AUTOCRATIC RULE AND SOCIAL CAPITAL: EVIDENCE FROM IMPERIAL CHINA[*]

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Abstract: This paper studies the consequences of autocratic rule for social capital in the context of imperial China. Between 1660–1788, individuals were persecuted if they were suspected of subversive attitudes towards the autocratic ruler. Using a difference-in-differences approach, our main finding is that these persecutions led to an average decline of 38% in the number of charitable organizations in each subsequent decade. To investigate the long-run effect of persecutions, we examine the impact that they had on the provision of local public goods. During this period, local public goods, such as basic education, relied primarily on voluntary contributions and local cooperation. We show that persecutions are associated with lower provision of basic education suggesting that they permanently reduced social capital. This is consistent with what we find in modern survey data: persecutions left a legacy of mistrust and political apathy.

Keywords: Social Capital, Institutions, Autocratic Rule, Persecutions, China

JEL Codes: N45, K42, I2

I Introduction

In *Democracy in America*, Alexis de Tocqueville (1835) argued that a thriving civil society was crucial for the success of democracy and subsequent research similarly argues that social capital complements liberal democracy (Fukuyama, 1995; Putnam, 1994; Guiso, Sapienza, and Zingales, 2004; Tabellini, 2008; Gorodnichenko and Roland, 2015).[1] Padro-i-Miquel, Qian, Xu, and Yao (2015) study how social capital enhances the ability of democratic institutions, such as local elections, to better provide local public goods.

These findings raise a larger question about the relationship between political institutions and social capital. In his later work, *The Old Regime and the Revolution*, Tocqueville (1856) argued that autocratic rule undermined social capital.[2] In a similar vein, North, Wallis, and Weingast (2009) note how autocratic states restrict the growth of civil society because they are reluctant to permit organizations that are independent of the state. These arguments suggest that autocratic rule can have a detrimental and long-lasting impact on economic and political outcomes.

A key feature of autocracy is the use of persecutions to intimidate potential opponents. This paper studies the impact of state-orchestrated persecutions on the social fabric of society. Putting together several unique datasets for historical and modern China, we examine the impact of persecutions conducted by Qing China (1644-1911) on social capital in historical and modern China. The period we study was characterized by the intensification of imperial autocracy in China. Existing scholarship suggests that the resulting fear of persecution elevated the risks facing notable individuals and scholars, and created an atmosphere of oppression and a culture of distrust which deterred prominent individuals from playing an active role in local society. But these claims have not been systematically investigated.

We conduct a difference-in-differences analysis that exploits spatial and temporal variation in the number of persecutions. We find evidence that persecutions reduced social capital. To complement our main findings, we estimate the long-run effects of persecutions on local publics goods provision in the twentieth century. Corroborating our hypothesis that this reflects the impact of persecutions on entrenched cultural beliefs, we find a negative impact of persecutions on trust of those outside one's family and on political engagement today. Such persistence is highly credible in a Chinese context, since until the Communist period, the vast majority of the Chinese population lived in stable rural communities and kinship networks that possessed long-

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[1] Recent research by Satyanath, Voigtländer, and Voth (2016) suggests, however, that this relationship may be more complex as social capital was also important for the rise of the Nazi dictatorship in Germany.

[2] Tocqueville (1856 (1998)), for instance, argued that autocratic rule prior to the French Revolution made each Frenchman indifferent to his neighbors' conditions and undermined the autonomy of the provinces and cities at the expense of the capital. It undermined the provincial nobility and made them increasingly dependent on the crown.

lasting collective memories.[3] In modern China, prominent victims of the literary inquisitions are still discussed in their hometowns today (B. Luo, 2008).

We first establish that persecutions had a genuine impact on the mentality of local people and were shocks that had real consequences. Conducting a difference-in-differences analysis, we exploit variation in the timing of persecutions and to control for time invariant differences across prefectures to estimate the impact of persecutions on social capital. We find that a persecution is associated with approximately a decline of 33% in the number of notable figures from a prefecture relative to the sample mean compared to prefectures that never had a persecution or prefectures that had not yet experienced a persecution. This shows that persecutions were indeed noticeable by local populations and had its intended effects—it led to a decline in intellectual activity.

Guiso, Sapienza, and Zingales (2011, p. 419) define social capital as "those persistent and shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities". In our core analysis we measure social capital by the number of charitable organizations. Charitable organizations played an important role in premodern China providing orphanages, disaster relief and other local public goods (Simon, 2013).[4] Publicly registered charities were dependent on local funding and relied on high levels of cooperation among local gentry (Rowe, 2009, p. 1220).[5]

Scholars have observed that autocratic governments isolate individuals and that this can lead to a decline in participation in society, cooperation, and trust, i.e. in social capital (e.g. Arendt, 1951). We find support for this hypothesis based on a difference-in-differences analysis: persecutions lead to a decline of 38% in the number of charitable organizations in a prefecture relative to the sample mean in comparison to prefectures that never had a persecution or prefectures that had not yet experienced a persecution.

Social capital enables individuals to overcome collection action problems thereby ensuring the provision of local public goods in many societies (Ostrom, 2000). Evidence from the early

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[3]During the Communist period, movement was restricted by the household registration system. There were large-scale displacements of people during the 'send-down' moment (zhiqing) of the 1950s and 1960s. This, however, primarily affected the young and, as it was involuntary, the propensity to move in this period is unlikely to have been correlated with local conditions and if anything would be likely to bias our estimates towards zero.

[4]For more detail about the role gentry played in the provision of disaster relief see Ch'ü (1962). Simon notes that "[i]n many cases, these private efforts were combined with the ones provided by local government officials or by emperors and kings" (Simon, 2013, p. 60). They evolved out of clan-based organizations and expanded to provide relief to those outside of the community. They were non-governmental organizations and played an important role alongside the government provision of disaster relief studied by Shiue (2004).

[5]The desire to establish charitable organizations was influenced by neo-Confucian ideology and by Buddhism among the gentry. We explain neo-Confucian ideology in more detail in Appendix C. The desire to contribute to, and organize, such societies was a reflection of the self image of members of the gentry and literati. These individuals clearly articulated the concept of a "'public" or "communal" sphere, as opposed to a "state" or "private" sphere, as both the agent and the beneficiary of philanthropic activism' (Rowe, 2009, p. 119). However, over time it expanded well beyond these origins and constitutes a good measure of social capital for our purposes.

twentieth century allows us to study the far reaching consequences of reduced social capital on the provision of local pubic goods. For our twentieth century analysis, we are unable to rely on the panel structure of our data for identification. But studying longer-run outcomes allows us to observe the persistent impact of autocratic rule through its effect on social capital. We provide evidence that the legacy of persecutions under an autocratic state can outlive the regime itself indicating that the channel of persistence is via social capital and cultural values rather than through institutions.

We first focus on the provision of basic education. In the absence of a system of public education, the provision of education at a local level depended on the time and effort of the local gentry and others who ran local schools on voluntary basis. These schools admitted all individuals and did not charge fees. Given the dependence of these institutions on local levels of trust and cooperation, if persecutions had a detrimental impact on social capital, we hypothesize that they should also have negatively affected the provision of basic education.

To test this channel we study the literacy levels of individuals born in the last decades of the Qing dynasty. We find that in prefectures that experienced persecutions, literacy rates for individuals were 4% lower. This effect is not driven by survivorship bias or selective migration and it is robust to controlling for the number of deaths during the Cultural Revolution. Implementing an instrumental variable strategy based on distance to the pre-1644 Manchu capital, we argue that the impact of persecutions on basic education at the turn of the twentieth century was causal.

Next we consider the long-run impact of persecutions on other measures of social capital. Local health clinics continue to operate at the village level in China. Infant mortality reflects the ability of local communities to look after orphans and the quality of local village health clinics set up by local communities (V. Li, 1975; Babiarz, Yi, and R. Luo, 2013). We find higher levels of infant mortality in prefectures affected by literary inquisitions. There is no effect of persecutions on other economic outcomes, suggesting that this effect is unlikely to be driven by economic development.

We find evidence of the legacy of persecutions on trust and political engagement. Individuals in prefectures affected by the literary inquisition demonstrate lower levels of generalized trust. They also have less trust in their bosses, classmates, and colleagues.

Recent surveys, such as Alesina and Giuliano (2015), note that early research focused on the effects of social capital on economic, social and political outcomes (e.g. Putnam, 1994; Putnam, 2001; Helliwell and Putnam, 2007; Nannicini et al., 2013; Aghion et al., 2010). In a Chinese context, Padro-i-Miquel, Qian, Xu, and Yao (2015) examine the relationship between social capital, the provision of local public goods, and the introduction of local elections in modern China. Measuring social capital by using the presence of temples at the village level, they find

that social capital complements formal democratic institutions. The introduction of elections in villages with higher levels of social capital leads to higher expenditure on public goods.

Recent research has turned to the determinants of social capital. Nunn and Wantchekon (2011), for instance, study the negative effects of the slave trade on trust and social capital. Tabellini (2010) studies the impact of institutions on cultural traits such as trust, respect, and the degree of control individuals feel they have over their lives. Guiso, Sapienza, and Zingales (2016) find that cities in northern Italy with a history of political independence in the middle ages have higher levels of civic capital today as measured by the number of non-profit organizations and levels of organ donation.

Several other recent papers study how state building can shape culture. Becker et al. (2014) finds that the Habsburg empire has a positive impact on trust in Eastern Europe today. Johnson (2015) finds a positive effect of state building on the formation of national culture in pre-Revolutionary France. Dell, Lane, and Querubin (2015) examine Vietnam and find that a legacy of a bureaucratic state is associated with more local associations and better governance today. Dittmar and Meisenzahl (2016) study the effect of adoption of compulsory educational laws in German cities following the Reformation. Cities which adopted these rules saw an uptake in the number of notable individuals. In contrast, Lowes, Nunn, Robinson, and Weigel (2015) study the legacy of the Kuba kingdom on social norms in the modern-day Congo. Descendants from the Kuba kingdom are substantially more likely to break the rules or cheat opportunistically than are descendants from their non-state neighbors.

Though persecutions are important tools in the arsenal of autocratic states, only small number of papers have studied the consequences of persecutions. Acemoglu, Hassan, and Robinson (2011) examine the consequences of the Holocaust in Russia. The main channel they focus on is how persecutions reduced the size of the middle class which permanently changed the economic structure of particularly hard hit cities. In contrast, the case of Qing China allows us to focus on the impact of persecutions on social capital as the middle class was not physically destroyed.

Lichter, Loeffler, and Siegloch (2015) examine the impact of the Stasi during Communist rule on social capital by studying differences in trust and in a range of economic outcomes along the border between eastern and western Germany. And, in their survey of social capital, Guiso, Sapienza, and Zingales (2011) discuss the idea that autocratic political institutions can lead to a decline in trust, civic engagement, and other measures of social capital. In a cross-country setting, they find that years of democracy since independence is positively correlated with trust once religion is controlled for but not correlated with other sources of civic capital.

In contrast to this research, we provide systematic evidence for the impact of autocratic rule

and state-orchestrated persecutions on local measures of social capital and civic engagement.[6] Our setting has several advantages. First, the persecutions that we study were largely exogenous to local conditions. Second, our identification strategy relies on variation in the timing of persecutions within China rather than on cross-country comparisons. Third, in contrast to events such as the Holocaust, the persecutions we study were narrow in scope and did not generate other effects, nor were they associated with other confounding events such as war or famine. Fourth, studying the consequences of state persecutions in China provides a different institutional setting to that offered by Nazi Germany, Cultural Revolution China, or the Soviet Union allowing, for instance, the long-run impact of these persecutions to be explored.

One challenge facing contemporary studies of autocracy is that most current autocracies are located in Africa or the Middle East, fairly recent in origin and often highly unstable, making it challenging to uncover the long-run impact of autocratic rule. In contrast, we hope by studying the intensification of imperial rule in China under the Qing dynasty, we can shed light on the long-run consequences of persecutions on the fabric of society. During the period of history that we study, Qing China was remarkably politically and economically stable, largely unthreatened by either external threats or internal rebellions. This stability makes it possible for us to identify the impact of persecutions on intellectual activity and social capital and reduces the danger of identifying false positives.[7] By focusing on within-country, within-region, and within-province variation, we can hold other institutional differences constant. Furthermore, as these persecutions did not result in the destruction of physical capital, they represent a pure shock to the 'collective conscience' of the educated classes within China allowing us to isolate their effect on social capital.

Our findings also relate to studies of the political economy of modern China. Historians have noted that policies of Qing emperors have "more parallels with that practiced in post-1949 communist China than that in previous imperial dynasties" (Whitfield, 2001, p. 19). Our study adds to an existing literature on the impact of the autocratic policies of the Chinese state, a literature that to this date has focused on the Communist period.[8] For instance, the "send-down"

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[6]Vidal-Robert (2014) also studies the long-run impact of persecutions. He finds that the Spanish Inquisition reduced population growth in early modern Spain. Though he finds that this effect disappeared after 1800, he continues to find some evidence for lower innovation in regions affected by the Inquisition in the nineteenth and early twentieth centuries. Gershman (2015) studies the impact of witchcraft beliefs on social capital in Africa. He provides evidence that these beliefs are correlated with lower levels of trust and less social capital.

[7]China has been governed by an autocratic state for most of its history. And there have been other episodes of persecution in China history, particularly during the twentieth century which have no doubt left a legacy on Chinese society. We choose to focus on the Qing-era literary inquisitions to study the consequences of autocratic rule because the effects of these other episodes are more difficult to discern because these events typically took place in the midst of many other political and economic shocks. The two major rebellions in the Qing period—the White Lotus Rebellion and the Taiping Rebellion took place after the period we are concerned with. For other relevant details concerning the political economy of Qing China see Appendix A.

[8]See Meng and R. G. Gregory (2002), H. Li, Rosenzweig, and J. Zhang (2010), and Gong, Lu, and H. Xie (2015)

movement disrupted the education of many thousands of individuals who were assigned to the countryside.[9] The Cultural Revolution saw tremendous turmoil and the persecution and deaths of large numbers of individuals (Walder, 2014; Bai, 2014). However, precisely because there were so many shocks in this period, including the Great Leap Forward, the Great Famine, it is challenging to uncover the specific impact of political persecutions; this difficulty partly motivates our choice to study eighteenth century China.

Finally, the subject of civil society has become increasingly relevant in contemporary debates about China's "authoritarian resilience". We show that the troubled relationship between autocratic rule and civil society in China has deep historical roots and our analysis sheds light on reasons for why a public sphere did not develop in China as it did in Europe in the early modern period (Habermas, 1962 [1989]; Mokyr, 2016).

The rest of the paper is organized as follows. Section II presents our historical setting, conceptual framework, and data. In Section III, we explain our difference-in-differences strategy and provide evidence that political persecutions had an immediate impact on individual intellectual activities and social capital in Qing China. In Section IV, we demonstrate that these persecutions had a persistent impact on social social as measured by the provision of basic education and infant mortality in the twentieth century. In Section V, we concluding by placing our findings in the broader context.

II Historical Setting & Conceptual Framework

A ESTABLISHMENT OF THE QING DYNASTY & SYSTEM OF GOVERNMENT

The Qing dynasty was founded by the Manchus who conquered China following the collapse of the Ming dynasty in 1644. The first 40 years of the Qing dynasty were spent subduing Ming loyalists and rebellious generals. However, after this period of upheaval, the Kangxi emperor (r. 1661–1722), the Yongzheng Emperor (r. 1722–1735), and the Qianlong Emperor (r. 1735–1796) succeeded in providing political stability. The period we study from the late seventeenth century until the end of the eighteenth century was thus one of the most stable in Chinese history. Taxes were low and there no major rebellions; economic historians view this as a period of economic and demographic expansion (see Wong, 1997; Pomeranz, 2000).

Like previous Chinese dynasties, the Qing emperors were autocratic rulers. Autocratic

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and Giles, Park, and Meiyan Wang (2015).

[9]Giles, Park, and Meiyan Wang (2015) use the disruptions caused by the Cultural Revolution as a way of estimating the returns to schooling. They find that the Cultural Revolution reduced high school and college completion rates in relation to rates predicted by pre- and post-Cultural Revolution trends. H. Li, Rosenzweig, and J. Zhang (2010) find that individuals who were "rusticated" or sent into the countryside did not in general experience worse life outcomes; in fact in some dimensions they did better than individuals who were not sent down.

rulers govern through a narrow elite or ruling coalition (**Svolik09**; **Svolik12**; Mesqita et al., 2003; North, Wallis, and Weingast, 2009). In the terminology of **Svolik09** the Qing empire in the period we study was an *established* rather than a *contested* dictatorship because the emperor could not be credibly threatened by other members of the ruling coalition. Other Manchus were subordinated to the Qing while the Han elite completed lacked the military means to threat Qing rule. Instead, the problem that the Qing faced was how to cement their rule ideologically given that the elite they relied upon to govern the empire were literati trained the Confucian classics.

Autocrats employ a range of strategies to maintain power from terror to control of information or the coopting of elites (Mesqita et al., 2003; P. R. Gregory, Schröder, and Sonin, 2011; Adena et al., 2015; Guriev and Treisman, 2015). Control of media, education, and information play a crucial role in maintaining autocratic governments in the modern age; and similar considerations governed the thinking of the rulers of imperial China.[10]

Political authority requires legitimation. Greif and Rubin (2015, p. 5) refer to political legitimacy as the "common knowledge probability that each member of a society holds that others will obey the authority". Greif and Rubin (2015) distinguish between legitimizing principles and legitimizing agents. Confucianism provided the predominant source of legitimatizing principles in premodern China (Dardess, 1983). It held that the rightful emperor upheld the "mandate of heaven", providing internal peace and justice as well as defending the borders from non-Chinese people. The main legitimizing agents in premodern China were the educated degree holders known as the gentry.[11] They could confer political legitimacy on a ruler. For this reason, the Qing sought to control the discourse of the educated gentry in order to cement their claim to be the legitimate rulers of China. In particular, the Qing built on the ideas of earlier scholars to elaborate an interpretation of neo-Confucianism that emphasized the importance of obedience to the emperor as an extension of filial obedience.[12]

Earlier Chinese dynasties had enforced ideological conformity among the official who governed the empire. However, as a dynasty established by foreign invasion, the situation of the Qing was different to that of prior dynasties. As Manchus, they were a ethnic minority in China, and this gave them a particular legitimacy problem. Their situation resembled that of modern dictatorships based on a small ethnic minority group such as the Alawites in Syria or the Sunni

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[10]We provide further relevant historical details on the political economy of Qing China in Appendix A.

[11]They are variously referred to as the literati and as mandarins in the historical literature (e.g. Ho, 1962). These refers both to those examination graduates who held official positions and to the much larger number of individuals who studied for the exams at either the county, provincial, or the metropolitan level. (Qin Jiang and Kung, 2015) study the determinants for success in the examination system. They find that the "ability" of candidates as measured by the age at which they pass the provincial level of exam is the most important determinant of success in the metropolitan level examinations rather than the wealth of their families.

[12]Neo-Confucianism was a complex phenomenon that is difficult to summarize. For this reason we provide details on the content of neo-Confucian ideology in Appendix C.

Muslims in Ba'athist Iraq. Conflicts are particularly intense when the losing ethnicity resents the fact that the victors have captured control of the state while the minority ruling group fear this resentment (Fearon and Laitin, 2003; Esteban and Ray, 2011a; Esteban and Ray, 2011b). Fear of the Han Chinese majority explains many aspects of Qing rule. For example, in 1652 individuals were forbidden to meet in groups to discuss political or philosophical ideas (Wakeman, 1998). And, over the course of the eighteenth century, a policy of literary inquisitions developed.

B THE LITERARY INQUISITIONS

The persecutions we study took place from 1660 through to 1788. They targeted speech and thought crimes and are referred to by historians as literary inquisitions. The persecutions aimed to deter all opposition to Qing rule by signaling the ability the Emperor to hunt down potential critics or opponents of the regime. The definition of what could be deemed subversive was not defined: "the ruler was the sole interpreter of these cases, and some accusations were based on suspicion" (Huang, 1974, p. 208). For this reason, it was all but impossible for writers to know *ex ante* what could be judged as subversive. This has been called "the institutionalization of Imperial subjectivity" (Wakeman, 1998, p. 168). It marks the intensification of the Qing autocracy.[13]

The Qing literary inquisition cases were highly publicized. We know from other examples that a small number of persecutions can have a large impact. The "chilling effect" that the persecution of Giordano Bruno in 1600 had on scientists in Catholic Europe is well attested to in the historical literature though the number of scientists actually investigated by the Roman inquisition was very small (Mokyr, 2007).[14]

These persecutions were different to prior purges in Chinese history: while earlier dynasties had persecuted dissent, they had concentred on enforcing conformity among officials. In contrast, the Qing sought to enforce ideological conformity across all of society. Victims of the Qing literary inquisitions included both members of the educated class as well as ordinary people including merchants and fortune tellers.[15]

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[13]Though they were studied by numerous scholars in the early and mid-twentieth century (e.g. Goodrich (1935), Ch'i-ch'ao (1959), and Wiens (1969)), the literary inquisitions have not been the subject of a major study among modern historians. The existing literature comprises either narrative accounts, detailed case studies (Spence, 2001), or comparatively brief mentions in more general accounts of Qing China. See, for example, Gernet (1972, p. 506), Huang (1974, pp. 204–208), Guy (1987, pp. 166–179), and Kuhn (2002)). In an older working paper we study the impact of literary inquisitions on human capital accumulation (Koyama and Xue, 2015).

[14]See for an overview Zagorin (2003). As the French Encyclopédie observed that 'the conditions of the sage is very dangerous: there is hardly a nation that is not soiled with the blood of several of those who have professed it' (quoted in Melzer, 2014, p. 139). One difference between early modern Europe and Qing China is that Europe was fragmented into competing states. Thus Descartes could escape to the Netherlands and Sweden and Rousseau to England. But, given the vastness of the Qing empire, this option was not available for Chinese writers or intellectuals. Chinese who fell foul of the emperor could not escape, but rather had to submit to Imperial authority.

[15]We do not consider other persecutions or peasant-led protests or rebellions. Kung and Ma (2014) study how Confucian values mitigated peasant rebellions in imperial China while Jia (2014) studies how the introduction of the

To better understand these persecutions, we outline a simple signaling model in Appendix G to illustrate how persecutions were used by Qing emperors to demonstrate their strength. In this setup, the population are not informed about the strength of a ruler. Stronger ruler find it less costly to conduct persecutions than do weak rulers. Persecutions can thus be used as a way to signal strength and deter potential opponents even in the absence of any open opposition to the regime. Our model that generates the following predictions: strong rulers from dynasties that lack legitimacy will be most likely to employ political persecutions to signal their strength and ability to root out opposition. These persecutions can occur in the absence of overt opposition. Their purpose is to demonstrate the ability of the regime to destroy any opposition. Hence the targets of these persecutions will be uncorrelated with local conditions and appear arbitrary. In contrast, weak rulers from dynasties lacking legitimacy will not be able to signal strength by undertaking political persecutions while rulers from more established dynasties will be less likely to use persecutions as a tool of governance.

This simple framework can rationalize several characteristics of these persecutions. First, there was no open opposition to the emperor. In the absence of open opposition, therefore these persecutions were not targeted at specific regions or at particular individuals; they were intended to overawe society at large. Second, they did not target religious or ethnic minorities who did not play a comparable role in China to the role that they played in Europe. Third, the number of individuals tried and punished during these literary inquisitions was small but the trials and executions themselves were prominent and highly publicized.

To illustrate, consider the case of Wang Xihou. A dictionary maker, Wang was accused by a rival on the basis of the content of his writings. Although the provincial governor did not find anything overtly treasonous in Wang's dictionary, he nevertheless passed the case to the Qianlong emperor who decided that Wang should be punished on the grounds that the dictionary did not show sufficient deference to the dictionary commission by the Qianlong emperor's grandfather (Reischauer and Fairbank, 1958, p. 382). Punishment was severe: Wang Xihou was executed and 21 members of his family enslaved.[16]

This case highlights both the highly subjective and idiosyncratic nature of persecutions during the Qing dynasty and the Qing emperors' zero tolerance attitude to potentially subversive behavior. As Guy observes, "the emperor was using the Wang case to make a statement to the literary community about his determination to preserve his dynasty's reputation. The singling out of one offender, repugnant though it may seem today, was not an uncommon means of communicating, in the eighteenth century to a large and diffuse community uncertain of

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sweet potato reduced peasant rebellions.

[16]We outline the standard procedure followed in inquisition cases in Appendix D. Further detail about the case of Wang Xihou case are provided in Appendix E.

Imperial directions" (Guy, 1987, p. 176).

The idiosyncratic and top-down nature of these persecutions aids empirical identification. In contrast to other large-scale persecutions such as the Cultural Revolution of the 1960s, the European witch-hunts of the 16th and 17th centuries, or antisemitic pogroms, these persecutions were not responses to local conditions or developments. Nothing in the historical record suggests that literary inquisitions were driven by local factors that might be correlated with social capital. We provide more systematic evidence consistent with this below.

Consistent with a Beckerian framework that emphasizes the importance of deterrence, individuals found guilty were usually executed by slow slicing in public. Historians agree that this policy was successful in achieving its aims (Huang, 1974; Fairbank, 1987; MacKinnon, 1997; Wakeman, 1998). We can now investigate the impact of these persecutions on social capital using a unique historical panel dataset.

III   The Impact of Persecutions on Social Capital

A   DATA & SAMPLE CONSTRUCTION

We use data on the persecution of individuals from *Qing chao wen zi yu an* (Qing literary inquisition case). This data has been collected and compiled by historians from the imperial archive. A total of 88 cases are included in *Qing chao wen zi yu an*, dating from 1661 to 1788.[17] We identify the hometown of each examination candidate mentioned as a victim of an inquisition. The individuals involved in all 88 cases can be matched to a specific province and prefecture.[18] Figure 1 depicts the prefectural boundaries of Qing China and displays the prefectures associated with victims of literary inquisitions per quarter century.[19]

To verify that literary inquisitions had the impact on society that historians have suggested, we first explore the effects of persecution on the number of notable individuals in a prefecture, Qingbo Jiang (2005) is our source for data on all notable individuals in Chinese history. We extract information on all individuals born between 1670 and 1800 who came from prefectures in our matched sample. The resulting dataset comprises 2,240 individuals.[20]

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[17]This is the most extensive source of information for inquisition cases. It is a collection of inquisition cases taken from archival material. We also consult *Qing chao wen zi yu dang* (Archives of Museum of Forbidden City, 1934). This source is based on archival material and contains information on 70 inquisition cases. We provide more detail in Appendix D where we explain why historians prefer it to more expansive definitions of 'literary inquisitions'.

[18]There were three levels of administration in Imperial China: the province, the prefecture and the county. There were roughly five or six counties per prefecture and seven to thirteen prefectures per province. Rowe notes that "the county was the lowest level of formal administration, the smallest unit to which a centrally-appointed, examination-certified bureaucrat was assigned" (Rowe, 2009, p. 37). Therefore the prefecture level is the lowest level of aggregation at which we expect to find a measurable effect of a literary inquisition.

[19]Summary statistics for all data used in our analysis are provided in Appendix H.

[20]While this data is unlikely to be suitable in a cross-section due to uneven geographic coverage, our panel

Figure 1: Prefectures of individuals persecuted as a result of a literary inquisition per quarter century: 1725, 1750, 1775, 1800.
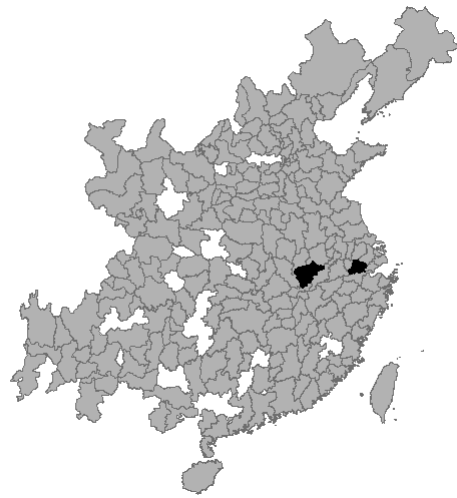
(a) Prefectures of persecuted individuals, 1660–1725.
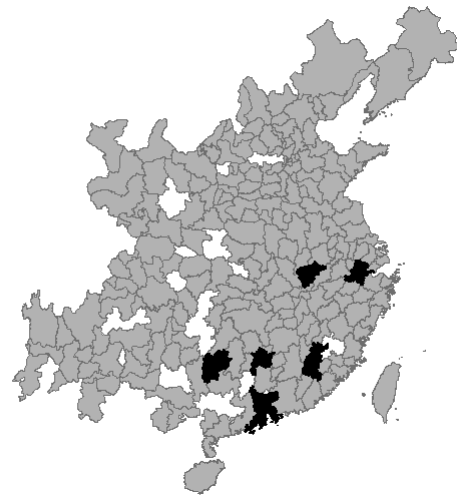
(b) Prefectures of persecuted individuals, 1660–1750.
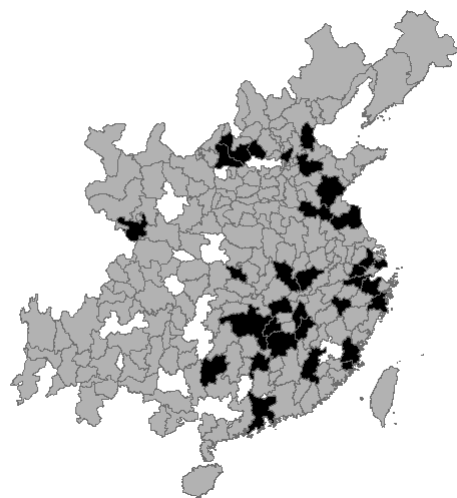
(c) Prefectures of persecuted individuals, 1660–1775.
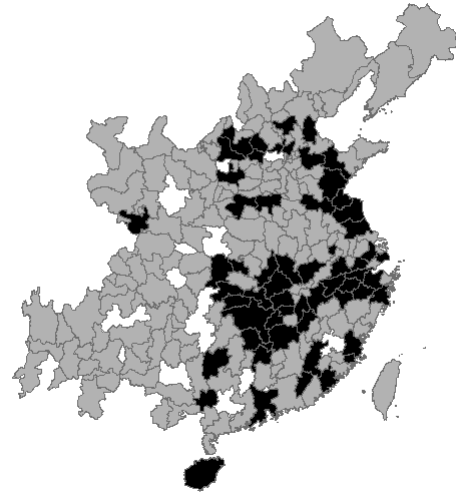
(d) Prefectures of persecuted individuals, 1660–1800.

Our main analysis focuses on the effects of literary inquisitions on social capital. Data for our measure of social capital, the number of charitable organizations in the Qing period, is provided by Liang (2001). This provides information on the foundation date for each charitable organization at the prefecture level. Charitable organizations in Qing China were not cooperations. They were small and simple organizations that provided services such as

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setting confer an advantage here as we exploit variation in time as well as between comparable prefectures in our matched sample.

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maintaining an orphanage. No information is available on the dissolution date of an organization. But given the short-lived and simple character of organizational forms in Qing China, the date of foundation provides an accurate measure of the level of charitable provision in a given decade.[21]

The historical evidence we reviewed in Section II indicates that persecutions were highly idiosyncratic and that the probability of persecution were effectively the same for individuals who were literate and thus likely to fall under the suspicion of the Qing authorities. However, at the regional level there were more likely to be persecutions in areas which we more prosperous or which had a higher proportion of literate individuals. Hence "treated" prefectures—prefectures that faced a literary inquisition—could differ systematically from untreated prefectures in terms of characteristics such as population or economic development. To overcome this, we use a propensity score matching approach to construct a more comparable control group for those prefectures that did experience an inquisition. To mitigate concerns over possible violations of the "parallel trends" assumption, we restrict our comparison group to those prefectures that have similar propensity matching scores to those of the treatment group (see Dehejia and Wahba, 2002).

Matching controls for regional characteristics that affect the likelihood of a prefecture producing an individual who might become a victim of a literary inquisition, We include the number of Ming-era examination graduates (specifically graduates of the metropolitan exam or *jinshi*). The number of examination graduates reflects the level of intellectual capital in a prefecture (see Qin Jiang and Kung, 2015), and it was educated individuals who were more likely to be victims of a literary inquisition. Additionally, as the number of Ming-era jinshi also reflects the prominence of the gentry in a prefecture, it could also be correlated with the level of local public goods provision and social capital.

To control for underlying differences in economic potential between prefectures, we include estimate of population in 1600 and agricultural suitability. To pick up other regional or economic differences, we employ an influential categorization developed by G. Skinner, Henderson, and Berman (2013). We distinguish between nine different socioeconomic macroregions in Qing China.[22] These were large economic areas with their own internal market systems and urban networks based around a core city. We show that our results hold when we match prefectures on a wider range of covariates. We also report results using Coarsened Exact Matching (CEM) in Appendix I, which provides an alternative and less model dependent approach to obtaining valid treatment and control groups.

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[21]We also control for the initial number of charitable organizations in our regression analysis and we show that treated and untreated prefectures were comparable in the number of charitable organizations prior to treatment. We provide more details on the role charitable organizations played in imperial China in Appendix B.

[22]The socioeconomic macroregions identified by G. Skinner, Henderson, and Berman (2013) are built on the regions highlighted by G. W. Skinner (1977). This data is used in Xue (2016).

B IMPACT ON NOTABLE FIGURES

Historians have discussed the consequences of these persecutions on the activity of intellectuals[23] Kuhn (2002, p. 9) quotes a Pak Chiwŏn, a Korean visitor to China in 1780 who observed that "Even about the most commonplace affairs, they burn the records of their conversations without leaving a scrap of paper". Our have data on the number of notable figures across Chinese history allows us to provide the first systematic test of this. We first consider the impact of persecutions on notable individuals. These dataset includes writers but also contains individuals who became notable for their role as officials, or for having contributed to society more generally.

Naturally, we focus on the impact of literary inquisitions on individual who were sufficiently young when a persecution took place, as it is these individuals who decisions could have been affected by the possibility of being victims of a literary inquisition. To do this, we reconstruct the cohort that were affected by persecutions when they were between age 10 and 30.[24] We then estimate the following equation:

$$\text{Notable Figures}_{p,d} = \beta \text{Literary Inquisition}_{p,d} + \Omega_p + \Lambda_d + \Lambda_d \mathbf{X}'_p + \epsilon_{p,d}, \qquad (1)$$

where subscript p represents a prefecture and d a decade. The treatment Literary Inquisition$_{p,d}$ is an indicator variable that becomes equal to one in the decade d following an inquisition in prefecture p. Ω_p is a vector of prefecture fixed effects. Λ_d is a vector of decade fixed effects. We also include interactions between decade fixed effects and a range of time-invariant controls ($\mathbf{X}'_p$) to control for differential economic and political trends across regions.

Our identification strategy utilizes a difference-in-differences strategy at the prefecture level.[25] We use propensity score matching to ensure that we are comparing like for like prefectures and exploit variation in the timing of the persecutions between prefectures. Our treatment is the whether a persecution affected an individual from prefecture p in decade d. By focusing on the first persecution of an individual from prefecture p, we minimize potential endogeneity concerns that could arise from individual responses to the threat of subsequent persecutions. Because our treatment occurs in different time periods, our control group in decade d comprises all of those prefectures that have not yet had an individual persecuted by decade d.

In Column (1) of Table 1 we present a sparse specification in which we only include an

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[23]See Wiens (1969), Huang (1974), and Schmidt (2003) and Gu (2003).

[24]For instance, the impact of a persecution should not reduce the number of established writers in a prefecture as they might have already produced their main work by the time of a persecution. Rather, we expect the threat of persecution to be most relevant for individuals who came of age around the time of a literary inquisition in a prefecture.

[25]China proper was divided into 18 provinces and 275 prefectures during the Qing period.

interaction between the log of the population of a prefecture in 1600 and decade fixed effects and an interaction between a prefecture's past level of intellectual capital stock as proxied for by the number of Ming-era examination candidates (jinshi) and decade fixed effects.[26] When we include a richer set of controls including interacting Skinner's socioeconomic macroregion dummies with decade fixed effects in columns (2)–(4) and latitude and longitude in columns (3) and (4) to account for differential regional trends, we obtain very similar estimates. Of these estimates, we prefer specification 3 and we will subsequently refer to log 1600 population, the number of Ming-era jinshi, latitude and longitude as our baseline controls. the magnitude of the coefficient we obtain under this specification suggests that a literary inquisition resulted in a 35% decline in the number of notable figures from an affected prefecture in every subsequent decade ($-0.603 \div 1.721$).

Persecutions lead to a decline in the number of notable individuals. Fear of persecutions deterred members of the gentry taking actions that would lead them to becoming prominent. Furthermore, as we document in further detail in Appendix A, the number of gentry was quite large so we can be quite certain that the effects we find are not mechanically driven by the persecution of a small number of individuals.

Focusing on the impact of persecutions on intellectuals, this interpretation suggests that individuals became less inclined to take risks in their writings inhibiting their ability to produce important works. Such an interpretation is supported by qualitative accounts of the psychological impact of the literary inquisition on Chinese society (see Liu, Mao Wang, and l. Wang, 2005).

Turning to how this effect varied over time, Table A.12 shows that it was strongest in the first four decades after an inquisition has taken place and fades away after this, indicating that over time writers are likely to have been able to learn how to avoid arousing suspicion or causing offense to the imperial authorities. Indeed, this is in line with the rise of "inoffensive" literary subjects during the Qing period, documented by historians. To reduce the risk of persecution, intellectuals scrupulously avoided activities that could be interpreted as constituting as undermining Qing rule. Instead they "immersed themselves in the non-subversive "sound learning" and engaged in textual criticism, bibliography, epigraphy, and other innocuous purely scholarly pursuits" (Wiens, 1969, p. 16). There was a corresponding decline in writings on history, politics or poetry. The "Chinese poet of the age had to be extremely cautious about what he wrote, since a number of authors and their relatives were subjected to horrendous punishments for seemingly innocent lines in their works" (Schmidt, 2003, p. 369).[27]

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[26]As well as a measure of pre-existing human capita, this control is also a proxy for a prefecture's political influence.

[27] This is alluded to in the writing and poetry of Yuan Mei, who noted that he was "normally . . . able to use my wits for the sake of self-preservation' but that life at court forced him into a situation where he faced a choice between his "personal integrity" and putting his own life in danger" (quoted in Schmidt, 2003). This attitude is clear

Table 1: The Impact of Inquisitions on Notable Figures

| | N. Notable Figures | | | |
	(1)	(2)	(3)	(4)
Literary Inquisition	-0.535*	-0.520*	-0.603**	-0.569**
	(0.319)	(0.271)	(0.288)	(0.273)
Socioeconomic Macroregion × Decade FE	No	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes
N. Ming Jinshi × Decade FE	Yes	Yes	Yes	Yes
Log 1600 Population × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1417	1417	1417	1417
Adjusted R^2	0.155	0.241	0.246	0.810

This table reports the effect of a literary inquisition on the number of notable figures. Column (1) includes prefecture fixed effects and decade fixed effects as well as interactions between the log of 1600 population and decade fixed effects and between the number of Ming-era jinshi and decade fixed effects. Column (2) adds an interaction between socioeconomic macroregion and decade fixed effects . Column (3) interacts latitude and longitude with decade fixed effects. Column (4) employs two-way clustering of our standard errors. In the other specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

C   Impact on Charitable Organizations

Having provided evidence that literary inquisitions were associated with a decrease in the number of prominent individuals, we now explore the impact of inquisitions on community level participation. We do this by estimating the following equation:

$$\text{Charitable Organizations}_{p,d} = \beta \text{Literary Inquisition}_{p,d} + \Omega_p + \Lambda_d + \Lambda_d \mathbf{X}'_p + \epsilon_{p,d}, \qquad (2)$$

where subscript p represents a prefecture; and d a decade. The treatment Literary Inquisition$_{p,d}$ is an indicator variable that becomes equal to one in the decade d following an inquisition in prefecture p. Ω_p is a vector of prefecture fixed effects. Λ_d is a vector of decade fixed effects.

We estimate the effects of a literary inquisition based on exploiting within-prefecture and within-decade variation. Identification relies on the timing of a treatment being exogenous to

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in Yuan Mei's poem "Avoiding the Heat":

> There's no other method of avoiding the heat;
> There is a secret recipe for saving your life:
> Just stay far, far away from the crimson sun,
> Then you'll feel how cool the blue sky can be!

(quoted in Schmidt, 2003, p. 371).

establishment of charitable organizations in a prefecture. This assumption is both consistent with the historical evidence we have reviewed and with the host of robustness checks we report.

Table 2 suggests that persecutions had a direct role in reducing social capital. According to the estimate in column (1) a persecution reduced the number of charitable organizations by about 27% of the sample mean ($-0.745 \div 2.679$). As we detail in Appendix A, it was the gentry who were responsible for the provision of charitable organizations and this group comprised a small, but non-trivial proportion of the population.[28] Thus the effects we find on community-level participation are not driven simply by the decapitation of local elites but instead capture a potent and long-lasting deterrence effect.

A natural concern is that different prefectures may have experienced different economic, social, or political trends. To account for this, we include interaction terms to better control for differential trends between treated and untreated prefectures. Our preferred specification (column 3) suggests that a literary inquisition reduced the number of charitable organizations by 38% of the sample mean ($-1.018 \div 2.679$). Henceforth we refer to this as our baseline specification. To address concerns about the appropriate way to estimate standard errors, in column (4) we cluster our standard errors by both prefecture and decade (Cameron and Miller, 2015).

Political economy factors To further validate the assumption of conditional exogeneity, in Table 3 we demonstrate that our results are robust to the inclusion of a range of political economy controls interacted with decade fixed effects. These controls reflect factors hat might be plausibly related to the likelihood of persecution. For example, we first consider the role of independent academies in the late Ming period. Unlike in the Qing dynasty, during the late Ming period, academies played a crucial role in shaping intellectual discourse (Wakeman, 1998; Dardess, 2002). These academies had the potential to magnify the impact intellectuals could have on society and were a reflection of active and engaged intellectuals were. Individuals in prefectures with Ming-era academies might therefore have different attitudes to Qing rule. While our baseline controls include the number of Ming-era jinshi, our data on Ming-era academies allows us to control for the differential impact these jinshi could have on society. Reassuringly column 2 shows that our results unchanged when we include an interaction term between the number of Ming-era academies and decade fixed effects.

Another factor that one might suspect could influence the decision to persecute an individual might be a legacy of support for the old Ming dynasty. To assuage this concern, in column (3) we use data on "Ming Martyrs"—individuals who decided to sacrifice themselves for the Ming cause during the Qing conquest. As Koon-piu (1994) discusses, while it was claimed that it was the "universal duty" for officials and others to die in defense of the Ming

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[28]Appendix A provides an estimate for the number of gentry in pre-1850 China.

Table 2: The Impact of Inquisitions on Charitable Organizations

	N. Charitable Organizations			
	(1)	(2)	(3)	(4)
Literary Inquisition	-0.745*	-0.817*	-1.018**	-1.002**
	(0.400)	(0.433)	(0.478)	(0.474)
N. Ming Jinshi × Decade FE	No	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	No	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes
Two-way Clustered S.E's	No	No	No	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1308	1417	1417	1417
Adjusted R^2	0.311	0.445	0.495	0.830

This table presents the effect of a literary inquisition on the number of charitable organizations. Column (1) presents our results controlling only for the interaction between decade fixed effects and log population in 1600. Columns (2) controls for the interaction between the number of Ming-era jinshi and Skinner's socioeconomic macroregion fixed effects and decade fixed effects. Column (3) is our baseline specification. It includes interactions with latitude and longitude. In Column (4) we cluster our standard errors by both prefecture and decade. In the other specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

dynasty, only a relatively small number of individuals did indeed sacrifice themselves. Thus this variable captures residual loyalty to the old dynasty and potential antagonism to the Qing state. Nevertheless, the results we report suggest that such residual hostility was orthogonal to our estimates.

In columns (4) and (5) we control for factors that could enable the Qing state to suppress dissent without relying on persecutions. We first employ distance to the nearest army base in column 4 as a proxy for the ability of the state to suppress potential disloyalty and to intimidate the population. Second in column (5) we include distance to the capital Beijing as a measure of the political control of the Qing state. In both cases the inclusion of these controls does not affect our estimate of the effect of persecutions on the subsequent number of charitable organizations in a prefecture.

Local Economic Conditions Our political economy covariates allow us to control for factors that might affect the decisions of the Qing state to persecute individuals. Nevertheless, from research in other settings, we know that local conditions can also affected the probability of

Table 3: The Impact of Inquisitions on Charitable Organizations: Political Economy Controls

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Literary Inquisition	-1.018**	-0.903*	-0.994**	-1.056**	-1.061**
	(0.478)	(0.499)	(0.474)	(0.483)	(0.463)
N of Ming-era Academies × Decade FE	No	Yes	No	No	No
N. of Ming Martyrs × Decade FE	No	No	Yes	No	No
Log Distance to Army Base × Decade FE	No	No	No	Yes	No
Log Distance to Capital × Decade FE	No	No	No	No	Yes
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes
Observations	1417	1417	1417	1417	1417
Adjusted R^2	0.495	0.495	0.498	0.501	0.532

This table reports the effect of a literary inquisition on the number of charitable organizations controlling for political economy factors. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects and socioeconomic macroregion fixed effects. Baseline controls include Ming-era jinshi, log 1600 population, latitude and longitude. Column (2) adds an interaction term with the number of Ming-era academies. Column (3) includes an interaction with the number of individuals who died for the Ming cause (Ming Martyrs). Column (4) includes an interaction with distance to the nearest army base. In column (5) we include an interaction term with distance to the capital, Beijing. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

political persecutions (e.g. Anderson, Johnson, and Koyama, 2016). Based on similar reasoning, natural disasters and conflicts could both increase the demand for charitable organizations, but might also impede the ability of a prefecture to provide such organizations. Table 4 shows that our results are robust to controlling for these factors.

Alongside these time-varying political economy controls we also control for the number of jinshi per decade. This is primarily a measure of human capital but it also serves as a proxy for how politically connected a prefecture was during the Qing period.[29]

In Table A.10, we show that our results hold when we control for time-varying local factors that had the potential to affect either the probability of persecution or the ability of locals to build charitable organizations. First, we include interactions between a range of economic variables and decade fixed effects; these controls include agricultural suitability, distance to either the

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[29] In another ongoing paper (Koyama and Xue, 2015), we investigate the impact of persecutions on human capital accumulation.

Table 4: The Impact of Inquisitions on Charitable Organizations: Time Varying Controls

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Literary Inquisition	-1.018**	-0.862*	-1.056**	-0.996**	-0.896*
	(0.478)	(0.447)	(0.489)	(0.469)	(0.461)
Disaster Intensity	No	Yes	No	No	Yes
N. Conflicts	No	No	Yes	No	Yes
N. Qing Jinshi	No	No	No	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes	Yes
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes
Observations	1417	1339	1308	1417	1236
Adjusted R^2	0.495	0.489	0.501	0.496	0.494

This table reports the effect of a literary inquisition on the number of charitable organizations controlling for shocks and for human capital. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming-era jinshi, log 1600 population, latitude and longitude. Column (2) adds disaster intensity. Column (3) includes the number of conflicts. Column (4) includes the number of jinshi. Column (5) includes all time-varying controls at once. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Grand Canal, Yangtze river, distance to the coast, and controls for Guangdong, the only part of China where foreign merchants were allowed to trade during this period after 1750. Persecutions were not responsive to local economic shocks.

Initial social capital In all difference-in-differences settings, the parallel treat assumption is crucial for identification. Table 5 demonstrates that our results are not driven by various measures of differences in the initial level of social capital in a prefecture. Our estimates are unaffected when we interact historical estimates of population density with decade fixed effects in 1580 (column 1). Urbanization is often associated with a greater density of civil society organizations. This was the case in medieval Europe where urbanization led to a rise in charitable organizations (see Davis, 2014). Guiso, Sapienza, and Zingales (2016) find that the independent cities of northern Italy in the middle ages were characterized by high levels of social capital. We therefore interact urbanization estimates from 1391—the only available year for which we have estimates of urbanization—with decade fixed effects to control for this possible driver of social

Table 5: The Impact of Inquisitions on Charitable Organizations: Further Controls for Initial Conditions

	N. Charitable Organizations			
	(1)	(2)	(3)	(4)
Literary Inquisition	-1.449**	-1.708***	-1.051**	-1.020**
	(0.605)	(0.606)	(0.496)	(0.482)
Log Population Density in 1580 × Decade FE	Yes	No	No	No
Log Urbanization in 1391 × Decade FE	No	Yes	No	No
N. Buddhist Temples × Decade FE	No	No	Yes	No
N. Funding Agencies for Exam Candidates × Decade FE	No	No	No	Yes
N. Ming Jinshi × Decade FE	Yes	Yes	Yes	Yes
Latitude & Longitude × Decade FE	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1014	962	1417	1417
Adjusted R^2	0.519	0.529	0.493	0.493

This table presents the effect of a literary inquisition on the number of charitable organizations controlling for initial conditions that might affect the number of charitable organizations in a prefecture. Column (1) controls for the interaction between a historical estimate of population in 1580 and decade fixed effects. Columns (2) controls for the interaction between an estimate of urban population for the early Ming period (1391). Column (3) includes the interaction between the number of Buddhist temples in 1650 and decade fixed effects. In Column (4) we interact the number of funding agencies for examination candidates in 1650 with decade fixed effects. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

capital (column 2).[30]

In a modern context, Padro-i-Miquel et al. (2015) argue that Buddhist temples are a proxy for social capital. In column (3), we show that our results are unaffected by controlling for the number of Buddhist temples in 1650. Another measure of initial levels of social capital were the funding agencies that helped to pay for the travel expenses of examination candidates. In column (4), we show that our results are robust when we control for the number of such agencies. In column (5), we control for the number of charitable organizations in 1650 as a measure of initial social capital. In all cases interacting various measures of initial social capital with decade fixed effects does not effect our main estimates of the impact of persecutions on the number of charitable organizations.

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[30]We provide further details about data construction and the logic of these variables in Appendix K.

Density of charitable organizations   To study the effects of persecutions on the density of charitable organizations in Table A.11 we report our results normalizing the number of charitable organizations by population for the year 1776—the only year for which we have prefectural level population data. Our results are inline with what we obtain in our baseline analysis.

Government sponsored academies   A plausible concern is that the government might either reduce or increase spending or raise or decrease taxation in prefectures associated with individuals found guilty of subversive attitudes. To assuage such concerns we study funding for government-sponsored academies.[31] Reassuringly, there is no evidence that this was the case. There is no effect of literary inquisitions on the number of government-sponsored academies (Table A.13). Therefore, the negative effect of persecutions on the number of charitable organizations cannot be attributed to less government funding or a less favorable fiscal environment.

Dynamic effects   Social capital is not timeless; it can decay and decline over time. Our results show that how political persecutions can lead to a fall in social capital. Figure A.3 plots the coefficients from a regression where we examine the impact of a persecution by decade over our entire sample. In contrast to our analysis of notable figures, the impact of a literary inquisition on social capital was far more enduring. Social capital, unlike physical capital, displays hysteresis. Shocks to physical capital typically only have a short-run impact as they raise the returns to investment. A negative shock to the amount of social capital in a region can be permanent, however, as there is no mechanism analogous to the price system capable of ensuring recovery. This finding is consistent with other studies that observed that social capital can be permanently damaged by a negative shock (e.g. the slave trade as studied by Nunn and Wantchekon, 2011).[32] Persecutions had significant impact on intellectual activity and social capital, reducing both the number of notable figures and the number of charitable organizations in a prefecture.

IV   Evidence from Twentieth-Century China

Having established that the persecutions of the Qing period had an immediate and lasting impact on social capital, we now seek to see how the effects autocratic rule persisted in the even longer run and in a different political and institutional setting. To do this we need to study outcomes from the twentieth century, after the fall of the Qing dynasty.

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[31]By the Qing period, even non-government funded academies had to take into consideration the attitude of the Emperor as the previous independence of non-governmental academies had been curtailed (Wakeman, 1998).

[32]In the Appendix K we explore the robustness of our main results to dropping outliers, varying the sample, and using 50-year windows.

As a uniquely long-lasting and durable autocracy, China provides an ideal setting to study the long-run consequences of autocratic rule.[33] First, in comparison to more transient or shorter-lived dictatorships, autocratic rule in China has had the time to have left a lasting imprint on cultural values. Second, mobility and migration were limited and controlled during the Qing period by both formal and informal institutions. Formally, the Qing government strictly controlled movement through a passport system. Informally, the clan system increased the costs of outmigration and social norms meant that sons were expected to stay in the same location as their parents in order to look after them in old age.[34]

Social Capital and Local Public Goods Provision

In her survey of work on social capital, Ostrom (2000) pointed out the critical role social capital plays in solving collective action problems and ensuring the provision of local public goods. One of the channels Knack and Keefer (1997) highlight, linking social capital to economic growth, is that social capital produces higher levels of cooperation and that this enables individuals to overcome the local collective action problems that typically besets the provision of public goods. Such collective action problems are a particularly acute in societies with low state capacity, where states are unable to provide basic public goods. Inline with this prediction, Hollard and Sene (2016) show that in sub-Saharan Africa social capital improves the provision of local health care. Measuring social capital by trust, they find that higher levels of trust are associated with fewer doctor absenteeism, shorter waiting times, and less corruption.

In late imperial China the imperial state did not actively govern below the level of the county (Feuerwerker, 1980; Kuhn, 2002; Sng, 2014; Sng and Moriguchi, 2014; Vries, 2015). Education, irrigation, and the provision of other public goods were not provided by the state and were the responsibility of private individuals.[35] The provision of such public goods in the absence of state provided education thus sheds light on local levels of social capital.

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[33]China has been ruled by a single autocratic rule for most of its history since the establishment of the Qin dynasty in 221 BCE. Despite periods of fragmentation, unrest, and turbulence, the Chinese state today is a recognizable continuation of the premodern imperial state (Fukuyama, 2011).

[34]In line with this, in their recent study of the persistent effects of the Imperial examination system, Chen, Kai-sing Kung, and Ma (2016) show that the number of jinshi who migrated from their hometown was extremely small (2.65 %).

[35]The same individuals who were responsible for the organizing the provision of charitable organizations in the Qing period also played a vital role in the provision of basic education. Basic education was the responsibility of either families or locally provided schools run on a voluntary basis by local gentry. Teaching was an "honorable profession for the gentry" and many "took the attitude that when they were accepted by the government, they should step into officialdom, and that if they were not in government service, they should be engaged in teaching" (Chang, 1962).

A   EVIDENCE FROM TWENTIETH CENTURY CHINA: BASIC EDUCATION

As the Qing state did not provide primary schools, local gentry played a key role in the provision of basic education. To explore the impact of persecutions on the provision of basic education, we estimate literary rates in the late Qing period using data on literacy rates among individuals aged at least 70 in 1982 (i.e. those born before 1912). This innovation enables us to overcome the absence of disaggregated literacy data prior to the modern period.

The Integrated Public Use Microdata Series census (IPUMS) provides individual level literacy data for China in 1982—the earliest date for which reliable microdata containing information about literacy is available. To obtain covariates, we match individual-level observations from IPUMS data with prefecture-level data from the Historical China County Population Census (HCCPC) from 1982 and prefecture-level information gleaned from historical GIS data.[36] This results in a sample of 72,658 individuals who obtained their education during a period influenced by the institutions of Imperial China either before or shortly after the collapse of the Qing dynasty.[37]

It is possible that this strategy may suffer from certain biases. First, there may be potential differences in survival rates between literate and illiterate individuals. Second, individual may have become literate later in life. To address the first point, we explicitly control for the age structure of a prefecture in our analysis. Furthermore, because differential survival probability is likely greater for the older cohort, we look at individuals who were at least 70 year olds in 1982 as our main specification and only focus on individuals who were at least 80 year olds in 1982 as a check on our results. The second point is highly unlikely for the generations that we focus on, as they were in their 40s and 50s by 1949, and hence not affected by the anti-illiteracy campaigns of the 1950s (Peterson, 1994).

B   THE EFFECT OF PERSECUTIONS ON BASIC EDUCATION

We examine the effect of literary inquisitions on basic education at the end of the Qing dynasty:

$$
\text{Prob (Literate)}_{i,p} = \alpha + \beta \text{Literary Inquisition}_p + \Omega \mathbf{X}_p + \Theta \mathbf{X}_i + \Gamma_{\text{prov}}
$$
$$
+ \Psi_m + \epsilon_{i,p} . \tag{3}
$$

Our dependent variable is the probability of an individual being literate when surveyed in 1982. Throughout, we restrict our attention to Han Chinese only, and to China proper. In all specifications, we control for prefecture-level variables that likely affected literacy ($\mathbf{X}_p$) including whether a prefecture is on the coast, had a historical courier route, agricultural suitability, and

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[36]We describe the process involved in matching different datasets in detail in Appendix **??**.

[37]Summary statistics are presented in Table A.1.

log population in 1820. We also control for distance to Beijing and whether a prefecture is in southern China (as measured by the Qinling-Huaihe Line). We include a measure of social and economic activity encompassing prefectures which were identified in 1820 as important centers of transport and communication, and business, areas that were difficult to tax, and affected by high crime.[38] The vector $\mathbf{X}_i$ contains individual level characteristics that are known to be correlated with literacy, such as gender, household size, and marital status. In some specifications, we also employ a vector of modern controls. Socioeconomic macroregion fixed effects (Ψ_m) and province fixed effects (Γ_{prov}) capture broader economic differences across regions in all regressions. The overwhelming majority of the population were illiterate so our data contain mostly zeros; as such we use a Logit specification.

Table 6: Long-Run Effect on Literacy: Main Specification

| | Probability Literate: Logit Regression | | | |
	(1)	(2)	(3)	(4)
Mean of Dep. Var.	0.153	0.108	0.153	0.153
Literary Inquisition	-0.304***	-0.327*	-0.370*	-0.413**
	(0.115)	(0.181)	(0.194)	(0.193)
Log Ming Jinishi	0.126***	0.0768**	0.165***	0.177***
	(0.0334)	(0.0346)	(0.0514)	(0.0520)
Over 80 Year Olds	No	Yes	No	No
Population Density 1820	No	No	Yes	Yes
% Over 65	No	No	No	Yes
Log Population	Yes	Yes	Yes	Yes
Historical Controls	Yes	Yes	Yes	Yes
Individual Controls	No	No	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes
Observations	72658	12035	72658	72658
Pseudo R^2	0.294	0.314	0.294	0.295

This table shows the effects of a literary inquisition at a prefectural level on the literacy rates of individuals older than 70 years old in 1982. Historical controls include distance to the coast, distance to a historical courier route, whether a prefecture contained a treaty port. Individual level controls include gender, marital status, and the number of couples in the household. Column (1) reports our Logit estimates. Column (2) focuses only on individuals aged 80 or greater in 1982. Column (3) controls for population density in 1820. Column (4) controls for population structure. Robust standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Column (1) of Table 6 reports results from our Logit estimation for the effects of a literary

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[38] In all specifications we use the same sample as in our prefectural level DID and, as in those estimations, we employ a caliper size of 0.002. We only report coefficients on control variables that are either statistically significant or otherwise of economic interest.

inquisition on illiteracy in the early twentieth century. Our preferred estimates indicate that in an area which experienced a literary inquisition, individuals aged over 70 had approximately a four percent lower probability of being literate (column (3)). In column (4), we show our results are robust to the inclusion of additional controls for the age structure of the population. We do this because as we show below literary inquisition may have had a negative effect on the provision of local health care centers.

Although we control for preexisting levels of education, there may be a concern that the preexisting stock of education may be correlated with both the probability of persecution and the likelihood of migrating to Taiwan in the wake of the Fall of the Nationalist government in 1949. To ensure that this is not a source of bias, we collect new data to provide an estimate of the percentage of the population who migrated to Taiwan (the main destination of migrants fleeing the Communists).[39] We use the Taiwan Family Genealogy Catalogue Database—a database that aggregates information from a range of sources, the most important of which is the Taiwan special collection maintained by the Genealogical Society of Utah (GSU).[40]

While it is to be expected that the migration of the most educated individuals would negatively affect the education of the next generation, we do not expect it to affect the literacy levels of those born 40–50 years earlier. We show that our baseline results on literacy are not affected by any of our measures of selective migration (Table A.19). Literary inquisitions continued to have had a strong effect on literacy among individuals born at the beginning of the twentieth century when we control for selective migration. Political persecutions undermined the provision of basic education in the Qing period and this had a long-run impact that is detectable among individuals older than 70 in the 1982 census.

Another natural concern is that the persecutions that took place during the Cultural Revolution might be affecting our estimates of the impact of literary inquisitions on the literacy rates of individuals aged over 70 in 1982. Using data on the number of victims from Walder (2014) in Table A.20, we show that our results are not confounded by the large-scale persecutions that took place during the Cultural Revolution.[41]

C   Instrumental Variable Strategy

The literary inquisitions targeted individuals for idiosyncratic reasons. We have argued that they were consistent with a model of preemptive deterrence. And were have shown they they did not occur in response to local economic or political conditions as shown in Table 3. In

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[39] Taiwan was the main destination for migrants. There were other locations but it is not possible for us to estimate the size of out-migration to those locations.

[40] Further details about the sources for this migration data and how we construct it are provided in Appendix **??**.

[41] We discuss how this data is constructed in Appendix K.

our historical panel, moreover, we exploit variation in the timing of persecutions to assess the impact of persecutions on otherwise comparable prefectures. However, in assessing the impact of literary inquisitions on twentieth-century outcomes, we rely on cross-section variation. To overcome this, we implement an instrumental variable (IV) strategy.

To motivate our IV strategy, we consider how tensions between the Manchus and the Han Chinese might vary across China. In particular, we are concerned with Manchu's fear of the Han majority. Recent studies provide evidence that the establishment of states comprising groups who have different languages and ethnicities, and lack a shared history of living in a single state, have negative political and economic effects (**Michalopoulos13**; **dippel14**). Differences betwen the Manchus and the Han Chinese were reinforced by the policies of the Qing state which restricted migration of Han Chinese into Manchuria and sought to maintain a distinct Manchurian ethnic identity. Tensions between Han Chinese and their Manchu rulers were likely to be more acure areas where there was greater cultural differences and a shorter history of shared interactions.

Open tensions and conflict between Manchus and Han Chinese did not openly manifest themselves during the High Qing period, largely due to the success of the Qing rulers in suppressing potential dissent and opposition. As we note above, the Qing state was an 'established dictatorship' (**Svolik09**) and as such it did not afford any space for potential opponents of the regime, But anti-Manchu sentiments did reappear at the end of the nineteenth century as the power of the Qing state weakened suggesting that there was an undercurrent of interethnic tensions and discontent throughout the eighteenth century. This suggests that, even in the absence of open opposition, underlying tensions between the ruling dynasty and the population were greater in areas where there was greater cultural differences and a shorter history of shared interactions. Here we exploit variation in such interethnic tensions as a potential source of exogenous variation in persecution probability.

In Appendix M, we report the main results of our instrumental variable strategy. We employ distance to the Manchu capital in the years immediately prior to the Manchu invasion of China—Shenyang (Mukden)—as our instrument. Shenyang was one of the ancestral homelands of the Manchus. On the formation of the Manchu state, Shenyang became their capital until they invaded China in 1644; thereafter, however, it was not an important economic or political center for China as a whole.

Distance to Shenyang provides a source of exogenous variation in the unconscious trust between the Qing rulers and the Han population. To satisfy the exclusion restriction, an instrument cannot affect literacy through any channel other than the probability of persecution. To control for factors that might otherwise shape literary levels, we condition our instrument on distance to Beijing, as Sng (2014) argues that state capacity declined further away from the

capital. We also condition the instrument on an indicator variable based on whether a prefecture was in northern or southern China. The resulting variation we identify should therefore reflect underlying and tacit differences in the likelihood of a persecution taking place. Our IV estimates are reported in A.24 and are of comparable to our baseline estimates suggesting that the effects we identify on the provision of basic education are causal.

D   Evidence from Twentieth Century China: Effect on Other Measures of Local Public Goods

We now turn to another long-run measure of local social capital: infant mortality. Infant mortality is often used as an indicator of economic development or disease environment. Within a country, areas with similar economic and development characteristics typically have similar levels of infant mortality. Conditional on these factors, therefore variation in infant mortality tends to reflect variation in local levels of healthcare provision. For this reason, infant mortality is widely used as a measure of local public goods provision (Zhuravskaya, 2000) and of quality of government (Ross, 2006). In China, village health centers remain partially funded at a local level and the number and capacity of local health clinics partially reflects local organizational capacity and local funding (see V. Li, 1975; Babiarz, Yi, and R. Luo, 2013).[42]

We can use the fact that the infant mortality reveals important information about the provision of local public goods such as village healthcare centers to study the impact of literary inquisitions on a different aspect of social capital. In Table A.21 we show that there is indeed a negative relationship between a legacy of persecutions and this measure of local public goods provision: prefectures that experienced a literary inquisition at any point during the High Qing period have significantly higher rates of infant mortality in the 1982 census.[43] This holds true whether we employ just our baseline controls from Table 6 (column 1), further control for age structure (column 2) or the economic composition of a prefecture (column 3).

In other respects the prefectures of individuals who were persecuted during literary inquisitions in the High Qing period are comparable in economic terms today. Specifically in Table A.22, we look to see whether there is an impact of a literary inquisition on the proportion of the workforce employed (column 1), the proportion employed in industry (column 2), birthrates and death rates (columns 2 and 3) or the age structure of the population (columns 4 and 5). These

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[42]This was especially so prior to the introduction of market reforms in the 1980s. V. Li (1975) used the term "barefoot doctors" to describe the nonprofessional health workers who played a crucial role in rural China in the 1960s to the 1980s. He explains how funding for local healthcare centers was spread between the state, the individual and the village commune (V. Li, 1975, p. 840).

[43]The 2000 census does not provide information about infant mortality at the prefectural level. Therefore we restrict our attention to the 1982 census. For the reasons outlined above we expect infant mortality in 1982 to be a better measure of local levels of social capital as the provision of healthcare has become more professional and centralized since the introduction of market reforms in the 1980s (see Babiarz, Yi, and R. Luo, 2013).

regressions indicate that treated and untreated prefectures were not on different development paths: other than being affected by the literary inquisitions, they were similar in terms of their observable characteristics. Together Tables A.21 and A.22 buttress our argument that political persecutions reduced social capital in the long-run. Consistent with our results on charitable organizations, they suggest that the impact of persecution on social capital can be extremely long-lasting.

E   A Culture of Non-Participation

Having shown that persecutions produced social apathy at a local level in Qing China, we now explore how the fear of persecution could have produced a culture of political non-participation. The threat of a literary inquisition helped to give rise to the belief that the costs of political activity were not worth the benefits. These beliefs could have been perpetuated via intergenerational transmission (as in Bisin and Verdier, 2001). To explore this possibility, we now turn to examine how persecutions affect attitudes to political participation, using modern survey data. We use two different datasets: the Chinese General Social Survey (CGSS) and the Chinese Political Compass (CPoC).

Civil participation requires interpersonal trust. In line with the negative impact we found with respect to social capital, our results suggests that the persecutions reduced generalized trust (Table 7, column 1). The impact of persecutions on generalized trust is also evident in lower trust in bosses (column 2), classmates (column 3), and colleagues (column 4).[44] This substantiates qualitative historical accounts that document how the policy of intrusive state surveillance and persecutions generated "a hydra of suspicion and denunciations" in which individuals "began to denounce each other, both to settle old scores and to attract the attention of regional officials" (Brook, 2005, p. 178). It parallels findings from Eastern Europe where exposure to Communist rule has left of a legacy of non-participation, distrust in political institutions, and cynicism towards political parities resulting in what scholars call term an "impoverished public sphere".[45] It is also evident in lower trust in the legal system (column 5).

The literature on trust and social capital distinguishes between generalized trust and in-group trust (e.g. Fukuyama, 1995). Literary inquisitions encouraged individuals to denounce their peers or superiors to the authorities. But unlike modern totalitarian states, the Confucian

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[44]Thus unsurprising, as social capital and trust are highly correlated. Social capital reflects the ability of individuals to collaborate on projects where the returns to an individual's inputs may be ambiguous and difficult to measure. Low trust societies therefore struggle to build social capital.

[45]See Bernhard (1996) and Mishler and Rose (1997), and Howard (2003). In particular, post-Communist societies are characterized by lower membership in civic organizations (Howard, 2003). Bernhard and Karakoç (2007) discuss the extent to which this is a general phenomenon characteristic of post-totalitarian societies. For a survey and empirical evaluation see Pop-Eleches and Tucker (2011).

Table 7: Long-Run Analysis: Modern Levels of Political Participation and Trust (CGSS)

	(1) Trust in General	(2) Trust in One's Boss	(3) Trust Classmates	(4) Trust in one's Colleagues	(5) Trust in Courts
Mean of Dep. Var.	3.450	3.242	3.614	3.539	3.812
Literary inquisition	-0.286**	-0.409***	-0.418***	-0.519***	-0.286**
	(0.134)	(0.0712)	(0.102)	(0.0960)	(0.134)
Historical Controls	Yes	Yes	Yes	Yes	Yes
Modern Controls	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.122	0.0601	0.127	0.103	0.0606
Observations	2449	2433	2435	2447	2456
	(6) Trust in Family	(7) Trust in Relatives	(8) Obedience to Government	(9) Voted in the Last Three Years	(10) Uninterested in Voting
Mean of Dep. Var.	4.804	4.221	3.808	0.444	0.0859
Literary inquisition	0.0667	0.0427	-0.282	-0.470***	0.392***
	(0.0647)	(0.0584)	(0.134)	(0.0601)	(0.0783)
Historical Controls	Yes	Yes	Yes	Yes	Yes
Modern Controls	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.0337	0.0627	0.122	0.171	0.0399
Observations	2453	2456	2449	2450	1350

This table shows the effects of a literary inquisition on modern levels of trust and attitudes towards political participation. Column (1) examines the impact of persecutions on generalized trust. Columns (2)-(5) examine trust the impact of persecutions on trust in one's boss column (2), trust in one's classmates (3); trust in one's colleagues (4), trust in the court system (5). Columns (6–7) show that there is no impact on trust within the family or on trust in relatives. Column (8) examines the impact of trust on obedience to government. Column (9) asks whether or not an individual has voted in local elections in the last three years. The dependent variable is a variable with scale 1-5 that the exception of column 10 which reports a binary choice (agree or disagree) among respondents who had not voted in the past three years. Historical controls include the following prefectural level controls: distance to the coast, distance to a historical courier route, and whether a prefecture contained a treaty port. Modern controls include log per capita income and the proportion of the population belong to ethnic minorities, the percentage urban and the percentage enrolled in primary education. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

ideology of Qing China meant that cases involving family members were not investigated as thoroughly because families were as seen as the foundation of social stability. Family members were not obligated to denounce one another in the same way that they were expected to denounce non-family members. If literary inquisitions reduced trust, we expect to find the largest effect to be on generalized trust. This is indeed what we find. In columns 6 and 7 of Table 7, there is no effect of literary inquisitions on trust within families. This provides further reassurance that we are identifying the impact of persecutions because it suggests that prefectures targeted by literary inquisitions are not just poorer, and hence less trusting in general,

prefectures today.

Column (8) of Table 7 reports the impact of inquisitions on whether individuals should obey the government. The negative coefficient is on the threshold of statistical significance (p-value of 0.101) is consistent with individuals in prefectures affected literary inquisitions in the past either being more opposed to the government or more apathetic to politics in general. Probing deeper, column (2) suggests that it is indeed the latter case. Since the 1980s, elections have been used to select officials for local self-governing bodies (see X. Zhang et al., 2004; Martinez-Bravo et al., 2014).[46] We find that political persecutions are associated with a lower likelihood of voting today (column 9). Column (10) focuses on the subset of individuals who have not voted in the last three years. Examining their reasons for not voting, we find that individuals from prefectures affected by past persecutions are more likely to report that the cause of their abstinence is that they don't see the significance of voting. Across all our measures of political engagement, we find the imprint of literary inquisitions on political apathy today.

Finally, writers from Orwell (1948) and Arendt (1951) onwards have worried that autocracies would, by destroying civil society and demoralize individuals, produce a population suited for autocratic rule and incapable of self-governance. We turn to a different dataset—the CPoC—to shed light on this question. The findings from the CPoC provide further evidence of the impact of literary inquisitions on attitudes towards society and the state. Our result suggest that, in China, past political persecutions have not produced individuals who are more supportive of autocratic rule today. As we detail in Table A.23, individuals in prefectures with a history of a literary inquisition are in fact less likely to agree with the statement: "People should not have the right to vote if they do not understand democracy" (Q 2.). They are also less likely to agree that: "Western-style multi-party systems are not suitable for China" (Q 43.). This suggests that in areas affected by literary inquisitions individuals are also more skeptical of the claims of the Chinese government and more open to considering alternative political systems. Similarly, individuals in affected prefectures are more likely to disagree with the statement that: "Modern China needs to be guided by wisdom of Confucius/Confucian thinking". In other respects, that is, on questions relating to social issues and economic policy, there is no discernible difference between prefectures from which individuals were persecuted and prefectures where individuals were not persecuted. The results of Table A.23 suggest that literary inquisitions did not produce individuals more supportive of autocratic rule today. Taken together with the results in Table 7, however, they also suggest that they have left a negative legacy on the forms of social capital

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[46]These individuals run are elected to run self-governing residence communities in urban areas and village committees. As these individuals provide administrative services and are not part of government, attitudes towards these elections should be independent of attitudes towards the Communist party. These elections are not directly comparable to elections in fully fledged democracies. Nevertheless, they are indicative of individuals willingness to engage in political activity.

that provide the preconditions for successful democratization. A legacy of autocratic rule is associated with political quietism.

V Conclusion

Imperial China was a uniquely long-lasting and stable autocracy. During the Qing period emperors used persecutions to intimidate their populations and repress potential opposition. This paper provides evidence that these persecutions had a long-lasting and negative impact on social capital.

Using a difference-in-differences approach, we first show that persecutions led to fewer notable figures from a prefecture in each decade following a persecution. Second, we show that these persecutions reduced the number of charitable organizations established in subsequent decades relative to those prefectures that had not yet experienced a persecution. These results are robust and indicate that these persecutions deterred participation and reduced social capital at a local level.

We go on to show that the literary inquisitions left a deep and long-lasting imprint on society. Examining twentieth century outcomes illustrates the far-reaching impact of inquisitions including its effects on education and health. As these results rely on cross-sectional analysis, they should be taken with caution and are more suggestive in comparison with the results we obtain from our historical panel. Individuals in prefectures associated with victims of the literary inquisition in the seventeenth and eighteenth centuries had lower levels of literacy at the beginning of the twentieth century, controlling for a host of individual, prefectural, and provincial characteristics and correcting for the possibility of selective migration during the Communist takeover. These prefectures also had higher infant mortality rates in 1982.

These findings are of considerable importance as social capital plays a prominent role in many explanations of political development (e.g. Fukuyama, 1995).[47] A large literature relates social capital to the vitality of democratic institutions (Tocqueville, 1835/1840 (2000); Putnam, 1994; Satyanath, Voigtländer, and Voth, 2016; Acemoglu, Reed, and Robinson, 2014; Padro-i-Miquel et al., 2015).

One contribution of this paper is that we show that autocratic rule reduced social capital and helped to produce a culture of political quietism in premodern China and that this has left a legacy that persists to this day. These findings have implications for China's current political trajectory. Some scholars anticipate China undergoing a democratic transition as its economy develops (e.g. Acemoglu and Robinson, 2012). Indeed China has partially democratized its

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[47]Recent work has also established the importance of social capital in Industrial Revolution Britain (Mokyr, 2009; Sunderland, 2013).

political institutions at the local level as studied by Martinez-Bravo et al. (2014) and Padro-i-Miquel et al. (2015) who show that local elections work better in areas with higher levels of social capital. Others point to China as an example of "authoritarian resilience" (e.g. Nathan, 2003). Taking seriously the arguments of North, Wallis, and Weingast (2009) about the importance of organizations and civic capital in the transition to open-access societies, our argument suggests that the suppression of social capital may pose a lasting impediment to democratization in China. By showing that a long-history of autocratic rule and political persecutions can produce a culture in which individuals inclined to political liberalism and democratization are political quiescent, our results shed light on a further and previously under-explored source of authoritarian resilience.

Our findings provide novel support for the arguments of the political theorist Leo Strauss (1952) who observed that the threat of persecution influenced the behavior and writings of intellectuals throughout history.[48] Similarly, Kuran (1987) and Kuran (1995) point out how such repression can affect economic and political outcomes. Under autocratic regimes, individuals have an incentive to falsify their true preferences in response to the fear of persecution. This can lead to an equilibrium in which individuals believe that a regime has more popular support than it does in fact enjoy.[49]

Our results relate to recent scholarship concerning the relationship between cultural values and autocracy in Chinese history. China has a long history of civil society organizations and of intellectual participation in society. At times in Chinese history these intellectuals came close to forming a nascent "public sphere" (Wakeman, 1998). However, the status of civil society organizations has always been fragile and such organizations have been frequently repressed (Simon, 2013, p. xxvii). Scholars such as T. Xie (1990) and Liu (2000); and Liu, Mao Wang, and l. Wang (2005) speculate that the style of government that developed under the Qing encouraged individuals to keep to the private sphere and not to engage in public affairs.

Thus at the same time that Habermas (1962 [1989]) and Mokyr (2016) detect the origins of a public sphere in western Europe, the Qing state suppressed public discourse and civic capital. As Parker (2013) observes: "[t]he Qing thus continued to see intellectual innovation and much 'useful knowledge' as a potential threat, not a potential asset ... China's new masters refused to allow their leading scholars either freedom of expression or freedom to exchange ideas" (Parker, 2013, p. 667).

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[48]See Melzer (2014) for a systematic overview of the prevalence of esoteric writing.

[49]More recently Greif and Tadelis (2010) show how coercion or the threat of persecution can generate a crypto-morality—that is, the secret adherence to one morality while practicing another in public.

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Historical Appendix

A THE POLITICAL ECONOMY OF QING CHINA

We now provide a brief overview of the political economy of Qing China, supplying more details concerning the incentives and constraints facing the rulers of China in the seventeenth and eighteenth centuries.

The Ming-Qing Transition (c. 1618-1680)   The analysis in the main paper focuses on the High Qing Period (c. 1680-1796). In this section of the Appendix, we provide further details on the turbulent period of transition that preceded it. The Ming-Qing transition saw the collapse of the Ming regime, the invasion of China by the Manchus and the establishment of a new regime. The following decades saw both major internal rebellions and external wars (Wakeman, 1985a; Wakeman, 1985b).

In some accounts, the trials and executions of the early 1660s are recorded as literary inquisition cases. However the majority of, historians who have studied the literary inquisitions do not include these cases viewing them as qualitatively different from the trails that took place in later decades. Following this scholarly consensus we do not include these cases in our main analysis. Furthermore, this transition was accompanied by famine, climate change, and massive population loss (Parker, 2013). This provides a further reason for why we do not focus on the political persecutions that took place in this period.

The High Qing Period (c. 1680-1796)   As discussed in the main paper, the High Qing period (c.1680-1796) saw the *intensification* of imperial autocracy in China. The High Qing period was one of great political stability, imperial expansion and internal peace. Emperors such as the Kangxi and Qianlong Emperors are seen as among the most successful in Chinese history. Their authority was uncontested. Nevertheless, as we documented in the main text, as ethnic Manchus, these rulers were extremely sensitive to possible opposition from the Han Chinese. While China has always been ruled through an autocracy, the Qing tightened the reigns of power and implemented a policy of the systematic persecution of dissent.

The Gentry   The gentry refers to the class of individuals who were trained to study for the imperial examination system. The most successful examination candidates became officials and played a crucial role in governing the empire (Elman, 2000). But many others, who did not pass the highest level exams, or were not able to obtain official positions, played an importance role in local society. If the gentry are defined as those individuals who passed the *shengyuan* level of exams, Chang (1955) estimates that the pre-1850 period, there were approximately 740,000

members of the gentry. The population of Qing China was growing in this period but these numbers suggest that the gentry comprised between 0.18% and 0.25% of the population. This means that the effects we find on community-level participation are not driven simply by purges decapitating local elite reflect a long-lasting deterrence effect.

The gentry might superficially resemble the aristocracy of medieval and early modern Europe. But in many respects that their status differed in important ways. First, in contrast to early modern Europe, there was no hereditary nobility or order of ranks in China (see, e.g. Doyle, 1992). Unlike Europe, landlords and members of the local elite did not control the local legal system nor did they control local armed forces. This meant that they were particularly vulnerable and at risk to persecution from the state. Second, due to the absence of a hereditary nobility and the importance of the examination system for selection into the bureaucracy, this elite was fluid. Levels of social mobility were high for preindustrial standards (Jiang and Kung, 2015; Y. Bai and Jia, 2016). As a consequence, there was no sharp distinction between elites and masses. Third, though there were some minor exceptions for degree-holders, members of the local elite had the same legal status as commoners: both were subject to the Qing penal code. They received no legal privileges and were not allowed to possess prohibited books or material. This is in contrast to the situation in western Europe where possession of forbidden books by elites was sometimes tolerated by political authorities.

A final defining characteristic of the gentry was that they were educated in the Confucian classics. This had important implications. On the one hand, these classics supported imperial rule: they emphasized the importance of obedience to established authority but, on the other hand, they had the potential to undermine the authority of the Qing emperors because they denigrated non-Chinese as barbarians and praised the role of the emperor in subduing them. These classics emphasized that the fact that the authority of previous dynasties had partially rested on protecting the Chinese from nomadic invasion by "barbarians" like the Manchus. Earlier emperors claimed the "mandate of heaven" on the basis of their ability to secure internal peace and guard the borders against incursions from nomadic, non-Chinese people (Ma, 2011). However, now it was a non-Han people, the Manchu who ruled the Chinese.[50] As Philip Kuhn writes:

> "However, cunningly the conquerors might frame the rhetoric of succession (a virtuous regime replacing a corrupt one was the conventional rhetoric of the Mandate of Heaven), there was always the danger that the symbolism of legitimate rule might be challenged by the ugly ethnic feelings: the claim that these rulers were usurpers precisely because they were outsiders" (Kuhn, 1990, p. 53).

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[50]See Brook (1988, pp. 177–178). This animosity long precedes the Qing dynasty. It was firmly established from the Song dynasty onwards (see Rossabi, 1983; Ebrey, 1991; Ge, 2004).

It was this tension and sensitivity that required the Qing Emperors to both promote the orthodox interpretations of the classics and to persecute any deviations from the ideological orthodoxy.

B   CHARITABLE ORGANIZATIONS IN QING CHINA

Our main dependent variable in the historical panel is the number of charitable organizations at a prefectural level. These organizations provided charitable relief which included famine relief, help for the indigent, support of orphans, and the provision of local public goods.

Traditionally, these services were provided within the clan (Greif and Tabellini, 2012). However, by the Qing period these private charitable organizations evolved out of clan-based organizations and expanded to provide relief to those outside of the community. Confucianism did not go as far as Christianity and Islam in making charitable donations a requirement but it did elevate charitable giving as a virtue. One historian writes:

> "One of the most distinctive Qing-era expressions of the passion for organization-building was in the area of philanthropy. Turning away from Buddhist and toward orthodox Confucian ideologies to underpin this activity, Qing society clearly articulated the concept of a 'public' or 'communal' sphere, as opposed to a "state" or 'private' sphere, as both the agent and the beneficiary of philanthropic activism" (Rowe, 2009, p. 119).

In contrast to western Europe, charitable organizations, however, in Qing China were not corporations. Their organizational form was not complex and they were established to simply provide a narrow range of services such as maintain an orphanage and did not developed into more complex organizations. Our data source, Liang (2001), provides information on the founding of each charitable organization.

Publicly registered charities were often usually dependent on local resources (Rowe, 2009, p. 1220). As such, they relied on high levels of cooperation among local gentry. High levels of local social capital allowed local communities to mobilize resources for charitable organizations. The desire to establish charitable organizations was influenced by neo-Confucian ideology among the gentry. The desire to contribute to, and organize, such societies was a reflection of the self image of members of the gentry and literati. However, over time it expanded well beyond these origins and thus constitute a good measure of social capital for our purposes.

C   NEO-CONFUCIANISM

The dominant intellectual ideology during the Qing period was neo-Confucianism. Neo-Confucianism originated during the Song dynasty and a variant of it became championed

Figure A.1: Procedure of a Representative Inquisition Case
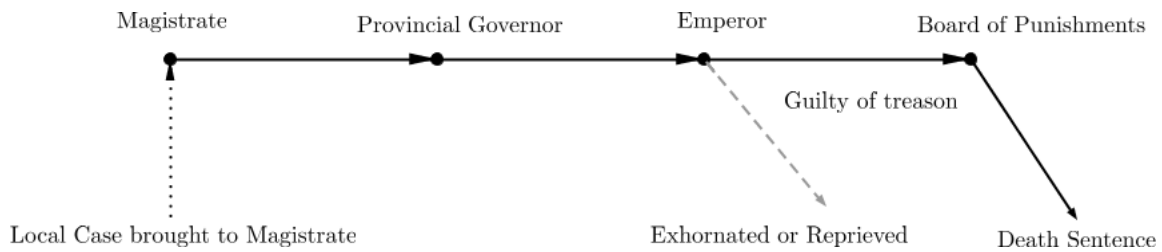
by the Qing emperors in seventeenth an eighteenth centuries. In this subsection, we provide more information on the intellectual background to the High Qing period that we study in this paper and on the significance of Neo-Confucianism. Neo-Confucianism was significant because it provided a powerful source of legitimation for the emperor. In particular, it emphasized the importance of obedience to imperial authority as a natural extension of obedience to the head of the family. This was an important element of the neo-Confucian political teachings associated with the work of Zhu Xi (1130-1200), the most influential neo-Confucian scholar. Filial piety was thus used to mobilize loyalty to the state.

At the same time, however, neo-Confucianism set limits to Imperial authority. Alan Woods writes: "the ruler's authority was integrated into a rational view of the universal order that clearly transcended the position of the ruler and to which in fact the ruler himself was made subordinate" (Woods, 1995, p. 15). Neo-Confucian scholars established an external standard for judging rulers: "whether their actions were guided by the moral conscience (*tian li*, 'heavenly principle' or 'universal coherence"' (Bol, 2008, p. 129). Neo-Confucianism also emphasized that the burden of ruling was the joint responsibility of the emperor and the gentry (Bary, 1983).

In the late Ming period, under the influence of Wang Yangming (1472–1529), a more liberal branch of neo-Confucian thinking emphasized the active role scholars could play in local governance. Reflecting on the prominence and influence of Wang Yangming in the late Ming period, Mokyr observes that "Wang's career shows that the market for ideas in China clearly was to some extent competitive and not invariantly hostile to a critique of the orthodoxy' (Mokyr, 2016, p. 319). Indeed it is in this context that Mokyr (2016) discusses a possible Late Ming "Chinese Enlightenment". This stream of thought could have led to the development of more useful knowledge, as Moykr suggests, and could also have led to the emergence of more liberal political ideas. T. Bai (2012, p. 166) notes "in addition to, 'gaining the emperor's ear so as to practice the Way' (de jun xing dao), these Confucians tried to 'enlighten the people so as to practice the Way" (jue min xing dao). They established private schools, and cultivated the village gentry (xiang shen), trying to . . . render local communities autonomous'.

However, Mokyr notes that "what little there was of a stirring of intellectual progress before 1644 could not survive what de Bary has called the 'Manchu suppression'" (Mokyr, 2016, p. 322). In contrast, to the views of the Wang Yangming school, the Qing encouraged the more authoritarian interpretations of neo-Confucianism based on the writings of Zhu Xi (Hung, 2011, p. 81). They sponsored literati who favored orthodox interpretations of neo-Confucianism. The examination system was one way in which they promoted this orthodoxy (Liu, 1990). They also suppressed many academies which ceased to play a role in discussing policy and came to focus exclusively on preparation for the imperial exams (Wakeman, 1998; Dardess, 2002). Scholars have termed this interpretation of neo-Confucianism "imperial Confucianism". These policies thus complemented the policy of literary inquisitions that we have studied in this paper.

D   HOW THE LITERARY INQUISITION FUNCTIONED

To better understand the process involved in a literary inquisition, Figure D depicts a stylized inquisition case. A local denouncement to a county-level magistrate might initial an inquisition case. If the case was deemed serious it would be passed to the provincial governor. As literary inquisition case often involved written materials, the provincial governor would have consultants or attorneys scrutinize the offending writings for evidence of disloyalty or treachery.

Any case that was potentially genuine would go to the Imperial Court in Beijing and be examined by the Emperor himself. Provincial governors who did not pass on information about suspects to the Emperor could be punished themselves. As we described in the main text, the Emperor's subjective judgement of whether a particular individual was guilty of disloyalty was all important. If an individual was found liable for treason, the Board of Punishment would sentence him. The proscribed punishment in such cases was death by *Lingchi* (slow slicing) and the enslavement of all one's immediate relatives. in some cases, however, the guilt party would be executed by beheading.

There was some variation in punishment. Of these 88 cases, 74 out of 88 involved public trials in which the accused were investigated for crimes against the state. In over half of the cases (54), the victim was a degree holder. In almost half of the cases, more than one individual was accused and in 38 cases more than three individuals were accused. The most celebrated cases, such as the investigation of Zeng Jing in 1728, documented in great detail by Spence (2001), saw dozens of individuals investigated, imprisoned, and enslaved in addition to the eventual execution meted out to Zeng Jing in 1735. Individuals guilty of treason were subject to the Qing penal code. The death penalty was employed in almost half of the cases for which we have concrete information. Among the other punishments, individuals could be subject to exile and at least 100 lashes (often equivalent in practice to a death penalty) while in a small minority of

cases only the offending writing was destroyed. Nevertheless, a lack of statistical power means that we are unable to investigate heterogeneous results.

It is also likely that the deterrence effects of a persecution could have spread into nearby prefectures. This form of spatial correlation, however, should bias us against finding the results that we obtain. If persecutions in the neighboring prefecture deter gentry from organizing charitable organizations in their prefectures, then this would case number of charitable organizations to go down even though the prefecture in question would be coded as untreated. This should bias the coefficient estimates we obtain on persecutions towards zero.

E   AN EXAMPLE LITERARY INQUISITION CASE

The case of Wang Xihou provides a good example for us to examine the procedures involved in a literary inquisition case. Wang Xihou was the author of ten books including a dictionary. He had passed the provincial level examinations in 1750, but never passed the *jinshi* exams. He was not disloyal to the regime nor a Ming loyalist of any kind. He came to the attention of the authorities largely by chance, but once he was brought to the attention of the Emperor, he was made an example of (Guy, 1987).

We can study the steps that lead to Wang's execution in 1777.

1. The case was first brought to the attention of the magistrate of Xinchang (Wang Xihou's hometown) by Wang Longnan. Wang Longnan had been banished from the provence for fomenting litigation in the past. When he returned he was arrested by Wang Xihou. In return he accused Wang Xihou of being disloyal to the Manchu regime.

2. Wang Longnan found a statement in the dictionary in which Wang Xihou seemed to cast doubt on the scholarly ability of the Kangxi Emperor.

3. Having reported these writings to the magistrate. The magistrate in turn reported the case and a copy of Wang Xihou's dictionary to the provincial Governor of Kiangsi.

4. The Governor assigned the dictionary to the consultants of his book bureau who searched the book for questionable passages. These consultants assessed Wang Xihou's writings and judged that they violated the law but did not constitute treason.

5. Nevertheless, the Governor was unsure about to deal with the case so he reported the case to the Emperor.

6. The Qianlong was extremely offended by Wag Xihou's dictionary. He accused the governor of overlooking and missing other offensive passages.

7. Wang Xihou was ordered to Beijing. His case was passed to the Board of Punishment. Wang Xihou was executed on 22 December 1777. Twenty-one members of his family were enslaved.

Other examples also confirm that it was not easy for individuals to safeguard themselves from the possibility of being persecuted. Gu (2003) details a case where an individual was persecuted for writing: "Qingfeng bu shizi, hebie luan fanshu" ("Since the clear wind does not recognize words, Why should it mess with the pages of my book?"). He notes that this "poetic couplet was interpreted as a satirical criticism of the Qing rulers, who were implicitly depicted as illiterate barbarians masquerading as arbiters of literary tastes" (Gu, 2003, p. 127). Referring to another case where a writer was accused of using poetic constructions that would inspire hatred of the Manchus, Kuhn (1990, p. 65) notes that this involved "what even then must have seemed a far-fetched textual construction".

Another case during the reign of the Qianlong emperor involved an individual who wrote "Facing the bright moon, one becomes a good friend./Inhaling the clear wind, one falls a drunken lord." As Gu (2003, p. 127) notes, "[t]he censor read 'brightmoon' as a reference to the salutary moral power of the Ming dynasty, while the 'clearwind' was interpreted as an allusion to the unhealthy influence of the Qing dynasty". In this case however, the scholar, his family and others involved in the case were spared punishment when the Qianlong emperor changed his mind at the last minute, writing: "'Clear wind' and 'bright moon' are commonly used words in poetry and essays. How can one avoid using them?" quoted in Gu, 2003, p. 127. This case highlights the highly arbitrary and unpredictable nature of persecutions under the Qing and is consistent with the simple model we outline in section G of the Appendix.

F   Comparison with other persecutions in Chinese History

In this paper, we focus on the Qing period because it was during the Qing dynasty that the Chinese state developed an institutional infrastructure that was aimed at rooting out disloyalty by punishing individuals for subversive speech or writing. The Qing persecutions were not limited to those in positions of power, but reached down to quite ordinary individuals including dictionary makers and fortune tellers. Of course, the Qing period was not far from the only period in Chinese history when the state used political persecutions as a tool of rule. Earlier Emperors had purged political enemies, often on a large-scale. Qing-era literary inquisitions should be distinguished from the persecutions undertaken by the first Ming emperor. These early Ming persecutions were less systematic and institutionalized and restricted to those related to a narrow circle of officials close to the Emperor (see Goodrich, 1935).

G   A Signaling Model of Political Persecutions

To build intuition for our analysis in this section, we sketch a simple signaling model of political persecutions in Qing China. This model abstracts from many features of real world rulers in order to deliver simple results that accord with the historical facts detained above.

G.1   Setup

Consider a simple signaling model of persecutions. There are two types of players: a ruler and a representative member of the population. Since our focus is on the role of persecutions in influencing the beliefs of the population rather than on the ability of citizens to coordination among themselves, we model the population as a single entity represented by one agent. A more general model could draw on the literature on global games to incorporate the coordination problem facing individuals in deciding whether or not to rebel against the Emperor.[51] This is not the focus of our analysis here.

The ruler is endowed with a strength $\theta_i \in \{S, W\}$, that is he can be strong (S) or weak (W). This strength refers to the ruler's ability of social control and capacity to maintain political order when it is challenged, hence $1 > S > W > 0$. $\Delta > 0$ measures the perceived legitimacy of the regime. A regime that is perceived as more legitimate can more easily survive challenges. For the purposes of studying premodern China, one can think of legitimacy as a trait that pertains to dynasties and can be treated as independent of the personality traits of a particular Emperor. Δ is common knowledge.[52] Therefore, when the ruler faces are rebellion by the citizen, he will survive with probability $S + \Delta$ if his strength is S and survive with probability $W + \Delta$ if his strength is W. We call the type S ruler a strong ruler and the type W ruler a weak ruler. The ruler's strength is private information.

The citizen has a prior belief that the ruler's type, θ, is S with probability π and W with probability $1 - \pi$. If the ruler stays in power he obtains 1. To make the analysis as simple as possible, it is assumed that the cost of suppressing a rebellion reflects the resources and capability of the regime and has therefore been incorporated into the probability of surviving the rebellion.

We focus on the role political persecutions can play in signaling strength. The ruler can choose how many individuals to persecute. The cost of persecuting for a type θ ruler is $c(p, \theta)$, where both the total and marginal cost of persecutions are increasing, and both total and marginal costs are lower for the strong type, S. The twice differentiable cost function satisfies $c_p(0, \theta) = 0$, $c_p(p, \theta) > 0$, $c_{pp}(p, \theta) > 0$, and $c_p(p, W) > c_p(p, S)$. In words, it is easier for a strong

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[51] Recently global games have been used to study revolutions (see Edmond, 2013).

[52] Δ is also unaffected by a ruler's actions. Therefore in our model it is not possible for "too many" persecutions to "delegitimatize" the ruler. This extension could be easily added at the cost of additional notation by modifying the cost function.

ruler to both persecute a given number of individuals and to persecute more individuals. A regime that has higher state capacity can carry out persecutions than can a weak ruler. This is the canonical single crossing condition.

The individual citizen can choose action $a \in \{0, 1\}$, where $a = 0$ refers to not rebelling and and $a = 1$ to rebelling against the Emperor. If the citizen rebels, the pays a cost of r regardless of the outcome of the rebellion. If the rebellion is successful the citizen obtains a benefit of b. We normalize the utility of living under the current regime to 0. We could include the direct cost of persecutions (i.e. the risk of being persecuted oneself) but this complicates our notation without substantively affecting analysis.

The utility of the ruler is denoted by $U_R(\theta)$ while the utility of the citizen is denoted by $U_c(\theta)$ as follows:

$$U_R(\theta) = \begin{cases} 1 - c(p, \theta), & \text{if } a = 0; \\ \theta - c(p, \theta) & \text{if } a = 1. \end{cases} \quad (4)$$

$$U_c(\theta) = \begin{cases} 0, & \text{if } a = 0; \\ b(1 - \theta - \Delta) - r & \text{if } a = 1. \end{cases} \quad (5)$$

The timing of the game is as follows:

1. Nature determines the ruler's type θ and the value of Δ and r.

2. The ruler decides how many individuals to persecute.

3. After observing the number of persecutions, the citizen will decide to rebel based on her beliefs about the strength of the ruler.

4. Payoffs are realized.

G.2 Equilibrium

As this is a game of asymmetric information, the solution concept is a Perfect Bayesian Nash Equilibrium (PBE). There are several cases to consider.

Case 1 Suppose Δ is greater than $1 - W - \frac{r}{b}$ (case 1). In this case, the regime is perceived as legitimate and both weak and stronger rulers are safe from rebellion. There is no incentive for either ruler type to engage in political persecutions. There is a trivial pooling equilibrium.

Case 2 Consider the case where Δ is uniformly distributed on $[1 - S - \frac{r}{b}, 1 - W - \frac{r}{b},]$. This means that there will be a rebellion against a ruler who is known to be weak. If the citizen is unable to tell whether a ruler is strong or weak, the citizen will rebel if r is lower than

A.10

$\pi b(1 - S - \Delta) + (1 - \pi)b(1 - W - \Delta)$ and not rebel otherwise. This means that the probability of rebellion is $1 - \pi$.

Case 3 If Δ or r are such that $1 - S - \frac{r}{b}$, then both strong and weak regimes types face a rebellion and neither have an incentive to engage in political persecutions.

We focus on Case 2 as this is the most relevant scenario for our historical setting. Consider the following candidate equilibrium: The citizen rebels if he observes the ruler's type is W, and does not rebel if he observes the ruler's type is S. Since in this equilibrium the weak ruler's type is revealed, there is no point in persecuting, and hence it will choose $p = 0$. Let the equilibrium number of persecutions conducted by the strong ruler be p^*. It has to be the case that the weak ruler prefers to face the risk of rebellion associated with being perceived as weak and obtain $(W - \Delta)$ than to pass as strong and persecute p^* individuals. Therefore to ensure that there are no deviations from these strategies the following conditions need to both hold:

$$
\begin{aligned}
U_R^*(S) &= 1 - c(p^*, S) \geq S - \Delta \, ; \\
U_R^*(W) &= W - \Delta \geq 1 - c(p^*, W) \, .
\end{aligned}
\tag{6}
$$

To ensure that there is indeed no incentive to deviate from this candidate equilibrium, define $\underline{p}$ implicitly as satisfying: $1 - c(\underline{p}, W) = W$ as the number of persecutions at which a weak ruler is indifferent between persecuting and attempting to pass as a strong ruler and not persecuting and being known to be weak. Define $\overline{p}$ as satisfying $1 - c(\overline{p}, S) = S$. $\overline{p}$ is the maximum number of persecutions a strong government is willing to engage in and be known as strong. At $\overline{p}$, a strong ruler is indifferent between engaging in no persecutions and being perceived to be weak. The equilibrium level of persecutions in the separating equilibrium p^* can correspond to any level of persecutions between $\underline{p}$ and $\overline{p}$ if it is supported by the following beliefs:

$$
\mu(\theta_S) = \begin{cases} 0 & \text{if } p < p^* \, ; \\ 1 & \text{otherwise} \, . \end{cases}
$$

Together these form a PBE. Observe that though any value of p^* between $\underline{p}$ and $\overline{p}$ can support a separating equilibrium, the only value of p^* consistent with the intuitive criterion is $p^* = \underline{p}$. Hence we can establish the following.

Proposition 1 *For values of $\Delta \in [(1 - S - \frac{r}{b}), (1 - W - \frac{r}{b})]$, there is a a unique separating PBE that satisfies the Intuitive Criterion, in which the strong ruler chooses a level of persecutions that solves $1 - c(p^*, W) = W$ and the weak ruler chooses no persecutions ($p = 0$). The citizen will not rebel if the observed level of persecution is p^* or higher, and rebel otherwise.*

No pooling equilibrium can satisfy minimal restrictions on out of equilibrium beliefs. In a pooling equilibrium, the citizen cannot tell whether the ruler is strong or weak from the number of individuals it persecutes, and so treats the ruler as being weak with probability $1 - \pi$. Suppose the two types of ruler pool at p^*, their payoffs are then respectively

$$
\begin{aligned}
U_g^* S) &= \pi + (1 - \pi)(S - \Delta) - c(p^*, S) ; \\
U_R^*(W) &= \pi + (1 - \pi)(W - \Delta) - c(p^*, W) .
\end{aligned}
\tag{7}
$$

Let $\tilde{p}$ be the highest number of persecutions a weak ruler will carry out in a pooling equilibrium: $\pi + (1 - \pi)(W - \Delta) - c(\tilde{p}, W) = (W - \Delta)$. The following beliefs support persecutions in a pooling equilibrium for any $p^* \in [0, \tilde{p}]$;

$$
\mu(\theta_S) = \begin{cases} \pi & \text{if } p = p^* \\ 0 & \text{otherwise} \end{cases}
$$

This can be part of a PBE but it requires unappealing out of equilibrium beliefs. More formally, it can be shown that no pooling equilibrium survives the Intuitive Criterion. Define p' which is greater than p^* by:

$$
\pi + (1 - \pi)(W - \Delta) - c(p^*, W) = 1 - c(p', W) ,
$$

where p' is the highest number of persecutions that a weak ruler is willing to engage in if it is mistaken for a strong ruler. But if this is the case, then a ruler strong will benefit from deviating to p'. Thus this pooling equilibrium fails the intuitive criterion because it requires the citizen believing that only weak and not strong rulers would deviate to p'.[53]

Proposition 1 gives rise to the following corollaries:

Corollary 1 *Persecutions are more likely when the legitimacy of the dynasty is questionable (Δ is low).*

In our model persecutions are not responses to either realized threats or to other shocks. They are a way to signal the strength of the ruler. This observation is consistent with the history of Qing dynasty. The Qing dynasty was strong in the eighteenth century. It faced no significant external threats or major rebellions during the eighteenth century (certainly not until the White Lotus Rebellion (1794–1805) which took place at the end of the century, after the period of literary

---

[53]To see this, note that the pooling equilibrium requires a citizen to believe that any ruler to deviates from p^* to $p' > p^*$ is weak. However, strong rulers have a greater incentive to deviate to p' if

$$
\pi + (1 - \pi)(S - \Delta) - c(p^*, S) < 1 - c(p', S) .
$$

which is equivalent to:

$$
c(p^*, W) - c(p^*, S) < c(p', W) - c(p', S) .
$$

and hence always holds as $p' > p^*$ and $c(p, S) < c(p, W)$.

inquisitions). The emperors in this period used literary inquisitions to deter the small hint of opposition.

Corollary 2 *In the absence of open opposition, political persecutions are necessarily indiscriminate.*

In our model there is only a single actor so it follows by definition that persecutions are indiscriminate. The important observation is that in equilibrium there is no open opposition. Hence the Emperor is not able to selectively target his enemies for persecution and instead relied on inquisitions to signal his ability to seek out and crush any potential disloyalty.

This is consistent with the historical evidence. The literary inquisitions were aimed at deterring subversive activities. But, as we note in the main text, in the absence of open opposition their targets invariably appear indiscriminate.

Corollary 3 *Strong rulers persecute to signal their strength; weak rulers do not.*

This accords with the historical evidence. Literary inquisition took place during the High Qing period. The Kangxi emperor, the Yongzheng Emperor, and the Qianlong Emperor were amongst the most powerful and successful rulers in Chinese history. The emperors who followed them, the Jiaqing Emperor (r. 1796-1820), the Daoguang Emperor (1820-1850), and the Xianfeng Emperor (1850-1861) were notably weaker and less successful rulers and they did not engage in persecutions.

Data Appendix

Table A.1: Summary statistics

Historical Panel Analysis					
Variable	Mean	Std. Dev.	Min.	Max.	N
# Charitable organizations	2.679	4.218	0	30	1417
# Notable figures (under 30)	1.721	3.35	0	33	1417
# Academies	9.271	7.616	0	50	1417
Literary Inquisition	0.077	0.267	0	1	1417
20th Century Outcomes					
Literary Inquisition	0.174	0.381	0	1	109
# Ming Jinshi (1368-1644)	75.761	83.965	1	533	109
Log Popuation Size in 1600	12.935	0.886	10.558	14.454	109
Longitude	113.729	4.243	102.71	121.099	109
Latitude	31.088	5.317	20.008	40.966	109
Agricultural Suitability	-4.991	1.63	-7	-1	109
# Courier Routes	2.376	1.919	1	9	109
# Buddhist Temples	10.064	9.33	0	79	109
Ruggedness	4.532	3.102	0.103	15.552	109

I   MATCHING PROCEDURE

Our empirical strategy utilizes a matching approaching. This is appropriate because the units of observation in our analysis are highly heterogeneous violating the necessary assumptions for identification in an difference-in-diferences analysis.

    This is evident in Table A.4 which depicts the balance of observables across treated and untreated prefectures before and after matching. Prior to matching we observe that, as expected, prefectures that experienced a literary inquisition tended to have better quality land, higher population density, and higher levels of human capital as measured by the number of past examination candidates (Table A.4.(a)). Such initial differences might produce different dynamics governing the number of notable figures and charitable organizations over time, and, possibly, generate varying responses to later policy reforms and external shocks. This poses a challenge to estimating the effect of a literary inquisition using only linear regressions. One issue is that some prefectures experienced rapid in-migration in the Qing period. As migration of individuals from different areas (potentially speaking different dialects or of different ethnicities) could disrupt the provision of local public goods (Hao and Xue, 2016), we exclude

these prefectures from our analysis. The difference in observables remains, however (Table A.4.(b)).

Matching our prefectures on a range of covariates using propensity score matching allows us to address these potential sources of bias. By combining matching and a DID estimation, we aim to minimize the bias from observable characteristics and to obtain accurate estimates of the "treatment effect" of an literary inquisition even though our setting is non-experimental.[54]

We generate a propensity score for each prefecture by estimating a logistic regression on a set of pre-treatment covariates. Specifically we estimate:

$$P(LQ_i = 1) = F(X_i) \, , \tag{9}$$

where P is the probability that a prefecture has an individual who is persecuted as a result of a literary inquisition and X_i is our vector of covariates.

We employ a parsimonious set of matching covariates. These include geographical variables such as ruggedness and agricultural suitability and economic variables such as Skinner's socioeconomic macroregions, log 1600 population and the number of Ming jinshi, a measure of a prefecture's human capital stock. See Table A.3 for a list of our matching covariates.

After matching, we obtain a sample that is balanced in terms of observables across treated and untreated prefectures. As Table A.4 panel (c) indicates, in our matched sample there are no statistically significant differences in observable characteristics between prefectures.[55]

To verify the importance of matching in conducting our analysis, Table A.7 presents our main results on the impact of a literary inquisition on the number of charitable organizations using the full sample (column 1) and a sample that drops frontier prefectures (column 2). The purpose of this table is to compare the results we obtain on the full sample to our preferred specification on the matched sample (column 3). A comparison of the coefficients we obtain in columns (1) and (2) to column (3) confirms that the inclusion of radically different prefectures in the full sample reduces the magnitude of the effect of an inquisition on the number of charitable organizations and reduces the precision of our estimates; nonetheless the sign of this effect remains negative even on the full sample.

---

[54]For discussion of this point see Heckman, Ichimura, and Todd (1998), Blundell and Monica (2000), Dehejia and Wahba (2002), and Blundell and Dias (2009). A matching approach is appropriate in our context and the data we have on premodern China means that there are a large number of observable covariates to condition on. By conditioning our DID estimates on a set of covariates through matching we further reduce our measurement error. A recent paper in economic history that employs this method is Dittmar (2011). Also see Voigtländer and Voth (2012) and Squicciarini and Voigtländer (2015) for other examples of this approach.

[55]Note that matching does reduce the number of treated prefectures from 57 to 19. Of course some treated and untreated prefectures are fundamentally different in them of their stock of human capital. As a result there is no natural control group for some of the most economically developed, prosperous, and highly educated prefectures in our sample. For this reason, our estimates report the effect of persecutions on prefectures for which we have a comparable control group.

Table A.2: The Impact of Inquisitions on Charitable Organizations: Going from the Full to Matched Sample

	N. Charitable Organizations		
	(1)	(2)	(3)
Literary Inquisition	-0.237	-0.375	-1.018**
	(0.783)	(0.806)	(0.478)
Baseline Controls × Decade FE	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
	Full Sample	Excluding Frontiers	Matched Sample
Observations	3432	2821	1417
R^2	0.439	0.458	0.547
Adjusted R^2	0.414	0.428	0.495

This table reports our results using the full sample (column 1), a sample where we exclude frontier prefectures (column 2) and our matched sample (column 3). All specification include the following baseline controls log 1600 population, log Ming jinishi, socioeconomic macroregion fixed effects interacted with decade fixed effects. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In our matching analysis we use a caliper of 0.002. We prefer a relatively tight caliper as this has been shown to reduce bias and produce closer matches (Lunt, 2014). The distribution of the propensity score for treated and untreated prefectures are extremely similar when we employ a tight caliper enabling us to have greater confidence in our inference (Figure A.2.a and Figure A.2.b)). In contrast, a larger caliper size would be inappropriate in our setting as the distribution of treated and untreated prefectures changes dramatically as indicated in Figure A.2 panels c and d.

J   COARSENED EXACT MATCHING (CEM)

We also employ Coarsened Exact Matching (CEM) in addition to propensity score matching (Iacus, King, and Porro, 2011). CEM bounds the degree of imbalance between treated and control groups and automatically restricts the data to the area of common support. This means that it minimizes the problem of model dependence. When we employ CEM our sample becomes smaller and, as result, our estimates become less precise, but the coefficient remains comparable in magnitude (see Table A.6).

Figure A.2: Propensity Score Matching Support Varying Caliper Width

(a) Caliper of 0.001 width.

(b) Caliper of 0.002 width.

(c) Caliper of 0.005 width.

(d) Caliper of 0.01 width
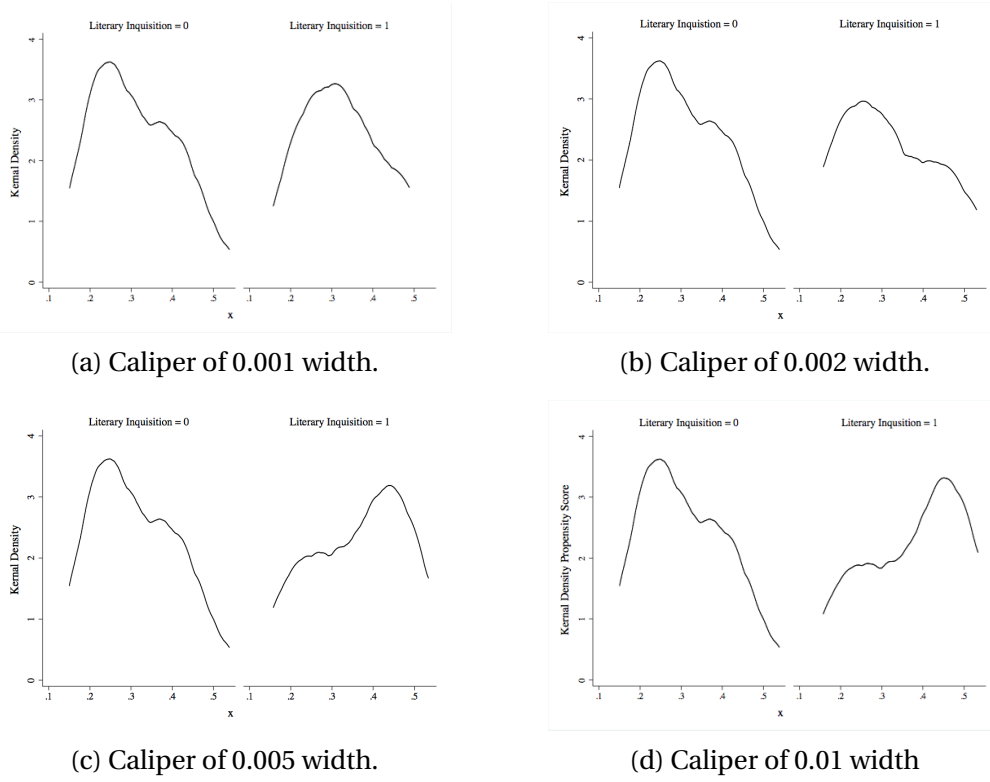
Table A.3: Matching Covariates

	Inquisition	
Ming Jinshi	0.0663**	(0.0259)
Agricultural Suitability	-0.0185	(0.0280)
Log 1600 Population	0.0450	(0.0346)
N. of Courier Routes	0.0203	(0.0185)
Ruggedness (2nd quartile)	0.116	(0.102)
Ruggedness (3rd quartile)	0.0783	(0.117)
Ruggedness (4th quartile)	0.00522	(0.144)
North China	0.0129	(0.110)
Northwest China	0.263	(0.199)
Upper Yangzi	0.207*	(0.124)
Middle Yangzi	0.256**	(0.124)
Lower Yangzi	0.158	(0.158)
Southeast Coast	0.115	(0.123)
Lingnan	0.0454	(0.123)
Constant	-0.835*	(0.436)

This table reports the variables used in our matching exercise. The omitted categories are the first quartile of ruggedness and Northeast China. There are 217 observations and the adjusted R^2 is 0.165. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Balance Table

			(a) Before Matching		
Variables	N	Mean (untreated)	N	Mean (treated)	Difference in Means
N. Ming Jinshi	226	2.441	57	4.544	-2.104***
Agricultural Suitability	226	-5.420	57	-4.632	-0.789***
Log 1600 Population	226	12.387	57	13.273	-0.886***
N. Courier Routes	226	1.881	57	2.825	-0.944***
Ruggedness	226	5.860	57	4.176	1.684***
Other	225	0.067	57	0.000	0.067**
Northeast China	225	0.004	57	0.000	0.004
North China	225	0.120	57	0.140	-0.020
Northwest China	225	0.147	57	0.088	0.059
Upper Yangzi	225	0.089	57	0.018	0.071*
Middle Yangzi	225	0.120	57	0.211	-0.091*
Lower Yangzi	225	0.093	57	0.246	-0.152***
Southeast Coast	225	0.053	57	0.140	-0.087**
Lingnan	225	0.107	57	0.158	-0.051

			(b) Before Matching, Excluding In-Migration		
Variables	N	Mean (untreated)	N	Mean (treated)	Difference in Means
N. Ming Jinshi	179	2.547	56	4.539	-1.992***
Agricultural Suitability	179	-5.492	56	-4.643	-0.849***
Log 1600 Population	179	12.351	56	13.281	-0.930***
N. Courier routes	179	1.933	56	2.857	-0.924***
Ruggedness	179	5.465	56	4.159	1.306**
Other	178	0.084	56	0.000	0.084**
Northeast China	178	0.006	56	0.000	0.006
North China	178	0.152	56	0.143	0.009
Northwest China	178	0.185	56	0.089	0.096*
Upper Yangzi	178	0.034	56	0.018	0.016
Middle Yangzi	178	0.124	56	0.214	-0.091*
Lower Yangzi	178	0.084	56	0.232	-0.148***
Southeast Coast	178	0.067	56	0.143	-0.075*
Lingnan	178	0.135	56	0.161	-0.026

			(c) After Matching		
Variables	N	Mean (untreated)	N	Mean (treated)	Difference in Means
N. Ming Jinshi	90	3.786	19	3.828	-0.042
Agricultural Suitability	90	-4.944	19	-5.211	0.266
Log 1600 Population	90	12.946	19	12.882	0.065
N. Courier routes	90	2.400	19	2.263	0.137
Other	90	0.000	19	0.000	0.000
Northeast China	90	0.000	19	0.000	0.000
North China	90	0.189	19	0.105	0.084
Northwest China	90	0.144	19	0.211	-0.066
Upper Yangzi	90	0.022	19	0.053	-0.030
Middle Yangzi	90	0.167	19	0.105	0.061
Lower Yangzi	90	0.133	19	0.105	0.028
Southeast Coast	90	0.122	19	0.158	-0.036
Lingnan	90	0.189	19	0.263	-0.074

This table reports differences between treated and untreated prefectures. There are 57 treated prefectures in our full sample and 225 untreated prefectures. Prior to matching we observe a number of substantial differences between treated and untreated prefectures across observables. After matching prefectures we observe no such differences in observable characteristics. Other refers to prefectures outside of Skinner's socioeconomic macroregions.

Table A.5: The Impact of Inquisitions on the Number of Charitable Organizations: Full Sample and Matched Sample

	N. Charitable Organizations		
	(1)	(2)	(3)
Literary Inquisition	-0.237	-0.375	-1.018**
	(0.783)	(0.806)	(0.478)
N. Ming Jinshi × Decade FE	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes
Initial Pop × Decade FE	Yes	Yes	Yes
Latitude & Longitude × Decade FE	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
Observations	3432	2821	1417
Adjusted R^2	0.414	0.428	0.495

This table presents the effect of a literary inquisition on the number of charitable organizations using both the full sample and our matched sample. Column (1) presents our preferred specification from column 2 of Table 2 using the full sample. In Column (2) we exclude frontier regions. Column 3 displays our preferred baseline specification using the matched sample. Standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: The Impact of Inquisitions on the Number of Charitable Organizations: Coarsened Exact Matching (CEM)

	N. Charitable Organizations		
	(1)	(2)	(3)
Literary Inquisition	-0.938	-0.894	-1.088
	(0.629)	(0.628)	(0.657)
N. Ming Jinshi × Decade FE	No	Yes	Yes
Socioeconomic Macroregion × Decade FE	No	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes
Prefecture FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
Initial Pop × Decade FE	Yes	Yes	Yes
Observations	403	403	403
Adjusted R^2	0.246	0.253	0.268

This table reports the effect of a literary inquisition on the number of charitable organizations using CEM matching. Column (1) reports our minimal specification from Table 2, Column 1. Column (2) reports this minimal specification using CEM weights. Column (3) replications Column 3 from Table 2 with CEM weights. Standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.3: The Dynamic Impact of Persecutions on Charitable Organizations
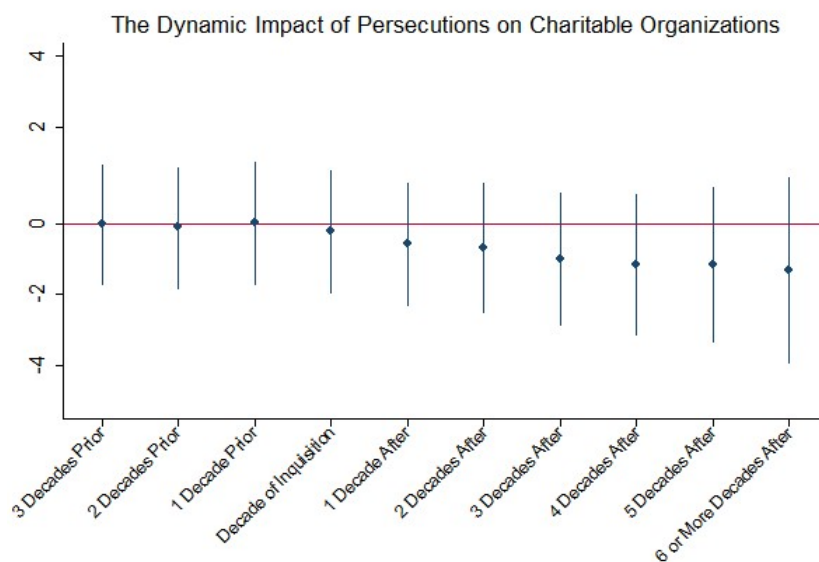
This figure reports the coefficients of the effect of an inquisition on the number of charitable organizations per decade. The coefficient is normalized to zero for three or more periods prior to an inquisition. Error bands represent 95% CI.

K FURTHER ROBUSTNESS ANALYSIS: HISTORICAL PANEL

In this section we provide further results that demonstrate the robustness of our main findings.

First we consider the results on the number of notable figures. Table A.12 shows the impact of a literary inquisition on the number of notable figures by decade. The negative effect of a persecution is evident in the decade following an inquisition and remains more or less constant in size for the next four decades before fading away approximately five to six decades later. As we discuss in the main text, this is consistent with scholars moving away from more sensitive topics in order to minimize the political risks involved in writing.

Turning to our results on the number of charitable organizations, Tables A.9, A.8, and A.16 probe the robustness of our findings. To ensure that our results are not driven by outliers or affected by heterogeneous trends, in Table A.9 we show that our estimates remain more or less unchanged when we drop prefectures which had no charities throughout the period to 1830 (column 2), which are reported as having a high population of immigrants (column 3), and which had a high number of Buddhist temples (column 4). The coefficient we obtain remains negative and statistically significant; it changes in size, but this is largely due to changes in the sample. Table A.8 employs a variety of different sample periods—extending the analysis out to 1840 and back to 1680—the results to do not change. In Table A.16 we employ 50-year time periods rather than looking decade-by-decade. We find comparable negative coefficients for both the number of charitable organizations and for the number of new charitable organizations.

In Table A.11 we normalize our estimate of the number of charitable organizations by population in 1776. While it goes without saying that it would be desirable to control for variation in population over time, population estimates for premodern China are infrequent and noisy and the estimates for the year 1776 are the only prefecture level-data available for the period of our historical panel analysis. Concerns about shocks that might have resulted in dramatic population falls are likely picked up by our natural disaster controls. Table A.11 replicates Table 2 using the number of charitable organizations per capita. The effects we find are comparable to those we obtain in our baseline.

To alleviate concern that the prefectures affected by literary inquisitions might be punished by the emperor in other ways in Table A.13 we report the effect of literary inquisitions on the number of Qing-era government funded academies. We find no impact regardless of specification. This provides further reassurance that the channel we identity worked via its effect on social capital; as funding for government-run academies was unaffected by whether or not there was a persecution.

To deal with concerns that political persecutions were a response to local unrest or revolts, we conduct two further empirical exercises. Table A.14 demonstrates that literary inquisitions

Table A.7: The Impact of Inquisitions on Charitable Organizations: Going from the Full to Matched Sample

	N. Charitable Organizations		
	(1)	(2)	(3)
Literary Inquisition	-0.237	-0.375	-1.018**
	(0.783)	(0.806)	(0.478)
Baseline Controls × Decade FE	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
	Full Sample	Excluding Frontiers	Matched Sample
Observations	3432	2821	1417
R^2	0.439	0.458	0.547
Adjusted R^2	0.414	0.428	0.495

This table reports our results using the full sample (column 1), a sample where we exclude frontier prefectures (column 2) and our matched sample (column 3). All specification include the following baseline controls log 1600 population, log Ming jinishi, socioeconomic macroregion fixed effects interacted with decade fixed effects. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

are in general uncorrelated with the number of conflicts (which includes local unrest and revolts). Table A.15 shows that there is no relationship between the timing of an inquisition and the number of conflicts either in the current period (column 1) or the preceding period (2). Table A.15 also provides evident that inquisitions were uncorrelated with the frequency or intensity of either contemporaneous or lagged natural disasters.

L   FURTHER ROBUSTNESS ANALYSIS: 20TH CENTURY OUTCOMES

Focusing on our 20th century analysis, Table A.17 shows that literary inquisitions were associated with weaker provision of basic education at the end of the Qing period, but not with less provision of higher education. This is inline with our hypothesis: it was basic education and not higher education that was the responsibility of the local gentry in the Qing period and thus basic education that we expected to be affected by lower levels of social capital.

Table A.18 shows that the results of Table 6 are robust to the exclusive of post-treatment controls. Column 1 replicates our preferred specification (Column 4) of Table 6. The coefficient estimates we obtain remain similar when we do not control for where a prefecture was recorded as *chongxian,* that is prefectures which were identified in 1820 as important centers of transport and communication, business, areas that were difficult to tax, and areas with high crime, as well as whether or a not a prefecture included a treaty port, or had a courier route in 1820.

We control for the possibility of selective migration and it effect on literacy rates in Table A.19 In the wake of the fall of the Nationalist government in 1949, more educated individuals were more likely to migrate to Taiwan—a source of potential bias in our estimates. To overcome this concern, we create an estimate of the percentage of the population who migrated to Taiwan (the main destination of migrants fleeing the Communists). Table A.19 verifies that baseline results on literacy are not affected by any of our measures of migration. Literary inquisitions continued to have had a strong effect on literary among individuals born at the beginning of the twentieth century when we control for selective migration.

In Table A.20 we employ data from Walder (2014) to see if persecutions during the Cultural Revolution confound our estimates of the long-run impact of literary inquisitions. Walder's estimates for the number of deaths and victims in the Cultural Revolution are based on comparing officially published numbers for entire provinces against tabulations from all of that province's local annals. Walder (2014) estimates, based on this data, that there were 273,000 reported deaths and 13.4 million victims.

Walder (2014) reports a variety of prefectural and county level data by province. In order to aggregating these estimates to the prefecture-level we employ two methods. Version 1 (v.1) uses prioritizes prefecture-level sources, only aggregating county-level sources to create a prefecture-level measure when prefecture level sources are unavailable. We also employ a second method which we call Version 2 (v.2). This uses only prefecture-level data that are aggregated from county-level sources, discarding prefecture-level data.

Columns (1)-(2) of Table A.20 shows that the impact of a literary inquisition survives controlling for the number of deaths per capita during the Cultural Revolution using version 1. The estimated effect of a literary inquisition is stable and slightly larger than our baseline estimates. Column (3) controls for the absolute number of deaths rather than the number of deaths per capital using version 1. Columns (4)-(5) of Table A.20 use per capita Cultural Revolution victims using version 2. Column (6) use the absolute number of Cultural Revolution death using version 2.

Table A.8: The Effect of Inquisitions on Charitable Organizations: Robustness to Different Samples

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Literary Inquisition	-1.018**	-1.017**	-1.037**	-0.825*	-1.224**
	(0.478)	(0.500)	(0.451)	(0.420)	(0.532)
Charities 1690-1830	Yes	No	No	No	No
Charities 1680-1830	No	Yes	No	No	No
Charities 1700-1830	No	No	Yes	No	No
Charities 1690-1820	No	No	No	Yes	No
Charities 1690-1840	No	No	No	No	Yes
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	
Observations	1417	1526	1308	1308	1526
Adjusted R^2	0.495	0.515	0.480	0.488	0.499

This table reports the effect of a literary inquisition on the number of charitable organizations while varying our sample temporally. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming-era jinshi, socioeconomic macroregions, latitude and longitude. Column (2) extends our dataset to include charitable organizations going back to 1680. Column (3) restricts our sample to 1700. Column (4) truncates the dataset to 1820. Column (5) extends the dataset out to 1840. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: The Impact of Inquisitions on Charitable Organizations: Robustness to Different Samples

	N. Charitable Organizations			
	(1)	(2)	(3)	(4)
Literary Inquisition	-1.018**	-1.454**	-0.888*	-0.734*
	(0.478)	(0.671)	(0.503)	(0.433)
No Charities in 1830	Yes	No	Yes	Yes
Incoming Migration	Yes	Yes	No	Yes
Locations with Strong Buddhist Presence	Yes	Yes	Yes	No
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1417	1040	1365	1157
Adjusted R^2	0.495	0.553	0.501	0.454

This table reports the effect of a literary inquisition on the number of charitable organizations. It shows our findings are robust to varying the sample. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming-era jinshi, socioeconomic macro regions, latitude and longitude. Column (2) drops locations which have no charities in 1830. Column (3) drops locations with incoming migrants. In Column (4) we omit locations with a large number of Buddhist temples. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: The Impact of Inquisitions on Charitable Organizations: Controlling for Local Conditions

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Literary Inquisition	-1.018**	-0.998**	-0.980**	-1.104**	-1.049**
	(0.478)	(0.481)	(0.451)	(0.495)	(0.476)
Agriculture Suitability × Decade FE	No	Yes	No	No	No
Distance to Grand Canal/Yangtze ×Decade FE	No	No	Yes	No	No
Distance to Coast × Decade FE	No	No	No	Yes	No
Guangdong × Decade FE	No	No	No	No	Yes
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes
Observations	1417	1417	1417	1417	1417
Adjusted R^2	0.495	0.500	0.502	0.499	0.495

This table reports the effect of a literary inquisition on the number of charitable organizations controlling for local economic conditions. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming-era jinshi, socioeconomic macroregions, latitude and longitude. Column (2) adds an interaction term with agricultural suitability. Column (3) includes an interaction with distance to the Grand Canal or Yangtze river. Column (4) includes an interaction with distance to the coast. In column (5) we include an interaction term for whether a prefecture is in Guangdong. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.11: The Impact of Inquisitions on Charitable Organizations Per Capita

	N. Charitable Organizations			
	(1)	(2)	(3)	(4)
Literary Inquisition	-0.00670**	-0.00649**	-0.00731**	-0.00727**
	(0.00272)	(0.00254)	(0.00286)	(0.00290)
N. Ming Jinshi × Decade FE	No	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	No	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes
Two-way Clustered S.E's	No	No	No	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1404	1404	1404	1404
Adjusted R^2	0.322	0.452	0.489	0.829

This table presents the effect of a literary inquisition on the number of charitable organizations per capita using 1776 population. Column (1) presents our results controlling only for the interaction between decade fixed effects and log population in 1600. Columns (2) controls for the interaction between the number of Ming-era jinshi and Skinner's socioeconomic macroregion fixed effects and decade fixed effects. Column (3) is our baseline specification. It includes interactions with latitude and longitude. In Column (4) we cluster our standard errors by both prefecture and decade. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: Notable Figures: Lags and Leads

	Mean number of notable scholars
Literary Inquisition t-4	-0.346
	(0.405)
Literary Inquisition t-3	-0.462
	(0.364)
Literary Inquisition t-2	-0.520
	(0.527)
Literary Inquisition t-1	-0.664
	(0.473)
Literary Inquisition	-0.348
	(0.570)
Literary Inquisition t+1	-0.903*
	(0.497)
Literary Inquisition t+2	-0.953*
	(0.540)
Literary Inquisition t+3	-1.090**
	(0.438)
Literary Inquisition t+4	-1.134*
	(0.650)
Literary Inquisition t+5	-0.0882
	(0.908)
Literary Inquisition t+6	-0.290
	(1.142)
Observations	1209
Adjusted R^2	0.168

This table depicts the impact of a literary inquisition on the number of notable scholars in preceding and subsequent decades. Robust standard errors clustered at the prefectural level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.13: No Impact on Government Sponsored Academies

| | N. of Academies | | | |
	(1)	(2)	(3)	(4)
Literary Inquisition	0.0568	-0.0831	0.0933	0.0965
	(0.346)	(0.277)	(0.292)	(0.263)
N. Ming Jinishi × Decade FE	No	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes
Log Population 1600 × Decade FE	Yes	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	1417	1417	1417	1417
Adjusted R^2	0.606	0.662	0.669	0.957

This table demonstrates that there was no impact of literary inquisitions on government sponsored academies. Column (1) reports our baseline specification which includes log 1600 population and socioeconomic macroregion fixed effects interacted with decade fixed effects. In Columns (2) and (3) we add in interactions between controls for the number of Ming-era examination graduates and latitude and longitude and decade fixed effects. In Column (4) we cluster our standard errors by both prefecture and decade. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Table A.14: The Impact of Inquisitions on Conflicts

	Total N. of Conflicts			
	(1)	(2)	(3)	(4)
Literary Inquisition	0.0106	-0.00431	0.00812	0.0108
	(0.0315)	(0.0301)	(0.0282)	(0.0193)
N. Ming Jinshi × Decade FE	No	Yes	Yes	Yes
Socioeconomic Macroregion × Decade FE	No	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes
Two-way Clustered S.E's	No	No	No	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes
Observations	1308	1308	1308	1308
Adjusted R^2	0.017	0.076	0.084	0.103

This table shows that literary inquisitions had no effect on the number of conflicts. Column (1) presents our results controlling only for the interaction between log population in 1600 and decade fixed effects. Columns (2) controls for the interaction between the number of Ming-era jinshi and Skinner's socioeconomic macroregion fixed effects and decade fixed effects. Column (3) includes interactions with latitude and longitude. In Column (4) we cluster our standard errors by both prefecture and decade. In the other specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.15: No Correlation Between Conflicts, Natural Disasters, and Inquisitions

	Decade of Inquisition			
	(1)	(2)	(3)	(4)
Conflict	0.00859	0.00921		
	(0.0137)	(0.0147)		
Lag Conflicts		0.00278		
		(0.00578)		
Natural Disasters			0.00626	0.00726
			(0.0191)	(0.0192)
Lag Natural Disasters				-0.0311
				(0.0192)
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes
Latitude & Longitude × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes
Observations	1308	1199	1339	1339
Adjusted R^2	0.047	0.046	0.038	0.039

This table shows that there is no relationship between the timing of an inquisition and the number on conflicts (columns 1 and 2) or the number of natural disasters (columns 3 and 4). In all specifications, robust standard errors, clustered at the prefectural level, are reported in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.16: The Effect of Inquisitions on Charitable Organizations: 50 Year Time Periods

	N. Charitable Organizations		New Charitable Organizations	
	(1)	(2)	(3)	(4)
Inquisition	-4.269***	-4.359***	-2.446**	-2.536***
	(1.406)	(1.406)	(0.946)	(0.937)
Baseline Controls×Decade FE	Yes	No	Yes	No
Baseline Controls ×50 Year Time Trend	No	Yes	No	Yes
Socioeconomic Macroregion × Decade FE	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	545	545	545	545
Adjusted R^2	0.461	0.464	0.333	0.324

This table reports the effect of a literary inquisition on the number of charitable organizations using 50-year time periods. Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming jinishi, socioeconomic macro regions, latitude and longitude. Column (2) drops locations which have no charities in 1830. Column (3) drops locations with incoming migrants. In Column (4) we omit locations with a large number of Buddhist temples. Column (4) drops all locations which are recorded as having a strong government presence (chong=0). In all specifications, robust standard errors, clustered at the prefectural level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.17: Long-run Effects on Higher-Level Education

| | Logit | | | | | |
| | Middle School | | | Higher Education | | |
	(1)	(2)	(3)	(4)	(5)	(6)
Mean of Dep. Var.	0.0269	0.175	0.0269	0.00271	0.0170	0.00271
Literary Inquisition	0.140	0.465**	0.345**	-0.303	-0.0870	-0.303
	(0.239)	(0.181)	(0.162)	(0.635)	(0.500)	(0.635)
Log N. Ming Jinshi	Yes	Yes	Yes	Yes	Yes	Yes
Illiteracy of 70 Year Olds	No	Yes	Yes	No	No	Yes
% Over 65	Yes	Yes	Yes	Yes	Yes	Yes
Modern Controls	No	No	No	No	No	Yes
Log Population	Yes	Yes	Yes	Yes	Yes	Yes
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72659	11137	72659	68230	10902	68230
Pseudo R^2	0.038	0.044	0.041	0.134	0.113	0.139

This table shows that the literary inquisition is not associated with a reduction in higher levels of education. Controls are the same as in Table 6. Column (1) reports our Logit estimates. Column (2) presents comparable OLS results. Column (3) focuses only on individuals aged 80 or greater in 1982. Column (4) controls for population density in 1820. Our preferred specification is Column (5), which further controls for population structure (i.e. number of individuals aged over 65). In Column 6 we include a range of modern controls. In all specifications robust standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.18: Long-run Effects on Basic Education: No Post-Treatment Controls

	Logit			
	(1)	(2)	(3)	(4)
Mean of Dep. Var.	0.153	0.153	0.153	0.153
Literary Inquisition	-0.413**	-0.509***	-0.366*	-0.366*
	(0.193)	(0.181)	(0.208)	(0.208)
Log N. Ming Jinshi	0.177***	0.223***	0.193***	0.193***
	(0.0520)	(0.0455)	(0.0341)	(0.0341)
Log Population	Yes	Yes	Yes	Yes
Chongxian	Yes	No	No	No
Treaty Ports	Yes	Yes	No	No
Courier Routes	Yes	Yes	Yes	No
Historical Controls	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes
Observations	72658	72658	72658	72658
Pseudo R^2	0.296	0.296	0.295	0.295

This table shows the effects of a literary inquisition at a prefectural level on the literacy rates of individuals age over 70 in 1982 excluding post-treatment controls. Controls are the same as in Table 6. Column (1) replicates Column (4) of Table 6. Column (2) does not control from whether a prefecture is recorded as Chongxian or "busy". Column (3) does not control for the presence of a Treaty Port. Column (4) does not control for whether a prefecture contains a courtier route. In all specifications robust standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.19: Long-run Effects on Basic Education: Controlling for Selective Migration

	Probability Literate: Logit Regression						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mean of Dep. Var.	0.153	0.153	0.153	0.153	0.153	0.153	0.153
Literary Inquisition	-0.413**	-0.424**	-0.426**	-0.419**	-0.532***	-0.502***	-0.429**
	(0.193)	(0.191)	(0.190)	(0.163)	(0.169)	(0.183)	(0.174)
Migration Records	None	Certain	Log Certain	Binary Certain	Possible Certain	Log Possible	Binary Possible
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72658	72658	72658	72658	72658	72658	72658
Pseudo R^2	0.295	0.295	0.295	0.296	0.296	0.296	0.295

This table provides evidence for the validity of our migration variable. All specifications control for the log of the number of Ming Jinishi and for prefectural population in 1982. Historical and individual controls are the same as in Table 6. In all specifications, robust standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.20: Controlling for the Number of Victims During the Cultural Revolution

	Probability Literate: Logit specification					
	(1)	(2)	(3)	(4)	(5)	(6)
Literary Inquisition	-0.435**	-0.437**	-0.488**	-0.386**	-0.389**	-0.420**
	(0.180)	(0.180)	(0.196)	(0.196)	(0.197)	(0.173)
Cultural Revolution Deaths (v. 1) P.C	-0.00304**	-0.00306**				
	(0.00151)	(0.00150)				
Cultural Revolution Deaths (v. 1) Abs. N.			-0.0688***			
			(0.0210)			
Cultural Revolution Deaths (v. 2) P.C				-0.00227*	-0.00260*	
				(0.00132)	(0.00150)	
Cultural Revolution Deaths (v. 2) Abs. N						0.0633
						(0.0539)
Log N. Ming Jinshi	0.157***	0.159***	0.132**	0.155***	0.160***	0.182***
	(0.0491)	(0.0482)	(0.0515)	(0.0525)	(0.0500)	(0.0521)
Log Population	-0.161*	-0.162*	-0.130*	-0.167**	-0.164**	-0.0802
	(0.0839)	(0.0884)	(0.0769)	(0.0781)	(0.0781)	(0.0798)
Average Death Rates		-0.0155			-0.0711	
		(0.0964)			(0.114)	
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72658	72658	72658	72658	72658	72658
Pseudo R^2	0.297	0.297	0.297	0.297	0.297	0.297

This table shows the effects of a literary inquisition at a prefectural level on the literacy rates of individuals older than 70 years old in 1982 controlling for death rates during the Cultural Revolution. Data on cultural revolution deaths is from Walder (2014) and is described in the text. Version 1 uses only prefecture-level sources only aggregating county-level sources to create a prefecture-level measure when prefecture level sources are unavailable. Version 2 uses only prefecture level data that are aggregated from county-level sources. Columns (1)-(2) shows that the impact of a literary inquisition survives controlling for the number of per capita Cultural Revolution deaths based on version 1 of the data. Column (3) controls for the absolute number of deaths using version 1. Columns (4)-(5) uses per capita Cultural Revolution deaths using version 2. Column (6) uses the absolute number of Cultural Revolution deaths using version 2. Historical controls include agricultural suitability, whether a prefectural was in Southern China, log population density in 1829, elevation, distance to the coast, distance to a historical courier route, whether a prefecture had a "busy" country in 1820, whether a prefecture contained a treaty port. Individual level controls include gender, marital status, number of children, and the number of couples in the household. Robust standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.21: Long-Run Effects on Infant Mortality

| | Infant Mortality (per thousand) | | |
	(1)	(2)	(3)
Mean of Dep. Var.	27.08	27.08	27.08
Literary Inquisition	6.707*	6.882**	5.742*
	(3.387)	(3.294)	(2.891)
% Over 65	No	Yes	Yes
% Agricultural Population	No	No	Yes
Output	No	No	Yes
Log N. Ming Jinshi	Yes	Yes	Yes
Log Population	Yes	Yes	Yes
Historical Controls	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes
Observations	72	72	72
Adjusted R^2	0.700	0.700	0.783

This table shows the effects of a literary inquisition on infant mortality. Prefecture level controls include the following: agricultural suitability, log number of Ming jinshi, ruggedness, log population in 1820, distance to the coast, distance to a historical courier route, distance to Beijing, whether a prefecture was in Southern China, whether a prefecture contained a treaty port. Column (1) is our benchmark specification. Column (2) controls for the proportion of over 65s. In column (3), we control for the proportion of a prefecture that work in agriculture and for the log of gross output in 1982. Robust standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.22: Long-run Analysis: No Relationship with Other Outcomes

	% Employed (1)	% Industrial (2)	Birth Rate (3)	Death Rate (4)	% Over 65 (5)	% Under 14 (6)
Mean of Dep. Var.	51.75	14.58	21.89	6.216	4.977	33.70
Literary Inquisition	-0.392	-0.480	-0.528	-0.00150	-0.185	0.122
	(1.351)	(4.677)	(1.321)	(0.373)	(0.398)	(1.244)
Log N. Ming Jinshi	Yes	Yes	Yes	Yes	Yes	Yes
Log Population	Yes	Yes	Yes	Yes	Yes	Yes
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72	72	72	72	72	72
Adjusted R^2	0.719	0.481	0.601	0.715	0.594	0.668

This table shows the relationship between a literary inquisition and a range of other outcomes. Historical controls include the following: distance to the coast, distance to a historical courier route, distance to Beijing, whether a prefecture was in southern China, and whether a prefecture contained a treaty port. Column (1) studies the effect on the proportion of the population employed. Column (2) examines the effect on the proportion of the population employed in industry. In columns (3) and (4), we look at the effect on birthrates and death rates. Columns (5) and (6) examine the relationship between inquisitions and the age structure of a prefecture. In all specifications robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.23: Long-Run Analysis: Modern Political Attitudes (CPoC)

	People Should not have the right to vote unless they understand Democracy[†]		Western-Style Multiparty System Not suitable for China[♮]		Modern China should be guided by Confucian Thinking[§]	
	(1)	(2)	(3)	(4)	(5)	(6)
Literary Inquisition	-0.0809***	-0.0544*	-0.110***	-0.0938***	-0.145***	-0.128***
	(0.0308)	(0.0322)	(0.0278)	(0.0315)	(0.0386)	(0.0435)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Excluding Beijing	No	Yes	No	Yes	No	Yes
Observations	53491	34435	53469	34425	53502	34446
Pseudo R^2	0.011	0.010	0.008	0.008	0.031	0.035

This table explores the impact of past persecutions on modern attitudes to politics. The dependent variable are responses to questions on the CoPC survey. Controls include income ad education and we include birth year fixed effects in all specifications. Robust standard errors are clustered at the prefectural level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Literary inquisitions were preemptive persecutions. Table 3 provides evidence that they were not a response to local economic or political conditions. Recall that our historical panel exploits variation in the timing of persecutions to assess the impact of persecutions on otherwise comparable prefectures. However, in assessing the impact of literary inquisitions on twentieth-century outcomes, we are not able to employ panel data. To overcome this limitation, we implement an instrumental variable (IV) strategy.

To motivate our IV strategy, we consider how tensions between the Manchus and the Han Chinese might vary across China. In particular, we are concerned with Manchu's fear of the Han majority . Recent studies provide evidence that the establishment of states comprising groups who have different languages and ethnicities, and lack a shared history of living in a single state, have negative political and economic effects (Michalopoulos and Papaioannou, 2013; Dippel, 2014). In our historical setting, tensions between Han Chinese and their Manchu rulers were likely greater in areas where there was greater cultural differences and a shorter history of shared interactions. This was reinforced by the policies of the Qing state which restricted migration of Han Chinese into Manchuria and sought to maintain a distinct Manchurian ethnic identity.[56]

Open tensions and conflict between Manchus and Han Chinese did not openly manifest themselves during the High Qing period, largely due to the success of the Qing rulers in suppressing potential dissent and opposition. As we note above, the Qing state was an 'established dictatorship' (Svolik, 2009) and as such it did not afford any space for potential opponents of the regime, But anti-Manchu sentiments did reappear at the end of the nineteenth century as the power of the Qing state weakened suggesting that there was an undercurrent of interethnic tensions and discontent throughout the eighteenth century. This suggests that, even in the absence of open opposition, underlying tensions between the ruling dynasty and the population were greater in areas where there was greater cultural differences and a shorter history of shared interactions. Here we exploit variation in such interethnic tensions as a potential source of exogenous variation in persecution probability.

Specifically, we expect the probability of persecution to be higher in areas that where there was less of a history of interactions between the Manchu and the Han Chinese. In such areas there would be less of a history of cultural interaction between the ruling elite and the ruled, and hence more potential distrust between the Qing and the local inhabitants.

For this reason, we employ distance to the Manchu capital in the years immediately prior to the Manchu invasion of China, Shenyang (Mukden) as our instrument. Distance to Shenyang

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[56]Manchu bannerman and their descendants were forbidden from marrying Han Chinese and subject to the jurisdiction of Manchu law.

Table A.24: Instrumental Variable Analysis: Distance to Shenyang

	Logit (1)	IV (2)	Logit (3)	IV (4)	Logit (5)	IV (6)
			Probability Literate			
Literary Inquisition	-0.351*	-0.612***	-0.375*	-0.597***	-0.371*	-0.556***
	(0.193)	(0.0991)	(0.197)	(0.110)	(0.196)	(0.0885)
Distance to Beijing (3rd order Polynomial)	No	No	Yes	Yes	No	No
Number of pre-Qing Academies	No	No	No	No	Yes	Yes
Distance to Nearest Army Base	No	No	No	No	Yes	Yes
Number of Ming Martyrs	No	No	No	No	Yes	Yes
Qinling-Huaihe Line	Yes	Yes	Yes	Yes	Yes	Yes
Distance to Beijing	Yes	Yes	Yes	Yes	Yes	Yes
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72658	72658	72658	72658	72658	72658

This table reports the results from the second-stage of our instrumental variable analysis. In each pair of columns we compare our Logit specification with second-stage IV Probit estimates using Newey's two-step method. Our instrument is Distance to Shenyang. Columns (1) and (2) present the baseline specification, which controls for distance to Beijing and whether a prefecture is below or above the Qinling-Huaihe Line (a standard definition of Southern China) and use the same baseline and individual controls are the same as in Table 6. Columns (3) and (4) include a third-order polynomial in distance to Beijing. Columns (5) and (6) include controls for the number of pre-Qing academies, the number of Ming martyrs, and distance to the closest army base. In all specifications robust standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

is a valid IV because Shenyang was one of the ancestral homelands of the Manchus and the base from which the Manchus launched their invasion of China. On the formation of the Manchu state, Shenyang became their capital until they invaded China in 1644; thereafter it was not an important economic or political center for China as a whole.

Distance to Shenyang provides a source of exogenous variation in the cost of opposing the Emperor. To satisfy the exclusion restriction, an instrument cannot affect literacy through any channel other than the probability of persecution. To control for factors that might otherwise shape literary levels, we condition our instrument on distance to Beijing, as Sng (2014) argues that state capacity declined further away from the capital. We also condition the instrument on an indicator variable based on whether a prefecture was in northern or southern China.

Table A.24 reports our second stage IV estimates obtained using IV Probit and the two-step method. Columns (1) and (2) compare our Logit and IV using our baseline set of historical and

individual-level controls (which are the same as in Table 6). Our IV estimates are negative and consistent in magnitude across specifications (and around 1/3 larger than our Logit estimates). To further ensure that we are not picking up a potentially non-linear distance to the capital effect, in columns (3) and (4) we introduce a third-order polynomial in distance to Beijing. Finally, there may be other sources of potential opposition to Qing rule. To ensure that these do not affect our results, columns (5) and (6) introduce controls for the number of pre-Qing academies (a proxy for the number of intellectuals), distance to the nearest army base (a measure of the cost involved in putting down a rebellion), and the number of individuals who died or committed suicide for the Ming cause and who were recorded as "Ming Martyrs". These measures do not affect the magnitude of our IV estimate and provide further reassurance that the impact of persecutions on literacy levels at the end of the Qing dynasty was causal.

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