



## THE INFLUENCE OF F.A. HAYEK ON LAW: AN EMPIRICAL ANALYSIS

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### I. Introduction

This inaugural issue of the NYU Journal of Law & Liberty presumes that the work of F.A. Hayek has been important to American law. But is this true? And if true, how important is Hayek relative to other economists? This paper measures Hayek's influence by looking at citations of famous economists in the literature of law—that is, scholarly articles in legal journals and published judicial opinions. Questions that will be asked and hopefully answered along the way include: Who are the most influential economists on law? How has the importance of specific economists or economists generally changed over time? And what do the trends in citations tell us about academic fads in legal scholarship? For example, does the winning of the Nobel Prize have an impact on the number of citations by lawyers?

Analysts have scarcely examined the legal influence of either Hayek or other economists, and the scant evidence produced to date hasn't yielded any clear answers.<sup>1</sup> On one hand, a recent empirical study of over 500 “public intellectuals,” including a few economists, by Judge Richard A. Posner ranks Hayek in the top 10% and notes that Hayek was one of the “most distinguished academic public intellectuals active in the second half of the twentieth century.”<sup>2</sup> This claim is sup-

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<sup>1</sup> Although citation studies in economics and law are quite common, I found only a few citation studies of famous economists and none measuring the influence of specific economists on law. See H.G. Grubel, *Citation Counts for Leading Economists*, *ECONOMIC NOTES*, Nov. 2, 1979, at 134; Cindy Kelly, *The Most Cited Economists*, *THE MARGIN*, Fall 1992, at 74–75 (ranking top twenty-five economists by citations in the Social Sciences Citation Index (SSCI) and finding Richard Posner as the most influential; Hayek was not ranked); Marshall Medoff, *The Ranking of Economists*, 20 *J. ECON. EDUC.* 405 (1989) (using SSCI from 1971 to 1985). The Grubel study used the SSCI to examine citations of 158 leading economists, including all Nobel Prize winners up to that time. Grubel concluded that Paul Samuelson was the most influential economist overall. Hayek ranked forty-fifth out of 158 as of 1979.

<sup>2</sup> RICHARD A. POSNER, *PUBLIC INTELLECTUALS: A STUDY IN DECLINE* 4–5 (2001). Posner performs a similar analysis to this paper on “public intellectuals,” including economists, lawyers, sociologists, scientists, authors, and so on. He ranks these thinkers according to web hits, media mentions, and scholarly cita-

ported by the many books and web sites dedicated to the study of Hayek. For example, a search on Amazon.com yields 217 books by or about Hayek, compared with 114 for Milton Friedman and only thirteen for Ronald Coase.

On the other hand, anecdotal evidence suggests Hayek is largely unknown and unappreciated in this country, especially by lawyers. For example, Virginia Postrel, author of *The Future and Its Enemies*, a paean to Hayekian ideas, describes encounters with prominent lawyers who were oblivious to Hayek and writes that “[i]n the United States . . . well-educated, intellectually curious people who nod at mentions of Max Weber, Hannah Arendt, or Michel Foucault have barely heard of [Hayek].”<sup>3</sup> This view was widely shared by the participants at a symposium on Hayek at Southwestern University Law School, which was designed “to redress the neglect of this important thinker in legal scholarship.”<sup>4</sup> The founders of the *Journal of Law & Liberty* are likely in this camp as well.

This paper uses a standard citation analysis of the works of Hayek and other notable economists. Citation analysis has been well accepted in social sciences as a way to measure influence for over four decades.<sup>5</sup> The fundamental premise is that “[a]uthors . . . with the most citations can logically be considered to have had the most impact.”<sup>6</sup> Citation studies are accepted as a good first approximation of influence because scholarly communities provide “powerful incentives for individuals to provide accurate information about influences on . . . their own work.”<sup>7</sup> The incentive is especially evident in the legal literature and is even more likely when lawyers range outside of their expertise, like bringing economics into law. In less familiar territory, we are bound to see lawyers citing ideas and concepts that scholars within that discipline would likely take for granted.

To measure the influence of Hayek and other economists on law, this paper presents the results of searches of the legal literature for each of the fifty-three winners of the Nobel Prize in Economics and ninety-seven other notable economists or economic thinkers who have not won the prize, such as Keynes, Jensen, and Marx.

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tions. For the latter, the closest analog to this study, Posner uses the SSCI, which includes citations of many non-law journals. For the years 1995–2000, Posner ranks Hayek 53rd among 546 public intellectuals, with 1655 citations, about eight times less than the most influential public intellectual Michel Foucault (13,238 citations). Other economists on the list of top public intellectuals are Gary Becker (seventh, 5,028 citations), Amartya Sen (fourteenth, 3,526), Paul Krugman (twentieth, 3,011), Milton Friedman (twenty-fifth, 2,706), George Stigler (thirty-sixth, 2,056), Joseph Stiglitz (thirty-seventh, 2,050), and James Buchanan (sixty-sixth, 1,275). In the present study—over a longer time period and limited to influence on law—Hayek performs better than all but Becker, Friedman, and Stigler.

<sup>3</sup> Virginia Postrel, *Friedrich the Great*, BOSTON GLOBE, Jan. 11, 2004, at L1.

<sup>4</sup> Norman Karlin & Mark Cammack, *Foreword*, 23 SW. U. L. REV. 425, 427 (1994).

<sup>5</sup> See William M. Landes et al., *Judicial Influence: A Citation Analysis of Federal Courts of Appeals Judges*, 27 J. LEGAL STUD. 271, 271–72 (1998); Grubel, *supra* note 1, at 134 (“Citation counts have been employed . . . for some time as an aid in reaching decisions about promotion, tenure, the awards of research grants . . . and the allocation of resources within universities.”); Richard A. Posner, *An Economic Analysis of the Use of Citations in the Law*, 2 AM. L. & ECON. REV. 381 (2000).

<sup>6</sup> Larry M. Robinson & Roy D. Adler, *Business Research in Eight Business Disciplines* (2003) (unpublished paper presented at International Business and Economics Research Conference 2003), at [http://academicassessments.com/ArticlesFolder/pdfs/2-Las\\_Vegas\\_Paper.pdf](http://academicassessments.com/ArticlesFolder/pdfs/2-Las_Vegas_Paper.pdf) (last visited Nov. 11, 2004).

The data will show that the economists one would expect to perform well—Ronald Coase, Gary Becker, Milton Friedman, and so on—do. Hayek does well too, ranking among the top ten most influential economists of the legal academy. Hayek's influence on judges is less certain, and likely much weaker. As we will see, Hayek's ideas do not translate as readily to the disposition of cases and controversies as they do to academic treatment of public policy questions. This seriously weakens his overall influence on law.

While the primary contribution of this paper is a quantitative assessment of the influence of specific economists on law, along the way we may hope to learn something more generally about how ideas from outside the legal academy are developed and incorporated into legal scholarship. Cass Sunstein notes that academic lawyers are especially susceptible to following fads from other disciplines.<sup>8</sup> He predicts, for example, that “[i]f . . . economists show a great deal of interest in [a topic], academic lawyers are likely to show an interest in that topic too.”<sup>9</sup> Sunstein also expects to see “rapid rises and declines in references to certain ideas and people,” what he calls “academic bubbles.”<sup>10</sup> This paper makes an effort to test these claims with respect to economists. As we will see, Sunstein's predictions (based on intuition from his years of experience as one of the leading academic lawyers) are largely without support.

To test these predictions empirically, it is helpful to think of academic legal work as a market shaped by supply and demand—economists supply, lawyers demand.<sup>11</sup> In this model, Sunstein predicts a market failure of sorts, with academic lawyers buying whatever economists are selling. This paper will show that the market for interdisciplinary ideas works fairly well and that lawyers are more discerning customers than Sunstein assumes. The data shows trends and trendy thinkers, to be sure, but academic lawyers are not lemmings. They “buy” only certain economists' goods in the marketplace of ideas. We will see that lawyers generally “buy” two types of economic ideas—“technical” ideas that are used as a tool for further analysis and “polemical” ideas that bolster the author's side of a normative political argument. In the legal literature, the ideas of Ronald Coase, Gary Becker, and Michael Jensen are examples of the former, while the ideas of F.A. Hayek, Milton Friedman, and Daniel Kahneman are examples of the latter. We will also see that politics and changing political winds have a significant impact on citation counts of the latter group but not the former. For example, we will see that Hayek was quite popular among academic lawyers during the 1980s when his anti-collectivist ideas resonated with the hot topics of the times, just as Daniel Kahne-

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<sup>7</sup> See Grubel, *supra* note 1, at 135 (describing idealistic and “whimsical” reasons why authors are likely to attribute most sources of significant influence).

<sup>8</sup> Cass R. Sunstein, *Foreword: On Academic Fads and Fashions*, 99 MICH. L. REV. 1251, 1260 (2001) (“[W]e should expect a large number of fads and fashions in the academic study of law.”).

<sup>9</sup> *Id.* at 1262.

<sup>10</sup> *Id.* at 1260.

<sup>11</sup> POSNER, *supra* note 2, at 7 (noting that there is “a market shaped by demand and supply” for academic work and that the performance of the market for ideas of economists is “test[able] . . . with empirical data.”).

man's ideas on the psychology behind economic choices are popular today among left-leaning academics as an antidote against the dominance of traditional "L&E" (Law & Economics) arguments.

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The remainder of this article is organized as follows: Section II describes the methodology of the searches conducted for this study. Section III presents the results of the searches for 150 economists in legal journals and case opinions. In addition, this section briefly addresses key questions raised by the data, including what role is played by politics and fads, and whether economists get a boost in citations from winning the Nobel Prize. Section IV summarizes the issues discussed in Sections II and III.

## II. Methodology

### A. Where to search

The most likely place to find *explicit* evidence of influence is in the literature of law, namely scholarly articles and judicial opinions. It is in legal journal articles that law develops ideas, including capturing and incorporating concepts from economics and other disciplines. And it is in judicial opinions that these ideas are applied to cases and controversies. Law review articles and case opinions are also where students, lawyers, and judges study the law. So counting references to the works of economists in legal journals tells us about the influence of those economists on the "leading edge of legal thought."<sup>12</sup> Counting references in judicial opinions tells us about how well these ideas percolate from the legal academy into practice.

The data come from two Westlaw databases: the legal journals database (JLR) and the judicial opinions database for federal and state cases (ALLCASES). These databases are easily searchable and are the most comprehensive source available. In addition, they allow an examination of the specific works/ideas cited, including the context of the citation, the usage, and so on. The JLR database is the most extensive and widely used repository of scholarly articles about law. The database has grown dramatically over the past five decades in terms of journals covered and total documents. It covers most important legal journals from 1982, as well as selected journals from as far back as the 1950s, and presently tracks all articles from over 800 law-related journals. The total number of documents in the JLR database currently exceeds 300,000, up from a total of 2000 in 1982 and about 300 per year for all years prior to that. It is fair to say the JLR database covers the entire field of legal scholarship for at least the past three decades.<sup>13</sup> The ALLCASES database is similarly comprehensive. This database includes all cases since 1944 from

<sup>12</sup> Robert C. Ellickson, *Trends in Legal Scholarship: A Statistical Study*, 29 J. LEGAL STUD. 517, 518 (2000).

<sup>13</sup> Several other citation studies have effectively used the Westlaw JLR database to measure influence. See, e.g., *id.* Another typical source is the *Social Sciences Citation Index*. See, e.g., Fred R. Shapiro, *The Most-Cited Legal Scholars*, 29 J. LEGAL STUD. 409, 411-15 (2000).

the Supreme Court, the several courts of appeals, all district courts, numerous specialized federal courts (such as the Court of Claims, the Court of International Trade, and bankruptcy courts), as well as cases from all state and territorial courts.

## B. Which economists to analyze

Because Hayek won the Nobel Prize in Economics in 1974, a good place to start is with the other fifty-two economists who have won that prize.<sup>14</sup> The Nobel Prize is a rough proxy for importance, as it is “a reflection of the recipients’ influence.”<sup>15</sup> This study bears that out, as most top economists in terms of citations are Nobel winners. Accordingly, the Nobel winners provide the primary study sample used in all analyses.

The Nobel Committee is not perfect and is often quite political. The list of winners therefore includes forgettable names such as Soviet economist Leonid Kantorovich (1975), and omits important thinkers such as John Maynard Keynes.<sup>16</sup> Therefore, the list of economists was expanded for many analyses to include all additional economists named in the *Dictionary of Economics*.<sup>17</sup> A selection of other prominent economists, including such figures as Michael Jensen, Richard Thaler, William Meckling, Andrei Shleifer, and Robert Vishny, was added to the list based on a random sampling of influential economics and L&E journals over the past five years. The final search list included 150 economists or economic thinkers ranging from Adam Smith to Marie Esprit Leon Walras and everyone in between.<sup>18</sup>

## C. How to search

The vagaries of the Westlaw databases and the citation habits of lawyers and judges made several iterations necessary before an efficient and effective search

<sup>14</sup> The Nobel Prize in Economics is technically not a “Nobel Prize” at all. It was established by the Swedish Central Bank in 1968 and is officially known as The Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel. It has been awarded annually since 1969, and the Swedish Academy of Sciences has given the prize its imprimatur. The Prize is not without controversy, however. Hayek himself was skeptical of economics as a predictive science and said, “if I had been consulted whether to establish a Nobel Prize in economics, I should have decidedly advised against it.” Friedrich A. Hayek, Address at Nobel Banquet (Dec. 10, 1974), at <http://www.nobelprize.org/economics/laureates/1974/hayek-speech.html> (last visited Nov. 11, 2004).

<sup>15</sup> Grubel, *supra* note 1, at 135.

<sup>16</sup> The selection of winners in economics, like in many other disciplines, is viewed as having a political undertone. Political sensitivity can be seen occasionally in shared awards, which has happened in fifteen of thirty-five years. For example, in 1974 the award was given to both Hayek and devout socialist Gunnar Myrdal, whose only notable work—*An American Dilemma*—was on race relations in the United States. These two were political “antipodes” and openly hostile to each other. In fact, Myrdal stated that the Prize should be abolished because it had been awarded to “reactionaries” like Hayek and Milton Friedman, see Samuel Brittan, *The Not So Noble Nobel Prize*, FIN. TIMES, Dec. 19, 2003, at 21, and that after he was awarded one, “there were no longer any prizeworthy candidates,” SYLVIA NASAR, A BEAUTIFUL MIND 368 (1998) (quoting “confidential sources”). For a fascinating account of the highly political process behind the selection process, see *id.* at 356–73.

<sup>17</sup> GRAHAM BANNOCK ET AL., *DICTIONARY OF ECONOMICS* (4th ed. 2003).

<sup>18</sup> Although it is possible that some influential economists are excluded from the final list, the skewness of the citation data—with most citations coming from a very few key thinkers—suggests that any omissions are likely insignificant.

process was developed. The first, crudest search conducted was a basic search using only the last name of the economist; for example, a search for all documents containing the word “Hayek” in the given database. This search is generally overbroad. It captures not only references to works and ideas of Hayek cited by authors, but also passing references to Hayek without attribution and false positives—that is, references to other individuals with the same last name. For example, a search in the JLR database for “Hayek” yields over 1300 results, but this includes many uses of “Hayek” unrelated to the economist’s ideas, like references to entertainer Salma Hayek.<sup>19</sup> When these are removed, Hayek’s total is reduced to 1164, an error rate of about 10%. This error rate may be low for rare last names like “Hayek,” but it becomes highly distortive for more common names like “Miller” (Merton Miller, winner in 1990) or “Lewis” (Arthur Lewis, winner in 1979). Because of this problem, searches were refined to search for full names.

A simple first name-last name search was not accurate, however, due to the different citation styles across authors, journals, and disciplines. In some cases, the nomenclature is “first initial, last name”; in others, it is “last name, first name”; and so on. Therefore, searches generally included all possible permutations of first, middle, and last names or initials, such as “F.A. Hayek,” “Friedrich Hayek,” “Hayek, F.,” etc.<sup>20</sup>

These name-based searches will ultimately exclude some mentions that are indicative of influence, especially for economists who are famous or whose name is affiliated with a specific idea. For example, authors may refer to the work of Ronald Coase simply by using a permutation of his last name—for example, “Coasian transaction costs.”<sup>21</sup> In addition, some works or ideas are so widely accepted or divorced from the author that no attribution is given. Think of “Kaldor-Hicks efficiency,” which is almost never accompanied by a citation to Nicholas Kaldor or Sir John Hicks, or “public choice,” which is commonly not attributed to James Buchanan. To account for these references, targeted searches were conducted for permutations of last names (for example, “Hayek!” or “Coas!”) and specific works or ideas of influential economists (for example, “human capital” for Gary Becker; “impossibility theorem” for Kenneth Arrow; or “Nash equilibrium” for John Nash).

<sup>19</sup> See, e.g., Ediberto Roman, *Who Exactly Is Living La Vida Loca?: The Legal and Political Consequences of Latino-Latina Ethnic and Racial Stereotypes in Film and Other Media*, 4 J. GENDER RACE & JUST. 37, 38–39 (2003) (returning a false positive for Hayek).

<sup>20</sup> In the case of Hayek, another problem plaguing the searches was striking variance in spelling across authors. I recorded over thirteen spelling or citation permutations in legal journals, including: “Friedrich August von Hayek,” “F.A. Hayek,” “Friedrich A. von Hayek,” “Freidrich A. Hayek,” “F.A. von Hayek,” “Frederick Hayek,” “Hayek, F.,” “Hayek, F.A.,” “Friederich Hayek,” “Fredrich A. Hayek,” “Friedrick Hayek,” “Freidich von Hayek,” and “Frederich A. Hayek.” (Citations available from author.) Searches for Hayek and all other authors were altered dynamically to include all misspellings and variable citations styles as they were discovered.

<sup>21</sup> See William M. Landes & Richard A. Posner, *Citations, Age, Fame and the Web*, 29 J. LEGAL STUD. 319, 321 (2000) (noting that “old work that is fundamental tends to be used without citation to the work, but instead by referring to the name of the author or even just to the ideas contained in his work . . .”).

Even when broader searches are used to measure influence, counting citations is more complicated than recording the total number of documents found for a given search. For example, a search for all the permutations of “Robert E. Lucas,” Nobel Prize winner in 1995, yields false positives like “Robert Lucas [who] was charged with and convicted of child abuse and felony murder,”<sup>22</sup> and “Robert Lucas—an Ohio Democrat, War of 1812 veteran, and temperance man . . .”<sup>23</sup> In addition, many economists in the study are active litigants, expert witnesses, or amici in court proceedings.<sup>24</sup> To eliminate the false positives, the author conducted a rigorous (and time consuming) search of each of the tens of thousands of results, counting only citations of specific works or ideas by the economist in question. The end result of this work is a fairly accurate count of all citations of these economists as of 2003.<sup>25</sup>

#### D. Limitations of citations studies

Citation studies are, of course, only one piece of evidence that can be used in conjunction with other techniques to try to assess the importance of an author, movement, article, or case. But as William Landes has noted, “[a]lthough citation analysis provides only a proxy for quantifying . . . influence, it offers some significant advantages over more conventional literary and historical approaches . . .”<sup>26</sup> These advantages include that it is analytically rigorous, unbiased, and relatively easy to conduct, replicate, and test. Moreover, even the more qualitative “literary” studies of influence typically involve some aspect of citation analysis. For example, in a paper entitled “Popper and Hayek: Who Influenced Whom?” the author uses several techniques but none more often than looking for explicit references to each others’ work.<sup>27</sup> Although authors typically supplement non-rigorous citation

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<sup>22</sup> Jerold P. McMillen, Note, *Prosecuting Child Abuse Homicides in Iowa: A Proposal for Change*, 44 DRAKE L. REV. 129, 143 (1995).

<sup>23</sup> Bruce Kempkes, *The Natural Rights Clause of the Iowa Constitution: When the Law Sits Too Tight*, 42 DRAKE L. REV. 593, 609 (1993).

<sup>24</sup> For example, Nobel winner Robert Mundell (1999) was a defendant in the case *Goodyear Publ’g Co. v. Mundell*, 75 A.D.2d 556 (N.Y. 1980); Merton Miller (winner in 1990) served as an expert witness for the government in the case *California Fed. Bank, FSB v. United States*, 245 F.3d 1342, 1350 (Fed. Cir. 2001); and several Nobel winners submitted an amicus brief in the case of *Eldred v. Ashcroft*: George A. Akerlof (winner in 2001), Kenneth J. Arrow (1972), James M. Buchanan (1986), Ronald H. Coase (1991), and others. Brief of George A. Akerlof et al. as Amici Curiae in Support of Petitioners, *Eldred v. Ashcroft*, 537 U.S. 186 (2002) (No. 01-618).

<sup>25</sup> Searches were conducted entirely by the author during February and March 2004. Some variability was found for the same search conducted on different days, but these variances amounted to only a few citations and do not impact the overall conclusions of this project. Attempts to recreate *exactly* the results presented here may be difficult for these reasons and because of the subjective nature of choosing citations that were indicative of influence.

<sup>26</sup> Landes et al., *supra* note 5, at 325.

<sup>27</sup> Bruce Caldwell, Popper and Hayek: Who Influenced Whom?, Address at the J. M. Kaplan Workshop in Politics, Philosophy and Economics (July 6, 2002), at <http://www.uncg.edu/bae/people/caldwell/popper%20and%20hayek.doc> (last visited Nov. 11, 2004). One of many examples is Caldwell’s consideration of Popper’s book *Poverty*, which Caldwell notes has “sixteen references to Hayek listed in the index.”

analysis with examination of language and theme similarity, the primary evidence for influence is usually an explicit reference of name, work, or concept.

Of course citation studies can't measure all influence, since even the most fastidious scholars and judges don't cite every source of influence. This failure may be the result of familiarity, laziness, mistake, rivalry, ego, or cultural reasons (e.g., judicial etiquette about appropriate sources for citations). The largest source of error is bound to be familiarity. As one scholar has described it, citations of especially famous economists may be missing because the work "is so well known that citation seems superfluous."<sup>28</sup> This possible error can be reduced, if not eliminated, by searching not only for the names of economists but for key ideas and concepts as well.<sup>29</sup> As such, it is generally accepted that "straight citations counts are highly correlated with virtually every refined measure of quality."<sup>30</sup> As Judge Richard Posner, one of the pioneers of the use of citation analysis to study the reputation of lawyers and the influence of academics on law, has noted, citation analysis is, at very least, "suggestive of scholarly distinction or reputation."<sup>31</sup>

### III. Results

Along several empirical dimensions, F.A. Hayek is one of the most influential economists on American law. He is among the most frequently cited of all economists by lawyers (ninth out of 150 examined), is a frequent subject of law review articles (appearing in the title of fourteen articles—second only to Coase), and is cited for over thirty articles and books (compared with twenty-one for Coase and nineteen for Becker), with four of these works having more than 100 mentions. Only five other economists share this last feat, and each—Gary Becker (six), Daniel Kahneman (five), George Stigler (five), Ronald Coase (four), and Kenneth Arrow (four)—is an undisputed giant of the field.

On several other measures, Hayek compares less favorably with fellow economists. While Hayek was the most commonly cited economist during the 1980s, his influence has waned significantly since then. Hayek has generally underperformed the growth in the overall market for economist citations, especially when compared with trendy thinkers like Gary Becker and Daniel Kahneman. Hayek also scores poorly in terms of citation by judges. Hayek was cited only three times in all published federal and state court opinions since 1944, compared with nearly seventy for Coase. This discrepancy between influence on legal academics and influence on judges is not unique to Hayek, but he has the highest ratio of mentions in legal journals to mentions in opinions of all economists. And this suggests

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<sup>28</sup> Grubel, *supra* note 1, at 134.

<sup>29</sup> Another weakness of citation studies is the inability to measure *implicit* influences. The inputs that shape a person's thinking are infinite and indeterminate, and without an explicit nod of some sort to an influence, we cannot know for sure where influence comes from. Because of this difficulty, this work focuses on explicit influences only. For the reasons discussed above, implicit influences are bound to be fairly insignificant in legal journals.

<sup>30</sup> Jonathan Cole & Stephen Cole, *Measuring the Quality of Sociological Research: Problems in the Use of the Science Citation Index*, 6 AM. SOCIOLOGIST 23, 28 (1971).

<sup>31</sup> POSNER, *supra* note 2, at 169.



that Hayek's overall influence has been smaller than his citations in law journals might indicate. After all, practical application of ideas to dispute resolution, from antitrust to tort, is the best evidence of influence on the legal system.

In order to better analyze Hayek's influence, let us look at citations of Hayek and other economists more systematically along the two dimensions mentioned above: legal journals and judicial opinions.

## A. Mentions in legal journals

### 1. Total mentions

The first measure of influence is the total number of times Hayek is mentioned or cited in legal journals.<sup>32</sup> As shown on Table 1, among Nobel Prize winners Hayek is the sixth most commonly referenced economist behind only Ronald Coase, Gary Becker, George Stigler, Kenneth Arrow, and Milton Friedman.<sup>33</sup> An expanded version of this Table (Appendix A) shows that Hayek's importance—about half that of Ronald Coase—is not diminished substantially when compared with ninety-seven other eminent, non-Nobel economists. When these economists are included in the search, Hayek ranks as the ninth most influential, bested only by additions John Stuart Mill, Adam Smith, Jeremy Bentham, and Karl Marx.<sup>34</sup>

The total number of citations is dominated by a few leading thinkers, with the top 10% of economists accounting for over 50% of all citations. This is quite skewed toward the top compared with the results from other citation studies.

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<sup>32</sup> Unless otherwise noted, "total number of mentions" refers to the search of all name permutations—for example, "Ronald H. Coase," "Ronald Coase," "R.H. Coase," "R. Coase," "Coase, Ronald H.," "Coase, Ronald," "Coase, R.," "Coase, R.H." As noted above, these searches do not capture all potential evidence of influence. Hayek's relative position in these rankings does not change much when broader searches are conducted: either for last name shortcuts—for example, "Hayek!" or "Coas!—or for concept shortcuts—"human capital" for Gary Becker or "capital asset pricing model" for William Sharpe. Total mentions for most economists increased when broader searches of these types were conducted, but few relative positions changed. The biggest jump seen is for Italian economist Vilfredo Pareto, who had only 133 full name mentions. But a search for "Pareto," as in Pareto superior or Pareto optimal, yields 2,467 results. The other biggest movers were: William Sharpe (59) with "CAPM" or "capital asset pricing model" (465); and Nicholas Kaldor (132) with "Kaldor" (977).

<sup>33</sup> In his 1979 study of citations of leading economists in all social science journals, Herbert Grubel found that the ten most influential economists were: 1. Paul Samuelson (10th in this study), 2. Milton Friedman (5th), 3. Kenneth Arrow (4th), 4. William Baumol (14th), 5. John Kenneth Galbraith (11th), 6. Gunnar Myrdal (12th), 7. George Stigler (3rd), 8. Harry Johnson (71st), 9. John Hicks (45th), and 10. Henel Tbesl (150th). The most influential economist in this study, Ronald Coase, was thirty-first in the Grubel study in 1979. Hayek, sixth in this study, was forty-fifth in the Grubel work. Not in the top fifty in Grubel's study are Daniel Kahneman (seventh), Amartya Sen (eighth), and Joseph Stiglitz (ninth). These differences are explained by the fact that Grubel's analysis was done nearly thirty years ago and included citations in all social science literature—not just law journals.

<sup>34</sup> This list includes all other economists from the *DICTIONARY OF ECONOMICS*, BANNOCK ET AL., *supra* note 17. The only other economists on this list with a significant number of mentions (>400) are: Michael Jensen (1,151), Mancur Olson (1,114), Gordon Tullock (1,108), David Hume (1,074), William Baumol (1,028), William Meckling (754), Herbert Spencer (656), Eugene Fama (620), Richard Thaler (559), Dennis Mueller (551), Joseph Alois Schumpeter (531), John Kenneth Galbraith (493), Andrei Shleifer (453), and John Maynard Keynes (411). The remaining eighty-seven economists average only sixty-six mentions (median = 34).

Richard Posner's recent analysis of "public intellectuals," for example, found that the top ten academics accounted for only about 30% of all mentions of the top 100 academics.<sup>35</sup> The skewness can also be seen in the tail of the distribution, with the bottom 10% of economists accounting for less than 1% of all mentions,<sup>36</sup> compared with 5% in Posner's study.<sup>37</sup>

But this isn't a sign of a dysfunctional market. In fact, this is expected in any market, like this one, where "cost is invariant to output."<sup>38</sup> In other words, the marginal cost to an author of citing the "best" work in a field as opposed to an alternative is effectively zero. One would therefore expect even slight quality differences to result in large differences in influence, yielding highly skewed data. This effect, commonly called the "superstar" or "Matthew" effect,<sup>39</sup> is evident here, with economists like Coase, Becker, Stigler, and Hayek showing signs of being superstars. As noted above, their superstar status leads not only to numerous references to their best work, but also increases citations by raising awareness of and lending credibility to their less-famous works.

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Lawyers cite economists for two general types of ideas. The first type are "academic" ideas that specifically address legal issues with economic analysis—what could be broadly characterized as L&E scholarship. Citations of Coase on transaction costs, Becker on discrimination, and Stigler on regulation are examples of this type. Legal academics cite these thinkers primarily to advance further analysis with technical concepts of economics. The second type are "polemical" ideas that provide an economic take on various current affairs debates. Citations of the popular books, speeches, and other publications of Hayek, Friedman, and Stiglitz on government, politics, international trade, and so on are examples of this type.<sup>40</sup> Legal academics cite these economists largely to support the author's side of a normative political argument. This study shows that members of the legal academy typically accept about two to three times as many "academic" ideas as "polemical" ideas from economists.

Some economists have had significant influence on lawyers by providing only academic ideas, while others have used a mix of both types. Ronald Coase is the most influential economist in this study, and he achieved this influence primarily through two technical, academic articles. Hayek, on the other hand, achieved about half of his influence through publications on policy issues aimed at general

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<sup>35</sup> POSNER, *supra* note 2, at 178; see also Eugene Garfield, *Citation Analysis as a Tool in Journal Evaluation*, 178 SCIENCE 471, 474 (1972) (observing skewness in all journals in the SSCI—1% of journals account for 25% of all citations).

<sup>36</sup> About 60% of economists have less than 100 total mentions, and about 7% have no mentions at all.

<sup>37</sup> POSNER, *supra* note 2, at 178.

<sup>38</sup> *Id.* at 179.

<sup>39</sup> *Id.* at 184 (describing the "Matthew effect" by quoting the Bible—"to him who has, more shall be given", *Matthew* 13:12); see also Robert K. Merton, *The Matthew Effect in Science*, 159 SCIENCE 56 (1968).

<sup>40</sup> Economists acting in this capacity are what Richard Posner calls "public intellectuals" as opposed to "academics." See, e.g., POSNER, *supra* note 2, at 21-22.

audiences (like *The Road to Serfdom*) and half through his pure academic work in economics and other fields (like *The Use of Knowledge in a Society*). Among top economists, Milton Friedman is the only one who was able to achieve significant influence on lawyers primarily through his works as a “public intellectual.”

Although economists like Hayek and Stiglitz are cited for numerous “academic” works, it is arguably because of their political works that their academic works are so widely cited. In other words, Hayek’s work *The Road to Serfdom* made him famous among lawyers, and this fame resulted in increased awareness of, and thus citation of, his less famous works—a “halo effect.”<sup>41</sup> Hayek achieved this fame in part because his works were non-technical and aimed at wide audiences, what Posner called “self-popularizing” works designed to increase influence beyond what academic or technical works would provide. For example, Posner believes Hayek is disproportionately credited for creating “the current world-wide enthusiasm for free markets” because of the appeal of “self-popularizing” works such as *The Road to Serfdom* and *The Constitution of Liberty*.<sup>42</sup> These works represent nearly 25% of citations of Hayek by lawyers because they provide ready and attractive arguments to make rhetorical, political points. In contrast, citations of many of Hayek’s other works are for technical, apolitical ideas.

In this way Hayek is like another free-market prophet, Milton Friedman. Nearly 30% of all citations of Friedman in legal journals (and nearly all of his mentions in judicial opinions) are for non-technical works such as articles in newspapers, magazines, or popular books. Although Friedman wrote many academic articles on a range of issues in economics, his citation by lawyers and his resulting fame as a spokesman for free markets owes more to his work as a “public intellectual” with a particular political bent that was ripe for the times.

Economists today are playing a similar role to that which Hayek and Friedman played in the 1980s. Joseph Stiglitz is a good example. Stiglitz, a veteran of the Clinton administration, has capitalized on his Nobel Prize by publishing a “self-popularizing” book in each of the past two years—*The Roaring Nineties* (2003) and *Globalization and Its Discontents* (2002). As a result of these works, he has become a spokesman for the economics of the New Left and made himself much more citable by lawyers. About 25% of all citations of Stiglitz within the past two years are from these works or affiliated articles in magazines like *The New Republic* or *Atlantic Monthly*. We would expect to see citations of Stiglitz’s other (academic) works to increase as a result of the fame he generates from these self-popularizing works.

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The total-number-of-mentions metric is susceptible to two potential biases that must be addressed: age (older economists have had more years to accumulate

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<sup>41</sup> See E.L. Thorndike, *A Constant Error in Psychological Ratings*, 4 J. APPLIED PSYCHOL. 25 (1920).

<sup>42</sup> POSNER, *supra* note 2, at 306.

citations) and year of winning the Nobel award (early winners have had more years of fame).

William Landes and Richard Posner identified the potential age-bias issue, noting that older authors might be expected to have a greater number of mentions because “they tend to have a larger body of publications and because their work has had more time to accumulate citations,” while “younger scholars are more likely to add to their publications in the future.”<sup>43</sup> A simple regression analysis shows that there is no correlation ( $R^2 = \sim 0$ ,  $t$ -stat  $< 2$ ) between the total number of mentions in the JLR database and age. Given the relatively old age of the winners—the median age for winners is eighty-two, and all winners are over sixty years old—this result actually fits well with the Landes and Posner human capital model, which predicts that only scholars younger than sixty-two are significantly penalized in citation studies that do not normalize for age.<sup>44</sup>

One difference from the Landes and Posner model relates to human capital depreciation. They predict that very old scholars (greater than eighty-two years) are likely to experience substantial depreciation in human capital, causing a decrease in the number of citations of them.<sup>45</sup> This study shows no depreciation, as citations of very old and deceased scholars continue to be as common as those to younger scholars. This is perhaps because Nobel-winning economists are so famous that the useful life of their products (that is, ideas) is longer, and because most citations are for major works that were written decades ago during peak years of productivity.<sup>46</sup>

The year in which an economist won the Nobel Prize is also an insignificant factor in the number of mentions ( $R^2 = \sim 0$ ,  $t$ -stat  $< 2$ ). In fact, of the top ten economists by journal mentions, five won the Nobel Prize after 1990, including numbers one and two. In addition, the total number of citations for winners since 1990 significantly exceeds the number of citations for winners before 1990, even when adjusting for the growth in the JLR database over that time.

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Hayek’s total number of citations (1164) outstrips his two biggest personal rivals, nearly doubling the number of both his primary intellectual sparring partner, John Maynard Keynes (617), and Hayek’s co-recipient of the Nobel Prize in

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<sup>43</sup> Landes & Posner, *supra* note 21, at 321 (using a human capital model to normalize citations by age to create an age-neutral assessment of influence).

<sup>44</sup> *Id.* at 327–28.

<sup>45</sup> *Id.*

<sup>46</sup> The data in this study is also robust in light of citation studies showing that the peak year for influential works of Nobel laureates is between forty-three and fifty-eight years old. David W. Galenson & Bruce A. Weinberg, *Creative Careers: The Life Cycles of Nobel Laureates in Economics*, Sept. 2004, at <http://fmwww.bc.edu/ec-j/semf2004/Weinberg.pdf> (last visited Nov. 12, 2004) (studying citations from the SSCI, SCI, and Arts & Humanities Citations Index for the years 1980–1999 and concluding that the peak age for influential works of “conceptual economists” (like Hayek and Coase) is forty-three years old, and the peak age for “experimental economists” (like Stigler and Myrdal) is fifty-eight years old).

1974 and vocal critic, Gunnar Myrdal (545). As shown in Figure 1, Hayek has averaged almost 2.5 times as many citations per year as either Keynes or Myrdal. From 1982 to present, all three economists roughly tracked the overall market for citations of economists, seeing a four- to five-fold increase in citations overall, and a sharp jump in the early 1990s. It was at this time that Hayek leapt far ahead of Keynes and Myrdal. The increase is at least partially attributable to a 1994 symposium at Southwestern University Law School on Hayek and the law that featured eleven articles in which Hayek was cited. The symposium caused an initial spike in citations of Hayek, and Hayek remained at this higher level thereafter. This is perhaps in part because of the “snowball” effect—articles about an author or citations of an author tend to create more opportunities for citations and create more awareness of that author’s work.

The relatively low number of citations of Myrdal is not surprising. Myrdal is most commonly known and cited for his work on American race relations: *An American Dilemma: The Negro Problem and Modern Democracy* (1944). This profoundly influential work on race accounts for nearly 75% of the references to Myrdal in the legal journals and *all* citations in the judicial opinions. But several factors limit its influence on modern legal scholarship. First, the work is more sociology than economics, and therefore Myrdal did not ride the popularity wave of L&E that occurred during the past twenty years.<sup>47</sup> Second, its relevance is necessarily limited to topics on race relations, a relatively small part of the modern legal academy. Finally, the work was published sixty years ago, and while age does not necessarily limit general applicability of scholarship as we will see, with respect to race relations it might more readily do so since the work describes an historical landscape of debatable relevance to today’s legal issues.

Keynes’s relatively low number of references presents more of a puzzle. Keynes has been called “the most famous and probably the most influential economist of the twentieth century.”<sup>48</sup> In addition, Keynes should be a darling of academic lawyers because much of his work was, like Hayek and Friedman, written specifically for general audiences, like lawyers and politicians.<sup>49</sup> In fact, one might expect Keynes to be cited more frequently than Hayek and Friedman because

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<sup>47</sup> Myrdal was a prominent economist in both academia, with positions at Stockholm University, and in government, as a member of the Swedish Parliament, as Minister of Commerce, and in a variety of roles at the United Nations. Myrdal also published several significant economic works, but they are infrequently cited in legal literature: *Monetary Equilibrium* (1931) (zero citations); *Economic Theory and Underdeveloped Regions* (1957) (two citations); *Value in Social Theory* (1958) (two citations), *Challenge to Affluence* (1963) (four citations), and *Against the Stream – Critical Essays in Economics* (1973) (one citation).

<sup>48</sup> POSNER, *supra* note 2, at 21. Keynes’s influence was so profound that he appeared on the cover of Time magazine on December 31, 1965, nineteen years after his death. Prior to the 1980s, most politicians considered themselves firm believers of Keynes. President Nixon famously quipped “We’re all Keynesians now,” and President Carter called himself a “neo-Keynesian.” See Steve H. Hanke, *We Were All Keynesians – Then*, FORBES, Feb. 22, 1999, at 78.

<sup>49</sup> Keynes, who didn’t have a Ph.D., often wrote “at a level that a general audience would have no difficulty comprehending[.]” and his work is “political” and “in places journalistic” as much as it is “economic scholarship.” POSNER, *supra* note 2, at 21. This type of work—what Richard Posner calls “self-popularizing”—is especially conducive to citation by non-economists. *Id.* at 36. Keynes’s most important academic work—*The General Theory of Employment, Interest, and Money* (1936)—is an exception.

his economic principles fit better with the left-leaning politics of most legal academics.<sup>50</sup> This is especially true since one would expect the increased consumption of *laissez-faire* ideas by the L&E movement would stimulate demand for left-wing thinkers as a counterbalance.<sup>51</sup>

A partial answer to the riddle lies in changing political tastes and the scope of the Westlaw database during the past sixty years. Keynes *was* without doubt among the most influential economists for the three decades following World War II. His most prominent work—*The General Theory of Employment, Interest, and Money* (1936)—was considered gospel until the Reagan and Thatcher revolutions of the early 1980s, but the Westlaw database includes few documents prior to 1982. It just so happens that the fall of Keynesianism and the rise of the Chicago School of Friedman, Hayek, Stigler, and others occurred at precisely the time when the Westlaw database grew from only two law reviews to encompass the entire field of legal scholarship. Keynes's influence on lawyers prior to the 1980s may thus be understated. We will see, however, that it is not clear that Keynes's relative ranking would be different if the Westlaw database were more comprehensive.

## 2. Mentions over time

Overall, consumption of economic ideas by lawyers (as measured by citations) is fairly low—only about one in sixty journal articles (and 1 in 15,000 judicial opinions) contain a reference to an economist in this study. However, the market has grown at an average of almost 20% per year since the early 1980s. References to Hayek have increased enormously over this period, from just 2 per year to over 100 per year over the past three decades, a compound annual growth rate (CAGR) of about 15% per year.<sup>52</sup> The first two references to Hayek were the only ones to any Nobel-winning economist in the database in 1967.<sup>53</sup> This is because citations of economists are quite rare in the JLR database prior to the 1980s. To make the point more explicitly, from 1950, when the first citation of any Nobel winner was recorded, until 1980, there were only seventy-five total mentions of Nobel-winning economists; Hayek accounted for eleven of these. In 2003, there were seventy-five references to Hayek alone, down from a peak of 100 in 1999.

As shown in Figure 2, total references to Nobel-winning economists have increased from an average of about 2 per year (over the period 1950 to 1980) to more than 1600 per year by 1999, with over 99% of references to Nobel-winning economists in articles since 1982. The average growth rate since the early 1980s is

<sup>50</sup> See, e.g., *id.* at 182, 207 tbl.5.2 (finding that 66% of mentions are for left-leaning thinkers; “the market for public-intellectual work is primarily a left-wing market”).

<sup>51</sup> *Id.* at 163. While there is some evidence of Keynes being used in this way, opponents of L&E have primarily used the ideas of behavioral economists such as Daniel Kahneman.

<sup>52</sup> Compound annual growth rate (CAGR) = ((current value/original value)<sup>1/# of periods</sup>)-1.

<sup>53</sup> The first citations of Hayek in the JLR database were two mentions in the Harvard Law Review in 1967: Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation,”* 80 HARV. L. REV. 1165, 1181 n.32 (1967) (citing Hayek’s *The Constitution of Liberty*); Andrew Shonfield, *Modern Capitalism: The Changing Balance of Public and Private Power*, 80 HARV. L. REV. 1375, 1380 (1967) (mentioning Hayek’s *The Road to Serfdom* as a counterpoint argument in a book review).

about 15% per year. One explanation for this increase is that the L&E movement gained wide appeal in the legal academy at about this time.<sup>54</sup> This explanation suggests an increasing influence of economists on lawyers.

There is another explanation for the growing number of citations that may call this conclusion into question. There has been a tremendous increase in the number of journals covered by, and therefore total documents found in, the JLR database over this same period. The number of journals covered by the JLR database has grown from 2 per year prior to 1980—the law reviews of Harvard and Pennsylvania—to over 30 per year by 1982, including law reviews from most top schools, to over 800 per year today.<sup>55</sup> The number of total documents in the database has increased in parallel from an average of about 250 documents prior to 1982 to an average of about 89,000 from 1982 to present. In 2003, the last year studied, the JLR database had a whopping 308,494 documents. Therefore, the increase in number of citations of economists might simply be the result of more journals, and thus more opportunities to be cited.

To adjust for the increasing size of the database, the number of mentions was normalized by the total number of documents in the database in a given year to obtain the percent of total documents with a reference to a Nobel-winning economist in that year. From 1950 to 1981, the number of documents in the database remained relatively constant and about 1.4% of all documents contained a reference to a Nobel-winning economist. Although the average number of documents with a mention has increased to an average of 2.1% for the period 1982–2003, it has fallen steadily from almost 4% in the early 1980s (when there were 2000–5000 documents) to less than 0.5% today (when there are over 300,000 documents).

This decrease suggests that the relative influence of economists has *diminished* in the past twenty years. This result runs contrary to the obvious rise in influence of economic ideas on law through the L&E movement. So how do we explain the apparent decline? One explanation is the fact that most of the documents accounting for the huge increase are quasi-academic in nature. For example, in 2003 over 90% of the over 300,000 documents in the database were “practice documents”—PLI documents, reports from bar journals, and so on—or boutique journals that no one is reading. These quasi-academic documents may be masking the true rise in influence of economists on academic journals.

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<sup>54</sup> Although L&E dates to the 1950s, it was confined to the University of Chicago for over twenty years and did not start to gain wider acceptance until the publication of influential books by Richard Posner and Guido Calabresi in the 1970s. By the early 1980s, helped unquestionably by the changing political climate in the United States, L&E became the most influential school of thought in the legal academy.

<sup>55</sup> The mix of law journals available in 1981 included twenty-four law reviews (from Harvard to Stanford to Mercer to Baylor) and a grab bag of miscellaneous journals, such as *The Journal of Corporation Law*, *Maritime Lawyer*, *The Bulletin of the Business Law Section of the State Bar of Texas*, and *Harvard Civil Rights-Civil Liberties Law Review*. The following year was the first truly complete year when nearly all major journals were covered.

To test this hypothesis, citations of the top ten Nobel-winning economists<sup>56</sup> were examined in ten top journals<sup>57</sup> over the past twenty-plus years. These journals are a good proxy for overall market trends of influential scholarly articles because (a) they are considered the premier journals, (b) they have all been consistently part of the database since 1982 (the year that tremendous growth in the database began), (c) they provide a relatively consistent number of documents in the dataset (a less than 2% change over twenty years), (d) they alone account for nearly 25% of all references to economists over this period,<sup>58</sup> and (e) it is likely that they are the only journals most people consistently read.<sup>59</sup>

The percentage of documents with a reference to a Nobel-winning economist in these scholarly journals grew from less than 10% in 1982 to nearly 30% in 2003. This clearly shows the rising influence of economists on legal scholarship for (at least) this set of important legal journals and proves the hypothesis about the diluting nature of quasi-academic documents. It also shows the enormous increase in economists' influence compared with the three decades prior to the database's growth. As noted above, from 1950 to 1981, less than 2% of articles from the Harvard and Pennsylvania law reviews contained a reference to an economist; in 2003, about 30% had such a reference.

#### a) The Role of Politics

Notwithstanding the growth in Hayek's influence, citations of Hayek have increased less than the overall market for references to Nobel-winning economists over the past thirty-plus years. The average growth rate for Hayek is 15% per year since the early 1980s, compared with about 20% per year for all economists. Hayek's market underperformance may be due to the fact that he is cited most often for highly political ideas that have fallen in and out of favor over this period.

Table 2 shows the citation leaders by decade since 1980, when citations of economists became more common (>25 per year) and when the JLR database became more complete. Hayek was the most influential Nobel-winning economist on lawyers during the 1980s, followed by Coase, Stigler, and Friedman, all members of the "Chicago School." This is not surprising. After all, the 1980s were the height of

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<sup>56</sup> The economists are: Coase, Becker, Stigler, Friedman, Arrow, Hayek, Kahneman, Samuelson, Stiglitz, and Sen.

<sup>57</sup> The journals are: Yale Law Journal, Harvard Law Review, Michigan Law Review, Stanford Law Review, Columbia Law Review, University of Chicago Law Review, Pennsylvania Law Review, California Law Review, Duke Law Journal, and New York University Law Review. This list includes the most influential law journals on American law. See Fred R. Shapiro, *The Most Cited Law Reviews*, 29 J. LEGAL STUD. 389, 393 (2000).

<sup>58</sup> Two additional journals—the Journal of L&E and the Journal of Legal Studies—are the other journals most likely to include references to economists. In fact, from 1995 when both these journals were included in the JLR database, they accounted for over 25% of all citations of these economists. And the bulk of these references (>60%) were to three economists: Coase, Becker, and Stigler. During this time, Hayek was referenced only eight times in these journals, compared with ninety-two for Becker, seventy-five for Stigler, and forty-eight for Coase.



the Cold War, and Hayek was among the most passionate and vocal anti-Communist economists of the time. This was also the era of the Thatcher and Reagan revolutions, and both leaders were strongly influenced by Hayek's ideas on the benefits of a limited government.<sup>60</sup> In fact, Hayek's *The Road to Serfdom* and *The Constitution of Liberty* were considered required reading for both sides in the war of ideas—central planning versus laissez faire—raging at this time.<sup>61</sup> As one author puts this point:

Ideology may explain some of the rise in demand for [laissez faire] ideas during the buildup to the fall of communism in the 1980s and the aftermath of that fall in the 1990s. Keynesian economics also came under heavy attack from [Hayek and] the Austrian school, and political changes favored a smaller role for government.<sup>62</sup>

Although citations by legal academics are somewhat attenuated from the day-to-day policy debates in Washington and London, it is not unexpected to find some correlation between hot political topics and academic commentary.<sup>63</sup> This is especially true because references to economists can be both used to reinforce or oppose specific arguments in a piece.<sup>64</sup>

In this way, Hayek is like a few other Nobel winners whose fortunes have risen and fallen depending on the political winds blowing through academia and government. As Hayek's fame fell with the end of the Cold War, we have seen the rise of Daniel Kahneman, whose interdisciplinary work in psychology and behav-

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<sup>59</sup> In a study of this subject, Garfield found that only a handful of journals in any discipline are commonly read, only 5–6% of journals are typically cited, and less than ten are responsible for the transmission of knowledge within a discipline. See Garfield, *supra* note 35, at 475.

<sup>60</sup> The most famous story about Thatcher's reverence for Hayek comes from John Ranelagh who wrote of a Thatcher comment at a Conservative Party meeting in the late 1970s. Thatcher interrupted another party member's presentation—"Before he had finished speaking to his paper, [Thatcher] reached into her briefcase and took out a book. It was Friedrich von Hayek's *The Constitution of Liberty*. . . . 'This,' she said sternly, 'is what we believe,' and banged Hayek down on the table." JOHN RANELAGH, *THATCHER'S PEOPLE: AN INSIDER'S ACCOUNT OF THE POLITICS, THE POWER, AND THE PERSONALITIES* ix (1991); see also MARGARET THATCHER, *THE PATH TO POWER* 50 (1995). "Our inspiration [for the Thatcher Revolution] was . . . Hayek's powerful *The Road to Serfdom* [among others] . . . . Such books . . . provided crisp, clear analytical arguments against socialism . . . ." MARGARET THATCHER, *THE DOWNING STREET YEARS* 12–13 (1993). Reagan also credited Hayek and his mentor Ludwig von Mises (plus the French economist Bastiat) for helping form his economic views. ROLAND EVANS & ROBERT NOVAK, *THE REAGAN REVOLUTION* 229 (1981).

<sup>61</sup> Judge Alex Kozinski acknowledged the very political nature of citations of Hayek's work at the Hayek symposium in 1994, writing that "Hayek is not less relevant" after the fall of communism but more so because "he explains why collectivism—even the moderate, supposedly pro-democratic variety that is still popular in the West—can become the road to serfdom." Alex Kozinski & David M. Schizer, *Echoes of Tomorrow: The Road to Serfdom Revisited*, 23 SW. U. L. REV. 429, 431 (1994).

<sup>62</sup> Jonathan B. Wight, *The Rise of Adam Smith: Articles and Citations, 1970–1997*, 34 HIST. POL. ECON. 55, 58 (2002).

<sup>63</sup> See *id.* at 63 (concluding after a review of citations of Adam Smith and other top economists that "interplay over time of economic and political events may lead to cycles of theories being 'in' and 'out' of ideological favor . . . [especially since the] great economists, being part of the accepted rhetorical cannon, can more easily be used to advance causes").

<sup>64</sup> Many articles during the 1980s used Hayek as a foil in an attempt to rebut laissez faire arguments. See, e.g., Note, *Protecting Steel: Time for a New Approach*, 96 HARV. L. REV. 866, 884–85, 884 n.105 (1983) (arguing for a national-planning approach for the steel industry and pointing to Hayek and Friedman as proponents of the alternative, market-based approach).

ior has recently found advocates in the Behavioral Law and Economics (BL&E) movement, and Joseph Stiglitz, whose service as head of President Clinton's Council of Economic Advisors and publication of two best-selling books on globalization and the bubble economy of the 1990s has made him a darling of many "New Democrats" in the legal academy.

One might expect politics to be a significant driver of citations given the political nature of most academic lawyers and much academic writing, but the role of politics seems fairly limited in this dataset. Citations of most of the preeminent economic thinkers, like Coase, Becker, Stigler, Arrow, and so on, have not changed substantially as the political winds have changed, despite the political ramifications of their works. For example, one might characterize the ideas of Ronald Coase or Gary Becker as right-leaning, but this has not greatly limited citations of them by left-wing legal academics. This is perhaps because their ideas are used primarily as economic tools that authors use for further analysis, and perhaps because their ideas have become so widely accepted as to constitute a core component of legal thought that even critics must acknowledge and counter. The citations of these economists and this type of technical economic ideas make up the bulk of citations in this study.

It is only the ideas of economists that are used to bolster an author's side of a normative political argument that are subject to the political winds, and these ideas, while important and apparent, are not as common. It is because the works of these economists—like Hayek and Friedman, Kahneman and Keynes—are overtly political or are used by academic lawyers for political ends, that citations of them are sensitive to the underlying political climate or predilections of lawyers. In fact, the data show that there is a political equilibrium of sorts that is achieved in citations of "political" ideas of economists. Judge Posner identified this possibility, noting that "the procapitalist public intellectual work of a Hayek and a Milton Friedman . . . would have been less needful had it not been for the advocacy of collectivist policies by such left-leaning public intellectuals as Keynes, Galbraith, and Laski."<sup>65</sup> An obvious example of this phenomenon is the influence of behavioral economists like Daniel Kahneman. Left-leaning academic lawyers tried for many years to counter the stranglehold that L&E had on legal education. At first, the anti-L&E crowd did not have its own economic theories to rebut those of Coase and Becker, so they relied on typical doctrinal legal analysis. These efforts were largely unsuccessful. So in the spirit of if-you-can't-beat-them-join-them, opponents looked to economists, specifically the work of Kahneman and Richard Thaler, for critiques of the orthodox view of L&E. While these economists are undoubtedly worthy of study and citation, it is very likely that their influence among lawyers is what it is only because they happen to provide a colorable critique of a trend in legal scholarship that many left-leaning faculty dislike.<sup>66</sup> It remains to be seen

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<sup>65</sup> POSNER, *supra* note 2, at 163.

<sup>66</sup> Another aspect of politics at play has to do with the awarding of the Nobel Prize. Since 1969 there have been fifteen years in which two or three winners have shared the Nobel Prize, often for political

whether BL&E will have the staying power and influence of L&E and if the market for economic ideas will find a political equilibrium or swing back and forth.

Notwithstanding the recent increase in citations of economists from the left and the fact that the market for legal academic work “is primarily a left-wing market,”<sup>67</sup> the data show that the lawyers’ market for economists’ work is primarily a right-wing market. Nearly all of the top economists in terms of citations are right-leaning economic thinkers such as Ronald Coase, Gary Becker, George Stigler, Milton Friedman, and F.A. Hayek. Overall, right-leaning economists account for nearly 70% of citations of top economists. This is likely due to the fact that the economic thinking was first introduced to law as part of the largely right-leaning L&E movement headquartered at the largely right-leaning economics department and law school at the University of Chicago. The “Chicago School” had a first-mover advantage that generated widespread interest and numerous articles and rebuttals, all of which included numerous citations of leading economic thinkers of the movement.

#### b) Is There a Nobel Bounce?

The phenomenon of increased importance or influence following the winning of a regarded prize like the Oscar or National Book Award is well known. It has also been shown that generally the citations Nobel winners (in all fields) receive “increase after receiving the Nobel Prize.”<sup>68</sup> One might expect an economist’s works to become more well known or widely accepted following the winning of the award, thus increasing the likelihood that lawyers will mention it. In other words, the Nobel creates a halo effect that gives added weight to the scholar’s other (perhaps less-deserving) works. This would be especially true if, as Cass Sunstein has recently argued, legal academics are especially prone to follow academic fads.<sup>69</sup> On the other hand, mentions in legal scholarship might serve as a signal or evidence in support of a future award.<sup>70</sup> In one case, the Nobel is the effect; in the other case, the cause.

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reasons. Typically one of the pair (or threesome) significantly outperforms the other(s). In some years the political nature of the award may provide an explanation of sorts. Consider the case of Hayek and Myrdal (co-winners in 1974) or Koopmans and Kantorovich (co-winners in 1975). In both cases, the award was jointly given in part for political reasons: in 1974 the award to free-marketer Hayek was offset politically by sharing it with socialist critic Myrdal; in 1975 the Prize was deliberately awarded to thinkers on opposite sides of the Cold War (Koopmans working in the United States as head of the Cowles Commission (1948–1967) and Kantorovich working in the Soviet Union) both pioneers of linear programming for the optimum allocation of resources. And yet, Hayek has over twice as much influence as Myrdal, and Koopmans has twenty times as much as Kantorovich. When politics overrides merit in this way, it is not surprising that one winner will dramatically outperform the other in the marketplace of ideas.

<sup>67</sup> POSNER, *supra* note 2, at 182.

<sup>68</sup> Cole, *supra* note 30, at 23.

<sup>69</sup> Sunstein, *supra* note 8, at 1262.

<sup>70</sup> The parallel with movies is apt here. For example, in 2003 lower profile films like *Monster* and *The Pianist* had big bounces after winning on Oscar night while *The Lord of the Rings: The Two Towers* (LOTR) did not have a bounce because of its near saturation in the market and notoriety even before the awards. See Bob Toutellotte, *Nominations Versus Box Office Numbers*, MSNBC NEWS, Jan. 28, 2004, at <http://www.msnbc.msn.com/id/4091296/> (last visited Nov. 12, 2004) (noting that *Monster* earned \$2

Figure 3 shows potential examples of each of these possibilities. This Figure shows Hayek's position as the most commonly cited economist until the early 1990s, when Coase and Becker overtook him. It is somewhat odd that Coase and Becker would see a dramatic increase in citations at this time. After all, the vast majority of references to them are for works published decades earlier: for Coase, *The Problem of Social Cost* (1960) and *The Nature of the Firm* (1937); and for Becker, *Human Capital*, *The Economics of Discrimination*, *A Treatise on the Family*, and *Crime and Punishment: An Economic Approach* were written between 1957 and 1981. In addition, both economists had already achieved significant notoriety in legal circles prior to this time. Their works were an inspiration for the L&E movement and were cited in many of the movement's sacred texts, including Judge Posner's pathbreaking textbook, *Economic Analysis of Law* (1973). One potential explanation for their surge in popularity is the fact that they both won the Nobel Prize (Coase in 1991 and Becker in 1992) just before their popularity in legal circles saw an inflection point. The Nobel Prize thus may have served to raise awareness of them throughout the legal community by giving an official imprimatur to their greatness. This is the "effect" hypothesis.

The arc of Daniel Kahneman is a potential example of the "cause" hypothesis. Kahneman overtook Hayek for good in 1997 and has risen consistently but erratically since then, equaling the number of references to Becker by 2003. Like that of Coase and Becker, Kahneman's most significant work was done decades before his recognition by academic lawyers.<sup>71</sup> Also similar is the fact that his rise in importance is the result of being adopted by a powerful interdisciplinary legal movement, in this case BL&E, the countermovement to L&E. Unlike Coase, Becker, and Hayek, however, Kahneman won the Nobel *after* his adoption by legal scholars. In this case, the adoption by the legal community may have been a factor in the awarding of the prize or at least a leading indicator of Kahneman's influence.

Let us test these hypotheses with the data. A simple regression of total mentions against age and a dummy variable representing the Nobel winners (one if a winner, zero if not), shows a very weak correlation between winning the Nobel Prize and total number of mentions (*t*-stat <2 at the 95% confidence level). This analysis is corroborated by the fact that only six of the top ten most influential economists are Nobel winners.

For an individual economist, however, the Prize might provide a relative boost compared with pre-Prize levels. To test this, we compare the average number of citations in the two years prior to winning the award with the average number in the two years after winning the award. This study finds that the number of citations in the years after winning are 60% higher than in the two years prior to winning, suggesting a fairly substantial "Nobel bounce." (Only economists with a

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million in the weekend after the Oscars compared with \$6 million in all months before; *The Pianist* box office receipts "doubled" in the period right after the awards; and receipts for the *LOTR* rose only slightly after the winners were named). In this way, for *Monster* and *The Pianist* the Oscar was the "cause," while for *LOTR* it was the "effect."

<sup>71</sup> Kahneman wrote his most significant articles in the 1970s.

significant number of citations in the years before and after were included to avoid the problem of percentage growth from small numbers.) This bounce includes overall increases in the total market for economic citations, however, which are unrelated to a specific economist or the winning of an award. In order to isolate the effect of winning the award,<sup>72</sup> the increase in citations was adjusted downward by the overall increase in the market (an average increase of about 25%). The net effect is a “Nobel bounce” of about 35%.

The variability across economists, however, is quite high. The range is from almost 300% for William Sharpe (winner in 1990) to about 10% for Daniel Kahneman (winner in 2002). Others who have benefited greatly from winning the Prize include George Stigler (~100% increase) and George Akerlof (~60% increase). The bounce may have been bigger for Sharpe, Stigler, and Akerlof because they were relative unknowns in legal academia prior to their award.

We have seen qualitative evidence that Coase and Becker benefited from winning the Nobel Prize—this analysis confirms the conclusion, showing about a 30–35% post-Nobel increase for both. For example, Coase averaged 51 citations in the two years prior to winning his award, and 147 in the two years after (a 188% increase), but the total market for citations of economists (excluding Coase) rose from 327 to 828 (a 153% increase). If we subtract out the overall market growth to isolate the impact of the award, Coase increased at thirty-five percentage points higher than the market. This fairly moderate increase reflects the fact that Coase was fairly well known within legal circles prior to winning and suggests that the award was not the primary cause of his rise in influence. We also speculated that Kahneman did not receive as significant a bounce, perhaps because his adoption by legal academics contributed to his award—as shown above, this analysis confirms that guess as well.

It is unclear whether Hayek received any boost in the number of mentions as a result of winning the Nobel Prize, because of the small number of documents in the JLR database around the time he won in 1974. In the five years before the award there were only three mentions of Hayek, while in the five years following the award there were eight. While the increase seems significant, especially compared with co-winner Gunnar Myrdal (ten mentions in the five years before, three in the five years after), the small dataset of only a few hundred documents per year limits the import of the finding.<sup>73</sup>

### c) Academic Fads

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<sup>72</sup> Another potential effect is the publication of a significant work during this period. This was relatively rare, as many Nobel winners are not active, and those who are active are typically cited for major works produced decades earlier. Moreover, the impact for those who have published works during the four-year window that were cited is typically very small. In any event, these citations were removed before the calculations.

<sup>73</sup> A final note: the data show no Nobel bounce effect for citations in judicial opinions. This is perhaps because of the already small dataset but also perhaps because judges generally lag the adoption of ideas by the legal academy by a sufficient time to mask any influence of the winning of the Prize.

It is likely that economists cited for largely apolitical, technical ideas, like Coase, will maintain their current citation levels for the foreseeable future. For example, the “Coase Theorem” is so ingrained in legal academy that he is unlikely to suffer much depreciation in importance. Unlike Coase, however, Figure 3 shows what may be a bursting of the Becker bubble. References to Becker’s ideas peaked in 1998 (165 references), and have fallen 21% since then to around 130 per year to-day. If true, this might support Cass Sunstein’s prediction about academic fads.

Let us turn to Sunstein’s hypothesis that academic lawyers are especially prone to follow academic fads—that is, “[i]f . . . economists show a great deal of interest in [a topic], academic lawyers are eventually likely to show an interest in that topic too.”<sup>74</sup> Overall, there is little support in the data for Sunstein’s claim. The first fact calling the claim into doubt is that citations of economists are highly skewed towards only a few economists. As we have seen, less than twenty-five of the top economists have a significant number of cites in law reviews. This is hardly suggestive of lawyers blindly “buying” whatever economists are “selling.” The point is made even stronger when we look at citations of Nobel winners. The Nobel Prize is surely a sign that economists have “show[n] a great deal of interest” in a topic, and only about half of the Nobel winners have more than a handful of citations. More specifically, there was a noticeable trend during the 1970s and early 1980s to award the Nobel Prize to economists studying “development planning” that was clearly not followed in law.<sup>75</sup>

To be fair, the evidence does offer some support for the intuition. The obvious examples are Coase’s work on transaction costs, Becker’s work on the economics of discrimination and crime and punishment, Buchanan’s work on “public choice” theory, and Kahneman’s work on the psychology of decision making. Each of these economists saw his work rapidly and wholeheartedly adopted by legal academics. These are obvious examples, but the data show that they are quite rare.

Sunstein also expects citation analyses to show “rapid rises and declines in references to certain ideas and people,” what he calls “academic bubbles.”<sup>76</sup> This study suggests this conclusion is also specious. Let’s take the first part first, looking at whether there are “rapid rises” in the citation of certain economists. There are not. To measure the rise of economists, we count the number of years it takes for an economist to go from little or no influence (fewer than ten citations) to “significant” influence (more than 100 in any given year). On average, it takes nine years for economists to achieve significant influence. For example, it took from 1983 to 1992 for Coase to reach the 100 citations plateau, and it took from 1990 to 1998 for Kahneman to achieve the same influence. (Hayek took eighteen years to achieve this level (1981–1999)). The average growth rate during the rise in influence was about 40% per year, which is about the same as the growth rate for the first ten years in which the economist was cited, and for the entire dataset over the period.

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<sup>74</sup> Sunstein, *supra* note 8, at 1262.

<sup>75</sup> *Id.* at 1260.

<sup>76</sup> *Id.*

In other words, no economist saw a rapid rise in influence that would qualify as an academic bubble. A specific example will illustrate this conclusion. Over the period 1986 to 1996, citations of Coase grew at a CAGR of 25% per year, the same growth rate as the overall market (excluding Coase). Moreover, citations of Kahneman grew at an annual rate of 32% over this same period, years before the rise of BL&E, the subject for which he is mostly commonly cited.<sup>77</sup> Thus we see Kahneman's influence growing steadily and gradually as his ideas percolate through the legal academy, rather than a sudden burst of interest that causes dozens of citations in the period of a few years. This result obtains for the other economists who have achieved substantial influence. And it suggests that their ideas are introduced slowly, are tried out, and then, if useful, applied to a broader range of problems. In other words, there is a fairly rational marketplace of ideas not prone to the "irrational exuberance" that typifies market bubbles.

Now let's look at Sunstein's claim that we are likely to see "rapid . . . declines" as well. The data don't support this conclusion either. Economists who reach a significant number of citations in any given year generally maintain that level over time—no economist who has achieved a consistent level of more than 100 has fallen below that level. Some economists are clearly recession-proof. For example, Coase has averaged almost 180 citations per year for the past decade. Even economists who have seen declines in citations over time have seen gradual declines. Gary Becker has seen his influence fall by about 20% since its peak, but this has taken over five years. Similar results obtain for other top economists, with the average decline of 20–30% taking five or more years. Here too, we see a fairly rational market. The data show that economists do not rapidly fall from favor, but instead reach a kind of equilibrium in the marketplace of ideas. For some, this equilibrium is certainly less than their peak influence—typically 20–30% less—but this hardly constitutes a bubble bursting.

### 3. Other indicators of influence

Along several other secondary measures of influence, Hayek compares favorably with leading economists.

#### a) Title mentions

One possible indicator of influence is the number of articles in legal journals in which an economist is the primary subject or whose ideas provide the primary impetus for the work. A reasonable proxy for this is the presence of the economist's name in the title of the work. For example, Paul Mahoney's recent piece entitled "The Common Law and Economic Growth: Hayek Might Be Right,"<sup>78</sup>

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<sup>77</sup> The conclusion that economic ideas are generally slow to percolate into legal academia is not called into question by the publication date of influential works because, as we have seen, most citations are to works written years before any citations.

<sup>78</sup> 30 J. LEGAL STUD. 503 (2001).

clearly shows the influence of Hayek on the author specifically and this area of law generally.

Hayek is one of only seven Nobel-winning economists whose names appear in the title of legal journal articles. With a total of fourteen articles, Hayek is second only to Coase (forty-nine), and ahead of all others: Arrow (ten), Sen (two), and Friedman, Nash, and Akerlof (one each). Hayek not only outperforms most other Nobel winners but also the other notable thinkers analyzed, such as Bentham and Marx.

It is not surprising that Coase, the leader in number of citations, is also the most common subject of law review articles. Coase's influence on how lawyers think about markets is so profound that his name has become a common adjective. Witness Professor Cole's article, *Shopping for Law in a Coasean Market*, which also appears in this issue of the NYU Journal of Law & Liberty.<sup>79</sup> In contrast, the other two most prominently titled economists—Hayek and Arrow—owe nearly all of their title mentions to symposia or special issues: eleven of fourteen in the case of Hayek,<sup>80</sup> and all ten in the case of Arrow.<sup>81</sup> These symposia are evidence of influence, but it is a weaker, niche influence that may not reflect overall impact on the legal community. For example, a few editors can make a decision to publish a special issue on Hayek, and—voilà!—Hayek has ten or more articles devoted to his work. Coase's influence by this metric seems more real because although he has been the subject of retrospectives and symposia, most articles invoke his name in the descriptive sense. Even if we take away Hayek's mentions in symposia, however, he is still among the top three economists in terms of title mentions.

#### b) Breadth versus depth

Another potential way to measure influence is to examine the number of works cited by lawyers and the frequency with which lawyers cite them. The number of works meriting a citation tells us something about how readily the economist's ideas translate to the legal world (breadth of influence), while the number of citations of each gives us an idea of how influential each work has been on law (depth of influence). There is significant variability along both dimensions.

Table 3 shows the total number of articles or books cited in the JLR database (breadth) and the works with more than 100 citations in the database (depth). Hayek's body of work provides one of the richest sources of ideas for lawyers, with citations of thirty-three works compared with twenty-one for Coase and only nineteen for Becker. These thirty-three works vary enormously in subject matter from a treatise on law and politics (*Law, Legislation, and Liberty* with 282 cites) to discourses on the history of science (*The Counter-Revolution of Science* with 19 cites). Four of

<sup>79</sup> G. Marcus Cole, *Shopping for Law in a Coasean Market*, 1 NYU J.L. & LIBERTY 111 (2004).

<sup>80</sup> Eleven of these works were from a 1994 symposium at Southwestern Law School on Hayek and the law. See Symposium, *F.A. Hayek and Contemporary Legal Thought*, 23 SW. U. L. REV. 425 (1994).

<sup>81</sup> All of the works with Arrow in the title were from a special issue of the Journal of Health Politics, Policy and Law. See Symposium, *Kenneth Arrow and the Changing Economics of Health Care*, 26 J. HEALTH POL. POL'Y & L. 835 (2001).



these works were cited over 100 times each, the same number as for Coase and Arrow. Hayek's oeuvre is therefore both broad and deep. In contrast, Gary Becker is narrow and deep (nineteen works cited, six more than 100 times), while Joseph Stiglitz is broad and shallow (twenty-eight works cited, none more than 100 times).

This points to another aspect of the skewness of the data. The vast majority of citations of a particular economist are typically from a few major works. Table 3 shows the concentration of citations of an economist's most influential works. Generally, about 75% of all citations of a given economist come from five works, with about 25% coming from the economist's most influential work. But the variance among leading economists is significant. On one end of the spectrum is Coase, with nearly half of all citations of a single work and almost 90% to two works ("The Problem of Social Cost" and "The Nature of the Firm"). On the other end of the spectrum are Stiglitz and Arrow, with less than 20% from the most influential work, and less than 50% from their top ten works. In the middle, and more typically, are Hayek and Becker, with about 20% of citations of a single work and about 90% of citations attributable to their top ten works. This evidence supports the view that snowball, superstar, and halo effects can lead to distortion of the influence of ideas. But the significant variance among the most important scholars suggests that there are different ways thinkers can achieve influence and that not all influence is the result of exogenous forces.

#### c) Mentions in top law journals

A final way to measure influence is to look at citations by economists in the "most influential" legal journals.<sup>82</sup> The first way to cut this data is the total number of citations in top journals. All other things being equal, an economist would obviously prefer more citations in the most influential journals to fewer. The total number of mentions in top journals for Nobel-winning economists is highly correlated with the total number of mentions in all journals. Coase, Becker, Stigler, and Arrow are the top four in both categories. Next is a bit of a surprise: Amartya Sen moved up three places to replace Milton Friedman, who fell four places to ninth. Sen's popularity in top journals may be explained in part by the nature of his scholarship. Sen writes in a narrow genre—welfare economics—and in a style—a strong emphasis on philosophical inquiry—that may be attractive to authors and editors at top journals. In contrast, citations of Friedman are typically for works, like his best seller *Free to Choose* and his famous interview in *Playboy* magazine, that have wider appeal or are more accessible to a range of authors, editors, and readers. Hayek is slightly less commonly cited in top journals than all other journals.

A second metric is the percentage of an economist's citations that are in the most influential journals. In influence studies, mentions in the "most important"

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<sup>82</sup> The list of the eleven most influential legal journals is adapted from work by citation analysis guru Fred R. Shapiro and includes the following: law reviews of Harvard, Yale, Stanford, Chicago, Columbia, NYU, Michigan, Pennsylvania, and California, as well as the Journal of Legal Studies and the Journal of L&E. See Fred R. Shapiro, *The Most-Cited Law Reviews*, 29 J. LEGAL STUD. 389 (2000).

journals are more highly valued than those in less influential journals.<sup>83</sup> One would therefore expect that economists, looking to maximize their influence in the most efficient manner, would prefer that most of their citations be concentrated in the most influential journals.<sup>84</sup> Economists scoring well along this dimension are Sen (26% of all citations in top journals), Stigler (25%), Becker (24%), and Kahneman (24%). These results fit well with the type of scholarship these economists produce and are cited for, as well as their reputation in legal circles. They can be considered favorites of the experts. For example, the same description of Sen's narrow but influential appeal, noted above, can be said equally of Stigler, Becker, and Kahneman. Each of these economists has had a profound influence on law by helping shape entire legal disciplines: L&E (Stigler and Becker), BL&E (Kahneman), and development and welfare economics (Sen). Hayek is fairly comparable, with about 22% of citations in top journals.

But might not an economist prefer to be cited widely in all types of legal periodicals by all types of authors? This type of influence, call it "popular influence," would be indicative of either (i) works or arguments that are more accessible or (ii) ideas that have so permeated legal thinking that they have filtered down from first rate journals to second tier journals and other periodicals like bar journals. Potential examples of this type of economist are Coase (18%), Samuelson (15%), and Friedman (12%). Samuelson, who is cited most frequently for two important textbooks, and Friedman, who is cited most often for books aimed at general audiences or articles/interviews in popular magazines, are examples of the first type, while Coase is an example of the second type.

A final analysis looks at citations in specific journals. The Yale Law Journal has the most citations of leading economists (about 3% of all citations), followed closely by Harvard and Chicago (about 2.5% each), comparing roughly the same number of total documents for each journal. The Journal of L&E (JLE) is at the other end of the spectrum with less than 1% of all citations of economists in this study. This is surprising. One would expect a journal devoted to applying economic analysis to law to have a relatively high number of citations of leading economists. In fact, while the top ten economists average about 2% of their citations in each of the top journals, only two economists reach this threshold for citations in the JLE: Stigler (3.4%) and Becker (2.3%). These economists are natural favorites of the JLE, since they produced many significant works with wide-ranging applicability to L&E. Think of Becker's "The Economics of Discrimination" or "Crime and Punishment: An Economic Approach" and Stigler's "The Citizen and the State: Essays on Regulation" or "The Economics of Information." Other potential favorites include Coase, but his work is fairly narrow (although revolutionary and a foundation of the entire field) and so well engrained as to be presumed by

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<sup>83</sup> Ignacio Palacios-Huerta & Oscar Volij, *The Measurement of Intellectual Influence*, 72 E 963 (2004).

<sup>84</sup> Studies in other academic disciplines have shown that only 5–6% of journals are cited, that most are ineffective at disseminating information, and that top journals are the only ones that matter for research. See Garfield, *supra* note 35, at 475.

most authors, editors, and readers; and Friedman, but his focus on being a public messiah of free market liberalism rather than an L&E scholar may have lessened his influence among those writing for technical journals like JLE.

More generally, there appears to be some correlation between an economist's academic affiliations and citation frequency in specific journals. In other words, economists who are on the faculty of a school or whose ideas fit well with a school's particular specialty will have more mentions in that school's law review. Under this theory, one would expect Becker, who has been on the faculty at the University of Chicago for many years and whose ideas about using economic analysis to analyze legal rules and policies are the common currency at the University of Chicago Law School, to have more mentions in journals edited there than anywhere else. This is because editors (be they students, as is the case for the Law Review, or faculty, as in the case of JLE and the Journal of Legal Studies) are likely to find articles incorporating the ideas of Becker or Stigler or other members of the Chicago school more impressive. And authors will know this too, making sure to address the ideas of these thinkers in pieces targeting legal journals like Chicago. "Becker" is valuable intellectual currency at Chicago, so one would expect that student editors, faculty, and aspiring authors spend it there more than elsewhere.

It turns out that this is true. Economists from Chicago and/or with Chicago-like ideas, like Becker and Stigler, have by far the most citations (about 10% of their total) in three journals affiliated with the University of Chicago, namely its law review, the Journal of L&E, and the Journal of Legal Studies.<sup>85</sup> The average for the other leading economists is less than 4%.

## B. Mentions in judicial opinions

Hayek's influence on judges is quite low compared with other notable economists, suggesting that his substantial influence on legal academics has not translated into a profound, tangible influence on practical law. A few observations about citations in judicial opinions are necessary to set the stage.

### 1. General observations

First, judicial opinions contain citations of only a select group of economists. Only about 40% of economists in this study received even a single mention in a judicial opinion over the past sixty years. In contrast, every Nobel-winning economist and almost 95% of all other economists in this study received at least one mention in legal journals over the same period. The data are also quite skewed, with the top 10% accounting for 90% of all citations in opinions. Just how skewed

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<sup>85</sup> Some correlation based on content only may be seen in the cases of Daniel Kahneman and Amartya Sen. Kahneman, an economist from Princeton, is most frequently cited in the University of Chicago Law Review (3%, plus 2% in the Journal of Legal Studies), since the Behavioral Law and Economics movement, which uses psychology to question the tenants of L&E, was started largely at Chicago. Similarly, Sen is most commonly cited in the Yale Law Journal (4%). Sen's work on the economics of international welfare and development find a natural home at Yale, whose source of academic distinctiveness is a focus on public policy and international law.

this result is can be seen by comparing it with the highly skewed data from the JLR database where the top 10% of economists accounted for about 50% of citations.

A second, related observation is that very few opinions contain a reference to an economist. In all reported federal and state cases since 1944, there are only 379 opinions with a reference to an economist in this study.<sup>86</sup> Curiously, this is almost exactly the same number of references to fictional works in the same database over roughly the same period of time. This amounts to a reference in only one out of every 15,000 opinions (0.007%).<sup>87</sup> In contrast, there were nearly 35,000 articles in the JLR database with a reference, or about 2% of all documents in that database. Thus a journal article is over 250 times more likely to include a citation of an economist than a judicial opinion.

This is expected. Judges are far less likely to cite non-legal sources of influence, sources such as works of economics, history, or fiction.<sup>88</sup> Judge Harry T. Edwards of the D.C. Circuit makes this point explicitly: "I often use treatises and law review articles that are not ultimately cited in my opinions."<sup>89</sup> The predominant reason for this is the limitation on style imposed by the culture of the bench, what Herbert Hovenkamp calls judicial "etiquette."<sup>90</sup> He notes that judges in his study were influenced by classical political economists but didn't cite them because it is considered bad form.<sup>91</sup> The relatively small number of cites makes a citation count as a pure measure of influence suboptimal for judicial opinions.<sup>92</sup> It doesn't make the analysis meaningless, however, since economists do get cited, and looking at the ones who do, why, and by whom provides insights into relative influence of economists and tells us something about judicial discourse.

A third observation is that citations of economists are predominantly found in federal as opposed to state cases. Almost 90% of cases with a reference to an economist are federal. This result is especially striking since there are over twice as many state cases as federal cases in the ALLCASES database. When normalized for the number of cases, there is a citation in about 1 out of every 5000 federal cases, while only 1 in about 65,000 state cases has a reference. In other words, federal cases are over twelve times more likely to contain a reference to an economist than state cases.

What explains this stark difference? Possible differences between state and federal judges that may explain the difference include: education, age, academic affiliations, continuing education, case type, quality of lawyers practicing before

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<sup>86</sup> See M. Todd Henderson, *Does Literature Matter? An Empirical Study of Literary References in Judicial Opinions* (1997) (unpublished manuscript on file with author).

<sup>87</sup> For example, in 2002 there were only ten references to economists in more than 210,000 opinions in the database (0.005%).

<sup>88</sup> See generally Louis J. Sirico & Beth A. Drew, *The Citing of Law Reviews by the United States Courts of Appeals: An Empirical Analysis*, 45 U. MIAMI L. REV. 1051 (1991). See also Henderson, *supra* note 86, at 20.

<sup>89</sup> Harry T. Edwards, *The Growing Disjunction Between Legal Education and the Legal Profession*, 91 MICH. L. REV. 34, 45 (1992).

<sup>90</sup> See HERBERT HOVENKAMP, *ENTERPRISE AND AMERICAN LAW 1836-1937*, at 269 (1991).

<sup>91</sup> See *id.*

<sup>92</sup> Edwards, *supra* note 89, at 45 (noting that "citation studies invariably underestimate utility" of economists and other extralegal idea sources).

them, and so on. The most likely explanation is a combination of factors that might be called “quality.” For example, federal judges are more likely to have better educational pedigrees and to be lecturers at or affiliated with top law schools. Thus federal judges may be more knowledgeable about the work of economists generally and how L&E can be used to decide cases specifically. Two classic examples of this are Judge Richard Posner and Judge Frank Easterbrook, both former full-time academics and current adjunct faculty at the University of Chicago Law School. As we will see, Posner and Easterbrook account for many of the citations of economists.

A fourth finding is that certain economists are more likely to be cited in federal cases than others. While all economists are much more likely to be cited in federal cases than state cases, for economists with more than twenty-five citations, the percentage of citations in federal cases ranges from 96% (George Stigler) to 74% (Milton Friedman). This evidence also fits well with the quality theory. As discussed above, Friedman is the prototypical self-popularizing economist who is widely known as a spokesman for free market principles. He is also quite quotable, which is important to garner appeal among judges. Gunnar Myrdal is also more frequently cited in state cases than other economists, with 21% of his references in state cases. The only one of Myrdal’s works cited by judges—*An American Dilemma*—is more a work of history/sociology and thus has wide appeal among run-of-the-mill lawyers. In contrast, over 96% of George Stigler’s citations are in federal cases. This fits well with the theory that federal judges are apt to have more access to and understanding of the ideas of technical works of economics, such as Stigler’s.

A fifth observation also fits this theory well: citations in federal cases are much more commonly found in appellate opinions. About 75% of cases with citations of economists are cases from the Supreme Court and the several courts of appeals. The judges on the courts of appeals are generally among the most talented legal minds and are more likely to be former academics and to be affiliated with academic institutions. Another explanation is that the discourse of appellate opinions is more conducive to citations of non-legal sources, such as works by economists. While district court opinions typically consist of a dry recitation of the facts and rely heavily on citations from controlling authority, appellate opinions are more scholarly treatments of broader legal principles. It is therefore expected that in generating legal rules of wide applicability, judges cite a greater variety of legal and non-legal sources.

A sixth finding is that some courts are much more likely to cite economists than other courts. In fact, one court—the United States Court of Appeals for the Seventh Circuit—accounts for 22% of all citations of economists. This is remarkable because there are literally hundreds of federal and state courts in the ALLCASES database, and Seventh Circuit accounts for only 2% of the total cases in the database.

This phenomenon is explained in turn by the role of two judges—Posner and Easterbrook—as almost 90% of Seventh Circuit opinions with a citation of an economist were written by one of these two judges. Thus these two judges (out of thousands of federal and state judges since 1944 with opinions in the database) ac-

count for an incredible 20% of all citations of economists in all federal and state cases. Although Posner and Easterbrook have both served on the bench for many years and have been quite prolific, this does not explain the result, since their opinions represent a measly 0.06% of all cases in the ALLCASES database. In other words, Posner and Easterbrook are 450 times more likely to cite an economist than the average judge.

In some ways, it isn't surprising that Posner and Easterbrook would be the leading citers of economists. First, they are preeminent figures in L&E—both have written many seminal works in the field, and both were presidents of the American L&E Association. Second, they are both former full-time and current part-time academics at the University of Chicago, the home of many of the leading economists and the birthplace of L&E. Posner and Easterbrook are currently colleagues of Becker and Coase, and are former colleagues of Friedman, Stigler, (Aaron) Director, and others. Finally, both have argued that judges should use principles of economics more frequently in the disposition of cases. They are simply practicing what they preach. But if Posner and Easterbrook are prophets of economics, they haven't attracted many followers.

This limited influence is especially striking since there are other judges on other courts who are leaders or devotees of the L&E movement. For example, Judge Guido Calabresi of the Second Circuit is considered a founder of the movement and has published some of the leading works in L&E.<sup>93</sup> But Calabresi has cited economists in less than 0.5% of his opinions, compared with 2% for Posner and 3% for Easterbrook. In addition, many other judges are either current or former L&E scholars or have some training or education in L&E. For example, one program alone—the L&E Center at George Mason Law School—has trained nearly 800 judges in L&E since 1976, including almost 400 active federal judges (over eighty of whom are on the courts of appeals), and nearly 100 active state court judges. Despite this training, very few of these judges or their colleagues cite economists in their opinions. As noted above, this doesn't mean that they were not influenced by the ideas, but simply that they chose, be it out of etiquette, habit, or some other reason, not to cite the influence. For advocates of L&E generally, and for prophets Posner and Easterbrook specifically, this must be considered a failure of sorts.

Within their own circuit, however, Posner and Easterbrook seem to have had some impact. The other judges in the Seventh Circuit are about 1.5 times as likely to cite economists as other courts of appeals judges. Although causation here is hard to prove, all of these citations, by judges like Diane Wood and Joel Flaum, came after Posner and Easterbrook made numerous citations in Seventh Circuit opinions. Posner and Easterbrook's impact is also seen on District Court judges under the auspices of the Seventh Circuit. These seven courts in Illinois, Indiana,

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<sup>93</sup> Calabresi, author of *THE COST OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* (1970), was an early pioneer of L&E and has been called "one of the most important figures in the development of L&E,"

and Wisconsin are almost twice as likely to cite economists as other district court judges (after adjusting for cases in which Posner or Easterbrook sat by designation on the district court). Again, causation is hard to prove, but there are several reasons why it is reasonable to believe there is some influence here. Appellate opinions are binding precedents for district court judges and are thus required reading. District court judges can thus learn about L&E generally or George Stigler specifically by reading opinions by Judges Posner and Easterbrook. District court judges may also feel more empowered to cite economists if the court of appeals signals that such thinking and such citations are appropriate. In addition, district court judges don't want to be reversed, and by adding some economic thinking to their opinions they may be trying to curry favor with potential reviewers of their opinions.

A seventh observation is that judges (other than Posner and Easterbrook) generally cite economists not for academic or technical ideas, but rather for simple economic concepts or as shortcuts to political messages. For example, all of the references to Paul Samuelson are to his basic economics textbook, and citations are almost always to run-of-the-mill ideas like equilibrium pricing: "The market price reaches its competitive equilibrium . . . where the forces of demand and supply are just in balance."<sup>94</sup> The fact that judges would cite elementary texts for such basic principles, especially when citations of non-legal sources are rare, suggests one of several possibilities: judges are relatively uninformed about economics (they had to look it up), or they think their readers think they are (they need the imprimatur of the text), and all assume readers are relatively uninformed about economics. The fact that citations of economists are uncommon and citations of cutting edge economic thinking is almost nonexistent from judges other than Posner and Easterbrook is some evidence of the former. Despite the writings and practice of Posner and Easterbrook, despite the success of L&E, and despite programs such as those at GMU, judges appear to be fairly uncomfortable with economics. It also could be explained by judicial etiquette. After all, citing to any non-legal source is somewhat unusual, so one would expect citations of any other discipline to be fairly safe. In other words, citing to an economist for a fairly basic idea conveys that the judge is smart and knowledgeable without raising red flags with colleagues or readers.

A final observation is that the number of citations by judges has been fairly consistent over time, averaging about ten per year since the early 1970s.<sup>95</sup> This contrasts sharply with citations in legal journals, which grew from the single digits to several thousand per year over this same period. From this we can surmise that

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Henry Manne, *An Intellectual History of the George Mason University School of Law*, at <http://www.law.gmu.edu/econ/history.html> (last visited Nov. 12, 2004).

<sup>94</sup> *Becker v. ARCO Chem. Co.*, 15 F. Supp. 2d 621, 627 (E.D. Pa. 1998) (quoting PAUL A. SAMUELSON, *ECONOMICS* 53 (1980)).

<sup>95</sup> This result still obtains when the number of citations in a given year is normalized by the number of opinions in the database for that year. The number of opinions has grown from about 60,000 per year in the 1970s to over 200,000 per year since the late 1990s. The average percentage of opinions with a citation over this period is 0.008% (or one citation in every 13,000 opinions). The average for the past ten years is about 0.007%.

legal movements like L&E or BL&E have had little net influence on judges, at least as far as we can tell from explicit citations. Instead, judges cite a fairly consistent body of superficial economic textbooks and other popular works for euphemisms and other word-bites. This is especially true when we take out the 20% of citations from Judges Posner and Easterbrook, all of which are citations of academic ideas of economists. Because it seems beyond dispute that economics has become much more influential on lawyers and judges over this period, the absence of explicit nods to the influence may tell us more about judicial customs about what is appropriate to cite than about absolute values of influence.

## 2. Evaluating economists

Hayek's relative influence on judges is considerably less than his influence on legal academics. The table in Appendix A catalogs all citations of the economists in state and federal decisions—Hayek ranks tied for twenty-seventh out of sixty economists with at least one mention. Hayek's explicit influence (three mentions) is the same as relatively minor figures, such as Arthur Pigou and Thorstein Veblen, and is far less than intellectual rivals John Maynard Keynes (forty mentions) and Gunnar Myrdal (thirty-eight mentions). In fact, all of the other top ten most frequently cited economists in legal journals have more judicial mentions than Hayek, with the exception of Amartya Sen, who had none.

The subject of an economist's work seems to explain the relative number of mentions. Hayek is typically cited by lawyers for his ideas about the value of free markets and the power of spontaneous order as opposed to collective, central planning. This isn't exactly valuable fodder for your average criminal appeal or commercial dispute. In fact, ever since Holmes famously declared in his dissent in *Lochner* that "[t]he 14th Amendment does not enact Mr. Herbert Spencer's Social Statics,"<sup>96</sup> judges have tried to be explicitly neutral when it comes to political economy.

By contrast, Myrdal's study of race relations provides a rich fact base for the courts' numerous cases about race in education, politics, employment, discrimination, and so on. In fact, Myrdal's work is not really economics but sociology, which may explain its appeal to judges who are clearly more comfortable with this type of work.

Keynes's appeal is also largely for something other than technical, academic works of economics. Nearly all citations of Keynes (thirty-three out of forty) are for his body of catchy euphemisms—"In the long run we are all dead"<sup>97</sup>—or are mere mentions of his name as a shortcut to economic theories of central planning—"Whether the legislature takes for its textbook Adam Smith, Herbert Spencer, Lord

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<sup>96</sup> *Lochner v. New York*, 198 U.S. 45, 75 (1905).

<sup>97</sup> See, e.g., *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 356 (2002) (quoting J. KEYNES, *MONETARY REFORM* 88 (1924)); *Dept. of Labor v. Triplett*, 494 U.S. 715, 724 (1990) (quoting *Comm. on Legal Ethics of the W. Va. State Bar v. Triplett*, 180 W. Va. 533, 541 (1988)).



Keynes, or some other is no concern of ours.”<sup>98</sup> This latter example, a rejoinder of Justice Holmes’s dissent in *Lochner*, puts Keynes as the antithesis of Adam Smith in a way that bespeaks significant influence. A similar juxtaposition by New York’s highest court puts Keynes and Milton Friedman at the economic poles.<sup>99</sup> The fact that Hayek is never used for the free market pole and Keynes is almost always used for the other pole suggests that in this narrow dimension Keynes is more influential than Hayek. Keynes’s influence, however, is superficial and not for any of his specific theories or ideas. As we have seen, economists like Keynes and Friedman are most often cited for their public statements or as shortcuts to represent specific economic philosophies.

Even when economists are cited for their academic work, it is typically only to their most famous work. For example, Hayek is cited only for his two most famous works: *The Road to Serfdom* and *The Constitution of Liberty*. This is true of most other economists as well. Only one work by Keynes is cited—*The General Theory of Employment, Interest, and Money*—and George Akerlof, winner of the Nobel Prize in 2001, is cited six times, each time for his work on “markets for lemons.” In fact, of the fifty economists with at least one citation in judicial opinions, only three are cited for more than three works. It seems judges are generally familiar with, or perhaps comfortable with, only a thinker’s most prominent one or two works.

The economists with more than a few works cited are: George Stigler (fifteen), Gary Becker (eight), and Ronald Coase (six). The fact that Keynes had about the same number of references as Stigler but judges cite many more of Stigler’s works suggests that Stigler’s influence is more significant among judges. In the case of Stigler and Becker, the depth of influence is largely the result of judges Posner and Easterbrook. As we have seen, these two judges account for almost 60% of the citations of Stigler and Becker, and nearly all of the citations of their less-famous works. These data support the hypothesis that familiarity and comfort (as well as judicial culture) are important determinants of how many works are cited. Posner and Easterbrook are long-time colleagues of Stigler and Becker, and are unquestionably the most well-versed in their theories. It is natural that they would cite more of works of Stigler and Becker than other judges.

The case of Coase is slightly different, owing to his wider appeal. Posner and Easterbrook still account for almost 30% of his citations under the theory above. But Coase is cited for a range of works other than “The Problem of Social Cost”—from “Durability and Monopoly” to “The Marginal Cost Controversy”—by several judges. What does this tell us? Let’s look at citations of Coase’s work, “The Federal Communications Commission,” as an example.<sup>100</sup> This isn’t one of Coase’s famous works, and yet it is cited three times—once by Easterbrook and twice by

<sup>98</sup> N.D. *State Bd. of Pharmacy v. Snyder’s Drug Stores, Inc.*, 414 U.S. 156, 165-66 (1973) (quoting *Ferguson v. Skrupa*, 372 U.S. 726, 732 (1963)).

<sup>99</sup> N.Y. Pub. Interest Research Group, Inc. v. Carey, 369 N.E.2d 1155, 1159 (N.Y. 1977) (“[T]he interrelationship between our economy and our government is no longer dependent on whether the thinking of a Keynes or a Friedman holds forth in the . . . Governor’s mansion.”) (Fuchsberg, J., concurring).

<sup>100</sup> R.H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959).

judges on the D.C. Circuit. While Easterbrook's citation may be explained by the familiarity theory, the other cites suggest influence that is atypical among judges. A partial explanation is that the judges on the D.C. Circuit are more likely to be familiar with academic work on the FCC since their court handles most cases involving that agency. But many other economists have done important work in this area that is arguably more important than Coase's. Why does he get cited? It is likely that the fame he earned from his work on transaction costs rubs off on his other works so that, for example, his ideas about regulatory agencies are given added weight by the judge or reader—the “halo effect” again.

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More generally, we can gauge how well an economist's ideas translate into practical application by comparing the ratio of mentions in legal journals to judicial opinions. Higher ratios suggest a greater appeal among academics, while lower ratios suggest a more balanced influence. Among forty-nine economists with mentions in both databases, Hayek has the highest ratio (388) and Scholes (of Black-Scholes formula fame) the lowest (4). The average ratio is about 100 times.<sup>101</sup> The other top five in terms of ratio are Nobel-winning economists Arrow (370), Merton (294), Stiglitz (281), and Buchanan (209). Each of these economists is among the most influential in this study, and each is known for a body of technical, academic work that is not capable of being distilled to a simple catchy euphemism. For example, Kenneth Arrow's work on the “impossibility theorem” is considered a landmark achievement, but it cannot be boiled down to a simple principle that would be effective in a legal brief (where judges get lots of ideas for citations) or judicial opinion.

The bottom five are Pareto (twenty-two), Myrdal (twenty-one), Hicks (nineteen), Bernoulli (six), and Scholes (four). The better performance of these economists may be explained by the fact that citations of them are shortcuts to widely known principles from their work. For example, Pareto is mentioned with regard to “Pareto optimality,” Hicks for “Kaldor-Hicks efficiency,” and Scholes for the “Black-Scholes” option valuation formula. These economists have influence with judges because part of their work is capable of being distilled into a “word bite” that is accessible to judges and their readers.

This difference in appeal also results in a finding that certain judges are more likely to cite certain economists. In other words, the nature of the ideas for which an economist is typically cited makes them more or less likely to be cited by particular judges. Judges Posner and Easterbrook are again the prototypical examples. One would expect the background and experience of these two judges to make them more likely than other judges to cite technical works of economics than to cite textbooks for general economic principles or lay works for aphorisms. This

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<sup>101</sup> Among 150 economists, eight have no mentions in legal journals, and 71 have no mentions in judicial opinions. One economist—Jean Charles Leonard Sismonde (1773–1842)—has no mentions in legal journals but at least one mention in judicial opinions.

is true. Posner and Easterbrook account for over 50% of all citations of Becker and Stigler, and less than 5% of citations of Samuelson's textbook and to Milton Friedman's popular quotations. For most of the other top economists, including Ronald Coase and Daniel Kahneman, these two judges account for about 25% of all citations. Although these economists are typically cited for technical ideas, this data suggests that their ideas simply have broader popularity among judges. In other words, the idea of Coasian transaction costs has percolated much better from legal academia to the real world disposition of cases than Gary Becker's views on the economics of crime and punishment or discrimination.

A final way of measuring the influence of economists in judicial opinions counts citations in the Supreme Court more than those in the circuit courts and those in turn more than citations in the district courts. The logic here is the same as counting citations in top journals—citations in more important courts are evidence of more influence. Starting with the most influential court, we find twelve economists with citations in the Supreme Court (Hayek is not one of them). The most commonly cited economists are Samuelson (eight) and Myrdal (six). As we have seen, all citations of Samuelson are for his basic economics textbook, making it the textbook of choice for the justices of the Supreme Court but not really suggesting much influence. Myrdal is also cited exclusively for his work on race relations, but he is arguably more influential because his work is cited as important evidence of the effects of racial discrimination in two of the Supreme Court's most important decisions on race, *Brown v. Board of Education* and *Regents of University of California v. Bakke*.<sup>102</sup>

But Samuelson and Myrdal aren't obviously the most influential economists on judges if we value more influential courts more. While they have more Supreme Court cites than Becker, Coase, and Stigler, they are less likely to be cited by circuit court judges. Their influence is spread more uniformly across the three levels of federal courts than other top economists: each has 10–20% of their citations in the Supreme Court, 40–50% in the circuit courts, and about 40% in district courts. In contrast, the likes of Becker, Coase, and Stigler have about 5% in the Supreme Court, 80% in circuit courts, and only 10–15% in district courts. The question of which of these formulas suggests more influence is debatable, but it is remarkable that the type of work that has more appeal in the Supreme Court is also favored in district courts. This is partially attributable to the role of circuit court judges Posner and Easterbrook, but the effect is still seen when they are removed from the sample. It may also be because district court judges are more likely to follow the lead of the Supreme Court in terms of content or etiquette.

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<sup>102</sup> 347 U.S. 483 (1954); 438 U.S. 265 (1978). The first citation of Myrdal in the Supreme Court was in *Hughes v. Superior Court of California*, 339 U.S. 460 (1950), as evidence of the negative psychological impact of segregation on children. He was cited once before that in the California Supreme Court for the definition of a mulatto for purposes of a California antimiscegenation statute, see *Perez v. Lippold*, 198 P.2d 17, 24 n. (Cal. 1948).

#### IV. Conclusion – Hayek’s Influence on Law

F.A. Hayek has indeed been important to law, although much more important to legal scholars than legal professionals. This study has shown that Hayek is among the most frequently cited of all economists in legal journals, ranking ninth out of 150 economists examined. His influence is about half that of Ronald Coase, and about twice that of John Maynard Keynes. Although Hayek is most well known, and cited most often, for his works aimed at general audiences—*The Road to Serfdom* and *The Constitution of Liberty*—he is cited for over thirty works and has a breadth and depth of influence that has few equals. This study has shown that Hayek is a prototypical example of the “self-popularizing” academic, in that it was his non-academic works that earned him fame and created a halo effect that contributed to the influence of his academic works.

Hayek’s influence has waned a bit over the past few decades. He was the most frequently cited economist in the 1980s but has been surpassed by eight other economists since then. Clearly Hayek’s non-academic works, which were largely political, contributed not only to the popularity of his other works but also made him more susceptible to falling out of favor as the political winds change. Hayek is also not highly influential on judges, as he is rarely cited in opinions. Here again, it is the nature of Hayek’s fame that is to blame. Hayek’s political writings apparently aren’t as applicable to the resolution of cases and controversies.

More generally, a few interesting conclusions are apparent from the data. First, economists have had a growing influence on legal scholarship over the past fifty years, with citations of economists growing at a steady clip of over 20% per year. Second, their influence on judges has been far less. In fact, judges are as likely to cite works of fiction as they are to cite works of economics. Descriptively this is an odd result and normatively probably a bad one. One could reasonably assume that economics is more influential on judges than fiction when it comes to analysis of legal rules, but this influence remains relatively hidden from view. Judges should be more explicit about citing non-legal sources of influence, be it economics, history, or fiction. Only when reasoning is fully transparent can a reasoned analysis be made.

Finally, we have seen that the market for economic ideas functions fairly well. Like other idea markets, it is highly skewed towards a few economists—the “superstar” effect—but this is a natural consequence of the price mechanism, not evidence of dysfunction. It also turns out that academic lawyers are fairly discerning customers for economic ideas, citing only the best of the best economic thinkers; although perhaps letting the “halo” effect bias their view of what constitutes good scholarship from famous economists. And while politics clearly plays a role in the fame of some economists, the bulk of academic economists have seen their ideas adopted notwithstanding their political affiliations. Judges, on the other hand, are generally unsophisticated consumers of economic ideas, citing leading economists only for the obvious, the quotable, or as a shortcut to a political message of some kind.

Figure 1: Hayek and Two Rivals, Mentions in Legal Journals

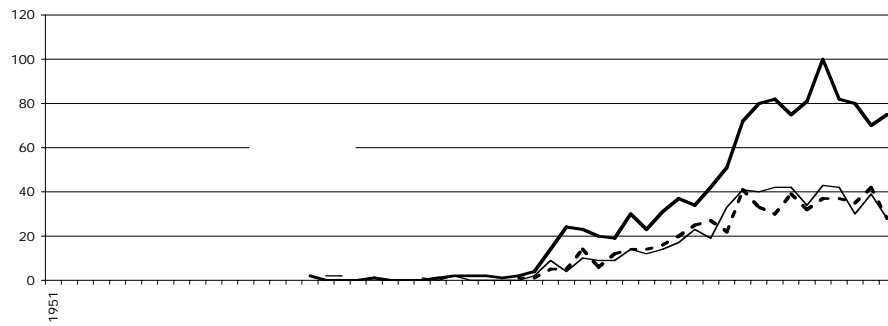


Figure 2: Mentions to Nobel-winning Economists in Legal Journals

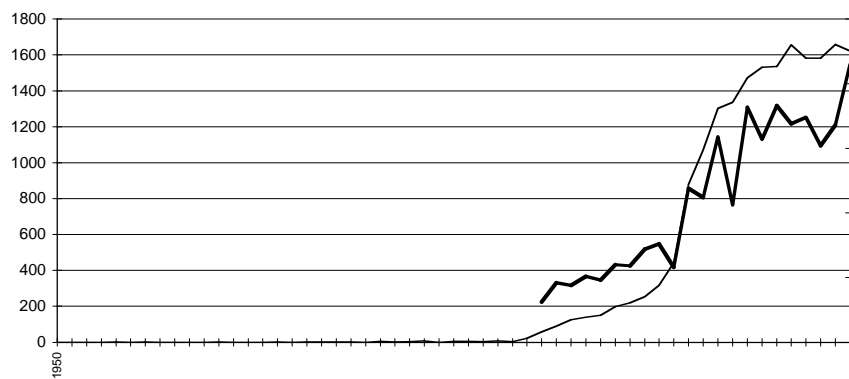
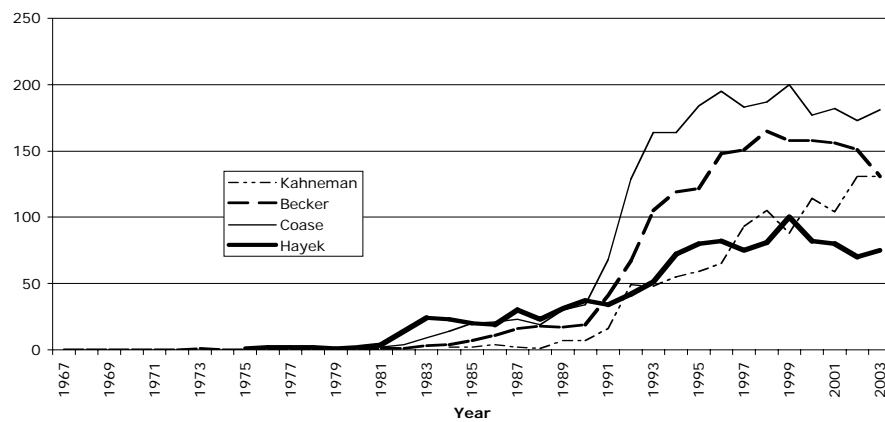


Figure 3: Citations to Several Leading Economists



**Table 1: Citations of top 20 Nobel-winning economists**

Rank	Economist	Nobel Prize	JLR	ALLCASES	Ratio
1	Coase	1991	2372	66	36
2	Becker	1992	1774	32	55
3	Stigler	1982	1521	46	33
4	Arrow	1972	1478	4	370
5	Friedman	1976	1364	23	59
6	Hayek	1974	1164	3	388
7	Kahneman	2002	1090	13	84
8	Sen	1998	1014	0	
9	Stiglitz	2001	842	5	168
10	Samuelson	1970	738	95	8
11	Myrdal	1974	574	38	15
12	Simon	1978	546	0	
13	Akerlof	2001	526	6	88
14	Buchanan	1986	418	6	70
15	North	1993	400	0	
16	Heckman	2000	304	0	
17	Merton	1997	294	2	147
18	Spence	2001	260	0	
19	Scholes	1997	253	9	28
20	Modigliani	1985	237	10	24

**Table 2: Citation Leaders by Decade**

Overall rank	Name	Rank by decade		
		1980s	1990s	2000s
1	Coase	2	1	1
2	Becker	7	2	2
3	Stigler	3	3	5
4	Arrow	8	4	3
5	Friedman	4	5	6
6	Hayek	1	6	9
7	Kahneman	14	7	4
8	Sen	5	8	7
9	Stiglitz	22	10	8
10	Samuelson	10	9	11

Table 3: Works of Nobel economists cited

Name	No. of works cited	Works with >100 citations	Citations of top work	Citations of top 5 works	Citations of top 10 works	Top work
Coase	21	4	49%	86%	94%	"The Problem of Social Cost"
Kahneman	23	5	38%	75%	88%	"Judgment Under Uncertainty: Heuristics and Biases"
Stigler	26	5	27%	64%	85%	"The Theory of Economic Regulation"
Hayek	33	4	23%	71%	91%	"The Constitution of Liberty"
Friedman	21	3	22%	49%	54%	"Capitalism and Freedom"
Samuelson	18	1	22%	39%	45%	"Economics" (textbook)
Becker	19	6	21%	77%	92%	"Crime and Punishment: An Economic Approach"
Arrow	28	4	18%	41%	51%	"Social Choice and Individual Values"
Sen	28	3	14%	42%	57%	"Inequality Reexamined"
Stiglitz	28	0	7%	25%	36%	"The Economics of the Public Sector"

**Appendix A: Citations of economists**

Rank	Economist	Nobel Prize	JLR	ALLCASES	Ratio
1	Mill		3534	150	24
2	Smith		2732	57	48
3	Coase	1991	2372	66	36
4	Becker	1992	1774	32	55
5	Stigler	1982	1521	46	33
6	Arrow	1972	1478	4	370
7	Marx		1416	51	28
8	Friedman	1976	1364	23	59
9	Hayek	1974	1164	3	388
10	Jensen		1151	2	576
11	Olson		1114	7	159
12	Tullock		1108	2	554
13	Kahneman	2002	1090	13	84
14	Baumol		1028	16	64
15	Sen	1998	1014	0	
16	Stiglitz	2001	842	5	168
17	Meckling		754	4	189
18	Samuelson	1970	738	95	8
19	Fama		620	6	103
20	Myrdal	1974	574	38	15
21	Thaler		559	2	280
22	Mueller		551	2	276
23	Simon	1978	546	0	
24	Schumpeter		531	4	133
25	Akerlof	2001	526	6	88
26	Galbraith		493	3	164
27	Shleifer		453	2	227
28	Buchanan	1986	418	6	70
29	Keynes		411	40	10
30	North	1993	400	0	
31	Vishny		321	2	161
32	Heckman	2000	304	0	
33	Pigou		300	3	100
34	Merton	1997	294	2	147
35	Ricardo		281	2	141
36	Spence	2001	260	0	
37	Scholes	1997	253	9	28
38	Malthus		243	3	81
39	Modigliani	1985	237	10	24
40	Cournot		231	4	58
41	Tobin	1981	207	1	207
42	Sharpe	1990	206	7	29
43	Veblen		205	3	68
44	Marshall		188	1	188
45	Solow	1987	186	4	47
46	von Mises		175	1	175
47	Nash	1994	165	0	
48	Viner		161	2	81
49	Harsanyi	1994	157	0	



50	Stone	1984	153	0	
51	Pareto		133	6	22
52	Knight		133	0	
53	Kaldor		132	2	66
54	Miller	1990	122	3	41
55	Smith	2002	121	0	
56	Okun		115	0	
57	Hotelling		107	0	
58	Blaug		106	1	106
59	Vickery	1996	101	0	
60	Robinson		94	0	
61	Robinson		93	0	
62	Markowitz	1990	90	0	
63	Fisher		86	0	
64	Gompers		80	0	
65	Fogel	1993	79	2	40
66	Ritter		79	0	
67	Chamberlin		76	3	25
68	J.B. Clark		75	0	
69	Dunning		73	0	
70	Binmore		71	0	
71	Johnson		69	0	
72	Schumacher		68	1	68
73	Thakor		67	0	
74	Mirrlees	1996	64	0	
75	Schultz	1979	64	0	
76	Taussig		60	1	60
77	Sharpe		59	1	59
78	Hutcheson		57	0	
79	Vetsuypens		57	0	
80	Rostow		54	1	54
81	Robbins		54	0	
82	Lucas	1995	53	0	
83	Barro		52	0	
84	Prescott		50	0	
85	Meade	1977	47	0	
86	Selten		46	0	
87	Selten	1994	44	0	
88	J.M. Clark		42	0	
89	Kuznets	1971	41	1	41
90	Lerner		41	0	
91	Mandeville		40	0	
92	Menger		39	0	
93	McFadden	2000	38	0	
94	Beveridge		37	0	
95	Tinic		36	0	
96	Debreu	1983	35	0	
97	Denison		34	0	
98	Edgeworth		33	0	
99	Lewis	1979	33	0	
100	Leontief	1973	31	0	
101	Sraffa		31	0	

102	Jevons		30	1	30
103	Wicksell		29	1	29
104	Tinbergen	1981	27	0	
105	Mitchell		26	0	
106	Nickell		26	0	
107	Harrod		25	1	25
108	LaPorta		25	0	
109	Petty		24	0	
110	Klein	1980	23	0	
111	Bauer		21	0	
112	Koopmans	1975	21	0	
113	Atkinson		20	0	
114	Hicks	1972	19	1	19
115	Mundell	1999	18	0	
116	Say		18	0	
117	Brav		18	0	
118	Dupuit		17	0	
119	Quesnay		17	0	
120	Ohlin	1977	16	0	
121	Allais	1988	15	0	
122	Galiani		15	0	
123	Treisman		15	0	
124	Senior		12	0	
125	Bernoulli		11	2	6
126	Granger	2003	11	1	11
127	Engle	2003	11	0	
128	Frisch	1969	10	0	
129	Turgot		7	0	
130	Engel		5	0	
131	Haavelmo	1989	4	0	
132	Misselden		4	0	
133	Wieser		4	0	
134	Euler		2	0	
135	Mun		2	0	
136	Serra		2	0	
137	Hawtrey		1	0	
138	Kantorovich	1975	1	0	
139	Malynes		1	0	
140	Harvey		1	0	
141	Sismondi		0	1	
142	Bohm-Bawerk		0	0	
143	Cantillon		0	0	
144	Gossen		0	0	
145	Longfield		0	0	
146	Phillips		0	0	
147	Slutsky		0	0	
148	Walras		0	0	
149	Tbsel		0	0	
150	Hendry		0	0	