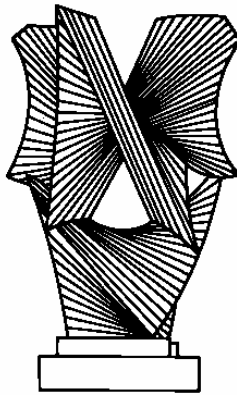


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Are Judges Overpaid?:  
A Skeptical Response to the Judicial Salary Debate

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## *Are Judges Overpaid?: A Skeptical Response to the Judicial Salary Debate*

Stephen J. Choi, G. Mitu Gulati & Eric A. Posner\*

*Abstract.* Nearly everyone thinks that judges are underpaid, but theory and evidence provide little support for this view. Theory suggests that increasing judicial salaries will improve judicial performance only if judges can be sanctioned for performing inadequately or if the appointments process reliably screens out low-ability candidates. However, federal judges and many state judges cannot be sanctioned, and the reliability of screening processes is open to question. An empirical study of the high court judges of the 50 states provides little evidence that raising salaries would improve judicial performance. The case for a pay raise has not been made.

### **I. The One-Sided Salary Debate**

Chief Justice John Roberts says that the pay increases that his colleagues have received over the past two decades are so inadequate that the present situation of judicial penury amounts to a “constitutional crisis.”<sup>1</sup> Justice Kennedy says that “[because of inadequate judicial pay] the nation is in danger of having a judiciary that is no longer considered one of the leading judiciaries of the world.”<sup>2</sup> Justice Alito warns that “eroding judicial salaries will lead, sooner or later, to less capable judges and ultimately to inferior adjudication.”<sup>3</sup> Justice Breyer “believe[s] that something has seriously gone wrong with

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\* Faculty at NYU, Duke, and Chicago law schools respectively. Thanks to Scott Baker, David Levi, Richard Posner, Jeff Rachlinski, Joshua Teitelbaum, Un Kyung Park and participants at a workshop at the Cornell Law School for comments. For research assistance, thanks to Jai Damle, John Niles, Craig Porges, Lauren Tribble, Reed Watson, Jennifer Wimsatt, and Matthew Wolfe.

<sup>1</sup> CHIEF JUSTICE JOHN ROBERTS, *2006 YEAR-END REPORT ON THE FEDERAL JUDICIARY*, January 1, 2007, at 7, available at <http://www.supremecourtus.gov/publicinfo/year-end/2006year-endreport.pdf>; *A Constitutional Crisis?*, DR PARTNERS D/B/A/ LAS-VEGAS-REVIEW JOURNAL, January 4, 2007, at 1.

<sup>2</sup> *Judicial Security and Independence Before the S. Comm. on the Judiciary*, 109th Cong. \_\_\_ (2007) (statement of Anthony M. Kennedy, Associate Justice of the United States Supreme Court).

<sup>3</sup> *Federal Judicial Compensation Before the H. Comm. of the Judiciary, Subcomm. On Courts, the Internet and Intellectual Property*, 110th Cong. \_\_\_ (2007). (statement of Samuel A. Alito, Associate Justice of the United States Supreme Court).

the judicial compensation system.”<sup>4</sup> Lower court judges, lawyers, public intellectuals, and law professors agree.<sup>5</sup> One hundred and thirty law school deans signed a letter urging judicial pay increases.<sup>6</sup> The American College of Trial Lawyers endorses a salary increase.<sup>7</sup> So does Paul Volker, the former Federal Reserve Board Chairman.<sup>8</sup> The complaints are not new—Chief Justice Rehnquist made them as did his predecessor, Chief Justice Burger.<sup>9</sup> State judges have also been complaining; the conditions under which state judges labor may be even more woeful than those for federal judges.<sup>10</sup>

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<sup>4</sup> See *Judicial Independence Before S. Comm. on the Judiciary*, 110th Cong. 1–5 (2007) (statements of Antonin M. Kennedy, Samuel A. Alito and Stephen G. Breyer, Associate Justices of the United States Supreme Court).

<sup>5</sup> See, e.g., Laura Parker, *Pay Gap Dismays Federal Judges*, USA TODAY, Sept. 23, 2007 (quoting U.S. District Court Judge Brock Hornby of Maine, chair of a judges’ panel on salaries, as saying that “[t]his trajectory [of judicial salaries] is of great concern to us, and we are fearful that we are approaching the tipping point” and also quoting Georgetown Professor Roy Schotland on the existence of a significant problem with judicial salaries being too low); Letter from American Bar Association Section of Business Law to Congressmen Howard L. Berman and Howard Coble (May 8, 2007), available at <http://www.uscourts.gov/judicialcompensation/ababusinesslaw.pdf>; Letter from Corporate Counsel to Congressional Leaders (Feb. 15, 2007), available at <http://www.uscourts.gov/judicialcompensation/gencounselletter.pdf>.

<sup>6</sup> See Letter from Law School Deans to Congressional Leaders (Feb. 14, 2007), available at <http://www.uscourts.gov/newsroom/DeansLetter.pdf>.

<sup>7</sup> AMER. COLLEGE OF TRIAL LAWYERS, *JUDICIAL COMPENSATION: OUR FEDERAL JUDGES MUST BE FAIRLY PAID* (2007), available at <http://www.actl.com/AM/Template.cfm?Section=Home&template=/CM/ContentDisplay.cfm&ContentID=2729>.

<sup>8</sup> Paul Volker, Op-Ed., *Judgment Pay*, WALL ST. J., Feb. 10, 2007 (“It is surely anomalous that federal district court judges make less than the salary plus bonuses of newly minted lawyers in . . . prestigious firms . . .”). Volker’s comments built on a report by a commission, set up by Congress to evaluate compensation to government employees, that he led. See generally NAT’L COMM’N ON THE PUBLIC SERVICE, *URGENT BUSINESS FOR AMERICA: REVITALIZING THE FEDERAL GOVERNMENT FOR THE 21<sup>ST</sup> CENTURY* 23 (2003).

<sup>9</sup> Michael J. Frank, *Judge Not, Lest Yee be Judged Unworthy of a Pay Raise: An Examination of the Federal Judicial Salary “Crisis”*, 87 MARQ. L. REV. 55 (2003) (surveying the various complaints about inadequate judicial salaries, as of 2003); Kristen A. Holt, *Justice for Justices: The Roadblocks on the Path to Judicial Compensation Reform*, 55 CATH. U. L. REV. 513 (2006). Going back further, Chief Justice William Howard Taft complained about how inadequate salaries were undermining the ability of the judiciary to attract the best and the brightest (the focus of his attention being John W. Davis, who declined the offer or seat on the High Court to go to Wall Street). Back then though, comparisons were being made between the salaries of justices and those of senior partners in Wall Street Firms. See Jerold S. Auerbach, *Book Review*, 87 HARV. L. REV. 1100 (1974). Today, the comparisons are to the salaries of first year associates.

<sup>10</sup> E.g., AMERICAN BAR ASSOCIATION, *THE IMPROVEMENT OF THE ADMINISTRATION OF JUSTICE* 67 (Fannie J. Klein, ed., 6th ed. 1981) (“Historically, state legislatures have provided inadequate judicial salaries. Often judges have gone for years without pay increases. As a result there has been considerable tension between the two branches of government, causing the resignation of some highly competent jurists.”); Roy A. Schotland, *Judges’ Pay: A Chasm Worse Than Realized and Worsening*, 5 IND. L. J. 1273 (2007); Judith S. Kaye, *Free Judges’ Pay*, N.Y. TIMES, June 7, 2007, at A35; Randall T. Shepard, *Plu Ça Change: Indiana Judges and Salaries*, 37 IND. L. REV. 885 (2004); Kevin Corcoran, *Judicial Salaries Loom as Big Issue; The Resignation of a Supreme Court Justice Spurs a Call for Better Pay for Indiana’s Judges*,

But are these complaints plausible?<sup>11</sup> How does one tell whether someone—a judge, or someone else—is underpaid? Most of the judges cite data showing that they are paid less than (some) foreign judges and (some) practicing lawyers in the United States and law professors, but why are these people the relevant comparison? What if these people are overpaid? To evaluate the argument that judges are underpaid, one needs a theory of wage compensation and empirical evidence. However, so far neither theory nor evidence has played a large role in the public debates. The purpose of this Article is to provide the theoretical and empirical foundations for determining the optimal level of judicial compensation.<sup>12</sup> In the course of our argument, we show that the case for increasing the salaries of federal judges is weaker than has been recognized.

We make several points. First, judicial pay cannot be evaluated in isolation. Judicial pay is only one aspect of judicial compensation—which includes status, tenure, pensions, and the satisfaction derived from doing justice, affecting policy, and wielding power—and working conditions in general, which for judges, are usually pleasant. Judges receive a great deal of assistance from secretaries and clerks, and have control over their schedules and other aspects of their working conditions. These elements must be considered together when determining optimal judicial compensation.

Second, judicial pay should advance the interests of the public. Whereas the existing debate focuses on comparisons between the salaries of judges and other legal professionals such as lawyers and law professors, the relevant question is not whether

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INDIANAPOLIS STAR, Oct. 11, 1999, at B1; Mel Masuda, *Off the Record*, 3 HAW. B.J. 38 (1999); George Flynn, *Private Job Lures Judge From Bench; Chief Justice Will Leave Her Appeals Court Post*, HOUS. CHRON., Dec. 19, 1995, at 21; *see also* Doris Ling-Cohan, Letter, *Surreal State of Legal Salaries in New York*, N.Y.L.J. Aug. 14, 2007, available at

<http://www.law.com/jsp/nylj/PubArticleNY.jsp?id=1175517538759> (comparing judicial salaries in the New York state courts to those of entering associates at elite firms who “have not been admitted to the bar and [are] therefore unable to practice before the courts themselves”); *The Merits of a Judicial Pay Raise in Pennsylvania*, Commonwealth Policy Brief, Vol. 18, No. 2, June 2006, available at <http://mail.commonwealthfoundation.org/pb18-02.pdf> (reporting on the Pennsylvania Chief Justice’s concern, among other things, that judges were leaving the bench for private practice); Doug Sherwin, “A Constitutional Crisis”: *To Justices Decry Profession’s Lagging Salaries*, DAILY TRANSCRIPT, Jan. 10, 2007 (reporting on California Chief Judge Ronald George complaining that judges were leaving the bench because they were unable to put their children through college on their judicial salaries).

<sup>11</sup> For some skepticism, *see, e.g.*, Dahlia Litchwick, *O Mighty Crisis: The “Constitutional Collapse” Over Judicial Pay*, SLATE.COM, Jan. 2, 2007, available at <http://www.slate.com/id/2156781>; Scott Baker, *Should the Salaries of Federal Judges be Raised?*, \_\_\_ B.U. L. Rev. \_\_\_ (forthcoming 2008).

<sup>12</sup> In a handful of states, the pay issue literally gets presented at the ballot box. *See* Schotland, *supra* note 10.

these salary differences are fair or unfair. Judicial compensation should be designed, as much as possible, to give judges incentives to perform their office diligently in the public interest and to attract qualified people to judgeships. When raising salary does not change, or worsens, incentives, then it is inadvisable; when it attracts people who are more productive in the private sector or improves the patronage opportunities of elected officials, it is also inadvisable.

Third, whether salary increases improve the performance of judges, and the quality of the people who become judges, is an empirical question. However, few empirical studies shed light on these questions. Most relevant studies look exclusively at federal judges who are paid the same, and operate under nearly identical conditions, thereby making it difficult to evaluate the impact of differing conditions on performance.<sup>13</sup> A relevant literature on public sector employees exists, but it provides only a few clues.<sup>14</sup> The literature on the effects of pay increases on public sector performance focuses on the effects of performance incentives (for example, basing teacher salaries on student exam scores).<sup>15</sup> No one, however, advocates making a judge's wages turn on the quality or quantity of her judicial output, which in any event would be constitutionally dubious.<sup>16</sup>

The key question is whether in settings where there is little room for incentive compensation based on judicial outputs, pay can nonetheless motivate better

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<sup>13</sup> On point is Scott Baker, *Should We Pay Federal Circuit Judges More?* \_\_\_ B.U. L. REV. \_\_\_ (forthcoming 2008). Using three different data sets of federal circuit court judges, Baker estimates whether effort, quality and independence are a function of salary (he finds that they are not). Because the salaries of federal judges at the same level are virtually identical and because Baker had only federal judges in his data set, he had to innovate to create a salary measure with variation. Opportunity costs in the model are the average partner salary within the state in which the court was located. A problem is that federal circuit court judges are an elite group often with a national stature -- suggesting that the loss of salary is from a local law firm might not be a good measure of opportunity costs. Baker, however, looks at whether judicial candidates tend to have lived in that particular state for at least ten years prior to becoming judges and finds that most (255 out of 260) have, suggesting that his opportunity cost measure might be valid. It is possible though that problems with his opportunity cost measure might be driving the non-results.

<sup>14</sup> For a survey, see Simon Burgess & Marisa Ratto, *The Role of Incentives in the Public Sector: Issues and Evidence*, 19 OXFORD REV. ECON. POL'Y 285, 293-96 (2003)..

<sup>15</sup> *See id.*

<sup>16</sup> Studies of academic productivity might also be thought relevant to these questions, but we have not found any that are germane to our inquiry. *See, e.g.*, Edward W. Holmes et al., *Measuring Contributions to the Research Mission of Medical Schools*, 75 ACAD. MED. 303 (2000) (examining four metrics in evaluating research productivity for medical faculty); Jeffrey L. Gilmore & Duc-Le To, *Evaluating Academic Productivity and Quality*, 75 NEW DIR. INST. RES. 35 (1992) (exploring factors that affect academic productivity by reviewing studies and conducting their own empirical research).

performance. The theoretical case that increased pay will improve judicial performance is far from certain. As we will explain in Part II, because of selection and incentive effects, increasing pay might even reduce the quality of performance.<sup>17</sup>

To address the deficiencies in the empirical literature on judicial incentives, we conduct an empirical test of the relationship between judicial performance and pay. For our study, we construct a unique dataset of the decisions of judges of the High Courts for every state for the time period from 1998 to 2000. We examine how higher judicial salary and other variables affecting the work environment of judges are related to various measures of judicial performance including productivity, opinion quality, and independence.

Part II sets out a model of judicial behavior that relates the effects of a salary increase to the behavior of sitting judges and the decisions of prospective judges to seek a judgeship or remain in their current non-judicial position. The model casts doubt on the claim that raising the salaries of judges will improve judicial behavior and the quality of judges when judges are protected by life tenure, suggesting instead that salary increases can improve judicial performance only when judges face a serious risk of termination or other punishment if they perform inadequately. Part III describes our empirical inquiry; Part IV describes the data; Part V reports results.

Our empirical results tell a complicated story. Judicial productivity—opinion-writing—is consistent with our model. Salary does not increase productivity on average; however, judges who face a higher risk of termination (failure to be reelected or reappointed) are more productive than those who do not. However, we do find that judges with more secure positions write higher-quality opinions, as measured by out-of-state citations. Finally, we find no relationship between salary and judicial independence, whether or not judges face a risk of termination. We conclude with a discussion of the implications of our findings for the debate about salary increases for federal judges.

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<sup>17</sup> See Paul E. Greenberg & James A. Haley, *The Role of Compensation Structure in Enhancing Judicial Quality*, 15 J. LEGAL STUD. 417 (1986).

## II. A Model of Judicial Behavior

An employer, faced with a request for salary increases, will ask whether the salary increase will result in improved performance by the employee, such that the productivity gains exceed the extra cost. And, if the answer is yes, the employer will also ask whether a salary increase is the best method among available options of improving performance. The performance increase could occur in one of two ways. The increased salary could give existing workers stronger incentives to exert higher levels of effort (the “incentive effect”). And it could improve the quality of the pool of workers who apply for the job (the “selection effect”). In the context of the judiciary, both the incentive and selection effects depend on how judges, current and prospective, react to the higher salary.

The standard economic model of worker behavior has workers maximizing utility subject to constraints. Since individual utility functions vary widely, an assumption often made is that workers maximize wealth (or, simplifying within a job setting, wage income). The judicial utility function, however, is different.<sup>18</sup> Judges are not maximizing wage income because most, if not all, judges could earn significantly higher wages in the private sector. A feature of the judge utility function, therefore, is that this person cares about achieving other goals as well as making money.

What might those other goals be? The job of a judge provides a range of non-pecuniary benefits that few other jobs do. Judges have power – the ability to decide the fate of others and to affect public policy. Judges also enjoy a high status in society, interesting work, a large degree of autonomy, and control over their schedules. Various strands of the literature on judicial behavior posit judges as being more or less motivated by combinations of the above factors. For our purposes, it suffices to assume that there is a variety of types of individuals who might find the job of judging attractive, including ideologues with political agendas, leisure or status seekers, workaholics, and “good judges”—people who derive utility from serving justice. In all cases, non-pecuniary benefits, as well as monetary reward, play a role in their decision to become judges.<sup>19</sup>

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<sup>18</sup> For discussions of the judicial utility function, see Richard A. Posner, *What do Judges Maximize? (The Same Thing Everybody Else Does)*, 3 SUP. CT. ECON. REV. 1 (1993); Russell Smyth, *Do Judges Behave as Homo Economicus, And If So, Can We Measure Their Performance? An Antipodean Perspective on a Tournament of Judges*, 32 FLA. ST. L. REV. 1299 (2004).

<sup>19</sup> See, e.g., RICHARD A. POSNER, HOW JUDGES THINK (forthcoming 2008); David R. Stras, *The Incentives Approach to Judicial Retirement*, 90 MINN. L. REV. 1417 (2006).

## A. Incentive Effects

A pay increase will improve a worker's incentive to exert effort only if the worker can be punished for failing to exert effort. In the context of judging, the only realistic type of punishment is termination, but not all judges can be terminated. Hence we divide our discussion into two parts: the case of judges with life employment and the case of judges who have fixed terms at the end of which they must undergo reelection or reappointment if they wish to retain their position.

### i. *Life Employment*

Life employment means a near zero risk of termination. Termination is theoretically possible, but will not occur unless there is extreme misbehavior in the form of corruption or an utter failure to perform the job. Because the job of judging provides many non-pecuniary benefits, the types of individuals who will be attracted to the job will be a combination of those who either love the job, want to serve the public, want to impose their policy preferences on others, want status, or seek leisure. For our purposes the key question is whether any of these types of individuals might be induced to work harder by a salary increase. We argue that the answer is: probably not.

Consider four types of judges for purposes of illustration: the workaholic, the good judge, the status seeker and the leisure seeker. For all four types, higher salary is unlikely to improve incentives to work hard. The workaholic works because she finds the job intellectually interesting. Maybe she could work more efficiently with a bigger computer screen or better library facilities. But, standing alone, a higher salary is not going to make her find the job more interesting. Next, take the good judge. She works because she wants to serve the public and gains utility from doing a good job. She is already doing what she thinks serves the public best – so, paying her more is not going to make her work harder or better.<sup>20</sup> A similar story applies to the status seeking judge. She desires the job because judges have high status in society. A higher salary does not necessarily produce more status. But even if it does, unless the high salary can be taken

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<sup>20</sup> In theory, the use of higher salaries to induce effort might even worsen matters, by producing a “crowding out” effect, where the use of monetary rewards works at cross purposes with non-monetary or intrinsic motivations. *E.g.*, Sverre Grepperud & Pal Andreas Pedersen, *The Crowding-Out of Work Ethics*, University of Oslo Health Economics Working Paper (2001-4); Bruno S. Frey, *A Constitution for Knave's Crowds Out Civic Values*, 107 *ECON. J.* 1043 (1997). On a skeptical note, see Robert Eisenberger & Judy Cameron, *Detrimental Effects of Reward: Reality or Myth?* 51 *AMER. PSYCHOL.* 1153 (1996).

away, the status seeking judge enjoys the higher status that comes with the greater salary even without changing her performance level. Finally, take the leisure seeker. He has taken the job because it gives him time for leisure. Give the leisure seeker more money and his ability to consume leisure increases. All of a sudden, that vacation in Paris becomes a possibility.<sup>21</sup> Essentially, with life employment, the effect of a salary increase is the same as a gift. Because the salary increase is not conditional on exerting greater effort, the rational judge—regardless of what she enjoys about the job—has no incentive to exert greater effort.<sup>22</sup>

ii. *Risk of Termination for Inadequate Performance*

As noted above, increasing the salary of a judge can provide an incentive to increase effort as long as an important condition is met: the judge can lose her job. The more the judge values the compensation package—including salary as well as the various nonpecuniary benefits—the harder the judge will work in order to avoid losing this scarce job. This is the theory of “efficiency wages.”<sup>23</sup>

The fly in the ointment is that there has to be an effective monitoring mechanism for the “efficiency wage” dynamic to work. If an employer increases the salary of an assembly line worker in order to induce greater effort, the employer must also be able to fire the worker if she does not increase her effort. Otherwise, the worker will pocket the money and continue at the same level of effort. Typically, because effort cannot be directly measured, employers use proxies—such as number of pieces assembled. If the worker falls below her quota, she is fired or penalized in some other way. If, however, the proxy is not sufficiently correlated with effort, this strategy will not work. Suppose, for example, that the worker is supposed to train new workers, but is paid entirely on the

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<sup>21</sup> In economics, this is described as the backward bending portion of the labor supply curve. WALTER NICHOLSON, *MICROECONOMIC THEORY: BASIC PRINCIPLES AND EXTENSIONS* 676–77 (7th ed. 1998).

<sup>22</sup> It is possible to construct a story of how an increase in salary could motivate judges to exert more effort. But the story does not stand on a strong foundation. For example, judges might view themselves in a reciprocal gift-giving relationship with the state, where the state (or society) provides the employee with gifts in exchange the employee gives back the gift of high effort. As best we know, no one has suggested that judges see themselves in this kind of reciprocal gift giving relationship with the state. At bottom, in the life employment context, there seems little reason to expect that higher salaries will result in increased production. See George A. Akerlof, *Labor Contracts as Partial Gift Exchange*, 97 Q.J. ECON. 543 (1983).

<sup>23</sup> GEORGE A. AKERLOF & JANET YELLEN, *EFFICIENCY WAGE MODELS OF THE LABOR MARKET* (1986); Carl Shapiro & Joseph Stiglitz, *Equilibrium Unemployment as a Worker Discipline Device*, 74 AMER. ECON. REV. 433 (1984).

basis of number of pieces assembled. She will shirk on training in order to maximize pay, possibly making the employer worse off. This is the “multitasking” problem.<sup>24</sup>

Federal judges cannot be fired for failing to undertake sufficient effort, but many state judges can, at least in principle. Whether they can in practice depends on whether the state can solve the multitasking problem. In the case of elected judges, the “employer” is the electorate. The electorate is typically a dispersed body with little ability or incentive to engage in detailed monitoring of its agents. So, the increased effort will likely be exerted in the directions that the electorate is able to observe and not as much in directions that are less observable. In other words, judges will perform on aspects of the job that the electorate cares about and can observe and shirk on other aspects of the job.

In states where the employer’s power has been in effect delegated to agents – for example, the governor, the legislature, or the local bar association – the dynamic will play out differently. The employee/judge still has an incentive to exert high effort because she has a job that she does not want to lose, especially if she receives a salary increase. But in this version of the model, her incentives to perform will focus on pleasing the agent; the immediately relevant decision-maker. The agent likely will have a greater ability to monitor the judge than the dispersed populace. But the agent might have her own personal agenda. A higher salary will induce more effort, but in the direction of the agent’s preferences. And if the populace is unable to monitor the agent well, judgeships can end up becoming favors that politicians or bar associations grant in exchange for reciprocal favors done for them by the judges.<sup>25</sup> Whether higher salaries enhance judicial performance thus depends on the quality of the judicial retention system. Rather than improving the quality of the justice system, increasing salaries might encourage judges to decide cases in a manner that advances the interests of elected officials or leaders of the bar.

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<sup>24</sup> See Bengt Holmstrom & Paul Milgrom, *Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design*, 7 J. LAW, ECON., & ORG. 24 (1991).

<sup>25</sup> More generally, on the dynamics of rent seeking in such environments, see, e.g., A. Gelb, J. B. Knight & R. H. Sabot, *Public Sector Employment, Rent Seeking and Economic Growth*, 101 ECON. J., 1186 (1991); S. A. Drakopoulos & A. D. Karayiannis, *Towards an Economic Approach to Imperfect Meritocracy*, 51 BULL. ECON. RES. 151 (1999).

## B. Selection Effects

The selection argument is the primary one that the judges themselves make in favor of salary increases. Here, the relevant issue is not life employment versus termination but the process for selecting or appointing judges, and we will organize our discussion accordingly.

### i. *When the Appointments Process Is Crude*

If salaries are increased, more people will be attracted to the job. The question here is whether the salary increase is attracting the right type of candidate. The employer wants primarily the good judges and maybe also the workaholics – those who work hard because they enjoy the job or are motivated by public service. It would like to avoid the leisure seekers, the status seekers, and those who seek to bring policy into line with their political preferences.

Higher salaries will attract workaholics and good judges. They like more money and will be more likely to give up lucrative jobs elsewhere if the wages of being a judge are higher. The problem is that the leisure and status seekers like higher salaries, too. Increasing salary, then, increases the attractiveness of judgeships both to people who would be good judges and to people who would be bad judges. Indeed, the argument might be made that a low salary will attract more workaholics and fewer leisure and status seekers than a higher salary because leisure seekers need money to be able to purchase leisure, and status seekers will get little status from a low-paid job. Those who are committed to advancing the public good, or who enjoy working for its own sake, by contrast, may still become judges even with only a low salary.<sup>26</sup> If the appointments process is crude, salaries should be low rather than high.

The selection argument also fails if the queue for the job is so long that there are more than enough highly-qualified candidates to fill all the vacant jobs. Given that a number of elite lawyers seem eager to become judges, this assumption seems plausible.<sup>27</sup> If there are more qualified candidates than there are jobs, then increasing the pool will not

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<sup>26</sup> See Greenberg & Haley, *supra* note \_\_

<sup>27</sup> Posner, *How Judges Think*, *supra* note \_\_ (pointing out that the queues are long even for magistrate and bankruptcy judge positions, where the status, salary, and tenure that come with the jobs are considerably less attractive than those at the federal circuit or district court levels).

serve any purpose.<sup>28</sup> Again, the prediction is that we should not expect a salary increase to produce better judges.

ii. *When the Appointments Process Is Sophisticated*

Suppose that those who appoint judges—the electorate, elected officials, or appointed officials, depending on the system—can easily screen prospective judges, and reject the various bad types—leisure seekers, status seekers, and ideologues with policy goals. If so, increasing the salary will straightforwardly improve the pool of those willing to serve as judges, and the quality of those who are selected. In addition, existing judges will have stronger incentives to work hard, as they know that they can be easily replaced with possibly superior judges if they shirk.

There are two difficulties with this argument, however. First, it is unclear whether those who select judges have the proper incentives to screen out the bad judges. Electorates might have trouble evaluating prospective judges; elected officials and others with the power of appointment might prefer appointing cronies. If so, raising salaries will not necessarily improve the quality of the people who are appointed to judgeships.

Second, it is unclear whether existing screening technologies are sophisticated. Leisure and status seekers have a strong incentive to mimic workaholics and people who obtain utility by judging well. If they successfully mimic the good types, then they will obtain desirable judgeships. Of course, it may be difficult to engage in such mimicking, especially over the long term. And so good-faith screeners will take a careful look at the prospective judge's record as a practicing lawyer or academic. It seems likely that more successful lawyers will also be more successful judges. But the process, whatever it is, will be imperfect.

In sum, salary increases will improve the quality of judges only if those who select judges themselves have good incentives to screen out bad judges, and if they have an effective mechanism for distinguishing good applicants and bad applicants. Because states and the federal government have diverse systems for judicial selection, one might predict that salary increases improve performance in some jurisdictions—those with effective selection systems—and not others.

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<sup>28</sup> See Baker, *supra* note \_\_.

### C. Summary

Judges should be paid enough that their total compensation—nonpecuniary as well as pecuniary—equals their social value (that is, the marginal social benefit equals the marginal cost). Otherwise, lawyers who would benefit society by being judges will prefer to work in the private sector. Unfortunately, because we do not know how much judges value their nonpecuniary compensation, and because we do not know their social value, it is hard to say whether judges are currently correctly paid, overpaid, or underpaid.

Beyond this significant difficulty, we have observed that raising the salaries of sitting judges provides them with no incentive to increase effort or otherwise improve their performance unless judges can be fired or otherwise sanctioned for inadequate performance. In the federal system, judges cannot be sanctioned for inadequate performance. In many state judiciaries, judges who perform inadequately may not be reelected or reappointed. In these systems, increasing salaries therefore might improve performance, but only if those who reelect and reappoint can properly evaluate judicial outputs.

In addition, raising the salaries of judges might improve the pool of people willing to be judges. But whether that translates into better judicial performance depends on the quality of the appointments process. With a broken appointments process used by politicians to further their private agendas, the only benefits of a salary increase will accrue to the politicians.

### D. Are Judges Overpaid?

Why pay judges more? Simply making judges wealthier is not a justification. Nor is a desire to lessen the gap between judicial pay and those of law firm partners a justification in and of itself. Rather, we should consider paying judges more only if the incremental increase in pay will improve the social value of judicial performance more than the social cost of the higher pay. Given our model of judicial incentives and pay, it is questionable that more pay will necessarily improve judicial outputs. Indeed, a strong case exists that judges are already overpaid.

If this claim sounds implausible, consider the following: First, many federal judges stay on the bench rather than retire on a full salary.<sup>29</sup> Albert Yoon reports that since 1984, eighty percent of the federal judges eligible for retirement at full pay chose instead to take senior status and keep working.<sup>30</sup> If judges were underpaid, they would retire and become highly paid practicing lawyers, while collecting a pension, often equal to their salary.<sup>31</sup> Instead, they, in effect, work for free!<sup>32</sup> Some judges even decline senior status and, as a result, give up the ability to do less work for identical pay.<sup>33</sup> Further, many people who become judges give up millions of dollars of compensation as a law firm partner. If people give up huge sums to become judges, and judges continue to work when they could stop working without a pay cut, the inescapable inference is that the

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<sup>29</sup> See Albert Yoon, *As You Like it: Senior Federal Judges and the Political Economy of Judicial Tenure*, 2 J. EMP. LEG. STUD. 495 (2005). In two articles, Yoon looks whether the gradual reduction in judicial salaries since 1945 has corresponded to higher turnover among judges and whether reducing the age at which judges could take senior status increased the rate at which judges did take this status. Albert Yoon, *Love's Labor Lost: Judicial Tenure Among Federal Court Judges 1945-2000*, 91 CAL. L. REV. 1029 (2003); Albert Yoon, *Pensions, Politics and Judicial Tenure: An Empirical Study of Federal Judges, 1869-2002*, 8 AMER. L. & ECON. REV. 143 (2006). The answer to the first question was no – turnover did not increase as a function of the gradually decreasing judicial salaries. And to the second was a yes – judges did take senior status earlier when the age limit was dropped. Yoon's second article suggests the judges respond to monetary incentives. But the first article also tells us that those monetary incentives are not enough to induce them to give up their jobs; only to reduce workload. Yoon's studies, while telling us that judges value the non-pecuniary aspects of the jobs enough that lower salaries don't induce them to quit, are not able to tell us about productivity. For other articles examining the factors that influence judicial retirement, see Deborah J. Barrow & Gary Zuk, *An Institutional Analysis of Turnover in the Lower Federal Courts, 1900-1987*, 52 J. POL. 457 (1990); James F. Spriggs, II & Paul J. Wahlbeck, *Calling it Quits: Strategic Retirement on the Federal Courts of Appeals, 1893-1991*, 48 POL. RES. Q. 573 (1995); Christopher J.W. Zorn & Steven R. Van Winkle, *A Competing Risks Model of Supreme Court Vacancies, 1789-1922*, 22 POL. BEHAV. 145 (2000); Melinda Gann Hall, *Voluntary Retirements from the State Supreme Courts: Assessing Democratic Pressures to Relinquish the Bench*, 63 J. POL. 1112 (2001).

<sup>30</sup> See Yoon, *As You Like It*, *supra* note \_\_ at 515.

<sup>31</sup> Law school dean salaries can often be significantly higher than those of judges – many in the \$300,000 to \$400,000 range -- especially if a judge retires at full pension to take on a deanship. On salaries in 2003, see Leiter Reports, [http://leiterreports.typepad.com/blog/2003/10/how\\_much\\_money\\_.html](http://leiterreports.typepad.com/blog/2003/10/how_much_money_.html). And should a retiring judge not wish to log the types of hours a dean has to, there is the option to do a little rent-a-judging. Rent-a-judges can earn in the vicinity of \$300 an hour (top mediators make significantly more), which amounts to \$150,00 a year assuming a light workload of only 500 hours a year or 10 hours a week. *E.g.*, Martin Kuz, *Rent-a-Judge*, CLEVELAND SCENE July 10, 2002 (reporting, in 2002, that wages for rent-a-judges were in the \$275/hour range) (available at <http://www.clevelandscene.com/2002-07-10/news/rent-a-judge/>); Richard Lacayo, *Tell it to the Rent-a-Judge*, TIME, June 24, 2001 (available at <http://www.time.com/time/magazine/article/0,9171,149981,00.html>).

<sup>32</sup> See Posner, *How Do Judges Think*, *supra* note \_\_; Yoon, *As You Like it*, *supra* note \_\_.

<sup>33</sup> Yoon finds that even when federal judges are eligible for retirement or taking senior status, only 35% of those eligible take that option immediately; it takes upto five years for the vast majority of these judges to take even the reduced work option. See Yoon, *Pension, Politics and Judicial Tenure*, *supra* note \_\_ at 160-61.

non-pecuniary benefits of being a judge—including status and the ability to exercise power over the lives of others—substitute for cash compensation, and lots of it.<sup>34</sup>

Second, the same can be said even about lower-prestige state judgeships. On the retirement front, many state judges have lobbied—some have sued—to eliminate mandatory retirement ages.<sup>35</sup> Candidates for elected state judge positions expend effort to obtain these judgeships, taking time away from their practices. News accounts suggest that candidates for elected judicial positions have been spending millions of dollars of campaign funding to win these seats.<sup>36</sup> Why would people devote so much energy to become (and stay) state judges if they are going to be underpaid? Either they think the pay is generous or they seek the non-pecuniary benefits of the positions.

Third, the evidence of judicial compensation in foreign countries is more ambiguous than has been recognized. While Justice Breyer is right that British and Australian judges earn more than American judges, in most other developed countries judges are not paid nearly as much.<sup>37</sup> A comparison of salaries for judges from 28 OECD

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<sup>34</sup> See Russell Smyth, *Do Judges Behave as Homo Economicus, And If So, Can We Measure Their Performance? An Antipodean Perspective on a Tournament of Judges*, 32 FLA. ST. L. REV. 1299 (2004); Baker, *supra* note \_\_

<sup>35</sup> In *Equal Employment Opportunity Comm'n v. State of Vermont*, 904 F.2d 794 (2nd Cir., 1990), Justice Louis Peck of the Vermont Supreme Court successfully challenged the Vermont's constitutional requirement that judges retire at age 70. The next year, however, in *Gregory v. Ashcroft*, 501 U.S. 452, 111 S.Ct. 2395 (1991), the Supreme Court rejected a similar challenge to the mandatory retirement provision of the Missouri Constitution, overruling Peck's victory.

Following *Gregory v. Ashcroft*, such challenges have been legislative. In 2006, Hawaii voters rejected a bid to repeal that state's 70 mandatory retirement age. However, in the November 2007 election, Texas voters approved Proposition 14 which repealed the Texas Constitution's mandatory retirement for mid-term state judges over the age of 75.

<sup>36</sup> See, e.g., Damon M. Cann, *Justice for Sale? Campaign Contributions and Judicial Decision Making* (August 10, 2006). Available at SSRN: <http://ssrn.com/abstract=991364>; *An Election Day Thought: Time to Change How Judges Are Selected*, NEW YORK TIMES, Editorial Board, November 6, 2007; Beverly P. Kraft, *Candidates: Judicial Race Costly*, JACKSON CLARION-LEDGER, Sept. 6, 2000 (quoting Mississippi Judge Keith Starrett as saying the rising cost "puts the judiciary in a position of being for sale"); Larry King, *They Can Talk Up Issues, but...*, PHILADELPHIA INQUIRER, May 6, 2002. For discussions of campaign contribution limits and judicial elections, see, e.g., David Barnhizer, "*On the Make*": *Campaign Funding and the Corrupting of the American Judiciary*, 50 CATH. U. L. REV. 361 (2001); Erwin Chemerinsky, *Preserving an Independent Judiciary: The Need for Contribution and Expenditure Limits in Judicial Elections*, 74 CHI.-KENT L. REV. 133 (1998).

<sup>37</sup> Justice Stephen G. Breyer invoked the comparative by observing that American federal judges "receive only 2/3 of the salaries of their judicial counterparts in Australia and 1/2 of their judicial counterparts in England. See Testimony of Stephen Breyer, Associate Justice, Supreme Court of the United States, Before the House Committee on the Judiciary, Subcommittee on the Courts, the Internet and Intellectual Property, Oversight Hearing on "Federal Judicial Compensation," Apr. 19, 2007, available at <http://www.uscourts.gov/testimony/JusticeBreyerPay041907.pdf>. See also AMER. COLLEGE OF TRIAL LAWYERS, *JUDICIAL COMPENSATION: OUR FEDERAL JUDGES MUST BE FAIRLY PAID* 7–8 (2007), available

countries shows the U.S. is fifth highest. Below the U.S. are a number of countries including Germany and Japan that have judiciaries that function well—well enough to support developed market economies and to keep crime low. Finland and Iceland, which pay their high court judges considerably less than the U.S., have the lowest corruption perception indices as measured by Transparency International.<sup>38</sup> And there is no evidence that the countries above the U.S. on the salary scale have better justice systems. Of course, judges have different roles and functions in different countries. Comparing the salaries of judges in one country and judges in another may therefore tell us little about the present level of U.S. judge salaries. One would also need to take account of the cost of living in these countries, and the salaries of competing positions<sup>39</sup>—which is not our purpose here. Our point is only that foreign judicial compensation statistics shed little light on the debate about American judicial compensation, and have so far been used selectively and crudely in order to support the case for increasing salaries.

Judicial Salaries of National High Courts, 2004/2005<sup>40</sup>

Rank	Country	Judicial Salary (in U.S. Dollars)
1	United Kingdom	\$331,738
2	Ireland	\$248,678
3	Australia	\$241,498
4	New Zealand	\$211,900
<b>5</b>	<b>United States</b>	<b>\$203,000</b>
6	France	\$198,201
7	Japan	\$172,346

at

<http://www.actl.com/AM/Template.cfm?Section=Home&template=/CM/ContentDisplay.cfm&ContentID=2729>. Justice Breyer previously compared the United States to Canada, *see* Prepared Statement of Justice Stephen G. Breyer before the National Commission on the Public Service, July 15, 2002, at 19 (Chart 8), but it appears that comparison is no longer helpful to his cause. *See infra* Tbl. \_\_.

<sup>38</sup> Johann Graf Lambsdorff, *Corruption Perceptions Index 2006*, in GLOBAL CORRUPTION REPORT 2007: CORRUPTION IN JUDICIAL SYSTEMS 324, 325 (Transparency Int'l 2007) (Both Finland and Iceland top the charts with scores of 9.6 out of 10, whereas the United States earns a 7.3, putting it in 20th place out of 163 countries.).

<sup>39</sup> For example, British judges are apparently appointed from the ranks of the highest-paid British lawyers. *See* Posner, *How Judges Think*, *supra* note \_\_ at \_\_.

<sup>40</sup> Obtained from Watson & Wolfe, *supra* note \_\_ (missing figures for Mexico and Switzerland that the authors were unable to obtain).

8	Canada	\$166,800
9	Iceland	\$156,250
10	Luxembourg	\$141,606
11	Netherlands	\$137,500
12	Spain	\$135,686
13	Finland	\$131,250
14	Austria	\$125,225
15	Belgium	\$117,073
16	Denmark	\$115,568
17	Sweden	\$110,520
18	Germany	\$108,098
19	Portugal	\$96,979
20	Norway	\$94,000
21	Greece	\$70,500
22	Italy	\$58,245
23	Poland	\$46,521
24	Hungary	\$43,033
25	Czech Republic	\$37,464
26	Turkey	\$33,948
27	Korea	\$33,600
28	Slovak Republic	\$11,856

Does it matter if judges are overpaid? There are reasons why it does.

First, if the government overpays public employees, then people will be drawn from the private sector to government work. This might seem attractive, but there is a problem, namely, that government work is not infinitely valuable and private sector work is not valueless. If the person in question is paid her marginal productivity in the private sector, and if the government overpays, then some people who are more productive in the private sector will become less-productive government employees. Overpayment is not as much a concern in the private sector. If employers overpay employees, then the employers will lose profits, fail to attract capital, and go out of business. Because governments do not have shareholders, but instead raise money from taxpayers, and

because taxpayers cannot determine whether civil servants are overpaid, the danger of overpayment by the government is more severe.

Second, if the government overpays public employees, then rent-seeking will occur, as people compete for these positions. In the case of elected offices, candidates will overinvest in campaigns—as appears to be happening in some states with elected judiciaries.<sup>41</sup> In the case of appointments, prospective judges will overinvest in supporting elected officials who have the power to fill judgeships—through campaign contributions, campaign assistance, and the like. The more lucrative the job, the more that people will compete to be loyal supporters, resulting in both diversion from productive activity and (potentially) excessive loyalty to elected officials—the problem of patronage.

We cannot prove that judges are overpaid, and that is not the purpose of this Article. But it is important to round out the debate about judicial compensation with attention to the dangers of overcompensation. Our bottom line is that (1) on the evidence that has been advanced in public debates, it is as likely that judges are overpaid as that they are underpaid, and (2) overcompensation is as socially harmful as undercompensation.

### **III. An Empirical Test**

#### **A. The Data Set: State High Courts**

The question is: What set of conditions—including salary and other aspects of the job—helps judges work best? Answering this question requires data on how similar sets of employees perform under different conditions. Using data on the performance of a set of federal circuit court judges, who work under similar conditions of pay, status, number of law clerks, salary, etc., would enable us to rank the judges according to relative performance. But it would not allow us to determine what working conditions support higher productivity. For that second inquiry, we need employees laboring under different conditions. For example, if judges with three law clerks produce more than judges with two law clerks and a secretary (assuming that the secretary costs the same as an additional law clerk), and we think the additional productivity is caused by the

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<sup>41</sup> See Deborah Goldberg, Craig Holman, and Samantha Sanchez, *The New Politics of Judicial Elections* (Brennan Center 2006).

difference between a clerk and a secretary, the state might want to encourage judges to use a third clerk rather than a secretary.

The state high courts present a useful data set because, in each of the fifty states, we have a set of judges doing similar tasks, but laboring under different conditions.<sup>42</sup> The states vary in how much they pay judges, what the mandatory retirement ages is, how many law clerks the judges have, the salaries of the law clerks, and so on. Among the most important differences are the different selection and retention processes. Some states use elections (both partisan and blind), and others use appointment or merit processes and it is likely that the different systems produce judging of a different quality. It is easy to overstate the amount of variation in the state courts, however; it is considerable as compared to the federal system but limited when looked at through an international lens.<sup>43</sup> None of the states, for example, has minimal educational qualifications for its judges or uses a civil service model for its judiciary.<sup>44</sup>

#### B. Measuring Performance

The threshold question for any employer attempting to determine which factors make its employees more productive is how to measure performance. This is a difficult task with judges because the job involves the exercise of qualities such as judgment and fairness that are hard to observe, let alone measure in a quantifiable and objective fashion. It is tempting then to say—as many do—that the task of measuring judicial performance is impossible and not worth attempting.<sup>45</sup> But the same measurement difficulty exists in many employment settings—doctors, nurses, lawyers, bankers, architects, policemen, baseball umpires, etc.—and employees in these professions are

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<sup>42</sup> See Paul Brace, Melinda Gann Hall & Laura Langer, *Placing State Courts in State Politics*, 1 STATE POL. & POL. Q. \_\_\_ (2001); *but cf.* Lee Epstein, Jack Knight & Olga Shvetsova, *Comparing Judicial Selection Systems*, 10 WM. & MARY. BILL RTS. J. 7 (2001).

<sup>43</sup> Epstein et al., *supra* note \_\_\_.

<sup>44</sup> *Id.*

<sup>45</sup> *E.g.*, Sheldon Goldman, *Judicial Selection and the Qualities that Make a “Good” Judge*, 462 ANNALS OF AMER. ACAD. POL. & SOC. SCI. 112 (1982) (objective measurement of the qualities of a good judge is “infinitely complex and to a large extent impossible”); William P. Marshall, *Be Careful What You Wish For*, 78 S. CAL. L. REV. 119 (2004) (“[n]o set of quantifiable measure of judicial excellence can be free from ideological influence or political manipulation. No set of quantifiable measures can predict who will be an outstanding Supreme Court Justice.”); Steven Goldberg, *Federal Judges and the Heisman Trophy*, 32 FLA. ST. U. L. REV. 1237 (empirical measurements of judicial performance are unlikely to accurately predict excellence on the Supreme Court).

regularly evaluated by their employers.<sup>46</sup> If employers can measure the performance of those professionals, why should the public not be able to measure the performance of judges?

The reason there has not been significant work on measuring judicial performance, we suspect, is not so much a measurement problem but rather a principal problem. That is, the principals (the public) are too dispersed and have inadequate incentives to measure the agents in this case – the judges. The subset of principals who have control of the selection mechanism, the politicians, do evaluate judges, but we have little information about how they do so.<sup>47</sup>

In putting forward a set of measures, we seek to use objective and reproducible measures. Subjective measures may be better at getting at nuanced aspects of an employee's performance. But subjective measures are also subject to bias and inconsistency. Objective and reproducible measures are important where the risk that the evaluator will be biased and attempt to manipulate the measures is high. Given that evaluating judges is an area with political stakes and, therefore, with a danger of evaluators bringing their biases to subjective evaluations, the use of objective and reproducible measures is important.<sup>48</sup>

There exist few systematic attempts to measure the performance of state court judges, and almost no academic studies.<sup>49</sup> A number of studies compare the court systems

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<sup>46</sup> See JAMES N. BARON & DAVID M. KREPS, *STRATEGIC HUMAN RESOURCES: FRAMEWORKS FOR GENERAL MANAGERS* (1999).

<sup>47</sup> See Donald R. Songer, Jeffrey A. Segal, Charles M. Cameron, *The Hierarchy of Justice: Testing a Principal-Agent Model of Supreme Court-Circuit Court Interactions*, 38 AMER. J. POL. SCI. , 673 (1994) (noting the principal-agent relationship between the Supreme Court and lower federal courts is one of the few instances of monitoring judicial behavior, and one that is obviously separate and distinct from the selection mechanism); Kenneth C. Cole, *Judicial Affairs: The Role of the Senate in the Confirmation of Judicial Nominations*, 28 AMER. POL. SCI. REV. 875 (1934) (describing the criticism of the confirmation process as a charge of “misfeasance rather than nonfeasance, [that is,] proposals to deprive the Senate of this power are not, like proposals to abolish the electoral college, based on alleged failure of the agency to function independently, but rather on its alleged abuse of the discretion conferred upon it”); see, generally, Bengt Holmstrom & Paul Milgrom, *Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design*, 7 J. L. ECON. & ORG. 24 (1991) (detailing the complex monitoring dynamic found in fixed wage employment contracts in which objective measures of output are limited or non-existent).

<sup>48</sup> For example, judges, who were surveyed, tend to report the system by which they were selected through, as the best. See Henry R. Glick & Craig F. Emmert, *Selection Systems and Judicial Characteristics: the Recruitment of State Supreme Court Judges*, JUDICATURE 70 (December-January 1987)

<sup>49</sup> For an overview of the localized survey-based evaluations, see Rebecca L. Kourlis & Jordan M. Singer, *Using judicial performance evaluations to promote judicial accountability*, \_\_ JUDICATURE \_\_ (2007)

in the different states, examining the question of whether elected judiciaries perform better than appointed ones. In devising measures of court performance, though, these studies focus primarily on measures of independence and ignore other aspects of the job, such as productivity and quality.<sup>50</sup> From an employer's perspective, this is inadequate. Independence is a key element of the job of the judge, but there is no value in an independent judge who does not work, decides cases wrongly, or explains her decisions inadequately. The closest the existing literature comes to measuring other aspects of judicial performance are studies that use subjective rankings by lawyers or rely on the prior qualifications of the judges.<sup>51</sup> However, the rankings by a subset of lawyers (e.g., general counsel) capture a narrow aspect of court performance. As for the qualifications of the judges, it is a leap from looking at what a judge's prior profession was, how long she practiced, or where she went to law school thirty years ago, to the inference that he or she must be a better judge than, for example, someone of a similar age who went to a lower-ranked law school, practiced for a shorter period, or had a different prior profession.

We propose measures for three aspects of employee production that we assume the hypothetical employers would wish to measure: effort, skill, and independence.

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(online at: [http://www.ajs.org/ajs/publications/Judicature\\_PDFs/905/kourlis\\_905.pdf](http://www.ajs.org/ajs/publications/Judicature_PDFs/905/kourlis_905.pdf), last visited Nov. 16, 2007) (providing a general account of the Judicial Performance Evaluation (JPE) programs implemented at the state and local levels); *see also*, Penny J. White, *Judging Judges: Securing Judicial Independence by Use of Judicial Performance Evaluations*, 29 *FORDHAM URB. L.J.* 1053, 1076 (2002); Leonard Post, *ABA Offers New Way to Judge the Judges*, *NAT'L L.J.*, May 5, 2005, at 4 (describing Virginia's Judicial Performance Evaluation (JPE) Program).

<sup>50</sup> A number of the studies, because of their focus on what for us is an independent variable (that is, the type of selection mechanism), look only at aspects of the court performance question such as the treatment of out of state defendants in torts cases, discrimination suits, or the amount of diversity in the judiciary. *See, e.g.*, Damon M. Cann, *Beyond Accountability and Independence: Judicial Selection and State Court Performance*, *JUDICATURE*, Vol. 220, p. 90 (2007); Joanna Shepherd, *The Influence of Retention Politics on Judges' Voting*, (June 2007) Emory Public Law Research Paper No. 24 Available at SSRN: <http://ssrn.com/abstract=997491>. Even more distant from a measure of judicial productivity are studies that look at the level of diversity on the bench. We have no quarrel with the hypothesis that increased diversity may improve the quality of decision-making. But that has not been shown yet. In other words, diversity should be an independent variable in the productivity calculus, not a dependent variable. *Cf.* Steven Zeidman, *Judicial Politics, Making the Case for Merit Selection*, 68 *ALB. L. REV.* 713 (2005) (suggesting a framework for a merit based appointment system as a means of promoting diversity and reducing judicial misconduct relative to the current mix of subjective appointments and rationally ignorant elections).

<sup>51</sup>*See* Cann, *supra* note \_\_; *see also* INSTITUTE FOR LEGAL REFORM, *STATE LIABILITY SYSTEMS RANKINGS* (2007) (available at [http://www.instituteforlegalreform.com/lawsuitclimate2007/pdf/Climate\\_Report.pdf](http://www.instituteforlegalreform.com/lawsuitclimate2007/pdf/Climate_Report.pdf)).

## C. Measures of Productivity

### i. *Effort*

Employers prefer employees who work harder, other things equal. An employee who puts in high effort is likely to be someone who cares about his job, who thinks what she is doing is important and relevant. While it is difficult to measure whether a judge is being fair, just, or empathetic, it is likely that someone who exerts high effort—works longer hours than her colleagues who prefer to be at the beach or golf course—cares about the job more and is likely to try to be as fair and just as possible, since those are crucial characteristics of the job.

What measures of judicial output indicate that a judge is exerting effort? We use opinion production rates. Opinion production rates indicate effort because producing written explanations for decisions is difficult and time consuming. To save themselves time, some judges may instead issue summary dispositions.<sup>52</sup> Assuming they have not exerted much effort in writing the opinion, they will prefer to avoid publication of their summary explanations, for fear of public scrutiny and criticism. Alternatively, judges may simply drag out the time to write an opinion, leading to fewer published opinions in any given year (and a corresponding increase in the backlog of opinions for the judge). Looking at the number of published opinions a judge issues relative to other judges, therefore, provides a measure of the relative effort exerted by her as compared to the others. It is true that the number of opinions that a judge writes will in part be determined by the kinds of cases that her court receives (and this may vary by state depending on whether the state has mandatory jurisdiction over certain types of cases). Even where a court has mandatory jurisdiction over some opinions, judges have discretion in choosing what opinions to publish and how long they take in writing their opinions. Courts may develop norms; if the majority of judges on a court do not like exerting effort they may be able to pressure newcomers to behave like they do – so court norms may be driving some of the publication numbers. The fact remains, however, that the newcomer is giving in to that pressure and producing less.

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<sup>52</sup>See Penelope Pether, *Inequitable Injunctions: The Scandal of Private Judging in the U.S. Courts*, 56 STAN. L. REV. 1435 (2004) (detailing the expansion of summary dispositions and unpublished opinions in the federal courts since 1950); Donald R. Songer, *Criteria for Publication of Opinions in the U.S. Courts of Appeal: Formal Rules Versus Empirical Reality*, 73 JUDICATURE 307, 308 (1990).

An alternate measure is the number of pages written. Judges who write more pages, other things equal, are doing more work in providing litigants with explanations and in helping the development of precedent. Again, this is not a perfect measure – it may be that Judge A is writing more pages than Judge B because he is delegating more of the work to his law clerks and law clerks just take longer to explain even basic concepts. That said, almost no judges do all of their own writing; most delegate extensively.<sup>53</sup> As a rough relative measure, if Judge A consistently writes 500 pages a year more than Judge B, Judge A is probably exerting more effort.

## ii. Measures of Skill

Employers also care about skill. The standard measure used to estimate the quality of the judicial production is citation rates. Opinions are products – judges create them and then a variety of customers use them. One can estimate the value of the product to the various customer groups by examining how much each group uses the product.

The three customer groups we examine are out-of-state state judges, out-of-state federal judges, and authors in the law reviews. We do not use inside state citations or citations from the federal circuit covering that state because these citations will often be a function of the fact that the opinion in question constituted precedent and, therefore, had to be cited. All of the other citations, by contrast, are voluntary – citations are made because the cited opinion adds value in terms of the arguments it makes.

The disadvantages of using citations as a measure of quality have been discussed elsewhere.<sup>54</sup> For all its faults, citations are the most popular and useful measure of quality for judicial opinions.

As with the measurement of effort, our goal is to use a multiplicity of measures for skill, each of which will capture a different aspect of the value that the opinion in question adds. An opinion that legal academics find interesting because of its nuance and

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<sup>53</sup> Further, at least on the federal courts, the handful who do all of their own writing seem to also be able to produce the most. Stephen J. Choi & G. Mitu Gulati, *Which Judges Write Their Opinions (And Should We Care)*, 32 FLA. ST. UNIV. L. REV. 1077 (2005).

<sup>54</sup> Richard A. Posner, *An Economic Analysis of the Use of Citations in the Law*, AMER. L. & ECON. REV. Vol. 2, No. 2, pp. 381-406 (2000); Daniel A. Farber, *Supreme Court Selection and Measures of Past Judicial Performance*, 32 FLA. ST. UNIV. L. REV. 1175 (2005).

complexity may not be the kind of opinion that other judges find useful precisely because of its excessive nuance and complexity.<sup>55</sup>

### iii. Measures of Independence

Judicial independence means judgment on the merits, uninfluenced by the political interests or ideological commitments of political branch officials or by the demands of party. A judge's decision should not be related to her political affiliation. It follows that, if judges are independent, Republican judges should agree (or disagree) with each other as often as they agree (or disagree) with Democratic judges, and vice versa. On this observation, we construct our measure of independence.

Our independence measure uses opposing opinions to measure the degree of disagreement among those of similar political orientations. Opposing opinions are defined as either a majority opinion when a dissent exists, or a dissent when a majority exists. Empirical literature has established that judges often vote consistently with policy preferences (typically proxied by the political party of the appointing actor).<sup>56</sup> A judge disagrees with those with a similar party background as his is demonstrating independence.<sup>57</sup>

To calculate this measure, we start with the number of dissents a judge issues against other judges on his court with the same political affiliation and the number of majority opinions that the judge writes that are opposed by a dissent from someone of the same political affiliation. We divide this number by the total number of dissents and majority opinions against a dissent that a judge authors (the resulting fraction is termed

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<sup>55</sup> Again, prior research suggests otherwise. Opinions with lots of citations from one set of customers tend to be the same opinions with high citation numbers from other customers. See Choi & Gulati, *Choosing the Next Supreme Court Justice*, *supra* note \_\_\_.

<sup>56</sup> See Joanna Shepherd, *The Influence of Retention Politics on Judges' Voting*, *supra* note \_\_\_; Tracey E. George, *Developing a Positive Theory of Decisionmaking on U.S. Courts of Appeals*, 58 OHIO ST. L. J. 1635 (1998).

<sup>57</sup> Party affiliation information is obtained by using three sources. First, we searched NEXIS and the Internet (using Google) for any news reports on the political affiliation of the each judge. Second, we also searched for information on political contributions at the *opensecrets.org* website. We used the political party of the donee candidate as a proxy for the political party of judges who contributed. Third, we used the party of the governor (if any) who appointed the judge as a proxy for the judge's political party. In most of the cases where we had multiple sources of information on political party, the party was consistent across these sources. When our three sources reported different parties, we gave first priority to the party identified through our NEXIS and Internet searches and second to the party identified in the *opensecrets.org* database. See Choi, Gulati & Posner, *supra* note \_\_\_.

“Opposite\_Party”). If Judge X is a Republican and writes 7 out of his 10 dissents against Democrat judges as well as 8 of his 10 majority opinions where there is a dissent against a Democrat dissenting judge, then Opposite\_Party for Judge X would equal 15 divided by 20 or 0.75.

The Opposite\_Party number, to provide a comparative measure, has to be normalized to take into account the fact the different courts have different ratios of judges from the opposing parties. A Republican judge who is on a court with one other Republican and eight Democrats will have relatively few chances to oppose someone of the same party, whereas if that same Republican judge were on a court with nine Democrats, he would only be opposing Democrats because there would be no opportunity to disagree with Republicans. To correct for the imbalance problem, we calculate each judge’s independence score as a function of what fraction of his court’s opinions are generated by those from the opposite party (Opposing\_Pool). If a court has seven out of ten judges who are Democrats and they all write the same number of opinions, the three Republican judges will have 70% of the court’s opinions to oppose. We expect that a Republican judge dissenting at random would dissent 70% of the time against a Democrat. We defined Independence as Opposing\_Pool minus Opposite Party. If one of the Republicans disagrees with his Democrat colleagues 72% of the time, we estimate an Independence score of -0.02 (that is, the baseline Opposite\_Pool number 0.70 minus the individual Opposite\_Party number 0.72); the negative score suggests that he is less likely to disagree with those from his own party than the baseline. If the fraction of his disagreements that are with his Republican colleagues is 68% of the time, we count that as a +0.02; because he is more willing to disagree with those from his party than with those from the other party and thus more independent.

The measure has problems. One problem is that the Opposite\_Party ratio is determined from a small number of opinions in question for almost all judges. Judges do not dissent often – it is hard work. Assuming that judges would prefer to avoid this additional work, they will seek to compromise where possible. A judge’s independence score under our measure might therefore be the product of only a handful of dissents. A judge who does not often dissent, might have had a couple of cases involving issues that he felt strongly about during the time period that our data spans. Given that our data

spans only a handful of years (a short period as compared to the judicial life span for most judges), it is possible that some judges have high scores on our independence measures due to the random arrival of cases they feel strong enough about to dissent against even fellow political travelers on the bench (a situation that may not have occurred for most other types of cases).

Another issue is that the measure only looks at extreme behavior—situations where compromise has broken down to the point that the judges are engaging in public disagreement. Judges, however, might also be displaying independence in their private negotiations with colleagues over case outcomes and the language of opinions in cases where there end up being no dissents; that is, the majority of cases.<sup>58</sup> Hence, our measure undercounts moderate displays of independence.<sup>59</sup>

Our measure differs from the standard measures of independence (or bias) used in the empirical literature on judges. Those measures tend to start with a series of assumptions about the policy preferences of Democrat judges versus Republican judges. For example, Democrat judges are typically assumed to dislike big corporation, oppose

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<sup>58</sup> See Richard Revesz, *Environmental Regulation, Ideology, and the D.C. Circuit*, 83 VA. L. REV. 1717 (1997).

<sup>59</sup> This undercounting problem is not as severe if a judge's ability to threaten dissent is a function of her actual willingness to dissent. Those with high dissent numbers against those from the same party will probably also be those who are actively negotiating with their colleagues. It is possible, however, that high dissent numbers instead simply represent cantankerousness and an unwillingness to compromise.

There is an additional set of problems that we do address. First, the problem of states that are dominated by a single party. Consider the case where all judges on a particular state high court are all of the same political party (say all Republican). Our Independence measure will equal zero since `Opposite_Party` will equal `Opposite_Pool` (and both will equal zero since there are no Democrat-authored opinions). Table 4 excludes judges who come from states with no variation in political party among judges for this reason. But, by the same token, we lose data.

Second, even where all judges are not of the same political party in a state, if an imbalance exists, the range of the Independence variable will vary. Consider two Republican judges. One is in a state with 90 percent of the majority opinions written by Democrats and the other is in a state with 10 percent of the majority opinions written by Democrats. For the first, Independence can range from -0.1 to +0.9. For the second, Independence can range from -0.9 to +0.1. So the second judge could have a much more negative Independence score than the first judge simply because the range is shifted over. To address this, we created a version of the Independence variable that is less dependent on the background political makeup of a particular state court. `Independence_Indicator` is defined as 1 if Independence is greater or equal to zero and 0 otherwise. The indicator variable addresses the range problem but also throws out information: it suggests judges subject to non-partisan elections are less independent than the other types, who are about the same. None of the differences in mean `Independence_Indicator` levels among the varying selection systems are statistically significant. There is also the possibility that dissenting is a greater display of independence than writing a majority opinion. However, we found no significant differences exist in the Independence score of active dissenters compared with occasional dissenters for judges of any of the four selection systems. See Choi, Gulati & Posner, *supra* note \_\_.

the death penalty, and support criminal defendant rights.<sup>60</sup> The cases are then coded as a function of the direction of the vote. If it turns out that the Democrat appointed judge votes in favor of the individual litigant more often than in favor of the big corporation, then the conclusion is that the judge is voting consistent with his policy preferences. An example of the use of this methodology is Shepherd's recent article where she focuses on whether sitting state judges bias their votes in the direction of the policy preferences of the group that has the power to decide whether to retain these judges or not (they do, even when the judge's politics differ from those of the group voting on retention).<sup>61</sup> We do not to use this methodology for a couple of reasons.

First, the methodology focuses exclusively on votes. Votes capture the underlying political dynamics of an opinion only imperfectly. Two opinions with votes in favor of a corporate litigant, for example, may generate different precedent for future opinions depending on how the opinion is written. Even if three Democrats on a panel compromise with the two Republicans to write the opinion narrowly, in exchange for voting in favor of the corporation (that is, allowing the corporation to win in this case, but making it more difficult for corporations to win in the future), the case gets coded as having a Republican outcome. Given that political parties likely care more about policies rather than individual case outcomes, looking only at voting outcomes may miss the mark. Put another way, reasoning and precedent is more important than the vote in any particular decision. It is only in the subset of cases involving dissents that we can be confident that the issues are important enough to the judges that they are not willing to trade votes for reasoning—and therefore examining votes (and against whom such votes are cast in a decision) in dissent situations provides a more accurate measure of the political dynamics among judges. Over the same time period then, our measure yields a smaller number of data points, but we can be more confident in the information that they yield.

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<sup>60</sup> E.g., Tracey E. George and Lee Epstein, *On the Nature of Supreme Court Decision Making*, AMER. POL. SCI. REV. Vol. 86, No. 2 (Jun., 1992), pp. 323-337; Paul R. Brace and Melinda Gann Hall, *The Interplay of Preferences, Case Facts, Context, and Rules in the Politics of Judicial Choice*, J. POL. Vol. 59, No. 4 (Nov., 1997), pp. 1206-1231; Thomas J. Miles & Cass R. Sunstein, *The Real World of Arbitrariness Review*, U. CHI. L. REV. (forthcoming). Cf. Jon M. de Figueiredo, *Strategic Plaintiffs and Ideological Judges in Telecommunications Litigation*, Princeton Law and Public Affairs Working Paper 05-007, November 2004 (available at [ssrn.com/abstract=747647](http://ssrn.com/abstract=747647)) (coding the bias of the court's decision as a function of the identity of the party that controls the administrative agency whose decision is being overturned by the court).

<sup>61</sup> Joanna Shepherd, *The Influence of Retention Politics on Judges' Voting*, *supra* note \_\_\_\_

Second, standard measures of independence also rely on subjective approximations to determine whether a judge's votes are classified as more aligned with Democrat preferences or Republican ones.<sup>62</sup> For example, voting for an individual bringing a tax challenge against the government might be coded as a Democrat vote because of an assumption that Democrats care about the little guy, the individual litigant. But, what if the types of individuals bringing tax cases are typically wealthy and what if the tax system is primarily redistributive? Even assuming that Democrats care more about the little guy (itself an often contestable assumption), the foregoing approximation is problematic because they may care more about redistribution. The same kind of argument can be made with respect to coding assumptions in a variety of areas such as securities fraud and medical malpractice. The standard measures likely work well in the subset of cases that empiricists studying the courts typically focus on – that is, civil rights type cases. But they get problematic when one moves away from the hot button areas into areas such as business law. Given that our data set covers all state High Court cases decided in a defined period of time (from 1998 to 2000), using the standard subjective coding method would result in a potentially high error rate. By contrast, our measure codes only those cases where the Democrat judges vote (and write) against their Republican counterparts as politically divided. Instead of making assumptions about what constitutes Democrat or Republican preferences, we in effect allow the judges to tell us.

#### **IV. Determining the Effects of Salary and Tenure**

##### **A. The Salary and Tenure Mechanisms**

The fifty states use a range of tenure and salary combinations. Salaries range from \$83,550 in Montana to over \$150,000 in New York as of 1999. For tenure, at the high end, a few states such as New Hampshire mimic the federal system with life tenure. Most states have judicial terms, ranging from just a few years, to 14 (New York), and always with the possibility of reappointment or reelection. A judge's actual longevity depends on her ability to be reelected or reappointed, plus the incentives to retire prior to the end of

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<sup>62</sup> For a thorough examination (and critique) of some of these coding assumptions in the tax context, see Lee Epstein, Nancy C. Staudt & Peter J. Wiedenbeck, *The Ideological Component of Judging in Tax Cases*, \_\_ WASH. U. L. REV. \_\_ (forthcoming 2007).

the term. In 1997, median longevity by state was 8.6 years, ranging from a low of 3.5 in West Virginia, to a high of 19.1 in Oklahoma.<sup>63</sup>

The tenure variable presents a potential complication. Because most states have mechanisms such as impeachment by which to remove judges, there is the possibility that judges in a particular state court might have a low tenure because they are no good. That is, the tenure variable may not be exogenous. Prior research, however, suggests that the tenure variable is stable over time, suggesting only a minimal endogeneity problem.<sup>64</sup> The tenure variable is highly correlated with the type of selection system that a state has (e.g., election versus appointment) and these selection systems have remained mostly stable over the last few decades, again suggesting that the endogeneity problem is not large.<sup>65</sup>

## **B. Hypothesis**

Conventional wisdom in the salary debate holds that higher wages translate into higher judicial productivity. That means that the high-wage judges, vis-à-vis their lower wage counterparts, should be exerting more effort, be demonstrating higher skill, and exercising greater independence. Theory, however, suggests that the operation of wages on production quality will not just be a function of wages, but also of tenure and the quality of the selection system. We therefore look to see how judges perform not just under different wage regimes, but different wage, tenure, and selection system combinations. Further, participants in the salary debate ignore the fact that basic employment conditions such as the number of assistants and their wages and tenure likely affect productivity. We examine the impact of various employment conditions.

## **C. Data Description**

### **i. The Dataset**

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<sup>63</sup> This variable is taken from table 1, in Andrew F. Hanssen, *The Effect of Judicial Institutions on Uncertainty and the Rate of Litigation: The Election versus Appointment of State Judges*, 28 J. LEG. STUD. 205 (1999)

<sup>64</sup> See Stephen J. Choi, Mitu Gulati, & Eric A. Posner, *Professionals or Politicians: The Uncertain Empirical Case for an Elected Rather than Appointed Judiciary*, working draft August 2007 (available on [ssrn.com](http://ssrn.com)).

<sup>65</sup> *Id.*

The decisions of the High Courts of every state for three years (1998-2000) constitute the dataset. Texas and Oklahoma have two High Courts, for civil and criminal appeals, and are counted as two states each, making a total of 52 states. The District of Columbia is excluded because of its unusual character. The dataset contains 408 judges, approximately 8 per court. The average judge spent 2.65 of the 3 years in our sample period on the court. Each judge wrote on average about 67 opinions per year.

The data is cut three ways, as a function of the type of data. For effort, we examine opinions at the judge level for each year. Each observation is a judge for a particular year, giving us 1082 observations (408 times 2.65). For citations, the number of data points is larger because those numbers were measurable at the opinion level. There are 27,596 majority opinions. Finally, because the data pool is smaller for independence (small number of dissents relative to number of opinions or citations), we calculate judge-level effects for the aggregate of the three years. For independence, there are 408 observations. The number of observations in the regressions is sometimes lower as a result of incomplete data for certain variables.

**Table 1**

<b>Appointed</b>	<b>Merit Selection</b>	<b>Non-Partisan Election</b>	<b>Partisan Election</b>
Connecticut	Alaska	Georgia	Alabama
Delaware	Arizona	Idaho	Arkansas
Hawaii	Colorado	Kentucky	Illinois
Massachusetts	Iowa	Louisiana	Mississippi
Maine	Indiana	Michigan	North Carolina
New Hampshire	Kansas	Minnesota	New Mexico
New Jersey	Maryland	Montana	Pennsylvania
New York	Missouri	North Dakota	Texas
Rhode Island	Nebraska	Nevada	West Virginia
Vermont	Oklahoma	Ohio	
South Carolina	South Dakota	Oregon	
Virginia	Utah	Washington	
	Wyoming	Wisconsin	
	California		
	Florida		
	Tennessee		

## **ii. Variables for the Multivariate Model**

We estimate a series of multivariate regression models using our proxies for productivity, quality, and independence. Our key independent variable of interest is the associate justice salary level for a particular court. We adjust the salary data for the cost of living for the city in which the court is located (Adjusted Associate Justice Salary).<sup>66</sup> In the multivariate models, we relate our proxies for productivity, quality, and independence with Adjusted Associate Justice Salary to test the importance of salary for judicial performance.

Because our focus is on the differential cost of being a judge, we need to include an opportunity cost measure into our models. To calculate the opportunity cost measure, we use the average wage paid to equity partners at large law firms in that state (Adjusted Partner Salary). We assume that the type of lawyer who might be interested in a state

<sup>66</sup> If not available, a nearby city with a similar profile in terms of income, crime rates, and population.

judgeship likely has a local orientation and that her best alternative position would be at a local law firm.<sup>67</sup>

The method of judicial selection is also an important determinant of productivity, quality, and independence. We include independent variables for whether the state High Court judges in our sample are selected through Partisan Election, Non-Partisan Election, or Merit Selection (as compared to the base category of Appointed judges).

In addition to our judicial salary and selection variables, we include a common set of control variables in our models of judicial productivity, quality, and independence. The control variables divide into four types, Judge Environment, Judge Characteristic, Court Characteristic, and State Controls.

### **Judge Environment Controls**

The judge environment controls seek to capture differences among states with respect to the structure of judicial chambers; they provide a sense of whether certain court characteristics, such as the wages paid to law clerks, have an impact on a judge's productivity.

The first environment control concerns whether the mix of judges on the high court remained the same throughout our sample time period from 1998 to 2000 (Stable Court) and the size of the bench during the 1998 to 2000 period (Number of Active Judges on Bench). Teams that have high turnover likely operate differently than those that don't, and the size of the team likely has an impact on its dynamics. Next, to measure the effects of law clerks, three variables are used. The average number of clerks per judge for the 1998 to 2000 period is one variable (Number of Clerks Per Judge).<sup>68</sup> Because

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<sup>67</sup> A more fine-tuned measure of opportunity cost might calculate not just the difference between judicial salary and average partner salary for that year, but also calculate in expected future streams of earning for the two jobs. Such a calculation would require both estimations as a function of age-wage profiles for the individual judges, but also detailed information regarding the pension plans of each state.

<sup>68</sup> Although clerks are generally assumed to increase judicial productivity there has been little research quantifying the effects of law clerks. An example of the assumption about value added by clerks is the literature on the caseload explosion in the federal courts in recent years. Judges are assumed to have used to deal with the explosion in caseloads has been to delegate more work to the clerks. *See e.g.*, William Richman & William Reynolds, *Elitism, Expediency and the New Certiori: Requiem for the Learned Hand Tradition*, 81 CORNELL L. REV. 273 (1996); *cf. also* Doug Smeath, *Law Clerks a Precious Commodity for Utah Judges*, Deseret News (Salt Lake City), May 30, 2004 (characterizing law clerks as invaluable in assisting judges with improving quality); Roger Hanson, *Resources: The Key to Determining Time on Appeal*, 35 Court Rev. No. 3 at 35 (1988) (suggesting an increase in court efficiency with a higher number

long-term clerks—who will be more experienced in the later years of their tenure as clerks—may be more effective at assisting the judge, a variable for whether the clerkships are longer is used. The typical clerkship at the federal level is one year and is considered standard, therefore clerkships lasting for two or more years are defined as long-term (Long-Term Clerk).

There is a potential causation issue with some of the clerkship variables. On the one hand, it is likely that clerks who are more experienced can help their judges more – and the prediction is that more experienced clerks will result in higher productivity. On the other hand, high quality judges might need less law clerk assistance. So, a state that provides its judges with a number of skilled assistants might attract low quality judges, thereby producing the prediction that higher quality assistants will correlate with lower quality judging.

Next, to capture the opportunity cost of being a law clerk, the difference between the average salary of an entering associate at law firm in that state and the law clerk salary is used (Law Clerk Opportunity Cost). Given the amount of status, training and networking benefits clerkships provide, we expect that clerkship salaries will have zero impact on judicial productivity. Indeed, given the scarcity of clerkships and long queues of applicants, clerkships salaries could even be reduced.

### **Judge Characteristic Controls**

The Judge Characteristic controls include, first, a set of factors specific to judicial productivity; and, second, a set of demographic variables that are common in productivity estimation models.

*Judicial Productivity Specific Variables:* There is an indicator variable for whether the judge was the chief judge of the high court (Chief Judge). A chief judge may have less time to author opinions. The chief judge may also command greater respect and receive greater numbers of citations as a result. Additionally, the chief may be able to assign herself the more important opinions and garner more citations that way.<sup>69</sup> Also

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of clerks); Stephen J. McEwen, *On the Effective Use of Resources in Pennsylvania*, 35 Court Rev. No. 3 at 48 (1988) (similar).

<sup>69</sup> See Laura Langer, *Recruitment of Chief Justices on State Supreme Courts: A Choice Between Institutional and Personal Goals*, 65 J. POL. 656 (2003).

included is the number of years between 1998 and the year in which the judge received her law degree (Post Law-School Experience) and the number of years the judge has been on the high court (Court Experience). More experienced judges may decide cases with greater skill and speed, leading to more opinions and more citations.

The problem of judges behaving differently as elections approach is often mentioned in criticisms of electoral systems of selecting judges.<sup>70</sup> To measure the effects of elections, we examine whether the judges in our data set raised campaign funds during any of the years for which we collected data (Election Spending). A variable for whether a judge retired in 2001 or earlier captures the possibility of end game problems of a different sort (Retirement Close) — judges who are about to retire have little to lose from sloughing off on the job. Additionally, they may be retiring because they no longer find the job interesting.<sup>71</sup> Finally, given that Chief Justice Roberts expressed concerns about the reduced presence on the bench of lawyers from private practice, we calculate a variable for whether the judge’s primary prior employment prior to joining the bench was in the private or public sector (Private Practice).<sup>72</sup>

*Demographic Variables:* To capture demographic effects – standard in testing the factors that influence worker productivity – we use variables for age and gender. A significant body of prior research has examined judicial various aspects of judicial

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<sup>70</sup> E.g., Stephen B. Bright & Patrick J. Keenan, *Judges and the Politics of Death: Deciding Between the Bill of Rights and the Next Election in Capital Cases*, 75 B.U. L. REV. 759 (1995); cf. Daniel Berkowitz, Chris W. Bonneau & Karen Clay, *Judicial Independence, Elections and Minority Interests*, draft dated Dec, 2005 (available at <http://www.isnie.org/ISNIE06/Papers06/04.4/clay.pdf>).

<sup>71</sup> If judges are motivated primarily by the desire to serve the public, rather than interest in the job, the fact that they no longer find the job interesting should have but a minimal effect on their performance.

<sup>72</sup> A number of prior studies have looked into the impact of prior experience on aspects of judicial performance – almost none though have focused on looking at a broad measure of productivity, focusing instead on narrower measures, tending to relate to independence or bias. See, e.g., Kevin Scott & Corey Ditslear, *Does the Resume Matter? The Effect of Career Experience on the Behavior of the Supreme Court* (draft dated August 2007, on file with authors); Ahmed Taha, *Publish or Perish: Evidence of How Judges Allocate Their Time*, 6 AMER. L. & ECON. REV. 1 (2004); Orley Ashenfelter et al., *Politics and the Judiciary: The Influence of Judicial Background on Case Outcomes*, 24 J. LEG. STUD. 257 (1995); James J. Brudney et al., *Judicial Hostility Toward Labor Unions: Applying the Social Background Model to a Celebrated Concern*, 60 OHIO ST. L. J. 1675 (1999); Gregory C. Sisk et al., *Charting the Judicial Mind: An Empirical Study of Judicial Reasoning*, 73 NYU L. REV. 1377 (1998). Among the exceptions that do look to the impact of background on broader measures of judicial productivity are Baker, *supra* note \_\_\_ & Landes, Lessig & Solimine, *supra* note \_\_\_. Going further back, Caldeira looked to whether occupational background was a predictor of judicial “greatness”. Gregory A. Caldeira, *In the Mirror of the Justices: Sources of Greatness on the Supreme Court*, 10 POL. BEHAV. 247 (1988).

behavior as a function of gender, age and educational background.<sup>73</sup> For example, women judges have been hypothesized to behave differently in discrimination cases than their male counterparts. With age, it has been suggested that younger judges are more politically biased and more productive than their older counterparts.<sup>74</sup> Further, the problem of older judges overstaying their welcome, particularly on the U.S. Supreme Court, has led to proposals for mandatory retirement.<sup>75</sup> To test this, we include both a variable for age and one for whether the state in question has mandatory retirement. The latter variable, mandatory retirement, might capture a selection effect – in that the type of individual attracted to a job that mandates retirement might be different from one who wants to hold on to power and status until he is physically unable to do so any longer.<sup>76</sup>

### **Court Characteristic Controls**

Judges may also act differently if facing a high workload, particularly if an intermediate appellate level court does not exist to help with the workload. The log of the number of trial cases in the state measured in 1998 (ln(Number of Trial Cases in the State)) and an indicator variable for the presence of an intermediate appellate court (Intermediate Appellate Court) are included.<sup>77</sup> The number of clerks and clerk tenure, the

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<sup>73</sup> Among the studies examining the effects of gender, age and educational background on aspects of judicial behavior, see e.g., Donald R. Songer et al., *A Reappraisal of Diversification in the Federal Courts: Gender Effects in the Courts of Appeals*, 56 J. POL. 425 (1994); Joshua Teitelbaum, *Age and Tenure of the Justices and Productivity of the U.S. Supreme Court*, 34 FLA ST. U. L. REV. 161 (2006); Russell Smyth & Mita Bhattacharya, *How Fast do Old Judges Slow Down: A Life-Cycle Study of Aging and Productivity in the Federal Court of Australia*, 23 INT'L REV. L. & ECON. 141 (2003).

<sup>74</sup> E.g., Teitelbaum, *supra* note \_\_ (citing articles on this point); Baker, *supra* note \_\_ (“[J]udges appointed late in life might be less partisan than judges appointed early in life. Someone willing to take a judgeship at, say, age 35, might care more about policy outcomes than someone willing to take the job at, say, age 55.”).

<sup>75</sup> See Crampton & Carrington, *supra* note \_\_.

<sup>76</sup> Given that we look at multiple occupational background variables (experience on the bench, years after graduation, and whether one’s prior primary occupation was in the private or public sector) and given that judges are not typically appointed until middle age, we did not expect eliteness of law school attended to be a useful predictor of judicial performance. However, increasing the quality of credentials has long been a goal of judicial reform movements. Our cynical reading of this goal and the history of the move toward merit selection is that this goal appears to have been driven more by the desire to enhance the status of the profession than a belief that these credentials translate into better judging. See Paul D. Carrington, *Judicial Independence and Democratic Accountability in the Highest State Courts*, 61 L. & CONTEMP. PROBS. 79 (1988). Assuming that the goal is to raise credentials then, independent of productivity, we find it the case that a higher law school rank under the U.S. News correlates with a higher salary. But the effect is not significant. Cutting the data more finely, we see that raising salaries increase credentials only in merit states; perhaps that is so because lawyers pick judges in the merit systems and they are more impressed with credentials.

<sup>77</sup> To control for the effects of court control of its docket on quality, we run the regressions with a control

size of the bench, and the number of trial cases may also influence a judge's choice to devote time to any specific case and those variables are included as well.

The High Courts vary in terms of whether they are required to hear certain types of appeals or can exercise discretion. To capture these requirements, which could skew how judges allocate their resources, we use indicator variables for whether a state high court has mandatory jurisdiction for all civil and criminal cases (mandatory civil jurisdiction and mandatory criminal jurisdiction). Related, courts differ in terms of their court rules for publication rules, with some allowing the judges discretion and others mandating publication. We use an indicator variable to distinguish states that mandate the publication of all opinions (mandatory publication). Again, these rules could distort the judges' allocation of their scarce resources; for example, if they have to publish a lot of opinions, the quality of individual opinions might drop.

### **State Controls**

State controls include variables relating to the general characteristics of each state. Differences in state population ( $\ln(\text{Population})$ ), gross state product ( $\ln(\text{Gross State Product})$ ), and crime rates (Crime Rate) may lead to different mixes of cases and judicial responses to these cases. Prior research suggests that judges are influenced by their colleagues in neighboring states – plus, states may be more likely to borrow from the law of their neighbors than from distant states because of familiarity, if those neighbors have more developed laws.<sup>78</sup> Further, larger neighboring states might produce more or different types of cases. For these reasons, we calculate a variable for the aggregate population of border states ( $\ln(\text{Border Population})$ ). We also include a measure of the age of the state (State Age). Older states likely have longer judicial traditions, more precedent, and perhaps a more sophisticated jurisprudence on which contemporary jurists

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variable for the ratio of cases resulting from mandatory appeal to the total number of cases. We also try to capture this same effect by using a variable that measures whether the state's internal publication rules mandate publication of opinions or allow the issuance of unpublished opinions (the former being more likely in states where the court has discretion in the cases it chooses to hear). In neither case do these additional controls make a difference to the coefficients for our main results. *Cf.* Paul Brace & Melinda Gann Hall, *Neo-Institutionalism and Dissent in State Supreme Courts*, 52 J. POL. 54 (1990) (finding that institutional variables, such as whether the state has an intermediate appellate court, explain a significant portion of the variation in dissent numbers).

<sup>78</sup> See Paul Harris, *Ecology and Culture in the Communication of Precedent Among State Supreme Courts 1870-1970*, 19 L & Soc'y Rev. 449 (1986).

can draw. State Age controls for the possibility that judges from older states are cited more often outside of the state just because they can draw on the more sophisticated jurisprudence of their state. We include a variable for citizen ideology based on election results in each district (Citizen Ideology Score).<sup>79</sup> The background ideology of the citizens of a state may affect the behavior of judges

Other state controls such as the number and educational backgrounds of staff attorneys or the educational backgrounds of the law clerks would have also been useful to include. Adequate data, however, was not available.

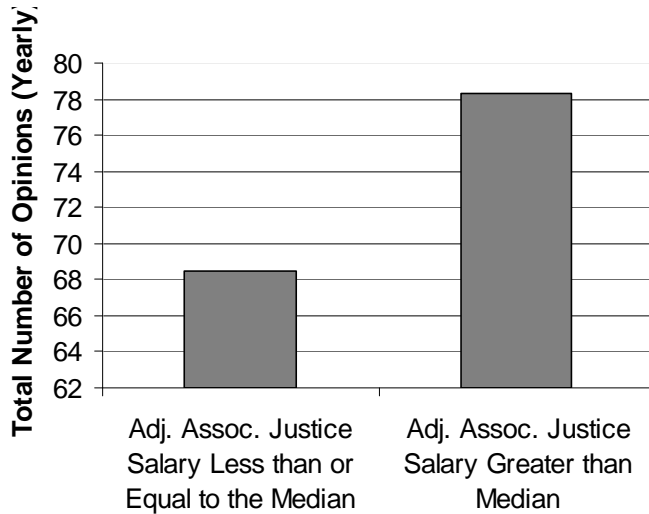
#### **D. Effort**

Our first multivariate model focuses on the total number of opinions authored yearly by a judge as our measure of effort. Figure 1 displays a mean comparison of the total number of opinions for judges paid less than or equal to the median adjusted associate justice salary and judges paid greater than the median. For purposes of reporting summary statistics, we divide the states into states where the salaries are above the median and those where it is below. The median salary of an associate justice in 1999 was \$111,758. Judges paid above the median are more productive than those below. The mean difference is significant at the <1% confidence level.

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<sup>79</sup> This variable is taken from William D. Berry et al., *Measuring Citizen and Government Ideology in the American States, 1960-93*, 42 AMER. J. POL. SCI. 327 (1998) (updated data available at [www.uky.edu](http://www.uky.edu)).

**Figure 1 Productivity by Salary**



Other factors may affect the effort exerted by a judge on a particular court. We estimate a multivariate model with number of opinions authored in a year as the dependent variable. The equation estimated, using an ordinary least squares regression with robust standard errors is:

$$\ln(\text{Total\_Opinions})_i = \alpha + \beta_{1i}\text{Adj. Assoc. Justice Salary} + \beta_2\text{Adj. Partner Salary} + \beta_{3i}\text{Election\_Non-Partisan} + \beta_{4i}\text{Election\_Partisan} + \beta_{5i}\text{Merit\_Plan} + \sum\beta_{ji}\text{Judge Environment}_{ji} + \sum\beta_{ki}\text{Judge Characteristics}_{ki} + \sum\beta_{li}\text{Court Characteristics}_{li} + \sum\beta_{mi}\text{State Controls}_{ji} + \text{Year Effects} + \varepsilon_i$$

The model relates the log of the total number of opinions published by a judge in a year with the Adjusted Associate Justice Salary for the judge. The Adjusted Partner Salary for the state is included as a control for the opportunity cost of becoming a judge. The regression model includes year-level Judge Environment, Judge Characteristic, Court Characteristic, and State Control variables.

The selection method used by a state will affect both the type of person who becomes a judge and the incentives facing judges to produce published opinions. Accordingly, indicator variables for Non-Partisan Election, Partisan Election, and Merit Plan states are included. The three variables use Appointed states as the baseline. The model includes year fixed effects. Model 1 of Table 3 reports results. Two variations on

Model 1 are also reported, replacing the selection method for judges with the average tenure of judges in a particular state (Tenure) and whether judges in a particular state enjoy lifetime employment (Lifetime Employment). These variations, reported as Models 2 and 3, allow examination of the importance of the retention mechanism on judicial effort. Judges with longer tenures (more job security) may face fewer pressures to exert effort.

**Table 3: Effort**

<b>Dependent Variable</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 2</b>
	ln(Total Opinions)	ln(Total Opinions)	ln(Total Opinions)
<b>Independent Variables</b>			
Adjusted Associate Justice Salary	0.004 (1.620)	0.007** (2.980)	0.006* (2.450)
Adjusted Partner Salary	-0.001 (-1.060)	-0.001 (-0.630)	0.000 (-0.510)
Election Partisan	0.318* (2.140)		
Election Non-Partisan	0.202+ (1.770)		
Merit Plan	0.278* (2.310)		
Tenure		-0.025* (-2.020)	
Lifetime Employment			-0.050 (-0.390)
Stable Court	0.242** (3.550)	0.220** (3.240)	0.237** (3.520)
Number of Active Judges on Bench	0.019 (0.940)	0.039* (2.010)	0.024 (1.310)
No Mandatory Retirement	-0.302** (-4.200)	-0.346** (-4.890)	-0.329** (-4.670)
Long-Term Clerk	-0.116* (-2.140)	-0.093+ (-1.820)	-0.103* (-1.960)
Number of Clerks Per Judge	0.052 (1.090)	0.058 (1.240)	0.077 (1.590)
Law Clerk Opportunity Cost	-0.009** (4.190)	-0.009** (4.270)	-0.009** (4.770)

Chief Judge	-0.167** (-2.670)	-0.176** (-2.750)	-0.164* (-2.600)
Court Experience	0.013** (2.650)	0.014** (2.890)	0.013** (2.620)
Post-Law School Experience	0.008 (1.250)	0.008 (1.160)	0.008 (1.150)
Retirement Close	-0.283** (-4.710)	-0.278** (-4.550)	-0.274** (-4.410)
Age	0.003 (0.410)	0.004 (0.550)	0.004 (0.560)
Gender	0.011 (0.190)	0.009 (0.160)	0.005 (0.080)
Private Practice	-0.094 (-1.320)	-0.088 (-1.240)	-0.084 (-1.180)
Election Spending	-0.006 (-0.080)	0.005 (0.070)	0.003 (0.050)
ln(Number of Trial Cases in the State)	-0.021 (-0.400)	-0.045 (-0.890)	-0.054 (-1.070)
Intermediate Appellate Court	0.054 (0.430)	0.072 (0.570)	0.085 (0.690)
Citizen Ideology	-0.003 (-1.020)	-0.005* (-2.010)	-0.004 (-1.610)
Mandatory Civil Jurisdiction	0.354* (2.230)	0.578** (5.090)	0.561** (4.780)
Mandatory Criminal Jurisdiction	-0.028 (-0.130)	-0.342* (-2.420)	-0.347* (-2.410)
Mandatory Publication	0.160* (2.460)	0.135* (1.990)	0.190** (3.060)
Constant	14.341** (6.960)	16.351** (9.360)	16.632** (9.250)
Year Fixed Effects	Yes	Yes	Yes
State Controls	Yes	Yes	Yes
N	886	886	886
Adj. R2	0.2188	0.2192	0.2149

The t-statistics (in parentheses) are calculated using Huber-White robust standard errors. Variable definitions are in the Appendix.

+ Coefficient significant at the 10% level or less.

\* Coefficient significant at the 5% level or less.

\*\* Coefficient significant at less than the 1% level.

For Model 1, we see that the coefficients on the associate justice and partner salary variables are not significant. For Models 2 and 3, the coefficients are significant for the associate justice salary variable, but not for the law firm partner opportunity cost measure.<sup>80</sup> Higher judicial salaries correlate with greater productivity (opinions written) in two of the models. But the magnitude of the effect is small. For a \$10,000 increase in salary, under Models 2 and 3, effort increases by 7% and 6% respectively. The mean level of opinion production for judges in our sample was 62 opinions per year. For the mean judge, \$10,000 more in compensation corresponds to an increase of 4.3 and 3.7 more opinions per year for Models 2 and 3. We see, however, that greater job security does not correlate with higher productivity; the Tenure and Lifetime Employment measures (Models 2 and 3) correlate with lower productivity, although only the coefficient on Tenure is significant.<sup>81</sup>

There are other variables with larger coefficients – important information for those who seek to increase judicial effort. The type of selection system matters. Election Partisan, Election Non-Partisan, and Merit selection states have more productive judges compared with states that use Appointment systems.<sup>82</sup> The presence of a stable court also correlates with greater productivity. However, the lack of a mandatory retirement age correlates with lower effort. This may be because courts without a mandatory retirement age have older judges who are unable to exert as much effort. The coefficient on the Age variable, however, is not significantly different from zero.<sup>83</sup> Perhaps there is a screening effect resulting from the lack of mandatory retirement. The types of individuals attracted

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<sup>80</sup> Unreported, when we use an opportunity variable calculated as the difference between Partner Salary minus Judge Salary, the coefficient is not significant.

<sup>81</sup> The regression models in Table 3 utilize indicator variables for mandatory civil jurisdiction and mandatory criminal jurisdiction to control for workload differences among the states. We lack data for these variables for all our states. As a robustness test, we omit mandatory civil jurisdiction and mandatory criminal jurisdiction from the models in Table 3 and re-run our tests. Not reported, we obtained qualitatively the same results. Higher associate justice salaries correlate with increased productivity (now significant at the 10% level in Model 1 and <1% level in Model 2. While the coefficient on associate justice salary is positive in Model 3, the coefficient is not significantly different from zero.

As another robustness test, we replace  $\ln(\text{Total Opinions})$  with the log of the total number of pages written yearly for our sample judges ( $\ln(\text{Total Pages})$ ). Using this alternative specification, we obtain qualitatively the same results as in Table 3. Higher associated justice salary correlates with more pages written only in Models 2 and 3. Election Partisan, Election Non-Partisan, and Merit state judges produce more total pages than Appointed judges.

<sup>82</sup> See Choi, Gulati, and Posner, *supra* note \_\_\_.

<sup>83</sup> Nor is the variable for gender.

to a job that does not require mandatory retirement are different from (and less inclined to exert effort than) those attracted to a job with mandatory retirement.

The results for the clerkship variables are more surprising. Having long-term clerks correlates with lower effort. Surely, long term clerks are better at their jobs than short term ones (who usually have only just graduated from law school). If so, it is likely that there is a selection effect at play here as well. Perhaps judges who use long term clerks are inherently less productive (that is why they are attracted to the job that provides better assistance) and that this lack of judge productivity is driving the negative correlation. Interesting, also, is that the number of clerks does not correlate with productivity. Again, it seems uncontroversial that more clerks can do more work than fewer clerks. So, the lack of correlation here might again be telling us something about selection effects. Finally, law clerk opportunity costs, show up in all three models as negatively correlated with effort (significant at the <1% level). The higher the cost of becoming a law clerk, perhaps the lower the skill level of the clerks who apply for the job. But, as we see later, this logic does not hold up with the quality variable.

Recall that our model of judicial compensation implies that salary should matter most when judges can lose their jobs. To investigate this possibility, we see whether the effect of judicial salary on productivity varies according to the type of selection system, length of tenure, and the presence of lifetime employment. Table 4 reports the data.

**Table 4 Total Number of Opinions (Yearly) and Judge Selection and Retention**

	Adj.	Assoc.	Adj.	Assoc.	p-value
	Justice	Salary	Justice	Salary	
	Less	than	or	Greater	than
	Equal to	Median	Median		
<b>Election Partisan</b>	68.6		97.9		0.001
<b>Election Non-Partisan</b>	72.6		88.5		0.013
<b>Merit</b>	67.3		69.2		0.612
<b>Appointed</b>	65.2		50.7		0.000

	Adj.	Assoc.	Adj.	Assoc.	p-value
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		Justice Less than Equal to Median	Salary or	Justice Greater Median	Salary than	
<b>Tenure</b>	<b>Less than or</b>	68.7		82.2		0.001
	<b>Equal to Median</b>					
<b>Tenure</b>	<b>Greater than</b>	68.3		74.3		0.128
	<b>Median</b>					

	Adj. Justice Less than Equal to Median	Assoc. Salary or	Adj. Justice Greater Median	Assoc. Salary than	p-value
<b>Not Lifetime Employment</b>	69.2		80.0		0.000
<b>Lifetime Employment</b>	62.7		40.9		0.000

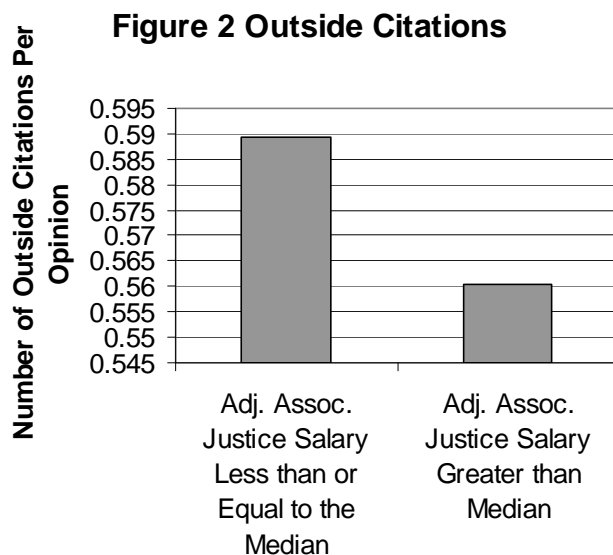
Elected judges, judges with shorter tenure, and judges who do not enjoy lifetime employment work harder when salary is higher—exactly what our model suggests. Judges behave like the rest of us – they exert more effort when they have more to lose and when their bosses (as opposed to their agents who may care about other things) are watching.

To provide a multivariate test of the mean comparison tests of Table 4, we replace the Adjusted Associate Justice Salary variable with an indicator variable for salaries greater than the median Adjusted Associate Justice Salary (Big Salary). We also add interaction terms between the method of judge selection (Election Partisan, Election Non-Partisan, and Merit) and Big Salary to Model 1 of Table 3. We similarly add Big Salary and interaction terms between Big Salary and the Tenure and Lifetime Employment variables to Models 2 and 3 of Table 3. Unreported, these multivariate tests provide similar qualitative results as the mean comparisons in Table 4. The relationship of salary with effort varies with the particular judicial selection and retention system. Only where judges face competitive pressure (either through initial selection in an election or merit selection state or a shorter tenure or non-lifetime employment state) does salary correlate

significantly with increased effort. In Appointed states, in contrast, a greater than median salary correlates significantly with diminished productivity.

### E. Quality

The number of outside state citations per opinion is our measure of opinion quality. We define outside state citations per opinion to include outside federal court citations (including U.S. Supreme Court citations) and outside state court citations. We measure the number of outside state citations using the Lexis Shepard's service up until January 1, 2007. Figure 1 compares mean outside citations for judges paid more and less than the median salary. Judges paid less generate more citations than those paid more. The t-test of the difference is not significant, but at this stage it does not appear that higher salaries are inducing higher quality opinions.



What about other factors? The following model using ordinary least squares and robust standard errors is estimated (with standard errors are clustered at the judge level).

$$\ln(\text{Outside State Citations}_i) = \alpha + \beta_{1i}\text{Adj. Assoc. Justice Salary} + \beta_{2i}\text{Adj. Partner Salary} + \beta_{3i}\text{Election\_Non-Partisan} + \beta_{4i}\text{Election\_Partisan} + \beta_{5i}\text{Merit\_Plan} + \beta_{6i}\text{Number Dissents} + \beta_{7i}\text{West Key Pages}$$

$$\begin{aligned}
& + \beta_{8i} \text{Opinion Length} + \sum \beta_{ji} \text{Subject Matter}_{ji} \\
& + \sum \beta_{ki} \text{Judge Environment}_{ji} + \sum \beta_{li} \text{Judge Characteristics}_{ki} \\
& + \sum \beta_{mi} \text{Court Characteristics}_{ki} + \sum \beta_{ni} \text{State Controls}_{ji} \\
& + \text{Year Effects} + \varepsilon_i
\end{aligned}$$

The model relates the number of outside state citations (Outside State Citations) for any specific majority opinion with measures for salary and opportunity costs.

Because this model is estimated at the opinion level, it includes Opinion Characteristic controls. These include the number of dissents written against the majority opinion in question (Number of Dissents). A majority opinion with one or more dissents may deal with more novel issues of law and generate more citations as a result. The model includes the number of west key pages (West Key Pages) as a rough measure of the topical importance of the opinion.<sup>84</sup> Similarly the model includes the length of the opinion (Opinion Length); longer opinions are more likely to contain analysis that other judges may cite compared with shorter opinions, all other things being equal. To control for the disproportionate effect that cases in certain subjects might have (and some states may receive more of these), we include subject matter fixed effects for twelve different subject matter categories, including Administrative, Attorney and Client, Capital Punishment, Church and State, Commercial, Criminal, Family, First Amendment, Labor, Property, Rights, and Torts.<sup>85</sup> The category of Other opinions is the baseline.

Judge Environment, Judge Characteristic, Court Characteristic, and State Control variables are used. Because we count citations up until January 1, 2007, precisely when a judge retires is important. A judge who retires in 2000 may find his influence wane immediately after retirement, leading to fewer citations of his opinions by 2002. In contrast, a judge who retires in 2004 may not see as a great a reduction in citations in our

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<sup>84</sup> An issue with using this variable is that it may dampen the effect that we are trying to measure, since both the left and right hand side now have variables that measure opinion quality. What we are trying to separate out though is the effect of judge quality from the effect of having hit a number of important topics (or having had the luck to get a case that raises numerous important issues first). And the West Key Note variable is aimed at doing that.

<sup>85</sup> The subject matter controls are chosen as a function of the subjects that are often suggested in the literature as being most salient to judges, both on the state and federal courts. *Cf.* Choi & Gulati, *Bias in Judicial Citations*, *supra* note \_\_ (estimating an exogenous measure of importance on the state courts); see also Aman Mcleod, *Judicial Performance Review: A Balance Between Judicial Accountability and Public Accountability*, 34 *FORD. URBAN L. J.* 343 (2007) (discussing the importance of criminal decisions at the state level – where judges are evaluated on the basis of their decisions in this area); Anthony Champagne, *Tort Reform and Judicial Selection*, 38 *LOY. L.A. L. REV.* 1483 (2005) (describing the importance to tort issues at the state court level).

count until January 1, 2007. To control for this possibility, instead of a single Retirement Close variable, we use a set of more specific indicators for whether retirement occurred prior to 2000 or in 2001, 2002, 2003, 2004, or 2005. Year fixed effects are also estimated.

Model 1 of Table 5 reports results. As before, two variations on Model 1 are also reported, replacing the selection method for judges with the average tenure of judges in a particular state (Tenure) and an indicator for whether the state uses lifetime employment (Lifetime Employment).

**Table 5: Quality/Citations**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 2</b>
<b>Dependent Variable</b>	ln(Outside Citations)	ln(Outside Citations)	ln(Outside Citations)
<b>Independent Variables</b>			
Adjusted Associate Justice Salary	0.001 <sup>+</sup> (1.920)	0.001 (1.010)	0.001 (0.800)
Adjusted Partner Salary	0.000 (0.190)	0.000 (-0.790)	0.000 (-0.800)
Election Partisan	-0.049 (-1.370)		
Election Non-Partisan	-0.028 (-1.090)		
Merit Plan	-0.089 <sup>**</sup> (-3.110)		
Tenure		-0.001 (-0.400)	
Lifetime Employment			-0.011 (-0.390)
Stable Court	-0.044 <sup>*</sup> (-2.380)	-0.038 <sup>*</sup> (-1.990)	-0.037 <sup>*</sup> (-2.020)
Number of Active Judges on Bench	-0.018 <sup>**</sup> (-3.250)	-0.013 <sup>*</sup> (-2.180)	-0.014 <sup>*</sup> (-2.500)
No Mandatory Retirement	0.028 (1.620)	0.034 <sup>+</sup> (1.910)	0.034 <sup>+</sup> (1.890)
Long-Term Clerk	-0.076 <sup>**</sup> (-4.250)	-0.067 <sup>**</sup> (-3.910)	-0.068 <sup>**</sup> (-3.970)
Number of Clerks Per Judge	-0.020 (-1.540)	-0.019 (-1.420)	-0.017 (-1.210)
Law Clerk Opportunity Cost	0.002 <sup>**</sup>	0.002 <sup>**</sup>	0.002 <sup>**</sup>

	(5.490)	(5.030)	(5.250)
Constant	-3.166** (-5.690)	-3.465** (-7.360)	-3.471** (-7.420)
Year Fixed Effects	Yes	Yes	Yes
Opinion Characteristic Controls	Yes	Yes	Yes
Judge Characteristic Controls	Yes	Yes	Yes
Court Characteristic Controls	Yes	Yes	Yes
State Controls	Yes	Yes	Yes
N	16825	16825	16825
R2	0.1326	0.1314	0.1314

The t-statistics (in parentheses) are calculated using Huber-White robust standard errors and clustered on each judge. Variable definitions are in the Appendix.

<sup>+</sup> Coefficient significant at the 10% level or less.

<sup>\*</sup> Coefficient significant at the 5% level or less.

<sup>\*\*</sup> Coefficient significant at less than the 1% level.

The coefficients on both the salary and opportunity cost measures are small and statistically insignificant (except for the coefficient on salary in Model 1 which is significant at the 10% level). Even for Model 1, a \$10,000 increase in salary correlates with only a 1% increase in the number of outside state citations per opinion. Salary does not appear to make a difference in determining quality.

As with effort, other factors correspond to more significant changes in the number of citations. Judges in Merit Plan states have lower levels of outside state citations (corresponding to 8.9% fewer citations compared with Appointed judge states respectively in Model 1). Judges from stable courts produce opinions that receive 4.4% fewer outside state citations and the number of active judges also have fewer outside state citations in Model 1 (with similar results in Models 2 and 3). Shorter-term clerks correlate with 7.6% greater outside state citations per opinion compared with long-term clerks in Model 1 (with similar results in Models 2 and 3). Judges with shorter-term clerks not only produce more opinions (as reported in Table 3 above), they produce opinions of higher quality. Surprisingly, the opportunity cost of being a clerk shows up with a positive coefficient. Perhaps there is an inverse correlation between the quality of life at a job at a law firm and the salary that the law firm pays (with the biggest cities obviously paying more and having jobs that are more unpleasant). But it is puzzling that

the sign on the coefficient is positive for the quality analysis and was negative for the effort analysis.<sup>86</sup>

Table 6 compares the mean number of outside state citations per opinion for judges who make less than or equal to the median salary and for judges who make greater than the median salary. This comparison is made for (a) the different selection mechanisms for judges, (b) states where judges have less than or equal to the median tenure versus states with judges with greater than the median tenure, and (c) states with lifetime employment for judges versus states without lifetime employment.

**Table 6: Outside Citation/Quality Comparison**

	<b>Adj.</b>	<b>Assoc.</b>	<b>Adj.</b>	<b>Assoc.</b>	<b>p-value</b>
	<b>Justice</b>	<b>Salary</b>	<b>Justice</b>	<b>Salary</b>	
	<b>Less than</b>	<b>or</b>	<b>Greater</b>	<b>than</b>	
	<b>Equal to Median</b>		<b>Median</b>		
<b>Election Partisan</b>	0.538		0.382		0.000
<b>Election Non-Partisan</b>	0.603		0.466		0.000
<b>Merit</b>	0.584		0.664		0.036
<b>Appointed</b>	0.614		0.990		0.000

	<b>Adj.</b>	<b>Assoc.</b>	<b>Adj.</b>	<b>Assoc.</b>	<b>p-value</b>
	<b>Justice</b>	<b>Salary</b>	<b>Justice</b>	<b>Salary</b>	
	<b>Less than</b>	<b>or</b>	<b>Greater</b>	<b>than</b>	
	<b>Equal to Median</b>		<b>Median</b>		
<b>Tenure Less than or</b>	0.644		0.507		0.000
<b>Equal to Median</b>					

<sup>86</sup> The regression models in Table 5 utilize indicator variables for mandatory civil jurisdiction and mandatory criminal jurisdiction to control for workload differences among the states. We lack data for these variables for all our states. As a robustness test, we omit mandatory civil jurisdiction and mandatory criminal jurisdiction from the models in Table 3 and re-run our tests. Not reported, we obtained qualitatively the same results. The coefficient on associate justice salary is not insignificant in all three models. Higher associate justice salaries do not correlate significantly with more outside circuit citations.

As another robustness test, we replace  $\ln(\text{Outside Citations})$  with the log of one plus the number of law review citations to an opinion ( $\ln(1+\text{Law Review Citations})$ ) in the models of Table 5. Using this alternative specification, we obtain a stronger relationship between salary and law review citations compared with Table 5. Higher associated justice salary correlates with significantly more law review citations. Election Partisan, Election Non-Partisan, and Merit state judges produce opinions that receive significantly fewer law review citations than Appointed judges.

	Adj.	Assoc.	Adj.	Assoc.	p-value
	Justice	Salary	Justice	Salary	
	Less than	or	Greater	than	
	Equal to Median		Median		
<b>Tenure Greater than Median</b>	0.525		0.625		0.001
<b>Not Lifetime Employment</b>	0.580		0.539		0.052
<b>Lifetime Employment</b>	0.672		1.264		0.000

Greater compensation correlates with fewer citations for Election Partisan and Election Non-Partisan states. In contrast, greater compensation correlates with *more* citations for Appointed judge states. Similarly, greater compensation correlates with fewer citations only for judges with relatively shorter tenures (for judges with longer tenure, more pay correlates with more citations). Higher salary also correlates with fewer citations for judges from non-lifetime employment states and increased citations for lifetime employment states. In sum, the pressure of having to seek re-election (or re-appointment) seems to lead to lower opinion quality where judges have more salary at stake. While judges exert more effort in such situations, greater levels of salary at stake lead to lower opinions quality. Maybe judges who face the risk of job loss focus their energies on the metrics of performance (number of opinions authored) that are easily observed by those deciding whether to hire or fire them (the populace, in an election state). Less observable measures, such as the quality of opinions are ignored – except by those who do not have to please the voters. This pattern is consistent with the multitasking theory, which predicts that agents will exert effort with respect to measurable types of performance and shirk with respect to other types of performance.<sup>87</sup>

To provide a multivariate test of the mean comparison tests of Table 6, we replace the Adjusted Associate Justice Salary variable with an indicator variable for salaries greater than the median Adjusted Associate Justice Salary (Big Salary). We also add

<sup>87</sup> See supra note \_\_.

interaction terms between the method of judge selection (Election Partisan, Election Non-Partisan, and Merit) and Big Salary to Model 1 of Table 5. We similarly add Big Salary and interaction terms between Big Salary and the Tenure and Lifetime Employment variables to Models 2 and 3 of Table 5. Unreported, these additional multivariate tests provide similar qualitative results to those of our mean comparisons in Table 6. Higher salary correlates with more outside state citations in Appointed states. In Election and Merit selection states, however, the incremental effect of higher salary on outside state citations is positive but much reduced. In Partisan Election states, the effect of higher judicial salaries on the number of outside state citations is negative but not significantly different from zero. The relationship of salary with outside state citations per opinion varies with the particular judicial selection system. Where judges face competition for their jobs (proxied by partisan elections), increased salary does not correlate with a more citations per opinion. If anything, higher salary results in a low quality product.

In contrast, we find in our multivariate tests that neither tenure nor lifetime employment is correlated with the number of outside state citations. Moreover, while high salary correlates with greater outside state citations in the tenure and lifetime employment models, the interactions between higher salary and tenure and lifetime employment are not significantly different from zero. In sum, employment conditions appear to matter in determining whether salary makes a difference in judicial quality—although the precise relationship between higher salaries and increase opinion quality is not straightforward (and may turn negative for certain regimes including in particular states where judges are elected) and is not robust.

## **F. Independence**

We use a regression model to examine the relationship between our Independence measure and the judicial salary and opportunity cost measures. The following equation on pooled data from 1998 to 2000 is estimated using an ordinary least squares model with robust standard errors:

$$\begin{aligned} \text{Independence}_i = & \alpha + \beta_1 \text{Adj. Assoc. Justice Salary} + \beta_2 \text{Adj. Partner Salary} \\ & + \beta_3 \text{Election\_Non-Partisan} + \beta_4 \text{Election\_Partisan} \\ & + \beta_5 \text{Merit\_Plan} + \sum \beta_{ji} \text{Subject Matter}_{ji} \end{aligned}$$

$$\begin{aligned}
& + \sum \beta_{ki} \text{Judge Environment}_{ji} + \sum \beta_{ji} \text{Judge Characteristics}_{ki} \\
& + \sum \beta_{mi} \text{Court Characteristics}_{ki} + \sum \beta_{ni} \text{State Controls}_{ji} \\
& + \text{Year Effects} + \varepsilon_i
\end{aligned}$$

Pooled versions of the Judge Environment, Judge Characteristic, Court Characteristic, and State Control variables are used as controls in the model. As a control for subject matter composition of the pool, the number of majority opinions that deal with the subject matter divided by the number of majority opinions for the state in the 1998 to 2000 time period is used. Table 7 reports on three models. Two new variables are added. The first, Opensecrets, is an indicator variable defined as 1 if the judge in question contributed money to a political candidate as tracked by the opensecrets.org website. Those who contribute their own personal resources to the political campaigns of others are likely more partisan in their political beliefs. The second, number of dissents, is defined as the total number of dissents the judge in question authored during the 1998 to 2000 time period. Number of dissents controls for the possibility that high levels of dissenting behavior generally might correlate with independence.

**Table 7: Independence**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 2</b>	<b>Model 2</b>
<b>Dependent Variable</b>	Independence	Independence	Independence	Indep01
<b>Independent Variables</b>				
Adjusted Associate Justice Salary	0.001 (0.460)	0.004 (1.390)	0.004 (1.440)	-0.043 (-1.340)
Adjusted Partner Salary	0.002** (2.810)	0.002** (2.800)	0.001* (2.180)	0.026** (3.000)
Election Partisan	0.232 (1.650)			3.638+ (1.670)
Election Non-Partisan	0.047 (0.440)			0.939 (0.620)
Merit Plan	0.055 (0.480)			1.178 (0.710)
Tenure		0.010 (0.900)		
Lifetime Employment			0.103 (1.070)	

Number of Dissents Authored	0.002 (1.400)	0.002* (2.120)	0.002* (2.150)	0.006 (0.240)
Opensecrets	-0.015 (-0.550)	-0.018 (-0.640)	-0.021 (-0.750)	-0.175 (-0.480)
Stable Court	0.009 (0.160)	0.042 (0.720)	0.032 (0.580)	-0.794 (-0.910)
Number of Active Judges on Bench	-0.009 (-0.570)	0.015 (0.970)	0.017 (1.050)	-0.310 (-1.190)
No Mandatory Retirement	-0.037 (-0.690)	-0.017 (-0.290)	-0.008 (-0.140)	-0.058 (-0.090)
Long-Term Clerk	-0.082 <sup>+</sup> (-1.750)	-0.079 (-1.640)	-0.063 (-1.350)	-0.250 (-0.410)
Number of Clerks Per Judge	0.105** (3.290)	0.118** (3.400)	0.094** (2.780)	0.359 (0.850)
Law Clerk Opportunity Cost	-0.001 (-0.780)	-0.001 (-0.360)	-0.001 (-0.560)	-0.028 (-1.290)
Constant	2.016 (0.950)	3.488 <sup>+</sup> (1.670)	2.073 (0.920)	49.942 <sup>+</sup> (1.770)
Year Fixed Effects	Yes	Yes	Yes	Yes
Judge Characteristic Controls	Yes	Yes	Yes	Yes
Court Characteristic Controls	Yes	Yes	Yes	Yes
State Controls	Yes	Yes	Yes	Yes
N	280	280	280	280
Adj R2	0.1385	0.1211	0.1219	0.2018

The t-statistics (in parentheses) are calculated using Huber-White robust standard errors. Variable definitions are in the Appendix. The logit model for the INDEP01 binary dependent variable reports the Pseudo R2 instead of the Adjusted R2.

<sup>+</sup> Coefficient significant at the 10% level or less.

<sup>\*</sup> Coefficient significant at the 5% level or less.

<sup>\*\*</sup> Coefficient significant at less than the 1% level.

Table 7 does not support the view that higher salaries lead to more independent judges. In the three models, the coefficients on salary are all insignificant. The opportunity cost measure (Adjusted Partner Salary) is significant and positive, suggesting that judges who give up *more* might be more independent. But the small coefficient suggests that the magnitude of the effect is not large.

We re-estimate Model 1 using a logit model with the use of Indep01 as the dependent variable, defined to equal 1 if Independence is greater or equal to 0 and 0 otherwise. Indep01 is less vulnerable to the critique that the range of our Independence

measure may vary based on the underlying political composition of a high court. In contrast, the *Indep01* provides less information than our Independence measure, treating all judges with a positive or zero Independence score as the same (and likewise for all judges with a negative Independence score). Model 4 reports that with *Indep01* as the dependent variable, greater judicial salary correlates with *decreased* independence. We therefore find no evidence that higher salaries helps improve independence.<sup>88</sup>

Table 8 compares the mean number of outside state citations per opinion for judges who make less than or equal to the median salary and for judges who make greater than the median salary. This comparison is made for (a) the different selection mechanisms for judges, (b) states where judges have less than or equal to the median tenure versus states with judges with greater than the median tenure, and (c) states with lifetime employment for judges versus states without lifetime employment.

**Table 8: Independence Summary Statistics**

	Adj. Justice Less than or Equal to Median	Assoc. Salary or Greater than Median	Adj. Justice Greater than Median	Assoc. Salary than	p-value
<b>Election Partisan</b>	-0.045		-0.003		0.117
<b>Election Non-Partisan</b>	-0.029		-0.101		0.107
<b>Merit</b>	-0.018		-0.037		0.484
<b>Appointed</b>	-0.035		-0.015		0.719

<sup>88</sup> The regression models in Table 7 utilize indicator variables for mandatory civil jurisdiction and mandatory criminal jurisdiction to control for workload differences among the states. We lack data for these variables for all our states. As a robustness test, we omit mandatory civil jurisdiction and mandatory criminal jurisdiction from the models in Table 7 and re-run our tests. Not reported, we obtained qualitatively the same results. Higher associate justice salaries do not correlate with changes in the Independence measure for our sample judges.

	<b>Adj.</b>	<b>Assoc.</b>	<b>Adj.</b>	<b>Assoc.</b>	<b>p-value</b>
	<b>Justice</b>	<b>Salary</b>	<b>Justice</b>	<b>Salary</b>	
	<b>Less than</b>	<b>or</b>	<b>Greater</b>	<b>than</b>	
	<b>Equal to Median</b>		<b>Median</b>		
<b>Tenure Less than or Equal to Median</b>	-0.029		-0.024		0.822
<b>Tenure Greater than Median</b>	-0.029		-0.050		0.456

	<b>Adj.</b>	<b>Assoc.</b>	<b>Adj.</b>	<b>Assoc.</b>	<b>p-value</b>
	<b>Justice</b>	<b>Salary</b>	<b>Justice</b>	<b>Salary</b>	
	<b>Less than</b>	<b>or</b>	<b>Greater</b>	<b>than</b>	
	<b>Equal to Median</b>		<b>Median</b>		
<b>Not Lifetime Employment</b>	-0.037		-0.037		0.985
<b>Lifetime Employment</b>	0.050		-0.038		0.234

Greater compensation does not correlate with a difference in independence levels for any of the different systems of selecting judges. Similarly, greater compensation does not correlate with independence regardless of a judge’s tenure. Higher salary does not correlate with greater independence for judges from non-lifetime or lifetime employment states. If anything, judges with lower than median salaries from lifetime employment states are more independent (although the difference is not statistically significant). As a robustness check, we redo the mean comparisons in Table 8 using the INDEP01 binary form of our independence measure. Unreported, we again find no differences in independence level.

To provide a multivariate test of the mean comparison tests of Table 8, we replace the Adjusted Associate Justice Salary variable with an indicator variable for salaries greater than the median Adjusted Associate Justice Salary (Big Salary). We also add interaction terms between the method of judge selection (Election Partisan, Election Non-Partisan, and Merit) and Big Salary to Model 1 of Table 7. We similarly add Big Salary and interaction terms between Big Salary and the Tenure and Lifetime Employment variables to Models 2 and 3 of Table 7. Unreported, these additional multivariate tests

provide similar qualitative results as our mean comparisons in Table 8. The relationship of salary with our Independence measure does not vary with the particular judicial selection or retention system.

## V. Conclusion

Our results defy easy description. By the same token they demonstrate that the debate about judicial salaries reflects an excessively simple picture of the judicial market.

At the level of theory, the claim that increasing the salaries of judges will improve judicial output, while holding the other aspects of the judges' position constant, has little support. Higher salaries should not improve the incentives of judges unless judges can be fired or otherwise punished for inadequate performance—which they often cannot. Higher salaries might increase the pool of people willing to be judges, but they also might encourage people who lack a judicial temperament to enter that pool, and give politicians better incentives to offer patronage rather than to appoint good judges. Further, it is a mistake to look at salaries in isolation from the other elements of judicial compensation—benefits, job security (for federal and some state judges), prestige, and power—and the general legal and political environment (type of selection system, political competition, caseload, assistance from clerks and staff). Comparisons of the salaries of judges and law firm associates are for this reason likely to be misleading. Finally, when high-quality people become judges, they must leave the private sector, vacating jobs where they may have a relatively high value compared with their value as judges. Judges should be paid their marginal social benefit, and not more, but no one knows whether their marginal social benefit is higher or lower than their current salary.

The empirical results do not provide much support for the salary advocates. Let us focus on the epicenter of the debate—the federal judiciary, where judges are appointed and have life tenure. If our empirical results carry over from the state courts to the federal judiciary, we would predict that increasing the salary of federal judges will not increase their productivity or independence. It *might* increase the quality of their opinions. The most plausible mechanism for this effect is that of selection: higher quality people would be willing to serve, and the appointment system, which involves both the president and

the senate, screens out low-quality candidates.<sup>89</sup> However, given the lack of robustness of our findings, such a conclusion is premature.

Thus, the case for increasing the salaries of federal judges is not particularly strong. Even if increasing salary increases the quality of opinions, we would still need to know whether the social value of this extra quality is worth the price. Proponents of salary increases need to show that this is true. In addition, as we have seen, there may be better ways of improving the quality of judges—for example, by restricting judges to the use of short-term clerks. Or it might be better to have more low-paid judges than to have fewer highly paid judges. Much more work needs to be done before the relationship between salary and judicial quality is understood.

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<sup>89</sup> See Rene Lindstadt, Jeffrey A. Segal, & Chad Westerland, *The Changing Dynamics of Senate Voting on Supreme Court Nominees*, 68 J. POL. 296 (2006), which finds that candidates with weaker qualifications are less likely to be confirmed by the senate than candidates with stronger qualifications.

**APPENDIX**  
**General Variable Definitions**

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Variable	Definition
Adjusted Associate Justice Salary	For year-level data, the associate justice salary reported in the prior year for the state (so 1997 for 1998 judge-level data) divided by a cost of living adjustment for the year in question measured for the metro area in which the high court of the state is located. For pooled data, the associate justice salary reported in 1997 divided by the cost of living adjustment for 1998.
Adjusted Partner Salary	For year-level data, the average partner salary reported for the year in question for the state divided by a cost of living adjustment for the year in question measured for the metro area in which the high court of the state is located. For pooled data, the average partner salary in 1998 divided by the cost of living adjustment for 1998.
Total Opinions	Total number of majority, concurring, and dissenting opinions authored by a particular judge in one year (ranging from 1998 to 2000)
Outside State Citations	Total number of citations from federal courts outside the circuit that includes the state in question and from courts in other states. Citations are measured in opinions authored up until January 1, 2007 (as tracked in the LEXIS Shepard's database).
Opposite_Party	The total number of opposing opinions written against an opposite party judge divided by the total number of opposing opinions written against either a judge of the opposite or same party as the judge in question for the 1998 to 2000 time period. Opposing opinions include dissents written against a majority opinion and majority opinions where a dissenting opinion exists.
Opposite_Pool	Total number of majority opinions written by the high court judges of the opposite political party (from the perspective of the judge in question) divided by the total number of majority opinions written by judges of both the same and opposite parties from 1998 to 2000.
Independence	Defined as Opposite_Pool minus Opposite_Party. A more negative Independence score occurs when Opposite_Pool < Opposite Party, indicating an increased tendency to write an opposing opinion against an opposite party judge. Conversely, a more positive Independence score indicates a decreased tendency to write an opposing opinion against an opposite party judge (and a corresponding increased tendency to oppose same party judges).
Election Non-Partisan	Indicator variable equal to 1 if the state uses a non-partisan election to select high court justices and 0 otherwise.
Election Partisan	Indicator variable equal to 1 if the state uses a partisan election to select high court justices and 0 otherwise.

Merit Plan	Indicator variable equal to 1 if the state follows the Missouri Merit Plan or a variant (including the Tennessee Plan) to select High Court justices and 0 otherwise.
Tenure	The average tenure of high court judges for the state in question, measured as of the spring of 1997 (from Hanssen 1999, tble. 1).
Number of Dissents	Number of dissents written against the majority opinion in question.
West Key Pages	Number of pages in an opinion associated with the West key pages section (as provided in the West reporter version of the opinion and tabulated on Westlaw).
Opinion Length	Number of pages from the start of the opinion to the end of the opinion as provided in the West reporter version of the opinion and tabulated on Westlaw. For majority opinions, we measured from where the authoring judge's actual opinion starts to the end of the majority opinion.
Open Secrets	Indicator Variable equal to 1 if the judge authoring the opinion in question has donated to a political candidate and 0 otherwise. Political contributions are tracked by <a href="http://www.opensecrets.org">www.opensecrets.org</a> and include Federal Election Commission records of receipts from all individuals who contribute at least \$200 from 1992 to 2006.

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**APPENDIX**  
**Judge Environment Variable Definitions**

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Variable	Definition
Stable Court	Indicator variable equal to 1 if the state high court justices stayed the same from 1998 to 2000 and 0 otherwise.
Number of Active Judges on Bench	Number of judges who were active at any time from 1998 to 2000 for the state in question.
Long-Term Clerk	Indicator variable equal to 1 if state clerks are tenured for more than one year and 0 if tenure is 1 year or less.
Number of Clerks Per Judge	Average number of clerks per judge in the 1998 to 2000 time period.
Law Clerk Opportunity Cost	The difference between the average salary of an entering associate at law firm in that state and the law clerk salary for the particular state in 1998

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**APPENDIX - continued**  
**Judge Characteristic Variable Definitions**

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Variable	Definition
Chief Judge	For year-level data, indicator variable equal to 1 if the judge in question is the chief judge of the court in the year in question and 0 otherwise. For pooled data, indicator variable equal to 1 if the judge in question is the chief judge of the court for any year from 1998 to 2000 and 0 otherwise.
Court Experience	For year-level data, the difference between the year in question and the year the judge first joined the high court. For pooled data, the difference between 1998 and the year the judge first joined the high court (if the judge started on the court in 1998 or later court experience is set to 0).
Post-Law School Experience	The difference between 1998 and the year the judge graduated law school.
Retirement Close	Indicator variable equal to 1 if the judge in question retired from the bench in 2001 or earlier and 0 otherwise.
Private Practice	Indicator variable equal to 1 if the judge worked in the private sector prior to becoming a judge and 0 otherwise (e.g., the public sector).
Election Spending	Indicator variable equal to 1 if the judge raised campaign funds during the year in question for year level data and 0 otherwise.
Age	The age of the judge in years measured as of 1998 for the pooled data and as of the year in question for year-level data.
Gender	Indicator variable equal to 1 if the judge is female and 0 if the judge is male.
Mandatory Retirement	Indicator variable equal to 1 if the state imposes a mandatory retirement age on its judges and 0 otherwise.

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**APPENDIX - continued**  
**Court Level Variable Definitions**

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Variable	Definition
Number of Trial Cases in the State	Number of trial cases in the entire state in 1998.
Intermediate Appellate Court	Indicator Variable equal to 1 if the opinion is in opposition to the opinion of another judge in the same case and 0 otherwise. In the case of a dissenting opinion written by the judge in question, the opinion is treated as in active opposition to the majority opinion. In the case of a majority opinion by the judge in question, active opposition exists if the majority opinion is opposed by a dissenting opinion.
Mandatory Civil Jurisdiction	Indicator variable equal to 1 if the state requires mandatory jurisdiction for all civil cases and 0 otherwise.
Mandatory Criminal Jurisdiction	Indicator variable equal to 1 if the state requires mandatory jurisdiction for all criminal cases and 0 otherwise.
Mandatory Publication	Indicator variable equal to 1 if the state requires mandatory publication of opinions and 0 otherwise.

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**APPENDIX - continued**  
**State Level Variable Definitions**

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Variable	Definition
Population	For year level data, the population of the state in millions measured in the year prior to the year in question (so the population in 1997 if the data year is 1998). For pooled data, the population of the state in millions measured for 1997.
Gross State Product	Gross State Product (measured as of 1998).
Crime Index	For year level data, overall crime rate for the state (including property and violent crime) per 100,000 population from the FBI Crime Report for the year prior to the year in question. For pooled data, the overall crime rate measured for 1997.
Total Population in Border States	Total population of all bordering states of the state in question (measured as of 1997).
State Age	Age of the state. For year-level data this is defined as the difference between the year in question and the year of admission of the state into the United States. For pooled data, this is defined as the difference between 1998 and the year of admission of the state into the United States.
Citizen Ideology Score	Measure of citizen ideology based on election results in each district, which are then used to compute a statewide average (ultimately based on interest group ratings of a given state's federal congressional delegation) (from Berry et al. 1998).

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**APPENDIX - continued**  
**Subject Matter Categories**

Variable	Definition
Administrative	Review of Agency/Government Decisionmaking (not in another subject matter category). Also includes Government Actions (e.g., State suit to comply with state statute that does not fit in other categories); private actions suing state actors for negligence, etc (unless the case involves prisoner rights which is included in the “Criminal” category of cases).
Attorney and Client	Attorney Misconduct; Attorney fees (unless fits in one of above categories); Disbarment; contempt of court order against attorney
Capital Punishment	Capital Punishment-related actions.
Church and State	Pledge of Allegiance; Funding for Private Religious Schools; Prayer in School; Ten Commandments
Commercial	Contracts; Insurance; Private arbitration; Creditor v. Debtor; Lessor-Lessee; Usury Laws; Franchise v. Franchisor; Employment Contractual Disputes; Corporate Law; Piercing the Corporate Veil; Tax; Bankruptcy; Enforcement of mechanics lien; Implied warrant of merchantability
Criminal	Sentencing Guidelines; Prisoners Rights; Murder; Rape; Drugs/Controlled Substances; Attorney-Client Privilege in Criminal Context; Grand Jury-related; Juvenile Criminals. Excludes Capital Punishment cases.
Family	Divorce; Adoption; Child Support; Probate/Inheritance
First Amendment	Employment issues (excluding employment contractual disputes); ERISA; National Labor Relations Board (NLRB); Occupational Safety and Health Act (OSHA); Fair Labor Standards Act (FLSA); Wrongful Discharge; Labor Management Relations Act (LMRA); Family and Medical Leave Act (FMLA); Employee Benefits; Worker’s Compensation claims; Retaliatory Discharge claims.
Labor	Employment issues (excluding (1) employment contractual disputes that are not Workers Comp or state administrative wage rate related—these go to “Commercial” and (2) excluding discrimination-type claims that fit in “Civil Rights”); ERISA; NLRB; Occupational Safety and Health Act (OSHA); Fair Labor Standards Act (FLSA); Wrongful Discharge; Labor Management Relations Act (LMRA); Family and Medical Leave Act (FMLA); Employee Benefits; Worker’s

	Compensation claims; Retaliatory Discharge claims; State Wage Rate Claims
Property	Takings claims; Zoning issues; Property rights; Property Licensing-Related or Permit-Related; Landlord-Tenant-Related.
Rights	Race Discrimination; Sex Discrimination; Affirmative Action; Civil Rights; Age Discrimination; Privacy; Handicap Discrimination; Abortion (Includes discrimination in employment context cases); Voting Rights-Voting Related
Torts	Federal Tort Related Act; Medical Malpractice; Products Liability; Wrongful Death; Libel; etc.
Other	All other cases.

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