made the reasonable, simplifying assumption that Rule 12(b)(6) motion practice could usefully be examined without also examining behavior that, on balance, is mostly extraneous. Needless to say, though, if ignoring other motions to dismiss is a problem for my ap-

155. Cecil, *Waves*, *supra* note 13, at 39.

156. Cecil, *Waves*, *supra* note 13, at 40.

157. Cecil, *Waves*, *supra* note 13, at 40.

158. Cecil, *Waves*, *supra* note 13, at 40.

159. Cecil, *Waves*, *supra* note 13, at 40.

160. At the outset of methodological discussion in *Locking the Doors*, I stated that "I shall rely on a number of simplifying assumptions for the sake of exposition," *Locking the Doors*, *supra* note 17, at 2296 (emphasis added).

b. Leave to amend

As I stated in *Locking the Doors*, “[i]t is straightforward, but . . . somewhat complicated algebraically, to extend the model to account for grants with leave to amend.”¹⁶² I stated further that when I considered an extended model that does allow for grants with leave to amend, “the main qualitative results are unaffected.”¹⁶³ As I discuss *supra*,¹⁶⁴ FJC data that I actually use in my empirical work codes whether plaintiffs or defendants ultimately “prevail” on claims challenged in Rule 12(b)(6) motions. As noted *supra*,¹⁶⁵ the FJC’s updated report explains that “[w]e identified cases in which the movant prevailed as those in which the court granted the last motion to dismiss in whole or in part and no opportunity to amend the complaint remained.”¹⁶⁶ My expository assumption that motions are granted without leave to amend thus corresponds well to the FJC data I use, because both the assumption and the actual data concern the situation in which the motion to dismiss ultimately is dispositive.¹⁶⁷ The only exception to this correspondence involves the issue of “Type Z” cases, which I raise *de novo* in section III.G.2, *infra*.

c. Multiple claims

It is straightforward to make simple modifications to the conceptual apparatus in section A, *supra*, in order to incorporate the possibility that a plaintiff has multiple claims.

Note first that only cases in which Rule 12(b)(6) motions are granted involve negatively affected cases. To account for the possibility of multiple-

161. And while we’re listing features of civil litigation that Cecil and co-authors (reasonably!) didn’t consider important enough to collect data for a study related to changes in the pleading standards, why stop with Rule 12(b)? How about Rule 12(e), Rule 11, and Rule 41—and why not let the common law in on the action and consider motions to dismiss for *forum non conveniens*? (See, e.g., *Piper Aircraft Co. v. Reyno*, 54 U.S. 235 (1981).) No one reasonably would or should suggest that cases must be coded for all these pleading-related rules and doctrines.

162. *Locking the Doors*, *supra* note 17, at 2306 n.133.

163. See *id.* There I cited to an earlier version of Gelbach, *Selection in Motion*, *supra* note 17. I have since decided that the relevant game-theoretic discussion isn’t worth the candle, because it is long and technical and provides no additional qualitative insights. Thus this discussion no longer appears in that paper.

164. See section D, *supra*.

165. See section D, *supra*.

166. FJC UPDATED REPORT, *supra* note 33, at 3.

167. The idea of using the updated report’s data on the rate at which movants prevail—rather than making arbitrary assumptions about party behavior following a grant with leave to amend—was not originally my own. In a bit of irony, I owe this idea to a suggestion made by Cecil himself. E-mail from Joe Cecil to author, (Dec. 5, 2011 11:12:01 EST) (on file with author).

claim cases, define the outcomes of *claims* rather than of *cases* as “D”, “S”, “A”, or “M”, and similarly define M claims as M_G or M_D according to whether the defendant’s motion to dismiss as to the claim in question would be granted or denied.

Finally, observe that the advent of *Twombly/Iqbal* would negatively affect a plaintiff as to any given claim if such a change in pleading doctrine would cause the defendant to prevail on any of the plaintiff’s claims as a result of a Rule 12(b)(6) motion

- (i) when the plaintiff would have faced and won such a motion as to that claim pre-*Twombly* ($M_D M_G$ claims),
- (ii) when the defendant would file an answer rather than a Rule 12(b)(6) motion as to that claim pre-*Twombly*, but the defendant would prevail on the motion as to the claim following *Twombly/Iqbal* ($A M_G$ claims), or
- (iii) when the plaintiff would secure a settlement from the defendant as to that claim pre-*Twombly*, but instead the claim would be terminated by a defendant’s prevailing on a Rule 12(b)(6) motion as to the claim following *Twombly/Iqbal* ($S M_G$ claims).

Now define a negatively affected plaintiff as a plaintiff who is negatively affected as to *any* claim. With these refinements in hand, all the rest of my analysis goes through unchanged, because logic dictates that any plaintiff who is negatively affected as to *a* claim is negatively affected as to *some* claim. Thus, all that is necessary to adapt the definition of negatively affected cases to the reality of cases with multiple claims is a collection of straightforward, if word-dense, adjustments to the definitions I used in *Locking the Doors*.¹⁶⁸

d. Multiple parties

The final expositional assumption that Cecil suggests is important is my assumption that each case has a single plaintiff and a single defendant. Now I will play the same game I played in the discussion of multiple claims: define the outcomes of *claims by plaintiff p_i against defendant d_j* as “D”, “S”, “A”, or “M”, and similarly define M claims as M_G or M_D according to whether the mo-

168. And this should not be a surprising conclusion, because *Locking the Doors* did not ignore the fact that the FJC-measured variables can involve multiple claims. See, e.g., *Locking the Doors*, *supra* note 17, at 2330-31 (“It is important to emphasize that the FJC codes a movant as prevailing if she prevailed on *any of the claims she challenged* via an initial Rule 12(b)(6) MTD”) (emphasis added); see also *id.* at 2331, n.177 (noting that “[t]he FJC could have instead coded movants as prevailing only if they prevailed on *all claims challenged*,” emphasizing this alternative approach).

tion to dismiss filed by whichever defendant filed it would be granted or denied to the affected plaintiff as a plaintiff who is negatively affected as to *some* claim filed against *some* defendant. Once again all the rest of my analysis goes through unchanged, because logic dictates that any plaintiff who is negatively affected as to *a* claim filed against *a* defendant is negatively affected as to *some* claim filed against *some* defendant. And so all that is necessary to adapt the definition of negatively affected cases to the reality of cases with multiple parties on “each side of the v” is a collection of definitional adjustments to the simpler exposition in *Locking the Doors*. In sum, *contra* Cecil, the conceptual apparatus and the empirical implementation in *Locking the Doors* get on just fine.¹⁶⁹

3. The Proper Unit of Analysis: Claims, Cases, or Plaintiffs?

The empirical work in *Locking the Doors* and above considers a plaintiff to have been affected by a Rule 12(b)(6) grant whenever the Rule 12(b)(6) movant prevails as to one or more claims. This is the definition of “prevailing movant” adopted by Cecil and co-authors in the updated report.¹⁷⁰ Both Cecil and Engstrom challenge my reliance on this approach to measuring prevailing movants. For example, Cecil writes that my “findings . . . extend[] only to cases where plaintiffs are denied the opportunity to settle or obtain access to discovery for at least one of what may be many claims in a case.”¹⁷¹ Of course that is true.¹⁷² And it is surely true that there are cases in which the termination of only one claim would be a minor affair. Further, given Cecil’s apparent belief that dismissals as to subsets of claims are unimportant, it is surprising that he and his co-authors collected so much data and reported so many results related to such dismissals. But it isn’t hard to imagine examples of multiple-claim cases in which a subset of claims would be quite important.

Even so, Engstrom argues that my approach suffers from overinclusiveness because

the grant-as-to-one-or-more-claims approach . . . sweeps in 12(b)(6) grants dismissing only some of the claims challenged in the motion, 12(b)(6) grants of motions that challenged only some of the plaintiff’s claims in the first place, and 12(b)(6) grants liberating purely periph-

169. *But see* the discussion of “Type Z” cases in section III.G.2, *infra*.

170. *See* Tables A-1 and A-2 of the updated report, *supra* note 33, at 7-8.

171. Cecil, *Waves*, *supra* note 13, at 39-40.

172. I noted this point in *Locking the Doors*, *supra* note 17, at 2330-31 (“It is important to emphasize that the FJC codes a movant as prevailing if she prevailed on any of the claims she challenged via an initial Rule 12(b)(6) [motion]”), immediately followed by footnote stating that “[t]he FJC could have instead coded movants as prevailing only if they prevailed on *all* claims challenged,” *id.* at 2331.

Plugging the FJC Second Study’s estimates of the post-*Twigbal* change in the rate at which 12(b)(6) orders entirely dismissed one or more plaintiffs from the litigation into Gelbach’s selection-accounting framework yields a lower “negatively affected” share for all three case types he examines, from 15.4% to 10.8% in job discrimination cases, from 18.1% to 4.4% in civil rights cases, and from 21.5% to 11.3% among “Total Other” case types.¹⁷⁴

It is important to understand what Engstrom is and isn’t claiming here. First, Engstrom is *not* suggesting that I have somehow miscalculated the object of my proposed inquiry, which is a lower bound on the share of post-*Iqbal* cases that faced Rule 12(b)(6) motions in which plaintiffs were negatively affected *on at least one claim*. Instead, Engstrom is suggesting that we should be answering a different question¹⁷⁵—a lower bound on the share of such cases in which plaintiffs were *totally dismissed from litigation*.¹⁷⁶ I disagree with Engstrom on this point, but for the sake of discussion I shall leave that disagreement aside. As I shall now show, Engstrom’s preferred measure is unreliable on its own terms, due to a missing data problem. The problem is that the data necessary to properly calculate Engstrom’s preferred measure do not exist. The estimates Engstrom reports are likely biased downward, possibly by substantial magnitudes. It is possible, however, to construct alternative estimates that do not suffer from this problem by looking at only those cases in which a plaintiff loses at the Rule 12(b)(6) stage (thereby excluding from the denominator those cases in which a Rule 12(b)(6) motion was filed but in which the defendant didn’t prevail, however prevailing is measured). When I construct these estimates, I find that both Engstrom’s approach and mine yield the conclusion that *Twombly* and *Iqbal* negatively affected plaintiffs in a substantial share of cases considered.

a. *The “wrong denominator” problem*

Engstrom first calculates what I shall call the “dismissed plaintiff” share, among *all cases* coded for the updated report:

173. Engstrom, *supra* note 13, at 1227. As I shall discuss, the existence of Engstrom’s second category here—“motions that challenged only some of the plaintiff’s claims in the first place”—renders his own proposed alternative unworkable, due to a lack of data.

174. *Id.*

175. *See supra* text accompanying note 95.

176. Engstrom, *supra* note 13, at 1228 (“Gelbach’s and my estimates do not differ because of something in the way the statistical analysis is performed. . . . Rather, we are measuring different quantities of interest.”).

He then inserts the pre-*Twombly* and post-*Iqbal* values of this dismissed plaintiff share into formula (3), *supra*, using the same motion-filing data that I used to estimate *m*. Engstrom's dismissed plaintiff share values are considerably lower than what they replace, i.e., the share of cases in which the movant prevails on one or more claims, i.e., formula (3)'s denominator. For example, in 2006, the FJC's data show there were only forty-three civil rights cases in which a plaintiff was dismissed as a result of a Rule 12(b)(6) motion; this indicates a dismissed plaintiff share of 25.4% among all cases with a Rule 12(b)(6) motion coded. This is a much lower frequency than the 58.6% of the time that movants in these same 169 cases prevailed on one or more claims.¹⁷⁷ The number Engstrom uses for his dismissed plaintiff share denominator is *the total number* of cases in which the updated report's authors coded the outcome of a Rule 12(b)(6) motion. But the appropriate number would be the *subset* of these cases in which a plaintiff *could possibly* have been eliminated.

To understand the importance of this "wrong denominator" problem, consider a simple example, illustrated in Table 3. The first row of this table indicates that there are 100 cases in which Rule 12(b)(6) motions are filed. Of these 100 cases, there are sixty in which the Rule 12(b)(6) motion could not possibly eliminate a plaintiff entirely, even if all requested relief were granted (row (b)). There are another forty cases in which the motion could eliminate a plaintiff entirely (row (e)). There are three types of cases in which the movant prevails as to at least one claim: those in which the movant prevails on at least one claim, given that the motion couldn't possibly eliminate a plaintiff entirely (row (c)); those in which the movant prevails on at least one claim but not on enough claims to eliminate a plaintiff entirely, among cases in which the motion *could* possibly eliminate a plaintiff entirely (row (f)); and those in which the movant could and in fact does prevail on enough claims to eliminate a plaintiff entirely (row (g)).

In terms of this example, my preferred approach both here and in *Locking the Doors* is to say that the movant prevails in 55% of cases: twenty-five row (c) cases, plus five row (f) cases, plus 25 row (g) cases, divided by 100 row (a) cases in total. An approach that considers plaintiffs to be negatively affected by *Twombly* and *Iqbal* only if they are entirely eliminated should instead determine that the movant prevails in 62.5% of cases: twenty-five row (g) cases in which the Rule 12(b)(6) motion is granted as to all of a plaintiff's claims, divided by the forty row (e) cases in which a Rule 12(b)(6) motion actually challenges all of a plaintiff's claims. But the approach Engstrom actually used would involve something different here. His approach amounts to (correctly)

177. FJC UPDATED REPORT, *supra* note 33, at 11.

taking the twenty-five row (g) cases, and then (incorrectly) dividing this number by 100 row (g) cases and EMPLOYER dismissed plaintiff share of 25%.

Total number of cases filed:	100	(a)
Rule 12(b)(6) motion challenges only some claims:	60	(b)
Granted as to at least one challenged claim:	25	(c)
Denied as to all challenged claims:	35	(d)
Rule 12(b)(6) motion challenges all claims:	40	(e)
Granted as to at least one claim, but not as to all:	5	(f)
Granted as to all claims:	25	(g)
Denied as to all claims:	10	(h)

This example shows two important things. First, Engstrom’s approach can lead to substantial downward bias in measuring the frequency with which plaintiffs are entirely dismissed as a result of Rule 12(b)(6) motions, among cases in which they could be; his approach would yield a share of 25%, whereas the correct share would be 62.5%. To deal with this problem, each dismissed plaintiff share that Engstrom actually uses would have to be inflated to account for the fact that only some of the motions coded by the FJC authors are relevant to Engstrom’s desired analysis. For example, in the hypo just above, the proper inflation factor is 2.5—the ratio of the total number of motions coded to the number that Engstrom would have to use to measure what he wants to measure. In an ideal world, I would calculate the appropriate inflation factors and correct Engstrom’s calculations. But neither FJC report provides any information that could be used to measure the number of cases with Rule 12(b)(6) motions that *could* have eliminated a plaintiff entirely.¹⁷⁸ Conse-

178. The initial report tells us how many cases had a Rule 12(b)(6) motion filed against them within ninety days of case filing. See FJC INITIAL REPORT, *supra* note 33, at 5. And the updated report tells us the number of cases in which the authors coded the results of orders adjudicating Rule 12(b)(6) motions. See FJC UPDATED REPORT, *supra* note 33, at 3. But so far as I can tell, neither report offers a single datum on the number of cases in which a Rule 12(b)(6) motion, had it been granted as to all claims the defendant challenged, could have eliminated that plaintiff entirely. This fact may be a consequence of the way the FJC

quently, the alternative lower bound estimates that Engstrom reports cannot be compared to the lower bound estimate in *Twombly/Iqbal*.¹⁷⁹

The second useful thing that Table 3's example shows is that the share of cases in which (i) plaintiffs are entirely eliminated due to a Rule 12(b)(6) motion, among all cases in which they could possibly be so eliminated, can exceed the share of cases in which (ii) plaintiffs lose one or more claims, among all cases in which a Rule 12(b)(6) motion is filed. In other words, there is nothing inherent in my preferred approach that suggests it should lead to greater estimates than one would get with a proper application of Engstrom's proposed approach.

b. A feasible alternative version of Engstrom's approach yields results that buttress the qualitative conclusions in Locking the Doors

In this subpart I suggest a valid alternative that incorporates Engstrom's suggestion to count only dismissed plaintiffs as having been negatively affected by *Twombly/Iqbal*. This alternative does not involve computing a lower bound on the share of negatively affected plaintiffs among those cases in which defendants filed Rule 12(b)(6) motions post-*Iqbal*. Instead, it involves computing a lower bound on the negatively affected share in post-*Twombly/Iqbal* cases whose defendants *actually prevail on all claims* necessary to eliminate one or more plaintiffs. To calculate this alternative measure, one must replace the number of Rule 12(b)(6) motions filed, in the denominator of equation (2),¹⁷⁹ with the number of cases in which a plaintiff is eliminated. Thus, the formula for this alternative measure of the negatively affected share is:

$$(5) \text{ LB Among Eliminated Plaintiffs} = \frac{\text{Change in Number of Cases in which Plaintiff is Eliminated}}{\# \text{ of post- } Iqbal \text{ Cases in which Plaintiff is Eliminated}}$$

Notice that the measure in formula 5 involves only data from the updated report concerning the number of dismissed plaintiffs. Consequently, unlike Engstrom's desired but unmeasured object of interest, formula (5) does not require knowing how many Rule 12(b)(6) motions could have eliminated one or more plaintiffs, had they been granted.¹⁸⁰

authors conducted the outcomes study: they coded orders resolving Rule 12(b)(6) motions, but not the motions themselves. To the extent that one might be able to discern from the FJC-coded order that a Rule 12(b)(6) motion could have eliminated a plaintiff entirely, the FJC authors appear not to have coded for that variable. See FJC INITIAL REPORT, *supra* note 33, at 42 (Figure C-1, "Code Sheet for Recording Action on Rule 12(b)(6) Motion") (listing no variables related to the issue in question).

179. See *supra* text just following note 126.

180. In footnote 84, at 1228, Engstrom reports measures of such lower bounds that are analogous to those generated by formula (5) in the text just above. He calculates these estimates by taking the ratio of his earlier-discussed estimates to his dismissed plaintiff share (I

282 *LOCKING THE DOORS: JOURNAL OF COMPLEX LITIGATION*, Vol. 23
In the first column of Table 4, I repeat the lower bound estimates I reported based on formula (5)—that is, lower bounds calculated by implementing Engstrom’s preferred approach of counting only entirely dismissed plaintiffs as negatively affected, while using as the denominator the number of post-*Iqbal* cases in which a plaintiff is eliminated. In the table’s second column, I report estimates of still another lower bound estimand, given by formula (6):¹⁸¹

(6) LB Among Plaintiffs Losing on One or More Claims =

Change in Number of Cases in which Plaintiff Loses on One or More Claims
of post- *Iqbal* Cases in which Plaintiff Loses on One or More Claims

The formula (6) alternative approach uses my preferred coding of which plaintiffs are negatively affected—including those who lose on any claims, not just those who are entirely eliminated. As with formula (5), it then uses as the denominator only those plaintiffs considered as *losing* post-*Iqbal* (rather than all those plaintiffs who face some type of Rule 12(b)(6) motion post-*Iqbal*, as in formulas (2) and (3)). Thus, unlike the main estimates reported in Engstrom’s paper and my main estimates in *Locking the Doors*, the lower bound estimates based on formulas (5) and (6) can be used to form a meaningful comparison of the importance of the which-plaintiffs-really-lose issue that Engstrom raises.

The table shows that Engstrom’s preferred measure of the outcome of Rule 12(b)(6) motions—dismissed plaintiffs only—yields lower bounds that are substantial in magnitude in all cases. Indeed, they exceed those in *Locking the Doors* by substantial amounts for two of the three case categories, and they are statistically significant at the 0.10 level for employment discrimination cases and at better than level 0.001 for the contract, tort, and “other” cases. The comparable estimates using the alternative approach to defining losing plaintiffs based on formula (6) are also substantial, and two of the three are statistically significant at level 0.01 or better.

In sum, both the formula (5) Engstrom approach and my preferred formula (6) alternative yield conclusions in line with the findings reported in *Locking*

did something similar in *Locking the Doors*, *supra* note 17, at 2335). Like my main approach in *Locking the Doors*, this approach uses formula (3)—so that it combines data from the initial report’s filing study and the updated report’s outcomes study. But otherwise, this approach functionally eliminates the problem of the wrong number of filed motions, because that wrong number appears in both the numerator and the denominator of the ratio in question here. Because it will be convenient for comparison’s sake, I shall use formula (5) instead of the approach Engstrom takes in his footnote 84.

181. Note that in terms of the example in Table 3, this formula is equivalent to one minus a ratio whose numerator is the sum of the numbers of post-*Iqbal* cases in rows (c), (f), and (g), and whose denominator is the sum of the same numbers of cases during the pre-*Twombly* period.

the Doors:¹⁸² a substantial share of the plaintiffs considered in each case type
Spring 2014 | DARK ARTS AND EMPLOYMENT DISCRIMINATION 281
of all plaintiffs whose cases were challenged via Rule 12(b)(6), or on only the
subset of these plaintiffs who lost in the face of such a challenge.

182. The statistical insignificance of the Engstrom-approach civil rights estimate and the Gelbach-approach employment discrimination estimate reflects both the fact that these are the smallest estimates for each of the two approaches and the fact that the numbers of cases included—the respective values of *N*, as defined in note , *infra*—are relatively small. This is especially clear by comparison to the *p*-values reported in the first column of Table 4, because these *p*-values are based on an estimate that incorporates information on many more cases (see Appendix B of *Locking the Doors*, available at http://www.yalelawjournal.org/images/documents/gelbach_appendix_b.pdf, for more).

Table 4: How Does the Choice of “Losing Plaintiff” Definition Affect the Lower Bound? *YALE LAW JOURNAL OF COMPLEX LITIGATION* [Vol. 2:2
 Comparing the Engstrom and Gelbach Approaches
 [One-sided *p*-values in brackets]¹⁸³

	<i>Locking the Doors</i> Estimates ^a	Formula (5) (feasible Engstrom approach) ^b	Formula (6) (alternative Gelbach approach) ^c
Civil rights	18.1 [0.004]	18.9 [0.180]	29.3 [0.005]
Employment discrimination	15.4 [0.033]	42.3 [0.059]	18.8 [0.141]
Contract, tort, and “other”	21.5 [0.000]	37.4 [0.000]	21.4 [0.000]

^a *Source*: Lower bound point estimates are from *Locking the Doors*, Table 6, at 2334; *p*-values are from Appendix B, Table 2, available at http://www.yalelawjournal.org/images/documents/gelbach_appendix_b.pdf.

^b *Source*: Author’s calculations based on data in Table B-1 of the updated report, at 11.

^c *Source*: Author’s calculations based on data in Table A-1 of the updated report, at 7. For comparability with Engstrom’s calculations, civil rights cases include ADA-related cases; these cases are excluded from consideration in *Locking the Doors*.

G. Potential Confounding Factors, and a Previously Unnoted Data Issue

In responding above to specific criticisms made by Cecil and Engstrom, I mean to suggest neither that no substantive assumptions are required nor that the FJC data are perfect. In this section I first discuss the need for behavioral

183. To calculate *p*-values, first observe that if there are G_{2010} and G_{2006} randomly generated cases in which the plaintiff loses, however this outcome is defined, then the total number of cases with a losing plaintiff is $N=G_{2010}+G_{2006}$. Under the null hypothesis that no cases were negatively affected, G_{2010} and G_{2006} should be the same up to random error. That means the probability that a randomly drawn losing-plaintiff case comes from 2010 must equal one-half. A one-sided test of the null hypothesis that there were no negatively affected plaintiffs among those in which the plaintiff lost on a Rule 12(b)(6) motion post-*Iqbal* can then be based on tabulations of the binomial cumulative distribution with N trials and success probability $\frac{1}{2}$. Each *p*-value reported in Table 4 is the probability that there will be no more than $G_{2010}-1$ successes in a N Bernoulli trials with equal probability of success and failure. See Appendix B to Gelbach, *Locking the Doors*, *supra* note 17, available at http://www.yalelawjournal.org/images/documents/gelbach_appendix_b.pdf, for certain additional, and subtle, conceptual issues related to sampling error.

assumptions to rule out the possibility that other changes, unrelated to pleading standard changes, account for my empirical results. I discuss the implications of a quirk of the FJC data that was previously unnoted.

1. Ruling Out Confounding Factors

One assumption necessary to justify the approach in *Locking the Doors* is that the composition of disputes that actually occur in the post-*Iqbal* period is not importantly different from the composition of disputes that would have occurred in this period if *Twombly* and *Iqbal* had never happened. Roughly speaking, this is equivalent to assuming that *Twombly* and *Iqbal* were the only causes of the differences in the numbers of cases and Rule 12(b)(6) motions filed, and in adjudication of those Rule 12(b)(6) motions that were filed.

I discussed this point in some detail in *Locking the Doors*, where I noted that if, for example, the underlying number of disputes grows at a fixed annual rate, then using the FJC data as I do would lead me to overstate the second component given in equation (3)'s lower bound formula. As I wrote in *Locking the Doors*, this would cause “the number of MTDs filed in the *Iqbal* period [to] rise simply due to the passage of time, rather than because of party selection effects.”¹⁸⁴ As I also wrote,

[p]erhaps some of the increase in the number of MTDs filed in employment discrimination and civil rights cases might come from such an exogenous growth source. But it seems very unlikely that exogenous growth in controversies can explain much of the lower bound for the total other cases nature-of-suit category. For this category, the rate at which MTDs were filed increased from 3.1% to 5.0% of case filings, which is more than a 60% increase, while the overall number of cases filed in the total other cases category actually fell slightly between

the 2006 and 2010 study periods.¹⁸⁵

In addition, as I also noted in *Locking the Doors*,¹⁸⁶ it is possible that primary behavior responded to perceived changes in the pleading standard in the period between the 2006 and 2010. Such changes could affect my results by changing the number of controversies that arise in the first place. As just one example, large employers, who are likely to be repeat-play defendants, might

184. Gelbach, *Locking the Doors*, *supra* note 17, at 2336.

185. Gelbach, *Locking the Doors*, *supra* note 17, at 2336 (footnotes deleted) (including footnote observing that “[o]ne interesting possibility is that case filings respond to the business cycle, which swung down substantially between 2005-2006 and 2009-2010” and citing Peter Siegelman & John J. Donohue III, *The Selection of Employment Discrimination Disputes for Litigation: Using Business Cycle Effects to Test the Priest-Klein Hypothesis*, 24 J. LEGAL STUD. 427, 427-62 (1995) (concerning the cyclical aspects of employment discrimination litigation)).

186. Gelbach, *Locking the Doors*, *supra* note 17, at 2336.

STANFORD JOURNAL OF COMPLEX LITIGATION, Vol. 2, No. 2
186
expect to face reduced litigation expenses related to (either real or simply alleged) employment discrimination. This would reduce the costs of actual discrimination, as well as of non-discriminatory actions that might be perceived as discrimination. In turn, this might lead to an increase in the number of lawsuits filed by comparison to the number that would be filed post-*Iqbal* were primary behavior unchanged. In the presence of such feedback effects, my results would need to be reinterpreted—of course, the same would be true of results generated by other researchers using before-and-after data.

Sometimes confounding factors can be addressed empirically using control or proxy variables.¹⁸⁷ Other problematic stories have no happy statistical ending; for example, it seems likely that, as a general matter, it would be very difficult to hold primary behavior constant statistically. As I wrote in *Locking the Doors*, “[o]ne of the facts of life for nonexperimental empirical research . . . is that there are always such potential counterexplanations.”¹⁸⁸ This is another way of stating the point that un-testable assumptions are an unavoidable part of empirical work.¹⁸⁹

2. “Type Z” Disputes

One qualification to the empirical analysis and implementation in the foregoing sections of this Part is necessary due to a quirk in the FJC data. The FJC authors’ coding scheme treats the movant as prevailing when the parties settle after a Rule 12(b)(6) motion is granted with leave to amend (such settlement could occur either before the deadline for the plaintiff to file an amended complaint, or after the plaintiff files an amended complaint but before the defendant files a new Rule 12(b)(6) motion). A preferable coding approach would have coded directly for whether a settlement occurred. It is worth asking how this feature of the data affects my results.

The typology outlined in *Locking the Doors* and further developed *supra* does not account for such a nuance. To do so, I introduce an additional potential outcome, “Z,” to capture cases in which the parties settle following a Rule 12(b)(6) motion’s grant with leave to amend, but before all possibility of

187. For example, with access to the FJC’s micro-data, one could estimate the Rule 12(b)(6) motion-filing rate in a model that includes business cycle-related variables such as the unemployment rate, retail sales data, or some other measure that might help account for macroeconomic variation.

188. Gelbach, *Locking the Doors*, *supra* note 17, at 2337.

189. Michael Abramowicz, Ian Ayres & Yair Listokin, *Randomizing Law*, 159 U. PENN. L. REV. 929 (2011), have recently argued that where possible, applicability of alternative legal rules should be randomized in order to facilitate measurement of policies’ effects. As has long been understood in statistics and the social sciences, random assignment can eliminate confounding factors. On the other hand (as Abramowicz, Ayres and Listokin note), randomization is not always feasible, and it does have drawbacks. For a general discussion, see James J. Heckman and Jeffrey A. Smith, *Assessing the Case for Social Experiments*, 9 J. ECON. PERSP. 85 (1995)). In the civil procedure context, it seems plausible that some of these drawbacks could be substantial.

amending the complaint expires. Consider a dispute that would have a Rule 12(b)(6) motion filed and denied by the court (a Type M_D dispute) but which, following *Twombly/Iqbal*, the Rule 12(b)(6) motion would be filed and granted with leave to amend, after which the parties would settle before the deadline for the plaintiff to file an amended complaint (a Type Z dispute). To extend my taxonomy of pairs of potential outcomes under the two pleading standards, I shall refer to this dispute as having Type M_DZ .

Given the possible existence of Type Z cases, the updated report's definition of prevailing movant would include cases of Types ZZ, AZ, SZ, M_DZ , and M_GZ in one or both of the periods. Because Type ZZ disputes will be coded as having movants prevail under both pleading standards, they are eliminated from my lower bound calculation when one subtracts the number of cases in which movants prevailed in the pre-*Twombly* period from the corresponding number in the post-*Iqbal* period, so they are unproblematic. And disputes of Type AZ can reasonably be viewed as involving negatively affected plaintiffs, so they also do not affect my conclusions.¹⁹⁰

Among post-*Iqbal* cases with prevailing movants, that leaves only disputes of Type SZ, M_GZ , and M_DZ . If some of these disputes would *not* involve plaintiffs who are negatively affected by the change in the pleading standard, as I define this concept *supra*, then using the updated report's data as I do could overstate the number of negatively affected plaintiffs.¹⁹¹ The updated report provides some limited data that can be used to get a handle on the relevance of such Type Z cases. Because the details are tedious, I relegate them to the Appendix. But the take-away point of the analysis there is that, under the scenario in which Type Z disputes make the *greatest* possible difference to my results,

190. Consider a Type A dispute—which is one whose defendant answers, rather than settling (or filing a Rule 12(b)(6) motion). Since the parties do not settle this dispute pre-answer/motion to dismiss, the plaintiff in such a case must expect her net gain from filing suit and litigating post-answer to be greater than cost the defendant expects from litigating post-answer. Now assume that *Twombly* and *Iqbal* affect neither the defendant's expected post-answer cost of litigating nor the plaintiff's expected post-answer gain from litigating (this is reasonable since *Twombly/Iqbal* affect only the chances of getting past the Rule 12(b)(6) stage). Now consider a Type AZ dispute. When the parties agree on a settlement under *Iqbal* after some Rule 12(b)(6) motion is granted, the plaintiff gives up her opportunity to file an amended complaint, and the defendant gives up her opportunity to file an answer in response to such a complaint. Thus the settlement amount must be no greater than the defendant's expected post-answer costs of litigating, which (by reasonable assumption) is the same under *Twombly/Iqbal* as under *Conley*. But we have seen that in a Type AZ dispute occurring under *Conley*, the plaintiff's expected net gain from filing suit and litigating post-answer would exceed the defendant's expected post-answer costs of litigating. Putting all this together establishes that the amount for which a Type AZ dispute settles under *Twombly/Iqbal* must be less than the plaintiff's expected net gain from filing suit and litigating post-answer. In other words, the plaintiff in a Type AZ dispute does worse, as of the post-answer/motion to dismiss stage of litigation, under *Twombly/Iqbal* than under *Conley*.

¹⁹¹ To see this point, observe that formula (2)'s numerator can be written as the sum of (i) Type Z cases in which the defendant prevails post-*Iqbal* and (ii) the number of non-Type Z cases in which the defendant prevails, minus (iii) the number of pre-*Twombly* cases in which defendants prevail on Rule 12(b)(6) motions.

my lower bounds each would also fall by roughly 5 percentage points. Such changes at Stanford Journal of Complex Litigation fully altered the principal qualitative empirical conclusions I drew in *Locking the Doors*. To demonstrate, consider a slight edit of my summary of these conclusions in the introduction to *Locking the Doors*:

For employment discrimination and civil rights cases, switching from *Conley* to *Twombly/Iqbal* negatively affected plaintiffs in at least [10] % and at least [13] % of cases, respectively, that faced MTDs in the *Iqbal* period. Among cases not involving civil rights, employment discrimination, or financial instruments, *Twombly/Iqbal* negatively affected at least [16] % of plaintiffs facing MTDs in the *Iqbal* study period. These results tell us that *Twombly/Iqbal* negatively affected a sizable share of those plaintiffs who actually faced MTDs in the post-*Iqbal* period that the FJC studies.¹⁹²

The only edits to this text (besides removed footnotes) involve the replacement of the original lower bound figures with the worst-case scenario ones just discussed. Thus my basic conclusion—that “*Twombly/Iqbal* negatively affected a sizable share of those plaintiffs who actually faced MTDs in the post-*Iqbal* period” — persists with the worst-case scenario figures.

Moreover, that is the worst-case scenario, which easily might not hold. Presumably in some of the cases in which plaintiffs could have submitted an amended complaint but did not, the plaintiffs simply gave up after determining that an amended complaint was unlikely enough to make a difference.¹⁹³ And some of the cases presumably were Type ZZ cases—ones whose resolution was unaffected by *Twombly/Iqbal*¹⁹⁴ — or Type AZ cases, whose plaintiffs are negatively affected by *Twombly/Iqbal*. In the Appendix, I provide a set of assumptions that do not seem extreme, under which lower bound estimates that would account for Type Z disputes work out to be about 2-3 percentage points lower than the conceptually appropriate ones—roughly half the size of the worst-case effects. In sum, accounting for the presence of Type Z disputes does not alter the basic conclusions in *Locking the Doors*.

CONCLUSION

Empirical scholarship on civil procedure—especially involving changes in litigation rules—is often motivated by normatively important questions. But

192. Gelbach, *Locking the Doors*, *supra* note 17, at 2278-2279 (footnotes deleted).

193. Thus, such cases would not be Type Z cases at all, since they do not involve a settlement having any value to the plaintiff—rather, they would best be considered Type M_G cases.

194. The updated report’s coding scheme would include Type ZZ cases as “movant prevails” cases in both the 2006 and 2010 periods. So while plaintiffs in these cases are not negatively affected, these cases do not affect the properly calculated negatively affected share, because they drop out in the numerator of formula (3), *supra*.

empirical researchers will fail even to begin to answer many such questions unless they take seriously the fact that litigants are human beings, who are not only motivated, but also have the ability to react to policy changes that affect the implications of their actions—in a word, agency. Consequently, it is critical to develop a behavioral framework when seeking to understand the empirical effects of developments that might alter the functioning of the civil justice system. In this paper, I have focused on these issues using the lens of *Twombly*, *Iqbal*, and contemporary debates concerning the federal civil pleading standard. Researchers in this literature have failed, writ large, to explain in behaviorally cognizable terms why they keep calculating changes in measures of the grant rate.

This paper revisits my own earlier work, showing how this continuing preoccupation with changes in grant rates is dually problematic. First, because parties can be expected to change their behavior in response to perceived changes in the pleading standard, grant rate changes do not identify judicial behavior effects (which seem to be the conceptual object of interest to researchers). Second, even if judicial behavior effects could, somehow, be identified, they are only part of the normatively relevant story of pleading standard changes. My own approach, while only a partial solution, does not suffer from these shortcomings, because it takes party selection into account.

An additional contribution of this Article comes in its response to two types of criticisms of my earlier work. Some of the criticism has been directed at the very idea of model-guided empirical research—in the realm of empirical civil procedure research, this means a rejection of the idea of taking seriously parties' status as motivated subjects, rather than assuming they are essentially inanimate objects drawn from an urn. The basis of this criticism, though, is a misunderstanding of what is and is not involved in empirically implementing my behavioral framework. Ironically, my proposed alternative requires *fewer* assumptions than the grant rate-focused approach others take. A second type of criticism I address has to do with one aspect of my empirical implementation; both my methods and results survive a detailed reckoning with this criticism, too.¹⁹⁵

I shall close this paper with the observation that empirical questions in civil procedure are too important to be answered as if people ignored changes in important incentives when choosing when and how to litigate. Parties don't conduct their primary behavior that way, lawyers don't plead or brief that way, and, one assumes, judges don't decide cases that way. So we ought not to study litigation that way, either. We ought to study the civil justice system as it is: composed of human beings who might well respond to incentives.

195. In Gelbach, *Can We Learn Anything About Pleading Changes From Existing Data?*, *supra* note 143, I respond in detail to other criticisms related to the empirical implementation in *Locking the Doors*.

The updated report explains that Rule 12(b)(6) motions were granted with leave to amend in 143 cases in the report's 2006 period and 400 cases in its 2010 period.¹⁹⁶ Figures in the updated report indicate that in 39%, or 56, of these 2006 cases, the plaintiff did not submit an amended complaint; among 2010 cases, plaintiffs did not amend in 34%, or 136, of these cases. The scenario in which the results reported in *Locking the Doors* deviate as much as possible from the correct lower bound, is the one in which *all* of the latter group of cases—all 136 cases that had a Rule 12(b)(6) motion granted with leave to amend in the 2010 period and in which no amended complaint was submitted—were Type SZ or Type MZ cases in which the plaintiff was not negatively affected.¹⁹⁷

Unfortunately, the updated report does not separately report by case type the numbers of cases with Rule 12(b)(6) motions granted with leave to amend and no amended complaint filed. I therefore assume that for each case type, the incidence of such cases is proportional to the total number of cases in the updated report's Table A-1.¹⁹⁸ After eliminating from consideration the imputed numbers of 2010 period cases in which a plaintiff could have submitted an amended complaint following a grant with leave to amend, but did not so submit, I find that the 2010 grant rates would be roughly 5 percentage points lower for each of the three case types I consider.¹⁹⁹ Under this worst-case scenario,

196. FJC UPDATED REPORT, *supra* note 33, at 3.

197. To see this fact, recall that the numerator of formula (3), *supra*, equals the change in the number of granted Rule 12(b)(6) motions, which is increasing in the number of 2010-period cases with motions granted and decreasing in the number of 2006-period cases with motions granted. Assuming that all the cases in question in the 2010 period involved plaintiffs that were not negatively affected, leads to the maximal reduction in the number of 2010-period cases that enter this numerator.

198. Table A-1 of the updated report indicates that the report includes data on a total of 1,111 cases in the 2010 period. Of these, 209 involve civil rights cases (here I include the updated report's Table A-1 figures for civil rights cases, which include ADA cases, though they are excluded from *Locking the Doors*, because there is no way to determine the number of 2010 cases in which there was an opportunity to file an amended complaint but in which one was not filed), and an additional 113 involve employment discrimination cases, with 599 cases involving my contract, tort, or "other" category (*see* Appendix A, Table 4 of Gelbach, *Locking the Doors*, *supra* note 17, at 2347). The imputations resulting from my proportionality assumption are that, of the 136 cases from the 2010 period in which an amended complaint could have been submitted but was not, 26 are civil rights cases ($=136 \times (209 \div 1,111)$), 14 are employment discrimination cases ($=136 \times (113 \div 1,111)$), and 65 fall into my contract, tort or "other" category ($=136 \times (599 \div 1,111)$).

199. For civil rights cases, the 2010 grant rate falls from 67.0% ($=100\% \times 140/209$) to 62.3% ($=100\% \times (140-26)/(209-26)$), a drop of 4.7 percentage points. For employment discrimination cases, the 2010 grant rate falls from 61.1% ($=100\% \times 69/113$) to 55.6% ($=100\% \times (69-14)/(113-14)$), a drop of 5.5 percentage points. For my contract, tort and "other" cases category, the updated report's authors coded 337 cases as having the movant

my lower bounds each would also fall by this amount, yielding lower bounds of 16% for my contract, tort, and “other” category.

Such changes would not have meaningfully changed the principal qualitative empirical conclusions I drew in *Locking the Doors*. To demonstrate, consider a slight edit of my summary of these conclusions in the introduction to *Locking the Doors*:

For employment discrimination and civil rights cases, switching from *Conley* to *Twombly/Iqbal* negatively affected plaintiffs in at least [10] % and at least [13]% of cases, respectively, that faced MTDs in the *Iqbal* period. Among cases not involving civil rights, employment discrimination, or financial instruments, *Twombly/Iqbal* negatively affected at least [16]% of plaintiffs facing MTDs in the *Iqbal* study period. These results tell us that *Twombly/Iqbal* negatively affected a sizable share of those plaintiffs who actually faced MTDs in the post-*Iqbal* period that the FJC studies.²⁰⁰

The only edits (besides removed footnotes) involve the replacement of the original lower bound figures with the worst-case scenario ones just discussed. The basic conclusion—that “*Twombly/Iqbal* negatively affected a sizable share of those plaintiffs who actually faced MTDs in the post-*Iqbal* period”—persists with the worst-case scenario figures.

And of course, all other situations are brighter than the worst case. Presumably some of the cases in question—those in which plaintiffs could have submitted an amended complaint but did not involved plaintiffs who determined that an amended complaint was unlikely enough to make a difference that they just gave up.²⁰¹ And some of the cases presumably were Type ZZ cases—ones whose resolution was unaffected by *Twombly/Iqbal*²⁰²—or Type AZ cases, whose plaintiffs are negatively affected by *Twombly/Iqbal*. As just one example, suppose that half of the 136 cases in question in the 2010 period *did* involve negatively affected plaintiffs. Then the 2010 grant rates based on the updated report’s coding scheme would be only 2-3 percentage points greater than the ones conceptually appropriate for use in my lower bound calcu-

prevail (see Appendix A, Table 4 of *Locking the Doors*, *supra* note 17, at 2347). The 2010 grant rate thus falls from 56.3% ($=100\% \times (337/599)$) to 50.9% ($=100\% \times (337-65)/(599-65)$), a drop of 5.4 percentage points.

200. Gelbach, *Locking the Doors*, *supra* note 17, at 2278-2279 (footnotes deleted).

201. Such cases would not be Type Z cases at all.

202. The updated report’s coding scheme would include Type ZZ cases as “movant prevails” cases in both the 2006 and 2010 periods, so while plaintiffs in these cases are not negatively affected, these cases do not affect the properly calculated negatively affected share.

203. Under the assumption that the cases in question are proportionately distributed across case type, the reduction in the 2010 grant rate would be from 67.0% to 64.8% ($=100\% \times (140 - (\frac{1}{2} \times 26)) / (209 - (\frac{1}{2} \times 26))$), for civil rights cases, a drop of 2.2 percentage points; for employment discrimination cases, the 2010 grant rate falls from 61.1% to 58.5% ($=100\% \times (69 - (\frac{1}{2} \times 14)) / (113 - (\frac{1}{2} \times 14))$), a drop of 2.6 percentage points; for my contract, tort and "other" cases category, the 2010 grant rate falls from 56.3% to 53.8% ($=100\% \times (337 - (\frac{1}{2} \times 65)) / (599 - (\frac{1}{2} \times 65))$), a drop of 2.5 percentage points.