Autocratic Rule and Social Capital: Evidence from Imperial China*

Mark Koyama‡ and Melanie Meng Xue§

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Abstract: This paper explores the consequences of autocratic rule for social capital at a subnational level. Between 1660-1788, the Imperial Chinese state conducted a number of persecutions known as literary inquisitions. Using a difference-in-differences approach we show that these persecutions led to a decline in social capital as measured by the number of charitable organizations and to a decline in intellectual activism, as measured by the number of notable scholars at a prefectural level. Focusing on the long-run effect of persecution on voluntary contributions to local public goods we use the 1982 census to provide evidence that that literary inquisitions weakened the provision of basic education at the end of the Qing period: the cohort born in the early 20th century, living in prefectures affected by literary inquisitions, had 4 percent lower literacy rates. Finally, by examining recent survey data, we provide further evidence that the mechanism linking a legacy of persecutions to lower social capital was via cultural norms.

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

JEL Codes: N45, K42, I2

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‡Email: mkoyama2@gmu.edu. Center for Study of Public Choice, Carow Hall, MSN 1D3, 4400 University Drive, Fairfax, VA 22030. Homepage: https://mason.gmu.edu/ mkoyama2/About.html

§Email: melanie.xue@anderson.ucla.edu UCLA Anderson School of Management, 110 Westwood Plaza, C512, Los Angeles, CA 90095, Homepage: http://melaniexue.bol.ucla.edu

I Introduction

Autocratic rule can have a detrimental and long-lasting impact on economic and political outcomes. Existing work has established that colonial rule left a negative legacy where extractive institutions were imposed (Acemoglu et al., 2001; Nunn, 2008; Nunn and Wantchekon, 2011; Dell, 2010). But little research has been conducted on the systematic impact of state-orchestrated persecutions on the social fabric of society. This is the aim of this paper.

We study the impact of the high-profile persecutions conducted by Qing China (1644-1912) against individuals suspected of expressing disloyalty. These persecutions are referred to by historians as 'literary inquisitions'. Existing scholarship suggests that the resulting fear of persecution elevated the risks facing writers and scholars, created an atmosphere of oppression and general culture of distrust which deterred intellectuals from playing an active role in society. But these claims have never been systematically investigated. Putting together several unique datasets for historical and modern China, we explore the impact of literary inquisitions on social capital in Qing China and trace it's long-impact on modern China via its effect on cultural values.

Conducting a difference-in-differences analysis across prefectures, we are able to exploit variation in the timing of persecutions and to control for time invariant differences across prefectures to estimate the impact of persecutions on measured social capital. We find that a literary inquisition is associated with a 38% decline in the number of charitable organizations in a prefecture in subsequent decades (relative to the sample mean). This reflects a decline in the ability of individuals to organize and cooperate to mobilize the local resources of community and in local levels of trust and engagement.

A literary inquisition is associated with an approximately 33% decline in the number of notable writers from a prefecture, relative to the sample mean. Inline with qualitative accounts, we find that the number of notable writers in a prefecture affected by a literary inquisition could recover, perhaps because writers could switch away from potentially sensitive topics such as history towards more neutral subjects such as philology. In contrast, our analysis suggests that the effect of a persecution on the number of charitable organizations was permanent.

Second, building on a recent literature that has explored the persistence of historical policies and institutions on more recent developmental outcomes (e.g Alesina and Fuchs-Schündeln, 2007; Nunn and Wantchekon, 2011; Alesina, Giuliano, and Nunn, 2013), we examine the long-run impact of these persecutions.[1] To conduct this analysis, we link our historical panel analysis to several novel modern individual-level datasets.

The literary inquisitions affected both ordinary people and local elites. The latter were

[1]Other important papers in this literature include Grosfled et al. (2013); Voigtländer and Voth (2012); Grosjean and Khattar (2014). See the survey by Alesina and Giuliano (2015).

also the main providers of local schooling. In the absence of a system of public education, the provision of education at a local level was dependent on the ability of local elites to coordinate with one another in the mobilization of resources; this required cooperation and trust. Thus if the persecution of intellectuals had a detrimental impact on social capital, it should also have negatively affected the provision of basic education.

To test this channel we need information about educational outcomes in the late Qing period. As there is no disaggregated literacy data for nineteenth or early twentieth century China, we innovate by using a later census which reflects the level of human capital of individuals born in the last decades of the Qing dynasty. We find that in prefectures that experienced literary inquisitions literacy rates for individuals aged 70 or older were 4% lower. This effect is not driven by survivorship bias and selective migration. Implementing an instrumental variable strategy based on distance to the pre-1644 Manchu capital we argue that the impact of literary inquisitions that we detect at the turn of the twentieth century was likely causal.

We go on to explore the long-run impact of persecutions on social capital. Modern civil society organizations remain regulated by the Chinese government so they does not provide a good measure of existing levels of social capital. Instead we study other outcomes that reflect the level of social capital. Local health clinics continue to operate at the village level in China and 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. Examining data on infant mortality in the 1982 census, we find higher levels of infant mortality in prefectures affected by the literary inquisition.[2] This is consistent with the persecution of intellectuals resulting in a permanent decline in the level of social capital. Importantly, there is no effect of persecutions on other economic outcomes suggesting that this effect is unlikely to be driven by unobservables associated with economic growth or development.

If persecutions indeed had a long-run impact on social capital this should be reflected in culture. We indeed find evidence of this in modern levels of trust and political engagement. Individuals in prefectures affected by the literary inquisition demonstrate lower levels of trust in government, of strangers and businessmen. They do not, however, report lower levels of trust in their close family or other relatives. This absence of such effects on within family trust is evidence that the effect that we identity is not driven by economic development or some unobserved factor but plausibly reflects the legacy of past political persecutions.

Relationship to the Literature In investigating how autocratic rule can reduce social capital, our analysis contributes to several important recent debates. An extensive literature documents the importance of social and civic capital for the functioning of democratic and

[2]Data on infant mortality in the 2000 census is absent.

liberal institutions.[3] North et al. (2009) argue that in mature and liberal democracies—what they term open-access orders—there is typically a rich and mature civil society characterized by a wide array of organizations and societies, separate from, and unconnected to, government. From Tocqueville (1998) onwards, however, it has also been argued that autocratic institutions undermine social capital, civic organization, and social cohesion.[4] North, Wallis, and Weingast (2009) similarly emphasize how autocratic 'natural states' restrict the growth of civil society because they are reluctant to allow organizations to develop that are independent of the state.

Research has shown that negative shocks can affect social capital. Nunn and Wantchekon (2009) study the effect of the slave trade on trust and social capital. They find that individuals belong to ethnic groups that were heavily targeted by the slave trade are less trusting of others today. Lower levels of trust are interpreted as consistent with models of the vertical transmission of cultural values over generations as theorized by Bisin and Verdier (2000, 2001) and Tabellini (2008). In contrast, other research finds that exposure to civil war tends to *increase* measured social capital as it leads to greater social cohesion (see Gneezy and Fessler, 2011; Voors et al., 2012; Gilligan et al., 2014).

In contrast to work on the legacy of the slave trade and conflict, identifying the impact of autocratic rule in general and political persecutions in particular on social capital has been difficult to achieve. Previous research has begun to explore the relationship between political institutions in the past and social capital. Tabellini (2010) studies the impact of political institutions such as constraints on the executive on cultural traits such as trust, respect, and the degree of control individuals feel they have over their lives. Inspired by Putnam (1994), Guiso et al. (2013) 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 per capita and levels of organ donation. Lichter et al. (2015) examine the impact of the Stasi during Communist rule on social capital by studying differences in trust and a range of economic outcomes along the border between eastern and western Germany and in a panel data setup.[5] And in their survey of the concept of social capital, Guiso et al. (2011) discuss the idea that autocratic political institutions can led to a

[3]For instance, de Tocqueville (2000); Coleman (1990); Fukuyama (1995, 1997); Putnam (1994); Helliwell and Putnam (1995); Putnam (2001); Gellner (1996); Guiso et al. (2004); Helliwell and Putnam (2007); Nannicini et al. (2013); Schofer and Longhofer (2011). Recent research by Satyanath et al. (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.

[4]Tocqueville (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.

[5]Alesina and Fuchs-Schündeln (2007) show that Communism changed preferences for redistribution in Germany. Others have speculated that the rule of Communist dictatorships had a persistent negative impact on social capital.

decline in trust, civic engagement and other measures of social capital but their findings are inconclusive. Finally, Acemoglu et al. (2014) examine the relationship between the number of local chiefs and social capital in Sierra Leone. In contrast to the expectations they find that far from reducing social capita, areas where a small number of chiefs are dominant have higher levels of measured social capital. Acemoglu et al. (2014), however, interpret this finding as suggests that a tightly knit elite are able to capture civil society.

An important reason why it is difficult to identify the causal impact of political institutions such as autocracy on social capital is that autocratic political institutions are, by nature, nation-state level institutions so there is little within-country variation for researchers to exploit. By studying the persecutions that took place in Qing China we can focus on the consequences of the intensification of autocratic rule within a single state.

Another 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 study the *intensification* of imperial autocracy in China—following the transfer of power to the Manchus and the establishment of the Qing dynasty—an event that was plausible exogenous to the outcome variables we examine. During the period of history that we study, Qing China was remarkably politically and economically stable, unthreatened by either external threats or internal rebellions, making it possible for us to identify the impact of persecutions on intellectual activity and social capital. And, as we focus on within-country, within-region and within province variation, we are able to hold other institutional differences constant. For these reasons, Qing China provides an important and novel environment for examining the legacy of autocratic rule.

A small number of papers have studied the consequences of persecutions. Acemoglu et al. (2011) examine the consequences of the Holocaust in Russia. The main channel they focus on is how persecutions led to a reduction in 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. Waldinger (2010, 2012) studies the negative effects of the expulsion of Jewish scientists for scientific outcomes including publications and the placement of PhD students in Germany. Our analysis is distinct from these papers in several respects. We provide systematic evidence for the impact of autocratic rule and state-orchestrated persecutions on local measures of social capital and civic engagement.[6]

[6]Another related paper that studies the impact of persecutions on long run outcomes is Vidal-Robert (2014) who 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 they are correlated with lower levels of trust and less social capital.

Studying the consequences of state persecutions in China provides a different institutional setting to that offered by Nazi Germany or the Soviet Union allowing, for instance, the long run effects of these persecutions to explored.

Another recent literature looks at how state building can shape culture. Johnson (2015) studies the consequences of state building in pre-Revolutionary France. Using a regression discontinuity approach, he finds that areas within the borders of the *Cing Grosses Fermes*—where the state had the greatest powerful to tax—shared national rather than local concerns on the eve of the French Revolution. He finds a positive impact of state building on the formation of national culture and on subsequent economic outcomes. Similarly Dell et al. (2015) examine Vietnam and find that a legacy of a bureaucratic state is associated with more local associations and better governance today. In contrast, Lowes et al. (2015) study the legacy of the Kuba kingdom on social norms such in the modern-day Congo. Conducting a variety of experiments designed to infer norms concerning rule-following and cheating behavior, they find that descendants from the Kuba kingdom are substantially more likely to break the rule or cheat opportunistically than are descendants from their non-state neighbors, particularly the Lele.

A third literature our findings relate to are studies of the political economy of autocracy in modern China. Historians have noted that policies of Qing emperors during this period have 'more parallels with that practiced in post-1949 communist China than that in previous imperial dynasties' (Whitfield, 2001, 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.[7] For our purposes, China during the High Qing (1680-1800) period provides an ideal setting with which to study the long-term impact of state persecutions as this was a period of political stability in which there were few wars and rebellions, or other major disruptions that could potentially confound our analysis. Finally, the subject of civil society has become increasingly relevant in contemporary debates in China. We show that the troubled relationship between autocratic rule and civil society in China has deep historical roots.

Structure of the remainder of the paper 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 DID strategy and provide evidence that political persecutions had an immediate

[7]Meng and Gregory (2002); Li et al. (2010); Gong et al. (2015) and Giles et al. (2015) study the impact of the Cultural Revolution and the 'send-down' movement. Giles et al. (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. Note that Li et al. (2010) find that individuals who were 'rusticated' or sent into the countryside did not in general experience worse life outcomes; in fact on some dimensions they did better than individuals who were not sent down.

impact on social capital in Qing China. We explore the persistence impact of the literary inquisitions on literacy at the end of Qing dynasty and measures of local public goods provision in the late twentieth century in Section IV. In Section V we place our findings in the broader context of Chinese history and the debate on the Great Divergence and the long-run affects of autocracy.

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. In fact, the period we study from the late seventeenth century until the end of the eighteenth century was one of the most stable in Chinese history. Taxes were low and there were few rebellions; economic historians view this as a period of economic and demographic expansion (see Bin Wong, 1997; Pomeranz, 2000; Vries, 2015).

Like previous Chinese dynasties, the Qing emperors were autocratic rulers and autocrats employ a range of strategies to maintain power from terror to control of information or the coopting of elites (de Mesqita et al., 2003; Gregory et al., 2011; Guriev and Treisman, 2015). Control of media, education, and information play a crucial role in maintaining autocratic governments in the modern age; similar considerations governed the thinking of the rulers of imperial China.

Political authority requires legitimation. Greif and Rubin (2015, 5) refer to political legitimacy as the 'common knowledge probability that each member of a society holds that others will obey the authority'. They 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'. This required providing internal peace and justice as well as defending the borders from nomadic, non-Chinese people. The main legitimizing agents in premodern China were the educated degree holders known as the literati or gentry. They had the ability to confer political legitimacy on a ruler (Man-Cheong, 2004). For this reason, the Qing sought to control the discourse of the educated class of literati in order to cement their claim to be the legitimate rulers of China.

Despite their successes, the Qing faced a particular problem of legitimacy as rulers of China. As Manchus, they were an ethnic minority. In this respect their situation resembled

that of modern dictatorships based on a small ethnic minority group such as the Alawites in Syria or the Sunni Muslims in Bar'athist Iraq (see Haklai, 2000). An established literature in economics studies the role ethnic divisions played in generating conflict (Fearon and Laitin, 2003; Esteban and Ray, 2011a,b; Esteban et al., 2012). One insight from this literature is that conflicts are particularly intense when there is a 'public' prize that can be captured as the losing ethnicity resents the fact that the victors have captured control of the state while the minority rulering group fear this resentment. This fear of the Han Chinese majority explains many aspects of Qing rule.

B The Literary Inquisition

The literary inquisitions are mentioned by a large number of historians. But, though studied by scholars in the early and mid-twentieth century (e.g. Goodrich (1935); Ch'i-ch'ao (1959); Wiens (1969)), these persecutions have not been the subject of a specialized 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.[8] This paper is the first systematic examination of their consequences.

The literary inquisitions we study took place from 1660 through to 1788. These persecutions targeted speech and thought crimes. Their victims included both members of the educated class and ordinary people including merchants and fortune tellers.[9] They aimed at deterring subversive writing and activities. Interpretation was all: the definition of what was deemed subversive was not defined and changed over time: 'the ruler was the sole interpreter of these cases, and some accusations were based on suspicion.' (Huang, 1974, 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, 168). It marks the intensification of the Qing autocracy.

To understand these persecutions we outline a simple signaling model in Appendix A. As we discussed, the literary inquisitions were used by Qing emperors to establish deterrence as much as punish actual subversion. Our model that generates the following predictions: strong rulers from dynasties that lack legitimacy will be most likely to employ widespread political persecutions to signal their strength and ability to root out opposition; weak rulers or rulers from more established dynasties will be less likely to use indiscriminate persecutions as a tool of governance.

This simple framework can rationalize several characteristics of these persecutions. First, these persecutions were not targeted at specific regions or at particular individuals or clans. Rather they were intended to overawe society at large, and particularly the scholarly elite. In

[8] See, for example, Gernet (1972, 506), Huang (1974, 204–208), Guy (1987, 166–179), and Kuhn (2002)).

[9] 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).

this respect, they resembled Stalin-era show trials (see Gregory et al., 2011). Second, they did not target open opposition since there no group equivalent to the religious minorities of early modern Europe.[10]

Third, the number of individuals tried and punished during these literary inquisitions was small. However, the trials and executions were prominent and highly publicized. To illustrate, consider the case of Wang Xihou—a dictionary maker—who was arrested along with 21 members of his family, for offending the Qianlong emperor (Guy, 1987, 175–6). Wang was found guilty of several crimes, including printing in full the characters of the name of Confucius and of early Qing emperors, both of which was forbidden (Reischauer and Fairbank, 1958, 382). 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 Imperial directions' (Guy, 1987, 176). 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; Schmidt, 2003).

C The Legacy of Persecutions

Historians have suggested that these policies had important consequences.[11] Certain topics and areas of intellectual research were shut down. The practice of literary persecutions encouraged timidity on behavior of writers and intellectuals: Kuhn (2002) quotes 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". In reference to this, Kuhn comments: '[t]here is no doubt that alien rule—particularly under the touchy Qiianlong—had made the Han literati fearful and circumspect' (9). As a result, the ability of scholar-officials to provide independent or conflicting views to the emperor became more constrained. It is the impact of these persecutions on social capital that we seek to explore in our empirical analysis.

The fear generated by the literary inquisition extended across society. For while the most prominent victims of the literary inquisition were educated individuals, many uneducated people were also punished. Some cases, for example, involved the persecution of illiterate fortune-tellers. The impact of literary inquisitions seeped into society at large. Like Soviet-era

[10]For a discussion of religious persecutions in Europe see Johnson and Koyama (2013). In the the context of the Spanish Inquisition Vidal-Robert (2013) argues external wars led to more trials and executions. Anderson et al. (2016) show that weather shocks were associated with Jewish persecutions in pre-modern Europe.

[11]See Wiens (1969); Huang (1974); Schmidt (2003) and Gu (2003).

persecutions, individuals were encouraged to spy and report on one another generating a culture of distrust (Brook, 2005). We explore the extent to which this culture of distrust lingers to this day in Section IV.

III The Impact of Persecutions on Social Capital

We examine the number of charitable organizations at a prefectural level—an important indicator of local social capital and civic engagement. We find that in the prefectures of individuals targeted in a literary inquisition the number of charitable organizations falls. We go on to show that persecutions also led to a decline in the number of notable writers in a prefecture. Together this provides evidence that state persecutions in Qing China resulted in political and social quietism.

Our identification strategy utilizes a difference-in-differences strategy at the prefectural level.[12] We use propensity score matching to ensure that we are comparing like for like prefectures. Our panel setting confers several important advantage to our analysis. We are able to exploit variation in the timing of the persecutions between prefectures. Our treatment is the decade d in which an individual from a particular prefecture p is first persecuted. 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 is time varying, our control group comprises those prefectures that have not yet had an individual persecuted by time t.

A Repression of Civil Society under the Qing

We first study the effect of state persecutions on social capital and civil society. Social capital is a widely used concept in the social sciences. However, it is employed in a variety of ways that imprecise or difficult to measure. From Tocqueville onwards, social scientists have stressed the important role played by civil society organizations in generating social cohesion and providing local public goods (de Tocqueville, 2000; Putnam, 1994, 2001; Helliwell and Putnam, 2007). According to one scholar, civil society refers to '[a]n intermediate associational realm situated between the state on the one side and the basic building blocks of society on the other (individuals, families, and firms), populated by social organizations which are separate, and enjoy some degree of autonomy, from the state and are formed voluntarily by members of society' (quoted in Simon, 2013, xxxii). Guiso et al. (2011, 419) offer a tractable definition of social capital as civic capital that is useful for our purposes: 'those persistent and shared beliefs and values that help a group overcome the free rider problem if the pursuit of socially valuable activities'. This definition specifies the role that social capital

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

plays in overcoming collective action problems and it makes it clear that social capital is capital, i.e. it is durable.

We employ this interpretation of social capital to study the effect of literary inquisitions in China. Social capital according to this definition was largely but not exclusively provided by members of the educated elite. Therefore in our investigation of impact of these persecutions on social capital in Qing China we expect that it was the weakening of local elites that played the most important rule in weakening local civil society, reducing the ability of these educated elites to cooperate with one another and to mobilize resources for their communities.

Our measure of civil society is the number of charitable organizations. Charitable organizations played an important role in premodern China from organizing disaster relief, providing local public goods such as repairing local roads to looking after the indigent (Simon, 2013). These local organizations were non-governmental; they played an important role alongside the government provision of disaster relief studied by Shiue (2004). Simons 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, 60). In this respect our measure of social capital bears some resemblance to the measure of association density used by Satyanath et al. (2016) in their study of how social capital in nineteenth century Germany helped paved the way for the rise of the Nazi party.[13] In the Chinese context, these private charitable organizations evolved out of clan-based organizations and expanded so as to private relief to those outside of the community.[14] Publicly registered charities were often usually dependent on local funding (Rowe, 2009, 1220). As such, they relied on high levels of cooperation among local landowners: high levels of local social capital allowed local communities to mobilize resources for charitable organizations.[15]

Building on Tocqueville's observation that autocratic rule tends to reduce civic activity we expect persecutions to decrease measured social capital. Autocratic governments isolate individuals and over time this can lead to a decline in participation in society, cooperation, and trust. Autocratic rulers also directly seek to undermine voluntary organizations as individuals who are able to organize to provide local public goods may also be able to organize a rebellion to overthrow the autocracy.[16]

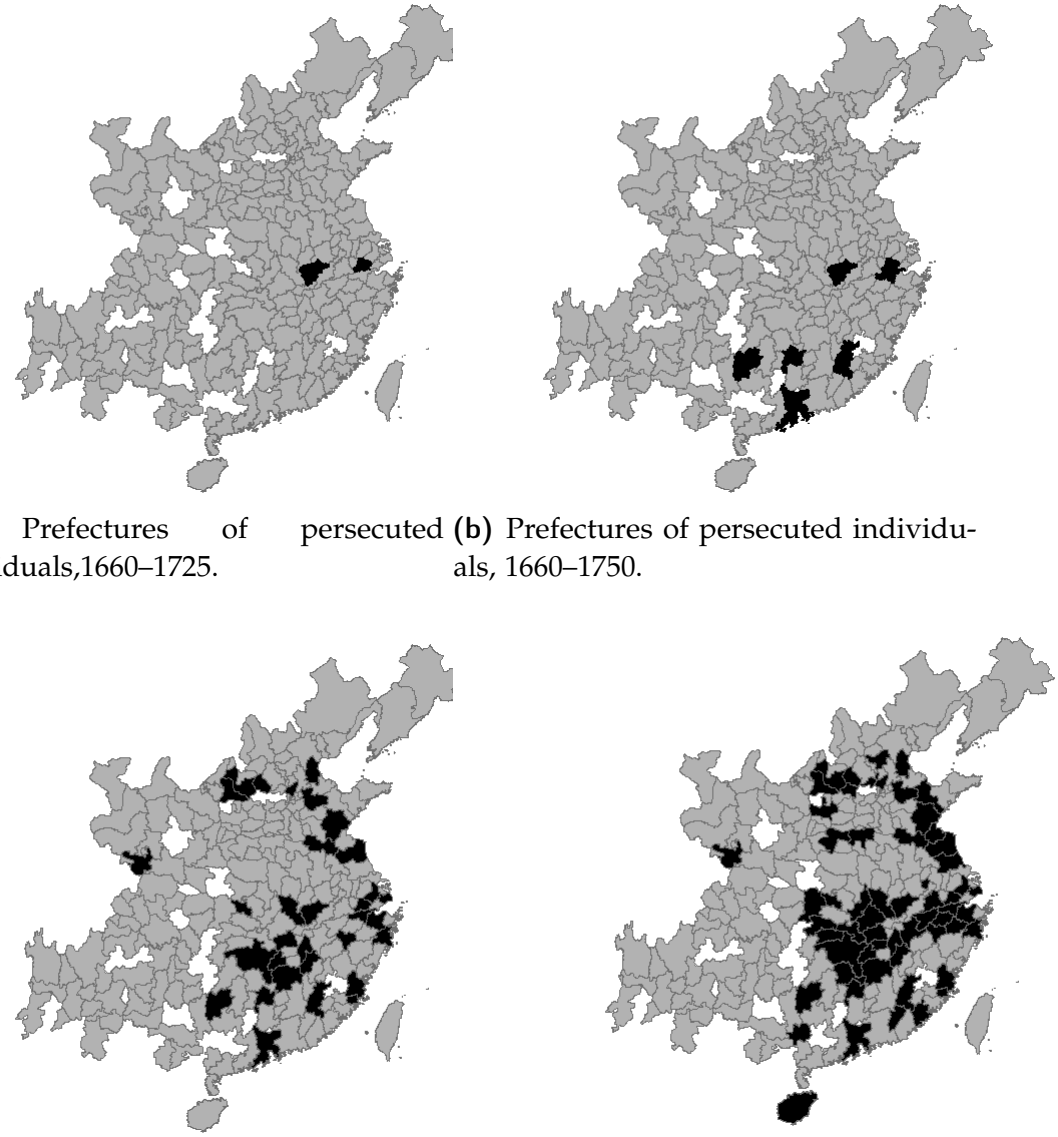
[13]We use the number of charitable organizations. In the German context, Satyanath et al. (2016) show that the number of associations is a good proxy for association density.

[14]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, 119).

[15]The desire to establish charitable organizations was influenced by neo-Confucian ideology and by Buddhism among the gentry. The desire to contribute to, and organize, such societies was a reflection of the self imagine of members of the gentry and literati. However, over time it expanded well beyond these origins and constitutes a good measure of social capital for our purposes.

[16]Similarly, in her celebrated analysis of totalitarianism, Hannah Arendt argued that totalitarian states seek to isolate individuals and to destroy the public sphere (Arendt, 1951). Qing China was far from a totalitarian

B Data



(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.

Figure 1: Prefectures of individuals persecuted as result of a literary inquisition per quarter century: 1725, 1750, 1775, 1800 .

Treatment We use data on the persecution of individuals from *Qing chao wen zi yu an* (Qing literary inquisition case). 88 cases are included in the book, dated from 1661 to 1788.[17] We

state; it lacked the apparatus and infrastructure of twentieth century autocracies. Nevertheless, it was similarly suspicious of associations between intellectuals.

[17]This is the most extensive and best source of data 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,

identify the hometown of each examination candidate mentioned as a victim of an inquisition. 75 of 88 cases can be matched to a specific county. The individuals involved in all 88 cases can be matched to a specific province and prefecture.[18]

Of these 88 cases, 74 out of 88 involved public trials in which the accused was 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. 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. Figure 1 depicts the prefectural boundaries of Qing China and displays the prefectures associated with victims of literary inquisitions per quarter century.

Dependent Variable Data for our main dependent variable, the number of charitable organizations in the Qing period, is provided by Liang (2001). Data drawn from gazetteers is subject to availability bias which could invalidate simple comparison made over time. Jiang (2005) is our source for data on all notable scholars in Chinese history. We extract the name of all individuals born between 1670 and 1800 who came from prefectures in our matched sample. The resulting dataset comprises 2,240 individuals.

Baseline Controls Our matching analysis requires covariates for factors that could affect human and social capital at a local level To measure preexisting levels of human capital we include the number of Ming-era examination graduates (specifically graduates of the metropolitan exam or *jjinshi*) and the number of pre-Qing era academies. To control for underlying differences in economic potential between prefectures we employ an estimate population in 1600, latitude, longitude, and agricultural suitability. We also control for access to different trade networks as measured by distance to either the Great Canal or the Yangtze river, distance to the coast, and whether or not a region belonged to the Ming trade area. To pick up other regional or economic differences we employ Skinner's definition of socioeconomic macro-regions as fixed effects (Skinner, 1977b).

1934). This source is also based on archival material and contains information on 70 inquisition cases.

[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, 37). Therefore the prefecture level is the lowest level of aggregation at which we expect to find a measurable effect of a literary inquisition.

Controls used in Robustness Tests To demonstrate that literary inquisitions were not associated with shocks we include time varying data on the number of natural disasters and conflicts. As a measure of state capacity we follow Xue (2016) and control whether a prefecture has access to one the major courtier routes that the imperial state used to govern the empire. It might be thought that one alternative to using persecutions to intimidate the population would be to station troops nearby. For this reasons we include data on the distance to the nearest army base.[19]

C Matching Prefectures

Literary inquisitions targeted offensive writing and speech. Places that were more prosperous or which had a more established literary culture may have faced a different risk of experiencing a persecution. For this reason 'treated' prefectures—prefectures that faced a literary inquisitions—could differ systematically from untreated prefectures in terms of their underlying characteristics. To overcome this issue 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).

Table B.5 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, denser populations, and higher levels of human capital as measured by the number of past examination candidates (Table B.5.(a). Such initial differences might produce different dynamics governing the number of notable writers 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 we exclude these prefectures from our analysis. The difference in observables remains, however (Table B.5.(b)).

Matching our prefectures on a range of covariates using propensity score matching allows us to address this potential source of bias.[20] By combining matching and a DID estimation, we aim to minimize the bias from observable characteristics and to obtain accurate estimates of

[19]Table B.3 presents our summary statistics and provides information on our important control variables. Further details on these variables are provided in our Appendix.

[20]As a robustness check we also employ Coarsened Exact Matching (CEM) in addition to propensity score matching (Iacus et al., 2011). CEM minimizes the problem of model dependence. Our analysis is robust to the use of a range of other matching methods.

the 'treatment effect' of an literary inquisition even though our setting is non-experimental.[21] After matching, we obtain a sample that is balanced in terms of observables across treated and untreated prefectures. As Table B.5 panel (c) indicates in our matched sample there are no statistically significant differences in observable characteristics between prefectures.[22]

D Specification & Results

To ascertain the impact of literary inquisitions on social capital, we estimate the following equation:

$$\begin{aligned} \text{N. Charitable Organizations}_{p,d} = & \beta \text{Inquisition}_{p,d} + + \Omega_p + \mathbf{\Lambda}_d \\ & + \mathbf{\Lambda}_d \mathbf{X}' + \epsilon_{p,d} \ , \end{aligned} \tag{1}$$

where subscript p represents a prefecture; and d a decade. $\text{Inquisition}_{p,d}$ denotes a prefecture p of an individual affected by an inquisition for all subsequent decades d. The treatment $\text{Inquisition}_{p,d}$ is an indicator variable that becomes equal to one in the decade d following an inquisition in prefecture p. $\mathbf{\Omega}_p$ are prefecture fixed effects. $\mathbf{\Lambda}_d$ represents decade fixed effects. We also include interactions between decade fixed effects and a range of time-invariant controls in most specifications to control for differential economic trends across regions. Baseline controls include initial population density in 1600, the number of Ming jinshi, a dummy variable based on which of Skinner's (1977a) socioeconomic macro region the prefecture belongs to, as well as latitude and longitude.

Table 1 provides support for the hypothesis that persecutions had a direct role in reducing social capital in Qing China. the number of charitable organizations in a prefecture is comparable across specifications. The baseline estimate in Column 1 suggests that a persecution reduced the number of charitable organizations about around 27% of the sample mean ($-0.745 \div 2.679$). One natural concern with our baseline specification is that different prefectures may be experiencing 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. We employ a widely used categorization developed by Skinner (1977a) to distinguish between nine different socio-economic macro regions in Qing China. These

[21] For discussion of this point see Heckman et al. (1998); Blundell and Monica (2000); Dehejia and Wahba (2002); 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); Squicciarini and Voigtländer (2015) for other examples of this approach.

[22] 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 1: DID Analysis. Number of charitable organizations

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	-0.745*	-0.817*	-1.018**	-1.002**	-0.314*
	(0.400)	(0.433)	(0.478)	(0.474)	(0.162)
Decade FE	Yes	Yes	Yes	Yes	Yes
Initial Pop × Decade FE	Yes	Yes	Yes	Yes	Yes
N. Ming Jinishi × Decade FE	No	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	No	Yes	Yes	Yes	Yes
Latitude & Longitude × Decade FE	No	No	Yes	Yes	Yes
Two-way Clustered S.E's	No	No	No	Yes	No
Lag N. Charitable Organizations	No	No	No	No	Yes
Observations	1308	1417	1417	1417	1417
Adjusted R^2	0.311	0.445	0.495	0.830	0.826

Notes: Column (1) presents our results only controlling for the interaction between decade fixed effects and log population in 1600. Columns (2) controls for the interaction between the number of Ming Jinishi and Skinners socioeconomic macro region variable and decade fixed effects. Column (3) is our baseline specification. It includes interactions with latitude and longitude. Column (4) is the same as column (3) except that it includes two-way clustering for our standard errors. In column (5) we include the lagged number of charitable organizations. In the other specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

were large economic areas with their own internal market systems and urban networks based around a core city. We interact these socioeconomic macro-region dummies with decade fixed effects in Column (2) to control for the effect of divergent economic trends between regions. To address similar concerns about differential geographic trends in Column (3) we interact latitude and longitude with decade FE. Finally to address concerns about the appropriate way to treat our standard errors, in Column 4 we follow Cameron and Miller (2015) and adopt a two-way clustering approach.

Our preferred specification in Column (3) suggests that a literary inquisition reduced the number of charitable organizations by 38% of the sample mean ($-1.018 \div 2.679$). For robustness we employ two-way clustering of our standard errors (Col. 4.) and include the lag of the number of charitable organizations as a control (Col. 5). Since our measure of social capital is a stock variable it is unsurprising that including the lag number of charitable organizations reduces the size of our coefficient. Hence it is reassuring that the number of charitable organizations fall even when we control for the past number of organizations.

Table 2: DID Analysis. Number of charitable organizations: additional controls

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	-1.018**	-0.998**	-0.980**	-1.104**	-1.049**
	(0.478)	(0.481)	(0.451)	(0.495)	(0.476)
Decade FE	Yes	Yes	Yes	Yes	Yes
Baseline Controls×Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	Yes	Yes	Yes	Yes	Yes
Ag Suitable×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
Observations	1417	1417	1417	1417	1417
Adjusted R^2	0.495	0.500	0.502	0.499	0.495

Notes: 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. Columns (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. Column (5) we include an interaction term for whether a prefecture is in Guangdong. Column (6) includes all interaction terms at once. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Robustness Checks To demonstrate the robustness of our man results, in Tables 2,3, and 4 we introduce a range of other interactions in order to control for differential trends in economic development, culture, and politics. Table 2 introduces interactions between a range of other time invariant economic controls and decade fixed effects; these controls include agricultural suitability, distance to either the Grand Canal, Yangtze river, distance to the coast and controls for Guangdong which was an important Qing trading post and the only part of China where foreign merchants were allowed to trade during this period after 1750. On the one hand these economic factors could affect the demand for charitable organizations in trade led to greater inequality. On the other hand, access to trade could also reduce the need for charities by increasing incomes and facilitating consumption smoothing. Additionally, these economic factors could also lead to great wealth and hence increase the supply of charitable organizations. Our results remain broadly consistent across specifications. Table 3 introduces interaction terms for the number of natural disasters, conflicts as these could both increase the demand for charitable organizations but might also impede the ability of a prefecture to provide such organizations. Table 3 also controls for the number of Ming

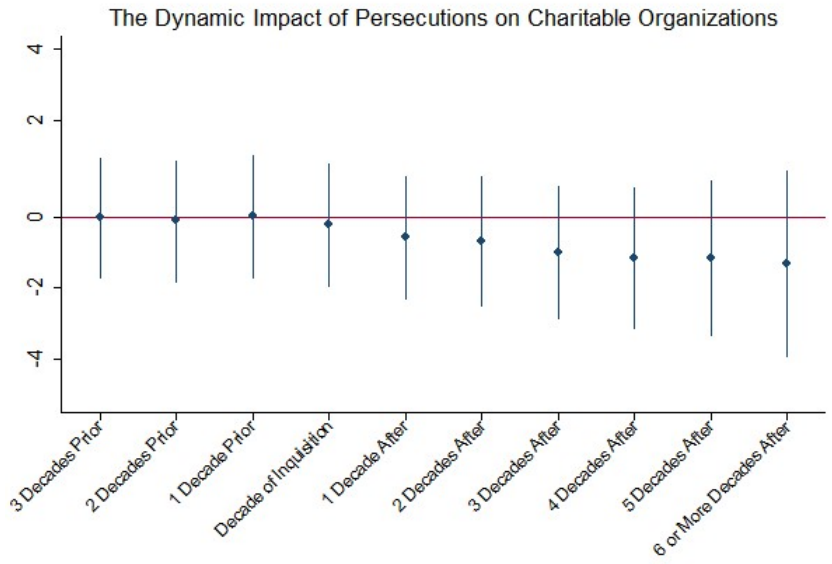


Figure 2: The Effect of Persecution on Charitable Organizations. Error bands represent 95% CI. The table corresponding to this figure is Table **??** in the Appendix. .

Table 3: DID Analysis. Number of charitable organizations: Conflict, Disaster and Human Capital controls.

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	-1.018**	-0.862*	-1.056**	-0.996**	-0.896*
	(0.478)	(0.447)	(0.489)	(0.469)	(0.461)
Baseline Controls×Decade FE	Yes	Yes	Yes	Yes	Yes
Disaster intensity	No	Yes	No	No	Yes
N. conflicts	No	No	Yes	No	Yes
N. Jinshi	No	No	No	Yes	Yes
Observations	1417	1339	1308	1417	1236
Adjusted R^2	0.495	0.489	0.501	0.496	0.494

Notes: Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects. Baseline controls include Ming Jinshi, socioeconomic macro regions, latitude and longitude. Columns (2) adds disaster intensity. Column (3) includes the number of conflicts. Column (4) includes an interaction with the number of Jinshi. Column (4) includes all interaction terms at once. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

era Jinshi (the highest level of examination graduate) as this is a proxy for how politically connected a prefecture is.

Table 4 introduces our most important political economy controls. We show that the magnitude of the coefficient we obtain in our baseline analysis (Col. 1) remains unaffected

Table 4: DID Analysis. Number of charitable organizations: Time Invariant Political Economy Controls

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	-1.018**	-0.903*	-0.994**	-1.056**	-1.061**
	(0.478)	(0.499)	(0.474)	(0.483)	(0.463)
Decade FE	Yes	Yes	Yes	Yes	Yes
Baseline Controls×Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	Yes	Yes	Yes	Yes	Yes
N of pre-1644 Academies×Decade FE	No	Yes	No	No	No
N. of Ming Martyrs×Decade FE	No	No	Yes	No	No
Log Distance to Qing Army Base × Decade FE	No	No	No	Yes	No
Log Distance to Capital× Decade FE	No	No	No	No	Yes
Observations	1417	1417	1417	1417	1417
Adjusted R^2	0.495	0.495	0.498	0.501	0.532

Notes: Column (1) presents the baseline specification which includes our baseline controls interacted with decade fixed effects and socioeconomic region fixed effects. Baseline controls include Ming Jinishi, log 1600 population, latitude and longitude. Columns (2) adds an interaction term with the number of pre-1644 academies. Column (3) includes an interaction with the number of individuals who died fighting the Qing (Ming Martyrs). Column (4) includes an interaction with distance to a Qing army base. Column (5) we include an interaction term with distance to the capital, Beijing. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

when we interact time invariant political economy variables that are potentially related to persecution incidence with decade fixed effects. The first variable we consider is the number of pre–1644 academies (Col. 2). During the late Ming period academies played a crucial role in shaping intellectual discourse (see Wakeman, 1998; Dardess, 2002). In contrast, the Qing suppressed the independence of the academies as soon as they came to power. The number academies is a proxy for adherence to Ming-rule and may measure cultural attitudes that were hostile to the Qing autocracy. In Column (3) we employ data on 'Ming Martyrs'. The Ming Martyrs were individuals who decided to sacrifice themselves in defense of the Ming cause during the Ming-Qing transition. As Koon-piu (1994) discusses while it was claimed that the was 'universal duty' for officials and others to die in defense of the Ming dynasty, only a relatively small number of individuals did indeed sacrifice themselves. This variable therefore also us to measure residual loyalty to the old dynasty and potential antagonism to the Qing state. We also employ distance to the nearest Qing army base as both a measure of the ability of the state to suppress potential disloyalty and as an alternative way to intimate the population (Col 4.). Finally in Column 5 we include distance to the capital Beijing as

a measure of the political control of the Qing state. Across specifications, including these controls does not affect our estimate of the effect of persecutions on the subsequent number of charitable organizations in a prefecture.

Figure 2 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 writers, the impact of a persecution the impact on social capital of a literary inquisition was permanent.[23] This finding is consistent with other studies that observed that social capital can be dissipated and damaged by a negative shock (e.g. the slave trade as studied by Nunn and Wantchekon, 2009).[24] In summary, our results support the hypothesis that persecutions reduced the ability of individuals to cooperate and provide local public goods.

Impact on Notable Scholars Part of the definition of social capital is that it is social i.e. it reflects the ability of a group of individuals to collectively organize and cooperate. But social capital also requires individuals to be willing to supply effort and to choose not to free ride on the contributions of others. We have provided evidence that literary inquisitions reduced the ability of communities to organize and build charitable organizations. To complement this community-level finding, we now turn to evidence that individuals in prefectures affected by persecutions were more likely to withdraw into the private sphere and away from public engagement.

To explore the impact of persecutions on individual behavior, we study the number of notable writers from each preference. Individuals who are recorded as having written major works or having contributed intellectually to society are recorded as notable writers. This variable therefore reflects the willingness of the members of the intellectual class to risk doing work that could attract either favorable or adverse attention.

We focus on the impact of literary inquisitions on writers who were between the age of 10 and 30 during the decade of a literary inquisition. The impact of a persecution should not reduce the number of established writers in a prefecture as they might have already produced their 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. We estimate an equation of the same structure as equation 1. The results are depicted in Table 5. Column (1) presents our baseline specification in which we only include an 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 elite human capital as proxied

[23]This is consistent with a view that 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 (Davis and Weinstein, 2002; Waldinger, 2016). 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 to ensure recovery.

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

for by the number of Ming-era examination candidates (jinshi) and decade fixed effects. This control is also a proxy for a prefecture's political influence. The mean number of notable writers in a prefecture in our dataset is 1.721. Therefore the coefficient we obtain suggests that a literary inquisition resulted in a decline in the number of notable writers of 33% from an affected prefecture in subsequent decades ($-0.569 \div 1.721$).

In contrast, we find not effect of literary inquisitions on the number of government sponsored academies (Appendix Table B.9). This suggests that literary inquisitions were associated with a decline in social capital and private initiatives but not associated with a reduction in investment in government-funded educational initiatives.

Historians have documented the rise of 'inoffensive' literary subjects during the Qing period, noting that to reduce the risk of persecution intellectuals avoided activities that could interpreted and constituting opposition to 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, 16). In Appendix Table B.8 we explore how the effect of inquisitions affected the number of notable writers in a prefecture over time. The effect on the number of notable writers is strongest in the four decades after an inquisition has taken place and fades away after this. This is consistent with the hypothesis that over time writers are likely to have been able to learn how to avoid arousing suspicion or causing offense to the imperial authorities. In contrast, persecutions had a permanent effect on the ability of individuals to organize and produce social capital.

Summary of Results In summary we find that literary inquisitions had a negative and permanent effect on the number of charitable organizations in a prefecture—our measure of social capital. We verify this effect by providing evidence that persecutions were associated with a decline in the number of notable writers from a prefecture in the decades following a persecution.

While recent historians have largely overlooked the significance of political persecutions in Qing China, our results demonstrate that they had meaningful impact on intellectual activity and social capital. These findings support the qualitative impressions of a minority of historians, like Wakeman, who emphasized how the Qing autocracy brought about a political and social retreat among intellectuals and local elites. Our results attest to the psychological impact of the literary inquisition on Chinese society (see also Liu et al., 2005). Schmidt (2003, 369) notes that 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' (See Jones (1975, 28) and Wiens (1969, 16)). 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

Table 5: DID Analysis. Effect of inquisitions on notable scholars:

	Mean number of notable scholars			
	(1)	(2)	(3)	(4)
Inquisition$_{p,d}$	-0.535*	-0.520*	-0.603**	-0.569**
	(0.319)	(0.271)	(0.288)	(0.273)
Decade FE	Yes	Yes	Yes	Yes
Ming Jinshi×Decade FE	Yes	Yes	Yes	Yes
Log 1600 population×Decade FE	Yes	Yes	Yes	Yes
Socioeconomic Macro-region×Decade FE	No	Yes	Yes	Yes
Latitude & Longitude*Decade FE	No	No	Yes	Yes
Observations	1417	1417	1417	1417
Adjusted R^2	0.155	0.241	0.246	0.810

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column (1) presents our baseline specification which includes prefecture FE and Decade FE as well as interactions between decade FE and the log of 1600 population as the number of Ming era Jinishi. Columns (2) adds an interaction between decade FE with socioeconomic macro-region. Column (3) interacts latitude and longitude with decade FE. Column 4 employs two-way clustering of our standard errors. In the other specifications standard errors are clustered at the prefectural level and are reported in parentheses.

danger (quoted in Schmidt, 2003).[25] We now turn to consider the long-run consequences of persecutions in an autocratic state.

IV The Long-Run Impact of Political Persecution

We have established that the persecutions of the Qing period had an immediate impact on civic capital, intellectual activity, and social activism. Research on the persistence of cultural values indicates that political institutions can leave a lasting imprint on social norms and on individual beliefs and behavior. Therefore to answer the question of how autocratic rule shaped social life and intellectual culture we need to study long-run outcomes.

China provides an ideal setting to uncover the long-run impact of autocratic rule for several reasons. As a uniquely long-lasting and durable autocracy, it enables us to study

[25]This attitude is clear 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, 371).

the long-run consequences of autocratic rule in a setting that is relatively uncontaminated.[26] In this respect, China is better suited to studying the impact of autocracies than are other autocratic states that were either less long-lasting or have subsequently transited to democracy. Furthermore, China provides a plausible setting in which to study the persistence of cultural values as 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 to look after them in old age.

Social capital was critical to the provision of local public goods in Imperial China as the Imperial state did not actively govern below the level of the county (Feuerwerker, 1980; Kuhn, 2002). Education, irrigation and the provision of other public goods was the responsibility of private individuals.[27] Thus, the extent and effectiveness of local public goods provision reveals a lot about variation in local social capital.

A Literacy Data

To overcome the absence of disaggregated historical data, we use an innovative approach to study literacy at the end of the Qing period. The literacy rates among individuals aged at least 70 in 1982 (i.e. those born before 1912) provides information about the provision of local education in late 19th and early 20th centuries.

The Integrated Public Use Microdata Series census (IPUMS) provide 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 prefectural-level information gleaned from historical GIS data.[28] 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.[29]

[26] 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).

[27] The same individuals who were responsible for the organizing the provision of charitable organization in the Qing period also played a vital role in the provision of basic education. There was no state system of education in the Qing period and primarily education, in particular, 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).

[28] We describe the process involved in matching different datasets in the Appendix.

[29] Summary statistics are presented in Table B.3.

This analysis provides an unbiased estimate of literacy rates in the late nineteenth and early twentieth century so long as two conditions are satisfied: first that we control for any potential differences in survival rates between literate and illiterate individuals; and second that there were limited opportunities for individuals to 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 70 year olds in 1982 as our main specification and only focus on 80 year olds in 1982 as a check on our results.

B The effect of literary inquisitions on long-run literacy

We now examine the effect of literary inquisitions on long-run literacy:

$$\text{Literate } 1982_{i,p} = \alpha + \beta \text{Inquisition}_p + \Omega_p \mathbf{X}_p^H + \Theta_p \mathbf{X}_i + \epsilon_{i,p} \, . \tag{2}$$

Our dependent variable is whether or not an individual was literate when surveyed in 1982. Throughout, we restrict our attention to Han Chinese only and to China proper. In all specifications we control for historical prefecture-level variables that likely affected literacy ($\mathbf{X}_p^H$) including whether a prefecture is on the coast, had a historical courier route, agricultural suitability, and log population in 1820. We include a measure of social and economic activity encompassing prefectures which were identified in 1820 as important centers of transport and communication, business, and areas with high crime.[30] The vector $\mathbf{X}_i$ contains individual level characteristics that are known to be correlated with literacy such as gender and martial status. In some specifications we also employ a vector of modern controls. Socioeconomic macro region fixed effects and province fixed effects are used to capture broader economic differences across regions in all regressions. As the overwhelming majority of the population were illiterate, our data contains many zeros. For this reason we use a Logit estimator.

Column 1 of Table 6 reports results from our Logit estimation for the effects of a literacy inquisition on illiteracy in the early twentieth century. The OLS results in column 2 indicate that in an area which experienced a literary inquisition individuals aged over 70 had a four percent lower literacy rate which is consistent with the marginal effects we estimate using our Logit estimator. In column 5 we show our results are robust to the inclusion of additional controls for age structure and mortality rates for the population because it is possible that the elasticity of life expectancy with respect to literacy is higher in high mortality environments than in lower mortality environments. Both age structure and death rates are insignificant and our results remain unchanged when we control for them. In column 6 we include a

[30] 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.

Table 6: Long-run effect on literacy: main specification

	Literacy					
	Logit (1)	OLS (2)	Logit (3)	Logit (4)	Logit (5)	Logit (6)
Literary Inquisition	-0.426**	-0.0406*	-0.349**	-0.474**	-0.522***	-0.259*
	(0.209)	(0.0217)	(0.178)	(0.199)	(0.187)	(0.152)
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Over 80 year olds	No	No	Yes	No	No	No
Population Density 1820	No	No	No	Yes	Yes	Yes
% over 65	No	No	No	No	Yes	Yes
Modern Controls	No	No	No	No	No	Yes
Observations	72658	72659	12035	72658	72658	72658
Adjusted R^2 or Pseudo R^2	0.294	0.233	0.314	0.294	0.295	0.300

Notes: This table shows the effects of a literary inquisition at a prefectural level on the illiteracy rates of 80 years 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, martial status, number of couples in the household. Columns (1) and (2) report our Logit and OLS estimates. Column (3) focuses only on individuals aged 80 or greater in 1982. Column (4) controls for population density in 1820. Column (5) controls for population structure. Column (6) includes a range of modern controls. Standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

range of modern controls including population, gross output, proportion of the workforce in agriculture, and the death rate from the 1982 census.[31]

Next we address possible concerns stemming from the selective migration of more literate individuals. In the wake of the fall of the Nationalist government in 1949 more educated individuals had greater reason to fear the Communist takeover and were therefore more were more likely to migrate to Taiwan. As this could be a potential 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). 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).[32]

[31]These endogenous regressors contain information about the channels through which the effects of a literary inquisition could impact literacy. The coefficient we obtain remains negative but is somewhat smaller suggesting that some of the impact of a literary inquisition operated through these channels.

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

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 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 (Appendix Table B.14). 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. Political persecutions undermined the provision of basic education in the Qing period and this had a long-run impact that is detectable among 70 and 80 years olds in the 1982 census.

C Instrumental Variable Analysis

Literary inquisitions were preemptive persecutions. And, as we have shown, they were not responsive to local economic or political conditions. Nevertheless, in the absence of clear random assignment there may be concerns that unobservables are correlated with both the probability that a prefecture experiences a persecution and modern outcomes. To alleviate such concerns, in this section we implement an instrumental variable (IV) analysis.

To motivate our IV analysis we consider how differences in the perceived potential threat of opposition might vary across China. If the purpose of the literary inquisitions was, as historians have argued, to intimidate potential opposition, it would mean that the Qing state would be more likely to persecute individuals from areas where opposition was harder for the Qing to subdue.

We expect, therefore, the probability of persecution to be higher in areas that were further away from the center of Manchu power. In these areas there was less cultural interaction and hence more potential distrust between the Qing and the local inhabitants. To satisfy the exclusion restriction, however, the instrument cannot affect modern outcomes such as literacy through any channel other than the probability of persecution. Meeting the exclusion restriction is often challenging for geography based instruments because economic and cultural variables are frequently correlated in space. To avoid these concerns we employ distance to the Manchu capital in the years immediately prior to their invasion of China, Shenyang as our main instrument.

Distance to Shenyang is a valid IV because it was the base from which the Manchu's launched their invasion of China but it was not otherwise a particularly important economic or cultural center. It is a source of exogenous variation in the cost of opposing the Emperor that should be uncorrelated with other cultural or economic correlates of whether or not a prefecture was likely to experience a persecution. We condition our instrument on distance to Beijing as there is a concern that areas further away from the capital may have a greater culture of local self-governance and on an indicator variable based on whether a prefecture was in northern or southern China as our main instrument.

Table 7: IV Analysis: Distance to Shenyang.

	Dependent Variable: Literacy					
	Logit	IV	Logit	IV	Logit	IV
	(1)	(2)	(3)	(4)	(5)	(6)
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)
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes	Yes	Yes
Qinling-Huaihe Line	Yes	Yes	Yes	Yes	Yes	Yes
Distance to Beijing	Yes	Yes	Yes	Yes	Yes	Yes
Distance to Beijing (3rd order Polynomial)	No	No	Yes	Yes	No	No
N. of pre-Qing Academies	No	No	No	No	Yes	Yes
Distance to Qing army units	No	No	No	No	Yes	Yes
N. of Ming Martyrs	No	No	No	No	Yes	Yes
Observations	72658	72658	72658	72658	72658	72658

Notes: In each pair of columns we compare our Logit specification with second stage IV Probit estimates using Newey's two-step method. Our IV is Distance to Shenyang. Columns (1) and (2) presents 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 Control 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 Qing army base. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7 reports our IV estimates alongside our Logit estimates. We report our second stage estimates obtained from using IV Probit using 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) an (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 Qing army bases (a measure of the cost involved in putting down a rebellion), and the number of individual who died or committed suicide for the the Ming cause and who were recorded as 'Ming Martyrs'. These measures do not affect the magnitude of our IV and provide further reassurance that the impact of persecutions on

literary levels at the end of the Qing dynasty was indeed causal.

D Local Public Goods Provision in the Late 20th Century

We now turn to another long-run measure of local social capital: infant mortality. Infant mortality is usually used as an indicator of economic development or disease environment. Within a country we would therefore expect areas with similar economic and development characteristics to have similar levels of infant mortality. Conditional on these variables, variation in infant mortality reflects 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 Li, 1975; Babiarz et al., 2013).[33] Table 8 shows that prefectures 'treated' by a literary inquisition have significantly higher rates of infant mortality in the 1982 census.[34] This holds true whether we employ just our baseline controls from Table 6 (Col. 1), further control for age structure (Col. 2) or the economic composition of a prefecture (Col. 3).

Controlling for economic development, infant mortality partially reflects the availability of orphanages, village health clinics and the willingness of families to help or support the children of the indigent. As orphanages and health clinics were established and run at a local level, they therefore reveal important information about the overall level of social capital in a community. This analysis reveals that literary inquisitions shaped the provision of public goods and social capital in the long-run.

Importantly, Table 9 suggests that prefecture that experienced literary inquisitions in the eighteenth century are broadly comparable in economic terms today. Specifically, in Table 9 we look to see whether there is an impact of a literary inquisition on the proportion of the workforce employed (Col.1), the proportion employed in industry (Col. (2), birthrates and death rates (Cols. 2 and 3) or the age structure of the population (Col. 4 and 5): there is no relationship. These regressions act as placebos because they indicate that the treated and untreated prefectures were not on different development paths. Other than being affected by the literary inquisitions they are similar in terms of their observable characteristics. The one important difference that we observe in the 1982 census is in terms of their ability

[33] This was especially so prior to the introduction of market reforms in the 1980s. 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 1980s. He explains how funding for local healthcare centers was spread between the state, the individual and the village commune (Li, 1975, 840).

[34] 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 et al., 2013).

Table 8: Long-run effect on infant mortality

	Infant Mortality		
	(1)	(2)	(3)
Literary Inquisition	6.760**	7.178**	5.785**
	(3.199)	(2.976)	(2.738)
Controls	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes
Socioeconomic Macroregion FE	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
%. of over 65s	No	Yes	Yes
% Agricultural Population	No	No	Yes
Output	No	No	Yes
Observations	72	72	72
Adjusted R^2	0.700	0.700	0.783

Notes: This table shows the effects of a literary inquisition at a prefectural level on infant mortality. Historical controls include the following prefectural level controls: agricultural suitability, log number of Ming Jinishi, elevation, log population in 1820, Chongxian, distance to the coast, distance to a historical courier route, whether a prefecture contained a treaty port. Column (1) is our benchmark specification. Columns (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 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

to reduce infant mortality. This finding is consistent with the our results on charitable organizations and in keeping with arguments of social scientists that shocks to social capital can be extremely long lasting.

E Channels for Persistence: Cultural Attitudes

To better understand what accounts for this persistence we now turn to examine how a legacy of persecution can affect cultural values. While institutions have changed radically since the end of the Qing dynasty, cultural values shaped during this period could have persisted to today as recent research has established that cultural values can be both remarkably long-lasting (e.g. Guiso et al., 2011) and can vary at a local level (e.g. Voigtländer and Voth, 2012).

To explore the impact on culture and on attitudes towards collective action and social engagement in particular, we turn to modern survey data. We use two different datasets. The first, the Chinese General Social Survey (CGSS), consists of statements such as 'in general people can be trusted' to which respondents choose on a 1-5 scale between 1. totally disagree and 5. totally agree. It provides a representative sample of political and social attitudes and is widely used among social scientists.

Our second source of data for modern political attitudes is the Chinese Political Compass

Table 9: Long-run Analysis: no impact on other outcomes

	% Employed	% Industrial Employment	Birthrate	Death rate	% over 65	% under 14
	(1)	(2)	(3)	(4)	(5)	(6)
Literary Inquisition	-0.470	-0.932	-0.292	0.0350	-0.165	0.287
	(1.389)	(5.379)	(1.547)	(0.350)	(0.352)	(1.332)
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes	Yes	Yes
Province 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

Notes: This table shows the effects of a literary inquisition at a prefectural level on a range of other outcomes. Historical controls include the following prefectural level controls: distance to the coast, distance to a historical courier route, whether a prefecture contained a treaty port. Column (1) studies the effect on the proportion of the population employed. Columns (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) look the impact on the age structure of a prefecture. In all specifications standard errors, clustered at the prefecture level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(CPoC). This comprises a survey of 50 questions designed to elicit individual attitudes to politics, economics, social, and cultural issues in the year 2014. Pan and Xu (2015) show that despite not being a random sample, the CPoC is representative. As many of the questions in sample concern social questions (e.g. approval of gay marriage), we focus on questions that shed light on attitudes to the state rather than those which concern more specific questions of policy.[35]

Our interest is in outcomes that are unrelated to specific policies and separate from support for the central government or CCP but which reflect more general and deeper rooted attitudes towards society and the state. First, we present the results of our investigation of the impact of past persecutions on current political outcomes using the CGSS data in Table 10. Lower levels of political engagement are one indication of lower levels of social capital. Column (1) reports the impact of inquisitions on whether individuals should obey the government. The coefficient is negative and on the threshold of statistical significance (p-value of 0.101). This is consistent with individuals either being opposed to the government or more apathetic to politics in general. Probing deeper, Column (2) suggests that it is the latter. Although it is a one party state, since the 1980s elections to have been used to select officials at a local level (see Martinez-Bravo et al., 2014). These officials provide administrative services and are not part of the central state. Hence attitudes towards these

[35]We provide detail on both CGSS and CPoC in the Web Appendix.

elections should be independent of attitudes towards the Communist party. Column (2) asks whether individuals have voted in the past three years. Consistent with arguments that claim that literary inquisitions helped to produce a culture of political apathy and disengagement; we find they are associated with a lower likelihood of voting today. Column (3) focus on the subset of individuals who have not voted in last three years. Examining the reasons that they give 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. Together these findings indicate that political persecutions shape local cultural values in general and attitudes to political and social engagement in particular.

Importantly, the political apathy that we uncover does not reflect disapproval of particular policies of government but a more general attitude towards political and social activism. This apathy is evident in a more inward and reticent attitude towards involvement in society and is characterized by lower levels of trust. Individuals in prefectures that experienced a literary inquisition are less trusting in general (Col. 4). This manifests itself specifically in lower trust in central government (Col. 5) and the courts (Co. 6). There is a similarly negative impact (with slightly smaller coefficients) for trust in the People's Congress—the legislative body of the Chinese government—and in the army.

This persistence is highly plausible in a Chinese context as until the Communist period, the vast majority of the Chinese population lived in stable rural communities and kinship networks that possessed long-lasting collective memories. In modern China prominent victims of the literary inquisitions are still discussed in their hometowns today (see, for instance, Luo, 2008). Moreover, even if individual victims of the literary inquisition are long-forgotten, it is likely that the legacy they left was a more general culture of fear and distrust.

Certainly, our empirical analysis suggests that the negative impact on trust in ones peers has left a legacy that has permeated into society more generally, affecting interpersonal trust as well as trust in government. Table 10 provides further evidence for this channel. We find that individuals in treated prefectures report lower trust in classmates (Col. 9), colleagues (Col.10), bosses (Col. 11) and businessmen (Col.12).

These results are consistent with the negative impact we found with respect to social capital in Qing China. 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. Our quantitative evidence thus provided novel and robust evidence that substantiate 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, 178).

The literature on trust and social capital distinguishes between generalized trust, or trust of those outside of the familial circle, and in-group trust (e.g. Fukuyama, 1995). Literary inquisitions encouraged individuals to denounce their peers or superiors to the authorities. Hence we expect these persecutions to negatively affect trust of one's peers. But unlike modern totalitarian states, Qing China did not attempt to undermine the family unit which was seen as the foundation of social stability. Family members were not obliged to denounce one another. Consistent with this, in columns 13 and 14 of Table 10 we find no effect of literary inquisitions on trust within families. Similarly, column 14 shows that there is no impact on trust of relatives more generally. This test both confirms our initial hypothesizes and acts as a placebo test because it demonstrates that prefectures targeted by the inquisition are not simply lower trust prefectures today thereby providing further evidence that the literary inquisition had its greatest impact on trust of ones' peers and superiors.

An entirely different dataset—the CPoC—provides further evidence of the impact of literary inquisitions on attitudes towards society and the state. As we report in Table 11 individuals in prefectures with a history of a literary inquisition are less likely to agree with the statement: "People should not have the right to vote if they do not understand democracy" (Q2). They are also less likely to agree that: "Western-style multi-party systems are not suitable for China" (Q 43.). Finally, they disagree more with the statement that: "Modern China needs to be guided by wisdom of Confucius/Confucian thinking". In all 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 from prefectures where individuals were not persecuted.

F Comparisons with Other Persecutions

Other persecutions in Chinese History 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. 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).

Table 10: Long-run analysis: modern levels of political participation and trust (GGSS)

	(1) Obedience to Government	(2) Voted in the Last 3 Years	(3) Uninterested in Voting	(4) Trust in general	(5) Trust in central government
Mean of Dep. Var.	3.808	0.444	0.0859	3.450	4.377
Literary inquisition	-0.282	-0.470***	0.392***	-0.286**	-0.616***
	(0.164)	(0.0601)	(0.0783)	(0.134)	(0.0440)
Adjusted R^2	0.122	0.171	0.0399	0.0606	0.101
Observations	2449	2450	1350	2456	2451
Historical Controls	Yes	Yes	Yes	Yes	Yes
Modern Controls	Yes	Yes	Yes	Yes	Yes
	(6) Trust in courts	(7) Trust in People's Congress	(8) Trust in army	(9) Trust in classmates	(10) Trust in colleagues
Mean of Dep. Var.	3.812	4.310	3.821 .	3.614	3.539
Literary inquisition	-0.286**	-0.616***	-0.708***	-0.418***	-0.519***
	(0.134)	(0.0440)	(0.150)	(0.102)	(0.0960)
Adjusted R^2	0.0606	0.101	0.0947	0.127	0.103
Observations	2456	2451	2447	2435	2447
Historical Controls	Yes	Yes	Yes	Yes	Yes
Modern Controls	Yes	Yes	Yes	Yes	Yes
	(11) Trust in one's boss	(12) Trust in businessmen	(13) Trust in family	(14) Trust in relatives	
Mean of Dep. Var.	3.242	2.659	4.804	4.221	
Literary inquisition	-0.409***	-0.226***	0.0667	0.0427	
	(0.0712)	(0.0647)	(0.0584)	0.114)	
Adjusted R^2	0.0601	0.0342	0.0337	0.0627	
Observations	2433	2444	2453	2456	
Historical Controls	Yes	Yes	Yes	Yes	
Modern Controls	Yes	Yes	Yes	Yes	

Notes: This table shows the effects of a literary inquisition on modern levels of political participation. The dependent variable is a 1-5 variable which the exception of column 3 which reports a binary choice (agree or disagree) among respondents who had not voted in the past three years. Column (4) reports the impact on trust in general; column (5) on trust in government ; column (6) on trust in the court system; column (7) examines the effect on trust in the People's Congress; column (8) studies the impact of inquisitions on trust in the army. Column (9) reports the impact on trust in one's classmates; column (10) studies the impact of inquisitions on trust in one's colleagues; column (11) studies the impact on trust in one's boss; column (12) reports the effect on trust in one's boss. Column (13) reports the impact on trust within the family. Column (14) studies the impact on trust of relatives. Historical controls include the following prefectural level controls: distance to the coast, distance to a historical courier route, whether a prefecture contained a treaty port. Modern controls include log per capita income and the proportion of the population belong to ethnic minorities, % urban and % enrolled in primary education. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: 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

Table 12: *Notes:* 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. Standard errors are clustered at the prefectural level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Persecutions in Early Modern Europe The Qing era literary inquisition cases were small in number but highly publicized. We know from other examples that even a small number of persecutions can have a large impact. This is evident from a study of European history. That the persecution of Giordano Bruno in 1600 had a tremendous 'chilling' affect on scientists in south Europe is well attested to in the historical literature even though the number of scientists actually investigated by the Roman inquisition was extremely small (Mokyr, 2007; Anderson, 2015).[36]

Historians have speculated about the long-term importance of the literary inquisitions. They took place at time when the grip of intolerance and persecutions was weakening in Europe; and scholars such as Joel Mokyr have argued that this increased level of intellectual freedom played an important role in the rise of the Western Europe and the Great Divergence (Mokyr, 2007, 19–27). As Parker (2013) observes: in contrast, '[t]he Qing thus continued to see intellectual innovation and much "useful knowledge" as a potential threat, not a potential asset . . . Unlike rulers in northwest Europe, China's new masters refused to allow their leading scholars either freedom of expression or freedom to exchange ideas' (Parker, 2013, 667).

[36]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, 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.

Other Long-Run Implications Scholars have previously commented on a general trend of alienation among intellectuals in the later Qing period. This had political consequences in the nineteenth century as the Qing began to face a series of internal and external crises. Hung (2007, 2011) argues that while previously, intellectuals and educated elites played a crucial role in mediating protests and provided a bridge between the government and the peasantry, this ceased to be the case by the early nineteenth century. As intellectuals no longer played this role, protests became more violent and the later Qing period had to deal with increasingly frequent and destabilizing peasant rebellions, which impeded the dynasty's ability to respond adequately to European imperialism in the late nineteenth century. Furthermore, whereas in Meiji Japan, the samurai elite were able to both abolish the old feudal system and modernize the economy and the state, historians have suggested that the absence of a cohesive elite in nineteenth century China may have also have played a role in the failure of the Chinese state to successfully industrialize.

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 systematic empirical evidence that these literary inquisitions have shaped cultural attitudes and values and have reduced social capital. Our findings suggest that autocratic rule can have a long-lasting and negative impact on social capital.

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

We go on to show that the literary inquisitions left a long-run impact on social capital that is reflected in local public goods provision. 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. Prefectures affected by the literary inquisition were also characterized by higher infant mortality rates in 1982 though they are otherwise similar in terms of their economic and demographic characteristics.

These results are of considerable interest because social capital plays a prominent role in many explanations of political development (e.g. Fukuyama, 1995, 1997; Knack and Keefer, 1997). Recent work has established the importance of social capital in Industrial Revolution

Britain (Mokyr, 2009; Koyama, 2012; Sunderland, 2013). A large literature also relates social capital to the vitality of democratic institutions (de Tocqueville, 2000; Putnam, 1994).

Our evidence indicates that autocratic rule reduced social capital in China. As such, they have implications for thinking about China's current political trajectory. Some scholars anticipate China undergoing a democratic transition as its economy develops (e.g. Acemoglu and Robinson, 2012). Others point to China as an example of 'authoritarian resilience' (e.g Nathan, 2003). If we take seriously the arguments of North et al. (2009) about the importance of organizations and civic capital in the transition to open-access societies, then this suggests that the suppression of social capital may pose a lasting impediment to democratization in China. Thus, despite coming from a different data source, our findings from the CPoC are consistent with those we obtained from the CCSS and provide evidence that a past history of persecutions has shaped the culture of the hometowns of affected individuals.

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 positions of these organizations has always been fragile and civil society has been frequently repressed (Simon, 2013, xxvii). Scholars such as Xie (1990); Liu (2000) and Liu et al. (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. Most recently Wang (2014) has examined the role played by literary inquisitions in shaping this culture of political quietism and has speculated about how political persecutions helped to generate ideological pressure on individuals producing a culture of self-containment and disengagement.

We are able to test these speculations systematically. In particular our results provide evidence both that the autocratic policies of the Qing state undermined the level of participation in civil society and that this effect has persisted into the modern period. Prefectures where literary inquisitions took place were less able to organize institutions for the provision of basic education in the late nineteenth and early twentieth century; we offer evidence that they were also less able to build orphanages and provide for abandoned children; finally we show that even today trust in strangers is lower and political apathy greater in prefectures were individuals were persecuted. Thus the legacy of autocratic rule in Qing China sheds light on China's 'authoritarian resilience' today.

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Web Appendix

Table of Contents

A A Signaling Model of Political Persecutions **42**
A Setup 42
B Equilibrium 44

B Historical Appendix **46**
A The Political Economy of Qing China 46
B How the Literary Inquisition Functioned 47
C An Example Literary Inquisition Case 47
D Summary Statistics 49
E Further Robustness Analysis 52

A 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 a stark framework and simple results.

A Setup

Consider a signaling model of persecutions based on a standard Spence (1973) framework. 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 coordination among citizens, 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.[37]

The ruler is endowed with a strength θ_i, which 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

[37]For the canonical analysis of global games see Morris and Shin (1998); Angeletos et al. (2006). Recently global games have been used to study revolutions (see Edmond, 2013).

Emperor. Δ is common knowledge.[38] 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 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 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:

$$U_R(\theta) = \begin{cases} 1 - c(p, \theta), & \text{if } a = 0; \\ \theta - c(p, \theta) & \text{if } a = 1. \end{cases} \tag{3}$$

$$U_c(\theta) = \begin{cases} 0, & \text{if } a = 0; \\ b(1 - \theta - \Delta) - r & \text{if } a = 1. \end{cases} \tag{4}$$

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.

[38] 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.

4. Payoffs are realized.

B 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 ruler 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 $\pi b(1 - S - \Delta) + (1 - \pi)b(1 - W - \Delta)$ 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 regime times face a rebellion and neither have an incentive to engage in political persecutions (case 3).

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:

$$\begin{aligned} U_R^*(S) &= 1 - c(p^*, S) \geq S - \Delta \, ; \\ U_R^*(W) &= W - \Delta \geq 1 - c(p^*, W) \, . \end{aligned} \tag{5}$$

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:

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

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

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

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:

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

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'.[39]

Proposition 1 gives rise to the following corollaries:

[39]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

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

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

In our model persecutions are preemptory and are not responses to either realized threats or two other shocks. This observation is consistent with the history of Qing dynasty which faced no significant external threats or major rebellions during the eighteenth century (until the White Lotus Rebellion which took place at the end of the century, after the period of literary inquisitions.

Corollary 2 *In equilibrium there is no open opposition. Political persecutions they are 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 their targets were often indiscriminate. Interpretation was all: the definition of what was deemed subversive was not defined and changed over time: 'the ruler was the sole interpreter of these cases, and some accusations were based on suspicion.' (Huang, 1974, 208). For this reason it was all but impossible for writers in anticipate *ex ante* what could be judged as subversive. This has been called 'the institutionalization of Imperial subjectivity' (Wakeman, 1998, 168).

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 but they did not engage in persecutions.

B Historical Appendix

A The Political Economy of Qing China

In Section **??** we provided a brief overview of the political economy of Qing China. In this Section we provide more details concerning the incentives and constraints facing the rulers of China in the seventeenth and eighteenth centuries.

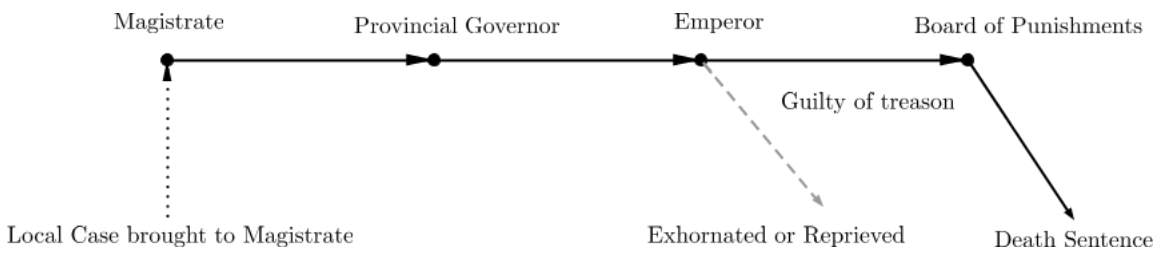
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which is equivalent to:

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

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

Figure B.1



B How the Literary Inquisition Functioned

Figure B.1 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 attorney's scrutinize the offending writings for evidence of disloyalty or even treachery. Serious cases would go to the Imperial Court in Beijing and be examined by the Emperor himself. As we described in the main text, the Emperor's subjective judgement of where a particular individual was guilty of disloyalty was all important. Provincial governors who did not pass on information about suspects to the Emperor could be punished themselves.

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* and the enslavement of all one's immediate relatives.

C 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 *jinishi* 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 for 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.

D Summary Statistics

Table B.3: Summary statistics

Short-run					
Variable	Mean	Std. Dev.	Min.	Max.	N
# Charitable organizations	2.679	4.218	0	30	1417
# Notable scholars (under 30)	1.721	3.35	0	33	1417
# Academies	9.271	7.616	0	50	1417
Inquisition$_{p,d}$	0.077	0.267	0	1	1417
Long-run					
Inquisition*Post	0.174	0.381	0	1	109
#j Jnshi (1368-1644)	75.761	83.965	1	533	109
Log pop. 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

Table B.4: Matching Covariates

	Inquisition	
Ming Jinishi	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)
Observations	217	
Adjusted R^2	0.165	

The omitted categories are first quartile of ruggedness and Northeast China. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.1: DID analysis. Number of charitable organizations: Robustness to different samples

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
$\text{Inquisition}_{p,d}$	-1.018**	-1.454**	-0.888*	-0.734*	-2.807**
	(0.478)	(0.671)	(0.503)	(0.433)	(1.248)
Baseline Controls *Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	Yes	Yes	Yes	Yes	Yes
No Charities in 1830	Yes	No	Yes	Yes	Yes
Incoming Migration	Yes	Yes	No	Yes	Yes
Locations with Strong Buddhist Presence	Yes	Yes	Yes	No	Yes
Locations with Strong Gov. Presence	Yes	Yes	Yes	Yes	No
Observations	1417	1040	1365	1157	390
Adjusted R^2	0.495	0.553	0.501	0.454	0.446

Notes: 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. Columns (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 standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.2: DID Analysis. Number of charitable organizations: robustness to different samples

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
$\text{Inquisition}_{p,d}$	-1.018**	-1.017**	-1.037**	-0.825*	-1.224**
	(0.478)	(0.500)	(0.451)	(0.420)	(0.532)
Baseline Controls × Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	Yes	Yes	Yes	Yes	Yes
1690-1830	Yes	No	No	No	No
1680-1830	No	Yes	No	No	No
1700-1830	No	No	Yes	No	No
1690-1820	No	No	No	Yes	No
1690-1840	No	No		No	Yes
Observations	1417	1526	1308	1308	1526
Adjusted R^2	0.495	0.515	0.480	0.488	0.499

Notes: 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. Columns (2) extends our dataset to include 1680. Column (3) restricts it 1700. Column (4) truncates the dataset to 1820 . Column (4) extends the dataset out to 1840. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.5: Balance Table

				(a) Before Matching	
Variables	N	Mean (untreated)	N	Mean (treated)	Difference in Means
Ming Jinishi	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. of 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
Ming Jinishi	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. of 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
Ming Jinishi	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. of 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 difference sin observable characteristics. Other refers to prefectures outside of Skinner's macro economic regions.

E Further Robustness Analysis

Tables B.6, B.7, and B.10 probe the robustness of our results. To ensure that our findings are not driven by outliers or affected by heterogeneous trends, in Table B.6 we show that our estimates remain more or less unchanged when we drop prefectures which had no charities throughout the period (by 1830) (Col. 2), which are reported as having a high population of immigrants (Col. 3), had a high number of Buddhist temples (Colu 3) and are reported as having a strong local government presence (Col. 5). The coefficient we obtain remains negative and statistically significant; it changes in size but this is largely due to changes in the sample. Table B.7 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 B.10 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 in the number of new charitable organizations. Table B.9 reports the effect of literary inquisitions on the number of academies. We find no impact regardless of specification.

Table B.6: DID analysis. Number of charitable organizations: Robustness to different samples

	N. Charitable Organizations				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	-1.018**	-1.454**	-0.888*	-0.734*	-2.807**
	(0.478)	(0.671)	(0.503)	(0.433)	(1.248)
Baseline Controls *Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region × Decade FE	Yes	Yes	Yes	Yes	Yes
No Charities in 1830	Yes	No	Yes	Yes	Yes
Incoming Migration	Yes	Yes	No	Yes	Yes
Locations with Strong Buddhist Presence	Yes	Yes	Yes	No	Yes
Locations with Strong Gov. Presence	Yes	Yes	Yes	Yes	No
Observations	1417	1040	1365	1157	390
Adjusted R^2	0.495	0.553	0.501	0.454	0.446

Notes: 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. Columns (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 standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.7: DID Analysis. Number of charitable organizations: robustness to different samples

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

Notes: 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. Columns (2) extends our dataset to include 1680. Column (3) restricts it 1700. Column (4) truncates the dataset to 1820 . Column (4) extends the dataset out to 1840. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.8: Notable Scholars: lags and leads

	Inquisition in year t										
Number of notable scholars	t-4 -0.346	t-3 -0.462	t-2 -0.520	t-1 -0.664	t -0.348	t+1 -0.903*	t+2 -0.953*	t+3 -1.090**	t+4 -1.134*	t+5 -0.0882	t+6 -0.290

Notes: Robust standard errors clustered at the prefectural level in parentheses

Table B.9: DID analysis: No Effect on Number of Academies

	N. of Academies				
	(1)	(2)	(3)	(4)	(5)
Inquisition$_{p,d}$	0.216 (0.589)	-0.0427 (0.409)	0.119 (0.433)	0.128 (0.406)	-0.0848 (0.104)
Log Population 1600*Decade FE	Yes	Yes	Yes	Yes	Yes
Socioeconomic Region $\times$ Decade FE	Yes	Yes	Yes	Yes	Yes
N. Ming Jinishi $\times$ Decade FE	No	Yes	Yes	Yes	Yes
Latitude & Longitude $\times$ Decade FE	No	No	Yes	Yes	Yes
Province Fixed Effects	Yes	Yes	Yes	No	Yes
Prefecture Fixed Effects	No	No	No	Yes	No
Lag N, of Academies	No	No	No	No	Yes
Observations	1417	1417	1417	1417	1417
Adjusted R^2	0.604	0.707	0.709	0.963	0.930

Notes: 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 dummies 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. Column (4) employs prefectural level fixed effects. Column (5) includes the lagged number of academies. In all specifications standard errors are clustered at the prefectural level and are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.10: DID Analysis. Number of charitable organizations: 50 year time periods

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

50 year periods. Notes: 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. Columns (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, standard errors, clustered at the prefectural level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.11: Long-run effect on elite education

	Logit					
	(1)	(2)	(3)	(4)	(5)	(6)
	Middle School			Higher Education		
Literary Inquisition	0.138	0.508**	0.343**	-0.302	-0.0817	0.141
	(0.224)	(0.206)	(0.162)	(0.544)	(0.487)	(0.479)
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	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
Observations	72659	11137	72659	68230	10902	68230
Pseudo R^2	0.038	0.044	0.041	0.134	0.113	0.139

Notes: This table shows the effects of a literary inquisition at a prefectural level on the illiteracy rates of 80 years in 1982. Controls are the same as in Table 6. Column (1) reports our Logit estimates. Columns (2) presents comparable OLS results. In 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 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 B.12: Long-run: post-treatment controls

	Logit			
	(1)	(2)	(3)	(4)
Literary Inquisition	-0.522***	-0.601***	-0.438**	-0.440**
	(0.187)	(0.188)	(0.216)	(0.223)
Historical Controls	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Chongxian	Yes	No	No	No
Treaty Ports	Yes	Yes	No	No
Courier Routes	Yes	Yes	Yes	No
Observations	72658	72658	72658	72658
Pseudo R^2	0.295	0.294	0.293	0.293

Notes: This table shows the effects of a literary inquisition at a prefectural level on the illiteracy rates of 80 years in 1982 excluding post-treatment controls. Controls are the same as in Table 6. Column (1) replicates Column (5) of Table 6. Columns (2) does not control from whether a prefecture is recorded as Chongxian. In 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 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 B.13: Long-Run: validity of the selective migration measure

	(1) Middle School or Above	(2) Primary School or Above
Migration records	-0.175***	-0.149
	(0.0372)	(0.124)
Total Migration Records	0.0465**	0.0314
	(0.0206)	(0.0220)
Literary Inquisition	0.131	-0.532**
	(0.320)	(0.269)
Historical Controls	Yes	Yes
Individual Controls	Yes	Yes
Socioeconomic macroregion FE	Yes	Yes
Province FE	Yes	Yes
Observations	72658	72658
Pseudo R^2	0.171	0.295

Notes: This table provides evidence for the validity of our migration variable. Historical and Individual controls are the same as in Table 6. In all specifications robust standard errors, clustered at the city level, are reported in parentheses. There are 72 clusters. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B.14: Long-run effects on literacy: controlling for selective migration

	Probability Literate: Logit Regression						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Literary Inquisition	-0.522***	-0.532***	-0.525***	-0.518***	-0.641***	-0.609***	-0.496***
	(0.187)	(0.180)	(0.189)	(0.168)	(0.177)	(0.179)	(0.166)
Historical Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Macro-region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Migration Records	None	Certain	Log Certain	Binary Certain	Possible Certain	Log Possible	Binary Possible
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

Notes: This table provides evidence for the validity of our migration variable. 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. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.