Authoritarian Control through the Judiciary

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Abstract

Using the universal court verdicts in China, we find that ethnic minorities receive significantly harsher penalties than the majority, the Chinese Han. The lion parts of disparities are driven by varying courts' leniency across spaces, yet unexplainable gaps remain. Conditional on an extensive set of covariates, minorities receive 6.7% longer sentences and a 26.9% and 34.9% higher likelihood of life imprisonment and the death penalty. The ethnic disparity is larger for crimes associated with social unrest, against Christian and Islamic defendants, and against ethnicities with a conflicted history with the Han, and the bias is exacerbated during Uyghur separatist movements, all of which imply China's judicial motivations to punish threats for social order. The mandated sentencing guideline significantly shrank the disparity, suggesting that limiting judges' discretion can reduce unwarranted case resolutions.

Keywords: Discrimination, Courts, Judicial Politics, Ethnicity
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1 Introduction

All authoritarian regimes must maintain social order to ensure their survival. To prevent political opponents from challenging their authority, authoritarian leaders employ a variety of tactics,[1] ranging from conventional methods based on brutal violence and ideological indoctrination (Adena et al., 2015; Yanagizawa-Drott, 2014) to more modern tools of governance, such as surveillance (Xu, 2021; Beraja et al., 2023), information manipulation (Rozenas and Stukal, 2019), censorship (King et al., 2013; Chen and Yang, 2019), local elections (Martinez-Bravo et al., 2022) and economic policies (Wen, 2024). This paper presents evidence of social control through the judiciary, a primary role of authoritarian legislation that has been long discussed in the literature, but which has lacked rigorous and systematic empirical evidence due to data limitations (Solomon, 1996; Pereira, 2005).

Our empirical analysis examines ethnic minority issues within the criminal justice system in China, one of the longest-standing authoritarian regimes in modern history. The Chinese Communist Party (CCP) is dominated by the Han ethnic majority, comprising about 91% of the population, and officially recognizes 55 minority ethnicities—each often with distinct ideologies, social practices, religious beliefs, and cultural traditions—. Since the CCP is the sole ruling party and faces virtually no political opposition, addressing ethnic minority issues is crucial for the preservation of its authority. As China's judiciary and its members are entirely under the CCP's control, its legal system can be seen as an instrument of social control. All the judges are appointed, promoted, and demoted by the local governments; 85% of judges are CCP members, and all the courts' heads are party members.[2] Consequently, ethnic minorities considered a threat to the central authority may be subject to unfavorable treatment.

We use a newly combined dataset of more than 8 million individual criminal court cases from the China Judgment Online from 2014 to 2021 that includes original sentencing documentation. Because the Supreme People's Court of China has obligated all the courts to publish all the verdict reports online, our dataset covers almost universal cases during the study period. Furthermore, our dataset includes an extensive set of variables about defendants' characteristics, criminal circumstances, and court proceedings. We develop a novel text-cleaning algorithm and extract possibly all the aggravating or mitigating factors that appear in criminal laws and sentencing guidelines from millions of complex, unstructured, and non-standardized documents. These features contrast starkly

[1] See reviews by Gehlbach et al. (2016), Guriev and Treisman (2019), and Egorov and Sonin (2024)

[2] See CCP's official statistics: `http://cpc.people.com.cn/pinglun/n1/2016/0615/c78779-28446750.html`

with previous studies that include only subsets of data across geography (Feigenberg and Miller, 2021), crime types (Rehavi and Starr, 2014), criminal procedures (Anwar et al., 2012; Arnold et al., 2022), or court levels (Cohen and Yang, 2019), and studies that do not contain detailed criminal characteristics (Ash et al., 2021).

Utilizing the comprehensive data, our empirical analysis proceeds in three steps. First, we present the stylized facts of China's criminal justice system through the lens of ethnicity. Despite the growing attention to ethnic minority issues in China, this is, to our knowledge, the first comprehensive national analysis of ethnic issues in its criminal justice system.[3] We employ a selection-on-observables approach, following Rehavi and Starr (2014), Cohen and Yang (2019), and Feigenberg and Miller (2021), to compare sentencing outcomes between minority and otherwise similar majority offenders, conditioning on a rich set of covariates.

The results indicate that China's criminal justice system gives harsher penalties to ethnic minority defendants than otherwise observably similar majority defendants. Minorities receive 6.7% longer sentences and have a 26.9% and 34.9% higher likelihood of receiving life sentences and death sentences, which is comparable to or slightly larger than the Black-white disparity in the US.[4]

The results also reveal striking heterogeneity. The "minority penalty" is significantly larger for drug, violent, and sex offenses—crimes often viewed as severe and linked to organized criminal syndicates. The disparity is more pronounced against Islamic, Christian, and Tibetan Buddhist minorities, as well as ethnic groups with a history of conflicts with the Han—groups less assimilated to the majority group. The additional penalty is also greater in poor, minority-dominant, and high-crime prefectures—locations facing heightened social tensions. Not surprisingly, Han judges, who preside over more than 90% of criminal cases, tend to impose harsher penalties than minority judges. While suggestive, our findings document coherent patterns that harsher penalties are strongly associated with the perceived risks of social unrest.

The second part of our analysis leverages two quasi-experiments to explore judicial incentives as an instrument of social control. We first investigate how local jurisdictions respond to ongoing threats of unrest. When faced with potential threats, if local jurisdictions play a role in social control, they would likely imprison dissenters or impose harsh, exemplary punishments as a preventive measure to deter collective actions. To

[3]Hou and Truex (2022) examines drug cases in Yunnan province and finds that ethnic minorities receive harsher penalties. In contrast, Peng and Cheng (2022) studies theft cases in five minority-dominant provinces and finds that penalties are more lenient.

[4]Existing studies in the US typically find the sentencing disparity between Black and non-black offenders is about 10-20% (Anwar et al., 2012; Rehavi and Starr, 2014; Cohen and Yang, 2019; Feigenberg and Miller, 2021)

explore this, we follow Wen (2024) and use unrest triggered by the ongoing conflict between Uyghur separatists and the Chinese government in Xinjiang province. The separatist movement may cause spillover ethnic conflicts, particularly in regions with large minority populations. This setting allows us to employ a DDD: we utilize variations in the defendant's minority status, in the minority population share across spaces, and in the intensity of the Uyghur separatist movements over time.

Our results find a surge in the penalties against minority criminals in response to potential unrest. Judges impose significantly harsher penalties on minority defendants in minority-dominant regions when Uyghur separatist movements intensify. The impact is economically meaningful, with baseline minority penalties amplified by 26% in sentence length and by 37% and 44% in the likelihood of receiving life sentences and death sentences. Notably, this increase is observed only among younger males, who are typically seen as potential bearers of unrest; in contrast, non-threatening elderly and females experience almost no impact.

We then examine how rulings in China's criminal justice system are influenced by the political incentives of local governments. One of the CCP's ultimate goals is maintaining social order, and local governments play a key role in preventing collective actions to support this objective. If the local judiciary functions as a tool of social control, political leaders may be motivated to use this function to fulfill their responsibilities. This motivation is likely to be particularly strong for prefectural leaders seeking to advance in their bureaucratic careers. Given such, we investigate how the appointment of "promotion-seeking" officials affects sentencing outcomes for ethnic minorities, again employing the DDD approach.[5] Our results provide compelling evidence of local government influence on the judiciary: in minority-dominant regions, the appointment of promotion-seeking officials significantly intensifies the additional penalties imposed on ethnic minorities.

These two analyses, along with the stylized facts we presented, highlight the unique political role of China's criminal justice system. We show that China's judiciary is heavily influenced by the political motives of local governments. Given the differing political goals of autocratic and democratic regimes, the judiciary in each system operates differently. In democracies, jurisdictions represent local citizens, and decisions are shaped by voter preferences (Lim, 2013; Berdejo and Yuchtman, 2013). In stark contrast, in an autocratic state like China, the judiciary serves as a tool of social control, supporting the government's efforts to maintain social order. As we demonstrate, such behaviors include imposing harsher penalties on ethnic minorities in response to perceived threats of

[5]We leverage China's unique bureaucratic system, where local leaders lose promotion opportunities once they turn 55 years old (Yao and Zhang, 2015; Campante et al., 2023). We use this age threshold to identify the promotion-seeking prefectural leaders. See section 3.3 for the details.

unrest.

The third component of our analysis documents the likely diminishing role of China's criminal justice system in enforcing social control and investigates the underlying causes. In 2017, China dramatically shifted its ethnic policy towards harsher repression, raising concerns about the unwarranted incarceration of larger minority populations. Our data, however, reveal the opposite: the majority-minority gap in sentencing has narrowed notably during our study period. We explore the drivers of this trend, focusing on the sentencing guideline reform initiated by the Supreme Court of China in 2017. This reform was introduced to address long-standing accusations of widespread inconsistent sentencing. Judges are required to follow mandatory guidelines that emphasize fact-based sentencing. Even when local governments or courts are politically motivated to incarcerate ethnic minorities, these guidelines may prevent them from doing so.

Our results, using the staggered Difference-in-Difference estimator, suggest a significant contribution of the mandatory sentencing guidelines to the reduction in the minority-majority gap. The guideline reform may have primarily aimed to address disparities among Han defendants as they explain over 90% of criminal cases. Nonetheless, it reduced the majority-minority penalty in sentence length by approximately 65%, resulting in the elimination of 11,375 years of imprisonment that had been imposed solely on minority defendants. This effect is confined to the 15 crimes and sentence lengths that were the primary focus of the reform. These suggest that China's large-scale legal reform has led to substantial improvements in fairness and transparency within its criminal justice system, though possibly at the unintended cost of weakening the judiciary's role as an instrument of social control.

Our study contributes to several strands of literature. First, we provide large-scale quantitative evidence on the judiciary's role in sustaining autocratic regimes by suppressing potential unrest. While existing research has examined various autocratic tools for survival, such as propaganda, information manipulation, censorship, local elections, and economic policies (see reviews by Gehlbach et al., 2016, Guriev and Treisman, 2019, and Egorov and Sonin, 2024)[6], the role of autocratic legislation has largely been overlooked.[7] Existing political science studies often focus on the judiciary's role in repressing individual political opponents, primarily through case studies (Solomon, 1996; Pereira, 2005), with a few exceptions (Shen-Bayh, 2018). Our paper demonstrates that, for regime sur-

[6]Previous empirical studies explore ideological indoctrination (Adena et al., 2015; Yanagizawa-Drott, 2014), surveillance (Xu, 2021; Beraja et al., 2023), information manipulation (Guriev and Treisman, 2019), censorship (King et al., 2013; Chen and Yang, 2019), local elections (Martinez-Bravo et al., 2022), and economic policies (Wen, 2024)

[7]Traditional research on autocratic judiciaries highlights their roles in coordination, signaling, and information gathering (Goldstein, 1978; Feeley, 1979)

vival, an autocratic judiciary can harshly penalize not only specific individuals but also entire groups, like the ethnic minorities we analyzed, which may constitute a significant portion of the population.

We also contribute to the literature on sentencing disparity by providing the first comprehensive evidence of ethnic disparities within China's criminal justice system. Previous research has documented discrimination against ethnic and religious minorities in criminal justice systems worldwide (Anwar et al., 2012; Shayo and Zussman, 2011; Rehavi and Starr, 2014; Cohen and Yang, 2019; Feigenberg and Miller, 2021; Arnold et al., 2022; Choi et al., 2022). In China, studies by Hou and Truex (2022) and Peng and Cheng (2022) have examined drug and theft cases in a few provinces, yielding mixed results. By utilizing data covering all criminal types throughout the nation, our research documents a consistent pattern of harsher penalties imposed on ethnic minorities. We further highlight the "political roots" of this disparity, showing that the disparity is largely driven by political dynamics and incentives. This stands in stark contrast to democratic regimes, where judicial decisions are closely tied to electoral preferences (Lim, 2013; Berdejo and Yuchtman, 2013).

2 Background

2.1 China's Ethnic Minority Issues

Ethnic minority issues lie at the heart of China's social stability, the largest and one of the longest-standing authoritarian regimes in modern history. China, a multiethnic nation, has a Han ethnic majority that comprises 91.5% of the population, while its government officially recognizes 55 minority ethnic groups. As China's Communist Party (CCP) remains the sole ruling party and faces virtually no political opposition, ethnic minorities—often with distinct ideologies, social practices, religious beliefs, and cultural traditions—pose some of the greatest challenges that the regime must navigate to maintain stability.

Ethnicity has long been a source of political conflicts in China. China's ethnic policy largely follows the Soviet model and confines minority autonomy to prevent territorial separation. Since the nation's establishment, the central government has granted formal rights to ethnic autonomy, though these have rarely been fully implemented. Freedom of religious beliefs, preservation of culture and language, and access to equal legal rights have not always been guaranteed, often leading to disputes between the Chinese government and ethnic minorities (Zhang 2011). Over the past few decades, tensions have steadily escalated. Political movements in Tibet and Xinjiang since 2008 prompted in-

creasingly tough responses from the central government.[8] Since 2017, the government has shifted to even harsher policies toward the Uyghur population in Xinjiang, drawing intense international attention and condemnation.[9] These dynamics further raise concerns about the unwarranted imprisonment and harsher penalties imposed on minorities by the judiciary, one of the autocratic tools the nation may employ.

Concurrently, over the past decades, the Chinese government has implemented various affirmative action policies favoring ethnic minorities. These policies include exemptions from the One Child Policy, additional points on national college entrance exams, tuition waivers, and stipends. Ethnic minorities also benefit from preferential access to employment opportunities, special tax breaks, and, in theory, the right to preserve their languages and cultures. Additionally, the government has introduced a series of poverty alleviation and local economic policies. Given these preferential treatments, one might expect similar considerations to be reflected in the judicial system.

These seemingly contradictory policies, where the authorities offer both preferential and hostile treatment, can be explained by China's unique ethnic policy. Since China's formation, it has long sought to build a "unitary multiethnic nation," where all distinct ethnic groups are politically unified while their diversity is acknowledged and their development promoted. To achieve this, the CCP must prevent ethnic minorities from becoming ideologically and politically independent while also preserving their distinct characteristics and fostering their development, often resulting in ostensibly inconsistent policies. Given this, whether ethnic minorities receive privileged or punitive treatment, including in the judiciary, remains an ultimately empirical question.

2.2 China's Criminal Justice as an Instrument of Social Control

China's judiciary, particularly its criminal justice system, can inherently function as a tool for social control for two reasons (See Appendix C for details of China's criminal procedure). First, under the authoritarian political regime, the Chinese judicial system must support political goals set by the CCP to maintain social order. All judges at any court level are appointed by the government,[10] and their promotions and demotions are tightly managed by the CCP. Further, 85% of judges are CCP members, and all court heads

[8] This includes initiatives like the "Strike Hard Campaign Against Violent Terrorism" in 2014

[9] The policies include mass surveillance and the incarceration of a significant number of Uyghurs and other Muslim minorities in internment camps. These actions have faced widespread international criticism, with accusations of crimes against humanity, cultural genocide, and physical genocide. See: UN human rights report and UN Panel

[10] In practice, they are appointed and removed by the corresponding level of the People's Congress, which is de facto fully controlled by the CCP

must be party members. Under these CCP's influences, the courts and their members are explicitly required to "pursue the political effects" in trial activities.

Second, judges in China hold enormous power in determining sentencing outcomes within the country's criminal justice system. China's legal system follows civil law traditions, where neither juries nor binding legal precedents are in place. Consequently, judges act as chief investigators, establish facts, apply relevant legal codes, and issue final rulings, granting them substantial discretion. These features may make China's criminal justice system an effective tool for social control: the judiciary may be politically motivated to maintain social order, and when so, it indeed has the authority and power to impose legal decisions that disproportionately affect ethnic minorities.

Ethnic minority issues in China's criminal justice system have gained enormous attention from legal practitioners, humanitarian agencies, and policymakers worldwide. Today, more than 10.77 million individuals are held in penal institutions globally, and China accounts for about 1.69 million, corresponding to 15.7% of the total (Fair and Walmsley 2021). Furthermore, China's judicial system is unique as it follows the civil law traditions and is tightly tied to the CCP's authoritarian political regime. The Chinese government's potential violation of human rights is widely recognized as a key issue in promoting global human rights. Despite these, existing empirical evidence remains either qualitative observations or quantitative assessments using only a single crime-type data in a few provinces with mixed findings: existing studies find ethnic minorities receive harsher punishments for drug crimes in Yunnan province (Hou and Truex, 2022) while more lenient for theft crimes in 5 provinces (Peng and Cheng, 2022). This issue has been largely understudied by a lack of comprehensive and systematic quantitative evidence.

2.3 Sentencing Guidelines Reforms

China has undergone large-scale legislative reform aimed at enhancing transparency and fairness, which may also affect the judiciary's role in suppressing potential unrest. To address the long-standing criticisms of inconsistent and arbitrary sentencing, China introduced sentence guideline reforms, a cornerstone of its legislative overhaul (Chen, 2010). These reforms are, in spirit, similar to those adopted in the US, where such guidelines are found to be effective (Fischman and Schanzenbach, 2012; Yang, 2015; Cohen and Yang, 2019).[11] This reform provides detailed, fact-based sentencing guidelines that all the courts

[11] Existing studies predominantly focused on the US, where the Federal Sentencing Guidelines were mandated in 1984 but became an "effective advisory" in 2005 as it held unconstitutional. Various papers suggest this modification enlarged racial disparities significantly (Fischman and Schanzenbach, 2012; Cohen and Yang, 2019).

must follow, significantly reducing judicial discretion. After an initial pilot program, this reform was officially launched in 2017 and gradually rolled out to more provinces in a staggered fashion.

The sentencing guidelines provide specific instructions for common circumstances and cover 15 targeted crimes (see Appendix ... for details). These crimes include traffic offenses, intentional harm, rape, robbery, and drug-related crimes. If we focus on drug-related crimes, judges' arbitrary seems significantly limited. For example, prior to the guideline reform, individuals found in possession of 201-1000 grams of opium were subject to "fixed-term imprisonment of not less than seven years..." under Articles 347 and 348 of the criminal law. This allowed judges to interpret differences in weight, such as 300 grams versus 500 grams when determining sentences. The sentencing guidelines eliminate much of this ambiguity. They specify that for possession of 201-1000 grams of opium, 200 grams should serve as the "starting point" for a 7-year sentence, with 1 year added for every additional 100 grams. As a result, possessing 300 grams of opium leads to an 8-year sentence, while 500 grams results in 10 years. Such detailed instructions are provided for all of the targeted crimes, ensuring greater consistency in sentencing.

These guidelines could unintendedly weaken the function of criminal justice as a tool of repression. Even when local governments or courts are politically motivated to incarcerate ethnic minorities, these guidelines may constrain their ability to do so. In fact, the reform primarily targeted sentencing biases among Han-majority criminals; at least, we found no evidence of documents indicating a focus on majority-minority inconsistency. These factors suggest that the dynamics of the judiciary's role in China may shift, though this remains an empirical question that has yet to be thoroughly explored.

3 Data

3.1 Universe of Criminal Court Verdicts

This paper assembles the most comprehensive dataset ever compiled on criminal sentencing verdicts in China from China Judgement Online (CJO, 2021; See Appendix D for the details and examples of verdicts). Since 2014, the Supreme People's Court of China has required all the courts to publish both contemporary and historical verdicts on this website, allowing us to construct a near-complete set of court decisions. We employ novel text-cleaning algorithms to extract a rich array of information from millions of complex, unstructured, and non-standardized text files. Additionally, we have automated the data assembly process on a daily basis to maintain completeness, as the website frequently

deletes large volumes of data without public notice.[12]

Our main dataset comprises approximately 4.0 million verdict cases from first-instance sentences. On the CJO, juvenile crimes and politically sensitive cases are not made public, and some cases from local courts are missing due to their capacity constraints.[13,14] The original dataset covers 11.78 million verdicts from 2014 to 2021, corresponding to 83% of the total cases officially reported.[15] Among them, 71% (8.4 million) were first-trial, 21% were commutation, 6.1% were second-trial, and the remaining 1.9% were modification. Our analysis focuses on first-instance sentences, as over 95% of second-instance trials result in no changes.

Our data contain an extensive set of variables about jurisdictions, defendants' backgrounds, a description of the criminal process and facts, and judgments of convictions, allowing us to compare cases that are observably highly comparable. The verdicts report courts (3,481 total) and judges (41,319 total) in charge and the year and month of sentencing. Using the deep-leaning method, we identify 8.7% of judges as belonging to ethnic minorities (See Appendix E for the detail). The defendants' demographic variables include age, gender, ethnicity, education, occupation, and criminal history.

In our dataset, all the cases are categorized into 485 distinct crime types, which is significantly more granular than previous papers. For example, drug-related offenses are divided into 13 categories, with cases involving illegal possession, trading, production, cultivation, harboring a drug offender, and abetting others treated as separate crime types.

Additionally, we collect case characteristics whenever sentencing includes descriptions recognized by criminal law as either aggravating or mitigating factors. Our dataset eventually encompasses a total of 238 sentencing factors, which are, once again, significantly more detailed than those in existing studies. For certain crimes, we gather key factors that characterize the severity, such as the number of individuals killed in homicides, the seriousness of injuries in assaults, the types and quantities of drugs involved in drug-related offenses, and the estimated monetary value in theft crimes, variables often overlooked in multi-crime studies. Common factors we collect include information on guilty pleas, voluntary surrender, the plaintiff's forgiveness, and details regarding defendants' attitudes, motives, mental disorders, and disabilities.

[12] Such deletion includes the major batch deletion in 2021.

[13] As reported by various media outlets, this issue is mainly concentrated in cases related to state security. Source: `https://www.rfa.org/mandarin/yataibaodao/renquanfazhi/ql-07162021074351.html`

[14] We find more data are missing in the early years, immediately after the website's launch. More than half of the cases are backlogs and added to the website later on.(Ahl et al., 2019; Liebman et al., 2020)

[15] According to the official reports from the Supreme People's Court of China, all levels of courts in China handled 13,303,442 cases in total from 2014 to 2021

Finally, we collect variables related to the judgments of convictions. Our primary sentencing outcomes include the duration of fixed-term imprisonment, life imprisonment, or the death penalty, where about 20% of crime types are subject to life imprisonment or the death penalty.

3.2 Uyghur Conflicts in Xianjiang

We collect data on Uyghur protests and conflict events in Xinjiang, which we use as a variation in the threats of unrest in the rest of China. Xinjiang is one of five autonomous ethnic regions located in the far northwest of China, where the Uyghur, also known as the East Turkic ethnic group, make up a significant portion of the population. Historically, the government has pursued various ethnic assimilation policies, such as state-sponsored migration, the promotion of Chinese cultural unity, and the suppression of expressions of Uyghur identity, triggering a series of backlash. The Uyghur have long been involved in separatist movements, using both violent and non-violent tactics, which have, at times, resulted in deadly terrorist attacks and large-scale protests (Millward, 2004; Dwyer, 2005).

Our dataset includes 83 protest and conflict events in Xinjiang from 2013 to 2017, a part of the last 50 years of a local Uyghur separatist movement. The data are manually collected from various sources, including Wikipedia reports, publications from international human rights organizations, and media coverage.[16] Data collection extends through 2017, the year when the government dramatically escalated its repression, leading to no further reported incidents. For each event, we gather the date, location, and number of deaths, categorized by attackers, police, and others.

3.3 Promotion-seeking Prefectural Leaders

We gather information on prefectural political leaders who hold significant influence over local jurisdictions and their members from 2014 to 2021. The information is collected from the résumés of city mayors and party secretaries and verified by cross-referencing news articles on appointments and dismissals from government websites to ensure the timing of leadership changes across all prefectures. Our data includes 3,030 prefectural leaders.

Leveraging a unique aspect of the Chinese political system, we measure the promotion incentives of prefecture officials based on their age. When prefectural leaders turn 55, they are required to "step back from frontline duties" even before reaching their official retirement age. As a result, city mayors or party secretaries older than 55 at the start

[16]Data sources: Wikipedia: Uyghur Conflict, Human Rights Watch: China - Xinjiang, and BBC News: Xinjiang

of their tenure are much less likely to be promoted, dramatically reducing the rent from exerting efforts in responsibilities, such as promoting the local economy and maintaining social order. Previous papers have documented such change in the incentive is indeed strong (Yao and Zhang, 2015; Yu et al., 2016). Accordingly, we categorize leaders younger than 55 years old as ”promotion-seeking leaders” and those older than 55 as ”soon-to-retire leaders.”

3.4 Criminal Sentencing Guideline Reforms

We collect information on sentencing guideline reforms from the official websites of the 15 provincial high courts identified as having adopted the mandated guidelines. The reform was initiated by the Supreme Court, which first published general guidelines. The higher provincial courts then adapted these into province-specific guidelines to account for local trial practices, although they are largely similar to one another. After the pilot program, this reform officially began in 2017 and gradually rolled out to more provinces in a staggered fashion. Each guideline includes the mandate's effective timing, general sentencing principles, adjustments for common circumstances, and specific sentencing guidelines for various crimes.

3.5 Descriptive Statistics

Our analysis uses 4 million first-instance verdicts, with 0.31 million (7.9%) from ethnic minority groups. The death penalty and life imprisonment account for 1.6% and 2.9% of the total cases, respectively. We exclude sentences missing any main variables as some verdicts do not contain personal information due to varying local judicial practices or privacy concerns. As a result, 52% of the original data collected remains in our main dataset.

Table 1 reports the summary statistics, and we overall find that minority and majority criminal offenders differ in various aspects. Minority defendants tend to be younger, less educated and earn less, while criminal history is similar (Panel A). During court trials, they are less likely to plead guilty, surrender voluntarily, receive forgiveness from their victims, and receive suspended sentencing, while the offense severity does not differ significantly. Regarding sentence outcomes, ethnic minority, on average, receives much harsher penalties than Chinese Han (Panel C). The unconditional mean length of confinement for ethnic minorities is 19.8 months, and that for the majority is 16.9 months. This observed discrepancy is even greater for more severe offenses. The probabilities of receiving life and death sentences are 0.263% and 0.147% for majorities, while they are 0.601%

and 0.346% for minorities.

Figure 1 presents the time trends of the unconditional means for Han and minority offenders in terms of sentence length (Panel A), death penalty (Panel B), and life imprisonment (Panel C). On average, minority offenders receive harsher penalties than Han offenders. Additionally, the disparity appears to converge quickly over the study period, and we will explore the exact causes in the following sections.

4 Ethnic Minorities in China's Criminal Justice System

4.1 Measuring Conditional Ethnic Disparity in Criminal Sentencing

Our analysis starts with presenting the first comprehensive national analysis of ethnic minority issues in China's criminal justice system. We employ the selection-on-observables approach, following Rehavi and Starr (2014), Cohen and Yang (2019), and Feigenberg and Miller (2021) to compare criminal sentencing outcomes between defendants from the majority Han group and ethnic minority groups who committed identical crimes under similar circumstances, with their cases ruled in the same jurisdictions and by the same judges.

It is important to note that while recent papers have increasingly employed the random assignment of judges, this research design is unsuitable for our setting (Bhuller et al., 2020). In some studies, this method is used to instrument incarceration, but in our case, the treatment variable is ethnicity, which is inherently non-random. Additionally, the method proposed by Arnold et al. (2022) to assess racial discrimination requires to model the judiciary's objective function, which remains largely unclear within China's criminal justice system.[17] As such, studies focusing on sentencing disparity typically rely on selection-on-observables, and we improve this approach by utilizing our dataset with an extensive set of detailed variables. Our results of sentencing disparity, therefore, should not be directly interpreted as evidence of discrimination.

Specifically, we specify the following equation:

$$Sentence_{icpjt} = \alpha + \beta Minor_i + X_{icpjt} + \lambda_c + \gamma_p + \sigma_j + \delta_t + \epsilon_{icpjt} \tag{1}$$

where $Sentence_{ipctj}$ is the sentencing outcome of interest, either of sentence length in month, dummy of life imprisonment, or dummy of death penalty, for criminal defen-

[17] These papers employ random judge assignments to estimate minority discrimination, particularly in bail decisions, where the primary legal objective is to maximize defendant releases while minimizing pretrial misconduct risks (Arnold et al., 2022). Unlike these papers, China's judiciary must pursue "legal effects, economic effects, and political effects," making such modeling extremely challenging.

dant i sentenced by judge j in court c at province p, in year-month t. Since life sentences and death sentences can apply only to severe crime types, we use the subsets of data to explore ethnic disparity in these outcomes. $Minor_i$ denotes the offender's ethnicity and takes 1 if the offender belongs to one of the minority ethnic groups. ϵ_{ipctj} is the error term.

Our coefficient of interest is β, representing the average conditional sentencing disparities between the Han majority and ethnic minorities. To credibly estimate the coefficient, our specification includes an extensive set of fixed effects and controls. The court fixed effects (λ_c) and province fixed effects (γ_p) account for variations in legal practices across different jurisdictions and geographic regions, year-month fixed effects (δ_t) for national-level changes in legal practices and laws over time, and judge fixed (σ_j) for judge-specific, time-invariant characteristics and preferences, which may influence the behavior of defendants and defense attorneys in response to the judges. Additionally, our control variables (X_{icpjt}) include defendant and case characteristics, crime types, and detailed criminal environments, all of which are discussed in detail in the data section. Specifically, we utilize 485 crime types and 238 sentencing factors, allowing us to estimate disparities within narrowly defined crime types and under similar criminal circumstances. Standard errors are clustered at court levels to account for arbitrally correlated shocks.

4.2 Five Stylized Facts about Ethnic Minorities in China's Judiciary

We present five stylized facts about ethnic minority issues in China's criminal justice system based on comparisons between ethnic minorities and observably similar Han offenders. The analysis suggests broader implications for how criminal justice contributes to maintaining social order.

1. China's criminal justice system gives harsher penalties to ethnic minorities—First, China's ethnic minority defendants receive significantly harsher penalties than otherwise observably similar Han majority defendants. Our results in Table A.1, which estimate the conditional sentencing disparity, indicate that ethnic minorities receive 6.7% longer sentences (Panel A) and face a 26.9% (Panel B) and 34.9% (Panel C) higher likelihood of receiving life imprisonment or the death penalty. The magnitude of these results is economically meaningful. Elimination of the disparity would have reduced total imprisonment lengths for ethnic minorities by 17,315 years and the number of life imprisonments and the death penalties by 375 and 314 that had been imposed solely on minority defendants. Moreover, our results in China are comparable, or even slightly larger than, the Black-white sentencing disparities in the US. Studies in the US typically find that Black offenders receive sentences that are 10-20% longer than non-Black offenders (Anwar et al., 2012;

Rehavi and Starr, 2014; Cohen and Yang, 2019; Feigenberg and Miller, 2021).

2. The minority penalty is greater in severe and organized crimes—Our subsample analysis in Table A.2 and Figure **??** shows that the "minority penalty", additional penalties against ethnic minorities compared to observably similar Han, are more pronounced for severe crimes, such as sex crimes, violent crimes and drug crimes.[18] In China, drug crimes are especially viewed as problematic, with ethnic minorities and their criminal syndicates being disproportionately involved.[19] For such crimes, an additional penalty is substantial, with sentence length increased by 9.4%, life and death sentences by 48.5%, and 47.9%, respectively—significantly higher than the baseline. In contrast, when minority defendants commit non-risky crimes, like other crimes, they only receive similar, or slightly harsher, penalties than Han majority defendants.

3. China's criminal justice harshly penalizes less assimilated ethnic groups—Our analysis, utilizing subsamples based on ethnic groups, demonstrates that those less assimilated to the Han culture receive significantly harsher penalties in China's criminal justice system. Panel A in Figure **??** and Columns (1) to (3) in Table A.5 reveal sizable incremental punishments against ethnic groups practicing distinct religions. We focus particularly on Christianity and Islam, which originated from foreign societies, are active in organizing religious events, shape individual lifestyles and identities, and have "spiritual leaders."[20] We show that minorities from Christian ethnic groups have a 36.5% and 45.3% higher likelihood of receiving life imprisonment and death penalties than observably similar Han individuals (Column (1) in Table A.5), and Muslim minorities face 27.0% and 42.1% higher likelihood of receiving these sentences (Column (2)). In contrast, minorities practicing other religions (primarily Taoism) or agnostic have a lower increase in the likelihood of life imprisonment and death penalties, at 11.6% and 14.7% (Column (3)). In Columns (4) and (5), we also find that ethnic minority groups with a history of conflicts with the Han

[18] These crimes are categorized as more serious crimes in Schanzenbach (2015). China's State Council has also regarded these crimes as "six evils" that hinder China's economic development. They include pornography, prostitution, drug use, and gambling (Biddulph, 2002).

[19] Drug addicts have increased every year in China since at least 1998 (Zhang and Chin, 2015). Ethnic minorities play a significant role in drug crimes, partly due to the proximity of some minority-dominant villages to supply sources. For instance, Yunnan province borders Myanmar, which supplies over 90% of the heroin in Chinese markets, making it a hub for drug smuggling.

[20] The CCP is officially atheist and the members of the CCP are prohibited from exhibiting their religious beliefs. Only Christian churches officially authorized by the central government are allowed to operate. In recent years, various media have reported indicative evidence of the nation cracking down on Islam and Christianity, suggesting that the government may informally regard religious minorities as a potential threat. For example, the Financial Times reports that China's crackdown on Islamic culture has extended beyond Xinjiang to almost every region of the country. Based on satellite imagery of over 2,300 mosques, they find that three-quarters of these mosques have been modified or destroyed since 2018. Source: `https://ig.ft.com/china-mosques/`

experience much more severe penalties, especially regarding life imprisonment and the death penalty.

4. Locations facing heightened social tensions face larger minority penalties—In Table A.4, we examine whether the extent of the minority penalty is correlated with local socio-economic characteristics. Our findings indicate that in poorer, minority-dominant, crime-prone prefectures, the incremental penalties imposed on minorities are more severe. These regional characteristics are closely correlated: minority-dominant areas are predominantly located in western and southern China, where the economy is less developed, and residents experience higher crime rates. These regions are also more prone to social unrest.

5. Han judges, rather than minority judges, explain most of the ethnic disparity—Table A.5 reveals that a significant portion of the minority penalty is attributable to Han judges, who are generally more aligned with CCP's ideology. Across all three outcomes, Han judges impose substantially harsher penalties on ethnic minority defendants than on otherwise similar defendants, compared to minority judges. The coefficients for Han judges are roughly three times larger: for example, the Han judges generate 7.02% of sentencing disparity in sentence length (Column (1) of Panel A), while minority judges generate 2.64% (Column (2) of Panel A). As Han judges account for 91.1% in total, similar to the nation's population share, they contribute to the majority of the observed minority penalty. Nonetheless, ethnic minority judges also give harsher penalties to minority defendants, though the additional penalties are smaller. These findings suggest that minority judges also have motivations to punish minority defendants that outweigh the incentives typically associated with in-group bias (Anwar et al., 2012, Shayo and Zussman, 2011, Ash et al., 2021).[21]

Addtional Analysis—We conduct several supplementary analyses. First, we examine the role of prosecutors, other key actors in the criminal justice system, since judges alone may not account for the entire minority penalty in case outcomes (Rehavi and Starr, 2014; Tuttle, 2021). Leveraging our data built from millions of original verdicts, we analyze "prosecutor recommendations" to assess whether they contribute to the incremental penalties imposed on ethnic minorities, possibly through biased evidence collection or police

[21] Existing studies generally find positive in-group bias in legal systems, where individuals tend to favor members of their own group in decision-making (Anwar et al., 2012; Shayo and Zussman, 2011; Ash et al., 2021; Choi et al., 2022), with a few exceptions (Lim et al., 2016). In-group bias is also evident in some Chinese jurisdictions.

charges.[22] Table A.5 column (3), which uses recommended sentences as outcome variables instead of final sentences, shows that both agents are harsher on ethnic minorities. Prosecutors recommend 0.74 months (4.67%) longer imprisonment, with a 15.9% higher likelihood of life sentences and 19.1% higher likelihood of death sentences for minorities compared to observably similar majorities. Although these effects are sizable, they are less extreme than the final sentences. For instance, the average judge imposes 1.2 months (7.0%) longer sentences on minorities, which is greater in its magnitude. These findings indicate a systematic disparity, where ethnic minorities are treated less favorably at each stage of the criminal process.

Second, we examine whether harsher penalties are imposed on Uyghurs, an ethnic group widely recognized by the international community as a target of unwarranted persecution. Surprisingly, we find no evidence of discrimination against Uyghurs; instead, the data suggest potential favoritism. However, this finding should be interpreted with caution. Appendix Figure XX reveals that the number of cases involving Uyghur offenders is unexpectedly low, especially given their population size. This could imply that our data are not fully representative, possibly because "politically sensitive" cases are excluded from public access via our data source, the CJO. Alternatively, it is possible that our data are indeed exhaustive and representative. For whatever reason, Uyghur individuals do not frequently appear in court and receive criminal sentences. Ultimately, our study cannot pin down the reasons behind this finding.

5 Two Quasi-Experiments to Understand Judicial Incentives in an Autocrac System

We have demonstrated that China's criminal justice system imposes harsher penalties on ethnic minority defendants. These punitive sentencings are particularly pronounced for crimes considered problematic, for groups less assimilated into Han-majority society, in regions experiencing heightened social tensions, and in cases presided over by Han judges. While these findings are suggestive, the patterns are consistent: harsher penalties are strongly associated with perceived risks of social unrest, highlighting the judiciary's critical role as an instrument of social control. This section leverages two quasi-

[22] The recommended sentences are included in the verdicts when the crime facts are clear, and the evidence is credible and sufficient, with all the factors for imposing heavier or lighter, mitigating, or exempting punishment ascertained. This follows the rules jointly established by the Supreme People's Court of China, the Supreme People's Procuratorate, the Ministry of Public Security, the Ministry of State Security, and the Ministry of Justice in 2010 https://www.spp.gov.cn/spp/xwfbh/wsfbt/202011/t20201105_484007.shtml#1

experiments to further examine the judiciary's role in the autocracy. First, we investigate how local courts respond to threats of unrest triggered by Uyghur separatist movements in Xinjiang province. Then, we examine how judicial decision-making is influenced by local governments, focusing on the promotion incentives of local political leaders.

5.1 Uyghur Unrest, Minority Population, and Minority Penalty

5.1.1 DDD Approach to Estimate Judicial Response to Threats of Unrest

Our first quasi-experiment examines how local jurisdictions respond to ongoing threats of unrest. When faced with potential threats, local governments have strong incentives to prevent collective actions, which is a central objective of autocratic regimes. If China's judiciary functions as an instrument of social control, we would expect it to imprison dissenters or impose harsh, exemplary punishments as a deterrent measure. To investigate this, we follow Wen (2024) and examine unrest triggered by the ongoing conflict between Uyghur separatists and the Chinese government in Xinjiang province. The Uyghur conflicts provide ideal variations in threats of social unrest in the rest of China, as they are highly visible, often deadly, and carry the potential to trigger spillover ethnic conflicts.

We employ a DDD estimator to investigate how sentencing outcomes are influenced by threats of unrest. The risk of spillover conflicts is likely more pronounced, particularly in regions with a higher proportion of ethnic minorities, as they are the actors triggering ethnic dissent. This naturally generates a setting to employ a DDD: we utilize variations in the defendant's minority status, in the minority population share across spaces,[23] and in the intensity of the Uyghur separatist movements over time. Our analysis excludes the sample from Xinjiang province to isolate possible reverse causality that original Uyghur conflicts occur in response to authority's ethnic oppression, which can be correlated with severe sentencing punishments.

Specifically, we augment equation (1) and specify:

$$\begin{aligned} Sentence_{icpjt} = \alpha &+ \beta_1 Minor_i \times Unrest_t \times MinorPop_p \\ &+ \beta_2 Minor_i + \beta_3 Unrest_t + \beta_4 MinorPop_p \\ &+ \beta_5 Minor_i \times Unrest_t + \beta_6 Minor_i \times MinorPop_p \\ &+ \beta_7 Unrest_t \times MinorPop_p + X_{icpjt} + \lambda_c + \gamma_p + \sigma_j + \delta_t + \epsilon_{icpjt} \end{aligned} \tag{2}$$

where a dummy variable $Unrest_t$ indicates whether at least one conflict event occurs in Xinjiang province in year-month t. $MinorPop_p$ takes 1 if the share of minority populations in prefecture p is above median. The set of the fixed effects and control variables are

[23] We use minority population share in the 319 prefectures from the 2010 census.

equivalent to equation (1). In practice, $Unrest_t$ and $MinorPop_p$ are absorbed by year-month fixed effects, δ_t and province fixed effects, γ_p. We are interested in estimating β_1, the coefficient of $Minor_i \times Unrest_t \times MinorPop_p$, measuring how and to what extent additional penalties imposed on ethnic minorities are altered during Uyghur conflicts in minority-dominant prefectures compared to those without the conflicts in the same prefectures. Standard errors are clustered at prefectural levels.

5.1.2 Assessing Judicial Behaviors in Response to Ongoing Unrest

Our results find that China's jurisdiction imposes more severe penalties against ethnic minorities in response to ongoing threats of unrest. Table 3 shows that our interest of coefficient (minority $\times$ unrest $\times$ minority share) estimated using the DDD estimator is 0.301 (column (1)). This means that sentence length for ethnic minorities becomes 0.301 months longer during the Uyghur separatist movement in minority-dominant prefectures compared to those without conflicts in the same prefectures. The magnitude of this response is considerably large as the effect corresponds to about 26% of the baseline minority penalty we estimated. The results for life sentences and death sentences even show greater impacts with coefficients of 0.031 (column (5)) and 0.025 (column (6)), corresponding to about 37% and 44% of the baseline results.

The results of subsample analysis in columns (2) to (4) find that younger males predominantly drive our main results.[24] This is not surprising as they are the main bearers of violence and collective actions, generating threats of unrest. In stark contrast, the coefficients of females and elderly males are almost close to zero.

Our results are unlikely to be driven by the "salience of group membership" (Shayo and Zussman, 2011). While the salience of ethnicity may rise during Uyghur-related conflicts, potentially leading to harsher penalties, our DDD approach accounts for this. The results are driven by differences in locations between minority-dominant prefectures and otherwise, conditional on the defendant being a minority and the occurrence of Uyghur conflicts. Furthermore, non-threatening groups, such as females and elderly males, do not face such punitive penalties despite being minority individuals.

[24] We do not conduct the same subsample analysis for elderly males and females due to the limited number of cases. For instance, fewer than 100 elderly males received either life sentences or death sentences.

5.2 Local Governments, Courts, and Penalties against Minorities

5.2.1 DDD Approach to Estimate Influence of Local Governments on Judiciary

This section examines how rulings in China's criminal justice system are influenced by the incentives of local governments. One of the CCP's ultimate goals is maintaining social order, and local governments play a key role in preventing collective actions to support this objective. If the local judiciary functions as a tool of social control, political leaders may be motivated to leverage this function to maintain social order, potentially affecting sentencing outcomes for ethnic minorities.

Testing this idea requires variation in the "political motivation" of logal government, which we obtain by leveraging China's unique promotion system. Political leaders aiming for promotion are likely to exert more effort in fulfilling their responsibilities, including maintaining social stability, as the rewards are significantly greater. In China, a local leader's promotion prospects are heavily influenced by their age: those over 55 years old face the greatest loss of promotion opportunities (Yao and Zhang, 2015; Campante et al., 2023). Using this critical age threshold, we categorize political leaders into "promotion-seeking" and "soon-to-retire" groups (See section 3.3 for the detail).

We again employ the DDD approach similar to equation (3). The political motivation for social control is expected to be more pronounced in minority-dominant regions, where collective actions are more likely to occur. Thus, we utilize variations in the defendant's minority status, the minority population share across regions, and the appointment of promotion-seeking political leaders. We specify:

$$\begin{aligned} Sentence_{icpjt} = \alpha &+ \beta_1 Minor_i \times Promotion_{pt} \times MinorPop_p \\ &+ \beta_2 Minor_i + \beta_3 Promotion_{pt} + \beta_4 MinorPop_p \\ &+ \beta_5 Minor_i \times Promotion_{pt} + \beta_6 Minor_i \times MinorPop_p \\ &+ \beta_7 Promotion_{pt} \times MinorPop_p + X_{icpjt} + \lambda_c + \gamma_p + \sigma_j + \delta_t + \epsilon_{icpjt} \end{aligned} \tag{3}$$

where notations largely follow those in equation (3). The only difference is $Promotion_{pt}$, which is a dummy variable indicating the appointment of a "promotion-seeking" officials in prefecture p in year t. Note that in China, there are two key prefectural leaders: the city mayor and the party secretary. The variable takes 1 if at least one of these leaders is promotion-seeking. Our primary interest is in estimating β_1, which captures the impact of appointing promotion-seeking officials on the minority penalty in minority-dominant prefectures, compared to those with soon-to-retire officials in the same prefectures. Standard errors are clustered at prefectural levels.

5.2.2 The Impact of Local Governments' Political Motivations on the Judiciary

Our results provide evidence of the local government's influence on the judiciary to achieve social control. Table 4 documents that our interest of coefficient is 0.09 for sentence length, corresponding to 8% of our baseline results. This means that switching to promotion-seeking political leaders in minority-dominant prefectures increases the sentence length for ethnic minorities by 8%, relative to soon-to-retire leaders in the same prefectures. The coefficients for life sentences and death sentences are 0.015 and 0.014, corresponding to 18% and 25% increase of the baseline minority penalty, suggesting that the impacts are non-negligible.

5.3 Discussion

Our two quasi-experiments, focusing on the Uyghur conflicts and the promotion of local leaders, underscore the unique political role of China's criminal justice system. We show that the judiciary imposes harsher punishments on ethnic minority offenders in response to threats of unrest, which aligns with the stylized facts we presented. This is also consistent with findings by Wen (2024), which indicate that local governments employ minority males through state-owned enterprises during the Uyghur unrest to prevent collective actions. Furthermore, we find that China's judicial decisions are largely influenced by the political motives of local governments. Given the contrasting political goals of autocratic and democratic regimes, the judiciary in each system functions differently. In democracies, jurisdictions represent local citizens, and decisions are shaped by voter preferences (Lim, 2013; Berdejo and Yuchtman, 2013). In stark contrast, in an autocratic state like China, the judiciary acts as an instrument of social control, supporting the government's efforts to maintain order and preserve the regime's authority.

6 Sentencing Guidelines and Judiciary's Role in Social Control

We have documented that China's criminal justice system functions as a tool of social control and, at times, gives vicious penalties against ethnic minorities. In 2017, China dramatically shifted its ethnic policy toward harsher repression, raising intense international concerns and condemnations. This naturally fuels suspicions of unwarranted unfavorable treatment toward minority populations. Our data, however, reveal the opposite: the sentencing gap between majority and minority populations has narrowed substantially

during our study period. In this section, we investigate the underlying causes behind the diminishing "minority penalty" in China's criminal justice system. Specifically, we explore how the nation's recent large-scale legislative reform affects the sentencing gap between Han majority and minority defendants.

Our focus is on the sentencing guideline reform introduced by the Supreme Court of China in 2017, which aimed to address long-standing accusations of inconsistent sentencing. Under this reform, judges are required to follow mandatory guidelines, which lean less on traditional qualitative methods and emphasize fact-based sentencing. This guideline limits judges' arbitrary significantly and, as a result, may weaken the role of China's criminal justice system in social control. Even if local governments or courts are inclined to alter sentencing outcomes for ethnic minorities, these compulsory guidelines may constrain such discretion.

6.1 Staggered DiD to Estimate the Effects of Sentencing Guidelines

We employ a staggered Difference-in-Difference (DiD) approach to compare the additional penalties imposed solely on minority defendants before and after the introduction of the reform. Taking advantage of the fact that the reform was rolled out in 15 provinces (out of 33 provinces) in a staggered fashion, we augment equation (1) and specify:

$$\begin{aligned} Sentence_{icpjt} = \alpha + \beta_1 Minor_i \times Reform_{pt} + \beta_2 Minor_i + \beta_3 Reform_{pt} \\ + X_{icpjt} + \lambda_c + \gamma_p + \sigma_j + \delta_t + \epsilon_{icpjt} \end{aligned} \tag{4}$$

where a dummy variable $Reform_{pt}$ indicates whether the criminal case is executed with mandated guidelines in the treated province p and year-month t. The set of the fixed effects and control variables are analogous to equation (1). The coefficient β_2 represents the difference between the Han and the minority before the mandated guidelines are enacted and β_3 estimates the level changes in sentence outcomes before and after the reform, which are common to the Han and ethnic minorities.

Our interest is in estimating β_1, the coefficient of the interaction term between $Reform_{pt}$ and $Minor_i$, which captures the extent to which the compulsory guidelines reduce the additional penalties imposed on minorities. Since we include an extensive set of covariates, we estimate the impacts on the differences in sentencing outcomes between minority defendants and those otherwise observably similar to the Han majority. We expect the coefficient β_1 to be negative, indicating that the guidelines limit the judiciary's ability to arbitrarily impose harsher punishments on minorities.

Since the second part of the guidelines (crime-specific guidelines) targets 15 major crime categories (85 categories in our classification), accounting for approximately 48.5%

of the cases in our data, we separately specify equation (4) for both targeted and non-targeted crimes. Moreover, the guidelines primarily focus on confinement lengths rather than life sentences or the death penalty.[25] Therefore, we expect the effects to vary across different sentencing outcomes.

For all the baseline results, including those using the event-study design, we account for heterogeneous treatment effects, following Sun and Abraham (2021) as we use the staggered adoption of the events. Furthermore, standard errors are clustered at province-by-crime levels to allow arbitrary correlation over time within the same crime type in the same province.

6.2 Measuring the effects of Sentencing Guideline Reform

Our results in table 5 suggest the effectiveness of the compulsory guidelines in reducing additional penalties solely imposed on ethnic minorities. Before the policy reform, the average gap between majority and minority was 0.707 months (coefficient of Minority in column (1)), and it was reduced to 0.249 months (0.707 - 0.458), implying a 65% reduction in existing ethnic discrimination. The magnitude of the mandated guidelines is tremendous. Without the guidelines, ethnic minorities would have faced an additional 11,375 years of incarceration, which corresponds to 64 million USD in forgone income.

The effects of the mandatory guidelines are entirely driven by those for targeted crimes, such as sex crimes, drug crimes, theft, and fraud (Column (2)). For non-targeted crimes, we find the null effects, likely because the sentencing gap was already minimal, at just 0.04 months, even before the policy reform (Column (3)). Additionally, the effects on life imprisonment and the death penalty are small and statistically insignificant (Columns (5) and (6)). This is likely because these sentencing outcomes were not the main focus of the policy; criminal law already established thresholds for life sentences and the death penalty, so the guidelines had little impact on standardizing these decisions.

These results are not driven by the systematic differences between the treated and control provinces. Our results using the event-study approach in Figure 5 suggest a balanced pre-trend in ethnic sentence gap between the treated prefectures and otherwise (Panel A). The pattern is similar for targeted crimes, while that for non-targeted crimes is somewhat noisy (Panel B), suggesting that mandated guidelines, rather than differing trends, indeed contributed to shrinking the minority penalty.

Our findings are consistent with existing research on the effectiveness of sentencing

[25]Sentencing guidelines provide more detailed instructions for sentencing decisions than criminal law. Criminal law already specifies the conditions for life imprisonment and the death penalty, so the guidelines play a minimal role in determining these outcomes.

guidelines, particularly in the context of racial discrimination in the U.S. In the US, the Federal Sentencing Guidelines were mandated in 1984 but became an "effective advisory" in 2005 as it held unconstitutional, and various papers suggest this modification enlarged racial disparities (Cohen and Yang, 2019; Scott, 2010; Fischman and Schanzenbach, 2012). Taken together, our findings contribute to an ongoing heated discussion on how to reduce unwarranted sentencing disparity. Our paper is the first to focus on guideline reforms in non-US countries, specifically China, and show that curtailing the judge's discretion can be key to promoting fair case resolution.

Lastly, these results also could have broader implications for the judiciary's dynamic role in the autocratic regime. Throughout the paper, we have documented that China's criminal justice system functions as a tool of social control and, at times, gives harsher penalties against ethnic minorities. However, with the introduction of these guidelines, the judiciary may lose some of its discretionary power. Consider a case involving the possession of 30 grams of heroin: before the reform, judges could arbitrarily choose sentences ranging from 7 to 15 years, but under the compulsory guidelines, the sentence must be 11 years. Even if a local political leader or the judiciary is motivated to push for harsher penalties in drug cases, deviating from the guidelines becomes too costly, as suggested by our findings. This indicates that while the guidelines have effectively reduced the additional penalties imposed on minority defendants–promoting greater transparency and fairness in line with the rule of law–they may unintentionally limit the judiciarys discretion, which is, in China's case, used to support the autocratic regime to maintain social order.

7 Conclusion

Discrimination against individuals of specific groups can exist at every stage in the criminal justice system. Our analyses focus on ethnic sentencing disparity in the criminal justice system in China, a country that has the second-largest prison population. International society is increasingly paying attention to ethnic issues in authoritarian regimes, including this nation. For this reason, this paper also provides insights into understanding global justice, which is greatly promoted by understanding China's ethnic disparity.

We utilize newly digitized data covering almost universal court verdicts in China, which is much more extensive and detailed than existing studies. We find that ethnic minorities receive significantly harsher penalties than the majority, the Chinese Han. The lion part of the disparity is driven by differences in criminal characteristics and, particularly, varying courts' leniency across spaces. Yet, unjustifiable gaps remain. Minorities

receive 6.7% longer sentences and 26.9% and 34.9% higher likelihood of life imprisonment and the death penalty, even compared with otherwise observably similar Han defendants.

We provide suggestive evidence that the ethnic disparity is greatly amplified by judicial motivations to support the CCP's political goals. We observe the tendency for judges to harshly penalize cases potentially threatening social unrest. For example, the ethnic disparity is larger for drug crimes that are often associated with organized crimes, against Christian and Islamic defendants, and against ethnic groups with experience of civil conflicts with the Han majority. The disparity also sored in minority-dominant provinces when Uyghur separatist movements.

Lastly, we demonstrate that compulsory sentencing guidelines introduced in 2017 reduce unwarranted ethnic disparity. As the guidelines lean less on traditional qualitative methods and emphasize fact-based sentencing, our results suggest that reducing opportunities for judges to exhibit their preferences can help mitigate unjustifiable sentencing disparity.

Overall, we provide the first comprehensive evidence of the existence of ethnic discrimination in the criminal justice system in China, unlike previous studies focusing on one crime type in a few provinces. For policies to combat discrimination, it is crucial to understand the magnitude and roots of the disparity at each stage in the criminal justice system, as these are not mutually exclusive and can even be interconnected. Much research is warranted to promote justice in China and the world.

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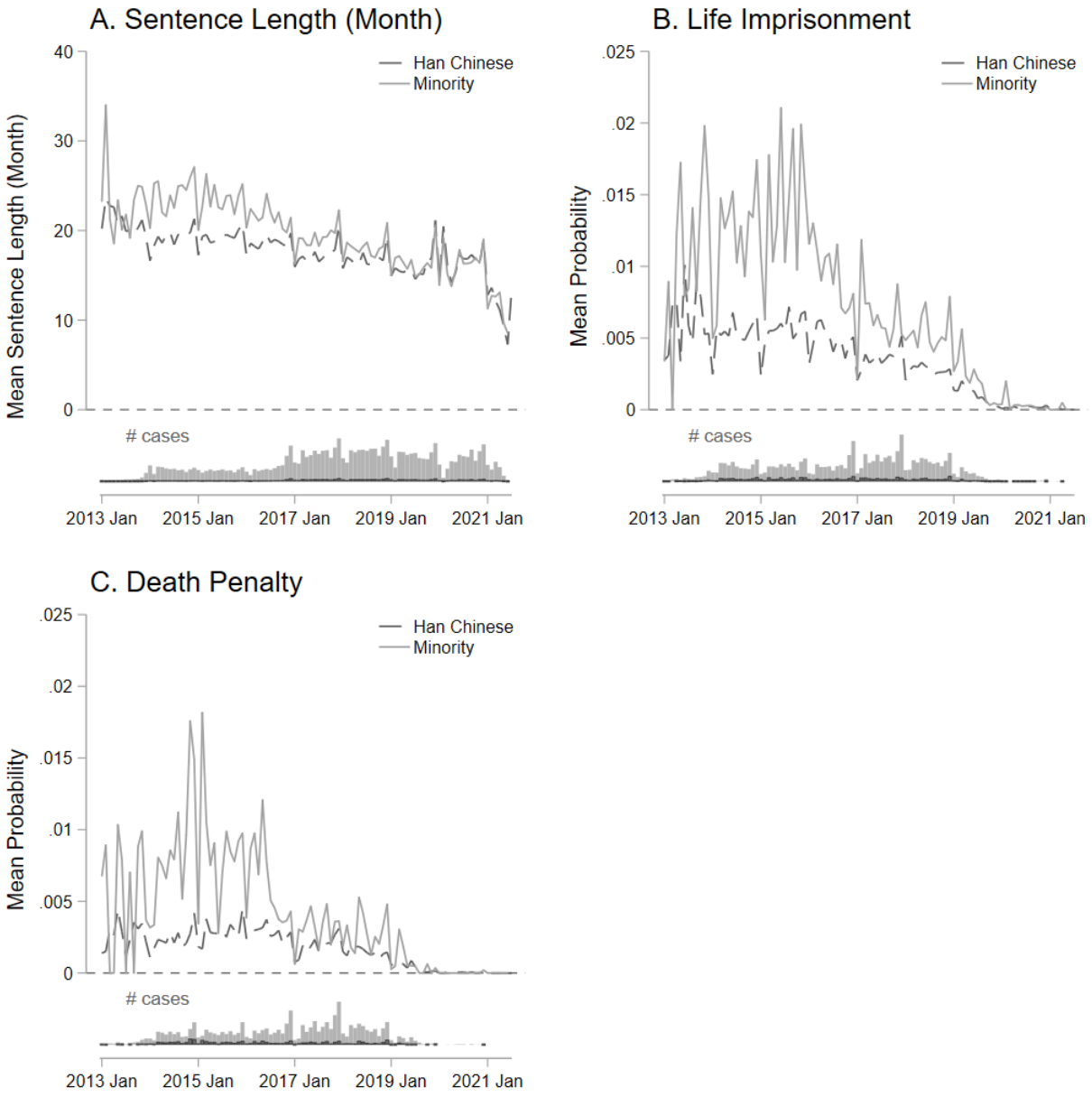
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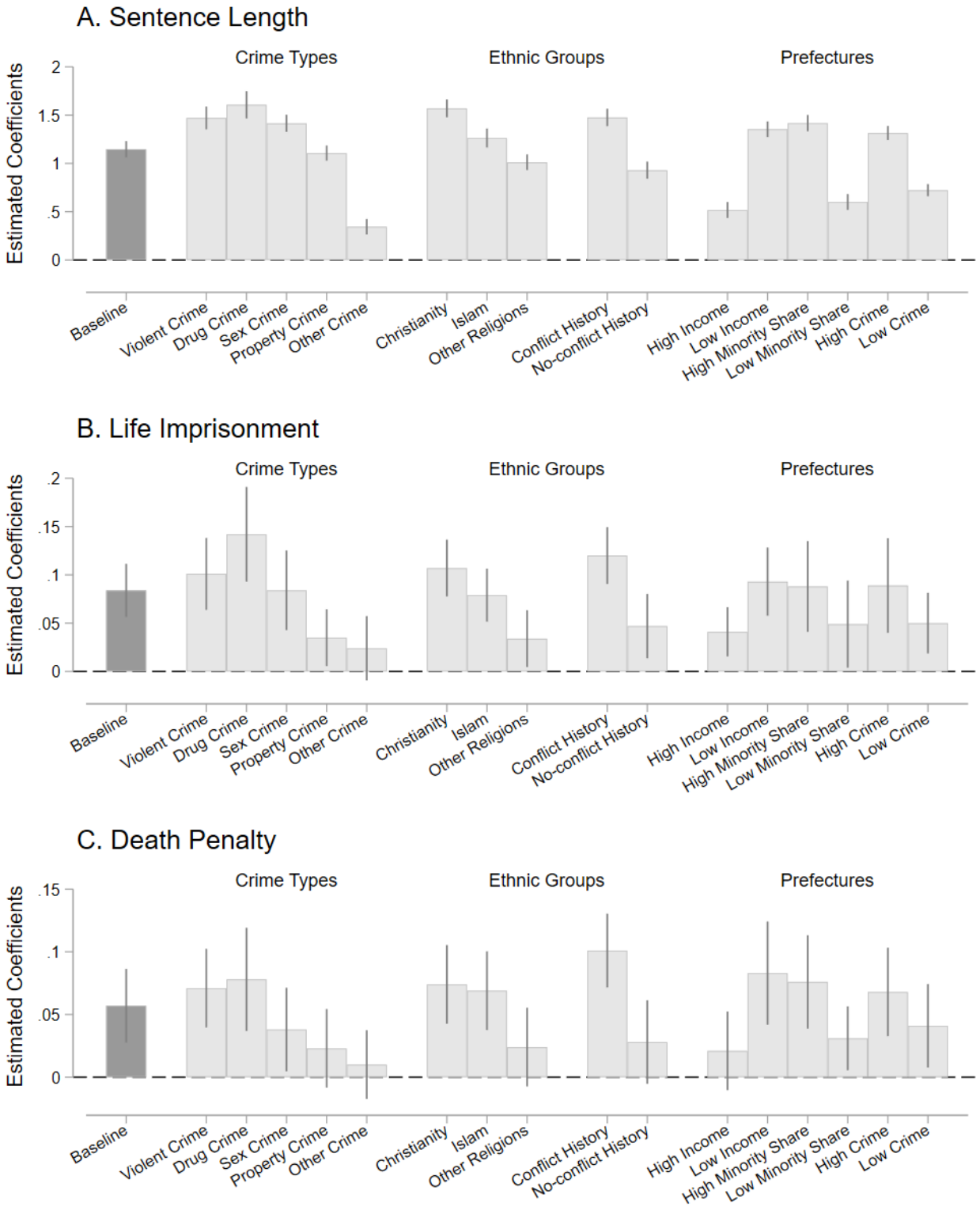
Figures and Tables

Figure 1: Time Trend of Average Sentencing Between Han and Minority



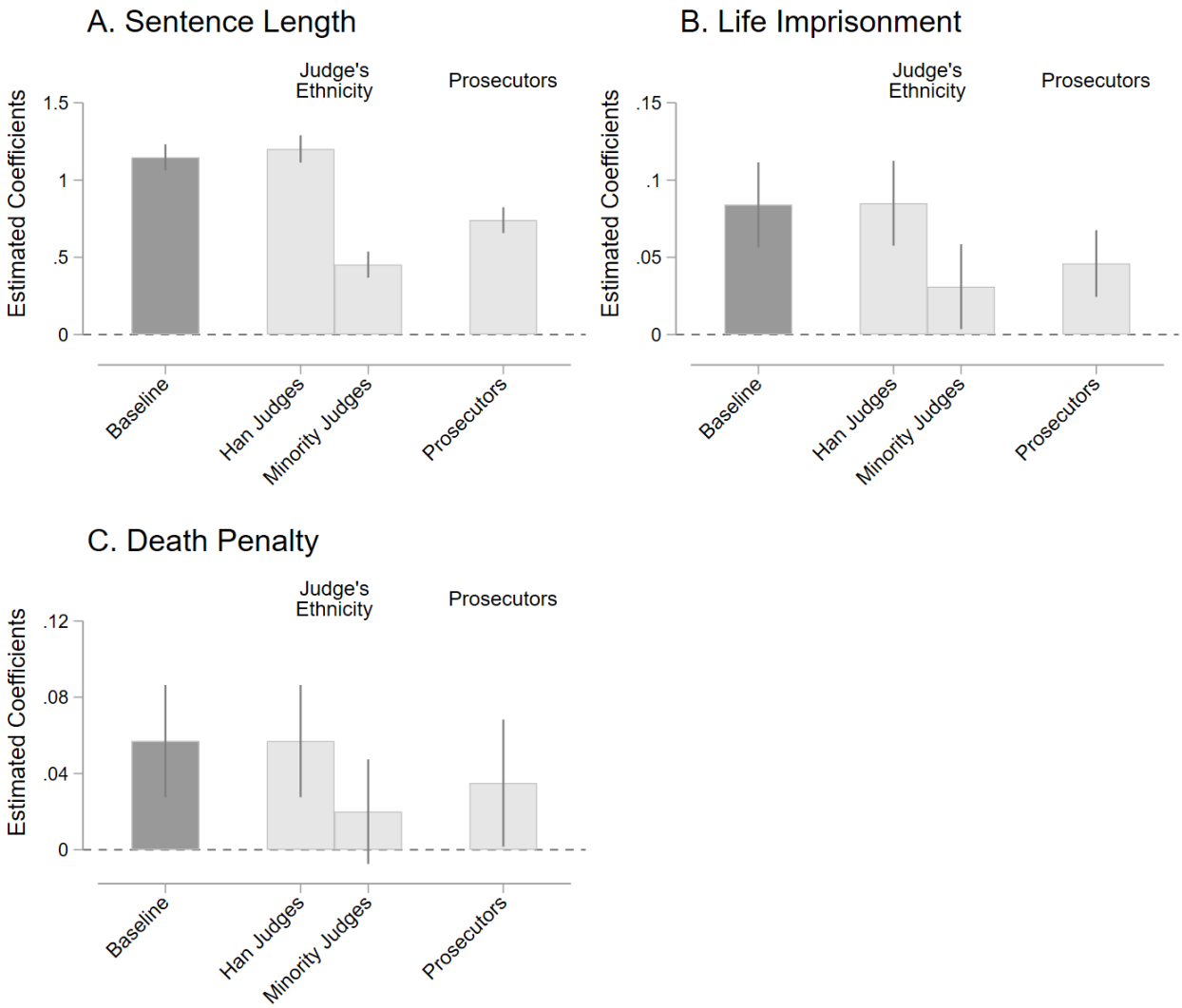
Notes: Panel (a) demonstrates the average imprisonment sentencing and the number of corresponding cases. Panel (b) plots the average probability of getting the death penalty and the number of corresponding cases. Panel (c) presents the average probability of getting life imprisonment and the number of corresponding cases.

Figure 2: Stylized Facts about Ethnic Minority Issues in China's Criminal Justice System



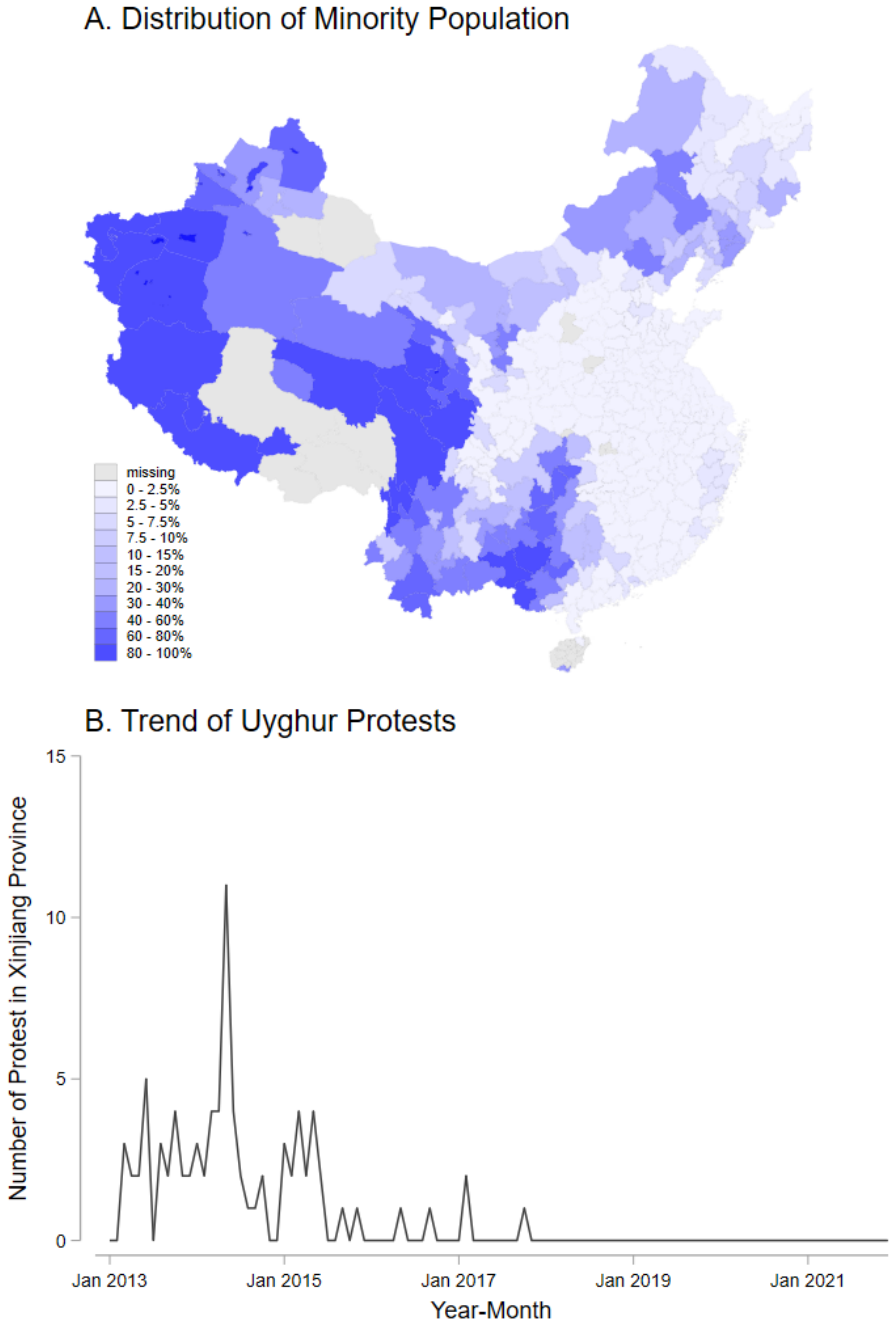
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Figure 3: Prosecutors, Ethnicity of Judges, and Minority Penalty



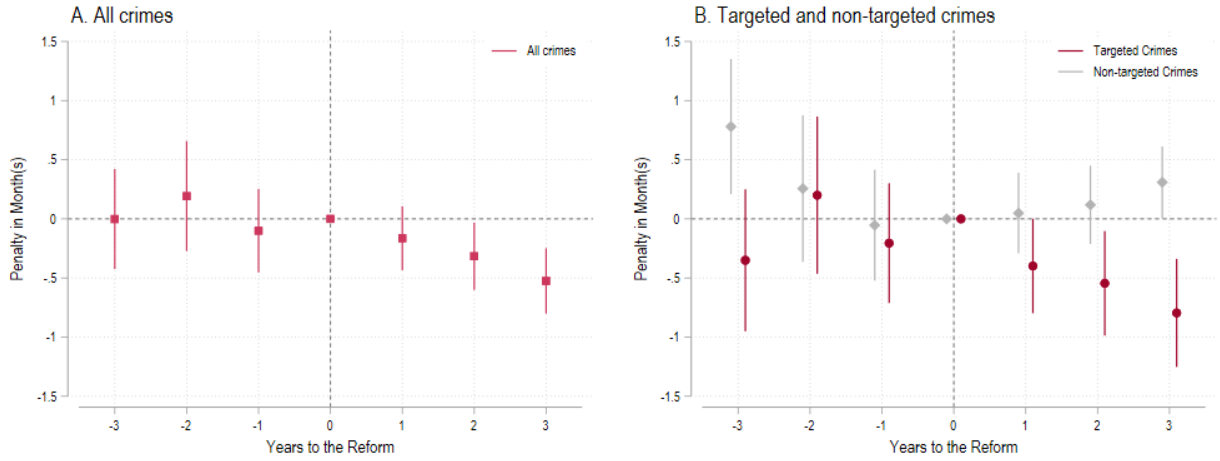
Notes: Panel (a) demonstrates the average imprisonment sentencing and the number of corresponding cases. Panel (b) plots the average probability of getting the death penalty and the number of corresponding cases. Panel (c) presents the average probability of getting life imprisonment and the number of corresponding cases.

Figure 4: Variations in DDD: Minority Share and Uyghur Protests



Notes:

Figure 5: Event Study of the Effects of Sentence Guideline Reforms on Sentencing Length



Notes: Panel (a) demonstrates the average imprisonment sentencing and the number of corresponding cases. Panel (b) plots the average probability of getting the death penalty and the number of corresponding cases. Panel (c) presents the average probability of getting life imprisonment and the number of corresponding cases.

Table 1: Summary Statistics of Key Variables

	Han Chinese (N = 3,685,669)		Ethnic minority (N = 315,782)		All (N = 4,001,451)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
A. Defendant characteristics:						
Age	37.8	(11.1)	34.8	(10.7)	37.5	(11.1)
Gender (male = 1)	.909	(.289)	.916	(.275)	.909	(.288)
Primary school and below	.277	(.447)	.415	(.482)	.288	(.452)
Secondary school	.487	(.486)	.410	(.473)	.481	(.483)
High school / junior college	.198	(.405)	.149	(.353)	.194	(.402)
Above 4-year college	.038	(.170)	.026	(.159)	.037	(.169)
High-paid Job (yes = 1)	.062	(.251)	.042	(.242)	.060	(.254)
B. Case characteristics						
Offense level (1-3)	1.524	(.639)	1.541	(.702)	1.525	(.642)
Crime History (yes = 1)	.156	(.363)	.159	(.397)	.157	(.366)
Guilty plea (yes = 1)	.085	(.276)	.069	(.253)	.084	(.275)
Surrender (yes = 1)	.384	(.478)	.362	(.470)	.382	(.474)
Confession (yes = 1)	.571	(.495)	.578	(.494)	.571	(.495)
Plaintiff Forgive (yes = 1)	.180	(.384)	.147	(.352)	.177	(.382)
C. Case resolution						
Sentence length (month)	16.9	(25.9)	19.8	(27.9)	17.1	(26.3)
Fine penalty (USD)	13,315	(35,615)	9,135	(26,586)	12,984	(34,520)
Life imprisonment (yes = 1)	.003	(.050)	.006	(.079)	.003	(.055)
Death penalty (yes = 1)	.001	(.037)	.003	(.058)	.002	(.040)
Suspended sentence (month)	24.5	(18.6)	28.2	(19.5)	24.7	(18.9)

Notes: This table reports summary statistics of key variables. Panel A presents the summary statistics for criminal defendants' personal characteristics extracted from court verdicts first section. Panel B shows the summary statistics of characteristics of criminal cases extracted from court verdicts second section. Panel C reports the summary statistics for different sentencing outcomes extracted from the final section of court verdicts.

Table 2: Stylized Facts about China's Criminal Justice System

	Sentence Length		Life Imprisonment		Death Penalty	
	Coef. (s.e)	% in Mean	Coef. (s.e)	% in Mean	Coef. (s.e)	% in Mean
Panel A. All						
All Crimes	1.15***	6.7%	0.08***	26.9%	0.06***	34.9%
	(0.04)		(0.01)		(0.02)	
Panel B. Crime Types						
Violent Crime	1.47***	8.6%	0.10***	34.5%	0.07***	43.6%
	(0.06)		(0.02)		(0.02)	
Drug Crime	1.61***	9.4%	0.14***	48.5%	0.08***	47.9%
	(0.07)		(0.03)		(0.02)	
Sex Crime	1.42***	8.3%	0.08***	28.7%	0.04**	23.3%
	(0.05)		(0.02)		(0.02)	
Property Crime	1.11***	6.5%	0.04***	11.9%	0.02	14.1%
	(0.04)		(0.02)		(0.02)	
Others	0.35***	2.1%	0.02	0.0%	0.01	6.1%
	(0.04)		(0.02)		(0.01)	
Panel C. Ethnic Group						
Christianity	1.57***	9.2%	0.11***	36.5%	0.07***	45.3%
	(0.05)		(0.02)		(0.02)	
Islam	1.26***	7.4%	0.08***	27.0%	0.07***	42.1%
	(0.05)		(0.01)		(0.02)	
Other Religions	1.01***	5.9%	0.03**	11.6%	0.02	14.7%
	(0.04)		(0.02)		(0.02)	
Conflict History	1.48***	8.7%	0.12***	41.0%	0.10***	62.0%
	(0.05)		(0.02)		(0.02)	
Non-conflict History	0.93***	5.5%	0.05***	16.1%	0.03	19.0%
	(0.05)		(0.02)		(0.02)	
Panel D. Locations						
High Income	0.52***	3.0%	0.04***	14.0%	0.02	12.9%
	(0.04)		(0.01)		(0.02)	
Low Income	1.35***	7.9%	0.09***	31.8%	0.08***	51.0%
	(0.04)		(0.02)		(0.02)	
High Minority Share	1.42***	8.3%	0.09**	30.1%	0.08***	46.7%
	(0.04)		(0.02)		(0.02)	
Low Minority Share	0.60***	3.5%	0.05***	16.7%	0.03***	19.0%
	(0.04)		(0.02)		(0.01)	
High Crime Rate	1.32***	7.7%	0.09***	30.4%	0.07***	41.8%
	(0.04)		(0.03)		(0.02)	
Low Crime Rate	0.72***	4.2%	0.05***	17.1%	0.04***	25.2%

(Continued)

	Sentence Length		Life Imprisonment		Death Penalty	
	Coef. (s.e)	% in Mean	Coef. (s.e)	% in Mean	Coef. (s.e)	% in Mean
Panel E. Ethnicity of Judges						
Han Judge	1.20***	7.0%	0.09***	29.0%	0.06***	35.0%
	(0.04)		(0.01)		(0.02)	
Minority Judge	0.45***	2.6%	0.03**	10.6%	0.02	12.3%
	(0.04)		(0.01)		(0.01)	
Panel F. Prosecutor's Recommended Sentences						
Prosecutors	0.74***	4.7%	0.05***	15.9%	0.04**	19.1%
	(0.04)		(0.01)		(0.02)	
Crime category FE	Yes	Yes	Yes	Yes	Yes	Yes
Case characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Defendant characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes	Yes
Judge FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: XX

Table 3: Uyghur Unrest, Minority Population, and Minority Penalty

	Sentence Length				Life Imprisonment	Death Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
	All	Male (20-60)	Male (60-)	Female	All	All
minority $\times$ **unrest** $\times$ **minority share**	0.301***	0.344***	0.001	-0.021	0.031**	0.025*
	(0.042)	(0.064)	(0.067)	(0.053)	(0.014)	(0.013)
crime category FE + case characteristics	Y	Y	Y	Y	Y	Y
defendant characteristics	Y	Y	Y	Y	Y	Y
year-month FE	Y	Y	Y	Y	Y	Y
province FE	Y	Y	Y	Y	Y	Y
court FE	Y	Y	Y	Y	Y	Y
judge FE	Y	Y	Y	Y	Y	Y
Observations	2,014,628	1,628,550	64,468	221,609	280,638	174,686
R-Squared	0.541	0.538	0.495	0.301	0.383	0.471

Notes: This table examines how the disparity changes during Uyghur unrest in regions with higher minority populations. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table 4: Local Governments, Courts, Minority Population, and Penalties against Minorities

	Sentence Length	Life Imprisonment	Death Penalty
	(1)	(2)	(3)
minority × high incentive × minority share	0.091***	0.015**	0.014*
	(0.031)	(0.074)	(0.072)
crime category FE + case characteristics	Y	Y	Y
defendant characteristics	Y	Y	Y
year-month FE	Y	Y	Y
province FE	Y	Y	Y
court FE	Y	Y	Y
judge FE	Y	Y	Y

Notes: This table examines how the disparity changes during Uyghur unrest in regions with higher minority populations. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table 5: Sentencing Disparity and Sentencing Guideline Reform

	Sentence Length in Month			Life Imprisonment	Death Penalty
	(1)	(2)	(3)	(4)	(5)
	All	Targeted	Non-Targeted	All	All
Post Reform × Minority	-0.458***	-0.625***	0.101	-0.011	-0.009
	(0.087)	(0.114)	(0.129)	(0.026)	(0.018)
Minority	0.707***	0.986***	0.081	0.067***	0.048***
	(0.062)	(0.091)	(0.059)	(0.013)	(0.010)
Post Reform	-0.171***	-0.409***	0.034	0.024	0.015
	(0.037)	(0.090)	(0.063)	(0.017)	(0.016)
Crime Category FE	Y	Y	Y	Y	Y
Defendant and case characteristics	Y	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y	Y
Province FE	Y	Y	Y	Y	Y
Court FE	Y	Y	Y	Y	Y
Observations	4,001,451	1,813,021	2,188,430	501,103	329,015
R-Squared	0.415	0.306	0.490	0.312	0.401

Notes: This table investigates the effect of sentencing guideline reform. Standard errors clustered at the province level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

ONLINE APPENDIX

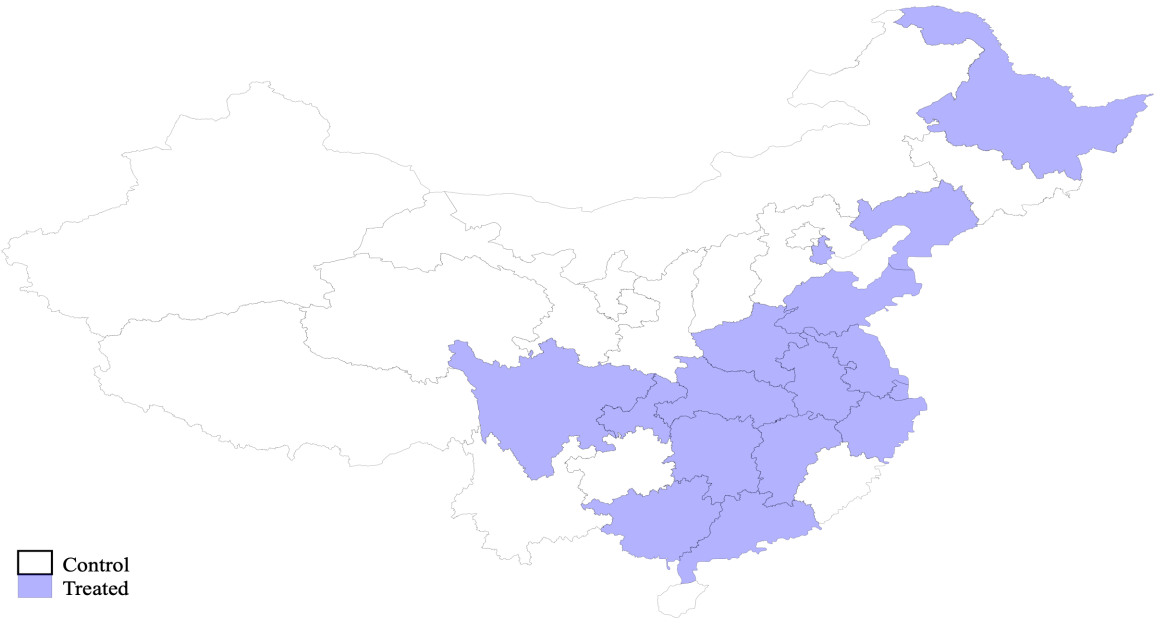
Ethnic Disparity in Criminal Sentences in China: Evidence from the Universe of Court Verdicts

Wenwei Peng and Takanao Tanaka*

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A Appendix Figures and Tables

Figure A.1: Rollout of Sentencing Guideline Reform



Notes: Panel (a) demonstrates the average imprisonment sentencing and the number of corresponding cases. Panel (b) plots the average probability of getting the death penalty and the number of corresponding cases. Panel (c) presents the average probability of getting life imprisonment and the number of corresponding cases.

B Criminal Procedure

In China's criminal justice system, the police department (People's Security Bureau), prosecutors (People's Procuratorates), and courts (People's Courts) each carry out their specific duties while also collaborating with one another. For policies to combat discrimination, it is crucial to understand the magnitude and roots of the disparity at each stage, as these are not mutually exclusive and can even be interconnected. Our analyses focus on discrimination after the entry into the criminal justice system.

China's criminal proceedings typically begin with the police department's investigations. When criminal activity is detected by the police or reported to them, they assess the criminal situation and determine whether to file the case for investigation, in which the policies gather evidence and possibly detain the suspected individuals. Once the police assemble sufficient evidence to conclude that the suspect is guilty, they write the prosecution opinions and submit them to the prosecutors, otherwise cases are dismissed.

The prosecutors then review the case and the evidence thoroughly. Based on this review, they decide whether to proceed with an arrest or to dismiss the case. If they conclude that the case constitutes a violation of criminal law, they officially charge the individuals involved and bring the case to the courts for trial with the relevant case materials and evidence. During this process, the files prepared by the prosecutors often include the "recommended sentences" that outline the plausible penalties. In China, all arrests lead to formal court charges, precluding the possibility of discrimination based on an extensive decision to charge accusations.

Finally, the case proceeds to local courts for adjudication. China adopts the "two instances of trial" principle, meaning that all the cases are resolved after the second trial. Criminal cases are handled by the criminal divisions in one of the four hierarchical levels of courts: basic (county and district-level), intermediate (municipal-level), provincial high, and the Supreme Courts with initial criminal trials are, in principle, conducted at the basic or intermediate courts. For the first instance, one to three judges are randomly assigned depending on the case's complexity and severity. Judges impose sentences based on the charges and relevant facts, and cases are typically resolved in court hearings as an open trial. If the defendants or prosecutors oppose the sentences imposed in the first instance, the second instance is convened.

China's criminal justice system is unique in two ways. First, Chinese judges play a central role in trial decisions. China's legal system largely follows civil law traditions that lack juries or legally binding precedents, which grants considerable discretion to judges.

To make the final rulings, judges establish facts and apply remedies found in criminal law. In this process, criminal law clearly directs penalties but allows considerable judicial discretion, especially before introducing the mandated sentencing guidelines. For example, regarding opium possession, Articles 347 and 348 of criminal law describe that individuals with opium of not less than 1000 grams shall be sentenced to "fixed-term imprisonment of 15 years, life imprisonment or death..." and with 201-1000 grams to "fixed-term imprisonment of not less than seven years..." However, judges are authorized to finalize penalties for different weights within the range, like 300 against 500 grams. Moreover, the penalties could be harsher, e.g., if the defendant aids and abets minors in committing offenses, but judges have discretion over deciding whether to apply the related criminal codes and over the extent of the additional penalties.

Second, Write something about the guilty plea https://www.chinalawtranslate.com/en/a-plea-for-greater-reform-and-engagement/

C Sentencing Guideline Reform

To tackle the long-standing accusations against widespread inconsistent sentencing in the criminal justice system, China launched sentence guideline reforms, one of the cornerstone legislation reforms designed by the "Five Year Reform Programme of Legal System" (Chen, 2010). This reform provides detailed sentencing guidelines that all the courts must follow. Notably, they lean less on traditional qualitative methods and emphasize fact-based sentencing, decreasing judges' discretion. This reform was directed by the Supreme Court of China, enabling its execution forceful. The Supreme Court first published the guidelines, and to account for local-specific trial practices, the higher provincial courts developed them into province-specific tailored guidelines. After the pilot program, this reform officially began in 2017 and gradually rolled out to more provinces in a staggered fashion.

The sentence guidelines comprise two essential elements. The first element is about policies regarding commonly seen circumstances, such as voluntary surrender, confessions, and obtainment of the plaintiff's forgiveness. For instance, the guideline directs that the base sentence may be reduced by up to 40% for voluntary surrender and 10-50% for confessions, depending on the detailed criminal facts. These contrast markedly with the pre-reform trial procedure, in which judges arbitrarily determined the degree of sentencing mitigation because the criminal law had just suggested decreasing sentences yet never defined how these reductions should be applied.

The second element of the guideline is instructions for specific crime categories, including traffic crimes, intentional harm, rape, robbery, and drug crimes. For instance, before the guideline reform, Articles 347 and 348 of criminal law dictated the sentencing for drug crimes. According to the law, individuals with opium of not less than 1000 grams shall be sentenced to "fixed-term imprisonment of 15 years, life imprisonment or death..." and with 201-1000 grams to "fixed-term imprisonment of not less than seven years..." Yet, judges decided how to treat different weights, like 300 against 500 grams, in finalizing the sentence. Moreover, the penalties could be harsher, e.g., if the defendant aids and abets minors in committing offenses, but the criminal law does not describe precise penalties.

The mandated sentence guidelines eliminate some of these ambiguities. The guidelines indicate that for a defendant with 201-1000 grams of opium, 200 grams and the imprisonment of 7 years shall be considered a "starting sentence," and the sentence shall be increased by 1 year for each additional 100 grams. Following this, possessing 300 grams of opium shall result in 8 years of imprisonment, while 500 grams shall result in 10 years, in which the confinement lengths do not depend on the judge's discretion. Further, those who abet a minor shall receive an increase of 10% to 30% of the base sentence. As the guidelines did not revise the cutoff for life imprisonment and the death penalty, they inherently aim to standardize the length of confinement. Appendix 2.3 provides additional examples comparing the criminal law and mandated sentencing guidelines.

China's guideline reform is, in spirit, similar to those adopted by various governments, as legislation worldwide has long sought to what extent discretion should be given to judges (Chen, 2010). Existing studies predominantly focused on the US, where the Federal Sentencing Guidelines were mandated in 1984 but became an "effective advisory" in 2005 as it held unconstitutional. Various papers suggest this modification enlarged racial disparities significantly (Fischman and Schanzenbach, 2012; Cohen and Yang, 2019), yet the lesson from a specific context may not be applicable elsewhere. This paper first quantifies the effectiveness of mandated sentencing guidelines other than the US context, where the design of legislation and political interactions greatly differ.

D Data Appendix

D-1 Criminal Verdicts

All the criminal court verdicts comprise three parts, each containing specific case-related information. First, the verdict introduces the jurisdiction in charge and the defendant's

personal background. Second, it explains the criminal charges and includes a detailed description of the alleged offense, the criminal process, any resulting damages, and relevant facts. The final part describes the verdicts' conclusion, which specifies the convictions and the penalties levied. This section exhibits two examples of the verdicts and variables we extracted from these verdicts.

Example A (like Opium possession)— we need both the texts in Chinese and English

Example B (like sex crime)—

D-2 Constructing the China's criminal dataset

I'm not sure how much we want to write here (we may want to delete this). Maybe a page summary. Also, examples like using a verdict, break them into the text, and extract, may be helpful. [Provide the content or summary here.]

D-2.1 Variables

Is it good to show all the variables that we extract? [Discuss your rationale here.]

D-2.2 Constructing our main sample

Explain the process of getting the main samples and show the balance table between all the samples and remaining samples. [Insert the explanation and balance table here.]

D-3 Other datasets

Write down the sources of various data. [List the sources and any relevant details here.]

Criminal Court Verdicts: Example A (Translated)

Part I

People's Court of Hepu County, Guangxi Zhuang Autonomous Region Criminal Judgment

Public prosecution agency: Hepu County People's Procuratorate, Guangxi Zhuang Autonomous Region.

Defendant Zhu Youchuan, a male who was born on July 12, 1984 in Hepu County, Guangxi, with Han ethnicity and junior high school education background. He was unemployed and lived in Hepu County, Guangxi Province when arrested. Due to drug abuse on January 17, 2018, he was administratively detained for 12 days by the Beihai City Public Security Bureau Yinhai Branch Office. On January 29, 2018, the Beihai City Public Security Bureau Yinhai Branch decided to conduct compulsory isolation and detoxification for two years for him. He was arrested on March 19, 2018, for being suspected of drug trafficking and was arrested on March 7, 2018, by the Beihai Municipal Public Security Bureau Yinhai Branch. He is currently detained at the Second Detention Center in Beihai City.

Part II

The Hepu County People's Procuratorate accused the defendant Zhu Youchuan of trafficking in dangerous drugs on the basis of the indictment of the Joint Public Prosecution [2018] No. 236, and filed a public prosecution on May 24, 2018. The court applied the simple procedure in accordance with the law, implemented a sole trial, and heard the case in public. The Hepu County People's Procuratorate appointed the procurator Pang Bin to appear in court to support the public prosecution. The defendant Zhu Youchuan went to court to participate in the lawsuit. It has now been accomplished.

After investigation, it was found that at around 14:00 on January 16th, 2018, Chen, a drug purchaser, contacted someone whose nickname is "Er Ge" to purchase 200 yuan of heroin and agreed to trade at the entrance of Hepu County People's Hospital. 'Er Ge' said that a person named "Twenty-six" took the heroin to the trading location. At about 14:30 on the same day, the defendant Zhu Youchuan (nicknamed 26) arrived at the entrance of Hepu County People's Hospital with heroin and called Chen to trade at the intersection of Dinghai Road and Pedestrian Street in Lianzhou Town, Hepu County, Guangxi Province. When the defendants Zhu Youchuan and Chen finished the trade at the above-mentioned location, they were arrested by the second brigade of the anti-drug detachment of the Beihai Municipal Public Security Bureau and the anti-drug brigade of the Yinhai Branch of the Beihai Municipal Public Security Bureau. They seized the two packets of heroin that the defendant Zhu Youchuan sold to Chen from Chen's body on the spot. The suspected drug was weighed and weighed 0.51 grams. They also seized 200 yuan of drug money and 6 packets of suspected drug heroin from the defendant Zhu Youchuan. After weighing, the net weight was 0.38 grams, 0.42 grams, 0.08 grams, and one mobile phone that was used to conduct crimes. It was identified that the seized suspected drug detected heroin.

Part III

The defendant Zhu Youchuan also had no objection about the above facts during the trial, and the facts could also be proved by a household registration certificate, a certificate of return, a call record, a transcript, a list of seized items, a transcript of the weighing, a testimony of the witness Chen, and the statement of the defendant Zhu Youchuan as well as the confession, the physical and chemical inspection report and the notice of appraisal opinion, the on-site inspection transcripts and photographs, the identification of transcripts and other evidence. All the above things were enough to identify the facts.

Our court held that the defendant Zhu Youchuan violated the state's regulations on drugs and illegally sold heroin to others. His behaviour constituted a crime of drug trafficking. The public prosecutor accused the defendant Zhu Youchuan of committing drug trafficking. In the crime of joint drug trafficking, the defendant Zhu Youchuan played the main role and was the principal offender. He should be punished according to the law for all the crimes he participated in. Since the defendant Zhu Youchuan confessed his crimes truthfully after returning to the case, he could be punished softly according to law. The mobile phone that was used for drug trafficking should be confiscated according to law. Considering the facts, nature, situation, and damage to the society of the defendant's crime, in accordance with line items 1 and 4 of Article 347, line item 1 of Article 25, items 1 and 4 of Article 26, Article 52, Articles 53, line item 3 of Article 67 and Article 64 of the Criminal Law of the People's Republic of China, the sentences are as follows:

1. The defendant Zhu Youchuan committed the crime of drug trafficking and was sentenced to 10 months in prison and fined RMB 2,000. (The term of imprisonment shall be counted from the date of execution of the judgment. If the sentence is executed before January 6, 2019. The fine is limited to the law of this judgment. Payment within 10 days from the date of effectiveness. We may conduct mandatory payment if the pay is overdue).

2. One mobile phone transferred with the case will be confiscated and turned over to the state treasury.

If you disagree with this judgment, you may appeal to the Beihai Intermediate People's Court of Guangxi Zhuang Autonomous Region through the court or directly within 10 days from the second day after receiving the judgment. In the case of a written appeal, the original copy of the appeal shall be submitted in duplicate.

Judge Liu Weipei
6 June 2018
Judge Assistant Chen Haijuan
Clerk Huang Chuntian

Example A (Original)

Part I

广西壮族自治区合浦县人民法院
刑 事 判 决 书

（2018）桂0521刑初277号

公诉机关广西壮族自治区合浦县人民检察院。

被告人朱有传，男，1984年7月12日出生于广西合浦县，汉族，初中文化，无业，住广西合浦县。因吸毒于2018年1月17日被北海市公安局银海分局处以行政拘留12日；于2018年1月29日被北海市公安局银海分局决定强制隔离戒毒二年。因涉嫌犯贩卖毒品罪于2018年3月7日被北海市公安局银海分局刑事拘留，同年3月19日被逮捕。现羁押于北海市第二看守所。

Part II

合浦县人民检察院以合检公刑诉［2018］236号起诉书指控被告人朱有传犯贩卖毒品罪，于2018年5月24日向本院提起公诉。本院依法适用简易程序，实行独任审判，公开开庭审理了本案。合浦县人民检察院指派检察员庞滨出庭支持公诉，被告人朱有传到庭参加诉讼。现已审理终结。

经审理查明：2018年1月16日14时左右，购毒人陈某电话联系绰号叫“二哥”的人要购买200元毒品海洛因，并约定在合浦县人民医院门口交易，“二哥”说其叫一名绰号“二十六”的人拿毒品海洛因到交易地点。当日14时30分左右，被告人朱有传(绰号二十六)持毒品海洛因到达合浦县人民医院门口，并打电话给陈某，约定在广西合浦县廉州镇定海路与步行街交汇处进行毒品交易，当被告人朱有传和陈某在上述地点交易完成后，被北海市公安局禁毒支队第二大队与北海市公安局银海分局禁毒大队民警现场抓获，当场从陈某身上缴获被告人朱有传贩卖给其的疑似毒品海洛因2小包，经称重，净重0.51克，并从被告人朱有传身上缴获毒资人民币200元和6小包疑似毒品海洛因，经称重，净重0.38克，0.42克，0.08克，作案手机一台。经鉴定，缴获的疑似毒品检出海洛因。

Part III

上述事实，被告人朱有传在开庭审理过程中也无异议，并有户籍证明，归案证明，通话记录，提取笔录，扣押物品清单，称量笔录，证人陈某的证言，被告人朱有传的供述，理化检验报告及鉴定意见通知书，现场勘验笔录及照片，辩认笔录等证据证实，足以认定。

本院认为，被告人朱有传违反国家对毒品的管理规定，非法向他人销售毒品海洛因，其行为构成贩卖毒品罪，公诉机关指控被告人朱有传犯贩卖毒品罪罪名成立。在共同贩卖毒品犯罪中，被告人朱有传起主要作用，是主犯，依法应按其所参与的全部犯罪处罚。被告人朱有传归案后如实供述自己的犯罪事实，依法可以从轻处罚。贩卖毒品使用的手机依法应当予以没收。根据被告人犯罪的事实、性质、情节和对社会的危害程度，依照《中华人民共和国刑法》第三百四十七条第一款和第四款、第二十五条第一款、第二十六条第一款和第四款、第五十二条、第五十三条、第六十七条第三款、第六十四条之规定，判决如下：

一、被告人朱有传犯贩卖毒品罪，判处有期徒刑十个月，并处罚金人民币2000元。

（刑期从判决执行之日起计算。判决执行以前先行羁押的，羁押一日折抵刑期一日，即自2018年3月7日起至2019年1月6日止；罚金限于本判决发生法律效力之日起十日内缴纳，逾期则强制缴纳）。

二、随案移送的手机一台，予以没收，上缴国库。

如不服本判决，可在接到判决书的第二日起十日内，通过本院或者直接向广西壮族自治区北海市中级人民法院提出上诉。书面上诉的，应提交上诉状正本一份，副本二份。

审 判 员　刘伟培

二〇一八年六月六日

法官助理　陈海娟

书 记 员　黄春添

E Judge Ethnicity Prediction

Because the verdicts only provide the judges' names, we apply a deep-learning approach to predict the judge's ethnicity. Although all the judges are appointed and removed by the CCP, some judges are from ethnicities rather than the Chinese Han, politically majority group. In so doing, we first use the census data that includes millions of pairs of names and ethnicities identified to build prediction algorithms: the algorithms return the plausible ethnicities when names are given as inputs. Then, using the judge's names in the verdicts, we assign the ethnicity predicted by our algorithms. We check the accuracy of the predictions in various ways.

E-1 Building Algorithms

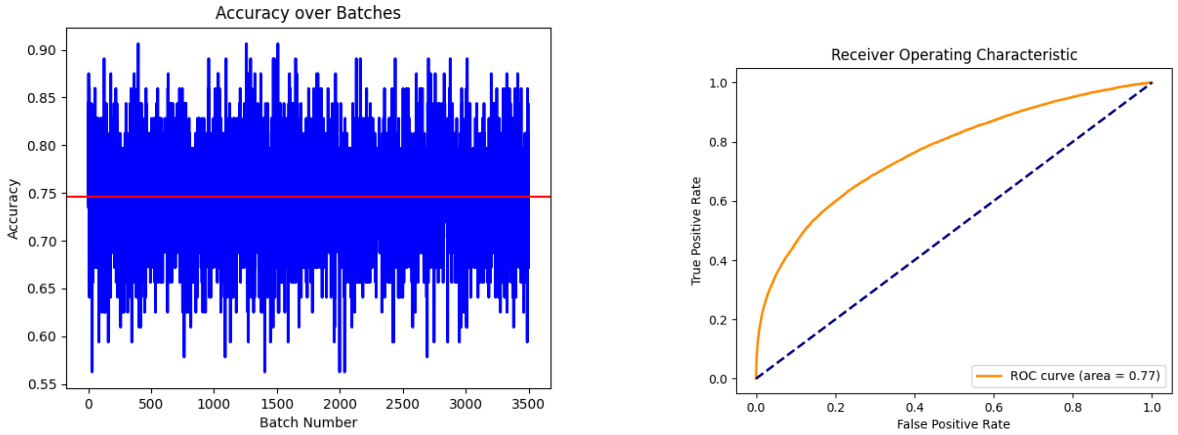
To build prediction algorithms, we use the 2005 census that includes nearly 13 million individuals with names and ethnicities identified. We first exclude individuals whose surnames are predominantly associated with Han Chinese. Our algorithms are used to classify about 2.5 million of the rest of the surnames that are used by both the ethnic minorities and the Han majority.

We adopt the Long Short-Term Memory (LSTM) neural networks, a common method for building prediction algorithms. The target variable of this prediction is a binary label indicating whether an individual belongs to an ethnic minority or the Han, while the input is each individual's name. The LSTMs are highly efficient for processing sequential data because of their unique architecture with 'gates' regulating information flow. These gates selectively retain crucial historical information, discarding irrelevant details and allowing the network to make decisions by considering an extended context rather than solely relying on recent inputs (Hochreiter and Schmidhuber, 1997).[1] To train the data, we randomly divide this census data into a 90% training set and a 10% test set. The testing

[1]We use the following model architecture. *Embedding Layer*: This layer transforms each character of name indices into dense vectors of a fixed size. It facilitates the model's understanding of character semantics. *Dropout Layer*: Implements a dropout rate of 10% to reduce overfitting. *LSTM Layer*: Processes the embedded characters, capturing the sequential dependencies within the names. *Linear and Activation Layers*: Consists of two linear layers with a ReLU activation in between. These layers map the LSTM's output to an intermediate representation and then to the final output size, corresponding to the number of ethnic categories. *Softmax Layer*: Converts the final linear layer's output into a probability distribution across different ethnic labels.

process takes a batch size of 64 and runs over 3,500 iterations.[2]

Overall, we find that our algorithms can accurately predict binary ethnicity. Our final model achieved a 75% overall accuracy as Panel A in Figure A.2 shows the accuracy rate over the iterations. Because our predictions are only applied to surnames that can both used by ethnic minorities and Han majority, the precision for the entire population should be much higher. The precision is comparable to Ash et al. (2021), whose accuracy rate is about 80% and 74% for the defendants' religions and gender and 96% and 98% for judges in India. We also obtain the AUC (Area Under the Curve) at 0.77 on the test set as depicted in Panel B. This figure plots the true positive rate on y-axis and the false positive rate on x-axis, in which the top left corner implies the AUC of 1 with 100% true positive rate and 0% false positive rate, while the 45-degree lines show the AUC of 0.5 which assigns positive complete randomely.



(A) Accuracy over Batches **(B)** Receiver Operating Characteristic

Figure A.2: Model Performance Evaluation

E-2 Predicting Judges' ethnicities

We use our algorithms to predict the ethnicity of each judge from the name in our main dataset. To ascertain the preciseness, we calculate the Han ethnicity rates of judges across

[2]We use the following training process. *Standardization and Tokenization*: Names are standardized and tokenized using ANSI encoding to make them suitable for input into the neural networks. *Resampling for Imbalance*: Due to the imbalanced label distribution in the training data, with minority ethnic groups representing only 7.2%, a PyTorch sampler "ImbalancedDatasetSampler" is implemented to ensure a more balanced representation of ethnic labels in each batch. *Model Training and Loss Calculation*: The model processes names and predicts ethnicities in each iteration. We use Focal Loss, a modified loss calculation method targeted at imbalanced datasets (Lin et al., 2017), to compute the difference between predicted and actual values. Model parameters are updated accordingly based on this loss.

provinces and compare these with those based on the 2005 census data. Figure A.3 shows the strong and positive correlation between the predicted judge's Han rate and that based on the entire population with its R-square at 0.898. If we plot these on the map in Figure A.4 with Panel A depicting our predicted spatial distribution of Han judges and Panel B the census data, these two maps largely coincide.

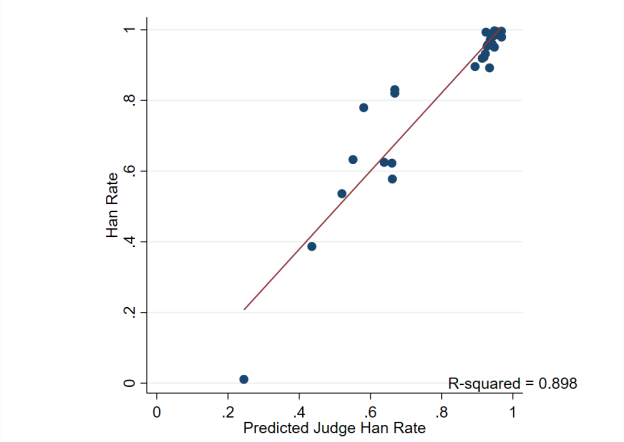
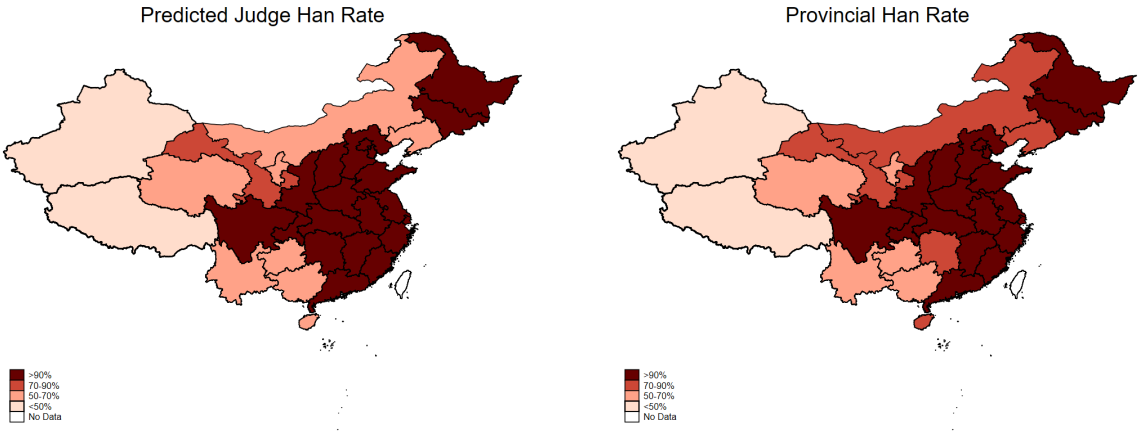


Figure A.3: Comparison between Actual vs. Predicted Ethnicity Distribution



(A) Prediction Result **(B)** Distributions in Census

Figure A.4: Model Performance Evaluation by Maps

F Comparing our results with other studies

Look at Yue Hou's J Politics paper Appendix. [Discuss how your results compare with other studies, specifically referencing Yue Hou's work as needed.]

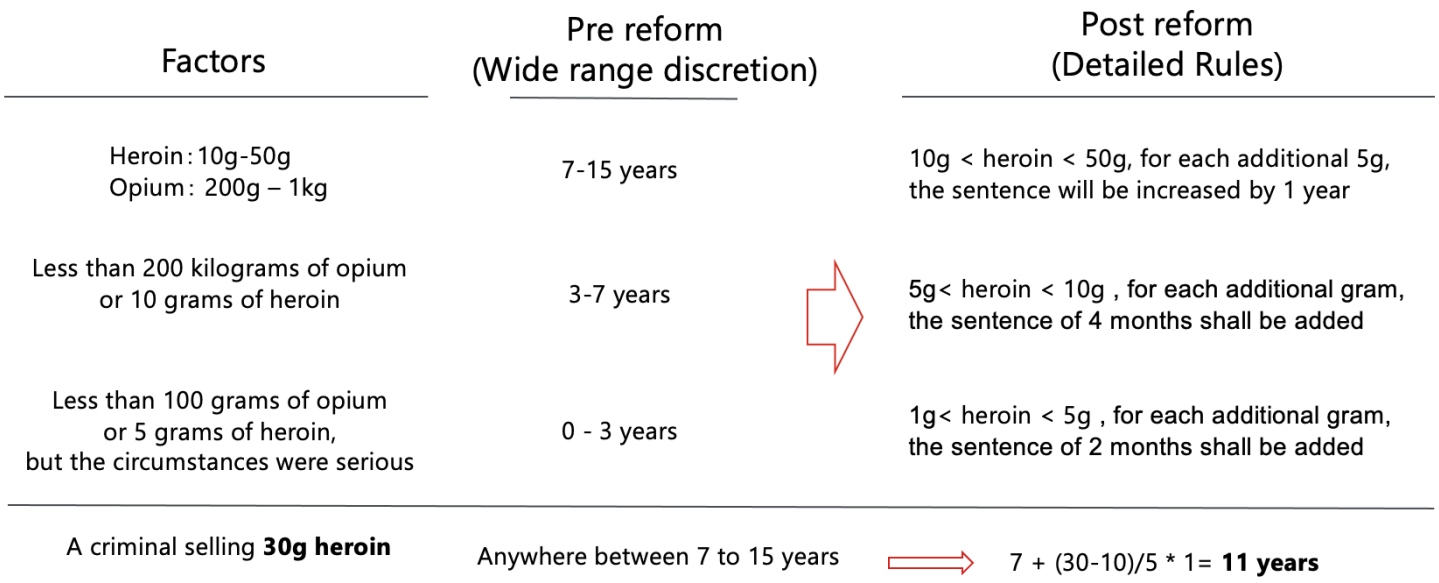


Figure A.1: Drug Cirme Sentencing Range: Criminal Law vs. Sentencing Guideline

Table A.1: Stylized Facts: Minority Penalty in Criminal Sentencing

	Sentence Length (1)	Life Imprisonment (2)	Death Penalty (3)
minority	1.147***	0.084***	0.057***
	(0.043)	(0.014)	(0.015)
% in control mean	6.7%	26.9%	34.9%
obs	3,414,623	474,531	295,427
Crime category FE	yes	yes	yes
Case characteristics	yes	yes	yes
Defendant characteristics	yes	yes	yes
Year-month FE	yes	yes	yes
Province FE	yes	yes	yes
Court FE	yes	yes	yes
Judge FE	yes	yes	yes

Notes: This table reports the results of our baseline estimations. Panel A, B, and C focus on sentence length, life imprisonment, and the death penalty, respectively. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table A.2: Heterogeneity of Ethnic Disparity in Criminal Sentencing – Crime Type

	Dependent Variable: Sentence Outcomes				
	Violent Crime (1)	Drug Crime (2)	Sex Crime (3)	Property Crime (4)	Others (5)
A. Effects on sentence length in month					
minority	1.471***	1.607***	1.415***	1.107***	0.345***
	(0.060)	(0.072)	(0.045)	(0.040)	(0.041)
% in control mean	8.6%	9.4%	8.3%	6.5%	2.1%
obs	680,707	394,093	82,401	931,494	1,481,462
B. Effects on life imprisonment (yes = 1)					
minority	0.101***	0.142***	0.084***	0.035***	0.024
	(0.019)	(0.025)	(0.021)	(0.015)	(0.017)
% in control mean	34.5%	48.5%	28.7%	11.9%	0.0%
obs	93,958	50,124	15,233	132,680	172,119
C. Effects on death penalty (yes = 1)					
minority	0.071***	0.078***	0.038**	0.023	0.010
	(0.016)	(0.021)	(0.017)	(0.016)	(0.014)
% in control mean	43.6%	47.9%	23.3%	14.1%	6.1%
obs	56,795	35,023	9,781	91,503	115,372
Crime category FE	Yes	Yes	Yes	Yes	Yes
Case characteristics	Yes	Yes	Yes	Yes	Yes
Defendant characteristics	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes
Judge FE	Yes	Yes	Yes	Yes	Yes

Notes: This table replicates our baseline exercises by splitting sample into different crime types. Panel A, B, and C focus on sentence length, life imprisonment, and the death penalty, respectively. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table A.3: Heterogeneity of Ethnic Disparity in Criminal Sentencing – Religions and Conflict History

	Dependent Variable: Sentence Outcomes				
	Christianity (1)	Islam (2)	Other Religions (3)	Conflict History (4)	No-conflict History (5)
A. Effects on sentence length in month					
minority	1.570***	1.263***	1.012***	1.476***	0.930***
	(0.047)	(0.050)	(0.041)	(0.046)	(0.045)
% in control mean	9.2%	7.4%	5.9%	8.7%	5.5%
obs	3,247,762	3,239,701	3,541,506	3,385,679	3,456,509
B. Effects on life imprisonment (yes = 1)					
minority	0.107***	0.079***	0.034**	0.120***	0.047***
	(0.015)	(0.014)	(0.015)	(0.015)	(0.017)
% in control mean	36.5%	27.0%	11.6%	41.0%	16.1%
obs	445,476	444,370	485,767	461,478	476,051
C. Effects on death penalty (yes = 1)					
minority	0.074***	0.069***	0.024	0.101***	0.028
	(0.016)	(0.016)	(0.016)	(0.015)	(0.017)
% in control mean	45.3%	42.1%	14.7%	62.0%	19.0%
obs	286,035	274,301	310,418	307,958	310,798
Crime category FE	Yes	Yes	Yes	Yes	Yes
Case characteristics	Yes	Yes	Yes	Yes	Yes
Defendant characteristics	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes
Judge FE	Yes	Yes	Yes	Yes	Yes

Notes: This table replicates our baseline exercises by dividing sample into different ethnic groups. Panel A, B, and C focus on sentence length, life imprisonment, and the death penalty, respectively. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table A.4: Local Socio-economic Characteristics and Minority Penalty

	Dependent Variable: Sentence Outcomes					
	Income		Minority Share		Crime Rate	
	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
A. Effects on sencence length in month						
minority	0.518***	1.354***	1.417***	0.601***	1.315***	0.723***
	(0.0417)	(0.0412)	(0.0426)	(0.0417)	(0.0373)	(0.0321)
obs	1,648,710	1,516,142	1,546,584	1,625,013	1,171,562	1,804,560
B. Effects on life imprisonment (yes = 1)						
minority	0.041***	0.093***	0.088**	0.049***	0.089***	0.050***
	(0.013)	(0.018)	(0.024)	(0.023)	(0.025)	(0.016)
obs	231,561	239,160	241,024	229,816	221,074	245,606
C. Effects on death penalty (yes = 1)						
minority	0.021	0.083***	0.076***	0.031***	0.068***	0.041***
	(0.016)	(0.021)	(0.019)	(0.013)	(0.018)	(0.017)
obs	160,315	144,469	151,536	149,891	143,461	164,901
Crime category FE	Yes	Yes	Yes	Yes	Yes	Yes
Case characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Defendant characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes	Yes
Judge FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table replicates our baseline exercises by dividing the sample based on local socio-economic characteristics: GDP per capita, minority population share, and crime rate. Panel A, B, and C focus on sentence length, life imprisonment, and the death penalty, respectively. Standard errors clustered at the court level are reported below the coefficients. * significant at 10% ** significant at 5% *** significant at 1%.

Table A.5: Judge's Ethnicity and Prosecutors

	Sentencing Outcomes		Recommended Sentences
	Han Judge (1)	Minority Judge (2)	Prosecutors (3)
A. Effects on sentence length in months			
minority	1.201***	0.453***	0.741***
	(0.045)	(0.043)	(0.0425)
% in control mean	7.02%	2.64%	4.67%
obs	3,039,014	317,560	701,853
B. Effects on life imprisonment (yes = 1)			
minority	0.085***	0.031**	0.046***
	(0.014)	(0.014)	(0.011)
% in control mean	29.01%	10.58%	15.92%
obs	431,823	42,233	184,125
C. Effects on death penalty (yes = 1)			
minority	0.057***	0.02	0.035**
	(0.015)	(0.014)	(0.017)
% in control mean	34.96%	12.27%	19.13%
obs	271,793	25,702	129,186
Crime category FE	Yes	Yes	Yes
Case characteristics	Yes	Yes	Yes
Defendant characteristics	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Court FE	Yes	Yes	Yes
Judge FE	Yes	Yes	Yes

Notes: XX