

The Cultural Revolution and Present-day Household Finance

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Abstract

The Cultural Revolution in China (1966-1976) brought with it a decade-long period of widespread social turmoil and violence. Focusing on the impact of this experience on cultural norms, we examine how this event shaped some of the key financial fundamentals across today's China. Our empirical results suggest that the Cultural Revolution accounts for a lingering mistrust among the Chinese population. The impact of this degraded social capital can be seen in obstacles encountered by present-day households in accessing finance, particularly of the informal credit-related type. Residents living in those regions that were severely affected by the Cultural Revolution are observed to have lower willingness to provide credits to their acquaintances, lower participation in financial markets and more conservative portfolio allocation.

Keywords: Trust, social capital, the Cultural Revolution, access to finance, financial development
JEL codes: G21; J15, G30

1. Introduction

Trust, as a key building block of social capital, enables individuals and social institutions to attain efficient economic outcomes (Fukuyama, 1995; Iyer et al., 2005; Guiso et al., 2006)¹. As such, trust underpins much of economic development and in the economic well-being of households, e.g. in smoothing transactions (Guiso et al., 2004; Bottazzi et al., 2016), in nurturing innovation (Kong et al., 2021), in human capital accumulation (Putnam et al., 1994), and in providing resilience to adverse shocks such as the Covid-19 pandemic (Ding et al., 2020). A growing body of literature explores the historical origins of the variations in levels of trust and the impact of such differences on present-day financial development², and evidence has been argued that a singular historical event can have a persistent effect on social norms (Nunn, 2008; Klüppel et al., 2018) and people’s beliefs and values (Nunn & Wantchekon, 2011). Among these historical events, the Cultural Revolution in China (1967-1976) has received attention (Bai and Wu, 2020; Kong et al., 2021).

Household finance has been a topic from the margin of financial studies (Campbell, 2006; Guiso & Sodini, 2013). Recent literature has brought insights into household finance from the cultural trails (Fuchs-Schündeln et al., 2020) and it has been highlighted the historical implications for the present-day household finance when taking trust or accumulative social capital as the lens (D’Acunto et al., 2019; Levine et al., 2020).

In the context of this stream of research, we provide the first evaluation of the impact of the Cultural Revolution on present-day household finance, and, in so doing, offer new insights into the long-lasting impact of cultural norms on financial development. Especially, our study adds to the discussion of “low stock-market participation puzzle” (Guiso & Jappelli, 2005; Chen & Stafford, 2016) and China’s high saving rate (Choi et al., 2017) by providing a regional embedded cultural explanation which inherited from historical shock.

The ten year long country-wide social turmoil that was the Cultural Revolution is estimated to have been responsible for between 1.1 and 1.6 million fatalities (Walder, 2014). This sociopolitical movement has been characterized as a “savage and cruel” period of denunciation, “unmitigated horror”, “killing and torturing”, and leaving “deep, still-painful wounds” (Economist, 2021)³. There has been no shortage of literature describing the suffering of this tumultuous decade and the associated economic failure (Chow, 1993) and loss of human capital (Huang et al., 2020).

¹ Evidence in support of this perspective has been provided in cross-country studies (e.g., La Porta et al., 1997; Guiso et al., 2009) as well as in within-country studies – examples being Italy (Putnam, 1993), Peru (Karlán, 2005), Vietnam (McMillan & Woodruff, 1999), and China (Wu et al., 2014).

² These historical roots are as varied as the slave trade in Africa (Pierce & Snyder, 2017), the anti-Jewish pogroms in Eastern Europe (Becker & Pascali, 2019) and the colonial experience in Latin-America (Dell, 2010).

³ *A revealing account of the Cultural Revolution*, Economist, 7 Jan 2021.

However, notwithstanding this evidence, there remains a lack of research regarding the lingering impact of the Cultural Revolution on household finance.

Two streams of literature help to understand the financial implications of the Cultural Revolution. First, consist with Vogel (1965), MacFarquhar & Schoenhals (2009) argue that the movement changed interpersonal relationships and trust, through fear of allegations and the severe sanctions that invariably followed. Beyond simple survival, the prospect of political and social advancement also served as an incentive for individuals to denounce their family, friends, and acquaintances. The prevailing wisdom was to trust no one. Although the revolution came to an end in 1976, the traumatic shocks it engendered changed the long-run trajectory of cultural norms (Roland & Yang, 2017). This type of social trauma not only affected the individuals involved but persisted across subsequent generations despite environmental changes and left an imprint on regional social capital (Nunn & Wantchekon, 2011; Dohmen et al., 2012). Recently, literature such as Bai and Wu (2020) and Kong et al., (2021) confirmed that the revolutionary intensity engendered by the Cultural Revolution had long-term corrosive effects on social trust, effects that are still visible a few decades later.

The second stream of literature focuses on the observation that virtually every commercial transaction has within itself an element of trust (Arrow, 1972). Consequently, the mistrust developed by the Cultural Revolution can impair the willingness to engage in commercial interactions with financial intermediaries, with capital markets or even with friends and relatives. The literature confirms that such mistrust is associated with lower participation of individuals in capital markets (Guiso et al., 2008), reduced usage of financial and fintech services, and more modest access to credit by households (D'Acunto et al., 2019; Levine et al., 2020). Building upon these studies, we explore the link between variations in the severity of the Cultural Revolution and the present-day variations in financial engagement of households across the different regions of China.

We obtain data from a wide range of sources. County-level data on the intensity of the Cultural Revolution was collected from Walder (2014). The unnatural deaths attributable to the Cultural Revolution in each county are divided by the contemporaneous population in that county, to obtain the “Cultural Revolution mortality rate” (*CR mortality rate*) as our key independent variable. To capture details on socio-economic status and household finance across present-day counties, we utilize the Chinese Household Income Project (CHIP), a nationally representative database. County-level control variables are collected from the National Bureau of Statistics of China. Additional data sources utilized in various robustness checks are from the Chinese Industrial Enterprises (CIE) database and from Guo et al. (2020).

The empirical evidence presented in this paper confirms the predictions sketched above. There is a negative relationship between the local intensity of the historical Cultural Revolution and the engagement of present-day households with finance. Those households located in the more severely affected areas report experiencing higher obstacles in engaging with finance, especially credit-based informal finance. We also find that present-day residents in the highly affected regions exhibit a stronger preference to hold cash deposits rather than participating in financial markets or providing credit to their acquaintances. We show that this can be attributed to the degradation of trust brought about by the events surrounding the Cultural Revolution.

In order to support a causal interpretation of the results, we address the endogeneity concerns that arise from the possible presence of measurement error and omitted variable bias by running a series of robustness checks. First, we apply a Difference in Differences (DiDs) estimation that focuses on the cohort of individuals who were in the key trust-development age range during the Cultural Revolution. Second, we subject our findings to an unobservable-selection-bias test (Oster, 2019). Third, our findings are validated by use of an alternative metric of the intensity of the Cultural Revolution, namely, the word count from the historical Cultural Revolution section appearing in each County Gazetteer⁴. We also demonstrate that our results are not driven by another social shock in the form of the Chinese Great Famine (1959-61). Our results also remain significant across different education and income groups and are, therefore, not driven by a specific social-economic group. Finally, our results retain external validity when we utilize firm-level measures of access to finance, as collected from the CIE database.

Our research contributes to the literature in several important ways. First, our findings add to the body of evidence that traces present-day socio-economic outcomes back to historical origins (Klüppel et al., 2018; Nunn, 2020) by contributing to the growing literature on the lingering adverse effects on present-day household outcomes of historical traumatic shocks (D'Acunto et al., 2019; Levine et al., 2020). We provide original evidence on how the Cultural Revolution, which took place some fifty years ago, continues to affect the financial behaviors of present-day residents. Those residents living in counties that were more severely affected by the Cultural Revolution are observed to manifest lower financial engagement in both formal and informal lending. At the same time, they exhibit a reduced willingness to provide private loans to others, a greater preference to hold savings and a greater reluctance to participate in financial markets. These

⁴ Compiled by the local authorities from late 1980s, these are book-length volumes that record the local history from a wide range of perspectives such as geography, demography, political events, and economics. These data are arguably reliable and has been adopted by scholars (e.g., Chen et al., 2013; Lin et al., 2021).

findings also shed light on the “low stock-market participation puzzle” (Guiso & Jappelli, 2005) and add to the discussion of China’s high saving rate (Choi et al., 2017).

Second, we contribute to another line of the literature that uses historical events to establish a causal link between culture, social capital (trust), and financial outcomes (e.g., Pierce and Snyder, 2017; An et al., 2022), especially household financial decisions (e.g., Fuchs-Schündeln et al., 2020). A major problem in many studies of the trust and economic development connection (e.g., La Porta et al., 1997; Guiso et al., 2004) is the absence of any time variation owing to their cross-sectional settings, making it impossible to control for the confounding effects of time-invariant factors. One approach argues trust as inherited from forebears and time-varying for immigrants after generations. After controlling time-invariant factors such as the geography of the region, this approach enables to identify the measurable causal impact of inherited trust on long-term development (Algan and Cahuc, 2010). Another plausible strategy, as used here in our study, is to exploit variations in the historical variables across regions and use this variation to instrument contemporaneous trust. Our results uncover the causal effects of how culture significantly shapes the financial engagement of households.

Third, and finally, this study is related to the literature on social capital, socio-political shocks, and long-term regional development (Acemoglu et al., 2001; Iyer et al., 2005; Beugelsdijk et al., 2006). The Cultural Revolution, which was responsible for the most serious setbacks and losses since the founding of the People’s Republic of China, has been increasingly studied in terms of its impact on the economy (Chow, 1993; Bai and Wu, 2020), educational attachment (Meng and Gregory, 2002; Huang et al., 2020) and firm innovation (Kong et al., 2021). Very little is known about the financial consequences. Our results provide new insights on how the Cultural Revolution can be seen to have affected the use of various financial instruments by Chinese households. Given the vital role of household finance in smoothing consumption, facilitating resilience to disasters and shocks, in enabling human capital accumulation, and in other aspects of well-being, our results suggest policy strategies for China and other similarly effected economies that focus on the restoration of social cohesion.

2. Theoretical background

2.1. Trust and its linkage to financial development

Scholars have long recognized the importance of trust in the operation of markets, and hence its linkage to the economic performance of a region. Arrow (1972) argued that the explanation for economic backwardness could lie in a lack of mutual confidence. This thesis attracted further attention in the contributions of James (1990), Putnam et al. (1994), and

Fukuyama (1995), who each explored the theoretical underpinnings of trust. These authors demonstrated that trust, as an essential dimension and component of social capital, is critical to the performance of institutions in society. A subsequent body of literature examined the importance of trust to social-economic development in various regional and cultural settings (La Porta et al., 1997; Guiso et al., 2006). From this literature, a culture-based explanation emerged whereby the mechanism of mutual trust affects the access of individuals or companies to economic exchange by impacting aspects such as trading frequency, portfolio investment, and direct investment. Through such mechanisms, trust is inextricably linked to the financial and economic development of a region.

An extensive body of country-specific studies underpins this view. The original paper by Arrow (1972) proposed that a lack of general social trust led to the underdevelopment of Southern Italy. Putnam (1994) argued that this general lack of trust in Southern Italy could be due to the region's strong Catholic tradition, which stresses the vertical relationship with the Church and discounts horizontal relationships among citizens. More recently, Guiso et al., (2004) explained how the disparities in social capital between North and South Italy contributed to the differences in their relative financial development, with households displaying higher levels of trust enjoying better access to financial instruments, better access to institutional finance and relatively less reliance on informal credit. This divergence persists, and the consequent deficiency in cooperative behavior brought about by a failure in trust is seen to have contributed to the relative underdevelopment of Southern Italy (Bigoni et al., 2016).

In the case of Vietnam, McMillan & Woodruff (1999) argue that trust compensates for the law when the law is absent or less than omnipresent. In this way, it facilitates contract formation, improves trade credit, and provides a network through which to sanction any defaulting customer or contractual counterparty. Using a "Trust Game" experiment in Peru, Karlan (2005) argues that trustworthiness is a significant measure of individual-level social capital. Trust-based network connections enforce informal contracting and thereby facilitate informal financial transactions. This experimental economic evidence, as collected by Karlan et al. (2009) in the context of a microcredit program in Peru, documents the correlation between trust and the success of group-lending programs. In China, Wu et al. (2014) observe within-country variations of trust and argue that firms have greater access to trade credit if located in a higher social trust region. The regional level of trust also influences the investment location (Ang et al., 2015) and the innovation performance of firms (Kong et al., 2021), and has a cumulative impact on regional industrialization (Bai, 2014).

2.2. Trust as a legacy of the past

Given this evidence of the persistent impact and importance of trust in financial and economic development, researchers have also examined the formation of trust. As a dimension of social capital or culture, trust is essentially a product of history. In this context, certain key historical events may play a catalytic role in shaping trust, resulting in a lingering effect on present-day financial development (Nunn & Wantchekon, 2011; D'Acunto et al., 2019; Bai & Wu, 2020). For example, it is possible to view the African slave trade as exerting a lingering negative effect on Africa's economic development (Nunn, 2008), with its continuing impact working through the mistrust engendered by the slave trade, with this resulting cultural norm of mistrust persisting to the present-day. The magnitude of the recorded historical slave shipments is seen to be negatively related to present-day levels of trust as observed in each region (Nunn & Wantchekon, 2011).

Following a similar logic, researchers have also found that ethnic factionalism in Europe can explain regional economic variations (Becker & Pascali, 2019). Grosfeld et al. (2013) argue that the culture of antipathy towards finance as associated with the observed historical inter-ethnic hostility towards the Jewish minority has led to lower trust in finance and a reduced willingness to engage with financial markets. This anti-market culture continues to be observable and continues to inhibit local financial development (D'Acunto et al., 2019) long after the Holocaust with its extinction of the Jewish presence across most territories of Middle and Eastern Europe,. Such evidence suggests a causal relationship whereby these historical events and conditions continue to influence present-day socio-economic outcomes through the associated cultural norms and values they created.

In examining the impact of history on trust, and through trust to present-day finance, Pierce & Snyder (2017) argue that the richness of "access to finance" as experienced by firms in each region of Africa reflects the aftermath of the extent of the historical slave trade in those same regions. In a similar setting, Levine et al. (2020) argue that the historical slave trade negatively impacts present-day household finance in Africa, due to the reduced trust in financial institutions found in regions historically more exposed to the slave trade. In line with this strand of research, attention has also been given to the intensity of the Cultural Revolution and present-day variation in trust formation and individual beliefs across the respective regions of China (Roland & Yang, 2017; Bai & Wu, 2020). However, the extent to which the lingering effects of the Cultural Revolution on trust can be seen to impact present-day financial development remains under-researched.

2.3. The Cultural Revolution and its lingering impact

The “Great Proletarian Cultural Revolution,” more usually referred to simply as the “Cultural Revolution,” was a period of severe social turmoil throughout China between the years 1966 to 1976. This period witnessed an unprecedented national collapse and paralysis of local government (Walder & Lu, 2017); massive intra-factional infighting followed by the imposition of military control (Walder, 2014); the suspension of college entrance exams, and widespread rustication of students at all levels of education (Zhou & Hou, 1999; Zhang et al., 2007). Even more striking was the immense scale of the violence and political persecution that occurred during the period. The Cultural Revolution led to 1.1-1.6 million deaths (Walder, 2014), along with pervasive mutual-denunciations and physical confrontation (MacFarquhar, 1974).

A combination of international and domestic factors contributed to the outbreak of the Cultural Revolution, which was engineered by Chairman Mao (MacFarquhar & Schoenhals, 2009). A widely recognized date for its launch was the 17th of May 1966, when the Central Committee of the Chinese Communist Party (CCP) issued a directive in the “People’s Daily.” This formally announced the establishment of the Cultural Revolution Committee and emphasized that the primary mission of the CCP should henceforth be the denunciation of “Revisionists” inside the Party and the continuing struggle of the proletariat against the bourgeoisie⁵. The escalation in violence that followed was due to the ever more zealous efforts of Mao’s followers as they attempted to prove their devotion by denouncing and physically assaulting “Revisionists.” These actions took place primarily within local communities, and often within households - family members being best placed to provide the “evidence” needed to expose “Revisionists” (MacFarquhar & Schoenhals, 2009). In September 1976, this tumultuous decade came to a halt following Mao’s death.

The economic impact of the Cultural Revolution has been widely discussed. Earlier studies argued that the loss of capital in the production sectors had an aggregate negative effect on China’s economy (Chow, 1993; Bai, 2014). However, from the perspective of personal incomes, the role of the Cultural Revolution is less clear. Some scholars argue that there has been a long-lasting impact on the economic well-being of the affected cohorts (e.g., Zhou & Hou, 1999). Others find that with a longer perspective, there is no significant adverse impact on individual economic wellbeing that can be attributed to the Cultural Revolution (e.g., Zhang et al., 2007).

More recently, a growing body of research has focused on the human impact rather than the direct economic consequences of the Cultural Revolution. The decade of the Cultural Revolution saw a whole generation grow up surrounded by violence and with a near total absence

⁵ Party History (1988) “wen hua da ge ming yan jiu zi liao”, p.4.

of education. Scholars label this cohort the “Chinese Lost Generation” (e.g., Chen, 1999; Roland & Yang, 2017). There is clear evidence of a loss of social capital, especially in terms of the level of trust among the Cultural Revolution cohort (Roland & Yang, 2017; Bai and Wu, 2020; Kong et al., 2021). This elevated level of mistrust is identified in terms of mistrust regarding specific social groups (e.g., government, strangers, family members, etc.) and in terms of trust that one’s own efforts will pay off (Roland & Yang, 2017; He, 2020). More importantly, the observed reduction in trust is related to the revolutionary intensity that occurred in each individual’s respective regional area. Given the observed lingering effect of the Cultural Revolution on present-day social trust, the question arises as to whether this plays a role in explaining variations in financial development across the regions of China? Our study fills this research gap by shedding light on the link between present-day financial outcomes and the half-century-old social shocks initiated by the Cultural Revolution.

3. Data and variables

This section describes the data sets and variables we utilize in our empirical estimates. The definition and descriptive statistics for each variable, including key controls, are shown in Table 1 and Table 2 respectively.

[Insert Table 1 about here]

[Insert Table 2 about here]

3.1. The Cultural Revolution (CR) Measure

Our principal measure of the local intensity of the Cultural Revolution is the *CR mortality rate* (subsequently, “CR” is used as an abbreviation for “Cultural Revolution” in all variable labels), which indicates the total number of reported unnatural deaths in each county during the Cultural Revolution divided by the local population in 1964. This data is obtained from Walder (2014), whose data covers a majority of Chinese counties and has been used by other researchers in the field (Bai & Wu, 2020; Kong et al., 2021). From the same source, we also utilize the *CR words count* as an alternative indicator of intensity. This counts the total number of words used to capture Cultural Revolution events in each county’s local gazetteer. By way of comparison with the approach adopted by other authors, Levine et al. (2020) use as an impact indicator the natural logarithm of the total number of slaves taken from each country, while Kong et al. (2021) adopt the total death toll as the indicator of the Cultural Revolution. We believe our *CR mortality rate* has an advantage over such level variables due to its scaling the effect by the local population in the county at the time, thereby capturing the density of the effect and revealing the intensity of the

Cultural Revolution in a more appropriate manner. The geographical distribution of this index is illustrating in the Figure 1.

[Insert Figure 1 about here]

3.2. Present-day household data

We utilize the latest released data (2013) from the *Chinese Household Income Project* (CHIP) for information regarding present-day social values and household financial practices. Run by the China Institute for Income Distribution at Beijing Normal University, with assistance from the National Bureau of Statistics (NBS) China, CHIP contains a rich set of nationally representative data regarding present-day households' income, expenditure, and social values⁶. As discussed earlier, we hypothesize that the Cultural Revolution exerts a persistent effect on present-day financial development through the channel of social capital (trust). From a micro or individual perspective, this manifests as lower trust among people and altered financial preferences (Fuchs-Schündeln et al., 2020). Utilizing the county codebook, we are able to merge CHIP and data from Walder (2014) by using the county in which each household is located.

Following the discussion of social capital by Guiso et al. (2004) and by Karlan et al. (2009), we measure the present-day resident's social capital by the CHIP indicators *trust family members* and *trust people outside of family*. These represent each respondent's self-reported level of trust regarding their family members and regarding people outside the family circle. They are scale-value indicators that range from 1 to 5, and a higher value represents a more positive answer to the question.

As discussed above, the variation of social capital provides an explanation of financial development as revealed in household finance (i.e., Guiso et al., 2008; Levine et al., 2020; Fuchs-Schündeln et al., 2020). We first construct *perceived ease of access to finance* to measure the respondent's general access to finance, which encompasses both informal borrowing and formal bank loans. This indicator scales from 1 to 3. We also analyze whether the household *applied for a bank loan* and *borrowed from friends/relatives* last year, as respectively indicators of access to formal and informal finance. In addition, we gauge the household's *participation in financial market* because social capital (trust) plays a key role in an individual's propensity to participate in the financial market (Guiso et al., 2008; D'Acuntono et al., 2019). Meanwhile, we observe the households' financial portfolio allocation: the percentage of *deposit* in total financial assets, and the percentage of *loaned-out money* in total financial assets. This is based on the evidence that the social norms linger and impact on an

⁶ For the See <http://www.ciidbnu.org/chip/index.asp?lang=EN>

individual's saving and leverage behavior. These impacts are inter-generationally transmitted (Levine et al., 2020; Fuchs-Schündeln et al., 2020).

3.3. Control variables and data in robustness checks

To capture the county-level characteristics both before and after the Cultural Revolution, we utilize data from Walder (2014) to include three pre-CR controls: *Han-race*, *urbanization*, and *distance to provincial capital*. These measures are derived from China's national census of 1964. The *Han-race* variable measures the percentage presence of China's main ethnic group, which varies considerably across the various counties of China. The *urbanization* and *distance to provincial capital* capture the pre-CR social-economic features for each county. The former is the proportion of urban residents among the total population, and the latter is the distance (in kilometers) from the county to the capital city of the province in which the respective county is located. For each county, we control its geographical location by using the latitude and longitude of its respective center.. We also include a fixed effect for city-type, allowing for five levels of urbanization of the county, as classified in 2009.

In terms of indicators from household and individual levels, consist with literature (e.g., Fuchs-Schündeln et al., 2020; Levine et al., 2020) we control the respondent's *age*, *age-squared*, *gender*, and *income (log)*. We include only responses from respondents who are over 16 years of age, as 16 is the minimum permitted age for a person to enter the labor market in China. We also control the squared value of age to capture the potential non-linear relationship between age and the outcome variables (Mincer, 1974). All the respondents were classified as having *gender* values of 1 for males and 0 for females. The yearly household income is a natural logarithmic value. Meanwhile, we include a set of fixed effects that categorize the respondents regarding their: *education level*, *race*, *residential status*, *marital status*, and *political status*. Detailed explanations of these variables can be found in Table 1.

4. Empirical Results

In this section, we report the empirical evidence regarding the lingering impact of the Cultural Revolution on present-day household finance. Specifically, we examine the link between the variation in the intensity of the Cultural Revolution across counties and for each present-day local resident their: (a) access to formal and informal finance; (b) participation in financial market; and (c) allocation of their financial portfolio. Importantly, we relate the intensity of the Cultural Revolution to present-day household finance through the channel of social capital (trust) (Guiso et al., 2004). Each of the related variables has been discussed in section 3.

4.1. Mechanism: the Cultural Revolution and social capital

Following Nunn & Wantchekon (2011), we start by evaluating the relationship between the Cultural Revolution.

$$trust_{i,c} = \alpha + \beta CR_c + F'_{i,c}\Gamma + H'_c\Omega + Z'_{i,c}\Theta + \varepsilon_{i,c} \quad (1)$$

In equation (1), *trust* represents the dependent variable, being either the self-reported variables *trust family members* or the *trust people outside of family*. These indicators are expressed by individuals *i* in county *c*. The CR_c is an abbreviation for *Cultural Revolution mortality rate*, which is designed to capture the severity of the Cultural Revolution in each county *c*. Vector $F'_{i,c}$ denotes the set of covariates of individual characteristics. Vector H'_c denotes the set of county-level covariates at and after the Cultural Revolution period. The $Z'_{i,c}$ denotes the fixed controls for both individual-level and county-level. In equation (1), Γ , Ω , and Θ represent the coefficients for each control setting. The residual term is $\varepsilon_{i,c}$. As we may observe multiple respondents from each household, we cluster the standard errors by household-level.

Table 3 illustrates the results, and we may find that the Cultural Revolution plays a significantly negative role in determining the trust of present-day residents. This is consistent with the mainstream literature on the historical legacy of the Cultural Revolution (e.g., Roland & Yang, 2017; Bai & Wu, 2020; Kong et al., 2021). The CR mortality rate shows a significant negative relationship with the trust of residents, both regarding their family members and regarding people outside of their family. As shown in columns (1) - (3) and (5) - (7) of Table 3, neither the significance nor the magnitude of this relationship attenuates with increasingly comprehensive control settings. Columns (4) and (8) of Table 3 also confirm that the effects remain when we make use of the OLS regression, an alternative econometric specification instead of Ordered-Probit regression for these full-scale values (1-5) of the trust measures.

[Insert Table 3 about here]

The economic interpretations or magnitudes of the observed effects are significant. As shown in columns (4) and (8) of Table 3, we observe that one standard deviation increase in the *CR mortality rate* would lead to a statistically significant reduction of 0.078 (-0.965*0.081) in the expected score of *trust family members*, and 0.070 (-0.867*0.081) in the expected score of *trust people outside of family*. These two figures amount to 9.1% (0.078/0.859) and 8.8% (0.070/0.799) of the sample standard deviation of this dependent variable.

It is worth noticing that our results reveal that although of similar magnitude, the Cultural Revolution has a relatively larger impact on the trust among family members than on the trust of

people outside of the family. This seems plausible because, as discussed in Section 2.3, the denunciations and struggles during the Cultural Revolution essentially (and tragically) happened between people who were familiar with each other, especially within families. Our results mirror this situation in the form of a deficit in present-day social capital - a legacy of the decade-long social turmoil that was unleashed half a century ago.

4.2. The Cultural Revolution and household finance

After examining the presence of the social capital (trust) channel and given the importance of trust on the viability of financial transactions, we next analyze the lingering effect of the Cultural Revolution on a household's engagement with the financial sector. Applying a reduced-form approach (Klüppel et al., 2018), we follow D'Acunto et al. (2019) and Levine et al., (2020) to construct equation (2).

$$finance_{i,c} = \lambda + \delta CR_c + F'_{i,c} \Phi + H'_c K + Z'_{i,c} \Sigma + v_{i,c} \quad (2)$$

Here, $finance_{i,c}$ represents a set of indicators capturing household finance, as discussed in Section 3.2. The explanatory variable and control settings are same as equation (1). It is worth highlighting that the dependent variables analyzed here have different measurement scales: scale-point integer values (1-3), dummy variable (0,1) and percentile value (0% -100%), respectively. Hence, we apply ordered-Probit regression, Probit regression (where we report the marginal effects) and OLS regression reflecting the reporting category for each variable.

In Table 4, we can see the extent to which the intensity of the Cultural Revolution is significantly and negatively associated with present-day household's access to finance, participation in the financial markets, and a more conservative allocation of the household financial portfolio. As shown in columns (1) - (3) of Table 4, a higher CR mortality rate is associated with a significantly lower score for the perceived ease of access to finance by present-day residents, and this negative impact is clear both in access to formal finance (applied for bank loan) and in access to informal finance (borrowed from acquaintances). It is noteworthy that the effect of CR mortality rate on borrowing is around twice the empirical size of its impact on bank loans, something that is consistent with our earlier findings. The distrust engendered among friends and relatives may more profoundly affect the willingness of residents to provide finance to each other than it does their willingness to access banking finance.

[Insert Table 4 about here]

As discussed in Section 2, the effects on social capital of social unrest such as the Cultural Revolution may persist and alter the willingness of present-day individuals to engage with the financial market (Levine et al., 2020) and may alter their portfolio allocation such as saving

behavior (Fuchs-Schündeln et al., 2020) even long after the original source of upheaval has passed. This evidence providing a cultural explanation of the occurrence of unexpectedly low levels of stock market participation across regions, adds to the discussion of the “low-participation puzzle” (Guiso & Jappelli, 2005; Chen & Stafford, 2016). Meanwhile, our findings supplement the study of and China’s high saving rate (Choi et al., 2017).

From the Column (4) of Table 4, we can see that in the regions that experienced greater severity of the Cultural Revolution, households are more reluctant to engage with the financial market. In the meantime, as shown in Columns (5) of Table 4, residents in high *CR mortality rate* counties allocate a higher portion of their portfolio as deposits, an effect that reflects a reduced level of social trust. The finding in Column (6) also confirms our earlier finding in column (3): as private borrowing is a mutual procedure, the fewer people willing to provide funds results in people finding it harder to borrow. The economic significance of these effects is considerable. For example, in columns (3) and (4) of Table 4, we find that a one standard deviation increase of *CR mortality rate* predicts a 6.50% (-0.802×0.081) lower likelihood that a household will access finance through their acquaintances and a 2.67% (-0.330×0.081) lower likelihood of participating in the financial market. Considering the mean values of these indicators (29.8% and 11.3% respectively), these figures represent an empirically significant impact.

In summary, our baseline research supports the argument that the decade-long social turmoil in China, known as the Cultural Revolution, which witnessed mass denunciations and persecutions, left a legacy of diminished social capital. This manifests in a lingering lack of trust, which, in turn, has resulted in reduced access to finance and a more conservative portfolio allocation among present-day households.

5. Identification

In order to confirm a causal interpretation to identify the relationships established in our baseline research (Schneider, 2020), we variously adopt a difference in differences (DiD) approach (Bai & Wu, 2020; Kong et al., 2021), the unobservable-selection bias test (Oster, 2019), and deploy an alternative Cultural Revolution indicator to robustly replicate the baseline regressions.

5.1. Difference in Differences: A cohort study

It has been argued that the Cultural Revolution created a cross-cohort variation in trust formation, which opens the way to conduct a Difference in Differences (DiD) test for the persistent outcomes arising from the Cultural Revolution (Bai & Wu, 2020; Kong et al., 2021).

Drawing on this stream of literature, we construct a Cultural Revolution cohort variable (CR cohort) for those within our study sample by using an individual’s birth year.

Van Den Bos et al. (2010) define adolescence, being from 9 to 22 years of age, as a “trust-development period”. After this stage, the individual’s value of trust and reciprocity becomes stable. Adopting this perspective, our *CR cohort* is defined as those individuals born between 1944 and 1968. For the control group, we limit the birth year of those included in the test to those born in the years 1934-1943 and 1969-1978, which is 10 years before and after the Cultural Revolution’s zone of influence. We follow the methodology of Balli & Sørensen (2013) to construct a formula that includes a demeaned interaction term, as shown in equation (3).

$$\begin{aligned} trust/finance_{i,c} = & \pi_0 + \pi_1 CR_c + \pi_2 CRcohort_i + \pi_3 (CR_c - \widehat{CR}) (CRcohort_i - \\ & \widehat{CRcohort}) + F'_{i,c} \Psi + H'_c M + Z'_{i,c} N + \eta_{i,c} \end{aligned} \quad (3)$$

Where the *trust/finance*_{*i,c*} represents the various outcome variables in our baseline results. The *CR_c* and the *CRcohort_i* represents the indicators of the Cultural Revolution and the CR cohort, respectively. The $(CR_c - \widehat{CR}) (CRcohort_i - \widehat{CRcohort})$ represents the demeaned interaction terms of these two key explanatory variables. Other control conditions remain the same as in our baseline OLS regressions. According to Balli & Sørensen (2013), this formula has the advantage of allowing a similar interpretation of the main-terms coefficients compared with the non-interacted regression, thereby facilitating direct comparison.

[Insert Table 5 about here]

We show the DiD results in Panel A of Table 5 and append the statistics of the balance tests (Goodman-Bacon, 2021) in Panel B. As we can see in Panel A, the CR cohort manifests a more profound trauma and reports lower trust and reduced access to finance relative to the control cohorts. Meanwhile, the *CR mortality rate* still play a significant role explaining the lingering effects. It is worth discussing that considering the present-day old age of the 1934-1943 birth cohort, it is clear that the comparison group will have a right-skewed distribution (less alive people were born before the CR cohort). Nonetheless, the DiD approach does provide a further dimension of support for the persistent impact of the Cultural Revolution, and the results further strengthen the claim for a causal interpretation of the mechanism.

5.2. Unobservable selection bias test

Omitted-variable bias has been a frequent concern in non-experimental empirical estimation, and it raises questions concerning any causal interpretation (e.g., Altonji et al., 2005; McKenzie, 2012). For example, a set of indicators such as education, income and occupation do

not completely capture an individual's overall socio-economic status. There are always other uncaptured factors. Recently, Oster (2019) proposed an approach that argues that the impact of the inclusion of observable factors is informative in terms of the unobservables, and that we can assess the unobservable-selection bias in proportion to observed coefficient movements when scaled by the corresponding movement in the R-squared.

Oster (2019) proposes two alternative indices to measure the unobservable selection bias, δ and β . The δ index indicates the weight on unobservables required to make an equivalent impact as observables. Oster (2019) argues that 1 is the proper criterion for δ , and that a δ value higher than 1 indicates that the observed factors dominate the regression results. The β index examines the treatment effect under the assumption of both “no informative relationship ($\delta=0$)” and “equal explanatory power ($\delta=1$)” between observables and unobservables in the regression. If the β index does not change the value of its sign across the assumption of $\delta=0$ and then $\delta=1$, the corresponding specification is seen as being not driven by unobservables. We utilize both δ and β to examine the robustness of our baseline arguments.

[Insert Table 6 about here]

Table 6 reports the statistical results obtained upon applying Oster’s (2019) method. Each row illustrates the value of δ and β for each regression specification corresponding to our baseline research. We concentrate on those specifications that produced significant results in our baseline analysis to test whether the significant results are unreliable owing to the presence of unobservable factors. Column (1) of Table 6 reports the estimated value of Oster’s δ for the corresponding specification. Our results universally reject the hypothesis of unobservable selection bias. For example, as we can see in row (1) of column (1), the value of 6.378 indicates that the selection on unobservables would need to be weighted more than six times relative to observables to make the treatment effect of CR mortality rate equal to zero. Columns (2) and (3) report Oster’s (2019) β index when setting δ equal to 0 and 1, respectively. We find that the value of the β index never changes the sign across these two specifications. This indicates that the significant results in our baseline research are not driven by unobservable selection bias.

5.3. Alternative CR indicator

We first utilize an alternative indicator of the severity of the Cultural Revolution: *CR words count*. As discussed in Section 3.1, *CR words count* represents the total number of words used to record the Cultural Revolution events in each county’s local gazetteer. Walder (2014) argues that a higher number of words indicates a greater magnitude of the impact of the Cultural Revolution in the local area. We, therefore, replace the *CR mortality rate* with the *CR words count* and replicate each

of the baseline regression specifications by way of a robustness check. The results obtained appear in Table 7.

[Insert Table 7 about here]

Notably, the CR word count variation does produce a statistically significant and similar pattern of results to those obtained in the baseline results with the *CR mortality rate*. This strengthens our original claim regarding the lingering impact of the Cultural Revolution manifesting through the mechanism of a reduced level of trust and impeding present-day financial development.

6. Robustness Checks

6.1. The impact of the Chinese Great Famine

The Chinese Great Famine (1959-1961) was one of the worst famines in China's history, with the estimated number of deaths ranging anywhere from 16.5 to 45 million individuals (Meng et al., 2015). Research indicates that the famine was caused by faults in the central planning system, aggravated by extreme weather events (Li & Yang, 2005). The disaster left behind not only highly negative long-term health and socio-economic consequences (Chen & Zhou, 2007) but also a deep-rooted suspicion of politicians on the part of the general populace (Chen & Yang, 2019).

To allow for the impact of this disaster, we utilize data from Guo et al. (2020), who constructed an intensity indicator for the Great Famine by measuring the shrink rate in birth cohort size that is obtained by comparing the Great Famine birth cohort with the equivalent three-year average both before and after the critical 1959-1961 period. These authors argue that this indicator reflects the increased mortality and reduced fertility that occurred during the Great Famine, thereby providing an inclusive measurement of the famine's intensity. A detailed explanation and summary statistics for the variable *Great Famine intensity* are shown in Table 1 and Table 2, respectively. It is important to highlight that this data only covers one third of the sample of our Cultural Revolution data. We add this variable into our baseline regressions as an additional control, other than keeping it in our baseline regression.

[Insert Table 8 about here]

Table 8 reports the regression results. We find that the Great Famine does not seem to drive our baseline results. The coefficients of the *CR mortality rate* across the specifications generally remain strongly significant even after considering the impact of the local *Great Famine intensity*. In many cases, the impact of the *Great Famine intensity* adds to the impact of the Cultural Revolution, indicating lingering superimposed effects from these two dramatic social shocks. Notwithstanding

the importance of the Great Famine, however, it is clear that our baseline results deriving from the effects of the Cultural Revolution remain significant.

Overall, the Great Famine shows a negative impact on present-day financial development that acts in conjunction with the Cultural Revolution. This evidence confirms the cost to social capital that lingers on long after the original causal historical trauma.

6.2. The impact of education and income

In our baseline results, income and education are consistently significant factors affecting the trust, access to finance, and financial portfolio allocation observed among present-day residents of China. This section analyzes the possible differential impact of the Cultural Revolution on disparate socio-economic and educational groups. In effect, we examine whether our baseline results are driven by a specific social-economic group rather than directly through general social norms of trust. We create various sub-samples, wherein we divide the total observations according to their education level (four categories) and quartile of income.

[Insert Table 9 about here]

The corresponding results can be found in Table 9, where each row represents one regression specification from our baseline research, and each column represents the key regression result (the coefficient on CR mortality rate) for the corresponding sub-sample. Firstly, for education, we split the total sample into four groups: illiteracy, primary, secondary, and tertiary (or above). We find the higher education does not offset the deep-rooted distrust, as shown in the first two rows. Notably, the adverse impact of the Cultural Revolution on trust is manifested more strongly in higher-educated groups. This is also true in terms of financial portfolio allocation and access to financial market. Secondly, we find that all income quartile groups were negatively affected by the Cultural Revolution both regarding trust and access to finance.

The evidence in this section indicates that the lingering impact of the Cultural Revolution is to be found across all social-economic groups, and our baseline results are not significantly driven by the performance of specific education or income groups. This result lends further support to our baseline arguments.

6.3. External validity: firm-level study

As a check for external validity, we conduct a firm-level study to examine the trust effect from an enterprise perspective. Researchers have presented evidence that local cultural norms alter the financial decisions of firms, with the channel through which this occurs being the managerial style of the relevant chief executive officers (Bigoni et al., 2016; Pierce & Snyder, 2017). We utilized

the Chinese Industrial Enterprises (CIE) database to construct a set of firm-county level trust-sensitive financial indicators.

First, we construct *access to trade credits* as a dummy variable measuring the access to informal finance enjoyed by a firm which altered by trust (Wu et al., 2014). This is set equal to one if the firm makes use of trade credit with their trade partners and zero if not. Second, we construct *credit period*, which measures the percentile proportion of a firm's total debt value that is in the form of long-term debt. A higher value of this index indicates a longer credit period that a firm can access. Then, we construct the variables *long-term investment ratio* and *short-term investment ratio*, which are percentile indicators that measure the firm's investment as a proportion of its total assets. A higher value of these indicators would suggest that this firm is more willing to commit to investment. A rich set of firm-level characteristics and fixed effects are included as control variables in this analysis: a dummy for each state-ownership and foreign-ownership; firm-age, total assets (natural logarithm value), profitability (quick ratio and asset turnover); firm-size fixed effect; registration-type fixed effect; industry fixed effect; and firm-year fixed effect.

[Insert Table 10 about here]

Table 10 illustrates the regression results obtained at the firm level. We find the firm-level evidence to be consistent with our baseline household-level results. Firms in a high *CR mortality rate* county are less likely to have trade credits as financial support from their trading partners, and are making do with a shorter period of trade credit. They also have a more conservative operating strategy, which manifested as lower engagement with investment. The economic magnitude of some of these effects is also noticeable. For example, as shown in column (2), one standard deviation increase in local Cultural Revolution density (CR mortality rate) predicts a 0.514% (6.344×0.081) shorter credit period index for the local firms, which indicates lower credit-based financial support from their commercial partners. The evidence here further underpins the mechanisms argued in our baseline research. The lingering impact of the Cultural Revolution works through negatively affected cultural norms, manifesting as a decrease in social capital (trust) and more conservative financial behavior.

7. Discussion and Conclusion

The Cultural Revolution brought about a decade of social turmoil and extensive violence across the whole of China, its effects being more pronounced in some areas than others (Dikötter, 2017). While the persistence of the effects of these “bitter ten years” on individuals has been identified (Roland & Yang, 2017; Bai & Wu, 2020), very few papers examine the extent to which this event has shaped the present-day disparity of regional socio-economic outcomes.

We establish consistent results that indicate the Cultural Revolution, and the ten years of social turmoil and massive persecution that it represented, decreased the population's trust in a way that persists long after the end of that movement. The effect continues to impede financial development to the present-day. We first establish a robust relationship between the historical intensity of the Cultural Revolution and the level of trust found among the local population in present-day China. We show that the mistrust generated by the Cultural Revolution can be traced to present-day constraints that confront households when raising money or, equally, when considering providing finance to others. This effect undermines present-day trust in the financial system and the willingness to participate in financial markets. This is reflected in the conservative financial portfolio allocation that is observed in areas of historically intense experience of the Cultural Revolution.

We conduct a series of robustness checks on the claim for a causal interpretation of our argument. A Difference in Differences (DiD) test, various unobservable-selection bias tests, and the utilization of an alternative intensity indicator of the Cultural Revolution all support a causal interpretation of the relationship between the historical Cultural Revolution and present-day financial development. Second, we show that our evidence is not driven by the Chinese Great Famine. We also demonstrate that the negative influence of the Cultural Revolution on present-day household finance is not weakened by higher education or higher household income. Finally, we find comparable results when utilizing firm-level data to examine the disparity of financial behavior across the regions of China.

Our research has far reaching implications. First, our evidence supplements the argument that the present-day cultural norm of trust can be viewed as being influenced by and reflecting historical experience (Levine et al., 2020; Nunn, 2020; Kong et al., 2021). The Cultural Revolution, which happened decades ago, continues to exert a lingering influence that can be seen empirically in the level of trust among present-day individuals. This finding helps us better understand the formation and disparity of social capital across regions.

Second, this paper views present-day finance through the theoretical lens of history and finance (D'Acunto, 2017; Klüppel et al., 2018). In so doing, it highlights the importance of social capital as the mechanism that links historical social shocks to the observed variation of present-day financial development across regions (D'Acunto, 2019). Our findings suggest that such cultural legacies of historical social shocks and their subsequent persistent financial costs merit further investigation. We also shed some light on the theoretical arguments regarding the "stock-market participation puzzle" (Guiso & Jappelli, 2005; Chen & Stafford) and China's high saving rate (Choi

et al., 2017) by providing a cultural explanation and empirical evidence (Fuchs-Schündeln et al., 2020).

Finally, our study adds to the discussion of development as an outcome that originates from multiple factors. Financial development has played a central role in fueling economic expansion (Calderon et al., 2002; Beugelsdijk et al., 2006). By understanding the cultural traits that impede the present-day use of finance, we shed light on where and how to tackle inequality in regional development.

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Figure 1. Geographical distribution of the Cultural Revolution (CR) mortality rate

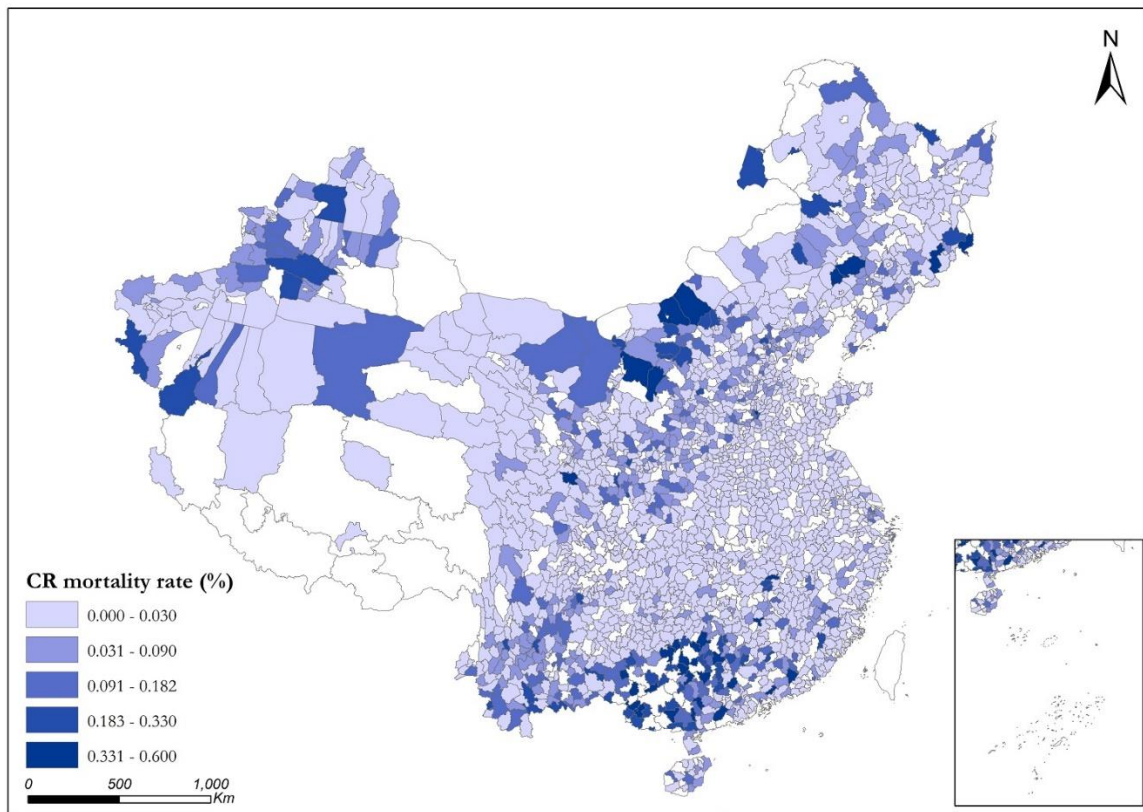


Figure 1. Distribution of county-level mortality rate during the Cultural Revolution (%)
Data in white regions are unavailable

Table 1. Variable definitions

| Variable | Definition |
|---|--|
| <i>Variables during the period of Cultural Revolution</i> | |
| CR mortality rate (%) | The total number of the reported unnatural deaths in each county during the Cultural Revolution divided by county population in 1964. Original data source: Walder (2014) data, variable name: deaths. |
| Han-race | The proportion of Han race among the county's total population in 1964. Original data source: Walder (2014) data, variable name: hanpop and totalpopu. |
| Urbanization | The proportion of urban population among total population in the county in 1964. Original data source: Walder (2014) data, variable name: urbanpop and totalpopu. |
| Distance to provincial capital | The distance from the county to the provincial capital city (kilometer). Original data source: Original data source: Walder (2014) data, variable name: distance. |
| <i>Contemporary social capital and household finance</i> | |
| Trust family members | The respondents' self-reported trust level regarding their family members. Original data source: CHIP, variable p03_1. |
| Trust people outside of family | The respondents' self-reported trust level regarding people except for their family members. Original data source: CHIP, variable p03_2. |
| Perceived ease of access to finance | The respondents' self-reported level of access to external finance, considering both channels, including borrowings from friends/relatives and bank loans. Original data source: CHIP, variable n02_1 and n03_1. |
| Applied for bank loan | Whether the household applied for a bank loan last year. Original data source: CHIP, variable n02. |
| Borrowed from friends/relatives | Whether the household asked a borrowing from relatives or friends last year. Original data source: CHIP, variable n03. |
| Reason why did not try to borrow: did not perceive the need | If the respondent did not ask for a loan from relatives or friends last year, what reason: did not need a borrowing. Original data source: CHIP, variable n03_2. |
| Reason why did not try to borrow: felt that would be rejected | If the respondent did not ask for a loan from relatives or friends last year, what reason: self-estimate that the borrowing would be rejected? Original data source: CHIP, variable n03_2. |
| Participation in financial market | Whether the household participate in financial or credit market. Composed by considering whether they participate in financial market such as stock, fund, bond, or informal credit market. Original data source: CHIP, variable f03, f03_5, f03_6, f03_7 and f03_8. |
| Pct in financial assets: deposit | The percentage of deposit value on total financial assets in each household. Original data source: CHIP, variable f03, f03_2 and f03_3. |
| Pct in financial assets: loaned-out money | The percentage of loaned-out money value on total financial assets in each household. This indicator measures the willingness for household to financially support to relatives or friends. Original data source: CHIP, variable f03 and f03_11. |
| <i>Variables in robustness checks</i> | |

| | |
|-------------------------|--|
| CR words count (log) | The word number that counts for the Cultural Revolution events in local county gazetteers. We compile the words count in all sections in local gazetteers. Original data source: Walder (2014) data, variable name: words1, words2 and words3. |
| Great Famine intensity | The intensity indicator of the Great Famine (1959-1961) in China. Measured by the shrink rate of birth cohort size when comparing the Great Famine birth cohort with the three-year average before and after 1959-1961. It reflects both the increased mortality, reduced fertility, and unnatural deaths during the Great Famine. Original data source: Guo, Gao, and Liang (2020). |
| Access to trade credits | A dummy variable that equals to one when the firms claim to endow trade credits from their trade partners in the last fiscal year. Original data source: Chinese industrial enterprises (CIE). |
| Credit period | The percentage of long-term debt value by total debt value. A higher value indicates a longer credit period. Original data source: Chinese industrial enterprises (CIE). |
| Long-term investment | The percentage of long-term investment value by total asset. A higher value indicates a higher willingness to invest in long-term projects. Original data source: Chinese industrial enterprises (CIE). |
| Short-term investment | The percentage of short-term investment value by total asset. A higher value indicates a higher willingness to invest in short-term projects. Original data source: Chinese industrial enterprises (CIE). |

Table 2. Statistical summary

| Variable | N | Mean | SD | Min | Max |
|---|----------|-------------|-----------|------------|------------|
| <i>Variables during the period of Cultural Revolution</i> | | | | | |
| CR mortality rate (%) | 2217 | 0.038 | 0.081 | 0 | 0.606 |
| Han-race | 2198 | 8.308 | 0.727 | 6.579 | 10.46 |
| Urbanization | 2191 | 0.128 | 0.174 | 0.012 | 0.896 |
| Distance to provincial capital (km) | 2209 | 0.851 | 0.271 | 0.010 | 1 |
| <i>Contemporary social capital and household finance</i> | | | | | |
| Trust family members | 32790 | 3.795 | 0.859 | 1 | 5 |
| Trust people outside of family | 32797 | 3.181 | 0.799 | 1 | 5 |
| Perceived ease of access to finance | 33313 | 1.308 | 0.559 | 1 | 3 |
| Applied for bank loan | 32592 | 0.129 | 0.336 | 0 | 1 |
| Borrowed from friends/relatives | 32537 | 0.298 | 0.457 | 0 | 1 |
| Participation in financial market | 18939 | 0.113 | 0.316 | 0 | 1 |
| Percentage in financial assets: deposit | 22890 | 70.50 | 33.57 | 0 | 100 |
| Percentage in financial assets: loaned-out money | 18689 | 2.800 | 10.14 | 0 | 75 |
| <i>Variables in robustness checks</i> | | | | | |
| CR words count (log) | 2198 | 8.308 | 0.727 | 6.579 | 10.46 |
| Great Famine intensity | 664 | 0.396 | 0.237 | 0.000 | 0.952 |
| Access to trade credits | 2273386 | 0.784 | 0.411 | 1 | 1 |
| Credit period index | 1883246 | 11.91 | 24.59 | 8.724 | 100 |
| Long-term investment | 759402 | 0.267 | 1.424 | 0 | 15.80 |
| Short-term investment | 758335 | 0.012 | 0.147 | 0 | 3.205 |

Table 3. baseline: the Cultural Revolution and trust

This table reports the baseline regression results of the Cultural Revolution density on the present-day trust among residents. All specifications have the identical explanatory variable: *CR mortality rate*, which is the reported unnatural deaths in each county during the Cultural Revolution divided by county population in 1964. The *trust family members* represents the respondents' self-reported trust level regarding their family members (scale value 1-5), while the *trust people outside of family* represents the respondents' self-reported trust level regarding people except their family members (scale value 1-5). The *individual characteristics* include the respondents' age, age-squared, gender, income (natural logarithm value) and education level. The *historical controls* include the Han-race, urbanization, and distance to the provincial capital for the county in 1964. The *individual fixed effects* are a set of individual-level fixed effects that include race category, residential status, marital status, political status. The *county-specific controls* are a set of county-level specific covariates, including the longitude and latitude of each county and the city-type fixed effect. Standard errors are clustered into household-level. The parentheses contain p-values where * p < 0.1, ** p < 0.05, *** p < 0.01.

| | Trust family members | | | | Trust people outside of family | | | |
|----------------------------|----------------------|----------------------|----------------------|----------------------|--------------------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| CR mortality rate (%) | -0.698*** [0.001] | -0.825*** [0.000] | -1.309*** [0.000] | -0.965*** [0.000] | -0.936*** [0.000] | -0.890*** [0.000] | -1.186*** [0.000] | -0.867*** [0.000] |
| Education level | | 0.085*** [0.000] | 0.081*** [0.000] | 0.059*** [0.000] | | 0.006 [0.618] | 0.022* [0.096] | 0.015 [0.112] |
| Income (log) | | 0.042*** [0.005] | 0.046*** [0.004] | 0.037*** [0.003] | | -0.048*** [0.001] | -0.041*** [0.009] | -0.030*** [0.009] |
| Gender | | -0.020*** [0.001] | -0.019*** [0.009] | -0.013** [0.025] | | -0.007 [0.252] | -0.014* [0.050] | -0.011** [0.048] |
| Age | | 0.002 [0.208] | 0.003 [0.263] | 0.002 [0.263] | | -0.005*** [0.002] | 0.001 [0.605] | 0.001 [0.616] |
| Historical controls | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |
| Individual characteristics | No | Yes | Yes | Yes | No | Yes | Yes | Yes |
| Individual fixed effects | No | No | Yes | Yes | No | No | Yes | Yes |
| County-specific controls | No | No | Yes | Yes | No | No | Yes | Yes |
| Observations | 33361 | 33101 | 32305 | 32305 | 33368 | 33110 | 32310 | 32310 |
| Specification | O-Probit | O-Probit | O-Probit | OLS | O-Probit | O-Probit | O-Probit | OLS |

Table 4. Baseline: the Cultural Revolution and household access to finance

This table reports the baseline regression results of the Cultural Revolution density on the present-day residents' access to finance. Each column represents the coefficient result for a different regression specification. All specifications have the identical explanatory variable: *CR mortality rate*, which is the unnatural deaths in each county during the Cultural Revolution divided by county population in 1964. The *perceived ease of access to finance* represents respondents' self-reported level of access to external finance (scale value 1-3). The *applied for bank loan* represents whether the household applied for a bank loan last year. The *borrowed from friends/relatives* represents whether the household asked a borrowing from relatives or friends last year. The *reason why did not try to borrow* analyses for what reason the residents did not ask for a loan from relatives or friends last year: *did not perceive the need* or *felt that would be rejected*. The *access to exchange or credit market* represents whether the household access to stock/bond/fund/credit market. This table includes the most comprehensive controls as shown and explained in Table 3: *historical controls, individual characteristics, individual fixed effects, county-specific controls*. Standard errors are clustered into household-level. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Perceived ease of access to finance | Applied for bank loan | Borrowed from friends / relatives | Participation in financial market | % in financial assets: | |
|----------------------------|--|--------------------------|--------------------------------------|--------------------------------------|------------------------|----------------------|
| | | | | | Deposit | Loaned-out money |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CR mortality rate (%) | -2.805*** [0.000] | -0.418*** [0.000] | -0.802*** [0.000] | -0.330*** [0.002] | 54.484*** [0.000] | -8.190*** [0.002] |
| Education level | 0.027* [0.096] | 0.020*** [0.000] | -0.012** [0.020] | 0.001 [0.909] | 0.983** [0.037] | -0.223 [0.203] |
| Income (log) | 0.020 [0.332] | 0.036*** [0.000] | -0.023*** [0.000] | 0.066*** [0.000] | 6.163*** [0.000] | 0.967*** [0.000] |
| Gender | -0.000 [0.965] | -0.003 [0.130] | 0.011*** [0.000] | -0.002 [0.400] | -0.299 [0.289] | -0.068 [0.505] |
| Age | 0.003 [0.408] | -0.000 [0.914] | 0.001 [0.294] | 0.001 [0.265] | 0.247** [0.024] | 0.025 [0.422] |
| Historical controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Individual characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| Individual fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| County-specific controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 32802 | 32147 | 32135 | 16558 | 19966 | 16365 |
| Specification | O-Probit | Probit | Probit | Probit | OLS | OLS |

Table 5. Identification: Difference in Differences (DID)

This table reports the causal interpretation results from the Difference in Differences (DiDs) regressions. For concision, we show the replication results of five key regression identifications about trust and access to finance. The *CR cohort* is the Cultural Revolution cohort individuals who were born between the years 1944 and 1968. The *c_CR*c_cohort* is the demeaned interaction term of *CR mortality rate* and *CR cohort* according to the methodology of Balli & Sørensen (2013). Panel A reports the regression results, and Panel B reports the balance test of this DiDs approach. The *full control settings* represent all the controls adopted in the baseline regressions, including individual characteristics, historical controls, individual fixed effects, and *county-specific controls*. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Panel A: difference in differences

| | Trust family members | Trust people outside of family | Perceived ease of access to finance | Applied for a bank loan | Borrowed from friends/relatives | Participation in financial market | % in financial assets: | |
|-----------------------|----------------------|--------------------------------|-------------------------------------|-------------------------|---------------------------------|-----------------------------------|------------------------|----------------------|
| | | | | | | | Deposit | Loaned-out money |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| CR mortality rate (%) | -1.239*** [0.000] | -1.256*** [0.000] | -2.986*** [0.000] | -2.256*** [0.000] | -2.631*** [0.000] | -2.024*** [0.001] | 56.617*** [0.000] | -9.251*** [0.000] |
| CR cohort | 0.007 [0.840] | 0.007 [0.824] | 0.067 [0.111] | 0.071 [0.182] | 0.065 [0.123] | -0.063 [0.381] | 1.268 [0.324] | -0.707 [0.131] |
| c_CR*c_cohort | -0.656** [0.044] | -0.225 [0.505] | -1.384*** [0.003] | -0.972* [0.090] | -0.978** [0.037] | -0.537 [0.490] | 5.074 [0.662] | 1.703 [0.671] |
| Full control settings | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 21319 | 21322 | 21669 | 21203 | 21200 | 11054 | 13333 | 10916 |

Panel B: Balance test

| | CR cohort =0 | | CR cohort =1 | | Difference | Overall sample | |
|-----------------|--------------|--------|--------------|--------|------------|----------------|--------|
| | Obs. | Mean | Obs. | Mean | | Obs. | Mean |
| Age | 9071 | 47.108 | 15619 | 15619 | 7.588*** | 24690 | 51.908 |
| Education years | 8729 | 8.122 | 15003 | 7.214 | -0.908*** | 23732 | 7.548 |
| Income (log) | 9025 | 10.647 | 15539 | 10.641 | -0.006 | 24564 | 10.643 |
| Gender | 9071 | 0.509 | 15619 | 0.502 | -0.007 | 24690 | 0.504 |

Table 6. Identification: Unobservable-selection bias test

This table reports the causal interpretation results from the unobservable-selection bias test according to the methodology of Oster (2019). We replicate all the regression specifications in the baseline analysis. The δ index indicates the weight of selection on unobservables to make an even impact as the observables. The β indicates the treatment effect under the assumption of no informative relationship ($\delta=0$) and equal selection ($\delta=1$) between observables and unobservables. The *full control settings* represent all the controls adopted in the baseline regressions, including individual characteristics, historical controls, individual fixed effects, and *county-specific controls*. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Independent variable: CR mortality rate (%) | | |
|---|---|------------------------------------|-----------------------------|
| | Oster's (2019) δ value | Oster's (2019) β value when: | |
| | (1) | Setting $\delta = 0$ (2) | Setting $\delta = 1$ (3) |
| Trust family members | 6.37860 | -0.79527 | -0.96468 |
| Trust people outside of family | 4.26260 | -0.91528 | -0.97274 |
| Perceived ease of access to finance | -18.3386 | -0.92310 | -1.22379 |
| Applied for a bank loan | -3.60808 | -0.30923 | -0.54590 |
| Borrowed from friends/relatives | 6.86076 | -0.76669 | -0.82711 |
| Participation in financial market | 4.80119 | -0.30586 | -0.30584 |
| % in financial assets: Deposit | -10.23658 | 54.48395 | 69.52440 |
| % in financial assets: Loaned-out money | 7.99231 | -9.25138 | -9.30162 |
| Full control settings | Yes | Yes | Yes |

Table 7. Identification: words count as alternative Cultural Revolution indicator

This table reports the robustness regression results when utilizing the *CR words count* as the alternative indicator of the Cultural Revolution (CR) density. Each column in this table represents a different regression specification based on different dependent variables. All the dependent variables are parallel to the variables that has been adopted in our baseline results. Panel A and Panel B differ in the type of regression and characteristics of dependent variables. The *full control settings* represent all the controls adopted in the baseline regressions, including individual characteristics, historical controls, individual fixed effects, and *county-specific controls*. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Trust family members (1) | Trust people outside of family (2) | Perceived ease of access to finance (3) | Applied for a bank loan (4) | Borrowed from friends / relatives (5) | Participation in financial market (6) | % in financial assets: Deposit (7) | Loaned-out money (8) |
|-----------------------|-----------------------------|---------------------------------------|--|--------------------------------|--|--|---------------------------------------|-------------------------|
| CR words count (log) | -0.086*** [0.000] | -0.052*** [0.007] | -0.135*** [0.000] | -0.020*** [0.000] | -0.032*** [0.000] | -0.069*** [0.000] | 2.946*** [0.000] | -2.463*** [0.000] |
| Full control settings | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Specification | Ordered-Probit | Ordered-Probit | Ordered-Probit | Probit | Probit | Probit | OLS | OLS |
| Observations | 31690 | 31695 | 32177 | 31524 | 31505 | 16558 | 19966 | 16365 |

Table 8. The impact of the Chinese Great Famine

This table reports the robustness regression results when considering the *Great Famine intensity* as a impact factor along with the Cultural Revolution density. The *Great Famine intensity* is collected from Guo et al. (2020), which measures the shrink rate of birth cohort size when comparing the Great Famine birth cohort with the three-year average before and after 1959-1961. The *full control settings* represent all the controls adopted in the baseline regressions, including individual characteristics, historical controls, individual fixed effects, and county-specific controls. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Trust family members | Trust people outside of family | Perceived ease of access to finance | Applied for a bank loan | Borrowed from friends/relatives | Participation in financial market | % in financial assets: | |
|------------------------|----------------------|--------------------------------|-------------------------------------|-------------------------|---------------------------------|-----------------------------------|------------------------|--------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | Deposit | Loaned-out money |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| CR mortality rate (%) | -0.981*** [0.001] | -0.773** [0.016] | -2.623*** [0.000] | -0.493*** [0.000] | -0.686*** [0.000] | -0.230 [0.119] | 32.986*** [0.000] | -5.091* [0.080] |
| Great Famine intensity | -0.024 [0.177] | 0.024 [0.192] | -0.056** [0.013] | -0.003 [0.590] | -0.016** [0.033] | 0.014 [0.202] | 3.264*** [0.000] | -0.277 [0.563] |
| Full control settings | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 18685 | 18688 | 18962 | 18596 | 18574 | 9768 | 11906 | 9742 |

Table 9. The impact of education and income

This table reports the robustness regression results when doing sub-sample analysis. We consider the respondents' education level and income level and analyze the Cultural Revolution density on the different groups. All the dependent variables are parallel to the variables that have been adopted in our baseline results. Each row represents the results from one specification, and each column shows the results of the specification using the corresponding sub-sample as observations. The *full control settings* represent all the controls adopted in the baseline regressions, including individual characteristics, historical controls, individual fixed effects, and *county-specific controls*. The parentheses contain p-values where * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Education level | | | | Income level | | | |
|--|----------------------|----------------------|----------------------|-----------------------|---------------------------|------------------------|------------------------|------------------------|
| | Illiteracy (1) | Primary (2) | Secondary (3) | Tertiary (4) | Bottom quartile (5) | 2nd quartile (6) | 3rd quartile (7) | Top quartile (8) |
| The key explanatory variable is CR mortality rate (%) | | | | | | | | |
| Trust family members | -0.373 [0.645] | -1.242*** [0.000] | -1.449*** [0.000] | -1.486*** [0.001] | -1.231** [0.012] | -0.269 [0.605] | -2.003*** [0.000] | -1.633*** [0.001] |
| Trust people outside of family | -0.473 [0.567] | -0.928*** [0.002] | -1.974*** [0.000] | -1.111** [0.017] | -0.888 [0.106] | -0.930* [0.075] | -1.004* [0.054] | -1.759*** [0.001] |
| Perceived ease of access to finance | -3.039*** [0.003] | -2.422*** [0.000] | -3.962*** [0.000] | -2.902*** [0.000] | -3.182*** [0.000] | -1.843*** [0.005] | -3.902*** [0.000] | -3.243*** [0.000] |
| Applied for a bank loan | -1.006 [0.444] | -1.818*** [0.000] | -3.376*** [0.000] | -2.244*** [0.002] | -1.288 [0.191] | -1.766* [0.091] | -2.906*** [0.001] | -2.961*** [0.000] |
| Borrowed from friends/relatives | -3.357*** [0.002] | -2.031*** [0.000] | -3.490*** [0.000] | -2.851*** [0.000] | -2.793*** [0.000] | -1.595** [0.015] | -3.425*** [0.000] | -2.842*** [0.000] |
| Participation in financial market | 0.510 [0.703] | -1.550** [0.016] | -2.100** [0.022] | -3.403*** [0.002] | -0.809 [0.582] | -3.672** [0.011] | -3.693*** [0.002] | -1.092 [0.249] |
| % in financial assets: Deposit | 22.888 [0.401] | 50.206*** [0.000] | 57.510*** [0.000] | 65.981*** [0.000] | 53.586*** [0.009] | 63.203*** [0.000] | 73.121*** [0.000] | 36.191*** [0.005] |
| % in financial assets: Loaned-out money | 0.565 [0.939] | -7.698** [0.014] | -8.556* [0.066] | -13.752*** [0.005] | -2.727 [0.536] | -10.031** [0.042] | -18.825*** [0.000] | -5.984 [0.314] |
| Full control settings | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Table 10. External validity: firm access to finance

This table reports the robustness regression results when replacing the dependent variables with firm-level variables collected from Chinese industrial enterprises (CIE) database. Each column represents a different regression specification based on different dependent variables. The *access to trade credit* represents whether the firm has trade credits from their trade partners in the last fiscal year (dummy value 0-1). The *credit period* represents the percentile value of long-term debt value by total debt value, where a higher value indicates longer credit period. The *long-term investment* and the *short-term investment* represent the percentage of long-term investment and short-term investment value by total asset value, individually. The *firm-specific controls* include a dummy of state-ownership and foreign-ownership, firm age, total asset (natural logarithm value), and profitability (quick ratio and asset turnover). The *firm size/type fixed effects* represent firm-size fixed effect (3 categories) and registration-type fixed effect (25 categories). The *firm-year fixed effect* includes 10 dummies representing the firm-year between 2004 and 2013, while the industry fixed effect represents the 68 industrial categories. The parentheses contain p-values where * p < 0.1, ** p < 0.05, *** p < 0.01.

| | Access to trade credit (1) | Credit period (2) | Long-term investment (3) | Short-term investment (4) |
|------------------------------|-------------------------------|----------------------|-----------------------------|------------------------------|
| CR mortality rate (%) | -0.106*** (0.000) | -6.344*** (0.000) | -0.039 (0.521) | -0.022*** (0.000) |
| State ownership | 0.011*** (0.000) | 0.870*** (0.000) | 0.023 (0.253) | -0.002 (0.138) |
| Foreign ownership | -0.001 (0.645) | -0.671*** (0.000) | 0.078*** (0.000) | -0.002* (0.075) |
| Firm age | 0.001*** (0.000) | -0.010*** (0.005) | 0.011*** (0.000) | 0.000** (0.029) |
| Total asset (log) | 0.003*** (0.000) | 2.081*** (0.000) | 0.134*** (0.000) | 0.001*** (0.000) |
| Quick ratio | 0.001*** (0.000) | 1.599*** (0.000) | -0.003*** (0.000) | 0.001*** (0.000) |
| Current asset turnover | -0.001*** (0.000) | 0.238*** (0.000) | -0.000 (0.787) | 0.000*** (0.000) |
| Firm-specific controls | Yes | Yes | Yes | Yes |
| Historical controls | Yes | Yes | Yes | Yes |
| Firm size/type fixed effects | Yes | Yes | Yes | Yes |
| Firm-year fixed effect | Yes | Yes | Yes | Yes |
| Industry fixed effect | Yes | Yes | Yes | Yes |
| Observations | 1,734,498 | 1,732,918 | 709,866 | 708,698 |
| Specification | Probit | OLS | OLS | OLS |