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Mass Digitization of Chinese Court Decisions: How to Use Text as Data in the Field of Chinese Law

21st Century China Center Research Paper No. 2017-01

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**Mass Digitization of Chinese Court Decisions:
How to Use Text as Data in the Field of Chinese Law**

Benjamin L. Liebman, Margaret E. Roberts, Rachel E. Stern and Alice Z. Wang¹

October 2019

Abstract

Over the past five years, Chinese courts have placed tens of millions of court judgments online. We analyze the promise and pitfalls of using this remarkable new data source, highlighting the takeaways for readers who face similar issues using other collections of legal texts. Drawing on a dataset of 1,058,986 documents from Henan province, we first document problems with missing data and call on scholars to treat variation in court disclosure rates as an urgent research question. We then outline strategies to learn from a corpus that is vast and incomplete. Using a topic model of administrative litigation in Henan, we complicate the conventional wisdom that administrative lawsuits are an extension of contentious politics that give Chinese citizens an opportunity to challenge the state. Instead, we find a high prevalence of administrative cases that reflect an underlying dispute between two private parties, suggesting that administrative lawsuits often represent an attempt to enlist help from the state resolving a civil dispute.

¹ We are grateful to a large number of commentators in both China and the United States whose feedback helped improve this article, and to the many research assistants at Berkeley, Columbia and UCSD who worked on various stages of this project. Particular thanks to Kevin Coakley, Subhasis Dasgupta, Amarnath Gupta, Haoshen Hong, Kai Lin at the San Diego Supercomputer and Xiaohan Wu at Columbia Law for their help with the data. This work was partially funded by National Science Foundation RIDIR program, award number 1738411.

I. Introduction

In January 2014, every level of Chinese courts became responsible for uploading judicial decisions to a centralized website run by the Supreme People’s Court (SPC 2013). This policy, which followed and formalized years of local efforts to put cases online, has led to a rapid expansion of the public record of court activity: more than seventy-eight million documents were posted by October 2019.² This new source offers an unusual opportunity to transform our understanding of the Chinese legal system by developing a granular portrait of what happens in courts every day.

The release of tranches of judicial documents also coincides with growing interest in treating legal texts as data and using computer science tools to uncover patterns in document collections too big for any research team to code by hand. Legal systems around the world are producing public text at unprecedented rates, and there is much to be learned from digesting it. Computers can help systematically map the “great unread” by analyzing patterns of topic prevalence, word use, and tone inside a corpus (Miller 2013). And new techniques of reading at a distance can also be paired with the close reading that has long been a staple of legal scholarship. There is already a groundswell of interdisciplinary legal scholarship that applies computational text analysis techniques to legal texts as diverse as Supreme Court and appellate court decisions (Rice 2017; Bryan and Ringsmuth 2016; Livermore et al. 2016), *amicus curiae* briefs (Evans et al. 2007), transcripts of U.S. Supreme Court oral arguments (Patton and Smith 2017), trial records from London’s Old Bailey (Kingenstein et al. 214), 19th century state procedure codes (Funk and Mullen 2018), and the world’s constitutions, past and present (Law 2016, Law 2019).

² The SPC website provides a real-time calculation of the total number of documents. See <http://wenshu.court.gov.cn/>.

This article stands at the intersection of these two trends, toward the increasing availability of legal texts on the one hand and computational social science on the other. Primarily, it is meant as a guide to a specific corpus: the millions of Chinese court decisions now online. This new source is impossible to ignore and can teach us a great deal, particularly as political conditions in China make interviews and surveys increasingly difficult. We provide information on how the corpus came about, use external data to reveal the holes in the data, and provide an example of how substantive conclusions can be drawn from the dataset.

At the same time, however, few of the technical and methodological challenges we describe are unique to China. Any researcher looking to conduct computerized text analysis of court decisions would need to grapple with a similar list of issues: holes in the public record and little information about what is missing, changing rules on what courts should post and varying levels of compliance with the rules governing public availability, inconsistent formatting of court documents, the fluctuating nature of databases that continuously expand but also sometimes remove material, and the technological difficulty of large-scale downloads from websites not designed for that purpose. Our general call is for legal scholars to take documenting missing data in court decisions seriously and treat patterns of missingness as an important research question, even as we also sketch out approaches to learning from a corpus that is both giant and incomplete. This piece was written in anticipation of a coming wave of research that brings computerized text analysis to the comparative study of courts, paralleling a similar trend in comparative politics.³ Readers of *The Journal of Law & Courts* pursuing this methodology, or tracking this turn in

³ For two overviews of how political scientists can use textual data, see Grimmer and Stewart (2013) and Lucas et al. (2015).

the field, will be interested in our recommendations about how best to explore a vast, incomplete corpus.

To do this, we analyze a dataset of 1,058,986 documents from the Henan Province High People's Court website.⁴ Our analysis has two parts. First, we investigate how much of the court record is missing in 2014, finding wide intra-provincial variation in judicial disclosure rates that persist even after accounting for court level, mediation rates, GDP per capita and population. Although we find that disclosure rates improve modestly by 2016, an average of forty-seven percent of Henan court decisions are nevertheless still missing. These findings underscore the risk of assuming that even a large case database is complete, and also frame an important question for future research: how best to investigate competing explanations for missing data. Above all, these findings push back against the dominant approach in the deepening Chinese-language literature, which is to move quickly past problems with missing data and report frequency rates from an incomplete dataset as if they represent reality.⁵

Although the scale and persistence of missing data complicates prospects for research, the second part of this article provides an example of how computational text analysis can yield insights even with data we know to be incomplete. A topic model of 25,921 decisions in administrative lawsuits from Henan shows how combining unsupervised machine learning with close reading of selected cases adds nuance to our understanding of how courts work. Since China introduced administrative litigation in 1989, most observers have treated it as barometer of citizens' willingness to sue to the state, even if a popular saying suggests it is as useful as "throwing an egg against a stone" (Finder 1989). Our

⁴ Our dataset covers all documents on the site as of November 29, 2015. After this date, Henan courts started uploading new cases exclusively to the SPC website.

⁵ For a sample of articles that use this approach, see Wu and Zhang (2017), Cai and Liu (2016) and Zhao and Geng (2016).

findings push back against this conventional wisdom by showing that a significant portion of administrative litigation consists of attempts to draw the state into private disputes, a phenomenon poorly captured by either a contentious politics or government accountability frame. We use our recommended techniques for working with missing data to show that this “administrivization of private disputes” comprises both a significant and underappreciated portion of administrative dockets, a finding that requires us to adjust how we think about Chinese administrative law.

II. The Origins of Judicial Disclosure

Today’s courts devote far more energy to judicial transparency than was the case a century ago. Worldwide, many courts selectively publish opinions, disclose court statistics, hold press conferences, offer status updates on cases, maintain social media accounts, and allow television coverage of court proceedings. An emerging strand of the comparative literature on courts examines why courts go public and the effect of transparency on public trust and legitimacy. So far, however, this literature has focused on democracies, particularly in Latin America (Staton 2010, Ingram 2017) and Europe (Grendstad 2017). Certainly, government transparency is associated with democracies because sharing information seems intuitively linked to responsive, accountable government. Yet the trend toward judicial transparency is not limited to democracies, and one contribution of this article is to document how it extends even to authoritarian states, such as China.⁶

When it comes to making court decisions available online, China is a trendsetter in the authoritarian world, and unusual even among other civil law jurisdictions. Most court

⁶ There is a small political science literature on the purposes and effects of authoritarian transparency (Malesky, Schuler, and Train 2012; Lorenzten, Landry, and Yasuda 2013; Hollyer, Rosendorff, and Vreeland 2015). Transparency is a capacious word, however, and we are not aware of any work focused on court transparency in authoritarian regimes.

judgments in China have technically long been public documents, meaning that a Chinese citizen has the right to view a case at the courthouse.⁷ In practice, however, until recently court decisions were typically available only to the people directly involved in the case. As recently as five years ago, this meant that collecting even a small set of court opinions required personal contacts. Today, China's Supreme People's Court (SPC) claims that the tens of millions of cases available online make its website the largest collection of public cases globally (Sina 2016).⁸ Vietnam, a Communist Party-led one-party state where political and legal reforms are often inspired by Chinese practice, has already followed suit. Starting July 1, 2017, all Vietnamese courts became obligated make their judgments public, with decisions centrally collected on a website managed by the Vietnamese Supreme People's Court (Nguyen 2019).

Why did China's judicial leadership embrace the practice of making court judgments public? One angle on this question is historical. As sudden as the 2013 decision to release the vast majority of court decisions might have seemed, it followed a history of experimentation and intellectual debate. The SPC recognized the value of making some court decisions publicly available to educate both judges and litigants early in the reform era. In 1985, the SPC began publishing an official gazette (最高人民法院公报), which included a small number of cases. Although not formally recognized as precedent, published cases were meant to guide lower courts on how to handle particular points of law, and improve the uniformity and quality of court decisions across China. Collections of representative cases, some curated by the SPC and others by academics or local courts, also became standard fare for legal publishers and a source of practical guidance for their readers

⁷ Article 156 of the Civil Procedure Law discusses the public's right to refer to final court decisions, except for those involving state secrets, trade secrets, or relating to personal privacy (National People's Congress Standing Committee 2013).

⁸ The claim is difficult to verify.

(Liebman and Wu 2007, 289). Likewise, in the late 1990s and early 2000s, individual courts began posting selected “representative cases” (典型案例) online. How much material was available varied, from a handful of decisions to hundreds of cases, with a few standouts attempting to cultivate a reputation for innovation by pursuing transparency. Fee-based databases also started to sprout up, as new actors saw a commercial opportunity to build the Chinese version of America's LexisNexis and Westlaw, although coverage remained spotty. A few law firms also started posting cases handled by their lawyers, to project professionalism and attract clients.

In the early 2000s, liberal scholars began to call for courts to place all opinions online as a way to fight corruption and restore public confidence in the courts (He 2003). Somewhat ironically, it was not until Wang Shengjun became president of the SPC in 2008—an official widely perceived to be ideologically conservative—that the SPC itself made a push to place large numbers of court decisions online. The SPC endorsed judicial transparency as a goal in its third five-year plan for legal reform in 2009 and also encouraged lower court efforts to compile and publish judicial decisions (SPC 2009a, 2009b). These central government cues prompted local initiatives, including in Henan, where a mid-2009 Henan High Court order mandated that all courts in the province place the vast majority of decisions online. This new requirement followed a wave of high-profile wrongful convictions in Henan, and was one of a number of populist measures adopted by Henan High Court President Zhang Liyong (Liebman 2015, 161-162). Other provinces followed Henan’s lead. Building on these local experiments, the SPC under the leadership of SPC President Zhou Qiang called on courts nationwide to begin posting most cases online in 2013 (SPC 2013).⁹ The new rules created a centralized website, called “China Court

⁹ An earlier SPC notice, issued in 2010, had taken a permissive approach, stating that courts could post cases

Judgments” (中国裁判文书网), which launched on July 1, 2013. By the middle of 2015, the website included documents from across the country (Sina 2016).

What the SPC has embraced is a form of “controlled transparency” (Liebman 2011). Although the trend is toward releasing a greater number and variety of court documents, certain types of cases are exempt and local courts granted discretion to hold back individual decisions. For example, the first set of SPC rules governing the public release of court opinions, issued in 2013, provided exemptions for cases involving state secrets or personal privacy, juvenile criminal cases, disputes concluded through mediation, and other documents deemed “inappropriate” (不宜) to publicize. Revisions to the rules in 2016 expanded the range of publicly-available court documents¹⁰ and also began requiring courts to release the case number of any decision deemed unsuitable for posting online, along with an explanation of why the judgment was held back (SPC 2016a).¹¹ At the same time, the 2016 rules reiterate the principle that local courts have discretion not to post decisions that the courts deem inappropriate for online posting, and expand the list of case types shielded from public view.¹² In addition, decisions may not be posted online for release until after the appeal process is exhausted, an area that was ambiguous under the 2013 rules.¹³ To be sure, these carve-outs restrict our view of significant areas of everyday adjudication, such as

online subject to certain exceptions.

¹⁰ These include outcomes in state compensation proceedings, changes in criminal sentences, mediated administrative cases, enforcement decisions and withdrawals. The general principle is that any document that reflects termination of a case should be made public unless it falls into a specific excluded category.

¹¹ No public posting of case number or explanation of the reason for non-posting is required for cases involving state secrets or national security. Nevertheless, because case numbers run sequentially by year in individual court decisions, it should be far easier in the future to identify the number of cases being held back without explanation. As of early 2019, however, few courts were publicly releasing the case numbers of any non-disclosed cases.

¹² This includes cases involving state secrets, crimes committed by minors, divorce cases, cases involving custody or guardianship of children, and most disputes resolved through mediation.

¹³ The 2016 rules do, however, require that first instance decisions be made public alongside the appeal when the appellate decision is made public. Prior to the issuance of the 2016 SPC rules, there was some debate over whether non-final first instance court decisions should be made public. Those opposed to the idea were concerned that litigants might be confused or angry if decisions published online were later altered or reversed, and also that first-instance judges might face undue pressure from litigants.

family law, as well as of how courts resolve difficult or sensitive disputes. And yet even this modest form of controlled transparency signifies a sea change for China's courts.¹⁴

Why did the court leadership do it? Another angle on this question is political, and the large-scale release of court documents was first-and-foremost as a way to serve Party goals by curbing wrongdoing in the courts. This line of argument was made explicit by court officials in Henan: judges are more likely to follow the law and less likely to engage in malfeasance when they know their work will be made public. A 2017 SPC white paper endorsed this logic, noting that placing cases online fits with President Xi Jinping's calls for judicial openness and increased public supervision (SPC 2017). Viewed from this perspective, disclosure of court documents was a way for the courts to participate in Xi's signature anti-corruption campaign and also join a broader government move toward transparency, a word which entered the Chinese lexicon of governance over the past decade. Freedom of information regulations passed in 2007 co-exist with a media spotlight glaring enough to expose at least some malfeasance. Officials are also required to release certain types of data, including selected environmental statistics and, now, court decisions. Somewhat unexpectedly, given the association between democracy and transparency, the contemporary CCP has emerged as a champion of Justice Brandeis' well-known ideas that publicity can act as "a remedy for social and industrial diseases" and that "sunshine is...the best disinfectant" (1913).

Greater judicial disclosure also appealed to strategic thinkers in the court bureaucracy who thought it could improve the standing of courts with the public, or at least help them more effectively monitor and run a far-flung court system. Chinese courts have long been regarded as weak actors, and some thought greater transparency could help improve trust in

¹⁴ Courts have also begun to put large numbers of video recordings of cases online, and in 2018 announced plans to place transcripts of court hearings online.

courts and make it easier for them to resist external pressure.¹⁵ Placing decisions online was also plainly a way to expose the activities of individual judges to their superiors in the court hierarchy. Databases of legal decisions can be a powerful tool of court administration insofar as they alert higher-ups to unusual patterns of decision-making, perhaps even identifying individual judges who work exceptionally slowly or routinely hand down outlier decisions.

Technophiles inside China's political-legal system have further argued that algorithms derived from mass digitization of court opinions can advance the efficiency and standardization of China's courts. Some court leaders are on the record discussing hopes that artificial intelligence can ensure consistent decision-making (同案同判), and reduce judges' workload by drafting parts of opinions or deciding easy cases. A number of experiments are underway to use technology to ensure standardization. SPC President Zhou Qiang, in particular, is associated with the idea of smart courts (智慧法院) and has talked about how computer-assisted judging could improve litigant satisfaction by ensuring consistent, fair, and transparent dispute resolution (Jie 2016). In contrast to past concerns about catching up with other countries, there is a possibility that Chinese courts could leapfrog past the rest of the world into the futuristic world of computerized judging. China's first forays with computer-assisted judging have been small-scale and some Chinese judges express skepticism about computerized adjudication. Nevertheless, these experiments place new importance on court opinions as the source of data that programmers are now using to construct algorithms used to standardize outcomes or decide cases.

¹⁵ Other Chinese institutions, notably the Ministry of Environmental Protection and the stock exchanges, have also used the threat of public exposure to curb wrongdoing and boost their own standing. The difference is that environmental and securities authorities have sought to use transparency to control behavior of third parties, while courts are using transparency to control misconduct within their own institution. On how transparency is "good medicine" (良药) to combat favoritism and local government influence over judicial decision-making, see You (2013).

III. Data and Methods: The Henan Dataset

The Henan dataset is a collection of 1,058,986 court documents from the Henan High Court website (Table 1). We chose to focus on cases from a single province, Henan, for three reasons. First, Henan started putting cases online earlier than most other provinces and posted hundreds of thousands of cases prior to the launch of the SPC website. Studying Henan allows us to look further back in time than would be possible in other provinces. Second, Henan ranks in the bottom third of Chinese provinces in per-capita GDP. Examining court practice in Henan is a useful corrective to scholars' tendency to focus on courts in rich areas, where researchers have often enjoyed better access. Our study also reveals significant differences even within Henan—perhaps not surprising given that the province is home to nearly 100 million people and 184 courts. Third, a provincial focus makes finer-grained analysis possible. It is feasible to collect information about individual courts, and to explore reasons for differences among them.

Table 1: Documents in the Henan Dataset

Year	Civil Decisions	Criminal Decisions	Administrative Decisions	Enforcement Decisions	Other	Total
2015	148023	39609	7913	26134	1228	222907
2014	194616	59609	9067	20926	1883	286101
2013	120050	46226	3884	4240	666	175066
2012	66316	30578	2429	972	201	100496
2011	59379	29751	2513	417	222	92282
2010	60713	31331	3187	428	349	96008
2009	42583	17779	2566	407	3363	66698
2008	1836	347	142	21	434	2780
2007	86	6	0	12	28	132

2006	19	2	0	0	13	34
1996-2005	65	16	5	10	8	104
Unspecified	61	1	4	625	15687	16378
Total	693747	255255	31710	54192	24082	1058986

Creating this collection of court documents took 18 months of effort by a team of research assistants with a background in computer science. They developed software to scrape more than one million court documents, and wrote code known as a parsing script to help the computer differentiate different parts of court documents. Due to the number of documents, a parsing script is necessary for such basic tasks as counting document types or knowing how many documents each court uploaded. In terms of format, court opinions follow guidelines set by the SPC, with some local variation.¹⁶ They open with a header that includes the court name, case type, and case number. Next comes a list of parties to the case, including information about the lawyers, legal workers or other persons acting as legal representatives involved in the proceedings. The substantial middle of the opinion follows, usually with a summary of the claims and arguments presented by each party, the facts and evidence reviewed by the court, and the court's legal reasoning and decision. The final paragraph of the decision apportions legal fees to the parties, before closing with the names of the court personnel who heard the case and the date of the judgment.

The ability to parse cases yielded Table 1,¹⁷ a detailed look at the types of documents contained in the Henan dataset. The 1,058,986 court documents span the years between 1996 and 2015, with the great majority dating from 2008-2015. Major categories include 693,747 decisions in civil disputes, 255,255 decisions in criminal cases, and 31,710

¹⁶ See SPC 2016b for the most recent guidelines.

¹⁷ A few notes on classification: 1) Joint civil/criminal cases (刑事附带民事) are classified as criminal; 2) The “unspecified” row contains 16,378 documents where the date was missing or obviously wrong (e.g. year 2022).

decisions in administrative cases. There are also a substantial number of enforcement actions (54,192).

IV. What's Missing? Assessing Bias

For all that is available, the Henan dataset is also clearly incomplete and documenting what is missing is an urgent task for researchers. Below, we document what we call “the missingness problem:” variation in court compliance with the national mandate for disclosure. We find wide variation in disclosure rates across courts that does not fully track the conventional explanations, such as mediation rates or GDP per capita.¹⁸ In contrast our analysis suggests that variation in transparency across courts is most likely due to variation in how courts have interpreted the national rules surrounding disclosure. Some courts are more diligent than others in disclosing decisions, especially as court leaders likely vary in how much emphasis they place on transparency.

In 2014, internal court statistics report that Henan courts completed 685,890 cases, compared to 286,101 documents in our collection.¹⁹ On average, this means that Henan courts placed just over 41 percent of their docket online, a proportion in line with recent national estimates that slightly less than half of 2014 and 2015 cases appear on the SPC website (Ma, Yu, and He 2016). However, this average disguises tremendous variation. The highest-ranking court in our sample released enough documents to plausibly cover 83 percent of completed cases, compared to just 14 percent for the least compliant court.²⁰ This

¹⁸ Using the province as the unit of analysis, Ma, Yu and He (2016) find a correlation between court disclosure rates and GDP per capita (208-209). To the best of our knowledge, no existing research examines whether mediation rates are correlated to court disclosure rates. A common sense explanation, however, would be that courts with higher mediation rates have lower disclosure rates because there is no obligation to release mediation agreements.

¹⁹ The data on court totals are from internal court statistics that were provided by a contact inside the Chinese court system.

²⁰ All estimates should be treated as upper bounds. As discussed further below, courts sometimes publicly post more than one decision related to a case.

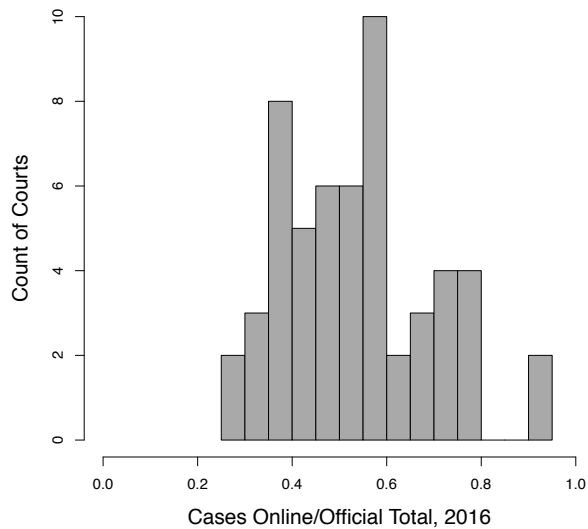
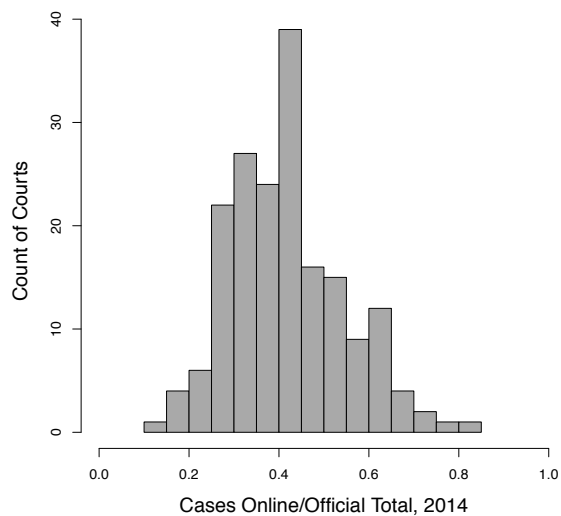
variation is particularly striking for a province that had released rules concerning what must go online by 2014, and had already begun ranking courts based on their compliance with provincial transparency policy.

Nor has variation in disclosure rates between courts disappeared. During a research trip in May 2017, many Henan judges and scholars argued that 2014 was early in the adoption of mandatory disclosure, and that disclosure rates had dramatically improved and become more uniform since then.²¹ There are now clearer SPC rules about what should be disclosed, and disclosure is now the default. In addition, the Henan courts introduced software in mid-2016 that automatically uploads court documents to the SPC server, unless the presiding judge indicates a reason the case should not be made public and a higher-ranking judge in the court approves a request not to disclose. Yet our analysis of fifty-five courts with publicly available work reports for 2016 shows an average disclosure rate of 54 percent—an improvement over 2014’s average disclosure rate of 41 percent, but hardly the end of the missingness problem (Figure 1).²² Variation between courts also persists. The highest-ranking court in our 2016 sample has a disclosure rate of 93 percent, compared to just 26 percent for the least compliant court.

Figure 1: Proportion of Cases Online by Court in the Henan Dataset, 2014 and 2016

²¹ In May 2017, we presented a draft version of this paper at Zhengzhou University, and solicited feedback from a mixed audience of scholars, judges, and other legal professionals. A common reaction was that 2014 was ancient history, and the missingness problem should be much improved and possibly totally solved. One judge commented that if we re-ran our plot of cases for 2016 we would find little variation, with courts all disclosing 80 to 90 percent of their docket. Although the trend is certainly toward greater disclosure of cases, as shown in Figure 1, our analysis shows that the public record is still far from complete.

²² We were unable to obtain internal court statistics on the total number of cases resolved by each court for 2016. Instead, we looked online for each court’s public 2016 court work report, finding work reports—and thus data—for fifty-five courts. A direct comparison of the same fifty-nine courts in 2014 and 2016 show a modest jump in disclosure rates from 42 percent to 54 percent. Our measure of cases available for 2016 is based on a separate dataset of Henan cases posted to the central SPC website, as the Henan High Court Website stopped posting new cases at the end of 2015. The primary dataset used in this paper, which was obtained from the Henan High Court Website, remains a valuable window onto court practices in Henan between 2012 and 2015, particularly because not all of the documents related to those cases migrated to the central SPC website.



What might explain the variation in disclosure rates across courts? One obvious explanation is that the national disclosure rules may affect courts differently. For example, mediation agreements are not required to be posted online, and courts with lower disclosure rates could rely more heavily on mediation. However, further analysis of the 2014 data shows that accounting for mediation does not explain differences across courts. In Henan, internal court statistics count 110,134 mediated cases in 2014²³ and accounting for mediation as described in footnote 22 boosts the average disclosure rate to 52 percent.²⁴ Adjusting for mediation also results in even more variation across courts. Although the least compliant court only released enough documents plausibly to cover 20 percent of completed cases, adjusting for mediation yields four courts that released enough documents potentially to cover 100 percent of decided cases.²⁵

²³ We obtained data on the total number of mediated cases for nearly all Henan courts. This analysis is based on data from 180 courts, rather than all 183 courts in existence in 2014, as we were able to verify that three courts had clerical errors in the official data for mediation. Henan established one new court in 2016, for a total of 184 courts as of early 2017.

²⁴ To account for mediation, we subtracted the number of mediated cases from the total number of cases the court reported handling. This gave us the total number of cases resolved through adjudication, which we compared to the number of documents for each court in the Henan dataset.

²⁵ The most compliant court, the Sheqi county basic level court, released 9 percent more documents than the

Another obvious place to look for explanations of variation in transparency is court resources. *Resource bias* suggests that variation in court transparency stems from underlying resource constraints, particularly the availability of personnel to collect judicial decisions, blackout personal information, and place them online (Grimmer, Roberts and Stewart 2018). Nationwide, Ma et al. (2016) show a statistically significant correlation between per capita GDP and the 2014 interprovincial disclosure rate, which provides some support for the idea that resource bias might matter (208-9). However, our parallel efforts to investigate the relationship among GDP per capita, population, and the 2014 disclosure rates for individual courts within Henan province show no statistically significant relationship among the variables (Appendix B).²⁶

Rather, we find evidence within the Henan data that how courts interpret the rules explains at least some of the variation in transparency. In other words, *diligence bias* – or the degree to which courts scrupulously adhere to national guidelines – helps explain missingness. Divorce cases provide a good example of variation in how closely courts adhered to national rules on disclosure.²⁷ From January 1, 2014 through September 20, 2016, the SPC rules were that divorce decisions should only be made public if the names of the parties were redacted. Then, in July 2016, the SPC changed the rules to protect personal privacy more fully and prohibited courts from disclosing divorce decisions.²⁸ In our dataset, however, we find that un-redacted divorce cases are common prior to 2016, and that some courts continued posting divorce cases even after the prohibition on releasing them took

number of cases it reported completing in 2014. Courts may release multiple decisions in the same case in order to resolve procedural or jurisdictional issues before issuing a final judgment.

²⁶ We use population as a rough proxy for the business of individual courts, making the assumption that courts located in populous areas are busier than those located in less inhabited areas. During fieldwork in Henan in 2017 we heard from judges that high-population districts might have lower disclosure rates due to larger per-judge caseloads. If anything, we find a negative relationship between GDP per capita and transparency and a positive relationship between population and transparency, both of which run counter to our intuition.

²⁷ Divorce cases are defined here as civil cases with “divorce” [离婚] in the title of the case.

²⁸ The new rules became effective on October 1, 2016.

effect. Our dataset contains 29,982 divorce decisions in 2014, an average of 5% of the cases posted in each court, and this average only falls to 3.5% of the cases posted in each court in 2016 (for a total of 38,585 cases posted). As shown in Figure 2, in both 2014 and 2016, the proportion of divorce cases posted online is positively correlated with the proportion of the total docket online. This suggests that courts with high transparency rates might be releasing *more* documents than SPC rules suggest, and that courts with low transparency rates are more strictly following the SPC rules.

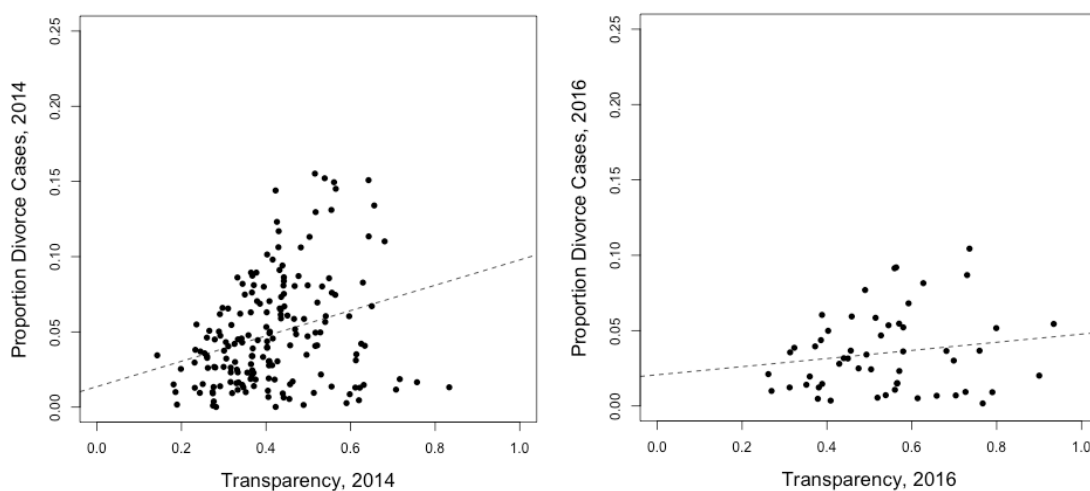


Figure 2: Relationship between Transparency and Proportion of Divorce Cases, 2014 and 2016. Both years show a strong correlation between transparency and divorce cases, indicating that court policy on releasing divorce cases may explain variation in transparency.

Diligence bias could also help explain differences in disclosure rates between basic and intermediate courts. Under SPC rules, first instance decisions may only be released after any subsequent appeal concludes. This rule creates a time lag between first instance decisions and putting those cases online, which may lead to an unintended disclosure gap between basic and intermediate courts. Even though almost all 2014 cases should have been resolved by the time we collected the data, the average intermediate court released enough

documents to cover 56 percent of cases decided in 2014 compared to an average of 40 percent for basic level courts, a statistically significant difference ($p < .001$).²⁹ In 2016, this trend held with intermediate courts disclosing 63 percent of documents compared to 51 percent for basic level courts, still a statistically significant difference ($p = .047$). Our interpretation is that some first instance cases may not be posted online because some lower court judges are unaware when appeals are resolved.³⁰ Diligence bias also helps explain why there is no relationship between court transparency and GDP per capita. Although our initial expectation might be that resource-rich courts have the human bandwidth to place more documents online, they might also use that capacity strictly to follow SPC standards surrounding non-disclosure, such that fewer documents end up online.

Of course, it is impossible to determine exactly what is *not* in our dataset, and it is also likely that more than one type of bias is at play. For their part, Henan legal professionals typically reached for explanations about the importance of court leadership when we asked about variation in disclosure rates during fieldwork there in 2017. Their explanation is that court presidents vary in the value they place on transparency, particularly how much they care about their court's performance in annual province-wide disclosure rankings, and the degree to which they prioritize disclosure rates in evaluating individual judges.³¹ There is also some evidence this might be true, and that court presidents respond to

²⁹ Adjusting for mediation rates, intermediate courts released enough documents potentially to cover 70 percent of all cases decided, compared to an average of 50 percent for basic level courts, a statistically significant difference ($p = .0002$).

³⁰ This was a particularly important issue in 2014, when the rules governing the disclosure of first instance cases were unclear. It is likely a less of an issue today as the 2016 clarify that first instance cases should be automatically made public after appeals are decided. In 2014, courts also had widely different approaches posting the short judgments known as *caidingshu* (裁定书), many of which resolve cases without deciding the merits of a claim or that are based on summary procedures, and disclosure of enforcement-related documents.

³¹ Specific evaluation metrics for judges and courts are often set by intermediate courts, so the weight given to disclosure rates in court evaluations can vary within a province. Courts that prioritize transparency may strategically place additional documents online to boost their court's standing in the disclosure rankings. For example, some Henan courts continued to release divorce decisions even after the SPC deemed divorce-related documents unsuitable for online publication. Of course, this behavior also could be due to administrative

the incentives created by rankings and evaluation. Ma, Yu, and He (2016) discovered through fieldwork that some courts face a “small exam” each quarter (季度小考), as well as a major year-end evaluation (年度大考), and that uploads of judicial decisions to the SPC website spike at the end of the quarter just ahead of court evaluations.

In contrast, American audiences typically speculate that records of politically sensitive cases are suppressed by the court leadership. Again, there is some evidence that this is true. In Henan, in particular, lawyers routinely note that cases they have handled that involve politically well-connected parties are frequently missing from online databases. Administrative censorship is particularly hard to document, however, because courts are reluctant to discuss it. Technically, Chinese courts are supposed to publicly release a written reason for any judicial decision they choose not to publicly disclose. Even though they rarely comply with this directive, our analysis of 2,472 of such documents only includes three examples of courts willing to either cite the catch-all “inappropriate to publish” provision of the rules or admit that they are suppressing collective cases (群体性案件). Of these courts, only a Shandong court disclosed enough detail to identify the type of case held back from public view, a string of collective labor disputes.

In summary, there are three credible explanations for what is missing: administrative censorship, incentive bias, and diligence bias. These three explanations collectively lay the groundwork for future research. What is needed is a sustained, cooperative effort to document the relative importance of different types of biases in China's new online case databases and trace change over time.

What to do in the meantime, then, as missing cases will affect every analysis? Building on Grimmer and Stewart’s four principles of automated content analysis (2013),

convenience or clerical errors.

we offer three concrete suggestions about how to learn from a rich, incomplete dataset. First, we can seek out pockets of excellent data. Although the results will not be generalizable to all courts, they will provide more certain answers. At the very least, some researchers may decide that a smaller scale analysis of a more complete corpus is a worthwhile tradeoff.³² Second, we can use what we know about missingness to bound our estimates of the prevalence of a phenomenon. Frequency estimates of any type of case can be bounded by assuming that all missing cases belong to the set (the upper bound) and then assuming that no missing cases belong to the set (the lower bound). And third, computational text analysis can be combined with qualitative research. Computational text analysis is particularly valuable preceding fieldwork, when it can be used to uncover patterns and suggest questions that we would not have otherwise known to ask. We are especially optimistic about what we can learn by asking local legal professionals—especially experts or repeat players in a particular area of law—to comment on preliminary results from computational text analysis. There is no substitute for local knowledge and, given how much data is missing, checking if findings are credible is an important reality check. Conversations with Chinese scholars, judges, lawyers and even plaintiffs can also help suggest explanations for trends, as well as further research questions. We illustrate these three approaches in the next section, using administrative litigation as a case study to illustrate how to work with a large, incomplete dataset.

V. Court Decisions as Data: Insights into Administrative Litigation

Administrative law is a natural starting point for students of Chinese politics because it is intrinsically political. This is the area of law that governs interactions between citizens

³² Stern (2014) analyzes the caseload of just one court with high disclosure rates and is an example of this approach.

and the state, where citizens use law to challenge illegal state actions. Because of this, administrative litigation lawsuits are often framed as part of the basic repertoire of contention and a way for ordinary Chinese citizens to contest government decisions over sensitive issues such as land seizures, fines and police detention (Mahboubi 2014; Cui 2017). Both the Chinese and English language scholarship has closely tracked the total number of administrative lawsuits, a number that has been treated as a signal of citizen willingness to challenge the state,³³ evidence that the populace is undergoing a “legal awakening” (Zhang and Ginsburg 2019, 285) and an indicator that the Chinese state is increasingly constrained by law (Zhang and Ginsburg 2019).

Despite the fact that the raw number of administrative lawsuits is seen as an important data point for understanding trends in state-society relations, no one has yet looked behind the numbers at *what kinds of disputes* end up counted in official statistics. In large part, this is because a more granular look only became possible following the Chinese court system’s decision to release publicly most court decisions. Below, we use a topic model to explore the 25,921 decisions in administrative litigation cases in our dataset, with the goal of better understanding the range of cases that collectively comprise “administrative litigation.”³⁴ To the best of our knowledge, no prior scholarship has analyzed such a large collection of Chinese administrative cases, and only a few scholars have used topic models to analyze judicial decisions in other countries.³⁵

³³ For example, a leading Chinese scholar of administrative law writes that “without administrative litigation, many of the plaintiffs would still be running on the road to petition, and many of the officials would not have heard of terms such as ‘excess of power’ or ‘due process’” (He 2018, 141). Along similar lines, Li’s (2013) examination of what determines variation in administrative litigation across provinces frames administrative litigation as “the first time in Chinese history [that] victims of official malfeasances may “routinely” sue the state for remedy” (815).

³⁴ As Table 1 shows, the Henan Dataset includes 31,710 documents from court administrative divisions in Henan courts. These include: 1) administrative litigation, which are lawsuits by individuals or legal persons against the state challenging concrete administrative actions and 2) non-litigation enforcement decisions, which are actions brought by administrative entities asking courts to enforce their decisions (usually unpaid fines). We removed 5,789 non-litigation enforcement cases prior to running out topic model in order to focus on suits against the state.

³⁵ Our approach also contrasts to recent empirical work on administrative litigation (Zhang, Ortolano, and Lu

Methodologically, this section shows how topic modeling can lead to new discoveries and, in particular, complicate categories that were previously taken-for-granted.³⁶ After sketching a portrait of the dataset using topic modeling, close reading of cases revealed a large number of topics related to disputes involving third parties. In these cases, the litigant is using administrative litigation to try to obtain assistance from the state in a dispute with another private individual or organization. We then go on to estimate that 47% of our administrative corpus consists of “third-party cases,” based on hand-coding a random sample of cases. This finding suggests that a large proportion of administrative lawsuits are private disputes where litigants are trying to leverage the power and authority of state agencies, rather than efforts to challenge or constrain officials. Mindful of the possibility that missing data could affect our analysis, we then further examine courts with high transparency, bound our estimate, and engage in qualitative fieldwork. All these strategies confirm the prevalence of third-party disputes—a finding that ought to shift the field’s interpretation of what a growing administrative caseload means, and temper conclusions that it signifies either popular dissatisfaction with the state or a step toward the expansion of judicial review.

Before walking through our research process and results, a brief introduction to topic modeling is helpful.³⁷ Topic modeling, a tool that originated in computer science and is now used across the social sciences, helped us examine the broad categories of more than twenty thousand administrative litigation cases without reading each one. We used the Structural Topic Model package in R (Roberts et al. 2014; Roberts, Stewart, and Tingley 2016;

2010; Cui 2017; Li 2014), which draws on interviews and small-n samples of court documents.

³⁶ Of course, missing data potentially has a large effect on topic models and the presence of so much missing data in this dataset introduces uncertainty to the topic model. Below, we argue that our finding about the importance of third party disputes would hold even accounting for missing cases, but substantial uncertainty remains about how frequently these kinds of disputes occur.

³⁷ For a deeper introduction to topic modeling, see Grimmer et al. (2019).

Roberts, Stewart, and Airoidi 2016) to estimate topics, which are groups of words that are likely to appear together within documents. For example, the model suggests that the words “land,” “use permit,” “collective, issue,” “land used,” “construction,” and “use” frequently appear together, collectively forming a topic we labeled as “rural land-use permitting.”³⁸ In addition, the model estimates topic proportions for each document, with each document containing a mixture of topics. Research assistants helped us review the highest frequency words associated with each topic, as well as twenty cases associated with each topic,³⁹ in order to assign each topic a topic label (e.g. “birth planning,” or “withdrawals -- individuals”). A list of all eighty-two topics, and the highest frequency words associated with them, appears in Appendix A.

Six broad categories of disputes emerged from the topic model – topics about land and property; procedure; fines or punishment; benefits, labor rights or compensation; general words; and permits and registration. We assigned each topic to one or two of these categories, based on the most important themes in the twenty cases we reviewed (Table 2). To describe the range of the topics and categories, Figure 2 is a correlation plot coded along these six themes, where the node size is proportional to the amount the topic is discussed

³⁸ A significant amount of pre-processing of the text is required before running a topic model. In brief, we segmented the Chinese text into words using the Stanford Natural Language Processing Chinese segmenter. By examining word removal lists, we found that removing words that appeared in more than half of the documents removed common legal terms that were unlikely to distinguish between cases, so we added this as a preprocessing step. We estimate the number of topics from the data using an algorithm developed by Lee and Mimno (2014), implemented in the STM package in R (Roberts, et al. 2018). We chose to use the Lee and Mimno algorithm to choose the number of topics because our goal was simply to describe the data, and this imposed an external criterion on this decision. We also found that the Lee and Mimno algorithm provided topics with high interpretability, a close reading of topics after the model was fit indicated that they had clearly separable ideas. However, we note that preprocessing decisions can have an important impact on results (Denny and Spirling 2018) and that there are likely many other ways of categorizing the same data.

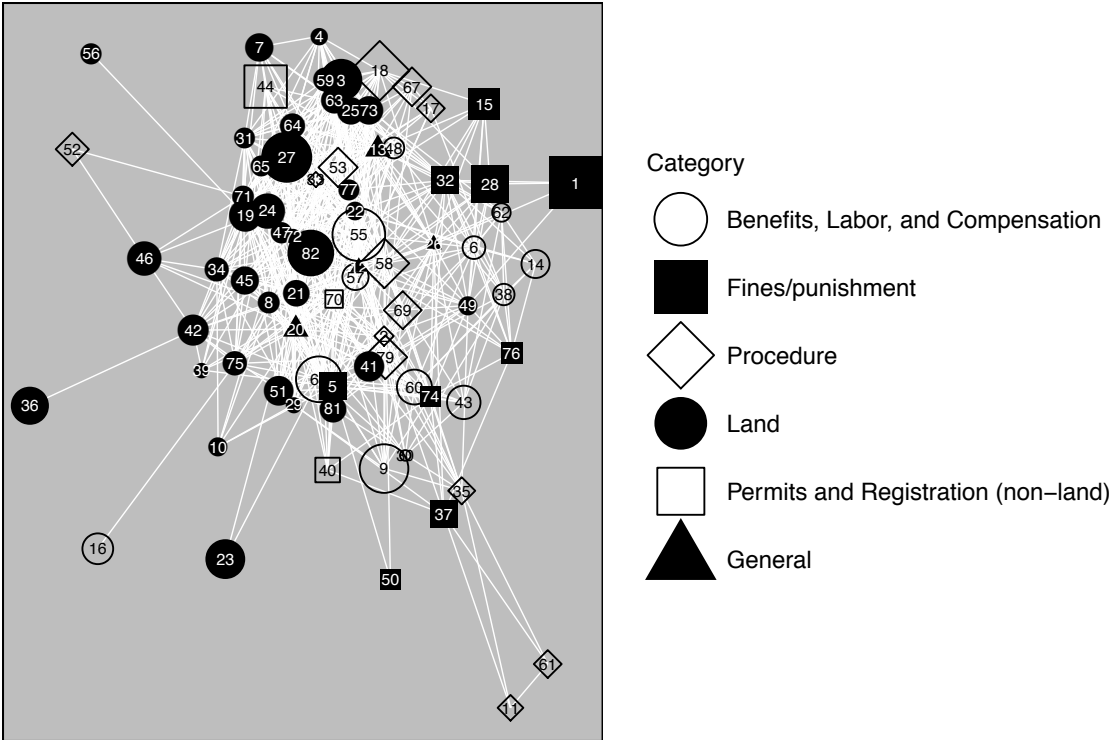
³⁹ Aa Grimmer and Stewart (2013) note, close reading is essential to ensure that topic labels accurately capture the content of the documents. The twenty cases we read included ten cases that the model identified as most representative of the topic – that is, the ten cases with the highest percentage of words correlated with the topic. We also reviewed ten additional randomly selected cases with an estimated topic proportion above .3, meaning that at least 30 percent of the words in the document were estimated to be from the topic. We did this to make sure the topic label corresponded to the variety of cases with high proportions of the topic and to ensure that the topic was not skewed by large numbers of nearly identical cases.

within the corpus of text.⁴⁰ In other words, larger nodes indicate more common topics. Edges, or the lines connecting nodes, indicate a correlation between topics greater than 0.01, or that the topics are more likely to appear within the same document. In addition, groups of topics that are likely to appear together within documents also come into focus. For example, a group of topics related to the benefits, labor, and worker compensation theme cluster in the right side of the plot. These documents are likely to contain similar language related to monetary demands, particularly related to health and retirement benefits. Land and property claims largely congregate toward the bottom left of the plot. Language related to court procedure and fines appear in many types of cases and such topics are scattered throughout the correlation plot.

Figure 2: Correlation Plot of Administrative Cases in the Henan Dataset⁴¹

⁴⁰ In some cases, we grouped topics into more than one category. In such cases, we identify both categories in Appendix A, but give the topic the color of the predominant category in Figure 2.

⁴¹ Topics 54, 66, 78 and 80 removed because they were not connected to other topics.



Using the topic model output, we can estimate the proportion of the documents related to each of the broad categories of topics. Table 2 shows the sum of the topic proportions for topic related to each of the broad categories in the topic. Overall, we see that the topic model estimates that 30% of the corpus is related to land and property disputes. In addition, 11% of the cases are related to fines and punishment.

Table 2: Categories of Administrative Litigation in the Henan Dataset⁴²

Category	Proportion of topic model (%)
Land and property disputes only	30.7
Topics related to procedural decisions only	27.8
Disputes over fines and punishment assessed by administrative agencies only	11.1
Disputes over benefits, labor rights or compensation for workplace injuries only	10.6
Topics that include land and property as well as procedure	8.8
General word topics, with litigation-related words common to many kinds of cases ⁴³	6.9
Topics relating to permits and registration (but not land or property)	2.0
Topics that include land and property as well as benefits, labor, rights, and compensation	1.2
Topics that include fines and punishment as well as benefits, labor rights, and compensation	<1
Topics that include fines and punishment as well as land and property	<1

By closely reading the cases most representative of each topic, we discovered that thirty-seven of eighty-two topics mark an attempt to draw the state into private disputes, typically by challenging an administrative decision in favor of another individual, group, or entity. Sometimes, the fact that the underlying dispute is between private parties is obvious because a designated third party (第三方) appears in the list of parties that opens all Chinese court decisions. In a 2013 case, for example, a concrete factory sued the Dengfeng Human Resources and Social Security Bureau over a decision to award work-related injury compensation to Wencan Liu. The factory had been privatized four years before the lawsuit, and argued (unsuccessfully) that they should not bear liability for a case of tuberculosis caused by a two-decade work history that largely fell into the period when they were a state-

⁴² We put each topic into 1-2 broad categories, in other words, some topics were assigned to one broad category and some to multiple categories. We then estimated the proportion of words in each category by estimating the expected topic proportions across documents assigned to that category. Results are presented in Table 2.

⁴³ These are general litigation-related words, such as “respondent” and “rights,” that persist even after removing words that appear in more than half of the court cases

owned enterprise.⁴⁴ Another example of this type of third-party dispute is a 2014 case from Pingdingshan City involving a complicated property dispute—and attempt to kick out several alleged squatters with a competing claim—in which the Real Estate Administration Bureau was dragged to court to (successfully) defend its property registration decision.⁴⁵ When the third-party was not clearly identified at the start of the decision, it took more attentive reading to surface the underlying civil dispute. In Topic 44 for example, there were a number of cases challenging business registration with the State Administration of Industry and Commerce. The text of these decisions, however, makes clear that these disputes are in fact about the underlying ownership of the company in question.

Having uncovered the importance of third-party disputes through topic modeling, we sought to estimate the frequency of third-party disputes by hand-coding a random sample of five hundred cases. This was also an important validation step, along the lines recommended by Grimmer and Stewart (2013), to check findings from an unsupervised topic model. Research assistants with a background in Chinese law decided if each case represented a dispute between two private parties, or between a private party and the government.⁴⁶ Overall, 47% of cases (n=234) were third-party disputes compared to 40% (n=201) of cases that reflected disputes with the government. (In 13 percent of cases, we were not able to make a determination based on the text of the decision.) At first glance, these numbers are striking: third-party disputes are approaching a majority of administrative cases in our sample. This is a finding that would surprise even close observers of the Chinese legal

⁴⁴ Dengfeng Shaolin Cement Company v. Dengfeng Human Resources and Social Security Bureau (2013), Zhengzhou Intermediate Court. Court decision on file with the authors.

⁴⁵ XX Jin and YY Liu [names anonymized by the court] v. Pingdingshan City Real Estate Administration Bureau (2014), Pingdingshan Xinhua District People’s Court. Court decision on file with the authors.

⁴⁶ Coding rules that lay out our detailed definition of a “third-party dispute” appear in Appendix C. Each case was read and coded independently by two research assistants. The coders started with a basic definition of third-party cases and then reviewed an initial 100 cases in order to develop a more precise definition of third-party cases. They then each reviewed the same 500 cases in the random sample. In the 34 instances in which their coding diverged one of the authors reviewed the case with both coders to arrive at a final classification. The definition of third-party cases that we used is set forth in Appendix C.

system. Although there is a parallel trend in criminal law where litigants sometimes use criminal sanctions to seek compensation in private disputes due to difficulty enforcing civil judgments (Liebman 2015), existing work on Chinese administrative law has not been attentive to how administrative litigation can get piggybacked onto civil disputes.

Accounting For Missing Data

How does missing data affect our analysis? On one hand, perhaps our dataset is missing cases brought against the state due to political sensitivity. On the other hand, perhaps our dataset contains only a partial view of third-party disputes because courts hold varying interpretations of what they are required to disclose, or simply devote insufficient resources to ensuring cases are placed online. In order to buttress our finding, and also to illustrate how to work with incomplete data, we use three approaches to make sure third-party disputes remain a substantial portion of the docket even accounting for missing data.

As a first step, we look only at courts with well above average transparency to see if the analysis changes. Within our random sample of 500 cases, sixty-three were from courts with higher than 65 percent transparency. In these “high transparency” courts, our coding suggests that 38 percent of cases were third-party cases, 46 percent of cases represent an underlying dispute with the government, and 16 percent could not be determined from the text of the decision. Over one-third of administrative lawsuits are still third-party disputes even in high transparency courts where missing data is less of a problem.

Second, we draw bounds around our estimate of the prevalence of third-party disputes. From the analysis we described in the previous section, the corpus contains about 41 percent of the all types of cases in 2014. The province-wide disclosure rate for administrative cases was higher than for the corpus of a whole: our dataset includes 9067

administrative cases from 2014, out of a total of 15,453 administrative cases that Henan courts reported resolving in 2014 -- a disclosure rate of 59 percent (Henan High Court 2015). We therefore use this 59% transparency rate in administrative cases to bound our estimate.

Assuming our estimate of 47 percent of all cases being third-party cases is correct, we can calculate the lower bound proportion assuming all cases that are missing are not third-party cases. This would leave us with 28% of cases being third-party cases, still a substantial number. On the other hand, if all missing cases were third-party cases, then a full 69% of all cases would be third-party cases. In either case, we believe that such a substantial portion of cases deserves more attention in the literature.

Finally, one of the authors traveled to China in 2018 to present our findings about the prevalence of third-party disputes to audiences that included Chinese judges and administrative law professors.⁴⁷ In cooperation with local universities, we held interactive forums in Beijing, Shanghai, Chengdu and Changchun which closed with a specific request for feedback about whether listeners had noticed that administrative litigation often masks a civil dispute. Across all four cities, audience participants noted a close fit between our findings and their experiences. In particular, judges noted that third-party disputes are common. “We have a sense of administrativization of civil cases,” said a Beijing judge in a typical reaction to our slide deck. Although it is possible that audience members were disposed to politely agree with our findings, we take solace in the fact that at least some participants felt comfortable publicly expressing disagreement. In particular, a few participants pushed back against our interpretation of our findings and disputed whether

⁴⁷ We also presented initial findings to Chinese audiences in 2017, including in Henan, but without the same emphasis on the prevalence of third-party disputes. All discussions were hosted at local universities or courts, typically with Chinese faculty serving as interlocutors to help ensure attendance from legal professionals with administrative law practice experience and expertise. Both the presentation and subsequent discussion was conducted in Chinese, and lasted between 90 minutes and two hours. The presenting author took detailed notes on the discussions that followed the presentation, and all quotes in this paragraph are drawn from these notes.

third-party disputes are common or, as one judge in Beijing put it, only “a sprout.” But the majority of commentators agreed that the courts are often caught in the middle between private disputants, and that judges have no option but to become involved even if they would prefer not to hear or resolve the case. One judge, expressing his frustration at being drawn into such cases, drew a link to the wider phenomenon of what Chinese judges call “abusive litigation” (滥用诉讼). One scholar noted that courts are taking steps to address the frequency of private litigation being transformed into administrative litigation and predicted that over time our data would begin to show a decline in the percentage of cases involving third-party disputes.

Regardless of the exact number of third-party cases, their prevalence in our corpus highlights the limits of conceptualizing administrative litigation primarily as a tool for angry people to petition a repressive or unresponsive state. To be sure, some cases certainly fit this mold. The topic model includes topics challenging reeducation through labor decisions (Topic 1), appeals relating to petitioning (Topic 2), claims by individual detained for petitioning to Beijing (Topic 28), and challenges to birth planning fines (Topic 50). However, the “citizens versus the state” frame flattens away a huge amount of complexity. Looking closely at our corpus makes plain that the aggregate number of administrative cases is a poor measure of citizen willingness to sue the state, even though observers of Chinese administrative law often treat it this way. In addition to third-party disputes, the prevalence of case strings shows how easy it is to count the same dispute numerous times. The huge number of documents related to court procedure—which are generally counted in official court tallies of administrative litigation—also suggests that the aggregate number of administrative lawsuits includes many mundane procedural decisions, including remands for

new trials (Topics 17 and 18), and decisions related to statutes of limitations (Topic 53), and jurisdiction (Topic 52).

All of this shows how topic modeling can be a useful tool of discovery to surface underappreciated motifs in administrative litigation, even when working with incomplete data. The prevalence of third-party disputes, in particular, is not a theme that would necessarily emerge from examining national statistics, tracking the news, or reading scholarship. Rather, it reflects the vantage point of the data: the perspective of the lower courts responsible for processing the diverse claims that collectively constitute administrative law. This wide-angle view offers a concrete sense of how Chinese administrative judges actually spend their time and reminds us how much of administrative law is about leveraging state authority rather than challenging it.

VI. Conclusion

A new wave of digital scholarship on law and courts is already underway, as researchers start to bring tools of computational text analysis tools to bear on the texts core to legal scholarship. For many of us, this digital turn is exciting because of the ways growing digital archives can contribute to knowledge across disciplines. As collections of court decisions grow, for example, legal scholars will be able to trace evolving interpretations of concepts such as fault, causation, or damages or to examine patterns in how courts handle specific types of cases or parties. Political scientists can also deploy topic models to visualize the rise and fall of certain topics in court dockets, and investigate the relationship to political priorities or legislative changes. At the same time, however, the millions of Chinese court decisions now online will not be the only corpus that is tantalizingly large and frustratingly incomplete. Digitizing documents offers an opportunity

for censorship, and there is evidence that this happens. Selected legal academic articles from the 1950s, for example, no longer appear in China's two leading online databases (Tiffert 2019). And even when censorship does not occur, commercial databases have incentives to oversell the completeness of their product rather than account for what is missing. Our general call is for legal scholars to take the missingness problem seriously, and consider following one of the three strategies detailed above, rather than succumbing to the temptation to treat even a very large-n sample as an accurate reflection of reality.

At the same time, taking missing data seriously does not mean giving up. Our investigation of administrative litigation shows how topic modeling opens a wide-angle perspective on courts' daily activity, exposing unappreciated trends and also surfacing new questions for research. Answering the deeper "why" and "how" questions, though, will likely continue to require the type of information about local context that typically emerges from time on the ground, especially as court judgments provide only one, often limited, view of actual practice. Thus, we hope that the migration toward treating text as data in the field of law will also mean a surge of multi-method work which combines digital tools with interviews, participant observation, archival work, and close reading. After all, "computers *amplify* human abilities," not replace them (Grimmer and Stewart 2013, 4). This also means that the best work is done in teams that combine skills and insights from law, the social sciences, and computer science.

Theoretically, the sudden availability of so much data from China's courts raises questions that our field will be grappling with for years to come. Overall, is the availability of so much information about court judgments changing the practice of Chinese law? Does publication of court judgments encourage certain types of cases or legal arguments? Does the imperative to post court decisions affect court dockets, by making courts more or less

willing to accept certain types of cases? Is greater transparency resulting in greater standardization and fairness in a legal system that has often been criticized as arbitrary and vulnerable to corruption? In this new environment, the list of possible research questions is nearly infinite and the primary challenge no longer is obtaining data but rather effectively using the public record and prioritizing among research questions.

Online Appendix A: Topic Model

	Topic Label	Category	Most frequent words, Chinese	Most frequent words, English	Representative Cases Primarily Third-Party Cases?
1	Re-education through labor	Fines/punishment	劳动, 教养, 决定, 公安, 决定书, 笔录, 劳教	labor, re-educate, decision, public security, decision letter, record, re-education through Labor	No
2	Petitioning rejections	Procedure	处理, 信访, 事项, 意见, 问题, 反映, 投诉	deal with, letters and visits, matter, opinion, problem, make known, complaint	No
3	Rural building disputes (宅基地)	Land	宅基地, 建房, 宅基, 使用权, 使用, 居住, 村民	rural buildings land, constructing houses, rural buildings, right to use, use, reside, villager	No
4	Rural land-use permitting	Land	土地, 使用证, 集体, 颁发, 用地, 建设, 使用	land, use permit, collective, issue, land used, construction, use	Yes
5	Administrative penalties	Fines/punishment	处罚, 决定书, 听证, 告知, 罚款, 责令, 笔录	penalty, decision letter, hearing, inform, fines, order, record	No
6	Workplace injury awards in context of corporate acquisition	Benefits, Labor and Compensation	鉴定, 材料, 结论, 内容, 主要, 其局, 成立	appraisal, materials, conclusion, content, mainly, the bureau, establish	Yes
7	Land contracts	Land	承包, 经营权, 土地, 合同, 第三人, 证书, 签订	contract (verb), right to operate, land, contract (noun), third person, certification, sign	No
8	Government land takings	Land	批复, 公告, 征地, 征收, 方案, 批准, 年度	official reply, open notice, land taking, expropriate, plan, approval, annual	No
9	Food safety	Benefits, Labor and Compensation	食品, 生产, 举报, 处罚, 安全, 产品, 销售	food, produce, report, penalty, safety, product, sell	Yes
10	Urban planning permits	Land	项目, 建设, 规划, 用地, 第三人, 许可, 日照	project, construction, planning, land used, third person, permit, sunlight	Yes
11	Withdrawals (individuals)	Procedure	撤回, 准许, 撤诉, 收取, 减半, 自愿, 应予	withdraw, approve, withdrawal of lawsuit, charge (fees), cut into half, voluntary, should	No
12	General word topic	General	是否, 存在, 问	whether, exist, question, respondent, right,	No

			题, 答辩人, 权利, 因此, 可以	therefore, may	
13	General word topic	General	第三人, 清楚, 辩称, 告诉, 及其, 代理, 正确	third person, clear, defense, inform, and its, agent, correct	Yes
14	Timing of workplace deaths	Benefits, Labor and Compensation	工作, 死亡, 时间, 疾病, 岗位, 抢救, 突发	work, death, time, illness, working position, rescue, emergency	Yes
15	PSB fines	Fines/punishment	处罚, 治安, 公安, 殴打, 管理, 决定书, 拘留	penalty, public order, public security, management, decision letter, detain	No
16	Re-settlement compensation	Benefits, Labor and Compensation; Land	移民, 补偿, 实物, 小浪底, 安置, 黄河, 市移民局	relocatee, compensation, object, Xiaolangdi, resettle, Yellow River, city relocatee bureau	No
17	Remands for new trial – general	Procedure	上诉人, 被上诉人, 原审, 二审, 原判, 终审, 正确	appellant, appellee, original trial, second instance, original decision, final trial, correct	No
18	Remands for new trial -- land cases	Procedure; land	一审, 二审, 正确, 原判, 答辩, 提交, 错误	first instance, second instance, correct, original decision, defense, submit, wrong	No
19	Land and housing permits (employee claims)	Land	市政府, 街道, 办事处, 门面房, 东街, 居委会, 西关	city government, street, office, store-front apartment, east street, neighborhood committee, west gate	Yes
20	General word topic	General	文件, 通知, 管理, 部门, 工作, 实施, 有关	document, notice, management, department, work, enforce, related	No
21	Land/ housing disputes -historical policies	Land	国家, 政策, 落实, 遗留, 当地, 按照, 历史	state, policy, implement, remaining, that place, according, history	No
22	Land-use permits (3rd parties)	Land	出具, 复印件, 编号, 原件, 情况, 说明, 作为	issued, copy, number, original copy, situation, explanation, as	Yes
23	Land cultivation subsidies	Land	退耕, 补助, 粮食, 资金, 补贴, 兑现, 土地	returning arable land, assistance, crop, fund, subsidy, fulfill, land	No
24	Housing permit measurements	Land	面积, 平方米, 建筑, 市场, 测绘, 部分, 显示	area, square meters, construction, market, survey, part, show	Yes
25	Forestry-use permits	Land	林权证, 林地, 林权, 泌阳县人民政府, 颁发, 林木, 村民	forestry right certificate, forest, forestry right, People's Government of Biyang County, issue, lumber, villager	Yes

26	General word topic	General	决定, 决定书, 处理, 重新, 错误, 第号, 正确	decision, decision letter, deal with, again, wrong, number, correct	No
27	Housing permits and registration (3rd party)	Land	房屋, 登记, 所有权证, 房产, 颁发, 房产证, 办理	house, register, ownership permit, real property, issue, housing permit, process	Yes
28	Petitioning detention	Fines/punishment	xx, 处罚, 秩序, 上访, 治安, 拘留, 公安	XX (redacted name), penalty, order, petition, social order, detain, police	No
29	Environmental impact	Land	中原, 中国, 银行, 重复, 农业, 濮阳市人民政府, 意见	Zhongyuan (central plains), China, bank, repeated, Agricultural, People's Government of Puyang City, opinion	Yes
30	Pensions	Benefits, Labor and Compensation	退休, 养老, 职工, 企业, 养老金, 事业单位, 保险	retire, elder care, employee, enterprise, pension fund, public institutions, insurance	Yes
31	Collective land ownership	Land	土地, 征用, 使用, 所有权, 占用, 所有, 争议	land, expropriate, use, ownership right, occupy and use, own, dispute	Yes
32	Police fines and detention	Fines/punishment	笔录, 证言, 证人, 调查, 询问, 异议, 证实	record, testimony, witness, investigate, inquire, objection, prove	No
33	Standing (evidence of harm)	Procedure	主体, 资格, 关系, 利害, 具有, 权益, 侵犯	subject, qualification, relationship, interest, have, rights and interests, violate	No
34	Land grants	Land	土地, 使用权, 国有, 出让, 用地, 收回, 批复	land, use right, state-owned, grant, land used, take back, official reply	Yes
35	Withdrawals by individuals: unpaid fees	Procedure	履行, 职责, 不作为, 处理, 办理, 判令, 查处	fulfill, duty, inaction, deal with, process, decide, investigate	No
36	Demolition and rezoning	Land	拆迁, 建设, 许可证, 项目, 规划, 用地, 改造	demolition and relocation, construction, permit, project, planning, land used, alter	Yes
37	Parking and traffic violations	Fines/punishment	交通, 处罚, 道路, 机动车, 公安, 安全, 交通警察	transportation, penalty, road, motor vehicles, public security, safety traffic police	No
38	Workplace injury	Benefits, Labor and Compensation	工伤, 社会, 保障局, 人力, 资源, 保险, 劳动	work injury, society, welfare bureau, human, resources, insurance, labor	No
39	Illegal demolition	Land	拆除, 改造, 拆迁, 房屋, 实施,	demolish, alter, demolish and relocate, house, implement,	No

			强制, 协议	forcible, agreement	
40	Taxi and transport permits	Permits and Registration (non-land)	经营, 出租车, 车辆, 出租车, 运营, 回复, 汤阴县人民政府	manage, taxi, car, cab, operate, reply, People's Government of Tangyin County	No
41	Illegal construction (failure to act)	Land	施工, 工程, 建设, 项目, 停止, 备案, 工地	construct, project, construction, program, cease, record a case, construction site	Yes
42	Land takings compensation	Land; Benefits, Labor and Compensation	拆迁, 房屋, 补偿, 安置, 裁决, 评估, 拆迁人	demolition and relocation, house, compensation, resettle, adjudication, appraise, demolishing party	No
43	Labor payments and benefits	Benefits, Labor and Compensation	劳动, 保障, 工资, 监察, 处理, 支付, 投诉	labor, protection, wages, supervise, deal with, pay, complain	Yes
44	SAIC business/share registration	Permits and Registration (non-land)	变更, 登记, 代表, 股东, 转让, 股权, 材料	change, registration, representative, shareholder, transfer, share rights, document	Yes
45	Mining licenses	Land	资源, 国土局, 国土, 许可证, 采矿, 矿产, 勘查	resources, land bureau, land, license, mining, mineral, exploration	Yes
46	Land takings plan and process	Land	征收, 房屋, 补偿, 决定, 改造, 项目, 方案	expropriate, house, compensation, decision, alteration, project, plan	No
47	Construction permits 3rd party (air & sunlight)	Land	规划, 建设, 许可证, 工程, 建筑, 用地, 颁发	planning, construction, permit, project, building, land used, issue	Yes
48	Divorce/marriage registration	Benefits, Labor and Compensation	登记, 办理, 离婚, 结婚, 婚姻, 结婚证, 去世	registration, process, divorce, marry, marriage, marriage certificate, die	Yes
49	Police inaction	Land	刑事, 公安, 机关, 公安局, 报警, 民警, 调查	criminal, public security, government organ, public security department, report to police, police officer, investigate	No
50	Birth planning	Fines/punishment	征收, 人口, 社会, 决定书, 生育, 抚养费, 计划生育	levy, population, society, decision letter, birth, upbringing fee, case wit	No
51	Open Government Information	Land; procedure	资金, 联合, 新城, 开发商, 存在, 凭证, 第二	fund, united, new city, developer, exist, certificate, second	No
52	Jurisdiction and case transfers	Procedure	管辖, 指定, 移交, 属于, 报请,	jurisdiction, appoint, transfer, belong, submit,	No

			所在地, 第一审	location, first trial	
53	Statute of limitations	Procedure	期限, 超过, 或者, 知道, 其他, 公民, 问题	time, passed, or, know, other, citizen, problem	Yes
54	Retirement benefits	Benefits, Labor and Compensation	上诉人, 期限, 退休, 被上诉人, 知道, 复议, 第三人	appellant, term, retire, appellee, know, reconsideration, third person	Yes
55	DOB Changes	Benefits, Labor and Compensation	办理, 时间, 审批, 档案, 印章, 加盖, 手续	process, time, review and approve, file, stamp, seal, procedure	Yes
56	Land-use rights (transfer from collective to state owned)	Land	土地, 集体, 村民, 登记, 使用证, 国有, 注销	land, collective, villager, register, permit, State-owned, cancel	Yes
57	Compensation from state	Benefits, Labor and Compensation	赔偿, 损失, 造成, 经济, 国家, 确认, 责任	compensate, damage, cause, economy, State, confirm, liability	No
58	Appeals rejections, land rights	Procedure; Land	提交, 副本, 递交, 质证, 异议, 无异议, 通知书	submit, copy, deliver, dispute evidence, objection, no objection, notification letter	No
59	Rural land (surveying)	Land	南北, 宅基, 东西, 使用, 出路, 房屋, 双方	south and north, rural buildings, east and west, use, exit, house, both parties	Yes
60	Retirement and other workplace benefits	Benefits, Labor and Compensation	职工, 待遇, 保险, 支付, 医疗, 破产, 缴纳	worker, treatment, insurance, payment, medical, bankrupt, pay	Yes
61	Withdrawals (commercial)	Procedure	审查, 过程, 违反, 承担, 诉讼费, 表示, 为由	review, process, violate, undertake, litigation fee, show, for the reason	No
62	Workplace injury (employer challenges)	Benefits, Labor and Compensation	工伤, 工作, 伤害, 决定书, 受伤, 认字, 关系	work injury, work, hurt, decision letter, get injured, literate, relationship	Yes
63	Land-use rights (ownership and use)	Land	争议, 处理, 土地, 确权, 使用权, 土地权属, 使用	dispute, deal with, land, confirm rights, right to use, land rights ownership, use	Yes
64	Land-registration (3rd party)	Land	土地, 国有, 登记, 使用证, 颁发, 使用权, 使用	land, State-owned, register, use permit, issue, right to use, use	Yes
65	Home registration for bankrupt property	Land	抵押, 登记, 办理, 执行, 合同, 协助, 房地产	pledge, register, process, enforce, contract, assist, real estate	Yes
66	Construction permits	Land	建设, 规划, 土地, 许可证, 工	construct, planning, land, license, project,	No

			程, 驻马店市人民政府, 张运生	People's Government of Zhumadian City, Zhang Yunsheng	
67	Applications for re-trials	Procedure	裁定, 再审, 执行, 原审, 申请人, 申诉, 问题	decide, retry, enforce, original trial, petitioner, petition, question	No
68	Pensions/Gvt subsidies	Benefits, Labor and Compensation	领取, 发放, 补贴, 单位, 享受, 金额, 财政	receive, grant, subsidy, work unit, enjoy, amount, fiscal	No
69	Administrative reconsideration (scope and procedures)	Procedure	复议, 决定书, 申请人, 机关, 第二, 郑州市人民政府, 条例	reconsideration, decision letter, petitioner, government body, second, People's Government of Zhengzhou City, clause	No
70	Business registration	Permits and Registration (non-land)	公司, 企业, 营业执照, 登记, 经营, 工商, 注销	company, enterprise, operating license, register, operate, industry and commerce, cancel	Yes
71	Illegal land occupation	Land	土地, 集体, 用地, 涉案, 建设, 村民, 耕地	land, collective, land used, case-related, construct, villager, arable land	No
72	Land/housing contracts	Land	协议, 签订, 合同, 转让, 协议书, 约定, 双方	agreement, sign, contract, transfer, agreement letter, agree, both parties	Yes
73	Termination of repetitive land use rights cases	Land	民事, 判决书, 生效, 确认, 民初, 无效, 裁定书	civil, judgment, effective, validate, civil first instance, invalid, decision	Yes
74	Government seizures	Fines/punishment	扣押, 强制, 车辆, 物品, 措施, 运输, 人员	detention, forcibly, car, goods, measures, transport, personnel	No
75	Takings and relocation compensation	Land	补偿, 安置, 征地, 补偿费, 标准, 工程, 补助费	compensate, resettle, expropriate, compensation, standard, project, subsidy	No
76	Traffic fines and workplace injury (mixed)	Fines/punishment; Benefits, Labor and Compensation	交通事故, 事故, 发生, 责任, 下班, 认定书, 驾驶	traffic accident, accident, take place, liability, after work, investigation report, drive	No
77	Land-use rights (agricultural uses)	Land	村民, 城关, 镇政府, 树木, 村委会, 责任田, 延津	villager, area outside city, township government, trees, village committee, contracted farmland, Yanjin	Yes
78	Forestry rights	Land	第三人, 林木, 承包, 林权证,	third person, lumber, contract, forestry right permit, guard Li, issue,	No

			李保卫, 颁发, 民事	civil	
79	OGI and written requests to government	Procedure; Land	收到, 邮寄, 郑州, 产业, 告知, 签收, 邮件	receive, mailing, Zhengzhou, industry, notify, receipt, mail	No
80	Conversion of collective land	Land	土地, 移民, 批复, 五龙镇人民政府, 林州市人民政府, 补偿, 水库	land, relocatee, official reply, People's Government of Wulong Township, People's Government of Linzhou City, compensation, reservoir	Yes
81	Open Government Information (land)	Land; procedure	信息, 答复, 政府, 回复, 告知, 条例, 内容	information, answer, government, reply, notify, regulation, content	No
82	Fees and fines (land)	Land; fines/punishment	同意, 费用, 同年, 票据, 收据, 交纳, 退还	consent, fee, same year, ticket, receipt, pay, return	No

Online Appendix B

In this Appendix, we show that the proportion of total cases online are not significantly related to either the GDP per capita of the locality or the population of the locality. This finding does not support the resource hypothesis that localities with more money or people would be better equipped to put cases online. Because intermediate and basic courts have significantly different rates of transparency, we divide the analysis into two sections – first to see if there GDP per capita and population is related to transparency in intermediate courts (Table 3), and then in basic courts (Table 4).

Table 3: Relationship between GDP per capita (in thousands), population (in ten thousands), and transparency in Intermediate Courts

	<i>Dependent variable: Proportion of Cases Online</i>		
	(1)	(2)	(3)
Population (ten thousands)	0.0001 (0.0003)		0.0003 (0.0003)
GDP per capita (thousands)		- 0.004 (0.002)	- 0.005 (0.002)
Constant	0.565*** (0.053)	0.751*** (0.104).	0.742*** (0.106)
Observations	18	18	18
R ²	0.004	0.160	0.195
Adjusted R ²	- 0.059	0.108	0.088
Residual Std. Error	0.132 (df = 16)	0.122 (df = 16)	0.123 (df = 15)
F Statistic	0.057 (df = 1; 16)	3.056 (df = 1; 16)	1.820 (df = 2; 15)

Note:

*p<0.05; **p<0.01

Table 4: Relationship between GDP per capita (in thousands), population (in ten thousands), and transparency in Basic Courts

	<i>Dependent variable: Proportion of Cases Online</i>		
	(1)	(2)	(3)
Population (ten thousands)	0.0005 (0.0003)		0.0004 (0.0003)
GDP per capita (thousands)		- 0.001 (0.0004)	-0.0004 (0.0004)
Constant	0.367*** (0.020)	0.421*** (0.019)	0.390*** (0.031)
Observations	159	159	159
R ²	0.017	0.013	0.022
Adjusted R ²	0.010	0.007	0.010
Residual Std. Error	0.110 (df = 157)	0.110 (df = 157)	0.110 (df = 156)
F Statistic	2.640 (df = 1; 157)	2.053 (df = 1; 157)	1.786 (df = 2; 156)

Note:

*p<0.05; **p<0.01

Online Appendix C: Coding Rules for Definition of a Third-Party Dispute

In this appendix, we detail a three-part test that coders used to determine whether each of five hundred randomly sampled cases reflect a dispute between two (or more) private parties, as opposed to between a private party and the government.

Definition - a three-part test: A third-party dispute means (i) a dispute between plaintiff and a third party, (ii) where the challenged government action is not the original source of the plaintiff's grievance or complaint, AND (iii) plaintiff brings the action against the government (contemporaneously or as an alternative) to resolve the dispute with the third party.

Break down of the elements:

(i) Dispute: our definition of dispute is broad. Examples that begin as private disputes but are often transformed into administrative litigation include land disputes between neighbors, and house or marriage registrations. Other disputes can also fit into this broad category, including medical malpractice, traffic accident liabilities, public interest litigation against counterfeits, and corporate matters.

(ii) Government action not being the source of the plaintiff's grievance or complaint. We distinguish two scenarios. The first scenario is that plaintiff had a bitter relationship with a third party (for example, due to disputed land ownership) regardless of the challenged government action, and he/she challenged the government action that gave the third-party entitlements (e.g. land use permit, house registration). We view such cases as third-party disputes because the plaintiff is using administrative litigation strategically to resolve a dispute that is originally civil and private in nature. The second scenario arises where a government action with wide scope (for example, a demolition or government taking) takes rights from the plaintiff, and there happens to be a third party benefiting from the government action. We do not classify such cases as third-party cases because the third-party beneficiary's involvement in this case could be incidental, and the plaintiff's real complaint is against the government action. Two questions can be asked to help decide a close case: Did plaintiff and third party know each other and interact with each other prior to the dispute? Is plaintiff's real complaint with the government or the third party? When the "facts" section does not have enough information to let us decide which scenario it is, we code it as "unclear."

(iii) The plaintiff brings the administrative lawsuit in order to resolve the private dispute. We use this part of the test to filter out cases involving third parties that might not otherwise be excluded by the first two parts of our test. For example, challenges to police administrative penalties are not third-party cases, even in cases in which the penalty follows a fight between plaintiff and a third party. This is because challenging the penalty does not help resolve the dispute with the third party.

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