Supplementary Appendixes

"Did the Independence of Judges Reduce Legal Development in England, 1600-1800?"
Peter Murrell

December 23, 2020

Forthcoming, *The Journal of Law and Economics*, 2021

Appendix OA, Part (a): 17th and 18th Century Institutions Affecting Judicial Employment in England. Terms of Appointment.

Relevant institutions, laws, organization	Applicable years	Comments
Appointment terms decided by monarch.	1600-1714	Traditionally, English judges had been appointed *durante bene placito*, but with notable exceptions. See below.
Variations in the terms of appointment	1600-1714	During the late Tudor and early Stuart periods, the judges of the Court of Exchequer were appointed *quamdiu se bene gesserint* (McIlwain 1913: 220). Charles I accepted *quamdiu se bene gesserint* in 1641 (Haynes 1944: 63). Cromwell appointed judges *quamdiu se bene gesserint* (Black 1976; Firth and Rait 1911). Charles II used *quamdiu se bene gesserint* from 1660-1672 (McIlwain 1913; Haynes 1944). William III and Anne used *quamdiu se bene gesserint* 1689-1714.
Parliament requests *quamdiu se bene gesserint*	1640-1701	In 1640, Parliament petitioned Charles I to appoint on good behavior; he agreed, but no legislation was passed (Shetreet and Turenne. 2013). In 1645 after Parliament's civil-war victories, it gave *quamdiu se bene gesserint* appointments to judges in the common-law courts (Black 1986). In both 1674 and 1680, Parliament prepared bills to mandate good behavior appointments, but these did not become law (Prest 1991: 85). Mandatory *quamdiu se bene gesserint* was in the Declaration of Rights but omitted from the Bill of Rights (Horwitz 1977: 366-7). In 1691 and 1696 William refused to sign bills that removed the crown's power over salaries and mandated *quamdiu se bene gesserint*), because influential judges did not deem it appropriate for judges themselves to not be dependent on the monarch and because the bills continued the traditional arrangement of charging judges' salaries to his hereditary revenues (Horwitz 1977: 75-76; Prest 1991: 82, 85; McIlwain 1913: 224).
Appointment on *durante bene placito* forbidden	1714-1800	Act of Settlement 1701, in force 1714: "...judges commissions be made *quamdiu se bene gesserint*…" Two exceptions noted immediately below.
Lord Chancellor appointed *durante bene placito*	1600-1800	The Lord Chancellor's appointment terms were not governed by the Act of Settlement. The Lord Chancellor was head of Chancery and in formal control of all judicial organization.
quamdiu se bene gesserint only for life of monarch	1600-1761	Appointments ended on accession of a new monarch until 1761 (Prest 1991: 82). Reappointment possible but did not always occur.
quamdiu se bene gesserint for life of judge	1761-	An Act promoted by George III. All previous eighteenth century monarchs had refused to renew the terms of some judges on accession—Anne two judges, George I three judges, and George II one judge. See Jay (1997: 20-21); Klerman and Mahoney (2005: 11-12); Haynes (1944: 79).

Appendix OA, Part (b): 17th and 18th Century Institutions Affecting Judicial Employment in England. Removing Judges.

Relevant institutions, laws, organization	Applicable years	Comments
The general record	1600-1800	Before the Act of Settlement became operative, 62% of associate judges and 42% of chief judges had *quamdiu se bene gesserint* appointments. After the Act of Settlement became operative, all high-court judges had secure tenure with the exception of the Lord Chancellor. During the reigns of the Stuart monarchs (before 1714), there were 275 separate judge appointments and in 62 cases (22.5%) judges were removed from office. During the reigns of the Hanoverian monarchs (after 1714), there were 166 separate judge appointments and in 3 cases (1.8%) judges were removed from office. (See Appendix OB for relevant sources.) Under both dynasties, none of the cases of removal from office involved a judge who was under a *quamdiu se bene gesserint* appointment. (See below for two cases, in 1628 and 1672, that might be classified as exceptions.)
Monarch appointing *durante bene placito*	1600-1800	After 1714, this was relevant to only the Lord Chancellor. Appointment on the pleasure of the Crown meant that the king had simply to revoke the patent appointing the judge, and the patentee had no legal recourse.
Monarch appointing *quamdiu se bene gesserint*: removal by monarch in courts	1600-1800	Appointment on good behavior meant that attempts at removal by the Crown acting on its own were governed by common-law precedents and procedures. The only legal route open to the Crown was filing a writ of *scrire facias* to revoke a judge's commission using precedents on what constituted misbehavior (Berger 1970). The decision would be then made by the judges in the relevant court. Conduct unbecoming to the office was the criterion, not the high crimes and misdemeanors of impeachment (see below). This process was largely irrelevant, since even in the seventeenth century when monarchs appointed on *quamdiu se bene gesserint*, they respected its terms. No English high-court judge has ever been removed by this process (Berger 1970). Charles I, in 1628, and Charles II, in 1672 both tried to summarily fire judges without using a court proceeding. In each case, the affected judge insisted on a writ of *scrire facias*. Both cases ended in political, but not judicial, stalemate with the judges retaining their positions for a short time but not allowed to decide on cases (McIlwain 1913).

Appendix OA, Part (b), continued

Relevant institutions, laws, organization	Applicable years	Comments
Monarch appointing either *quamdiu se bene gesserint* or *durante bene placito*: removal by impeachment in Parliament	1600-1800	Impeachment was available to Parliament from that body's earliest times, and it could be used against any judge. It was never used in cases of a simple violation of "good behavior" but instead for high treason and other high crimes and misdemeanors, and therefore was used against judges in only the most extraordinary circumstances (Berger 1970). This was in contrast to the early experience of state legislatures in the U.S. where removal of judges by interventionist legislatures was much more common (Hanssen, 2004). Apart from the time when England was on the threshold of its civil war (1640-42), there were very few cases of the initiation of attempts at impeachment of judges. In 1621, Francis Bacon was convicted by the Lords for what were then commonplace levels of corruption. In 1667, the Commons considered impeachment against a judge, but did not proceed. In 1680, the Commons voted articles of impeachment against two judges, but the Lords refused to convict (Feerick, 1970). In 1701, the Commons voted articles of impeachment against a Lord Chancellor, but the Lords refused to convict (Feerick 1970). In 1725, the Lord Chancellor was impeached and convicted. The Lords were unanimous in their conviction vote, indicating the enormity of the corruption (Bowman 2019).
Monarch appointing *quamdiu se bene gesserint*: removal by joint action of Parliament and monarch	1714-1800	Act of Settlement 1701, in force 1714: " …upon the address of both Houses of Parliament it may be lawful to remove [judges]." Importantly, the King makes the final decision on removal, but the King can do so only after both Houses have requested removal. With such unanimity, a *scire facias* process would not be necessary. The process was intended for violations of good behavior that did not reach the levels required for impeachment (Berger 1970). At that time, an "address" was a standard procedure for Parliament to petition the crown. "But it is well to remember also that this parliamentary joint address was and is a procedure of extreme formality and great solemnity, never resorted to except in matters of national concern…This is no mere resolution of both houses" (McIlwain 1913). Accordingly, this procedure has only resulted in the removal of one judge, in 1830 from the Admiralty Court in Ireland.

Appendix OA, Part (c): 17th and 18th Century Institutions Affecting Judicial Employment in England. Administration and Salaries.

Relevant institutions, laws, organization	Applicable years	Comments
Strong legal profession with large degree of autonomy and a base of power independent of the Crown and Parliament.	1600-1800	The centralized court structure and the Inns of Court provided barristers, and particularly the top judges, with mechanisms to exert informal control over legal-administrative matters. They controlled who became barristers, who were appointed to the upper ranks of barristers (the pool from which judges were selected), who performed daily administrative tasks, and who argued cases in court (Francis 1983: 46, 94). The profession was so opposed to the monarch in the 1620's that Charles I considered excluding lawyers from Parliament but failed (Medley 1902: 455). Attempts at radical legal reforms during the interregnum foundered on the opposition of the legal profession (Francis 1983: 47-48).
Monarch appoints judges	1600-1800	(Or the head of state during the interregnum). Appointees were always from the upper ranks of the barristers.
Lord Chancellor's organizational decisions affect judges	1600-1800	The judges' work conditions were largely under the control of the Lord Chancellor, the monarch's direct employee, who was chosen from the upper ranks of the legal profession. For example, assignment of judges to specific circuits was used as a cudgel. (Wales, instead of Norfolk, was dire.) These tools were used well into the eighteenth century (Cockburn 1972).
Judges' salaries paid out of the monarch's household funds.	1600-1786	At least partially. The measure ending this passed in 1786, as part of a more general statute dividing the monarch's household expenditures from those necessary for government (Rubini 1967: 344). Tarkow (1943: 557) suggests the date was 1761 rather than 1786.
Judges' income dependent on monarch and litigants	1600-??	Judges salaries were purely at the monarch's discretion at the beginning of the Stuart period and were augmented by litigants' fees. A very gradual changing of culture, and some legislation, made the situation very different by the end of the eighteenth century (Prest 1991).
Commons increases judges' salaries	1645	An increase of over 500% that was not reversed, which in an era of somewhat stable long-term price levels (Allen 2001) meant that judges' salaries were kept at more reasonable levels given alternatives (Prest 1991: 83).
Judges salaries to be fixed.	1714-1800	Act of Settlement 1701, in force 1714: "...judges…salaries [to be] ascertained and established". Essentially an endorsement of a practice gradually developed over the previous century and that continued to be developed over the next century.

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Appendix OB: The Data Sets

B.1. Construction of data on the judges

Sainty (1993) is the primary source for the information on judges' years of service in particular positions and their terms of appointment. The information from Sainty (1993) was supplemented and checked using Foss (1848, 1870), Campbell (1846), and Cannadine (2016). Cannadine (2016) was the primary source for the birth and death dates of judges but was supplemented and checked with information from Foss (1848, 1870) and Sainty (1993). Occasionally when birth year was not available, year of baptism was used as a proxy. When neither birth year nor baptismal year was available, the birth year was calculated as 22 years before the date at which the future judge entered one of the Inns of court.

B.2. Construction of dataset on citations

Schmidt (2015) constructed an electronic database of citations reflecting the information in Renton (1900) as digitized by Juta Law (2010). Full information on the process of construction can be found in Schmidt (2015), whose procedures relied almost wholly on text recognition algorithms programmed in Python. The core of the database is a set of records, each linking a citing case in the *English Reports* to a cited case in the *English Reports*, providing the years of both cases and the courts in which each case was decided. Schmidt's database contains 397,164 records with the dates of cited cases available in 391,997 and the dates of citing cases available in 392,054. The database also includes a set of records linking a citing case in the *English Reports* to any statute passed before the citing case occurred, providing the years of both the citing case and the passage of the cited statute.

Because Schmidt (2015)'s analysis focused on the period after the 17th century, most of the missing information in his database is concentrated in the years before 1700, which are crucial for

the present study. To complete the database for the current study, the author filled in the missing dates using three procedures. First, visual inspection of the pertinent pages of the volumes of the *English Reports* provided a large number of dates. Where a number of cases appeared on one page, a randomization procedure was used to pick a case, and therefore a date. Second, using regularities in the correspondence between the pages of volumes and the dates that appeared thereupon, dates could be easily predicted for cases where cited or citing dates were missing. Lastly, for four smaller sets of reports within the *English Reports* no dates were available for cases. For these, a randomization procedure was used to assign dates within the set of years covered by each set of reports. This last step has no relevance for the present study, given that the pertinent volumes covered either before 1600 or a small three-year period in the 19th century. These procedures resulted in a database with 397,164 records each linking the year and court of a citing case to the year and court of a cited case.

B.3. Other variables

The measure of Parliamentary activity is the number of days in which the House of Lords was in session in a year, derived primarily from the Journal of the House of Lords (n.d.). The House of Lords was chosen because the data on the House of Commons are available for fewer relevant years in a consistent fashion. During the interregnum (1649-1659), when the Lords did not exist, Parliamentary activity is measured by the number of days that the Commons was in session, obtained from the Journal of the House of Commons (n.d.). In the Journal of the House of Lords (n.d.) there were no data for the House of Lords for 1794-1800. For these years, the number of days in session was derived from information in History of Parliament Trust (n.d.)

Table OB.1: Summary statistics

	Obs.	Mean	Std. Dev.	Min	Max
Citations to court k in year t made by all courts in all years, the most comprehensive version of $CITE_{kt}$	804	179	324	0	2646
Citations to court k in year t made by courts other than k	804	67	110	0	755
Citations to court k in year t made by court k	804	112	231	0	1978
Citations to court k in year t fewer than 20 years after t	804	48	110	0	939
Citations to court k in year t after 1830	804	45	86	0	623
Secure tenure of chief judge (C_{kt})	804	0.56	0.49	0	1
Mean secure tenure of associate judges (A_{kt})	804	0.79	0.39	0	1
Whole-court secure tenure (W_{kt})	804	0.75	0.44	0	1
Chief judge previous service, years (an element of X_{kt})	804	3.14	4.94	0	23
Mean of Associate-judge previous service, years (an element of X_{kt})	804	1.12	1.99	0	12
Chief judge served on same court (an element of X_{kt})	804	0.12	0.31	0	1
Years in position, chief judge (an element of X_{kt})	804	6.92	5.68	1	32
Mean years in position, associate judges (an element of X_{kt})	804	8.00	4.51	1	25
Mean age in years, associate judges (an element of X_{kt})	804	60.4	6.10	40	81
Mean age in years, chief judge (an element of X_{kt})	804	58.8	8.10	38	82
Same-court citations to statutes of previous 10 years ($statcite_{kt}$)	804	257	311	0	1330
Chief judge life expectancy, years	804	11.95	8.64	0	41
Days Parliament in session, previous decade	804	812	475	0	2494

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Appendix OC: Hiring and Firing and Indications of Important Litigation in the Future

Because the dataset does not conform to that used for the standard treatment-effect analysis, with well-defined pre- and post-treatment periods, a standard pre-treatment-trends analysis is not feasible. But a substitute is possible.

One objection to interpreting the results in Tables 1 and 2 of the paper as capturing causal effects is that the monarch might prefer to give secure tenure to judges who would favor the crown, and that these types of judges would be less likely to produce the decisions that would get highly cited in later years. But to produce bias, given fixed-effects, the application of this preference would have to vary between courts within years in a manner that also varied over years. Such variation would arise in a plausible way if monarchs especially invoked this preference at times and in courts when vital litigation lay in the near future.

Two variables can proxy expectations about the future importance of litigation. The first, $statcite_{kt}$, is defined in the text and reflects the likelihood of crucial impending litigation in court k over statutes passed in the years immediately preceding t. Similarly, since previous litigation can lead to further litigation when past decisions are contested, a second variable, $pastcite_{kt}$, is constructed, capturing the number of citations to cases heard in court k in the five years preceding t. Of course, $statcite_{kt}$ and $pastcite_{kt}$ were not known by the monarch at t, but presumably the importance of the legislation and litigation of the previous few years was approximately known.

Then, if the suspected bias were affecting the results of the paper's Tables 1 and 2, those court-year combinations in which a judge is appointed at the king's pleasure would evidence higher values of $statcite_{kt}$ and $pastcite_{kt}$ than those court-year combinations in which a judge receives secure tenure. There are 397 judge-court-year combinations in which judges were appointed, 235 with secure tenure and 162 without. The appropriate test is on the values of the residuals from

regressions of $statcite_{kt}$ and $pastcite_{kt}$ on fixed-effects. Table OC.1 provides the results. For the mean values of the variables predicting important future litigation, there is no significant difference between court-years in which a judge is appointed at the king's pleasure and court-years in which a judge is awarded secure tenure. The implication of the assumption needed to conclude problematic bias is not supported.

Table OC.1: Decisions on tenure and predictors of future litigation

	mean value for judge-court-years when a judge is appointed at the king's pleasure	mean value for judge-court-years when a judge receives secure tenure	p-value for a test of the hypothesis of no difference
residualized $statcite_{kt}$	-3.14	-10.44	0.631
	(12.90)	(8.96)	
residualized $pastcite_{kt}$	43.35	-27.41	0.292
	(53.58)	(41.65)	

Note: standard-errors in parentheses

There are 997 judge-court-year combinations when associate judges could be legally fired or not renewed. In 208 of these they were either fired or not-renewed, the vast majority of which are simply non-renewals. The test uses the residualized values of $statcite_{kt}$ and $pastcite_{kt}$ and examines whether means of these values are greater for associate-judge-court-year combinations having a firing or non-renewal than for other associate-judge-court-year combinations in which firing or non-renewal of associate judges was legally possible. The results are presented in Table OC.2. The results for both $statcite_{kt}$ and $pastcite_{kt}$ suggest that firing or non-renewal of associate judges is less likely when important litigation is expected. Both sets of results are statistically significant. The data reject the implication of the assumption needed to conclude problematic bias.

Table OC.2: Decisions on firing associate judges and predictors of future litigation

	mean value for judge-court-years when a judge is not fired and is renewed when firing or not renewing is legal	mean value for judge-court-years when a judge is fired or is not renewed and firing or not renewing is legal	p-value for a test of the hypothesis of no difference
residualized $statcite_{kt}$	4.61	-23.72	0.059
	(6.93)	(12.76)	
residualized $pastcite_{kt}$	166.12	-72.59	0.000
	(30.71)	(46.18)	

Note: standard-errors in parentheses

Table OC.3 presents the analogous results for decisions on chief judges. There are 1,341 chief-judge-court-year combinations when chief judges could be legally fired or not renewed.[1] In 195 of these they were either fired or not-renewed, the vast majority of which are simply non-renewals. The test now is the same as before, using the residualized values of $statcite_{kt}$ and $pastcite_{kt}$ and examining whether their mean values are greater for chief-judge-court-year combinations having a firing or non-renewal than for other chief-judge-court-year combinations in which firing or non-renewal was legally possible. The results are presented in Table OC.3. One comparison (for $statcite_{kt}$) suggests that firing or non-renewal was more likely when important litigation was expected, but the other comparison suggests the reverse. Neither are statistically significant. The implication of the assumption needed to conclude problematic bias is not supported by the data.

[1] Judges could be fired if they did not have secure tenure or if a monarch died. Note that the number of judge-court-year combinations is greater than the number of court-year combinations because in years of changeover there would be more than one chief judge, and also because in a few years the chief-judgeship was 'in commission', which meant that there were several chief judges simultaneously.

Table OC.3: Decisions on firing chief judges and predictors of future litigation

	mean value for judge-court-years when a judge is not fired and is renewed, when firing or not renewing is legal	mean value for judge-court-years when a judge is fired or is not renewed, when firing or not renewing is legal	p-value for a test of the hypothesis of no difference
residualized $statcite_{kt}$	-11.93	5.79	0.192
	(5.25)	(11.37)	
residualized $pastcite_{kt}$	82.59	18.74	0.305
	(24.56)	(43.68)	

Note: standard-errors in parentheses.

Appendix OD: Instrumental variable estimates

Table OD.1: First stage results for instrumental-variable estimates of the effects of chief- and associate-judge secure tenure on citations

	(1) 1000×Secure tenure of chief judge	(2) 1000×Secure tenure of associate judges
Life expectancy, chief judge	-9.84***	-2.96**
	(-6.79)	(-2.60)
Days Parliament in session previous decade × King's Bench dummy variable	0.23*	0.53***
	(2.57)	(9.06)
Days Parliament in session previous decade × Common Pleas dummy variable	0.34***	0.61***
	(3.88)	(10.44)
Days Parliament in session previous decade × Exchequer dummy variable	-0.02	0.30***
	(-0.31)	(5.93)
Chief judge previous service, years	-2.60	2.02
	(-1.21)	(1.10)
Associate-judge previous service, years	32.09***	19.80***
	(4.93)	(4.04)
Chief judge served on same court	89.65**	65.49**
	(3.26)	(2.98)
Years in position, chief judge	11.03***	5.48***
	(4.79)	(3.39)
Years in position, associate judges	47.81***	29.09***
	(13.49)	(9.50)
Age, chief judge	-16.51***	-7.38***
	(-6.81)	(-4.90)
Mean age, associate judges	-32.84***	-18.07***
	(-9.87)	(-7.14)
Same-court citations to statutes, previous decade	0.06	-0.04
	(0.94)	(-0.62)
Court and year fixed-effects	yes	yes
Number of observations	804	804
R^2	0.840	0.832
Cragg-Donald Wald stat.	19.8	19.8
Kleibergen-Paap Wald stat.	16.3	16.3
critical value, 20% IV bias	5.57	5.57
critical value, 10% IV bias	7.56	7.56
Sanderson-Windmeijer F(3,200) test-statistic	21.7	24.7

Notes: Dependent variable rescaled by a factor of 1000, to improve legibility;
omitted: Days Parliament in session previous decade × Chancery dummy variable;
t statistics in parentheses, using heteroscedasticity-robust standard errors clustered at the year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table OD.2: Instrumental-variable estimates of the effects of chief- and associate- judge secure tenure on citations

Citations included in dependent variable	(1) All courts, all years	(2) All courts, after 1830	(3) All courts, within 20 years of decision	(4) Same court, all years	(5) Other courts, all years
Secure tenure of chief judge	15.69 (0.16)	26.52 (0.80)	52.00 (1.19)	32.71 (0.47)	-17.03 (-0.44)
Secure tenure of associate judges	-229.2* (-2.56)	-32.88 (-1.06)	-117.0* (-2.54)	-201.0** (-3.15)	-28.22 (-0.90)
Chief judge previous service, years	4.471 (1.58)	0.0518 (0.07)	1.405 (1.19)	4.051+ (1.91)	0.419 (0.49)
Associate-judge previous service, years	13.59+ (1.72)	1.492 (0.67)	6.833* (2.38)	11.17* (2.03)	2.419 (0.88)
Chief judge served on same court	-217.3*** (-3.87)	-66.24*** (-4.14)	-31.36+ (-1.66)	-129.2** (-3.11)	-88.11*** (-5.17)
Years in position, chief judge	-0.634 (-0.25)	0.0350 (0.05)	1.119 (1.19)	-1.288 (-0.68)	0.654 (0.67)
Years in position, associate judges	-1.046 (-0.26)	0.356 (0.30)	-0.838 (-0.62)	-3.526 (-1.19)	2.480+ (1.68)
Age, chief judge	1.744 (0.83)	1.493** (2.65)	0.0415 (0.05)	0.862 (0.54)	0.882 (1.14)
Mean age, associate judges	1.396 (0.42)	-1.236 (-1.32)	0.0762 (0.07)	3.653 (1.53)	-2.256+ (-1.87)
Same-court citations to statutes, previous decade	0.351** (3.08)	0.0336 (1.17)	0.0983* (2.39)	0.304*** (3.56)	0.0476 (1.55)
Court fixed-effects	yes	yes	yes	yes	yes
Year fixed-effects	yes	yes	yes	yes	yes
p-value Hansen *J*-stat.	0.159	0.591	0.650	0.033	0.841
Observations	804	804	804	804	804

Notes: GMM estimation;
t statistics in parentheses, using heteroscedasticity-robust standard errors clustered at the year level;
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix OD, continued: The effects of whole-court secure tenure on citations, robustness exercises obtained by varying instrument sets

In the case of whole-court secure tenure, given only one endogenous variable, the instrument set can be varied to provide perspective on the robustness of the estimates with respect to the choice of instruments. Table OD.3 below presents three first-stages. By itself, life-expectancy is a weak instrument. The 'Days Parliament in session × court dummies' instruments are strong even when used alone. The combined instrument set is strong.

Table OD.4 presents the second-stage estimates of β_w for the three different instrument sets, and includes the most important diagnostic statistics. Thirteen of the fifteen estimates are negative, eight of which are significant at the 10% level and six at the 1% level. On their own, these results are strong evidence supporting the hypothesis that courts with all judges having secure tenure were not of higher quality than courts in which some judges were appointed at the monarch's pleasure. Nothing indicates a positive effect of secure tenure and, on balance, the results point to a negative effect. Viewed as robustness tests they add to the weight of evidence presented in the paper and in this Supplementary Online Appendix.

Table OD.3: First stage results for instrumental-variable estimates of the effects of whole-court secure tenure on citations, varying instrument sets

	(1)	(2)	(3)
Dependent variable	1000×Secure tenure of whole court		
Instruments used	Both	Parliament-days	Life expectancy
Life expectancy, chief judge	-3.12*		-2.59+
	(-2.41)		(-1.94)
Days Parliament in session previous decade × King's Bench dummy variable	0.62***	0.64***	
	(7.41)	(7.59)	
Days Parliament in session previous decade × Common Pleas dummy variable	0.65***	0.63***	
	(7.91)	(8.07)	
Days Parliament in session previous decade × Exchequer dummy variable	0.36***	0.36***	
	(4.28)	(4.21)	
Chief judge previous service, years	1.60	2.24	3.21
	(0.58)	(0.80)	(1.03)
Associate-judge previous service, years	41.57	54.27	165.03***
	(1.23)	(1.65)	(5.11)
Chief judge served on same court	14.17*	12.52*	24.80***
	(2.43)	(2.30)	(3.53)
Years in position, chief judge	4.14+	4.81*	10.26***
	(1.81)	(2.08)	(3.85)
Years in position, associate judges	30.80***	29.51***	27.47***
	(7.71)	(7.64)	(5.63)
Age, chief judge	-7.29***	-5.99**	-10.01***
	(-3.60)	(-3.30)	(-4.53)
Mean age, associate judges	-17.83***	-16.58***	-15.69***
	(-5.54)	(-5.36)	(-4.74)
Same-court citations to statutes, previous decade	-0.07	-0.04	-0.07
	(-0.96)	(-0.58)	(-0.80)
Court and year fixed-effects	yes	yes	yes
Number of observations	804	804	804
R^2	0.827	0.826	0.756
Cragg-Donald Wald stat.	62.01	80.28	2.79
Kleibergen-Paap Wald stat.	22.52	30.37	5.07
critical value, 20% IV bias	6.71	6.46	6.66
critical value, 10% IV bias	10.27	9.08	16.38
Sanderson-Windmeijer F(4,200) test-statistic	22.52	30.37	5.07

Notes: Dependent variable rescaled by a factor of 1000, to improve legibility;
omitted: Days Parliament in session previous decade × Chancery dummy variable;
t statistics in parentheses, using standard errors clustered at year level;
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table OD.4: Coefficient estimates and Hansen *p*-values for instrumental-variable estimates of the effects of whole-court secure tenure on citations

	(1)	(2)	(3)	(4)	(5)
		Citations included in dependent variable			
	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
			Using both instruments		
Whole-court secure tenure	-209.6***	-14.96	-78.63**	-175.5***	-34.05+
	(-3.64)	(-0.95)	(-3.20)	(-3.96)	(-1.88)
p-value Hansen *J*-stat.	.370	.608	.407	.117	.717
			Using parliament-days instrument only		
Whole-court secure tenure	-215.6***	-15.27	-80.17**	-181.8***	-33.86+
	(-3.69)	(-0.96)	(-3.06)	(-4.04)	(-1.85)
p-value Hansen *J*-stat.	0.214	0.400	0.243	0.057	0.514
			Using chief-judge life-expectancy instrument only		
Whole-court secure tenure	-142.9	34.35	29.00	-107.1	-35.78
	(-0.31)	(0.26)	(0.18)	(-0.32)	(-0.21)
p-value Hansen *J*-stat	n/a	n/a	n/a	n/a	n/a

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Appendix OE: The Altonji et al. (2005)-Oster (2018) procedure applied to the fixed-effects OLS estimates

Using the Oster (2018) method necessitates making assumptions on the size of two statistics. The first is on the relative degree of importance in selection for treatment of the observed and unobserved variables that, together with the treatment, determine $CITE_{kt}^{m}$. Following the literature (González and Miguel 2015; Oster 2018), the results below use the assumption that included and omitted variables are equally important.

The second assumption is on the maximum size of R^2 that would be obtained were all relevant variables available and included in the regression (denoted R^2_{max}). The choice of R^2_{max} depends upon judgments about how much unexplainable variation $CITE_{kt}^{m}$ contains, that is, how much measurement error. Bellows and Miguel (2009) and Oster (2018) suggest two different general guidelines, both of which are not specific to the subject under study. González and Miguel (2015) recommend a third: the use of direct evidence on the likely measurement error in the dependent-variable. The paragraphs below provide a detailed discussion of how these three alternatives are implemented.

Oster (2018) suggests the general guideline that R^2_{max} should be 30% greater than the R^2 produced by the regression that includes all observables (e.g., the regression reported in column (2) of Table 1). This is referred to below as the Oster R^2_{max}. Bellows and Miguel (2009) suggest an R^2_{max} equal to twice the R^2 from the regression including all observed covariates (column (2)) minus the R^2 from the regression with no controls (column (1)).[2] This is referred to as the Bellows-Miguel R^2_{max}.

[2] The controls are $statcite_{kt}$ and the seven variables in X_{kt}. Hence, these procedures are applied as if the original data comprise the error terms from regressions of the original variables on fixed-effects. The justification for this is the assumption that the unobservables are similar to the observable controls, but not to the fixed-effects. If the reported procedures were applied using the original variables and not the errors after regression on fixed-effects, the conclusions reached by this paper would be even stronger.

González and Miguel (2015) recommend using evidence on the likely measurement error in the dependent-variable data. $CITE_{kt}^{m}$, the dependent variable, is viewed as a proxy for the quality of judge decisions, which is imperfectly measured. This paper uses five different measures of $CITE_{kt}^{m}$ produced by varying m, the details of which are reported in Subsection 4.1. Correlations between these measures indicate the amount of measurement error in the dependent variable because they all proxy unmeasurable judge quality. Therefore, one suitable estimate of R^2_{max} is the average of the correlations of all pairs of these measures that do not contain any overlapping data.[3] This is referred to below as the measurement-error R^2_{max}. It is the most reliable estimate of R^2_{max} since it is based on estimates of the measurement error of the specific data used in this study, rather than general guidelines. As it happens, in the results reported in the tables, estimates based on the measurement-error R^2_{max} usually fall between those for the Oster R^2_{max} and the Bellows-Miguel R^2_{max}.

Table OE.1 reports assessments of the sensitivity to omitted-variable bias of the estimates of β_a reported in the paper's Table O1. (For reasons noted in the text no insights would be generated from producing the analogous results for β_c because the magnitudes of the coefficients from regressions with controls are more supportive of the general conclusions reached in the paper than are the magnitudes of the coefficients from regressions without controls.) These assessments are reflected in intervals bounded by the estimated coefficient on one side and the value derived from applying the Oster (2018) procedure on the other (González and Miguel 2015; Oster 2018). The interpretation is that the estimated coefficient would almost certainly lie in the interval if all

[3] Consistent with the overall framework, these regressions include fixed-effects. Thus, strictly speaking, instead of correlations of the raw data, the R^2_{max} uses the R^2's from regressions of one member of a pair on the other member and fixed-effects.

omitted-variable problems were solved.[4] For example, using the measurement-error R^2_{max}, the estimated interval in the first column of Table OE.1 is [-287.0, -169.5], that is, it does not include zero. Recalling that the almost universal hypothesis in the historical literature is that this coefficient should be positive, this is strong evidence of rejection of that hypothesis. Similar conclusions follow when using the other two criteria for setting R^2_{max} and when examining all the 15 estimated intervals appearing in Table OE.1.

Table OE.2 is analogous to Table OE.1 in presenting the intervals derived from the Altonji et al. (2005)-Oster (2018) procedure applied to the estimates of β_w in Table 2 of the paper.

References for Appendix OE

Bellows, John, and Edward Miguel. 2009. War and local collective action in Sierra Leone. *Journal of Public Economics*, 93: 1144–1157.

Gonzalez, Felipe and Edward Miguel. 2015. "War and Local Collective Action in Sierra Leone: A Comment on the Use of Coefficient Stability Approaches." *Journal of Public Economics*, 128: 30-33.

[4] The standard implementations of the Altonji et al. (2005)-Oster (2018) procedure are generally viewed as setting bounds on the likely true coefficient, rather than providing estimates of that coefficient (González and Miguel 2015; Oster 2018) because these implementations use an assumption that likely exaggerates the relative explanatory power of the unobservables.

Table OE.1: The effect of associate-judge secure tenure on citations: Sensitivity to omitted variable bias of the OLS fixed-effects estimates

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table 1	(2)	(4)	(6)	(8)	(10)
Using measurement-error R^2_{max}	[-287.0 ,-169.5]	[-47.45, -3.6]	[-67.9, -24.1]	[-222.9, -157.7]	[-64.15, 0.28]
Using Oster R^2_{max}	[-287.0, -118.6]	[-47.45, 19.3]	[-67.9, -46.8]	[-222.9, -153.2]	[-64.15, 28.8]
Using Bellows-Miguel R^2_{max}	[-287.0, -239.4]	[-47.45, -31.0]	[-67.9, -63.3]	[-222.9, -197.7]	[-64.15, -41.9]

Note: The interval estimates of associate-judge coefficients were derived by applying the Oster (2018) procedure to the coefficient estimates in the indicated columns of Table 1.

Table OE.2: The effect of whole-court secure tenure on citations: Sensitivity to omitted variable bias of the OLS fixed-effects estimates

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table 2	(1)	(2)	(3)	(4)	(5)
Using measurement-error R^2_{max}	[-250.0 ,-142.9]	[-45.9, -17.5]	[-517.3,-55.9]	[-179.8, -91.6]	[-70.3, -31.5]
Using Oster R^2_{max}	[-250.0, -50.4]	[-45.9, 16.8]	[-102.9,-55.9]	[-179.8, -82.0]	[-70.3, 9.0]
Using Bellows-Miguel R^2_{max}	[-250.0, -216.5]	[-45.9, -37.9]	[-60..9,-55.9]	[-179.8, -155.8]	[-70.3, -60.9]

Note: The interval estimates of associate-judge coefficients were derived by applying the Oster (2018) procedure to the coefficient estimates in the indicated columns of Table 2.

Appendix OF: Clustering on both court and year

Table OF.1: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of OLS fixed-effects estimates of both chief-judge and associate-judge secure tenure

Citations included in dependent variable	All courts, all years		All courts, after 1830	
Corresponding column of Table 1	(1)	(2)	(3)	(4)
bootstrapped p-value of estimated chief-judge coefficient	0.606	0.793	0.729	0.939
95% confidence set for chief-judge coefficient	[-169, 351.8]	[-241, 379]	[-51, 97]	[-62, 79]
bootstrapped p-value of estimated associate-judge coefficient	0.079	0.054	0.039	0.040
95% confidence set for associate-judge coefficient	[-789, 51.4]	[-645, 7.1]	[-137, -4.0]	[-98.6, -3.7]

Citations included in dependent variable	All courts, within 20 years of decision		Same court, all years		Other courts, all years	
Corresponding column of Table 1	(5)	(6)	(7)	(8)	(9)	(10)
bootstrapped p-value of estimated chief-judge coefficient	0.533	0.653	0.481	0.620	0.855	0.747
95% confidence set for chief-judge coefficient	[-79, 186]	[-96, 189]	[-92, 243]	[-149, 289]	[-80, 108]	[-93, 80]
bootstrapped p-value of estimated associate-judge coefficient	0.080	0.087	0.090	0.064	0.060	0.036
95% confidence set for associate-judge coefficient	[-173, 12.1]	[-159, 13.1]	[-616, 43.4]	[-516, 16.3]	[-191, 5.7]	[-130, -5.7]

Note: The estimates were derived by applying the methods described in Roodman et al. (2019) within those procedures used to generate the results in Table 1 of the paper.

Table OF.2: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of OLS fixed-effects estimates of whole-court secure tenure

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table 2	(1)	(2)	(3)	(4)	(5)
bootstrapped p-value of estimated whole-court coefficient	0.008	0.003	0.003	0.017	0.000
95% confidence set for whole-court coefficient	[-433.4, -82.5]	[-75.4, -18.9]	[-83.8, -29.5]	[-335.5, -36.8]	[-104.2, -38.2]

Note: The estimates were derived by applying the methods described in Roodman et al. (2019) within those procedures used to generate the results in Table 2 of the paper.

Table OF.3: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of instrumental-variable fixed-effects estimates of both chief-judge and associate-judge secure tenure

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OD.2	(1)	(2)	(3)	(4)	(5)
bootstrapped p-value of estimated chief-judge coefficient	0.920	0.548	0.551	0.778	0.781
95% confidence set for chief-judge coefficient	[-338.8, 373.2]	[-67.0, 129.5]	[-143.4, 258.0]	[-222.6, 291.6]	[-150.6, 126.4]
bootstrapped p-value of estimated associate-judge coefficient	0.032	0.438	0.064	0.015	0.511
95% confidence set for associate-judge coefficient	[-433.5, -24.1]	[-121.1, 50.1]	[-247.3, 8.3]	[-343.7, -54.2]	[-121.7, 61.3]

Note: The estimates were derived by applying the methods described in Roodman et al. (2019) within those procedures used to generate the results in Table OD.2 of the paper.

Table OF.4: Boot-strapped coefficient *p*-values for instrumental-variable estimates of the effects of whole-court secure tenure on citations

(See Appendix OD for information on the estimated coefficients.)

	(1)	(2)	(3)	(4)	(5)
		Citations included in dependent variable			
	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
			Using both instruments		
bootstrapped p-value of estimated whole-court coefficient	0.008	0.472	0.005	0.026	0.120
			Using parliament-days instrument only		
bootstrapped p-value of estimated whole-court coefficient	0.005	0.490	0.003	0.021	0.085
			Using chief-judge life-expectancy instrument only		
bootstrapped p-value of estimated whole-court coefficient	0.854	0.809	0.919	0.851	0.894

Appendix OG: Results matching those in the text using $\ln(1 + CITE_{kt}^{m})$ as the dependent variable instead of $CITE_{kt}^{m}$

Table OG.1: Summary statistics that are additional to those in Table OB.1

	Obs.	Mean	Std. Dev.	Min	Max
Natural logarithm of one plus citations to court *k* in year *t* made by all courts in all years, the most comprehensive version of $CITE_{kt}$	804	2.96	2.59	0	7.88
Natural logarithm of one plus citations to court *k* in year *t* made by courts other than *k*	804	2.46	2.19	0	6.62
Natural logarithm of one plus citations to court *k* in year *t* made by court *k*	804	2.41	2.45	0	7.59
Natural logarithm of one plus citations to court *k* in year *t* fewer than 20 years after *t*	804	1.94	2.04	0	6.85
Natural logarithm of one plus citations to court *k* in year *t* after 1830	804	2.03	2.06	0	6.44

Table OG.2: The effects of chief- and associate-judge secure tenure on citations: OLS fixed-effects estimates

	(1)	(2)	(3)	(4)
Citations included in dependent variable	All courts, all years	All courts, all years	All courts, after 1830	All courts, after 1830
Secure tenure of chief judge	-0.972**	-1.136**	-0.419+	-0.468+
	(-2.77)	(-2.99)	(-1.81)	(-1.71)
Secure tenure of associate judges	-2.083***	-1.730***	-1.751***	-1.483***
	(-4.79)	(-3.94)	(-6.16)	(-4.96)
Chief judge previous service, years		0.0114		0.0205
		(0.71)		(1.54)
Associate-judge previous service, years		0.0439		0.0322
		(1.12)		(0.96)
Chief judge served on same court		-1.306***		-1.197***
		(-6.56)		(-7.68)
Years in position, chief judge		-0.0161		-0.00590
		(-1.01)		(-0.51)
Years in position, associate judges		0.0282		0.000359
		(1.11)		(0.02)
Age, chief judge		-0.00947		-0.00115
		(-0.73)		(-0.13)
Mean age, associate judges		0.0198		0.0232
		(1.05)		(1.52)
Same-court citations to statutes, previous decade		0.0008*		0.0097**
		(2.21)		(3.20)
Court fixed-effects	yes	yes	yes	yes
Year fixed-effects	yes	yes	yes	yes
Number of observations	804	804	804	804
R^2	0.42	0.46	0.38	0.41

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Table OG.2, continued: The effects of chief- and associate-judge secure tenure on citations: OLS fixed-effects estimates

Citations included in dependent variable	(5) All courts, within 20 years of decision	(6) All courts, within 20 years of decision	(7) Same court, all years	(8) Same court, all years	(9) Other courts, all years	(10) Other courts, all years
Secure tenure of chief judge	-0.307	-0.615*	-0.579+	-0.587+	-0.814**	-1.047**
	(-1.21)	(-2.02)	(-1.84)	(-1.72)	(-2.89)	(-3.31)
Secure tenure of associate judges	-1.761***	-1.417***	-2.154***	-1.880***	-1.831***	-1.495***
	(-5.64)	(-4.31)	(-5.45)	(-4.85)	(-5.32)	(-4.14)
Chief judge previous service, years		0.00141		0.0180		0.00988
		(0.11)		(1.40)		(0.64)
Associate-judge previous service, years		0.0423		0.0491		0.0273
		(1.37)		(1.44)		(0.74)
Chief judge served on same court		-1.061***		-1.198***		-1.167***
		(-6.75)		(-7.24)		(-6.77)
Years in position, chief judge		-0.00507		-0.0266*		-0.00177
		(-0.42)		(-2.24)		(-0.12)
Years in position, associate judges		0.0417+		0.000321		0.0353
		(1.92)		(0.02)		(1.51)
Age, chief judge		-0.000137		0.00502		-0.0124
		(-0.01)		(0.52)		(-1.05)
Mean age, associate judges		-0.00988		0.0335*		0.00448
		(-0.62)		(2.02)		(0.25)
Same-court citations to statutes, previous decade		0.001**		0.001***		0.0007+
		(3.06)		(4.30)		(1.81)
Court fixed-effects	yes	yes	yes	yes	yes	yes
Year fixed-effects	yes	yes	yes	yes	yes	yes
Observations	804	804	804	804	804	804
R^2	0.35	0.39	0.54	0.58	0.32	0.36

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Table OG.3: The effect of associate-judge secure tenure on citations: Sensitivity to omitted variable bias of the OLS fixed-effects estimates

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OG.2	(2)	(4)	(6)	(8)	(10)
Using measurement-error R^2_{max}	[-1.73,-0.28]	[-1.48, -0.89]	[-1.42, -0.18]	[-1.88, -1.77]	[-1.49, 0.72]
Using Oster R^2_{max}	[-1.73, 2.48]	[-1.48, 1.09]	[-1.42, 2.02]	[-1.88, 0.23]	[-1.49, 1.93]
Using Bellows-Miguel R^2_{max}	[-1.73, -1.34]	[-1.48, -1.18]	[-1.42, -1.04]	[-1.88, -1.56]	[-1.49, -1.13]

Note: The interval estimates of associate-judge coefficients were derived by applying the Oster (2018) procedure to the coefficient estimates in the indicated columns of Table OG.2.

Table OG.4: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of OLS fixed-effects estimates of associate-judge secure tenure

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OG.2	(2)	(4)	(6)	(8)	(10)
bootstrapped p-value of estimated associate-judge coefficient	0.056	0.022	0.002	0.008	0.075
95% confidence set for associate-judge coefficient	[-3.48, 0.05]	[-2.66, -0.30]	[-2.15, -0.70]	[-3.12, -0.62]	[-3.12, 0.17]

Note: The estimates were derived by applying the procedures described in Roodman et al. (2019).

Table OG.5: The effects of whole-court judge secure tenure on citations: OLS fixed-effects estimates

Citations included in dependent variable	(1) All courts, all years	(2) All courts, after 1830	(3) All courts, within 20 years of decision	(4) Same court, all years	(5) Other courts, all years
Whole-court secure tenure	-2.044***	-1.515***	-1.593***	-1.805***	-1.875***
	(-7.51)	(-7.84)	(-9.60)	(-7.69)	(-8.10)
Chief judge previous service, years	0.0110	0.0195	0.000910	0.0162	0.00998
	(0.73)	(1.52)	(0.08)	(1.33)	(0.68)
Associate-judge previous service, years	0.00452	0.00998	0.0188	0.0185	-0.00647
	(0.11)	(0.29)	(0.59)	(0.52)	(-0.17)
Chief judge served on same court	-1.450***	-1.275***	-1.139***	-1.317***	-1.284***
	(-7.56)	(-8.61)	(-7.52)	(-8.22)	(-7.88)
Years in position, chief judge	-0.0312+	-0.0136	-0.0134	-0.0375**	-0.0146
	(-1.94)	(-1.21)	(-1.13)	(-3.22)	(-0.98)
Years in position, associate judges	-0.0109	-0.0172	0.0213	-0.0247	0.00143
	(-0.42)	(-0.93)	(0.98)	(-1.12)	(0.06)
Age, chief judge	0.00216	0.00439	0.00605	0.0130	-0.00250
	(0.17)	(0.51)	(0.67)	(1.39)	(-0.21)
Mean age, associate judges	0.0488**	0.0368*	0.00586	0.0522**	0.0298+
	(2.62)	(2.60)	(0.38)	(3.17)	(1.79)
Same-court citations to statutes, previous decade	0.0006+	0.0009**	0.0010**	0.0011***	0.0005
	(1.73)	(3.01)	(2.89)	(3.95)	(1.34)
Court fixed-effects	yes	yes	yes	yes	yes
Year fixed-effects	yes	yes	yes	yes	yes
Number of observations	804	804	804	804	804
R^2	0.75	0.79	0.75	0.83	0.69

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table OG.6: The effect of whole-court secure tenure on citations: Sensitivity to omitted variable bias of the OLS fixed-effects estimates

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OG.5	(1)	(2)	(3)	(4)	(5)
Using measurement-error R^2_{max}	[-2.04 ,0.33]	[-1.51, -0.63]	[-1.59,-0.17]	[-1.81, -1.51]	[-1.88, 1.93]
Using Oster R^2_{max}	[-2.04, 5.16]	[-1.51, 3.51]	[-1.59,5.62]	[-1.81, 2.51]	[-1.88, 3.93]
Using Bellows-Miguel R^2_{max}	[-2.04, -1.6]	[-1.51, -1.12]	[-1.59,-1.34]	[-1.81, -1.32]	[-1.88, -1.51]

Note: The interval estimates of associate-judge coefficients were derived by applying the Oster (2018) procedure to the coefficient estimates in the indicated columns of Table OG.5.

Table OG.7: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of OLS fixed-effects estimates of whole-court secure tenure

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OG.5	(2)	(4)	(6)	(8)	(10)
bootstrapped p-value of estimated associate-judge coefficient	0.037	0.004	0.015	0.001	0.048
95% confidence set for whole-court coefficient	[-4.07, -0.12]	[-2.64, -0.49]	[-2.86, -0.38]	[-2.87, -0.83]	[-3.79, -0.02]

Note: The estimates were derived by applying the procedures described in Roodman et al. (2019).

Table OG.8: First stage results for instrumental-variable estimates of the effects of chief- and associate-judge secure tenure on citations

	(1) 1000×Secure tenure of chief judge	(2) 1000×Secure tenure of associate judges
Life expectancy, chief judge	-9.84***	-2.96**
	(-6.79)	(-2.60)
Days Parliament in session previous decade × King's Bench dummy variable	0.23*	0.53***
	(2.57)	(9.06)
Days Parliament in session previous decade × Common Pleas dummy variable	0.34***	0.61***
	(3.88)	(10.44)
Days Parliament in session previous decade × Exchequer dummy variable	-0.02	0.30***
	(-0.31)	(5.93)
Chief judge previous service, years	-2.60	2.02
	(-1.21)	(1.10)
Associate-judge previous service, years	32.09***	19.80***
	(4.93)	(4.04)
Chief judge served on same court	89.65**	65.49**
	(3.26)	(2.98)
Years in position, chief judge	11.03***	5.48***
	(4.79)	(3.39)
Years in position, associate judges	47.81***	29.09***
	(13.49)	(9.50)
Age, chief judge	-16.51***	-7.38***
	(-6.81)	(-4.90)
Mean age, associate judges	-32.84***	-18.07***
	(-9.87)	(-7.14)
Same-court citations to statutes, previous decade	0.06	-0.04
	(0.94)	(-0.62)
Court and year fixed-effects	yes	yes
Number of observations	804	804
R^2	0.840	0.832
Cragg-Donald Wald stat.	19.8	19.8
Kleibergen-Paap Wald stat.	16.3	16.3
critical value, 20% IV bias	5.57	5.57
critical value, 10% IV bias	7.56	7.56
Sanderson-Windmeijer F(3,200) test-statistic	21.7	24.7

Notes: Results are identical to those in the equivalent table of the paper, since the dependent-variable data is the same
Dependent variable rescaled by a factor of 1000, to improve legibility;
omitted: Days Parliament in session previous decade × Chancery dummy variable;
t statistics in parentheses; standard errors clustered at year level; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table OG.9: Instrumental-variable estimates of the effects of chief- and associate-judge secure tenure on citations

Citations included in dependent variable	(1) All courts, all years	(2) All courts, after 1830	(3) All courts, within 20 years of decision	(4) Same court, all years	(5) Other courts, all years
Secure tenure of chief judge	-0.592	-0.124	-0.0197	0.500	-0.912
	(-0.63)	(-0.18)	(-0.03)	(0.64)	(-1.07)
Secure tenure of associate judges	-2.021*	-1.181+	-1.471*	-1.681+	-1.816*
	(-2.28)	(-1.90)	(-2.10)	(-1.89)	(-2.57)
Chief judge previous service, years	0.0125	0.0191	0.00154	0.0169	0.0112
	(0.77)	(1.46)	(0.12)	(1.31)	(0.72)
Associate-judge previous service, years	-1.348***	-1.311***	-1.155***	-1.424***	-1.133***
	(-5.99)	(-7.42)	(-6.72)	(-7.57)	(-5.68)
Chief judge served on same court	0.0336	0.0119	0.0236	0.00645	0.0317
	(0.75)	(0.31)	(0.67)	(0.16)	(0.78)
Years in position, chief judge	-0.0212	-0.0146	-0.0136	-0.0456**	-0.0002
	(-1.15)	(-1.09)	(-1.03)	(-3.25)	(-0.01)
Years in position, associate judges	0.0115	-0.0224	0.0167	-0.0527+	0.0373
	(0.34)	(-0.93)	(0.65)	(-1.93)	(1.22)
Age, chief judge	-0.00496	0.00594	0.00711	0.0208+	-0.0135
	(-0.34)	(0.56)	(0.70)	(1.87)	(-0.96)
Mean age, associate judges	0.0314	0.0378+	0.00677	0.0683**	0.00359
	(1.20)	(1.93)	(0.35)	(3.05)	(0.15)
Same-court citations to statutes, previous decade	0.0007+	0.0009**	0.0011**	0.0011***	0.0006
	(1.91)	(2.84)	(2.95)	(3.69)	(1.60)
Court fixed-effects	yes	yes	yes	yes	yes
Year fixed-effects	yes	yes	yes	yes	yes
p-value Hansen *J*-stat.	0.000	0.132	0.010	0.018	0.000
Observations	804	804	804	804	804

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table OG.10: Clustering on both year and court: wild bootstrap estimates for the significance levels and confidence intervals of instrumental-variable fixed-effects estimates of associate-judge secure tenure

Citations included in dependent variable	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
Corresponding column of Table OD.9	(1)	(2)	(3)	(4)	(5)
bootstrapped p-value of estimated associate-judge coefficient	0.146	0.196	0.201	0.103	0.157
95% confidence set for associate-judge coefficient	[-4.82, 0.82]	[-3.06, 0.66]	[-3.98, 0.86]	[-3.74, 0.35]	[-4.52, 0.87]

Note: The estimates were derived by applying the procedures described in Roodman et al. (2019).

Table OG.11: First stage results for instrumental-variable estimates of the effects of whole-court secure tenure on citations, varying instrument sets

Instruments used	(1) Both	(2) Parliament-days	(3) Life expectancy
Life expectancy, chief judge	-3.12*		-2.59+
	(-2.41)		(-1.94)
Days Parliament in session previous decade × King's Bench dummy variable	0.62***	0.64***	
	(7.41)	(7.59)	
Days Parliament in session previous decade × Common Pleas dummy variable	0.65***	0.63***	
	(7.91)	(8.07)	
Days Parliament in session previous decade × Exchequer dummy variable	0.36***	0.36***	
	(4.28)	(4.21)	
Chief judge previous service, years	1.60	2.24	3.21
	(0.58)	(0.80)	(1.03)
Associate-judge previous service, years	41.57	54.27	165.03***
	(1.23)	(1.65)	(5.11)
Chief judge served on same court	14.17*	12.52*	24.80***
	(2.43)	(2.30)	(3.53)
Years in position, chief judge	4.14+	4.81*	10.26***
	(1.81)	(2.08)	(3.85)
Years in position, associate judges	30.80***	29.51***	27.47***
	(7.71)	(7.64)	(5.63)
Age, chief judge	-7.29***	-5.99**	-10.01***
	(-3.60)	(-3.30)	(-4.53)
Mean age, associate judges	-17.83***	-16.58***	-15.69***
	(-5.54)	(-5.36)	(-4.74)
Same-court citations to statutes, previous decade	-0.07	-0.04	-0.07
	(-0.96)	(-0.58)	(-0.80)
Court and year fixed-effects	yes	yes	yes
Number of observations	804	804	804
R^2	0.827	0.826	0.756
Cragg-Donald Wald stat.	62.01	80.28	2.79
Kleibergen-Paap Wald stat.	22.52	30.37	5.07
critical value, 20% IV bias	6.71	6.46	6.66
critical value, 10% IV bias	10.27	9.08	16.38
Sanderson-Windmeijer F(4,200) test-statistic	22.52	30.37	5.07

Notes: Results are identical to those in the equivalent table of the paper, since they do not dependent-variable data.
Dependent variable rescaled by a factor of 1000, to improve legibility;
omitted: Days Parliament in session previous decade × Chancery dummy variable;
t statistics in parentheses, using standard errors clustered at year level;
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table OG.12: Coefficient estimates, boot-strapped coefficient *p*-values, and Hansen *p*-values for instrumental-variable estimates of the effects of whole-court secure tenure on citations

	(1)	(2)	(3)	(4)	(5)
		Citations included in dependent variable			
	All courts, all years	All courts, after 1830	All courts, within 20 years of decision	Same court, all years	Other courts, all years
			Using both instruments		
estimate of β_w	-2.017**	-1.144**	-1.260**	-1.237*	-2.020***
	(-3.25)	(-3.03)	(-3.00)	(-2.26)	(-4.02)
bootstrapped p-value of estimated whole-court coefficient	0.190	0.132	0.130	0.195	0.155
p-value Hansen *J*-stat.	.000	.209	.006	.019	.000
			Using parliament-days instrument only		
estimate of β_w	-2.101***	-1.197**	-1.269**	-1.356*	-2.067***
	(-3.37)	(-3.16)	(-3.00)	(-2.44)	(-4.12)
bootstrapped p-value of estimated whole-court coefficient	0.152	0.095	0.097	0.153	0.122
p-value Hansen *J*-stat.	0.002	0.240	0.003	0.162	0.000
			Using chief-judge life-expectancy instrument only		
estimate of β_w	3.770	0.847	1.037	4.309	1.796
	(0.94)	(0.33)	(0.41)	(1.18)	(0.56)
bootstrapped p-value of estimated whole-court coefficient	0.696	0.909	0.873	0.584	0.835
p-value Hansen *J*-stat	n/a	n/a	n/a	n/a	n/a

Notes: t statistics in parentheses, using standard errors clustered at year level;
+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.