Judicial Transparency and Entrepreneurship: Evidence from Mass Publicity of Chinese Court Decisions

Xing Liu, Xuan Tian, Zhiming Zhu*

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Abstract

Exploiting plausibly exogenous variation in litigation information disclosure generated by mandated online publication of court decisions in China, we examine the effect of judicial transparency on entrepreneurship. We show that enhanced judicial transparency fosters entry into entrepreneurship. The effect is more pronounced in industries that are historically more prone to litigation, especially those more inclined to be plaintiffs. Reshaped beliefs on the quality of institutions, enhanced technology-driven legal services are two plausible underlying economic mechanisms through which judicial transparency promotes entrepreneurship. Judicial transparency improves the quality of entrepreneurship in terms of financial, operating, and innovation performance. Overall, our findings highlight the important role of judicial transparency in shaping entrepreneurial ecosystems via its nuanced effects on uncertainty reduction.

Keywords: judicial transparency, information disclosure, litigation risk, court judgment, entrepreneurship, data access, big data, China

JEL Classification: K40, L26, L86, O33, P48

*All authors are affiliated with PBC School of Finance, Tsinghua University. Email addresses: liuxing@pbcsf.tsinghua.edu.cn, tianx@pbcsf.tsinghua.edu.cn, zhuzhm.23@pbcsf.tsinghua.edu.cn. We thank Rongli Zhu for excellent research assistance. Liu thanks National Natural Science Foundation of China (No.72403140) for financial support. Tian thanks National Natural Science Foundation of China (No.72425002) for financial support. We remain responsible for all remaining errors.

1 Introduction

Entrepreneurship is risky, and risks permeate every stage of the entrepreneurial process. These risks encompass a spectrum of factors including the founding team, market dynamics, technology, products and services, execution, operations, financing, and even business dissolution, which contribute to the uncertainty surrounding entrepreneurial outcomes. As a result, risk-adjusted returns to entrepreneurs are often remarkably small (Hall and Woodward, 2010). Compounding this uncertainty is the information frictions that hinder potential entrepreneurs from learning about these risks, thereby affecting their ex-ante incentives to enter entrepreneurship due to a lack of information disclosure.

In this paper, we study the effect of information disclosure of entrepreneurial risks on entrepreneurship. We focus on an important type of entrepreneurial risk, the litigation risk, which pervades the entire entrepreneurial process, such as contracting, intellectual property, financing, labor, operation, and exits. Litigation risk is complex; it arises not only from entrepreneurs and their own businesses but also involves various market participants and is intertwined with the judicial system. More importantly, litigation risk could be a major barrier that limits entrepreneurial entry, expansion, job creation, and innovation (Cumming, Haslem and Knill, 2017; Appel, Farre-Mensa and Simintzi, 2019). Smaller entrepreneurial firms are particularly burdened by litigation costs, which require substantial financial and resource commitments. Given that entrepreneurial risks are diverse and difficult to quantify systematically, as regulators do not mandate the reporting of entrepreneurial risks as they do in public markets, litigation information is a valuable source of data for assessing potential entrepreneurial risks, especially for those aspiring to start a business.

A major challenge facing empirical entrepreneurship literature is that entrepreneurship is likely endogenous with market and legal characteristics. Therefore, a correlation between litigation information disclosure and entrepreneurship tells us little about the causal effect of information disclosure of entrepreneurial risks on entrepreneurship. To mitigate this concern, we exploit plausibly exogenous variation in litigation information disclosure generated by mandated

online publication of court decisions in China to examine the effect of enhanced litigation information disclosure on entrepreneurship. Over the past two decades, China has been committed to improving the disclosure of court judgments, with the aim of promoting judicial transparency and procedural justice. The disclosure regime of court judgments has undergone a profound transformation. There have been voluntary attempts at court judgment disclosure in China since the early 2000s, with the degree of enforcement varying by region. The Supreme People's Court (SPC) of China implemented the mandatory policy nationwide in July 2013, requiring *all* levels of courts to upload *all* judgment documents to the centralized website, China Judgments Online (CJO), within seven days of trial conclusions, effective from January 1, 2014. Since 2014, the number of publicized court judgment documents in China has surged dramatically (Figure 1). The CJO website has now become one of the largest collections of court judgments globally.

The above regulatory change offers us a good laboratory to examine the effect of enhanced litigation information disclosure on entrepreneurship. First, the civil law system in China is primarily based on statutory law rather than case law. That is, courts are not bound by judicial precedents *de jure*. However, in order to bridge potential gaps between codified laws and judicial practice, the SPC encourages courts to use case precedents when adjudicating cases. Therefore, in practice, historical cases can serve as important references for judges when handling similar cases. This highlights the importance of judicial data availability to those (e.g., potential entrepreneurs) who usually lack law expertise but need to make decisions under uncertainty. Second, the mandatory disclosure of judicial documents online applies to all courts starting from 2014, circumscribing the issue of non-randomness that could arise from the staggered roll-out of reforms in different regions or policy experimentation (Karpoff and Wittry, 2018; Wang and Yang, 2021). Third, the centralized platform publishes *realized* litigation data predominantly from other market participants, as well as *anticipated* future litigation that may involve the entrepreneurs themselves. Both types of disclosure contribute to *perceived* litigation risk, although the effect may not be uniformly experienced by all. This offers us a unique opportunity to explore the nuanced impacts of judicial transparency on entry into entrepreneurship. Fourth, in

addition to entrepreneurs, the legal services industry, an important but overlooked intermediary in the entrepreneurship ecosystem, is also the user of judicial information. We explore how the supply of judicial data nurtures the technology-driven legal services industry.

The effect of enhanced judicial transparency on entrepreneurship is ambiguous. On the one hand, historical judgment documents provide entrepreneurs with detailed judicial opinions and court decisions that can be legally referenced during potential litigation. Enhanced predictability of litigation outcomes helps to reduce the uncertainty surrounding future litigations, and hence the perceived litigation risk, creating ex-ante incentives for more informed entry (Kerr, Nanda and Rhodes-Kropf, 2014; Ewens, Nanda and Rhodes-Kropf, 2018). Meanwhile, a more transparent judicial environment could better restrain judges' discretionary power. Anticipated enhancement in judicial justice could reshape beliefs on the quality of institutions, further reduce the uncertainty of litigation outcomes and the expected costs of entry, thereby encouraging more entry into entrepreneurship. On the other hand, litigation has an uncertain payoff and could lead to reputational costs and unfavorable career outcomes for entrepreneurs, which might affect their ability to raise external finance in the future (Cumming, Haslem and Knill, 2017). Therefore, a *deterrence* effect is also possible if judicial information increases perceived risk or downside of pursuing entrepreneurship and discourages some would-be entrepreneurs from entry.

To estimate the effect of enhanced judicial transparency caused by mandated online publication of court judgments, we take advantage of the fact that some local courts have a higher ex-ante level of judicial transparency than do others due to voluntary publication practices prior to 2014. We conduct a difference-in-differences (DID) analysis in which we contrast cities with low versus high ex-ante judicial transparency, before and after the mandate. The challenge here is to construct a city-level measure of judicial transparency when there were no mandates, hence no centralized data infrastructure. Our approach is to exploit the incentives of the third-party commercial law databases to collect judicial data from various sources. Our main measure of ex-ante judicial transparency is the city-level number of judicial documents collected by the database scaled by local population size, i.e., per capita publication of court judgment documents. We gauge the validity of our measures by comparing the time variation of the number of judicial documents

collected within the commercial database, within the CJO website, and across the two.

We first ask whether enhanced judicial transparency affects overall entrepreneurship. Our baseline results show that cities with low ex-ante per capita publication (bottom tercile) exhibit an increase of new firm entries by 9.2% more than in cities with high ex-ante per capita publication, after mandated online publication of judicial documents. This suggests that the mandated disclosure of court judgments promotes overall entrepreneurship in China. We then provide a more nuanced picture of entrepreneurial activities. First, regarding the types of entrepreneurial activities, we find that enhanced judicial transparency fosters entrepreneurship for the formation of incorporated businesses, rather than self-employment, in which uncertainties surrounding litigation risks are particularly pertinent and disclosure of judicial information can benefit more. Second, the mass publicity of court judgments increases capital injections for new ventures, suggesting that these entrepreneurs may perceive more promising prospects for their business ideas, thereby becoming more inclined to scale up by injecting capital. Third, the increase in newly registered firms mostly comes from the private sector. These findings imply that increased transparency in judicial disclosures could promote higher-quality entries.

We conduct a range of tests to address potential identification concerns. First, we examine the satisfaction of the parallel trends assumption of the DID analysis. We find that the ex-ante low-publication cities are not on track to the observed outcome before the mandate. Second, to rule out the possibility that local levels of ex-ante judicial transparency are driven by contemporaneous or pre-existing trends of economic conditions, we predict ex-ante judicial transparency and do not find evidence of such selection. Third, given the decision to formulate and enforce policies regarding court judgment disclosure prior to 2014 is left to the discretion of provincial-level courts, we hand collect the resumes of presidents of provincial-level courts and find that our estimates remain robust after controlling for their personal characteristics. Fourth, our results are robust to controlling for the effects from potential confounding reforms enacted in parallel with the mandatory disclosure policy for court judgments. Fifth, due to the inaccessibility of annual caseload data at the city level, we show that our results are robust when using three alternative denominators to measure ex-ante judicial transparency: the city-level GDP, the total number of cases accepted, and the total

number of cases closed by provincial courts, in addition to the city population used in our baseline measure.

Since the ex-ante level of judicial transparency are mainly driven by the heterogeneous disclosure policies voluntarily enacted by different provinces, our baseline result should be similar to that of comparing the effect of the mandated disclosure policy between provinces without prior voluntary enforcement of court judgment disclosure and those that had *de facto* enforcement in place before the mandate. To test this conjecture, we manually search provincial court websites and news reports for provincial disclosure policies before 2014, whether formulated in government documents or simply proclaimed by provincial court presidents. We show that the effect is mainly driven by the regions without any ex-ante disclosure policies. Given regional disclosure policies before 2014 are voluntarily enacted by provincial courts, it is also meaningful to examine whether the voluntary disclosure regime has promoted entrepreneurship. We implement a staggered DID design based on the timing of initiating voluntary disclosure practices using the pre-2014 sample. We find much weaker effects in comparison to those of the mandatory publication, reinforcing the validity of our baseline results.

To further strengthen the causality from litigation information disclosure to entrepreneurship, we explore the heterogeneous effects of judicial transparency across industries with different levels and types of litigation exposure. As we posit that the mandated policy of judgment disclosure could reduce the perceived litigation risk for entrepreneurs, we expect the effect to be more pronounced in industries that are more susceptible to litigation. While it is empirically challenging to gauge the litigation propensity ex-ante, we construct industry-level measures of litigation exposures based on *realized* litigation data, and break our baseline effect across industries. We find that the effect of enhanced judicial transparency on entrepreneurship is more pronounced in industries with higher levels of litigation exposure, especially for industries with a higher propensity to be plaintiffs in litigation. In contrast, the effect on industries that more frequently act as defendants in litigation is less pronounced or even opposite. We interpret this as a potential deterrent effect, as entrepreneurs who are more susceptible to reputational costs may be discouraged by the mandatory disclosure of court judgments. Overall, the industry heterogeneity results strongly demonstrate how perceived

litigation risk influences the decisions to enter entrepreneurship.

We then examine two plausible underlying economic channels though which enhanced judicial transparency promotes entrepreneurship. The first plausible channel is reshaping beliefs on the quality of institutions via improved judicial justice. The primary goal of online publication of court judgments is to prevent the abuse of discretion by judges, thereby increasing fairness in trial outcomes. This reduction in uncertainty regarding litigation outcomes is posited to decrease perceived litigation risks and entry costs for entrepreneurs. We show that our effect is mainly concentrated in regions with lower initial trust in institutions (e.g., government officials and judges) or a poorer business environment, where *anticipated* enhancement in judicial justice is likely to have a stronger effect on reshaping beliefs on the quality of institutions, thus encouraging more entries into entrepreneurship in these areas.

The second plausible channel is the surge in technology-driven legal services following the mandated publication of court judgments. We first provide evidence of a significant increase in the establishment of LegalTech firms, venture capital deals in the LegalTech sector, academic research on judgment documents, and LegalTech patents post-2014. These developments are attributed to the availability of judicial data (i.e., more legal precedents), which fuels legal analytic tools that predict case outcomes and assist legal professionals, thus enhancing the quality of legal services for entrepreneurs. For entrepreneurs, accessing higher-quality legal services may lead to less uncertain litigation outcomes, which can help mitigate perceived litigation risks and reduce expected costs of entry. By exploiting the timings of the establishment of the first LegalTech firm across cities, we estimate a staggered DID model and show that LegalTech firm entry is associated with more entry into entrepreneurship. Our results thus highlight the importance of an understudied intermediary market in the entrepreneurial ecosystem: the legal services industry.

Finally, we examine the effects of enhanced judicial transparency on the performance of entrepreneurial firms. Relying on firm-level data, we find that the mandated publication policy of court judgments has significantly enhanced the performance of new firms in terms of financial, operating, and innovation outcomes, with the positive effects being both immediate and enduring. This implies that enhanced judicial transparency following the mandated policy improves the

overall quality of entrepreneurship.

This paper contributes to several strands of literature. The first is the literature on entrepreneurship. Previous work has examined how entrepreneurship is affected by entry regulations (Djankov et al., 2002; Klapper, Laeven and Rajan, 2006), tax policy (Gentry and Hubbard, 2000; Denes et al., 2023), financial constraints (Hurst and Lusardi, 2004; Schmalz, Sraer and Thesmar, 2017; Hombert et al., 2020; Bellon et al., 2021), the broader banking system (Bertrand, Schoar and Thesmar, 2007; Kerr and Nanda, 2009), entrepreneurship training or exposure to entrepreneurial peers (Karlan and Valdivia, 2011; Lerner and Malmendier, 2013), job protection or career risk (Gottlieb, Townsend and Xu, 2022), and fallback opportunities created by gig economy (Barrios, Hochberg and Yi, 2022). Our paper focuses on litigation risk and litigation risk disclosure in particular, which has received little attention in the entrepreneurship literature.[1] The risks in the existing works mostly refer to the ones that are related to the payoff or net present value of entrepreneurial projects, emphasizing the ultimate outcome of these projects. Litigation risks, either realized or perceived, however, permeate the entire process of entrepreneurship and can affect new business formation through revealing information about a project's expected return. We also highlight the role of legal services industry in ameliorating litigation risk for entrepreneurs.

Second, we contribute to the literature on the effect of risk information disclosure, which has primarily focused on publicly listed firms, examining the information content of mandatory risk factor disclosures in corporate filings (Bao and Datta, 2014; Campbell et al., 2014; Hope, Hu and Lu, 2016), and the capital market effects of information that concerns the riskiness of firms' cash flows (Lambert, Leuz and Verrecchia, 2007; Heinle and Smith, 2017). These disclosure requirements are initiated and increasingly emphasized by regulators. We make contributions in at least three ways. First, we focus on litigation information disclosure and its effect on private markets where the information environment is poorer. In face of uncertainty about a project's

[1] Our paper also adds to the broader corporate litigation literature. See, for example, early works by Karpoff and Lott Jr (1993), Bhagat, Brickley and Coles (1994), Bizjak and Coles (1995), Lanjouw and Lerner (1997), and Bhagat, Bizjak and Coles (1998), and recent works by Appel, Farre-Mensa and Simintzi (2019), Cohen, Gurun and Kominers (2019), Lin, Liu and Manso (2021), and Mezzanotti (2021), among others. We contribute by focusing on the effect of litigation information disclosure from the judicial system on the entry of small private firms into entrepreneurship, who are mostly resource-constrained.

payoff, litigation information from other market participants is a signal that directly concerns the cash flow variance. Our setting points to the impacts of litigation information about incumbent firms on potential entrants. Second, our results speak to the dual effects of enhanced disclosure of litigation information, uncertainty reduction and deterrence, based on industry heterogeneities prone to being plaintiffs or defendants in litigations. Third, enhanced litigation risk disclosure, in our setting, comes from enhanced predictability of legal outcomes because more precedents are available due to mandated disclosure of judicial documents. Previous work, however, has focused on firm-level disclosure of risk factors or realized risks.

The third strand of literature we contribute to is the literature on deciphering the role of institutions in economic development. Seminal works, for example, include North (1981), Acemoglu, Johnson and Robinson (2001), and Acemoglu and Johnson (2005). Regarding the economic consequences of the institutional architecture of the legal system, prior work has examined particular aspects such as stronger investor protections (McLean, Zhang and Zhao, 2012; Brown, Martinsson and Petersen, 2013), protections of private property (Claessens and Laeven, 2003; Berkowitz, Lin and Ma, 2015), strengthened creditor rights (Qian and Strahan, 2007; Bae and Goyal, 2009; Vig, 2013), and the quality of court enforcement (Djankov et al., 2003, 2008; Ponticelli, 2013; Gopalan, Mukherjee and Singh, 2016; Brown, Cookson and Heimer, 2017). Our paper differs in its focus on judicial transparency.[2] We are not aware of any other work examining whether judicial transparency encourages entry into entrepreneurship. We use within-country variation and trace out the mechanisms through which regional differences in judicial transparency matter for entrepreneurial activity, namely, shaping beliefs on the quality of institutions, enhancing predictability of legal outcomes, and reducing uncertainty.[3] As such, our findings should be as interesting to policy makers concerned about the broader information role of

[2]Given that judicial data originates from the public sector, our paper is also related to the literature on government transparency. Previous research has examined the role of government transparency in government quality (Mattozzi and Merlo, 2007; Djankov et al., 2010; Cordis and Warren, 2014; Mas, 2017), fiscal policy (Gavazza and Lizzeri, 2007, 2009), financial crises (Faria-e Castro, Martinez and Philippon, 2017), and investment (Angeletos and Pavan, 2004; Gelos and Wei, 2005), and their underlying mechanisms. The types of information include macroeconomic data, fiscal spending, banks, and governmental activities.

[3]Emphasizing the perceived uncertainty view, Lee, Schoenherr and Starmans (2024) theoretically and empirically examine the impact of legal uncertainty on economic activity. As one of the policy implications, they discuss that reforms of the judicial or legal systems, such as increasing transparency and utilizing information technology to enhance the predictability of legal outcomes, help to reduce both idiosyncratic and systematic legal uncertainty. We focus on entrepreneurship as an outcome and provide empirical evidence on the effectiveness of such policy interventions.

judicial system in the economy, beyond its role in enforcing contracts to facilitate transactions (North, 1990). Moreover, we uncover how institutional reforms that supply judicial data to the public can nurture the private legal services industry, an important but understudied market in the entrepreneurship ecosystem.

Finally, our paper contributes to the literature on the economics of data (Brynjolfsson and McElheran, 2016; Farboodi et al., 2019; Goldfarb and Tucker, 2019; Jones and Tonetti, 2020; Farboodi and Veldkamp, 2023; Veldkamp and Chung, 2024). In particular, we enhance the understanding of how access to public data shapes market entry and firm performance in the private sector. Existing literature primarily focuses on the value of *opportunity-related* information that public data—such as geographic, administrative, or scientific data—brings to market participants, including demand, business prospects, and scientific search/discoveries (Williams, 2013; Furman, Nagler and Watzinger, 2021; Nagaraj, 2022; Beraja, Yang and Yuchtman, 2023; Babina et al., 2024). Judicial document data, however, mainly encompasses *risk-related* information in business operations, particularly litigation risks. We contribute by showing that mandated publication of judgment documents foster entry into entrepreneurship in China, with the underlying mechanisms depending on how judicial data is used. From an information economics perspective, enhanced predictability of litigation outcomes helps to reduce litigation uncertainty and expected entry costs, with heterogeneous effects across industries based on their exposures to litigation risks. From a production-input perspective, we demonstrate that such risk-related data also acts as a catalyst for technological innovation in the legal services industry, further enhancing an intermediary market for entrepreneurship. Among the various ways policies intervene to foster innovation (Bloom, Van Reenen and Williams, 2019; Howell, 2024), we highlight public data infrastructure, although not always motivated by overcoming major market failures such as positive externalities (e.g., knowledge spillovers) and financial frictions, may *indirectly* stimulate entrepreneurship.

The rest of the paper is organized as follows. Section 2 introduces the institutional background. Section 3 describes the data, variable construction, and summary statistics. Section 4 introduces the empirical strategy, and presents the baseline results and robustness tests. Section 5 presents

the results of industry-level analysis. Section 6 discusses the plausible underlying mechanisms. Section 7 examines the effects on firm-level performance, and Section 8 concludes.

2 Institutional Background

Court judgment documents disclose case information, trial outcomes, as well as detailed judicial opinions. Potential audiences of judgment documents include legal professionals such as judges, lawyers, advocates, attorneys, and ordinary people making decisions on their own. Despite the high demand for court judgment information, the actual practices of disclosing court judgments exhibit significant variation worldwide, even across developed economies. In the US, for example, under Section 205 of the E-Government Act, federal courts are mandated to make all electronically filed documents accessible online. The public could access most court judgment filings through the Public Access to Court Electronic Records (PACER) service.[4] In contrast, UK does not mandate the publication of all judgments. Typically, only those deemed newsworthy are published on the *Judiciary* website, while legally significant rulings are made available on the non-profit British and Irish Legal Information Institute (BAILII) platform.[5] As the world's largest developing economy, China has established standardized protocols for the disclosure of court judgments, and has one of the largest online centralized collections and publications of court judgments in the world (Liebman et al., 2023). During the 2010s, China transforms its judgment disclosure system from a decentralized, voluntary approach to a centralized, mandatory one, presenting a compelling case for in-depth investigation.

2.1 China's Judicial System

In parallel with the administrative system, China has a four-level court system. From top to bottom they are: the Supreme People's Court (SPC) at the central level, High People's Courts at the provincial level, Intermediate People's Courts at the prefectural (city) level, and Basic

[4] See: https://www.uscourts.gov/statistics-reports/accessing-court-documents-journalists-guide.

[5] Source: The European Network of Councils for the Judiciary (ENCJ) Project Team Justice, Society and Media 2011-2012, https://encj.eu/images/stories/pdf/workinggroups/encj_pt_judiciary_media_replies_national_practices.pdf.

People's Courts at the county/district level. The upper-level courts, especially the SPC, are responsible for guiding and supervising trial works of the lower-level courts. Although China's judiciary is not independent from the government as it is in Western countries, the upper-level courts, particularly the SPC, are responsible for guiding and supervising the trial affairs of lower-level courts. Hence, court-related policies are mostly promoted by the SPC or by provincial-level courts, and implemented by lower-level courts. The mass publication of court judgments follows a similar spirit, which is introduced by the SPC and enforced by local-level courts without much interference from local governments.

It is important to note that China's civil law system is primarily based on statutory law rather than case law. Courts are generally not bound by judicial precedents. Nonetheless, the system does incorporate aspects of the *Stare Decisis* principle. The SPC emphasizes the consideration of case precedents in adjudicating cases to bridge potential gaps between codified laws and judicial practice.[6] As a result, in practice, historical cases usually serve as important references for judges when dealing with similar matters.

2.2 Early Attempts of Court Judgment Disclosure (before 2014)

The earliest attempt to promote court judgment disclosure in China dates back to the early 2000s. In June 2000, the SPC for the first time proposed a general recommendation for selective publication of court judgments.[7] The call for judicial transparency has become increasingly emphatic since June 2007, following the SPC's formal recommendation that all provincial-level courts establish specific rules for the publication of judgment documents.[8] In 2009, the SPC set judicial transparency as a goal in its third five-year plan for judicial reform and encouraged local courts to enhance the online availability of their judgments. The phrase "judicial openness" is mentioned every year in the annual work reports of the SPC during 2009 to 2013.

According to the SPC, the overarching goal of publishing court judgments online is to enhance

[6] In 2010, the SPC issued the *Provisions on Case Guidance*, outlining how courts should refer to judicial precedents in their adjudication of cases.

[7] See: *Administrative Measures for the Proclamation of Document of Judgment by the Supreme People's Court* (No.4 (2000) issued by the Legal Office).

[8] See: *Notice of the Supreme People's Court on Issuing the Opinions on Strengthening the Work on Judicial Openness in the People's Courts* (No.20 [2007] of the Supreme People's Court).

judicial democracy and justice, More specifically, it aims to "enhance the responsibility, capability, and professionalization of judges, and ensure the people's right to be informed, participate, express, and supervise the judicial work".[9] Recent scholarly work in law, such as Liebman et al. (2020), views these early attempts of judicial disclosure as moves to respond to calls from legal academics, combat corruption, and restore public confidence in the courts.

However, while the SPC has encouraged local courts to experiment with the publication of judgments, the actual implementation of court judgment disclosure varied across regions. Prior to 2014, around 20 provincial courts have either formally or informally advocated for online disclosure of court judgments, yet only half of them have imposed *de facto* requirements on lower-level courts (i.e., establishment of provincial websites dedicated to the online publication of judgments and proactive uploading of judgment documents). One notable exemplar is Henan Province, where, since late 2009, courts at all levels are mandated to publish every effective court judgment online.[10] In contrast, Yunnan Province, despite being one of the first to announce its policy for online judgment disclosure in March 2008, exhibited a notably weak implementation of the policy until 2014.[11] Such variation in the enforcement of judgment disclosure led to wide differences in per capita publication both between provinces and within provinces prior to 2014, as illustrated by Figure 2.[12] It is worth noting that, there is no clear evidence suggesting that these local initiatives were directed by the SPC in a top-down approach as pilot programs. These endeavors in judgment disclosure are more aptly characterized as voluntary experiments by local courts.

[9] Source: https://www.chinacourt.org/article/detail/2013/11/id/1151559.shtml.

[10] Under the leadership of the High People's Court President Zhang Liyong, Henan Province carried out an exemplary experiment on judgment document disclosure and was widely recognized as a provincial model for judicial transparency (Liebman et al., 2020). As stated by the SPC President Zhou Qiang in 2013, the collective publication of judgments in Henan has served as a "gem" for legal scholars to study Chinese judicial system. See: http://cpc.people.com.cn/n/2013/1128/c64094-23680586.html.

[11] According to a news report in 2013, the timeliness of judicial documents published on the websites of local courts in Yunnan Province was extremely poor. The majority of the judgments uploaded online were outdated by over six months, with a notable scarcity of recent judicial documents. See: https://www.chinanews.com.cn/sh/2013/12-27/5671901.shtml.

[12] In Appendix Figure A.1 and A.2, we illustrate the expansion and temporal trend of court judgment disclosures at the provincial level across the nation.

2.3 Mandatory Disclosure of Court Judgments (since 2014)

In March 2013, Zhou Qiang took office as the President of the SPC and carried out judicial reforms forcefully. A keystone of these reforms was the establishment of a comprehensive, centralized online platform for the publication of court judgments, a project described by Zhou as "unprecedented in scale." The initiative for nationwide court judgment disclosure was initially announced in July 2013, and was subsequently codified with the issuance of the "Provisions of the Supreme People's Court on the Issuance of Judgments on the Internet by the People's Courts" in November 2013. According to these Provisions, the SPC mandates all levels of courts to upload all judgment documents to the centralized platform within seven days of trial conclusion, effective from January 1, 2014.

The launch of the centralized website - *China Judgments Online* (CJO) - marks the important shift from localized and voluntary disclosure to centralized and mandatory publication regime of judicial opinions by local courts. The mandatory nature of the publication requirement is evident in the following aspects. First, all judgment documents are required to be published on the CJO website.[13] Second, judgments are to be published with the real names of the parties involved.[14] Finally, once posted, judgments are intended to remain accessible, with amendments, replacements, or retractions permitted only under specific technical or legal justifications.[15] Such stringent disclosure policy contrasts with the more lenient disclosure standards in place prior to 2014.

In compliance with directives from the SPC, provincial-level courts established provisions in 2014 to govern the online disclosure of court judgments by lower-level courts within their jurisdictions. By June 2015, all 31 provinces (including four municipalities and five autonomous regions) in China have fulfilled the requirement of mandatory online publication of court judgments. In subsequent years, the trend of mass publicity escalates. Figure 1 shows the overall

[13]Exceptions include cases involving state secrets or personal privacy, crimes involving minors, settlements reached through mediation, and certain other cases that are not suitable for online release.

[14]Exceptions include cases that could violate personal privacy, i.e., cases involving the names of parties in marriage and family law cases and inheritance disputes; the names of victims, witnesses, and expert witnesses in criminal cases; and the names of defendants in criminal cases who are sentenced to three years or less and are not habitual offenders.

[15]Recent literature has documented that the CJO website suffers from the issue of missing cases (Wu et al., 2022; Liu et al., 2022*b*; Liebman et al., 2023). We discuss this concern further in Section 4.5.

temporal progression of online court judgment disclosure in China. By the end of 2020, over 100 million court judgments have been posted on the CJO website, with a peak of 23.37 million court judgments published online in a single year, which is 12.5 times of the number in 2013, the year preceding the enforcement of the mandatory disclosure policy.

The mass publication of judgment documents in China has attracted an unprecedented level of public attention on judicial information. According to the SPC, the number of total visits on the CJO website reaches 48 billion in August 2020, with 1.5 billion from overseas, making it the largest and most influential online judgment disclosure platform in the world. As shown in Figure 3, the number of newspaper articles mentioning "judgment document" has nearly doubled post-2014.[16] The Baidu search index of the term "judgment document", which reflects online public attention to key terms, has experienced a significant upsurge since 2014.[17]

3 Data, Variables and Descriptive Statistics

3.1 Measuring Judicial Transparency

To capture judicial transparency at the regional level, the key is to obtain data on the public availability of court judgments. The main challenge in data collection is accessing the historical disclosure practices of court judgments prior to 2014. Although local courts are recommended by the SPC to upload pre-2014 historical judgment documents to the CJO website, they are only obligated to upload court judgments that became effective from January 1, 2014 onwards to meet the mandatory disclosure requirement. Therefore, local courts may have little incentive to upload judgment documents from before 2014. Hence, relying solely on the number of judgment documents published on the CJO website could substantially underestimate the actual level of judicial transparency before 2014.

To this end, we utilize the *Wolters Kluwer China Law & Reference* (WKCLR) platform to

[16]The data is collected from the China Core Newspapers Database (CCND) in the China National Knowledge Infrastructure (CNKI) platform.

[17]Baidu, China's premier search engine analogous to Google, offers a search index that reflects the search volume for specific key terms over a defined period.

assemble a city-year level dataset on court judgment disclosure.[18] This approach leverages the greater incentives inherent to commercial data platforms to collect judicial documents more comprehensively in the absence of a regulatory mandate. Wolters Kluwer is a global leader in information, software solutions and services for professionals in healthcare; tax and accounting; financial and corporate compliance; legal and regulatory; corporate performance and ESG.[19] Wolters Kluwer established its Beijing headquarter in 2010 and has collected a significant archive of court judgments that were published on provincial court websites prior to 2014. Appendix Table A.1 shows the number of judgment documents collected by both the WKCLR and the CJO websites from 2000 to 2021. The volume of judgment documents collected by the WKCLR platform prior to 2014 is two to ten folds that of the CJO website, suggesting that the number from the WKCLR is potentially much closer to that of the actual caseload.[20]

We obtain the total number of published court judgments at the city-year level by manual searches on the WKCLR website.[21] We scale the number of published court judgment documents by population as our baseline measure of city-year level judicial transparency. Therefore, our measure captures the per capita publication of judgment documents within a city for a specific year. Ideally, judicial transparency would be gauged by the disclosure rate of judgment documents, which is the ratio of disclosed cases to all cases accepted (or closed) by local courts (Wu et al., 2022). However, due to weak enforcement of court information disclosure in China prior to 2014, compiling a comprehensive dataset of annual case volumes at the city level is extremely difficult. Despite this, we manually gather annual reports of provincial courts and extract annual case volumes at the provincial level for robustness checks. As exhibited in Appendix Figure A.4, the number of cases accepted/closed by courts in a province is highly correlated with the province's population. This indicates that the per capita number of published judgment documents is a plausible proxy for the disclosure rate, and thus for assessing judicial

[18] There are municipality-level, prefectural-level, and county-level cities in China. County-level cities are under the administration of prefecture-level cities. In this paper, we refer cities to the four directly-administered municipality-level cities (Beijing, Tianjin, Shanghai, and Chongqing) and the 333 prefectural-level cities.

[19] See: https://www.wolterskluwer.com/en. Appendix Figure A.3 provides screenshots of the website.

[20] We cross-reference these figures with official statistics reported by news outlets and annual reports of provincial or prefectural level courts, and find that they are closely aligned.

[21] We accessed WKCLR via the Tsinghua Library and obtained the numbers on February 9, 2024.

transparency.

3.2 Measuring Entrepreneurial Activity

The main dataset we use to capture entrepreneurial activity in China is the business registration data, maintained by the State Administration for Industry and Commerce (SAIC). The dataset covers all firms registered in China since 1985, making it the most widely used dataset for researches on Chinese entrepreneurship (Barwick et al., 2022; He, Liu and Zhu, 2022; Tian and Xu, 2022; Bai et al., 2021; Fang et al., 2023). Information provided by the dataset includes firm's registration date, location, industry classification code, amount of registered capital and paid-in capital, ownership type, and detailed business scope, etc.

Our study focuses on the sample of new business entries from 2010 to 2018, comprising a total of 81.1 million newly registered firms. Following existing literature (Black and Strahan, 2002; Kerr and Nanda, 2009), we compile the data at the city-year level and use the logarithm of the total number of new firm registrations as the main measure of a city's entrepreneurial activity. The business registration data include both registered firms (i.e., business incorporations) and self-employed individuals. We also compile the city-year level data on the number of newly registered self-employed individuals. Moreover, we construct three alternative measures to provide a more nuanced picture of entrepreneurial activity. *New Firm Ratio* is the ratio of the number of newly registered firms to the number of all legal entities ever registered in a city-year. *Paid-in Ratio* is the proportion of newly registered firms with paid-in capital. *Non-SOE Ratio* is the proportion of non-state-owned newly registered firms.

3.3 Tracking Performance of Entrepreneurship

To capture entrepreneurial performance in China, we employ two additional databases. The first is the National Tax Survey Database (NTSD), which includes a large and representative sample of firms and has been used in a number of recent studies (Liu and Mao, 2019; Barwick et al., 2022; Chen et al., 2023; Fang et al., 2023). The NTSD offers three kay advantages. First, the NTSD is jointly collected by the State Administration of Taxation (SAT) and the Ministry of Finance (MoF)

of China, ensuring the data's authenticity and accuracy. Second, the database includes a substantial number of firms that are continuously surveyed, complemented by a stratified random sample, which enhances its representativeness of the entrepreneurial sector (Liu and Mao, 2019; Chen et al., 2023). Third, the dataset contains rich information on firms' financial and operational performance. We extract a subset of the NTSD, focusing on firms registered between 2010 and 2016.[22] Our final sample contains 728,673 firm-year observations of 306,905 entrepreneurial firms. Among which, 73,534 firms have observations in the founding year.[23] We use variables of such as total assets, sales, number of employees, profit margin, and investment to measure the performances of these entrepreneurial firms.

Second, to capture innovation performance of entrepreneurial firms, we match the patent database maintained by the China National Intellectual Property Administration (CNIPA) to the NTSD. We use the number of applied and granted patents, along with the number of forward citations to measure innovation outputs.[24] We also use R&D expenditure from the NTSD to measure innovation input.

3.4 Summary Statistics

Table 1 Panel A reports the summary statistics of the entrepreneurship metrics at the city-year level. On average, a city in our sample has 9,433 newly registered firms per year, representing approximately 29.7% of all registered legal entities. Among these, 8% has paid-in capital, and 97.9% are non-SOEs. We winsorize all city-year level variables at the 1% and 99% levels.

Panel B provides the summary statistics of the NTSD sample at the firm-year level. An average firm-year observation has total asset of 102 million CNY, revenue of 58 million CNY, 42 employees, and investment of 1.04 million CNY.[25] These firms has an average of R&D

[22] Due to limitations in data availability, our NTSD sample is restricted to the period up to 2016.

[23] Only about a quarter of firms in our NTSD subset have data available for their founding years, because not all firms in the NTSD were surveyed in its founding year.

[24] The CNIPA database records three categories of patent applications: invention patents (IPs), utility model patents (UMPs), and design patents (DPs). We only focus on IPs since they are granted for novel technical solutions pertaining to products, processes, or their improvements, and they undergo the "substantive examination" process (Tian and Xu, 2022).

[25] Firms in the tax records data are substantially larger than those in the registration data. This is because the NTSD is surveyed by stratifying firms across all sizes, hence the majority of which are medium and large ones, while the business registration data contains the universe of registered firms, most of which are small ones (Fang et al., 2023). However, this difference does not

expenditure amounting to 0.015 million CNY, 0.11 patent applications, 0.02 granted patents, and 0.41 forward citations on their applied patents. The average profit margin is -0.64. Not surprisingly, less than 1% of the firm-years has positive amount of R&D expenditure and number of patents applied or granted. Therefore, we winsorize all innovation-related variables at the 0.1% and 99.9% levels, and winsorize the remaining variables at the 1% and 99% levels. Since the distribution of the raw values for non-ratio variables is right-skewed, we apply logarithm transformations to all firm-year outcome variables.[26]

4 Judicial Transparency and Entrepreneurship

4.1 Empirical Strategy

To examine the effects of enhanced judicial transparency on entrepreneurship, we exploit the mandated publication of court judgments as a policy shock and employ the difference-in-differences (DID) methodology. Because the publication mandate is a nationwide policy applied to all courts, we do not have any natural treatment and control groups. However, the effect of the mandate may not be uniform across all courts. We exploit the pre-2014 cross-sectional variation in per capita publication of judgment documents (Section 2.2) to classify cities into treatment and control groups. Cities that previously have weaker enforcement of court judgment disclosure are more likely to be affected by the mandate than cities with stronger pre-existing enforcement. Such variation in the treatment intensity across regions provides us a natural experiment to identify the effect of the mandated court judgment disclosure policy.

Specifically, we divide cities into terciles based on their per capita publication in 2012, and define the bottom tercile as the treated group and the rest as the control group. We use the regional judicial transparency level in 2012 rather than that in 2013 to mitigate the potential noise introduced by local courts uploading judgment documents from late 2013 onto the CJO website, as shown in Panel (b) of Figure 2.[27] As detailed in Section 4.5, the mandatory disclosure requirement is

compromise the representativeness of the entrepreneurial firm sample of the NTSD.

[26] We add one to the value of investment and all innovation-related measures when calculating the logarithm of these variables.

[27] This noise might also stem from the anticipation of local courts regarding the mandated judgment disclosure, leading to preactive uploads of judgment documents following the SPC's announcement of the nationwide initiative in July 2013.

enforced on court judgments that became effective after January 1, 2014. Hence, we set 2014 as the event year in the baseline specification. Our sample period runs from 2010 to 2018 (i.e., 4 years before and after the policy). We estimate our baseline DID model using Equation 1:

$$Entrepreneurship_{c,t} = \alpha + \beta Treat_c \times Post_t + \gamma X_{c,t} + \mu_c + \delta_t + \varepsilon_{c,t}, \quad (1)$$

Here, c indexes city, t indexes year; $Treat_c$ is an indicator variable that takes the value of one if per capita publication of a city court in 2012 is in the bottom tercile among all city courts, and zero otherwise. $Post_t$ is one in and after 2014, and zero otherwise. The variable of interest is β, which captures the DID effect. We control for a set of time-varying city-level variables $X_{c,t}$, including GDP, GDP growth rate, population, population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending, employment population, and Consumer Price Index (CPI).[28] We include city (μ_c) and year (δ_t) fixed effects. Standard errors are clustered at the city level.

The coefficient estimate for the interaction term $Treat_c \times Post_t$ captures the effect of the policy on entrepreneurial activity. Essentially, our specification compares the effect of the mandatory disclosure policy between regions with ex-ante lower levels of judicial transparency (i.e., higher marginal treatment intensity) and those with higher levels.

4.2 Baseline Results

Table 2 Column (1) presents estimates of Equation 1, where the dependent variable is the logarithm of the number of new firm registrations. The coefficient for the interaction term $Treat_c \times Post_t$ is positive and statistically significant at the 1% level. On average, entries of new firms in cities with initially lower level of judicial transparency increases by 9.2% more than that in cities with higher pre-existing judicial transparency. Therefore, our baseline regression shows that the mandated disclosure of court judgments promotes overall entrepreneurial activity in China.

Nevertheless, we conduct a robustness test in Section 4.5 by reassigning treatment and control groups based on the judicial transparency levels in 2013, and find the results to be consistently robust.

[28] We take logarithm of GDP, population, fiscal spending, and employment population. Summary statistics of the city-level controls as shown in Panel A of Table 1.

We conduct robustness tests to address possible concerns with the baseline results. First, we include a linear trend for the treated cities to control for heterogeneous trends among cities with varying degrees of initial judicial transparency. Second, to account for possible correlations among the error terms of cities within the same province in the same year, we cluster standard errors at the province-year level. Third, we re-aggregate the data at the county-year level to verify the consistency of our findings at a more granular geographical unit. Finally, we employ a fixed-effects Poisson model to the baseline specification and use the raw count of new firms as the dependent variable, to alleviate potential biases associated with log transformation (Cohn, Liu and Wardlaw, 2022; Chen and Roth, 2024). We report the results of these robustness checks in Appendix Table A.2. We find consistent and robust results across all the tests.

4.3 Alternative Measures of Entrepreneurship

Our baseline result suggests a positive effect of enhanced judicial transparency on the overall quantity of new business entries. We next use alternative measures to provide a more nuanced picture of the entrepreneurial activity.

The first is about the types of entrepreneurial activities—self-employment and business formation, which are economically distinct activities that likely respond differently to the same policies (Bellon et al., 2021). Survey evidences from Hurst and Pugsley (2011) show that the establishment of an incorporated business is more closely associated with Schumpeterian growth, whereas self-employment is often less growth-driven, such as engaging in subsistence work or pursuing the autonomy and flexibility that comes with being one's own boss. Hurst and Pugsley (2017) further posit that the most influential entrepreneurial activities are typically associated with the formation of incorporated businesses. However, business formation incurs higher costs, such as incorporation, recruitment, and organizational structuring, which could make litigation concerns more significant than those associated with self-employment. Thus, we expect the effect of enhanced judicial transparency to be more pronounced for business formation than for self-employment. In Table 2 Column (2), we show that enhanced judicial transparency does not spur new self-employment. In Column (3), we employ *New Firm Ratio*, defined as the ratio of

newly registered firms to the total number of newly registered entities, as the dependent variable. The coefficient estimate is positive and statistically significant at the 1% level. The proportion of newly registered firms in treated cities increased by 2% more than that in control cities, which is 6.7% of the sample mean (29.7%). Viewing results from Columns (1) to (3) together, it is clear that the positive effects of the mandated judgment publication on entrepreneurship are exclusive to the formation of incorporated businesses, in which uncertainties surrounding litigation risks are particularly pertinent and disclosure of judicial information can benefit more.

Second, we examine whether the owners of newly incorporated businesses have indeed injected monetary capital (i.e., paid-in capital) into their firms. Given that the vast majority–92%–of newly registered firms in China are established without any paid-in capital (See Table 1), the registration of a new firm with positive capital injection is indicative of more formal and serious entrepreneurship.[29] It is also likely that these entrepreneurs may perceive more promising prospects for their business idea, thereby becoming more inclined to scale up, compared to those who are still testing nascent ideas at a small scale before injecting capital. We hypothesize that after the mandated policy, entrepreneurs are more willing to inject capital into new firms. To test this, we employ *Paid-in Ratio*, which is the proportion of new firms with paid-in capital among all new firms as the dependent variable. As reported in Column (4) of Table 2, the coefficient estimate is positive and significant at the 1% level. The proportion of new firms with paid-in capital in treated cities increases by 3.4 percentage points more than that in control cities. This finding suggests that under the mandated regime of judgment publication policy, entrepreneurs may perceive their business prospects as less uncertain, thereby becoming more inclined to scale up by injecting capital.

Finally, we examine whether the increase of newly registered firms mostly comes from the private sector. The establishment of private firms is typically considered more challenging than that of state-owned enterprises, given the severer financial constraints faced by private entities (Barwick et al., 2022). In Column (5) of Table 2, we report the regression result using *Non-SOE*

[29]The business registration reform in the 2010s permits the establishment of firms with a mere CNY 1 in registered capital, significantly lowering the entry barriers for firm registration and the average injected capital (Barwick et al., 2022; Cui and Wei, 2022). This reform could be a primary factor contributing to the low proportion of newly registered firms with paid-in capital. In section 4.5, however, we show that the business registration reform did not confound our baseline results.

Ratio as the dependent variable. The estimated coefficient suggests that the proportion of new non-SOEs in treated cities increases by 0.7 percentage points more than that in control cities.

Overall, our analysis shows that, the mass publicity of court judgments fosters formation of incorporated businesses, increases capital injection for new ventures, as well as stimulates private sector entrepreneurship. These results, if viewed as quality indicators of entrepreneurship, inspire us to further explore the performance implications of enhanced judicial transparency (Section 7).

4.4 Dynamics

Our DID methodology relies on the assumption that entrepreneurial activities in treatment and control cities did not exhibit unparallel trend before the mandated disclosure policy. We examine dynamics using an event study design in Equation 2:

$$Entrepreneurship_{c,t} = \alpha + \sum_{k=-3}^{4} \beta_k Treat_c \times Year_t^k + \gamma X_{c,t} + \mu_c + \delta_t + \varepsilon_{c,t}, \tag{2}$$

The model includes coefficients for each year dummy relative to 2014, and otherwise is the same as in Equation 1. We omit $Year_t^{-4}$ so that 2010 serves as the reference year. Figure 4 presents the dynamic DID event studies around the mandate. The outcome variables are *Log(New Firms)* (a), *New Firm Ratio* (b), *Paid-in Ratio* (c), and *Non-SOE Ratio* (d).

Across the four outcomes, we show that treated cities were not on track to experience the effects that we see post-mandate. We interpret the results as representing a degree of causal effect of enhanced judicial transparency on entrepreneurship.

4.5 Addressing Identification Concerns

In this subsection, we conduct a number of tests to address potential identification concerns, rule out alternative explanations, and consolidate the causal relationship between enhanced judicial transparency and entrepreneurship.

4.5.1 Local Economic Conditions and Ex-ante Judicial Transparency

One concern with our baseline model is that the spatial distribution of the pre-existing level of judicial transparency, as shown in Figure 2, is possibly driven by local economic conditions (Wang and Yang, 2021). For example, economically prosperous regions are more likely to voluntarily improve court judgment disclosure prior to the policy intervention, which could result in the treatment group comprising cities with relatively weaker initial economic conditions but greater developmental potential. Therefore, it is necessary to examine whether the contemporaneous economic conditions or pre-existing trends would bias our estimations.

We follow the regression approach of existing studies (Li and Ponticelli, 2022; Liu et al., 2022*a*) to investigate whether local economic conditions and pre-existing trends could predict ex-ante level of judicial transparency. The dependent variable is the ratio of the number of disclosed judgment documents to local population in 2012, our key measure to define the treatment and control groups. The predictors are the level or annual change of the dependent variable, *Log(New Firm)*, and all control variables in the baseline specification in 2012. Table 3 reports the regression results. Panel A shows that none of the contemporaneous economic conditions predict the level of local judicial transparency in 2012. Panel B shows that, only pre-existing trends in local fiscal spending and CPI could predict the level of local judicial transparency in 2012. Taken together, these results suggest that the level of ex-ante judicial transparency was not predominantly driven by contemporaneous economic conditions or pre-existing trends of these conditions. This helps to alleviate potential selection biases that might interfere with our baseline specification.

4.5.2 Controlling for Court Leaders' Characteristics

As detailed in Section 2.2, the decision to formulate and enforce policies regarding court judgment disclosure prior to 2014 was left to the discretion of provincial-level courts. Although our analysis has indicated that the pre-existing level of judicial transparency was not significantly driven by local economic conditions, there remains a possibility that the degree of enforcement of judgment disclosure at the provincial level before 2014 was determined by personal characteristics of the court leaders. For example, court leaders with a stronger commitment to professionalism might

be more likely to promote judicial information disclosure; while stronger hometown ties could lead businesses to seek more local protection (Cao et al., 2024), which could in turn jeopardize court leaders' initiatives to promote judicial transparency. These could pose potential endogeneity concerns, because court leader's characteristics might also affect local entrepreneurial activities.

To address this potential threat to identification, we hand collect the resumes of presidents of provincial-level courts and construct three variables to capture their personal characteristics. First, we identify whether a court president has law degrees (*Law Degree*), as an indicator of professional qualification. Second, we identify whether a court president has prior experience working at the SPC (*SPC Experience*), to gauge his/her ties to the central government. Such connections could lead to more effective implementation of centralized transparency policies (Chen, Liu and Tang, 2022). Third, we distinguish whether a provincial court president is serving in his/her birth province (*Hometown Province*), to capture his/her local connections. We estimate Equation 1 by controlling for these three indicators separately in Columns (1) to (3), and simultaneously in Column (4) of Table 4. The estimates remain robust, suggesting that personal characteristics of provincial court leaders are unlikely to bias our estimations.

4.5.3 Addressing Possibly Confounding Events

Three other reforms were enacted in parallel with the mandatory disclosure policy for court judgments, which might also have profound effects on China's judicial system and/or entrepreneurship, as documented by existing literature. These include the judicial organizational reform, which removes the financial and personnel oversight of local courts to the provincial level (Liu et al., 2022*a*); the business registration reform, which lowers the regulatory barrier for firm registration by permitting the formation of firms with minimal equity capital (Barwick et al., 2022; Cui and Wei, 2022); and the anti-corruption campaign, which intensifys the scrutiny and punishment of corruption among government officials since late 2012 (Giannetti et al., 2021; Kong and Qin, 2021; Zhang, 2023). Therefore, it is necessary to assess whether these concurrent events might confound our baseline results.

All of these reforms are carried out in a staggered approach across cities or provinces.[30] Thus, we include post-reform indicators of these reforms to the baseline regression. If there are no significant changes in the estimated coefficients of interest, we could infer that these reforms are less likely to confound our baseline results. We add indicators of the three aforementioned reforms both separately and simultaneously in Columns (5) to (8) of Table 4. We show that the estimated coefficients remain almost unchanged. Therefore, our baseline results are less likely to be confounded by these contemporary events.

4.5.4 Addressing the Missing Case Issue after 2014

Recent literature has documented the *missing case* issue of the CJO website. For example, local courts sometimes fail to disclose litigation cases that are swayed by local and political interests (Liu et al., 2022*b*); courts could even remove previously published cases from the CJO website (Wu et al., 2022; Liebman et al., 2023). The causal interpretation of our baseline results hinges on the assumption that the extent of missing cases in court disclosures across regions post-2014 was uncorrelated to ex-ante level of local judicial transparency. If this assumption is not satisfied (e.g., cities with ex-ante lower level of judicial transparency are also those with severer issues of missing cases ex-post), the observed increase in entrepreneurship between the treatment and control groups might not be solely interpreted as a causal effect of the enhanced judicial transparency.

We first examine the relationship between cities' ex-ante level of judicial transparency and ex-post judgment disclosure rate on the CJO website. Specifically, we obtain the universe of all available documents on the CJO website since 2014, and employ the method proposed by Wu et al. (2022) to estimate the judgment disclosure rate of local courts from 2014 to 2018.[31] In Appendix Table A.3, we show that there is no significant relationship between per capita publication of judgment documents in 2012 and judgment disclosure rate on the CJO website post-2014.

We also show that entrepreneurial activities in cities with less severe missing cases problem

[30] Existing studies usually exploit different years when provincial-level officials are investigated as distinct shocks to implement a staggered DID for assessing the effect of anti-corruption campaigns (Kong and Qin, 2021; Zhang, 2023).

[31] Wu et al. (2022) applies the German Tank Model to detect the potential sample selection of the disclosed documents. Specifically, the model offers a statistical method to estimate the maximum number N in the population of a consecutive series 1, 2, ..., N, based on a randomly-drawn sample of k limited observations with the largest number m. As described by Goodman (1952), a minimum-variance unbiased estimator for N is given by: $\hat{N} = m(1+k^{-1})-1$.

after 2014 are more active. To show this, we average the post-2014 disclosure rate for each city and label cities with above-median average disclosure rate as the *High Disclosure Rate* group. We interact this indicator with $Treat_c \times Post_t$, and report the estimation results in Table 4 Column (9). The coefficient of the triple interaction term is positive and statistically significant, indicating that entrepreneurial activities increases most in cities with lower ex-ante, yet higher ex-post level of judicial transparency. This reinforces our main finding that enhanced judicial transparency helps foster entrepreneurship.

4.5.5 Alternative Definitions of the Treatment and Control Groups

We further examine the robustness of our baseline results with alternative definitions of the treatment and control groups. First, we estimate our baseline specification using alternative cutoffs of ex-ante level of judicial transparency. In Columns (1) to (3) of Appendix Table A.4, cities with ex-ante judicial transparency levels in the bottom median, quartile and quintile are designated as the treatment group, respectively. We show that all estimates of coefficients are still positive and statistically significant. This suggests that our baseline results are mainly driven by the variations in ex-ante judicial transparency across cities, and thus the varying degrees of improvement in judicial transparency, rather than being attributable to any specific cutoffs.[32]

Second, we consider potential measurement errors induced by how we calculate ex-ante judicial transparency. As detailed in Section 3.1, due to the inaccessibility of the annual caseload data at the city level, we use the per capita number of published judgment documents as a proxy for our baseline measure of judicial transparency. However, annual case volume is not solely dependent on the population size. Therefore, we check if our results are robust to three alternative denominators: GDP (million) at the city level, the total number of cases accepted, and the total number of case closed by provincial courts. We reassign treatment and control groups (cities for the first and provinces for the other two) based on these alternative measures. As reported in Columns (4) to (6) of Appendix Table A.4, the estimated coefficients are all positive and statistically significant at the 1% or 5% level.

[32]When we use the coarsest cutoff, median, the estimated coefficient is smaller. This further suggests that our results on entrepreneurship are attributable to the enhancement in judicial transparency.

Finally, as elaborated in Section 4.1, we use the regional judicial transparency level in 2012 rather than that in 2013 to construct the treatment and control groups, in light of concerns that the 2013 figures might contain noise from pre-uploaded documents. Column (7) of Appendix Table A.4 reports the estimation results with the treatment and control groups redefined based on the 2013 transparency levels, which remain positive and statistically significant. This suggests that our baseline results are unlikely to be driven by the choice of the benchmark year for assessing the ex-ante level of judicial transparency.

4.5.6 Falsification Tests

We conduct two falsification tests to further support the causal relationship between enhanced judicial transparency and entrepreneurship. First, following existing studies (Liu and Mao, 2019; Barwick et al., 2022), we keep the number of treatment and control cities unchanged but randomly falsify these two groups, then reestimate the baseline specification. If our baseline results are not driven by unobservables, we should expect that the counterfactual results would not deviate significantly from zero. We repeat this falsification process for 1,000 times and plot the density of the estimated coefficients in Appendix Figure A.5. We find that the distribution of these coefficients is centered around zero and closely resembles a normal distribution. Moreover, the baseline estimate of a 9.2% increase in entrepreneurship between treatment and control cities is greater than 99.9% of coefficients estimated from the counterfactual data with random assigned groups. Second, we falsify the construction of the treatment and control groups by using the regional judicial transparency level in 2014 rather than that in 2012. Since 2014 is the first year of the enforcement of the mandated disclosure policy, the judicial transparency measure for that year should contain no information on ex-ante judicial transparency levels. As our identification strategy relies on the regional disparities in ex-ante judicial transparency, we would expect an insignificant estimation result with a falsified construction of the treatment and control groups based on 2014 data. If not, our baseline results might rather be driven by some unobservables. In Column (8) of Appendix Table A.4, we show that the estimated coefficient is insignificant. Taken together, these falsification tests provides additional evidences for the causality of our baseline

results.

4.6 Mandatory Disclosure vs. Voluntary Disclosure

Our baseline DID model compares entrepreneurial activities between cities with ex-ante lower level of judicial transparency with those with higher levels, before and after the mandated disclosure policy. Since the ex-ante level of judicial transparency were mainly driven by the heterogeneous disclosure policies voluntarily enacted by different provinces, our baseline results should be similar to that of comparing the effect of the mandated disclosure policy between provinces without prior voluntary enforcement of court judgment disclosure and those with *de facto* enforcement in place before the mandate.

We formally test this conjecture in this subsection. We first manually search the *PKULaw* platform and news reports for provincial disclosure policies pre-2014, whether formulated in government documents or simply proclaimed by provincial court presidents. As shown in Appendix Figure A.6, of the 31 provinces, 18 claimed to have court judgment disclosure initiatives prior to 2014. However, not all of these claims translated into actual enforcement. As detailed in Section 2.2, in some provinces, the commitment to online court judgment publication was more of a symbolic gesture than a real enactment before 2014. We categorize cities from the 6 provinces that had either policies or claims regarding court judgment disclosure but exhibited the weakest enforcement (based on per capita publication of court judgments) into the "weak ex-ante policy group", and cities from the remaining 12 provinces with such policies or claims into the "strong ex-ante policy group". For those provinces that had no pre-2014 court judgment publication policies or claims, their cities are assigned to the "no ex-ante policy group".

We now reestimate the baseline Equation (1). First, we set cities in both strong and weak ex-ante policy groups as the control group and cities in the no ex-ante policy group as the treatment group. As reported in Column (1) of Appendix Table A.5, the estimated coefficient is 0.098 and statistically significant, which is very similar to the baseline results in Section 4.2. Second, we only set cities in the strong ex-ante policy group as the control group and cities in no and weak ex-ante policy groups as the treatment group. As reported in Column (2), the estimated coefficient remains

significant and very close to the baseline results. Finally, we use separate dummies to denote cities in weak or no ex-ante policy groups, to estimate the treatment effect relative to cities in the strong ex-ante policy group. As shown in Column (3), the policy effect is mainly driven by cities without any ex-ante policies. Taken together, these results suggest that the baseline results are essentially driven by the variation in treatment intensity between regions without ex-ante enforcement of court judgment disclosure and those that had *de facto* enforcement in place prior to the policy mandate.

Given these regional disclosure policies voluntarily enacted by provincial courts, it is also meaningful to examine whether the voluntary disclosure regime has promoted entrepreneurship. Since these regional disclosure policies before 2014 were not as forceful as the mandated policy after 2014, we expect weak or even no policy effects on local entrepreneurship.

In Column (4) of Appendix Table A.5, we estimate a staggered DID model using the pre-mandate sample from 2000 to 2012, where *Post Weak Policy* and *Post Strong Policy* equal one after a provincial court adopted a disclosure policy. We find that only the estimated coefficient on *Post Strong Policy* is statistically significant at the 10% level, yet the magnitude is notably smaller than that of our baseline results. Although such staggered setting might suffer from endogeneity concerns, it provides suggestive evidence that the mandated court judgment disclosure policy in 2014 is more effective in fostering entrepreneurial activities, reinforcing the validity of our main conclusions.

5 Industry-level Analysis: The Role of Heterogeneous Litigation Risks

Our evidence so far suggests a positive, causal relationship between judicial transparency and entrepreneurial activity. The underlying hypothesis we posit is that the mandated judgment disclosure policy helps to reduce perceived litigation risk for entrepreneurs, thereby incentivizing entry into incorporated businesses. Although it is challenging to capture variation in perceived litigation risk at the city level, industrial observations would provide a more nuanced perspective. Therefore, in this section, we disaggregate entrepreneurial activity into the city-industry level to examine the heterogeneous effects of enhanced judicial transparency across industries.

Firms encounter litigation risks to different degrees, which are often driven by the nature of their business activities and the propensity to become entangled in legal disputes. Some industries are naturally more prone to lawsuits than others (Francis, Philbrick and Schipper, 1994). As we posit that the mandated policy helps to reduce perceived litigation risk for entrepreneurs, we expect that in industries with a higher predisposition towards litigation, the effect of mandatory judgment disclosure on entrepreneurial entry would be more pronounced.

While existing literature primarily focuses on litigation risks faced by defendants (Lowry and Shu, 2002; Hanley and Hoberg, 2012; Houston et al., 2019; Huang, Hui and Li, 2019; Lin, Liu and Manso, 2021), Cumming, Haslem and Knill (2017) point out that the costs of becoming a plaintiff are particularly burdensome for smaller entrepreneurial firms. This is largely because litigation demands considerable financial and resource commitments from these firms. Thus, when examining entrepreneurial litigation risks, it's crucial to consider firms in both roles: as defendants and as plaintiffs. The propensity for different industries to be plaintiffs or defendants in litigations could also varies. Industries that are more inclined to initiate lawsuits (plaintiffs) could better leverage the publication of judgment documents to gain a clear advantage in harnessing legal information and tech-driven legal services. However, for industries that are more often on the receiving end of legal actions (defendants), the implications could be quite different. Being a defendant in litigation is generally an adverse event for a firm, especially when the details of judgment documents are made publicly accessible (Liu et al., 2022*b*). Therefore, for defendants, the potential reputation costs of judgment disclosures might offset the legal and informational benefits brought by the mandated disclosure policy, resulting in a potential deterrent effect on entry.[33] Accordingly, we hypothesize that the policy's effect on entrepreneurship would be more pronounced in industries prone to initiating lawsuits (plaintiff-prone), in contrast to those more likely to face them (defendant-prone).

To test these hypotheses, we construct industry-level measures of litigation exposures and examine the heterogeneous effects of enhanced judicial transparency across industries. Our

[33]Using data from 550 corporate litigation cases filed by publicly traded firms from 1981 to 1983, Bhagat, Brickley and Coles (1994) document a negative stock market reaction to defendant firms upon the filing of a suit, whereas plaintiffs experience no significant gains. This can be partly explained by the increased financial distress costs imposed on the defendant.

approach is grounded in two assumptions. First, certain industries face a higher likelihood of lawsuits compared to others, as noted by Francis, Philbrick and Schipper (1994). Second, there is a general persistence in the perception of litigation risk for firms over time, albeit to varying degrees (Lin, Liu and Manso, 2021). Thus, we construct industrial litigation risk measures based on each industry's ex-ante litigation exposures. Given the scarcity of litigation data on entrepreneurial firms prior to 2012, we resort to leveraging the litigation information of publicly listed firms in the China Stock Market & Accounting Research (CSMAR) database.[34] Specifically, we construct three sets of measures to assess litigation exposure at the 2-digit industry level. The first is the proportion of listed firms within an industry that have ever disclosed litigations. The second is the average annual number of litigations for listed firms in each industry. For both of these metrics, we also differentiate between the firms' roles as plaintiffs or defendants in the legal proceedings. Lastly, we calculate the propensity (i.e., proportion) with which listed firms in an industry are involved in litigation as either plaintiffs or defendants. We use litigation data in and before 2012 to compute all these metrics, ensuring that our industry-level assessments capture ex-ante litigation risks. We find that the outcomes of our industry litigation exposure metrics are largely consistent with real-world expectations.[35]

The difference-in-difference-in-differences (DDD) specifications are as follows:

$$\begin{aligned} Entrepreneurship_{c,j,t} = \alpha + \beta_1 Treat_c \times Post_t \times Litigation_j + \beta_2 Litigation_j \times Post_t \\ + \beta_3 Treat_c \times Post_t + \gamma X_{c,t} + \theta_{c,j} + \delta_t + \varepsilon_{c,j,t}, \end{aligned} \tag{3}$$

[34]The China Securities Regulatory Commission (CSRC) mandates that listed firms disclose material litigation or arbitration matters. Timely disclosure is required if the amount at stake exceeds CNY 10 million and accounts for more than 10% of the firm's latest audited net assets. Additionally, disclosure is obligatory for cases that, regardless of the monetary threshold, could significantly affect the firm's valuation (Liu et al., 2022*b*).

[35]For example, Water, Environment and Utilities Management (Industry N) and Information Transmission, Software and Information Technology Services (Industry I) have the lowest proportion of listed firms that have ever disclosed litigations (16.6% and 20.3%, respectively), while Accommodation and Catering (Industry H) and Culture, Sports and Entertainment (Industry R) have the highest proportion (58.3% and 58.3%, respectively). Culture, Sports and Entertainment (Industry R) and Mining (Industry B) have the highest propensity for being defendants (84.4% and 80.1%, respectively), while Scientific Research and Technical Services (Industry M) has the highest propensity for being plaintiffs (62.5%). The industry classification codes are based on the 2011 edition published by the National Bureau of Statistics (NBS) of China.

$$
\begin{aligned}
Entrepreneurship_{c,j,t} = \alpha &+ \beta_p Treat_c \times Post_t \times Litigation_Plaintiff_j \\
&+ \beta_d Treat_c \times Post_t \times Litigation_Defendant_j \\
&+ \beta_{2p} Litigation_Plaintiff_j \times Post_t \\
&+ \beta_{2d} Litigation_Defendant_j \times Post_t \\
&+ \beta_3 Treat_c \times Post_t + \gamma X_{c,t} + \theta_{c,j} + \delta_t + \varepsilon_{c,j,t},
\end{aligned} \tag{4}
$$

where $Entrepreneurship_{c,j,t}$ refers to the logarithm of the number of newly registered firms, *Log(New Firm)*, in 2-digit industry j of city c in year t. $Litigation_j$ denotes overall litigation exposure in industry j, while $Litigation_Plaintiff_j$ and $Litigation_Defendant_j$ denote litigation exposures prone to being plaintiffs and defendants, respectively. $Treat_c$, $Post_t$, and time-varying city-level controls $X_{c,t}$ are same as in Equation 1. We control for city-industry fixed effects, $\theta_{c,j}$, and year fixed effects, δ_t. As hypothesized, we expect positive effects for the coefficient estimates β_1 in Equation 3 and β_p in Equation 4.

We report the regression results of Equation 3 and 4 in Table 5. Columns (1) and (2) use the proportion of listed firms that have ever disclosed litigations to proxy for industry litigation exposure. As shown by Column (1), the estimated coefficient on the triple interaction term $Treat_c \times Post_t \times Litigation_j$ is positive and significant, suggesting that the policy's effect on entrepreneurship is more pronounced in industries with higher potential litigation risks. In Column (2), only the estimated coefficient on the triple interaction term $Treat_c \times Post_t \times Litigation_Plaintiff_j$ is positive and significant. This indicates that the policy effect is more pronounced in industries that are more prone to initiate lawsuits. In Columns (3) and (4), we use the average annual number of litigations of listed firms as an alternative proxy for industry litigation exposure, and yield similar results.

In Columns (5) and (6), we estimate Equation 3 and use the propensity of industries to be plaintiffs or defendants as distinct measures of industry litigation exposure. We find that for industries that are more likely to be plaintiffs, the policy effect is positive and significant. In contrast, for industries that are more likely to be defendants, the coefficient estimate turns

negative. These results demonstrate that the effect of the mandated judgment publication policy on entry mainly comes from entrepreneurial firms that face a lower risk of being sued.

We further explore the dynamic effects by replacing the indicator $Post_t$ with a set of year dummies $Year_t^k$, same as in Equation 2. Panels (a) and (b) of Figure 5 plot the estimation results corresponding to Columns (2) and (4) of Table 5, respectively. We show that there is no pre-trend in entrepreneurial activities between the treatment and control groups and among industries with different levels of litigation exposure. After the policy, the estimated coefficients turn positive and significant, yet this is observed exclusively for plaintiff-prone industries, not for the defendant-prone industries. In Panel (c) of Figure 5, we compare the estimation results corresponding to Columns (5) and (6) of Table 5, and find similar patterns.

In summary, our findings in this section suggest that the mandated judgment disclosure policy fosters entrepreneurial activities mostly within industries that are more susceptible to litigations. Importantly, this positive effect is evident primarily in industries where firms are more likely to be plaintiffs, rather than defendants. For these defendants, the potential reputational costs under the publication mandate might counteract the legal and informational benefits provided by the policy. Overall, these insights highlight the role of perceived litigation risk on entrepreneurial entry decisions. While enhanced judicial transparency lowers the barriers to entry into entrepreneurship on average, its impact is not uniform, potentially deterring a subset of industries.

6 Mechanisms

The results in Section 4 and 5 provide suggestive evidence that enhanced judicial transparency fosters entrepreneurship by mitigating preceived litigation risk, which creates more incentives for entrepreneurial entry. To further answer how the mandated judgment disclosure policy reduces perceived litigation risk for entrepreneurs, in this section, we explore two plausible mechanisms: reshaped beliefs on the quality of institutions by improving anticipated judicial justice, and enhanced technology-driven legal services.

6.1 Enhanced Judicial Justice

According to the SPC, the primary goal of publishing judgment documents is to improve judicial justice (see Section 2). To unify adjudication standards and prevent the abuse of discretion, judges in China are required to retrieve and refer to similar cases when adjudicating cases. Since court judgments are to be posted online, judges are less likely to misuse their discretionary authority, which could lead to unfair trial outcomes. Anticipating this shift, entrepreneurs might experience a significant reduction in the uncertainty surrounding future litigation outcomes, and hence in perceived litigation risks and expected costs of entry. Therefore, improvement in judicial justice could act as a potential mechanism through which enhanced judicial transparency fosters entrepreneurial activity.

We conduct heterogeneity tests by considering two local institutional features that could help corroborate this channel: trust and business environment. We posit that in regions with lower levels of trust or poorer business environment, anticipated enhancement in judicial justice is more likely to have a stronger effect on reshaping beliefs about the quality of institutions, thus encouraging more entry into entrepreneurship in these areas.[36]

6.1.1 Heterogeneous Effects: By Trust

Our measure of trust at the regional level is derived from the China General Social Survey (CGSS), conducted by the Renmin University of China. We employ the data in 2012, the year we construct the treatment and control groups, to capture ex-ante levels of trust across provinces. The 2012 CGSS contains 11,756 complete individual responses from 29 provinces. We use four questions related to trust. One is about overall trust: "In general, do you agree that most people can be trusted in this society?", with responses ranging from 1 ("do not trust greatly") to 5 ("trust greatly"). The other three are more specific: "How much do you trust in local government officials/judges/firm executives", with responses ranging from 1 ("do not trust greatly") to 4 ("trust greatly"). For each question, we calculate the average score of respondents' answers for each province and divide

[36] Grimmelikhuijsen and Klijn (2015), for example, conduct a field experiment to investigate the effect of a Dutch television series on trust, and find that judicial transparency has a positive effect on trust in judges.

provinces into high-trust and low-trust groups based on the median score. Then, we estimate Equation 1 by subsamples.

We report the regression results in Table 6. In Columns (1) and (2), we compare the estimated coefficients between low and high overall trust groups. The estimated coefficient is 0.169, statistically significant in low overall trust group; and is 0.017, statistically insignificant in high overall trust group. The equality test shows that the two coefficient estimates are significantly different with a p-value of 0.013. This suggests that the effect of the mandated judgment disclosure policy on entrepreneurship is more pronounced in regions with lower levels of trust. In Columns (3)-(8), we compare the estimated coefficients from subsample analysis based on trust in local government officials, judges, and firm executives. The results show that the effect is most pronounced in regions with lower trust in these groups. Together, mandated judgment disclosure significantly bolsters entrepreneurial activities in regions with lower trust levels, especially in trust pertaining to the local government and judges.

6.1.2 Heterogeneous Effects: By Business Environment

Next, we explore the heterogeneous effects by local business environment. NTSD contains detailed financial and operational information for a large and representative sample of firms, enabling us to capture business environment at the regional level. Specifically, we use the variable of perk spendings (i.e., entertainment expenses), to proxy for the cost of corruption (Cai, Fang and Xu, 2011; Giannetti et al., 2021); and the variable of administrative fees to capture the extent of regulatory discretion of the local government (e.g., imposing penalties). We calculate the average perk spending relative to total revenue and administrative fees relative to total revenue across firms at the city level in 2012.[37] These variables capture the average costs incurred by firms in a city to navigate administrative processes, thereby serving as indicators of a city's business environment.

We divide our sample into high and low groups based on these measures of ex-ante business environment, and estimate Equation 1 by subsamples. Columns (1) and (2) of Table 7 present the

[37] We employ the full sample of the 2012 NTSD, which contains 333,352 firm observations, to calculate the above measures.

results of subsample analysis by perk spending. The estimated coefficients for the two groups are 0.147 and 0.020, respectively, and are significantly different with a p-value of 0.066. Columns (3) and (4) report the results of subsample analysis by administrative fees. The estimated coefficient for the high administrative fee group is 0.137, and is 0.024 for the low administrative fee group; the two estimates are significantly different with a p-value of 0.062. These results suggest that the effect of mandated disclosure of court judgments on spurring entrepreneurship is more pronounced in regions with ex-ante poorer business environment.

Taken together, the heterogeneous effects by trust and local business environment support improvement in judicial justice as one plausible mechanism through which enhanced judicial transparency promotes entrepreneurship. It is worth noting that our evidence from subsample analyses mainly points to the role of *perceived* improvement in judicial justice in reshaping entrepreneurs' beliefs on the quality of institutions, thus affecting their entry decisions. There is a clear need for further studies to better measure the *realized* aspects of judicial justice, which calls for an interdisciplinary approach combining insights from law, economics, and finance.

6.2 Surges of Technology-driven Legal Services

The centralized publication of court judgments supplies a vast repository of judicial data to society. Among the various sectors that stand to capitalize on this data, the legal services industry is particularly prominent to harness potential benefits. Data is the fuel of tech-driven information services. By leveraging judicial data and automation technologies, legal analytics tools predict case outcomes, helping lawyers and clients make more informed decisions. For entrepreneurs, accessing higher-quality legal services may lead to less uncertain litigation outcomes, which helps to reduce perceived litigation risk and expected costs of entry.[38] In this subsection, we ask how enhanced judicial transparency transforms an important but understudied intermediary market in

[38] Ibrahim (2012) survey a sample of U.S. VC-backed start-ups to understand how they obtain legal services. 72% of the respondents rely on outside counsel and do not have in-house counsel. When asked to indicate all reasons for preferring outside counsel, respondents rank the reasons as follows: in-house counsel is not cost-justified (83%); outside counsel offers more coverage and depth of specialization (60%); outside counsel is more independent/objective (13%); outside counsel enhances their reputations with third parties (8.7%); outside counsel could connect them to angel investors and venture capitalists (4%). These findings highlight the importance of external legal services to small firms and entrepreneurs, who are often resource-constrained. In contrast, large firms may afford internal legal teams or rely on their own connections with law firms (Lanjouw and Schankerman, 2004).

the entrepreneurial ecosystem: the legal services industry, and examine the role of tech-driven legal services in fostering entrepreneurship.

6.2.1 Stylized Facts: The Surge of Technology-driven Legal Services

In Figure 6, we provide four pieces of evidence showing that mandated publication of court judgments fuels legal technologies and tech-driven legal services.

First, we look at the establishment of LegalTech firms. To identify LegalTech firms, we search the business registration database based on the business scope information with keywords "LegalTech" or "legal big data", while ensuring that the business scope also includes the term "legal services". This yields a total number of 1,300 LegalTech firms established between 2006 and 2021. As shown in Panel (a) of Figure 6, the number of newly registered LegalTech firms (blue bar) surges since 2014, peaks in 2015, and gradually declines yet remained a notably high level. This suggests that the mandated publication of court judgments since 2014 stimulates the establishment of LegalTech firms. In addition, we plot the number of cities having the first LegalTech firms in a given year (orange bar). The emergence of LegalTech firms in cities previously devoid of such entities post-2014 indicates that the policy has broadened the geographical reach of legal technology services.

Second, we obtain data of venture capital (VC) deals on LegalTech start-ups in China from *PitchBook*. Panel (b) of Figure 6 shows that out of the total 66 VC deals, 52 occurs after 2014, with 7 deals in 2014 and 14 in 2015. This distribution further demonstrates the fact that the mandated publication of court judgments spurs the establishment of high-quality LegalTech start-ups.

Third, we collect a time series of the number of research papers mentioned "judgment document" (in Chinese) by manually searching the China National Knowledge Infrastructure (CNKI) database. As shown in Panel (c) of Figure 6, the number of papers mentioned "judgment document" increases dramatically after 2014. Notably, within the field of Computer Science, the number of papers mentioned "judgment document" surges since 2019.[39] This indicates that the mandated judgment disclosure significantly bolsters academic research focused on judgment

[39]This lag may reflect the possibility that the development of certain applied fields in science and engineering is built upon the availability of data in social sciences.

documents. Science production constitutes an important source of business formation in the legal space.

Fourth, we construct a time series of the number of granted legal-tech patents (i.e., those include the term "judgment document" in the patent abstract) from the CNIPA patent data. As shown in Panel (d) of Figure 6, the number of legal-tech patents increases significantly after 2014.

In sum, the above stylized facts illustrate that the mass publicity of judgment documents fuels tech-driven professional legal services in China. It is thus important to explore the effect of such surges in tech-driven legal services on entrepreneurial activities.

6.2.2 The Effects of LegalTech Firm Entry

Legal services help potential entrepreneurs and newly established businesses operate smoothly within the legal and regulatory framework. They offer a range of services including business incorporation and registration, contract drafting and review, intellectual property protection, labor, financing and investment consulting, design of governance structure, compliance and risk assessment, and dispute resolution. The availability of more legal precedents at the CJO website and the rise of legal technologies, by assisting legal professionals and improving the quality of legal services, could enhance the predictability of legal outcomes. This, in turn, reduces the uncertainty associated with future litigations, hence diminishing perceived litigation risks and anticipated costs of entry.

By exploiting the different timings of the establishment of the first LegalTech firm across cities, we estimate a staggered DID model to examine the effect of LegalTech firm entry on entrepreneurship. The data on the timing of LegalTech firm entry is the same as that in Panel (a) of Figure 6. The staggered DID specification is as follows:

$$Entrepreneurship_{c,t} = \alpha + \beta LegalTech_{c,t} + \gamma X_{c,t} + \mu_c + \delta_t + \varepsilon_{c,t}, \tag{5}$$

where $LegalTech_{c,t}$ equals one after a city has its first LegalTech firm, and zero elsewise.

We report the estimation results in Table 8, with *Log(New Firm)* being the dependent variable. The coefficient estimate in Column (1) is 0.069, statistically significant at the 5% level. On

average, the inception of a LegalTech firm in a city is associated with an increase in the number of newly registered firms by 6.9%. Admittedly, this specification could suffer from reverse causality, because the likelihood of LegalTech entry could be positively related to the scale of entrepreneurship in a city. As a result, in Column (2), we further control lagged *Log(New Firm)* to partially address this concern. The estimated coefficient is 0.058, slightly smaller than that in Column (1), and statistically significant at the 1% level.

Taken together, our results suggest that the surge of legal-tech services propelled by the mandated publication of court judgments might serve as another plausible mechanism to spur entrepreneurship.

7 Performance

In this section, we delve into firm-level evidence to investigate whether the mandated disclosure policy of judgment documents has ultimately improved the quality of entrepreneurship. We examine the policy effects on the financial and operating performance, as well as the innovation outcomes of the newly registered firms, in both their inception year and subsequent years.

7.1 Firm-level Specification

To examine the effect of the mandated judgment disclosure policy on the quality of entrepreneurship, we first focus on the subsample of firm observations during their inception years. Our regression design compares the policy's effects on the first-year performance of new firms between the treatment and control cities. Specifically, we estimate the following firm-level model:

$$Performance_{i,j,c,k} = \alpha + \beta Treat_c \times Post_k + \gamma X_{c,k} + \mu_c + \theta_j + \phi_k + \varepsilon_{i,j,c,k}, \tag{6}$$

where i denotes an individual firm, j denotes the 2-digit industry, c denotes the inception city of the firm, and k denotes the establishment year of the firm.[40] $Treat_c$ indicates whether a city is assigned

[40]Since we only use the establishment-year observations in this specification, the establishment year is equivalent to the observation year.

into the treatment group, same as that in Equation 1. $Post_k$ is one for firms establish in and after 2014, and zero otherwise. $X_{c,k}$ denotes time-varying city-level controls for city c in year k, in parallel with those in Equation 1. We include city, industry, and establishment year fixed effects, denoted by μ_c, θ_j, and ϕ_k, respectively. We cluster standard errors at the city-industry level.

We then examine whether the mandated judgment disclosure policy has had long lasting effects on the performance of entrepreneurship. To this end, we employ the full firm-year sample to estimate the following model:

$$Performance_{i,j,c,k,t} = \alpha + \beta Treat_c \times Post_k + \gamma X_{c,t} + \mu_c + \theta_j + \phi_k + \delta_t + \varepsilon_{i,j,c,k,t}, \tag{7}$$

where t denotes the year of the observation, and $Performance_{i,j,c,k,t}$ refers to outcomes of firm i in year t, located in city c, categorized in industry j, and established in year k. $X_{c,t}$ denotes time-varying city level controls for city c in year t. δ_t refers to observation year fixed effects. All else is the same as in Equation 6.

7.2 Financial and Operating Performance

Table 9 Panel A examines the effects of the mandated judgment disclosure policy on financial and operating performance of entrepreneurial firms in their inception-years. While newly registered firms in treated cities after the policy do not outperform their counterparts in control cities regarding total assets and revenues, they have a larger workforce, higher profit margin, and higher amount of investment in their founding year. Quantitatively, the mandated disclosure policy leads to an increase of 7.8% in founding-year employment and a 49.1% boost in investment for new firms in treatment cities, relative to those in control cities, and enhanced profit margins by 38.8 percentage points.

Panel B reports the estimation results of Equation 7, which reflect the long-run effects on entrepreneurial firm's performance. The coefficient estimates of $Treat_c \times Post_k$ in all regressions are positive and significant at the 1% level. On average, the policy leads to an increase of 17.0% in total assets, 26.6% in revenues, 12.7% in employment, and 33.3% in investment for new firms in treatment cities, relative to those in control cities, and raises profit margins by 23.7 percentage

points. This suggests that newly registered firms in treatment cities generally perform better than those in control cities after the policy. Taken together, our results provide suggestive evidence that the mandated judgment disclosure policy improves the quality of entry.

7.3 Innovation Performance

Last, we examine whether the mandated judgment disclosure policy has fostered the creation of more innovative firms. We estimate Equation 6 and 7 with innovation outcomes, and report the estimation results in Table 10. Panel A shows that, after the policy, newly registered firms in treatment cities do not outperform those in control cities regarding patent applications or grants in their establishment year. However, they do make a substantially larger R&D investment compared to firms in control cities.

When estimating the policy effects using full sample years, as shown by Panel B, the estimated coefficients in all regressions are positive and statistically significant. New firms in treatment cities have, on average, 2.0% higher R&D investment, 0.3% more patent applications, 0.2% more granted patents, and 0.5% more forward citations on applied patents than those in control cities after the policy. This suggests that the mandated judgment disclosure policy encourages the formation of more innovative entrepreneurial firms.

To summarize, in this section, we demonstrate that the mandated publication policy of court judgments remarkably improves the quality of entrepreneurship in terms of financial, operating and innovation performance of new firms. Moreover, this effect has proven to be not only immediate but also enduring over time.

8 Conclusion

Exploiting China's unique case of mass, mandated publication of court judgments, this paper examines the effect of judicial information disclosure on entrepreneurship. We find that enhanced judicial transparency fosters entry into entrepreneurship. Industries that historically are more inclined to be plaintiffs, rather than defendants, drive the positive effect. We show that reshaped

beliefs on the quality of institutions and enhanced technology-driven legal services are two plausible underlying mechanisms through which judicial transparency promotes entrepreneurship. We also find that the mandate improves the quality of entrepreneurship in terms of financial, operating, and innovation performance. Overall, our findings highlight the important role of judicial transparency in shaping entrepreneurial ecosystems via its nuanced effects on mitigating perceived litigation risks of entrepreneurial activities and uncertainty reduction.

In terms of policy implications, our results suggest that, first, the economic significance of judicial transparency might be particularly pertinent for developing countries that usually have underdeveloped legal institution, low public trust in government, and a less favorable business environment. Second, we underscore the significant role of mandatory information disclosure policies over voluntary disclosures in enhancing judicial transparency and stimulating entrepreneurial activities. Our findings should be as interesting to policy makers concerned about the broader information role of judicial system in the economy. Lastly, given the critical role of litigation information in the entrepreneurial landscape of the big data era, it is imperative to foster the growth of legal-tech and legal data initiatives through the aggregation and publication of comprehensive court judgments.

While our paper sheds light on the positive economic implications of judicial transparency, there remains an ongoing debate on the extent to which judgment documents should be publicized. Notably, recent data indicates a decline in the volume of judgment documents published on the CJO website, which has sparked discussions about whether China's commitment to embracing judicial transparency may be waning. This seems to imply potential drawbacks to mandated judgment disclosure, such as privacy infringements, damage to business interests, and increased workload for local courts, which are yet to be explored in this study. In other word, the overall economic and welfare impacts of mandated court judgment disclosure in China remain to be answered. We view this as an important direction for future research.

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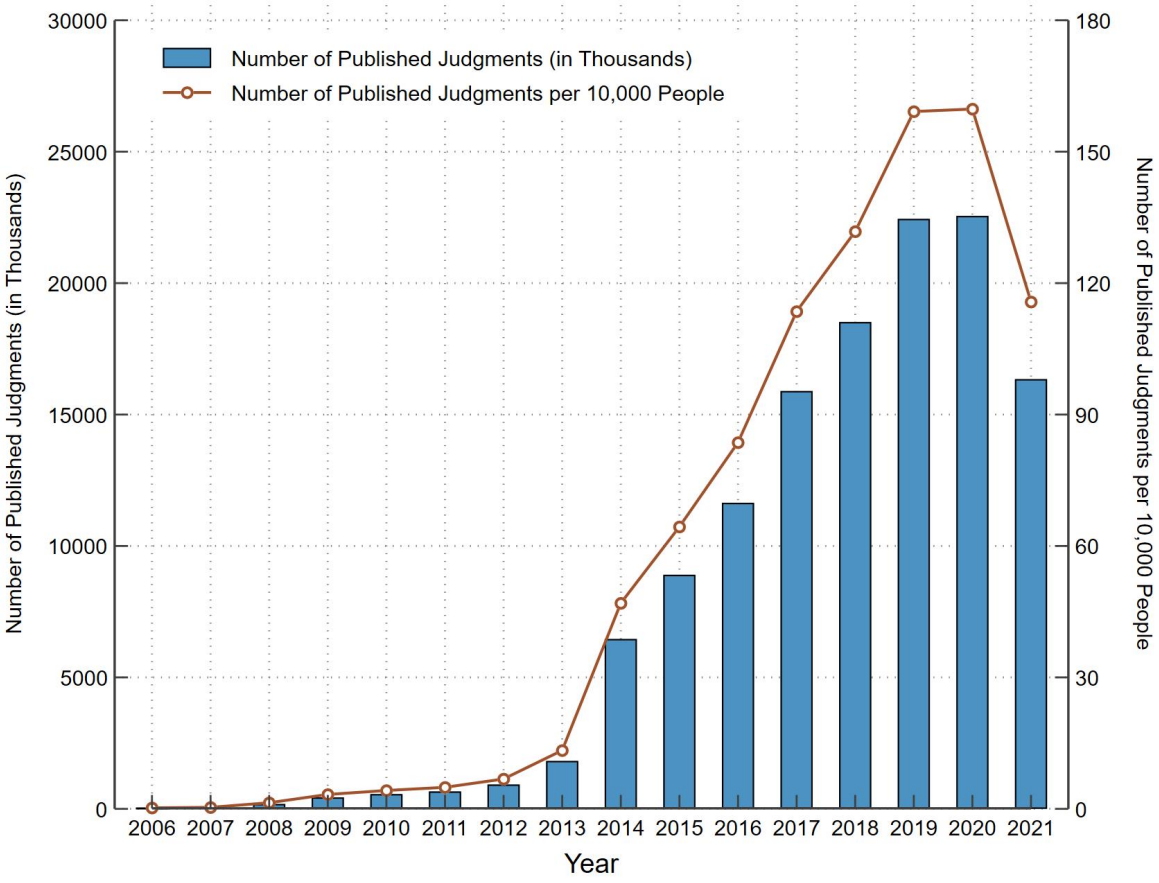
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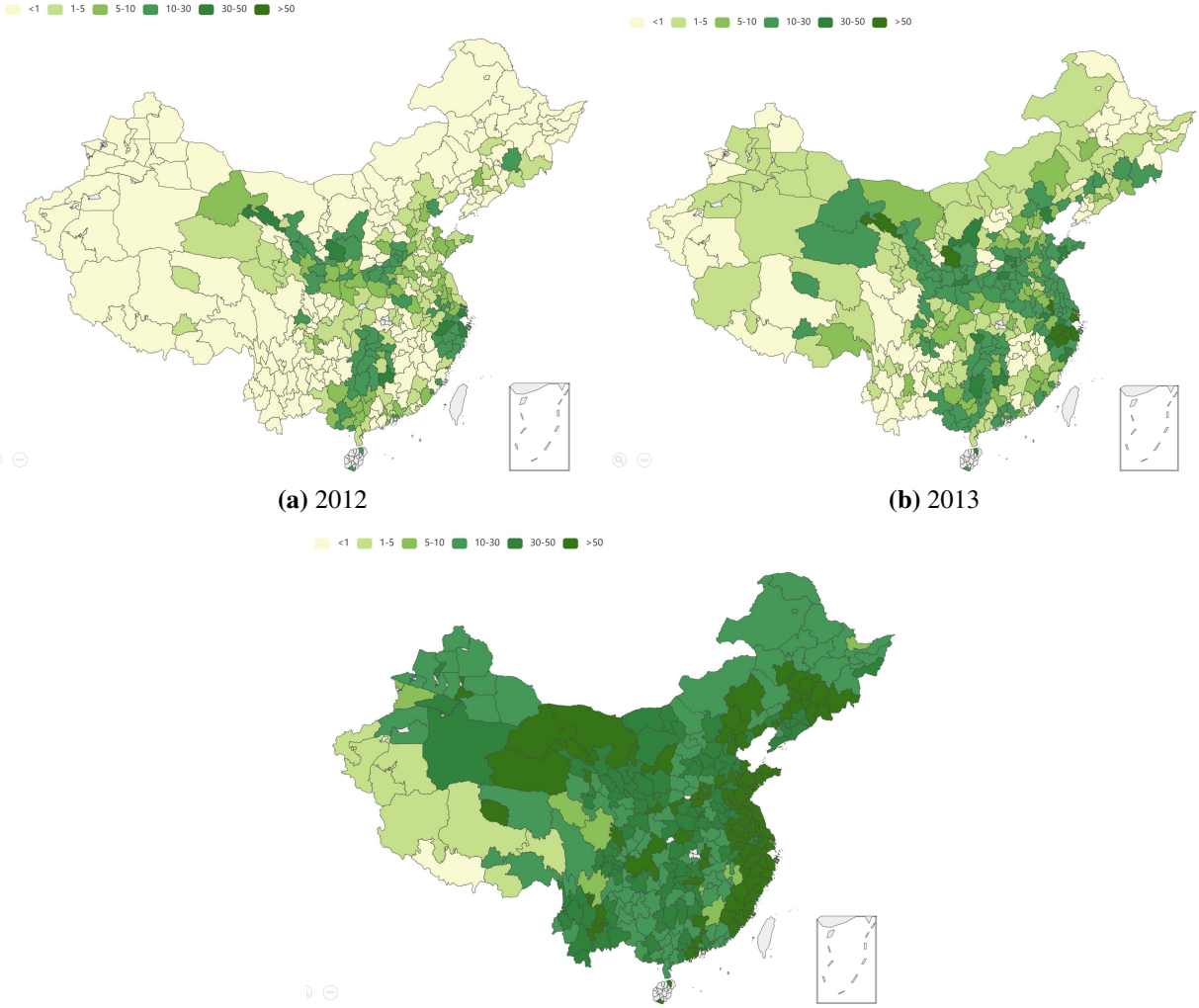
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Figure 1: **Court Judgment Disclosure in China Over Time**



Note: This figure shows the temporal progression of court judgment disclosure in China. The blue bar represents the number of published judgment documents in a given year (in thousands). The red line represents the number of published judgment documents per 10,000 people in a given year. Numbers of published judgment documents are collected from the *Wolters Kluwer China Law & Reference* platform. Data of national population is from the National Bureau of Statistics (NBS) of China.

Figure 2: **Expansion of Court Judgment Disclosure**

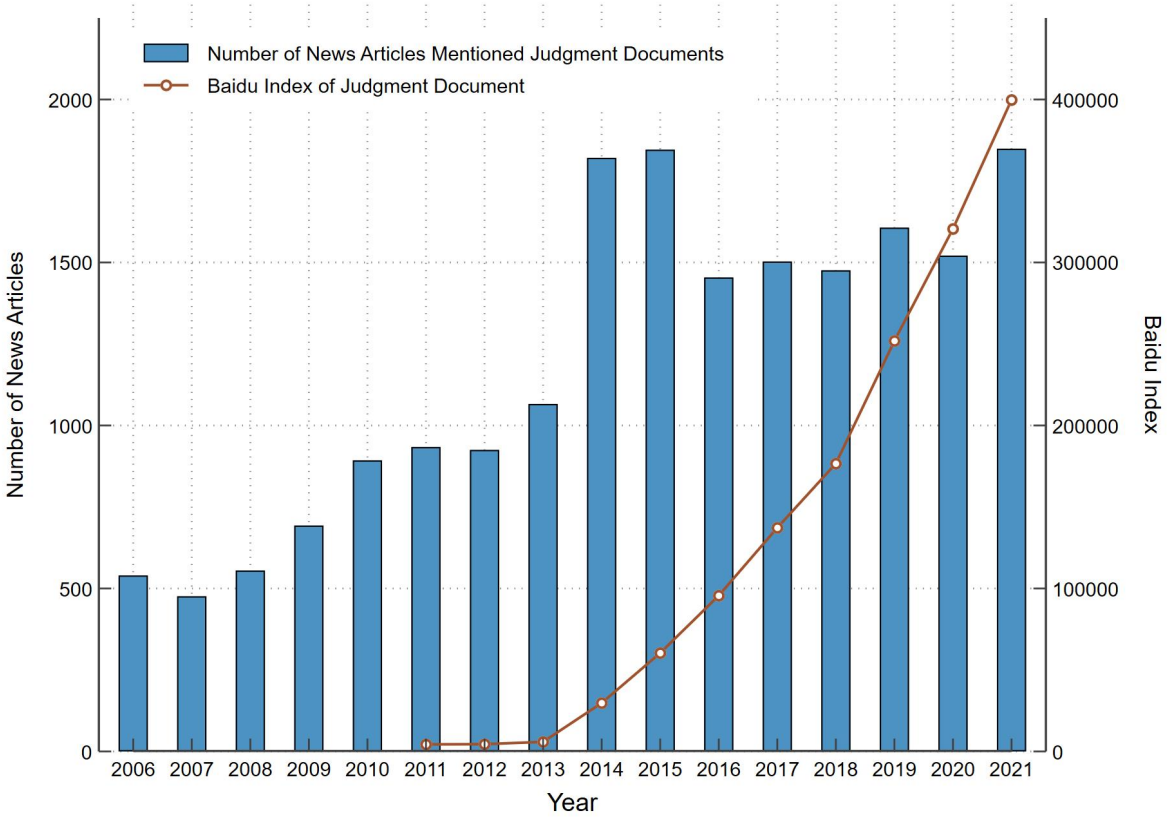


(a) 2012 **(b)** 2013

(c) 2014

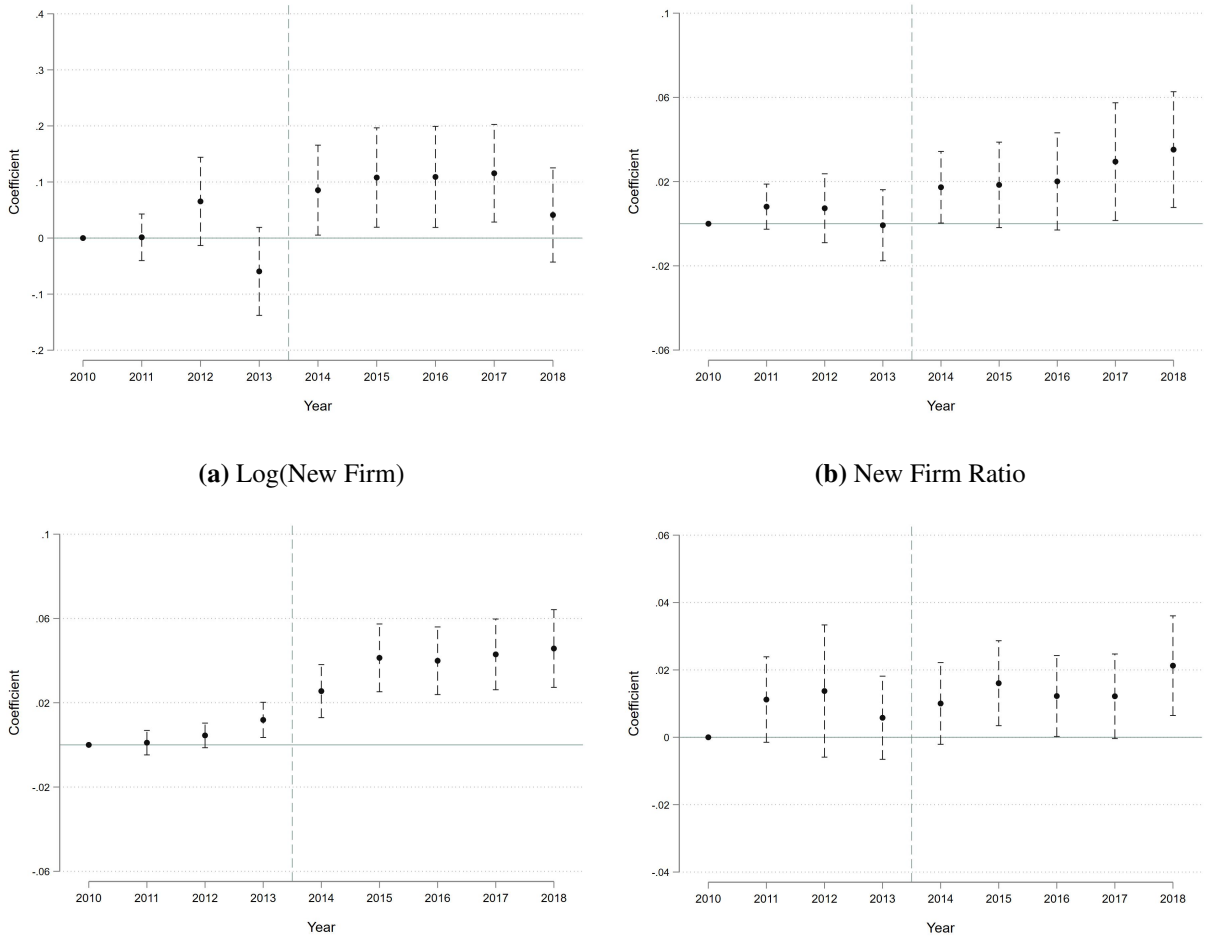
Note: This figure illustrates the expansion of court judgment disclosure at the city-level across the country. Panel (a), (b), and (c) present the city-level number of published judgment documents per 10,000 people in 2012, 2013, and 2014, respectively. The data of the number of published judgment documents is collected from the *Wolters Kluwer China Law & Reference* platform. Population data is from the *China City Statistical Yearbooks*.

Figure 3: **Public Attention to Court Judgment Disclosure**



Note: This figure shows public attention to court judgment disclosure in China over time. The blue bar represents the number of newspaper articles mentioning "judgment document" in a given year. The data is collected from the China National Knowledge Infrastructure (CNKI) platform. The red line represents the Baidu search index of the term "judgment document".

Figure 4: **Dynamics of Entrepreneurial Activities**



(a) Log(New Firm)

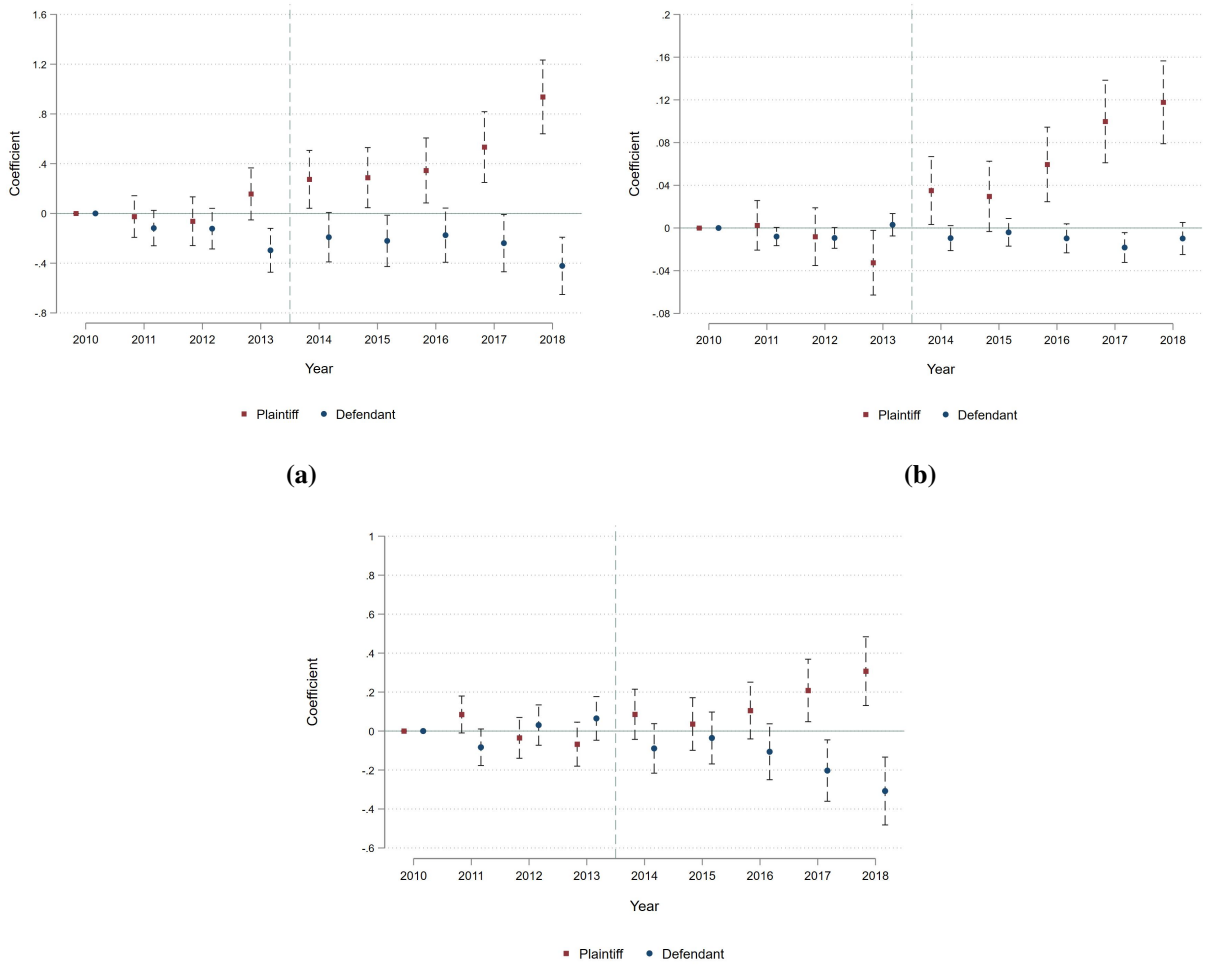
(b) New Firm Ratio

(c) Paid-in Ratio

(d) Non-SOE Ratio

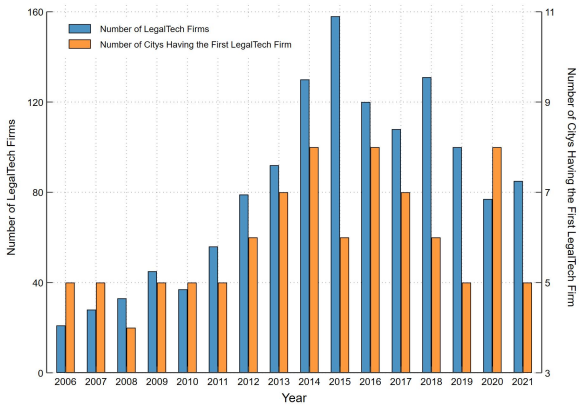
Note: This figure plots the estimated coefficients and 95 percent confidence intervals of the event studies using Equation 2. The observations are at the city-year level. The sample period is from 2010 to 2018. In Panel (a), the dependent variable is the number of newly registered firms (in logarithm). In Panel (b), the dependent variable is the ratio of the number of newly registered firms to the number of all newly registered entities. In Panel (c), the dependent variable is the proportion of new firms with paid-in capital. In Panel (d), the dependent variable is the proportion of non-state-owned firms. The year dummy of 2010 is omitted and hence serves as the reference year of the specification. City-year controls as well as year and city fixed effects are included in the regressions. Standard errors are clustered at the city level.

Figure 5: **Dynamics of Entrepreneurial Activities: Industry Heterogeneity**

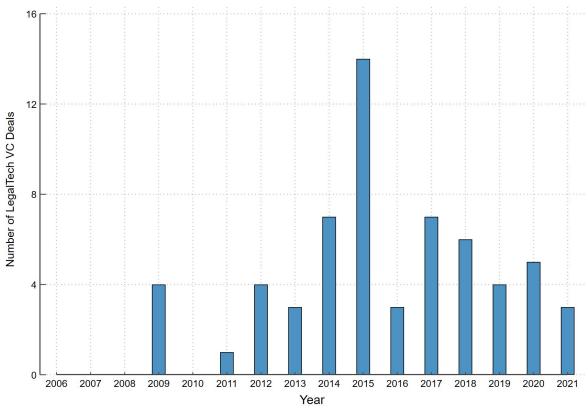


Note: This figure plots the estimated coefficients and 95 percent confidence intervals of the event studies using Equation 3 and 4, by replacing the indicator *Post* with a set of year dummies. The observations are at the city-industry-year level. The sample period is from 2010 to 2018. Panel (a) shows the dynamic effects of Column (2) in Table 5, where litigation exposure is defined as the proportion of listed firms that had ever disclosed litigations in an industry in and before 2012. Panel (b) shows the dynamic effects of Column (4) in Table 5, where litigation exposure is defined as the annual number of litigations of listed firms of an industry in and before 2012. Panel (c) shows the dynamic effects of Columns (5) and (6) in Table 5, where litigation exposure is defined as the proportion of litigations in which firms were plaintiffs or defendants in an industry in and before 2012. The year dummy of 2010 is omitted and hence serves as the reference year of the specification. City-year controls as well as year and city-2 digit industry fixed effects are included in the regressions. Standard errors are clustered at the city-2 digit industry level.

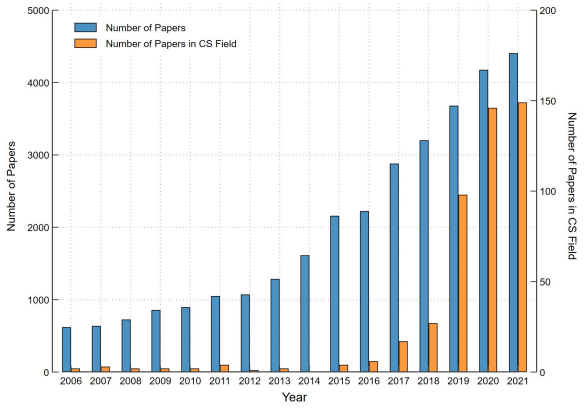
Figure 6: **Stylized Facts: The Surge of Technology-driven Legal Services**



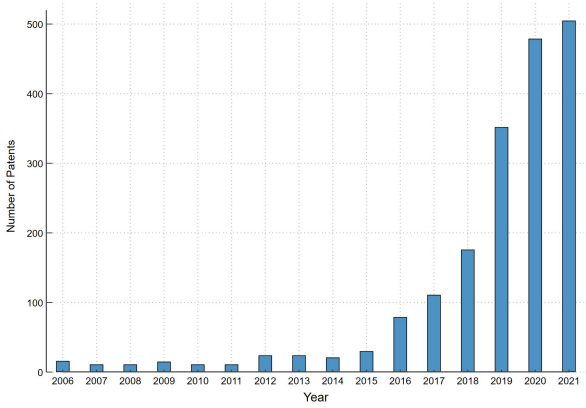
(a) Newly Registered LegalTech Firms



(b) LegalTech VC Deals



(c) Research Papers



(d) Patents

Note: In Panel (a), the blue bar represents the number of newly registered LegalTech firms in a given year; the orange bar represents the number of cities having their first LegalTech firms in a given year. The data is collected from the business registration database. Panel (b) presents the number of VC deals on LegalTech start-ups in a given year. The data is from *PitchBook*. In Panel (c), the blue bar represents the number of all academic papers mentioning "judgment document" in a given year, and the orange bar represents the number of academic papers in CS field mentioning "judgment document" in a given year. The data is collected from the China National Knowledge Infrastructure (CNKI) platform. Panel (d) presents the number of granted patents including the phrase "judgment document" in their abstracts. The data is collected from the China National Intellectual Property Administration (CNIPA).

Table 1: **Summary Statistics**

Variable	Obs.	Mean	Std. Dev.	p5	Median	p95
Panel A: City-Year Level						
Log(New Firm)	2,737	8.294	1.267	6.366	8.228	10.586
New Firm Ratio	2,737	0.297	0.136	0.129	0.270	0.583
Paid-in Ratio	2,737	0.080	0.117	0.010	0.042	0.407
Non-SOE Ratio	2,737	0.979	0.051	0.934	0.990	0.999
Log(GDP)	2,737	25.588	0.956	24.035	25.535	27.318
Log(Population)	2,737	15.032	0.734	13.709	15.118	16.074
GDP Growth Rate (%)	2,737	9.627	3.569	3.994	9.200	15.400
Population Growth Rate (%)	2,737	0.453	1.269	-1.446	0.443	2.151
GDP_Manufacturing & Service%	2,737	0.871	0.082	0.727	0.879	0.983
Log(Fiscal Spending)	2,737	23.922	0.720	22.824	23.883	25.196
Log(Employment)	2,737	12.859	0.887	11.552	12.755	14.505
CPI (%)	2,737	2.534	1.242	1.200	2.200	5.500
Panel B: Firm-Year Level						
Log(Asset)	771,138	15.207	2.713	10.779	15.128	19.976
Log(Revenue)	764,521	14.948	2.909	9.741	15.151	19.482
Log(Employees)	778,714	2.379	1.510	0.000	2.140	5.263
Profit Margin	764,308	-0.641	3.604	-1.848	0.000	0.273
Log(Investment)	782,427	5.150	5.873	0.000	0.000	15.059
Log(R&D)	782,427	0.026	0.602	0.000	0.000	0.000
Log(Patent_Appl)	782,427	0.016	0.161	0.000	0.000	0.000
Log(Patent_Grant)	782,427	0.006	0.082	0.000	0.000	0.000
Log(Patent_Cite)	782,427	0.022	0.231	0.000	0.000	0.000

Note: This table presents summary statistics of the main variables used in this paper. Panel A reports summary statistics for the city-year sample. City-level entrepreneurship measures are derived from aggregating the business registration data (See Section 3.2 for the definitions of the variables). City level controls are obtained from the China City Statistical Yearbooks. The sample period spans from 2010 to 2018. All variables are winsorized at the 1% and 99% levels. Panel B reports summary statistics for the firm-year sample, which is a subset from the NTSD by extracting observations of firms registered between 2010 and 2016. Variables of total assets, revenue, employees, profit margin, investment, and R&D are provided directly by the NTSD. Patent-related variables at the firm-level are obtained by matching the CNIPA patent database with the NTSD sample. We winsorize all innovation-related variables at the 0.1% and 99.9% levels, and winsorize the remaining variables at the 1% and 99% levels.

Table 2: **Effects of Judicial Transparency on Entrepreneurship**

	Log(New Firm)	Log(Self-Employed)	New Firm Ratio	Paid-in Ratio	Non-SOE Ratio
	(1)	(2)	(3)	(4)	(5)
Treat × Post	0.092***	-0.037	0.020***	0.034***	0.007*
	(0.031)	(0.038)	(0.007)	(0.007)	(0.004)
Log(GDP)	0.139**	0.382***	-0.075***	-0.041**	-0.013
	(0.067)	(0.140)	(0.024)	(0.020)	(0.009)
Log(Population)	-0.164	-0.403	0.089	-0.083*	-0.022
	(0.177)	(0.354)	(0.057)	(0.045)	(0.015)
GDP Growth Rate	0.000	-0.005	0.002***	-0.002***	-0.000
	(0.004)	(0.005)	(0.001)	(0.001)	(0.000)
Population Growth Rate	0.000	0.012	-0.003*	0.001	0.003***
	(0.005)	(0.008)	(0.002)	(0.001)	(0.001)
GDP Manufacturing & Service%	1.657***	0.134	0.344**	0.244**	-0.018
	(0.470)	(0.747)	(0.133)	(0.110)	(0.077)
Log(FiscalSpending)	0.292***	0.081	0.043**	0.057**	0.042***
	(0.084)	(0.121)	(0.017)	(0.024)	(0.016)
Log(Employment)	-0.077**	0.050	-0.017*	-0.026**	-0.011***
	(0.030)	(0.036)	(0.009)	(0.011)	(0.004)
Province CPI	0.007	-0.055***	0.015***	-0.016***	-0.001
	(0.016)	(0.018)	(0.004)	(0.003)	(0.003)
Constant	-0.287	2.899	-0.283	1.178	0.804**
	(2.976)	(6.223)	(0.928)	(0.801)	(0.340)
Mean of Dep. Var.	8.294	9.127	0.297	0.080	0.979
Observations	2,737	2,737	2,737	2,737	2,737
R-squared	0.978	0.943	0.839	0.883	0.294
Year FE	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes

Note: This table reports the regression results of Equation 1. The observations are at the city-year level. The sample period is from 2010 to 2018. In Column (1), the dependent variable is the number of newly registered firms (in logarithm). In Column (2), the dependent variable is the number of newly registered self-employment. In Column (3), the dependent variable is the ratio of the number of newly registered firms to the number of all newly registered entities. In Column (4), the dependent variable is the proportion of new firms with paid-in capital. In Column (5), the dependent variable is the proportion of non-state-owned firms. Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 3: **Ex-ante Judicial Transparency and City Characteristics**

	Number of Files/Population (Year = 2012)		
	(1)		(2)
Log(New Firm)	0.252	Δ Log(New Firm)	0.028
	(0.200)		(0.228)
Log(GDP)	0.094	Δ Log(GDP)	-0.464
	(0.185)		(2.314)
Log(Population)	-0.188	Δ Log(Population)	-1.029
	(0.166)		(5.630)
GDP Growth Rate	-0.009	Δ GDP Growth Rate	0.028
	(0.037)		(0.029)
Population Growth Rate	0.025	Δ Population Growth Rate	0.045
	(0.041)		(0.045)
GDP_Manufacturing & Service%	-0.522	Δ GDP_Manufacturing & Service%	4.444
	(0.953)		(9.822)
Log(FiscalSpending)	-0.184	Δ Log(FiscalSpending)	-3.088**
	(0.207)		(1.359)
Log(Employment)	0.021	Δ Log(Employment)	0.154
	(0.124)		(0.529)
CPI	-0.488	Δ CPI	-0.821**
	(0.331)		(0.354)
Constant	5.020	Constant	-1.079
	(5.430)		(1.069)
Observations	317	Observations	297
R-squared	0.133	R-squared	0.217

Note: This table examines whether local economic conditions and pre-existing trends could predict the level of ex-ante judicial transparency. The observations are at the city level. The sample year is 2012. The dependent variable is a city's per capita publication of judgment documents. The independent variables are the number of newly registered firms (in log), GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI in Column (1), and the annual changes of these variables in Column (2). Standard errors are clustered at the province level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 4: **Addressing Identification Concerns**

	Dependent Variable: Log(New Firm)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treat × Post	0.095***	0.098***	0.105***	0.110***	0.095***	0.091***	0.093***	0.095***	-0.011
	(0.031)	(0.032)	(0.031)	(0.032)	(0.031)	(0.031)	(0.030)	(0.030)	(0.038)
Law Degree	-0.024			-0.006					
	(0.025)			(0.024)					
SPC Experience		0.046		0.034					
		(0.031)		(0.031)					
Hometown Province			-0.103***	-0.099***					
			(0.027)	(0.027)					
Jud. Ind. Reform					-0.065***			-0.064***	
					(0.019)			(0.019)	
Bus. Reg. Reform						0.113*		0.083	
						(0.068)		(0.071)	
Anti-corruption							0.063***	0.061***	
							(0.020)	(0.020)	
Post × High Dis. Rate									-0.114***
									(0.038)
Treat × Post × High Dis. Rate									0.202***
									(0.057)
Observations	2,737	2,737	2,737	2,737	2,737	2,737	2,737	2,737	2,731
R-squared	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table addresses identification concerns by estimating Equation 1 with additional controls. The observations are at the city-year level. The sample period is from 2010 to 2018. The dependent variable is the number of newly registered firms (in logarithm). Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. Law Degree indicates whether the provincial court president has any law degrees. SPC Experience indicates whether the provincial court president has worked in the SPC. Hometown Province indicates whether the provincial court president worked in his/her birth province. Jud. Ind. Reform, Bus. Reg. Reform, and Anti-corruption are indicators of the judicial independence reform, the business registration reform, and the anti-corruption campaign, respectively. High Dis. Rate is a dummy indicating whether a city had higher (above-median) average disclosure rate on the CJO website between 2014 and 2018. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 5: **Triple Differences: Industry Litigation Risk Exposure**

	Dependent Variable: Log(New Firms)					
	Exposure: Proportion of listed firms with disclosed litigations		Exposure: Average number of litigations of listed firms		Exposure: Propensity for being plaintiffs/defendants of listed firms	
	(1)	(2)	(3)	(4)	(5)	(6)
Litigation × Post	-0.224***		0.007***			
	(0.040)		(0.002)			
Treat × Post	-0.065**	-0.073***	-0.029*	-0.048***	-0.042**	0.109**
	(0.028)	(0.027)	(0.017)	(0.018)	(0.021)	(0.045)
Litigation × Treat × Post	0.189***		0.011**			
	(0.073)		(0.004)			
Litigation_Plaintiff × Post		1.883***		0.310***	0.755***	
		(0.061)		(0.008)	(0.035)	
Litigation_Plaintiff × Treat × Post		0.470***		0.079***	0.155**	
		(0.106)		(0.014)	(0.064)	
Litigation_Defendant × Post		-1.413***		-0.073***		-0.749***
		(0.049)		(0.003)		(0.034)
Litigation_Defendant × Treat × Post		-0.131		-0.007		-0.153**
		(0.086)		(0.006)		(0.062)
Observations	169,694	169,694	169,694	169,694	164,220	164,220
R-squared	0.903	0.906	0.903	0.907	0.906	0.906
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City-Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the estimation results of the Equation 3 and 4. The observations are at the city-industry-year level. The sample period is from 2010 to 2018. Litigation denotes overall litigation exposure, while Litigation_Plaintiff and Litigation_Defendant denote litigation exposure prone to be plaintiffs and defendants, respectively. In Columns (1) and (2), litigation exposure is defined as the proportion of listed firms that had ever disclosed litigations in an industry in and before 2012. In Columns (3) and (4), litigation exposure is defined as the annual number of litigations of listed firms of an industry in and before 2012. In Columns (5) and (6), litigation exposure is defined as the proportion of litigations in which firms were plaintiffs or defendants in an industry in and before 2012. Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city-2 digit industry fixed effects are included in the regressions. Standard errors are clustered at the city-2 digit industry level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 6: **Heterogeneous Effects: By Trust**

	Dependent Variable: Log(New Firms)			
	Overall Trust		Trust in Local Government	
	High	Low	High	Low
	(1)	(2)	(3)	(4)
Treat × Post	0.017	0.169***	0.041	0.135***
	(0.044)	(0.043)	(0.052)	(0.040)
Equality test	$p = 0.013$		$p = 0.124$	
Observations	1,372	1,331	1,283	1,420
R-squared	0.980	0.976	0.973	0.980
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
	Trust in Judges		Trust in Firm Executives	
	High	Low	High	Low
	(5)	(6)	(7)	(8)
Treat × Post	0.060	0.080**	0.076*	0.081**
	(0.049)	(0.039)	(0.045)	(0.041)
Equality test	$p = 0.726$		$p = 0.813$	
Observations	1,351	1,352	1,377	1,326
R-squared	0.973	0.981	0.975	0.980
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes

Note: This table compares the estimation results of Equation 1 between subsamples of provinces with trust levels above and below the median. The observations are at the city-year level. The sample period is from 2010 to 2018. Trust is measured by averaging the scores of respondents' answers within each province, as recorded in the 2012 CGSS data. Columns (1) - (2) present effect heterogeneity by overall trust. Columns (3) - (4), (5) - (6), (7) - (8) present effect heterogeneity by trust in local government, judges, and firm executives, respectively. The dependent variable is the number of newly registered firms (in logarithm). Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 7: **Heterogeneous Effects: By Business Environment**

	Dependent Variable: Log(New Firms)			
	Perk Spending/Revenue		Fees/Revenue	
	High	Low	High	Low
	(1)	(2)	(3)	(4)
Treat × Post	0.147***	0.020	0.137***	0.024
	(0.044)	(0.036)	(0.044)	(0.042)
Equality test	$p = 0.066$		$p = 0.062$	
Observations	1,284	1,412	1,323	1,373
R-squared	0.982	0.976	0.977	0.980
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes

Note: This table compares the estimation results of the baseline Equation 1 between subsamples of cities with better and poorer (than the median) business environment. The observations are at the city-year level. In Column (1) - (2) and (3) - (4), business environment is respectively defined as the city average of perk spending rate and administrative fee rate (i.e., the amount of corresponding spendings to total revenue) of individual firms in 2012, derived from the NTSD. The dependent variable is the city-year numbers of newly registered firms (in logarithm). Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom terciles of all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Standard errors are clustered at the city level. The sample period is from 2010 to 2018. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 8: **The Effect of LegalTech Firm Entry**

	Dependent Variable: Log(New Firm)	
	(1)	(2)
LegalTech	0.069**	0.058***
	(0.035)	(0.019)
Log(New Firm)$_{t-1}$		0.547***
		(0.027)
Observations	2,737	2,737
R-squared	0.978	0.984
Controls	Yes	Yes
Year FE	Yes	Yes
City FE	Yes	Yes

Note: This table examines the effect of LegalTech firm entry on a city's entrepreneurship using Equation 5. The observations are at the city-year level. The sample period is from 2010 to 2018. The dependent variable is the city-year numbers of newly registered firms (in logarithm). LegalTech is a dummy indicating whether a city has had its first LegalTech firm. Column (2) adds lagged value of the dependent variable as a control. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 9: **Performance of Entrepreneurship**

	Log(Asset)	Log(Revenue)	Log(Employees)	Profit Margin	Log(Investment)
	(1)	(2)	(3)	(4)	(5)
Panel A: Founding Year Only					
Treat × Post	0.042	0.014	0.078*	0.388***	0.491**
	(0.097)	(0.122)	(0.046)	(0.085)	(0.236)
Observations	71,999	70,808	73,159	70,595	73,534
R-squared	0.278	0.291	0.333	0.045	0.140
Controls	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Establishment Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Panel B: All Sample Years					
Treat × Post	0.170***	0.266***	0.127***	0.237***	0.333***
	(0.048)	(0.050)	(0.027)	(0.044)	(0.087)
Observations	718,234	712,441	725,214	712,239	728,673
R-squared	0.305	0.256	0.310	0.024	0.146
Controls	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Establishment Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes

Note: This table examines the effect of the mandated judgment disclosure policy on the performance of entrepreneurship using firm-level data from the NTSD. The sample period is from 2010 to 2016. Dependent variables are total assets (in log), revenue (in log), employees (in log), profit margin, and investments (in log). Treat is a dummy that indicates whether the city in which the firm is located is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. In Panel A, we estimate Equation 6 using only the founding-year observations of the firms. In Panel B, we estimate Equation 7 with all sample years. City, establishment year, and 2-digit industry fixed effects are included in regressions in both panels. Year fixed effects are further included in Panel B. City-level control variables are GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Standard errors are clustered at the city-industry level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

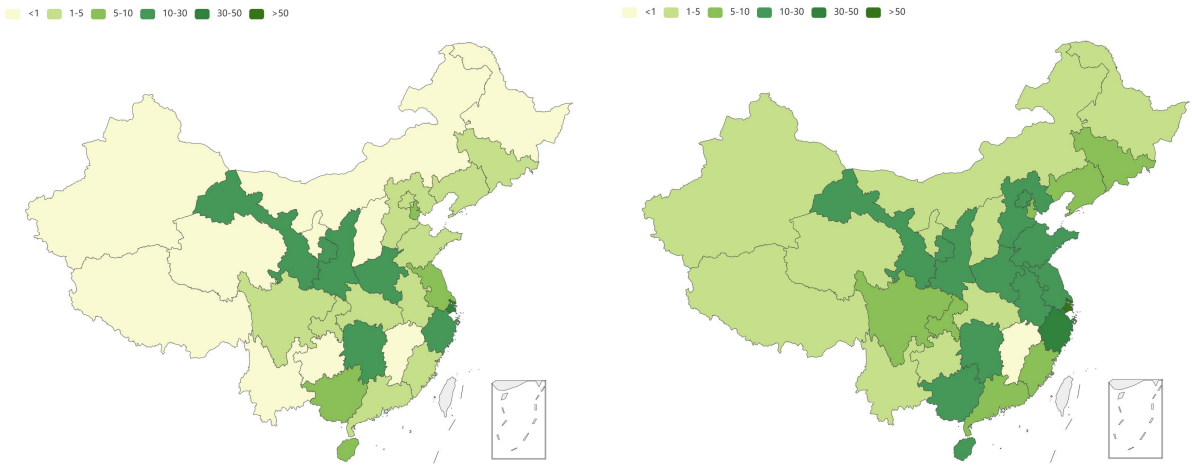
Table 10: **Innovation Outcomes of Entrepreneurship**

	Log(R&D)	Log(Patent_Appl)	Log(Patent_Grant)	Log(Patent_Cite)
	(1)	(2)	(3)	(4)
Panel A: Founding Year Only				
Treat × Post	0.030***	-0.002	-0.001	-0.003
	(0.012)	(0.002)	(0.001)	(0.003)
Observations	73,534	73,534	73,534	73,534
R-squared	0.018	0.019	0.012	0.017
Controls	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
Establishment Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel B: All Sample Years				
Treat × Post	0.020***	0.003***	0.002***	0.005***
	(0.003)	(0.001)	(0.000)	(0.001)
Observations	728,673	728,673	728,673	728,673
R-squared	0.023	0.039	0.025	0.032
Controls	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Establishment Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Note: This table examines the effect of the mandated judgment disclosure policy on innovation outcomes of entrepreneurial firms using firm-level data from the NTSD. The sample period is from 2010 to 2016. Dependent variables are logarithm of a firm's R&D investment, patent applications, granted patents, and forward citations of applied patents. Treat is a dummy that indicates whether the city in which the firm is located is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. In Panel A, we estimate Equation 6 using only the founding-year observations of the firms. In Panel B, we estimate Equation 7 with all sample years. City, establishment year, and 2-digit industry fixed effects are included in regressions in both panels. Year fixed effects are further included in Panel B. City-level control variables are GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Standard errors are clustered at the city-industry level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

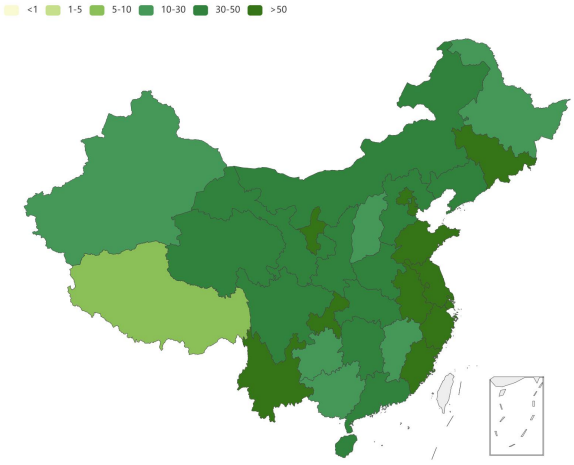
Appendix A: Additional Figures and Tables For Online Publication

Figure A.1: **Expansion of Court Judgment Disclosure (Province Level)**



(a) 2012

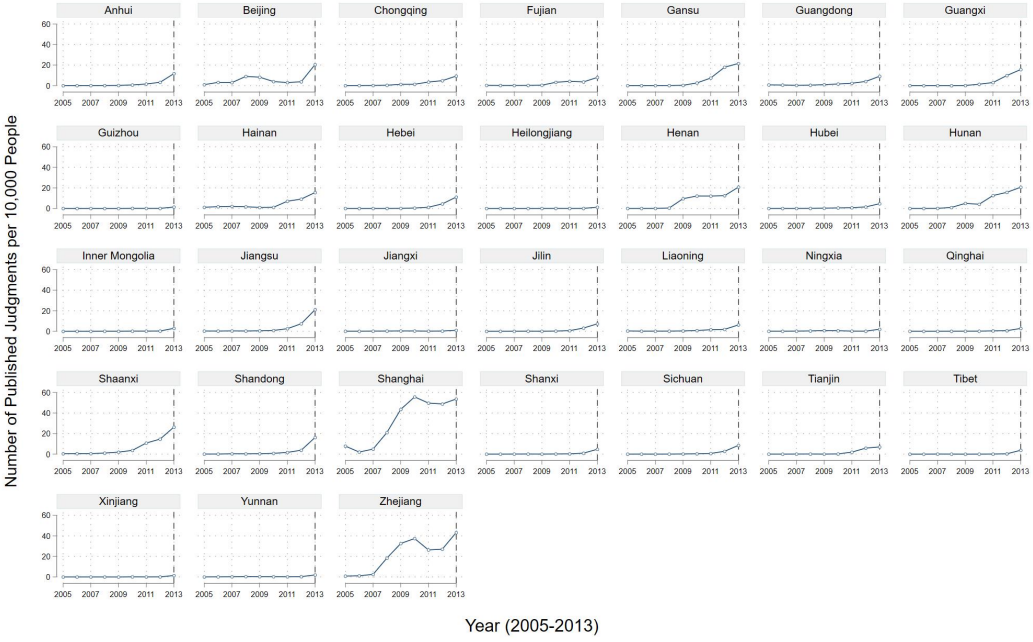
(b) 2013



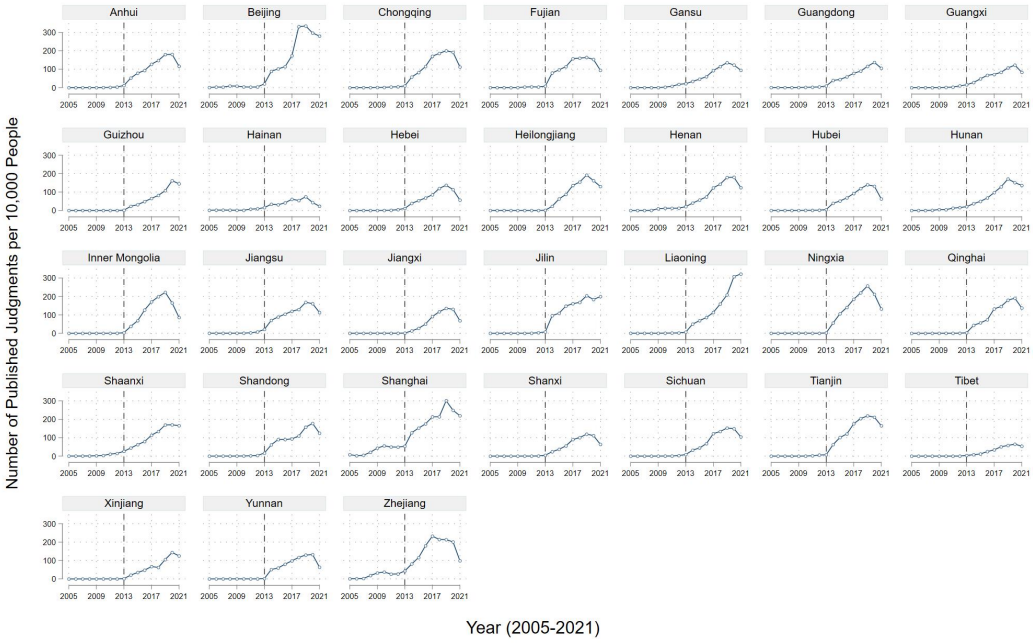
(c) 2014

Note: This figure illustrates the expansion of court judgment disclosure at the province-level across the country. Panel (a), (b), and (c) present the provincial number of published judgment documents per 10,000 people in 2012, 2013, and 2014, respectively. The data of the number of published judgment documents is collected from the *Wolters Kluwer China Law & Reference* platform. Provincial population data is collected from the National Bureau of Statistics (NBS) of China.

Figure A.2: **Court Judgment Disclosure Over Time By Province**



(a) Before



(b) Before and After

Note: This figure illustrates the time trend of court judgment disclosure of 31 provinces (except Hong Kong, Macau, and Taiwan) in China. The vertical axis represents the number of published judgment documents per 10,000 people. Panel (a) shows the time trend from 2005 to 2013. Panel (b) shows the time trend from 2005 to 2021. The data of the number of published judgment documents is collected from the *Wolters Kluwer China Law & Reference* (WKCLR) platform. Provincial population data is collected from the National Bureau of Statistics (NBS) of China.

Figure A.3: **Frontpage of the Wolters Kluwer China Law & Reference Website**

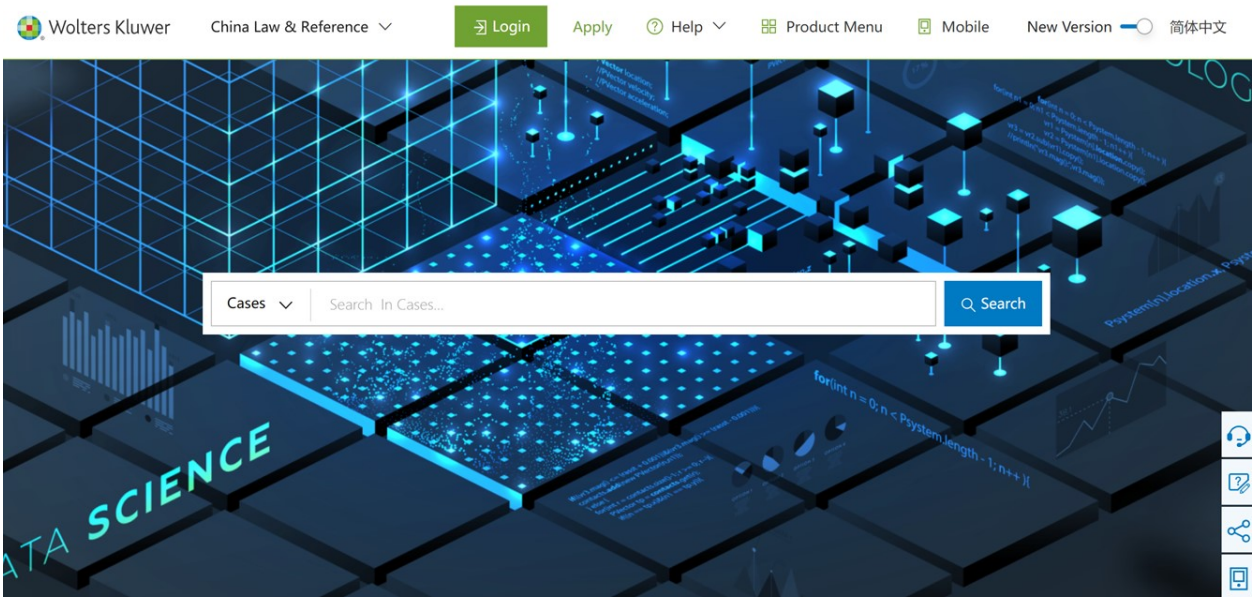
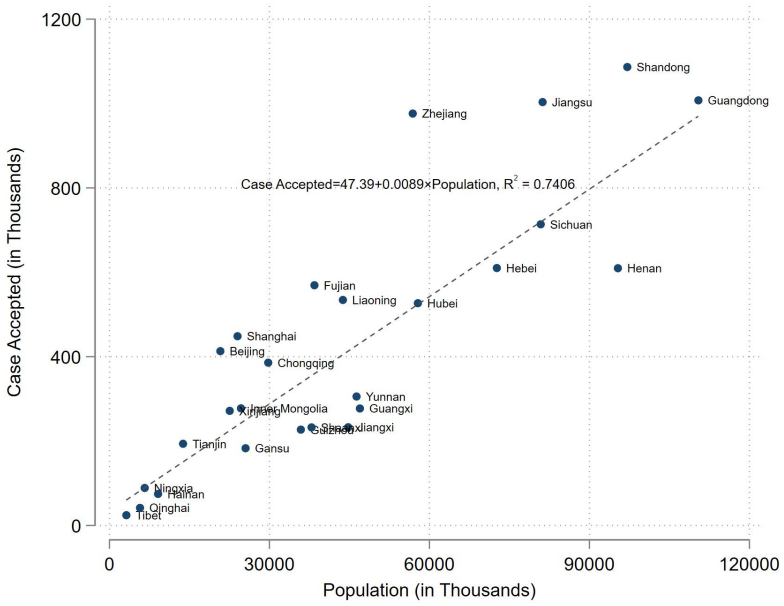
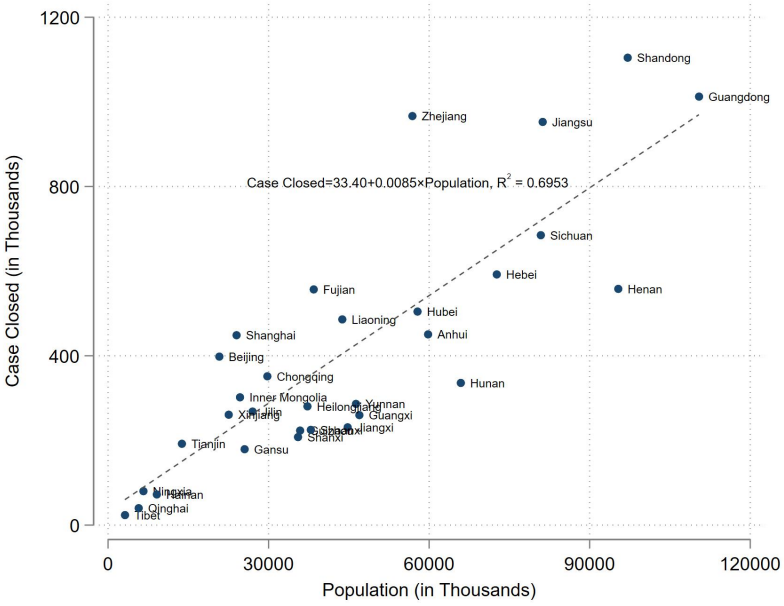


Figure A.4: **Court Cases and Population in 2012**



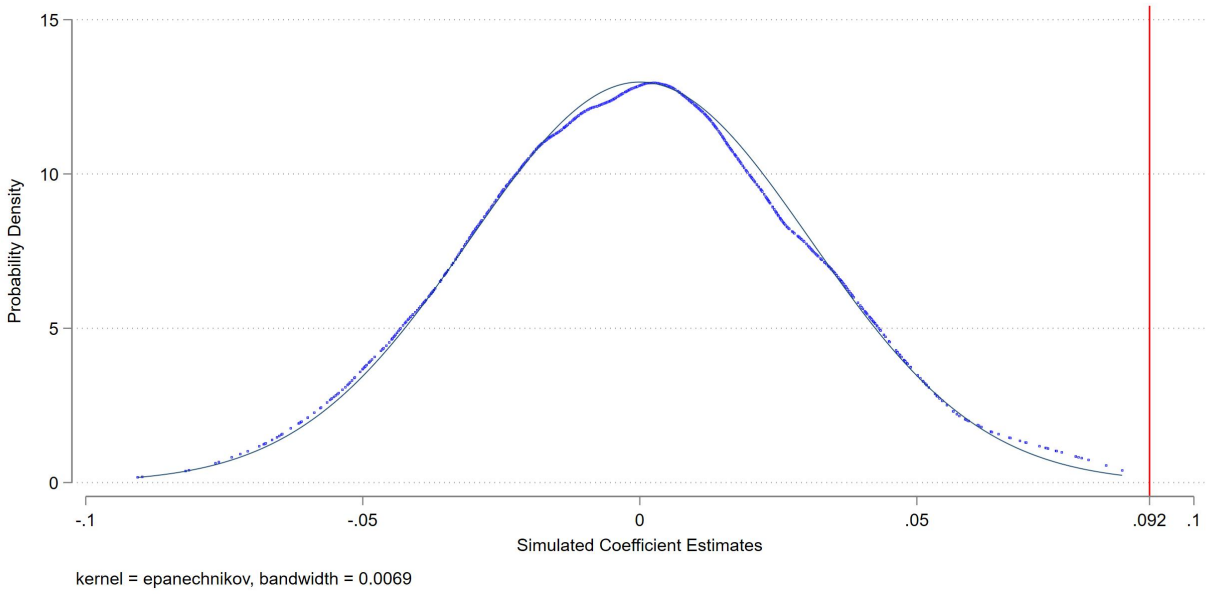
(a) Case Accepted



(b) Case Closed

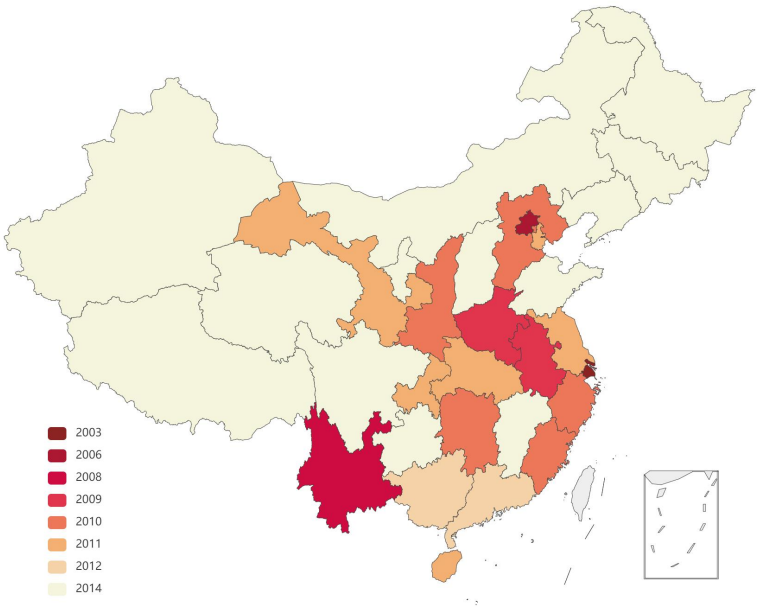
Note: This figure shows the correlation between provincial number of court cases and population in 2012. The horizontal axis represents provincial population. In Panel (a), the vertical axis represents total cases accepted by courts in a province. In Panel (b), the vertical axis represents total cases closed by courts in a province. Data of provincial number of court cases is collected from annual reports of provincial courts. Provincial population data is collected from the National Bureau of Statistics (NBS) of China.

Figure A.5: **Randomly Assigned Treatment and Control Cities**

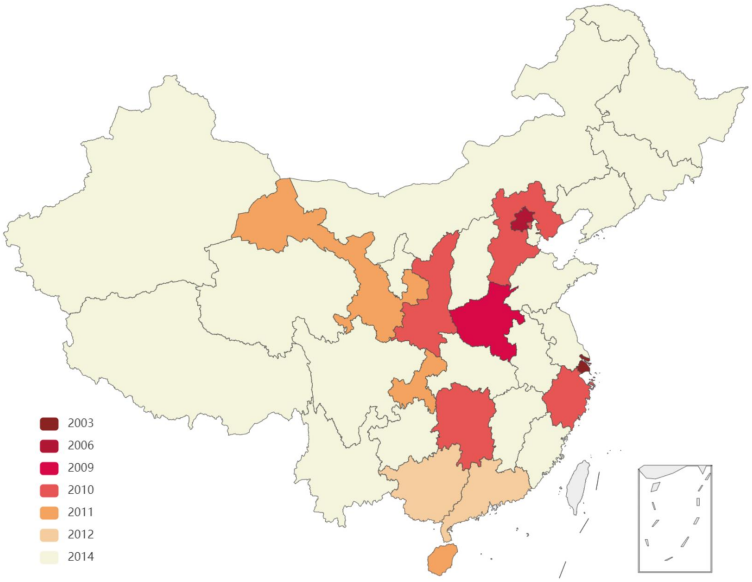


Note: This figure shows the results of the falsification test. We repeat Equation 1 or 1,000 times with randomly falsified treatment and control groups, and plot the empirical density of the estimated coefficients as well as the standard normal distribution. The vertical red line presents the estimate of treatment effect reported in Column (1) of Table 2.

Figure A.6: **Provincial Court Judgment Disclosure Policy**



(a) Weak & Strong Policies



(b) Strong Policies Only

Note: This figure illustrates the roll-out of provincial policies of court judgment disclosure voluntarily formulated by provincial courts before 2014. Strong policies are those with *de facto* enforcement (12 provinces), while weak policies are those with weakest enforcement (6 provinces). Panel (a) illustrates the roll-out of both weak and strong policies. Panel (b) illustrates the roll-out of strong policies only.

Table A.1: **Number of Judgment Documents Collected**

Year	Wolters Kluwer	China Judgment Online	Wolters Kluwer : CJO
2000	4,162	407	10.226
2001	4,418	1,332	3.317
2002	10,830	3,477	3.115
2003	14,061	2,678	5.251
2004	18,284	4,514	4.051
2005	39,760	5,780	6.879
2006	33,347	7,649	4.360
2007	49,108	14,873	3.302
2008	194,200	27,489	7.065
2009	453,663	97,429	4.656
2010	580,221	197,176	2.943
2011	681,399	219,387	3.106
2012	946,981	412,391	2.296
2013	1,862,232	1,423,669	1.308
2014	6,594,681	6,921,136	0.953
2015	9,110,525	9,728,805	0.936
2016	11,933,587	12,539,707	0.952
2017	16,282,182	16,727,594	0.973
2018	18,962,606	19,342,026	0.980
2019	23,005,489	23,042,985	0.998
2020	23,095,158	23,370,409	0.988
2021	16,629,796	16,739,416	0.993

Note: This table reports annual numbers of judgment documents collected by the *Wolters Kluwer China Law & Reference* platform and the *China Judgments Online* website, as well as the ratio between the two, from 2000 to 2021.

Table A.2: **Baseline Results: Robustness Checks**

	Dependent Variable: Log(New Firm)			# of New Firms
	Treatment cities trends	Province-year std. clusters	County-level observations	Poisson regression
	(1)	(2)	(3)	(4)
Treat × Post	0.134***	0.092***	0.096***	0.145***
	(0.036)	(0.031)	(0.018)	(0.055)
Observations	2,737	2,737	23,841	2,737
R-squared	0.978	0.978	0.950	0.979
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes		Yes
County FE			Yes	

Note: This table presents the results of robustness checks of Equation 1. The sample period is from 2010 to 2018. In Column (1), we include a linear trend for the treatment cities. In Column (2), we cluster standard errors at the province-year level. In Column (3), we use county-year observations, include county fixed effects, and cluster standard errors at the county level. In Column (4), we estimate a fixed-effects Poisson model for the baseline specification and use the raw count of new firms as the dependent variable. The dependent variable is the number of newly registered firms (in logarithm) in Columns (1) - (3). The observations are at the city-year level in Columns (1), (2), and (4). Treat is a dummy that indicates whether a city is assigned into the treatment group, based on whether the city's per capita publication of judgment documents in 2012 was in the bottom tercile across all cities. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year fixed effects are included in all the regressions, while city fixed effects are included in Columns (1), (2), and (4). Standard errors are clustered at the city level in Columns (1) and (4). ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table A.3: **Ex-ante Judicial Transparency and Ex-post Disclosure Rate**

	Judgment Disclosure Rate	
	(1)	(2)
Number of Files/Population (Year=2012)	-0.002	0.006
	(0.010)	(0.009)
Log(GDP)		-0.029
		(0.019)
Log(Population)		0.004
		(0.020)
GDP Growth Rate		-0.004*
		(0.002)
Population Growth Rate		-0.012*
		(0.006)
GDP Manufacturing & Service%		0.101
		(0.096)
Log(FiscalSpending)		-0.003
		(0.022)
Log(Employment)		-0.006
		(0.014)
Province CPI		0.009
		(0.021)
Observations	1,666	1,511
R-squared	0.221	0.335
Year FE	Yes	Yes

Note: This table examines whether ex-ante level of judicial transparency can predict ex-post judgment disclosure rate on the CJO website. The observations are at the city-year level. The sample period is from 2014 to 2018. The dependent variable is the annual judgment disclosure rate on the CJO website, calculated based on the method proposed by Wu et al. (2022). The independent variable is the ex-ante level of judicial transparency (i.e., per capita publication of judgment documents in 2012). We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI in Column (2). Year fixed effects are included in the regressions. Standard errors are clustered at the province level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table A.4: **Alternative Constructions of the Treatment and Control Groups**

	Dependent Variable: Log(New Firm)							
	Alternative Cutoffs			# of Judgment Documents Scaled by			Ex-ante Judicial Transparency Based on	
	Median	Quartile	Quintile	GDP	Case Accepted	Case Closed	2013	2014
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treat × Post	0.057*	0.122***	0.094***	0.063**	0.136***	0.126***	0.078**	-0.021
	(0.030)	(0.034)	(0.036)	(0.032)	(0.037)	(0.033)	(0.031)	(0.032)
Observations	2,737	2,737	2,737	2,737	2,186	2,737	2,737	2,737
R-squared	0.978	0.978	0.978	0.978	0.977	0.978	0.978	0.978
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents estimation results of Equation 1 with alternative constructions of treatment and control groups. The observations are at the city-year level. The sample period is from 2010 to 2018. The dependent variable is the number of newly registered firms (in logarithm). Treat is a dummy that indicates whether a city is assigned into the treatment group. In Columns (1) - (3), we define cities with ex-ante judicial transparency (per capita publication of judgment documents in 2012) in the bottom median, quartile, and quintile as the treatment group. In Columns (4) - (6), we use the city-level number of published judgment documents per million GDP, the province-level transparency based on case accepted, and the province-level transparency based on case closed as measures of ex-ante judicial transparency in 2012 to define the treatment and control groups. In Columns (7) - (8), we use the city-level per capita publication of judgment documents in 2013 and 2014 to assign the treatment and control groups. Post is a dummy that equals one for the years in and after 2014, and zero otherwise. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table A.5: **Mandatory Disclosure vs. Voluntary Disclosure**

	Dependent Variable: Log(New Firm)			
	Year: 2010-2018			Year: 2000-2012
	Weak and Strong Policy Group as Control	Strong Policy Group as Control	Weak and No Policy Groups as Treatment	Staggered Setting: Voluntary Disclosure
	(1)	(2)	(3)	(4)
Treat × Post	0.098***	0.099***		
	(0.033)	(0.034)		
Weak Policy × Post			0.064	
			(0.044)	
No Policy × Post			0.120***	
			(0.037)	
Post Weak Policy				0.028
				(0.029)
Post Strong Policy				0.056*
				(0.033)
Observations	2,737	2,737	2,737	3,323
R-squared	0.978	0.978	0.978	0.979
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes

Note: This table compares the treatment effects of the nationwide mandatory disclosure in 2014 with the provincial voluntary disclosure prior to 2014. The observations are at the city-year level. The sample period is from 2010 to 2018 in Columns (1) - (3), and from 2000 to 2012 in Column (4). The dependent variable is the number of newly registered firms (in logarithm). Treat is a dummy that indicates whether the city is assigned into the treatment group. In Column (1), we assign cities without any ex-ante disclosure policies into the treatment group. In Column (2), cities with no or weak ex-ante policies are assigned into the treatment group. In Column (3), Weak Policy and No Policy denote cities with weak and no ex-ante policies, respectively. In Column (4), Post Weak Policy and Post Strong Policy equal one if the province of a city had weak and strong court judgment disclosure policies or claims, respectively. We control for GDP (in log), GDP growth rate, population (in log), population growth rate, percentage of GDP from manufacturing and service sectors, fiscal spending (in log), employment population (in log), and CPI. Year and city fixed effects are included in the regressions. Standard errors are clustered at the city level. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.