

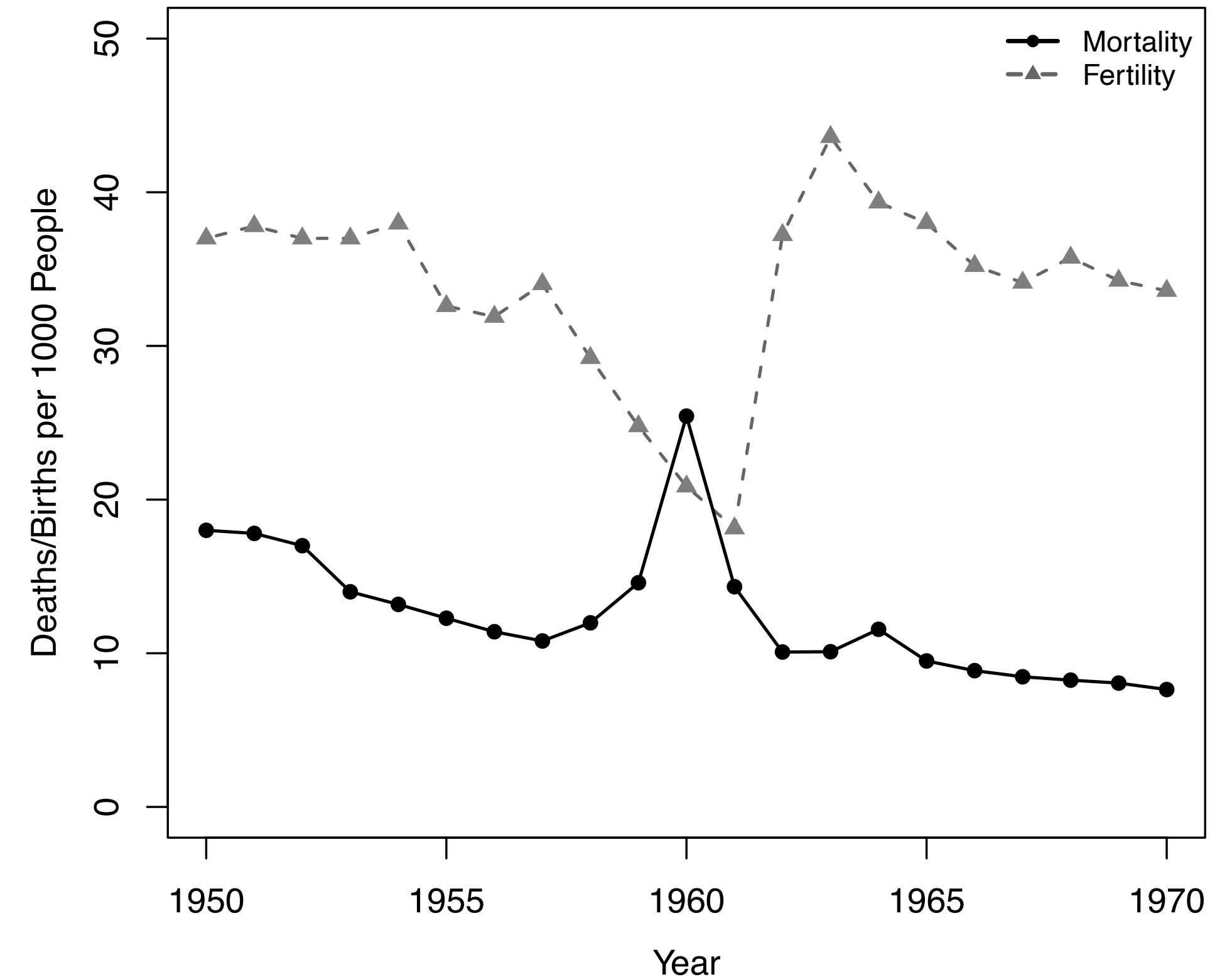
# Clans and Calamity: How Social Organizations Saved Lives during China's Great Famine

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Jiarui Cao    Yiqing Xu    Chuanchuan Zhang

# The Great Famine

- China's great famine in 1958/59-1961 is the most deadly famine in recorded human history
  - An estimated **16-45 million** people have died during the famine (2-7% of the 1958 population)
  - The famine hit the countryside the most
  - According to official data, in some counties, the death rate was as high as 16%!
- The famine was directly linked to Mao's Great Leap Forward (GLF) campaign
- **Research question:** Can traditional social structure, i.e., kinship-based clans (宗族), mitigate disastrous outcomes of the famine, and if yes, how?



# Clans as Social Organizations

- Social Organizations were created to maintain social order, provide public goods, and connect the grassroots with the state (Grief and Iyigum 2013)
  - Vehicles of social capital for collective action (Putnam 1993); require constant, long-term investment in relationships (Guiso, Sapienza, and Zingales 2011); also referred to as “solidary groups” (Tsai 2007)
- Clans are probably the most important grassroots social organizations in China’s history (Fei 1946; Watson 1982)
  - A key element of socio-political order in Imperial China
  - Public goods providers and platforms of collective action (Greif & Tabellini 2010; Dincecco & Wang 2020)
  - Clan leaders obtain moral standing by contributing to public goods and taking leadership roles
  - Its importance persists in the reform era (Tsai 2007; Xu and Yao 2015; Mattingly, 2020)
- Less systematically is known about clans’ role in extremely dire situations

# Main Challenges

- Credibly measure clans nationwide → A comprehensive dataset of genealogies
- Collect mortality data during the Great Famine → County gazettes & representative survey
- Establish causality & investigate mechanisms → DID (comparative interruption design)

# Preview of Our Findings

- **Macro data** (a nationwide county-year panel): The increase in the mortality rate is negatively correlated with clan density at the county level
- **Micro data** (China Family Panel Survey, CFPS 2010): Hunger experience is negatively correlated with clan density in rural communities for famine-exposed cohorts
- **Mechanisms:**
  - No sign of clans affecting grain production during the GLF
  - Enabled collective action against **excessive procurement**

# Roadmap

- Motivation
- **Theory & Background**
- Data and Identification Strategies
- Empirical Findings
- Conclusion



# A Conceptual Framework



- State & officials
  - The state incentivizes local officials to carry out a policy
  - Local officials respond by delivering policy outcomes and messages
- Officials & the people
  - Local officials enforce the policy upon the people (with an information advantage)
  - The people can choose to
    - comply with the policy
    - reward officials with moral standing for good policies (Tsai 2007; 2010)
    - resist, esp. when they think have the right to do so (O'Brien 1996; O'Brien & Li 2006)

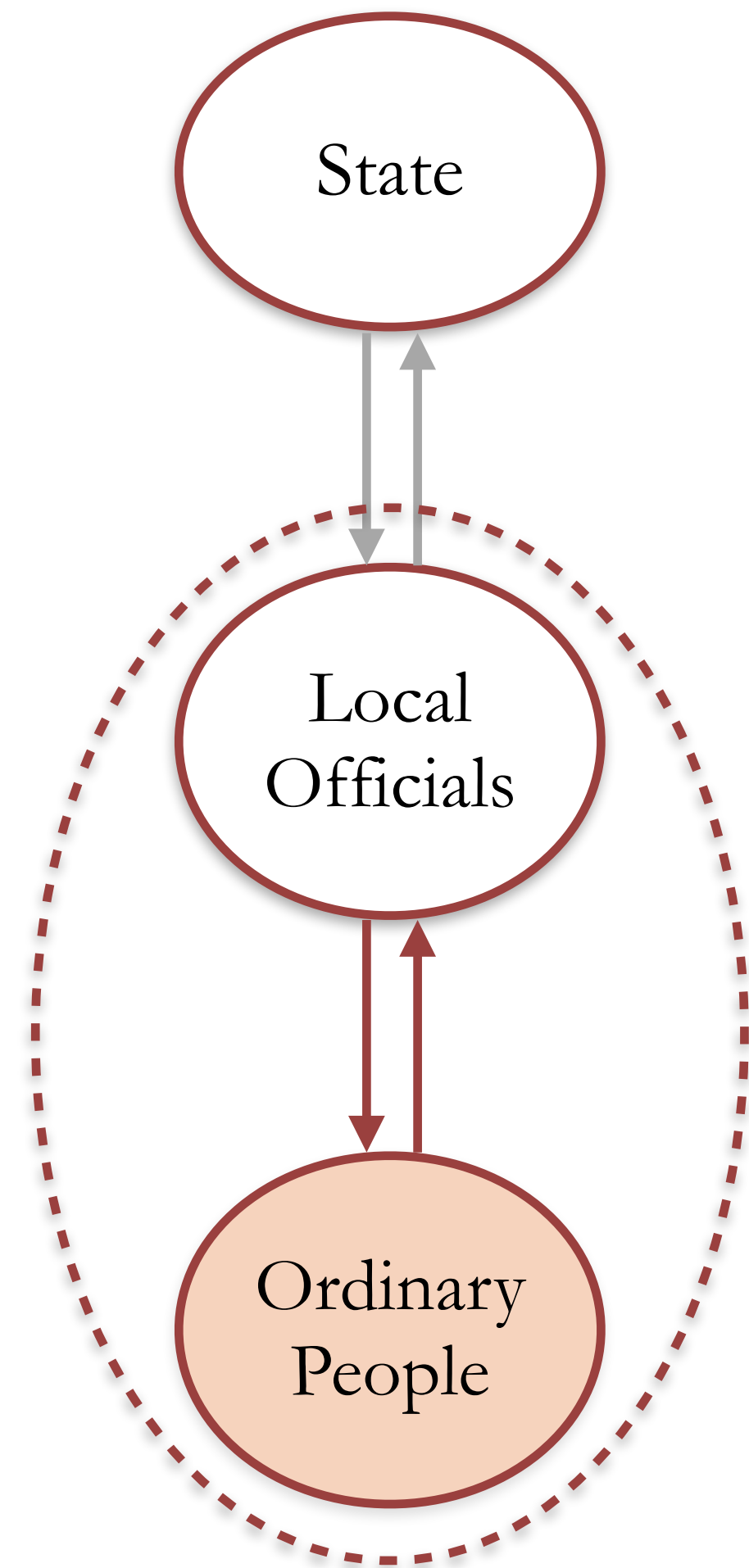
# Traditional Social Structure (“Solidary Group”)

**First,** it facilitates

- risk-sharing among group members
- solving the collective action problem
  - ▶ mobilize resources
  - ▶ monitor local officials
  - ▶ organize resistance toward bad policies

**Moreover,** when officials are *embedded* in the group, it can

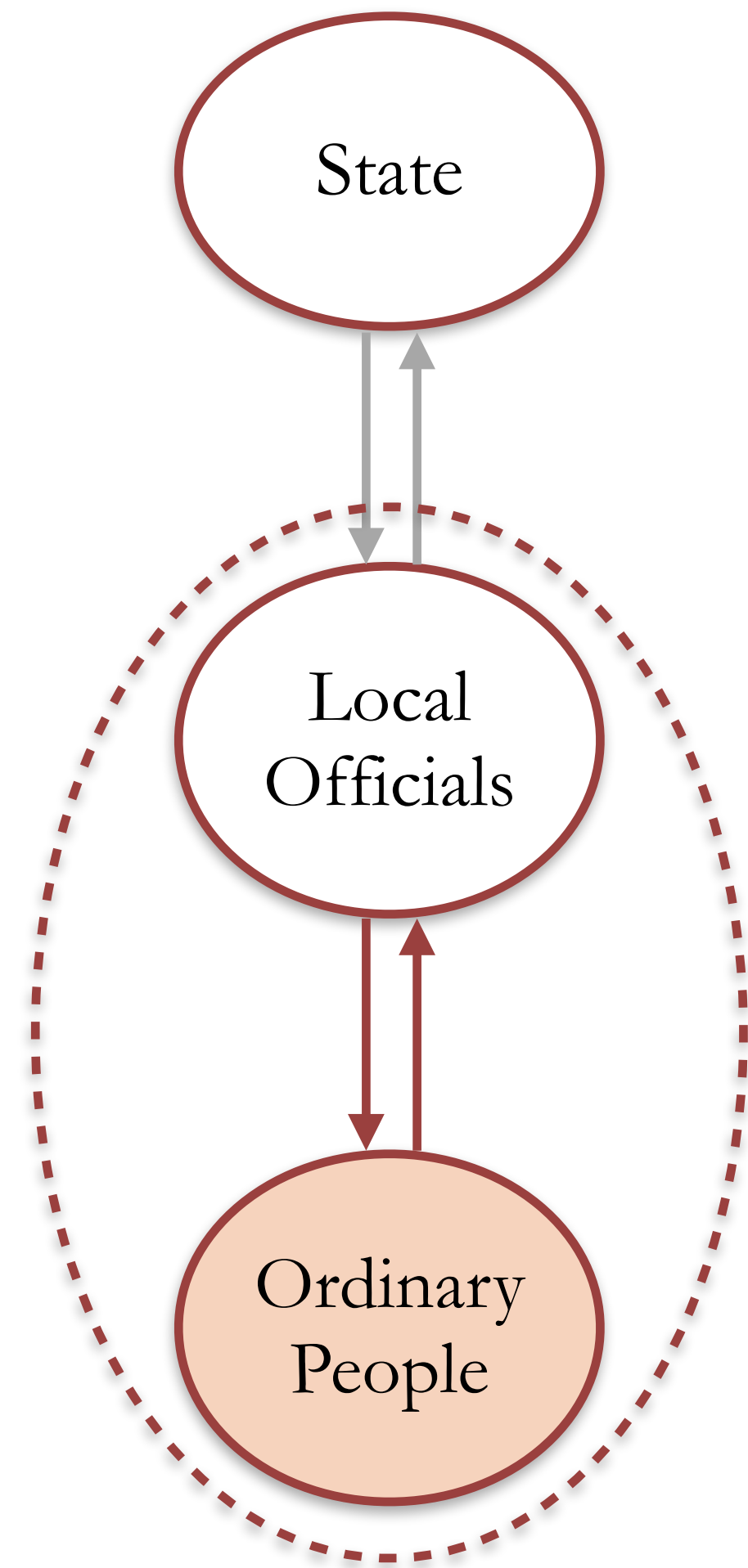
- align preferences between local officials and the people
- make up for the information gap
- further facilitate collective action (which requires leadership)





# Theoretical Expectations

- When a policy is **aligned** with people's interest, the presence of solidary groups enhances desirable policy outcomes
  - Through better monitoring (Tsai 2005; 2007)
  - Through mobilizing more resources (Xu & Yao 2014 APSR)
  - Exceptions: intense group conflicts when no group is dominant
- When a policy is **not aligned** with people's interest, the presence of solidary groups may trigger resistance & self-salvation
  - Through mobilizing collective action & hiding critical information (this paper)
  - Exceptions: when leaders are no longer subject to sanctions, they are tempted to renege (Mattingly 2016; 2020)



# Mao's GLF Campaign

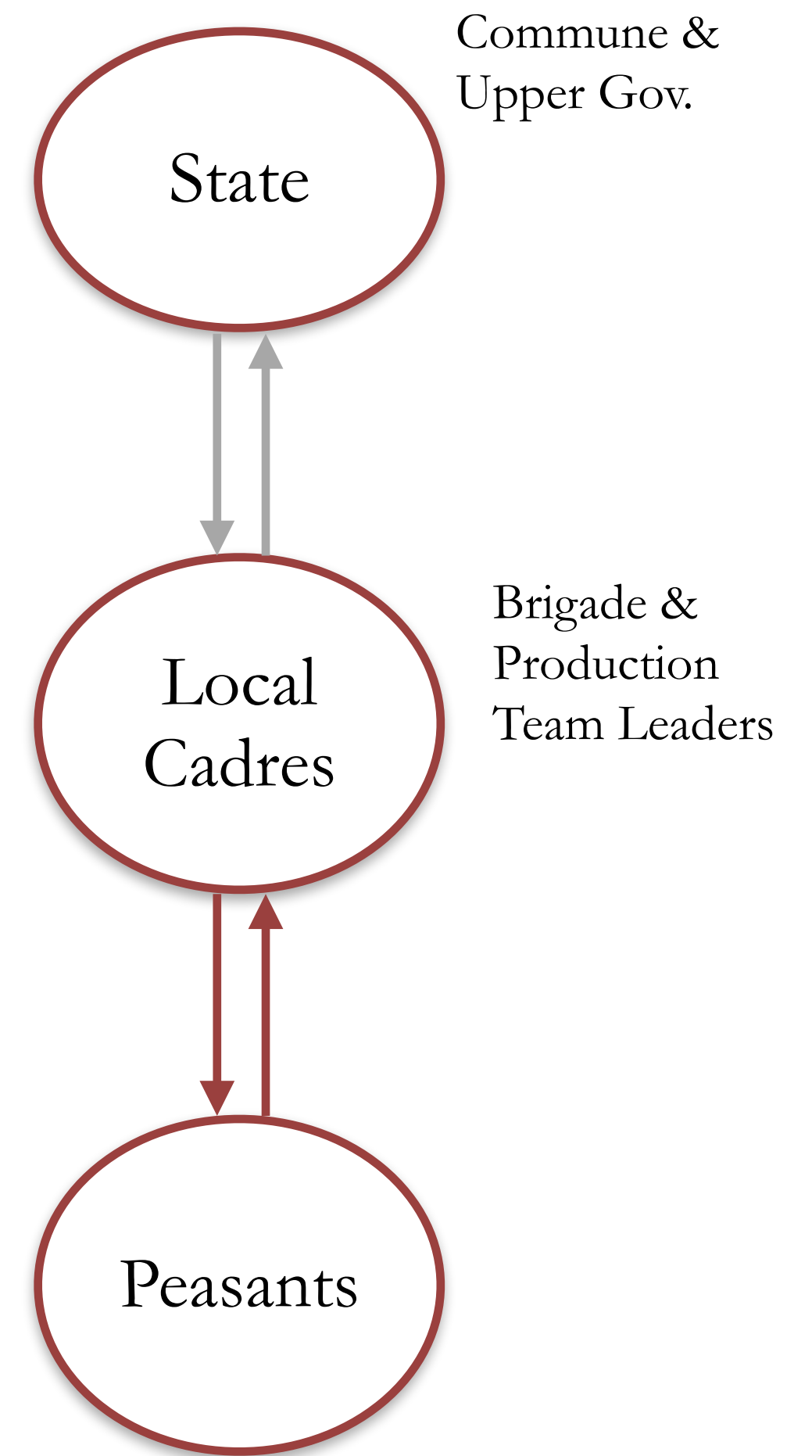
- In 1958, Mao launched the GLP campaign to quickly transform China's agrarian economy
- Local officials, in Mao's bidding, diverted resources away from agriculture production to industrialization
  - Large construction projects
  - Backyard steel furnaces
  - Extract aggressively from the agriculture sector



Steel Furnace in Henan Xin'an County People's Commune

# Rural Collectivization & State Procurement

- People's Communes
  - Militarized collective farms
  - Families turned over their personal possessions & means of productions
  - Cadres wielded enormous power while most peasants were powerless
  - “Communes are the institutional basis of the famine” (Yang, 2007)
- Procurement
  - The upper-level government officials set targets prior to harvest
  - The production teams were required to hand over grain to meet the large
  - Commune and brigade cadres launch campaigns to enforce procurement





# Causes of the Famine

- Less food availability due to lowered grain production (Lin 1990; Yao 1999; Yang 2008)
- Excessive state procurement (e.g., Meng, Qian & Yared 2015)
  - Mao and the CCP leadership set unrealistic targets
  - Provincial officials feared to lag behind (Yang, Xu, Tao 2014)
  - “The cycle of mutual deception & self-deception” (Walder 2015)
  - Made possible through oppression (Yang 2007; Dikötter 2010)

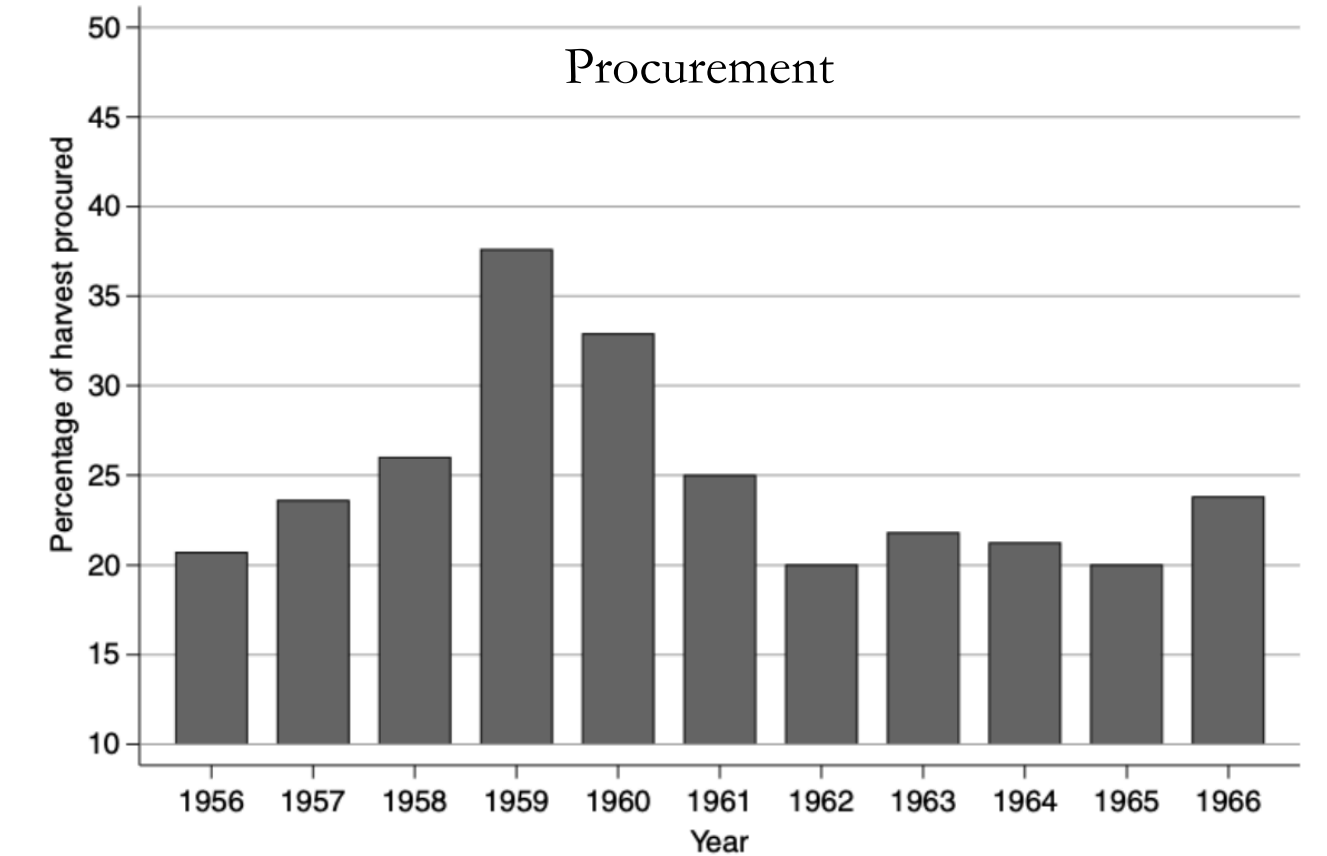


Figure 8.1. State grain procurements, as percentage of harvest, 1956–1966. Source: Calculated from Li and Yang (2005, 846).

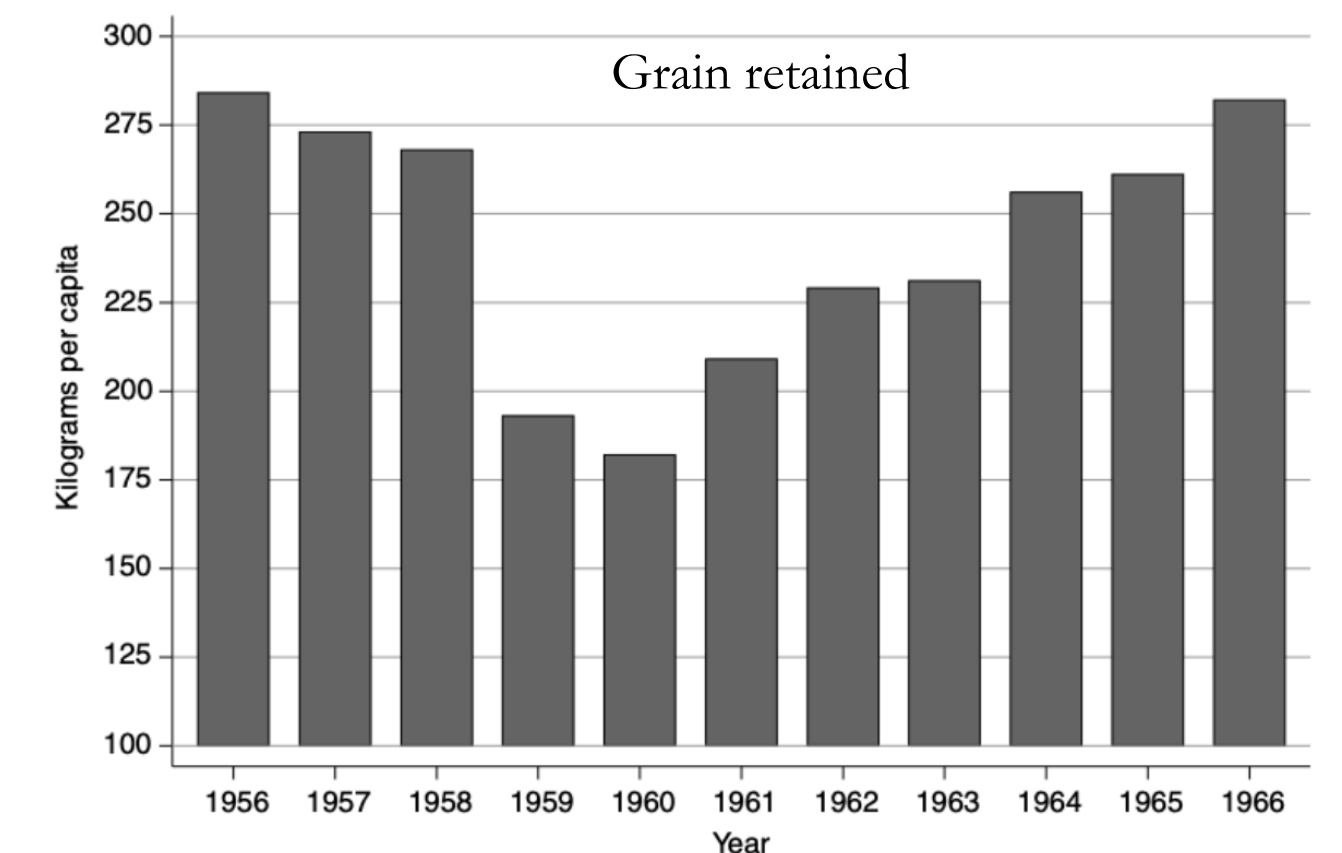


Figure 8.2. Grain retained by collective farms, 1956–1966. Source: Li and Yang (2005, 846).

Source: Walder (2015)

# A Study of Three Villages in Anhui

“The Maoist state’s excessive grain procurement fundamentally caused the Great Leap famine, particularly through its 1959 procurement.

When food became scarce, kin leadership was the crucial factor in determining life and death in a village. ... The **breakdown of kin leadership**, as in the case of Laoqu, was the leading cause of disaster, and the **continuity of this leadership** in the cases of Dongshanxia and Dongyu was the primary reason more people survived in those villages.

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YIXIN CHEN

When Food Became Scarce:  
Life and Death in Chinese  
Villages during the Great Leap  
Forward Famine\*

IT REMAINS LARGELY unclear even today how thirty million peasants perished during the Great Leap Forward famine between 1959 and 1961, and how and why many more survived.<sup>1</sup> Ever since the early 1980s, when the Chinese Government for the first time published its official, readjusted yet nonetheless fabricated population data with regard to the Great Leap years,

# When Food Became Scarce

“[N]o other form of relationship—social class, friendship, comradeship, marriage, economic partnership, or political interests—could have held an entire village together for self-preservation and to save lives.” — *Chen (2010)*



# Roadmap

- Motivation
- Theory & Background
- **Data and Identification Strategies**
- Empirical Findings
- Conclusion

# Measuring Famine Severity

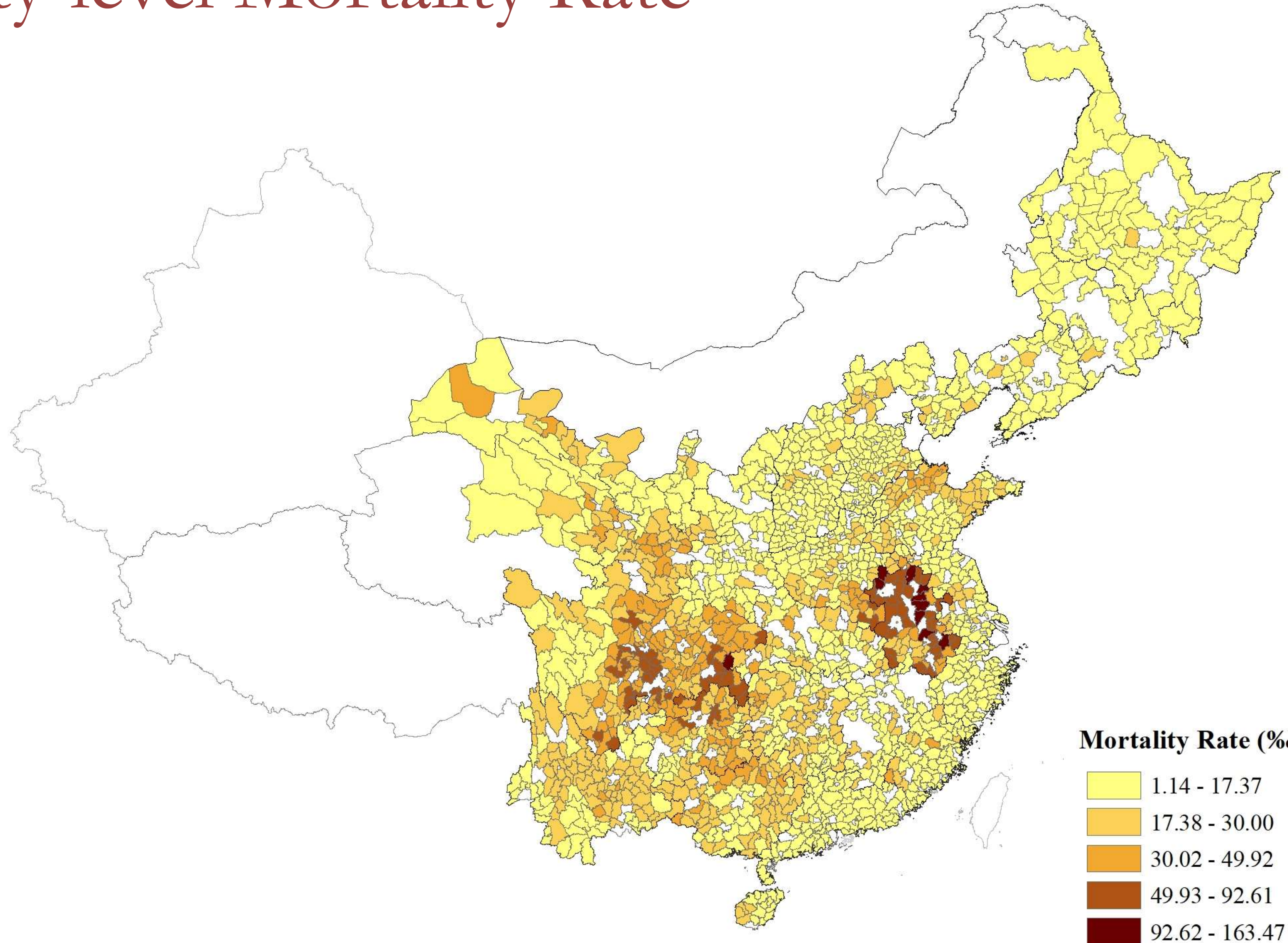
- Mortality rate
  - Many existing studies use “relative cohort size” (e.g. Kung & Lin 2003; Meng et al 2015)
  - From first-hand sources: local government statistics (资料汇编) and county gazettes (县志); they were mostly compiled in the early reform era

“Someday the central government will ask you for the actual figures, so you must make sure to have all the real numbers and be ready to present them at any time” (Walder 2015, p. 162)

- Our data cover 1,854 counties in 23 provinces (1954 to 1966); 95% of population in 1953
- At the aggregate-level, consistent with independent estimates of famine deaths (~20 million)



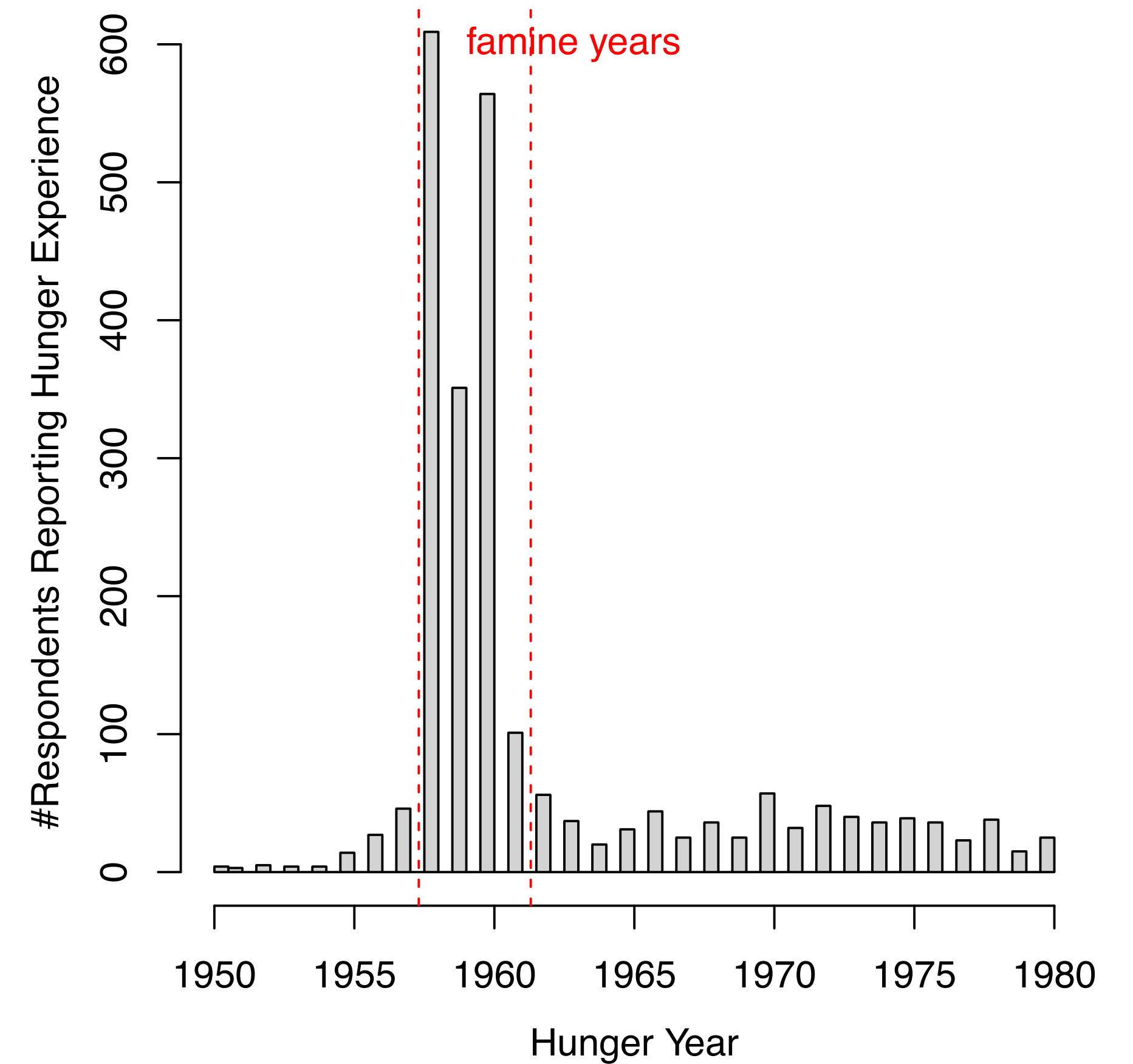
# County-level Mortality Rate





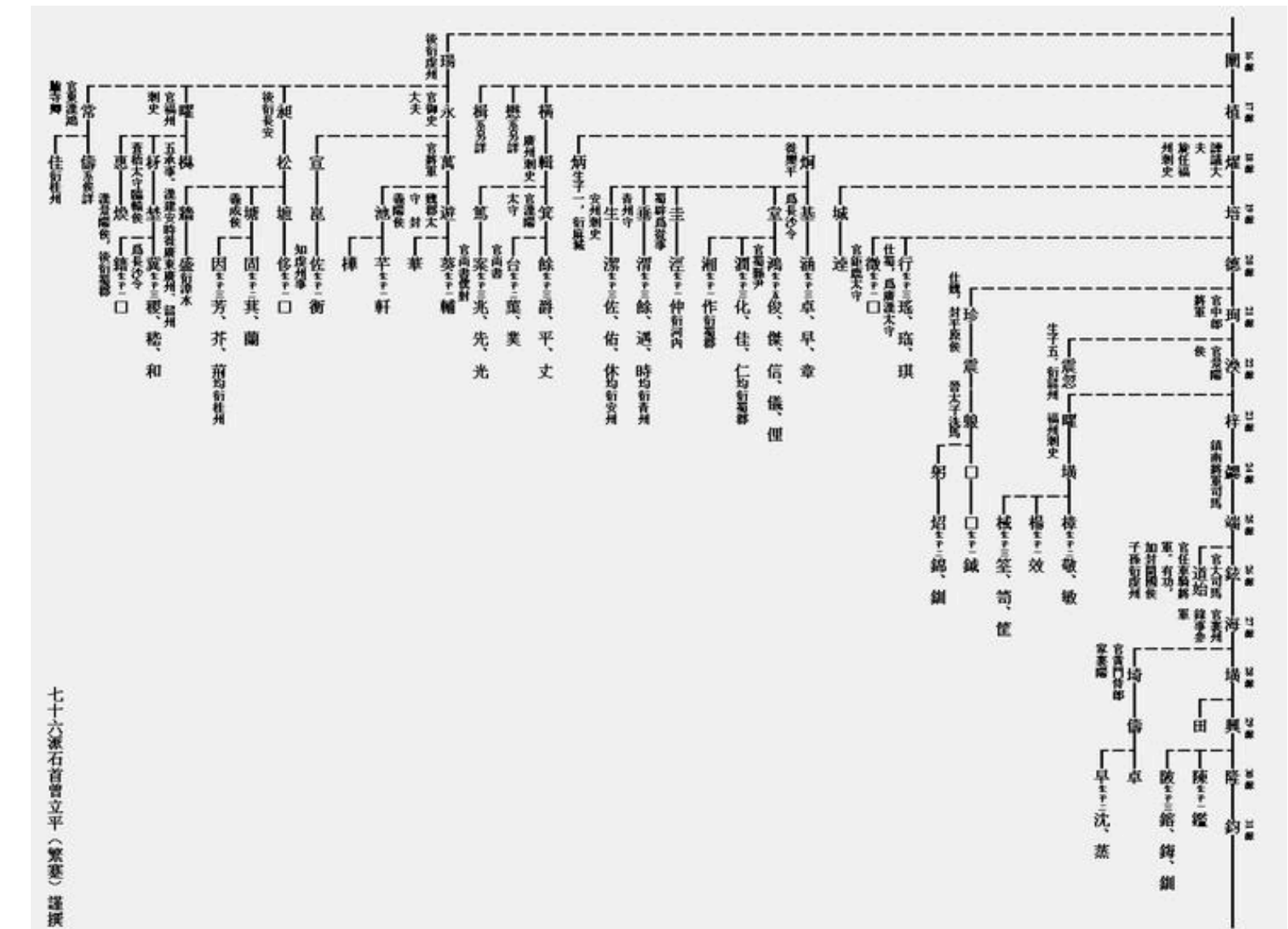
# Corroborative Evidence

- Hunger experience
  - CFPS 2010: a nationally representative survey (14,960 households and 33,600 adults)
  - 18,972 were born before 1977
  - They were asked: “Have you ever experienced hunger for at least a week?”
  - 14% reported “Yes”
  - Among them, 68% were during the famine years



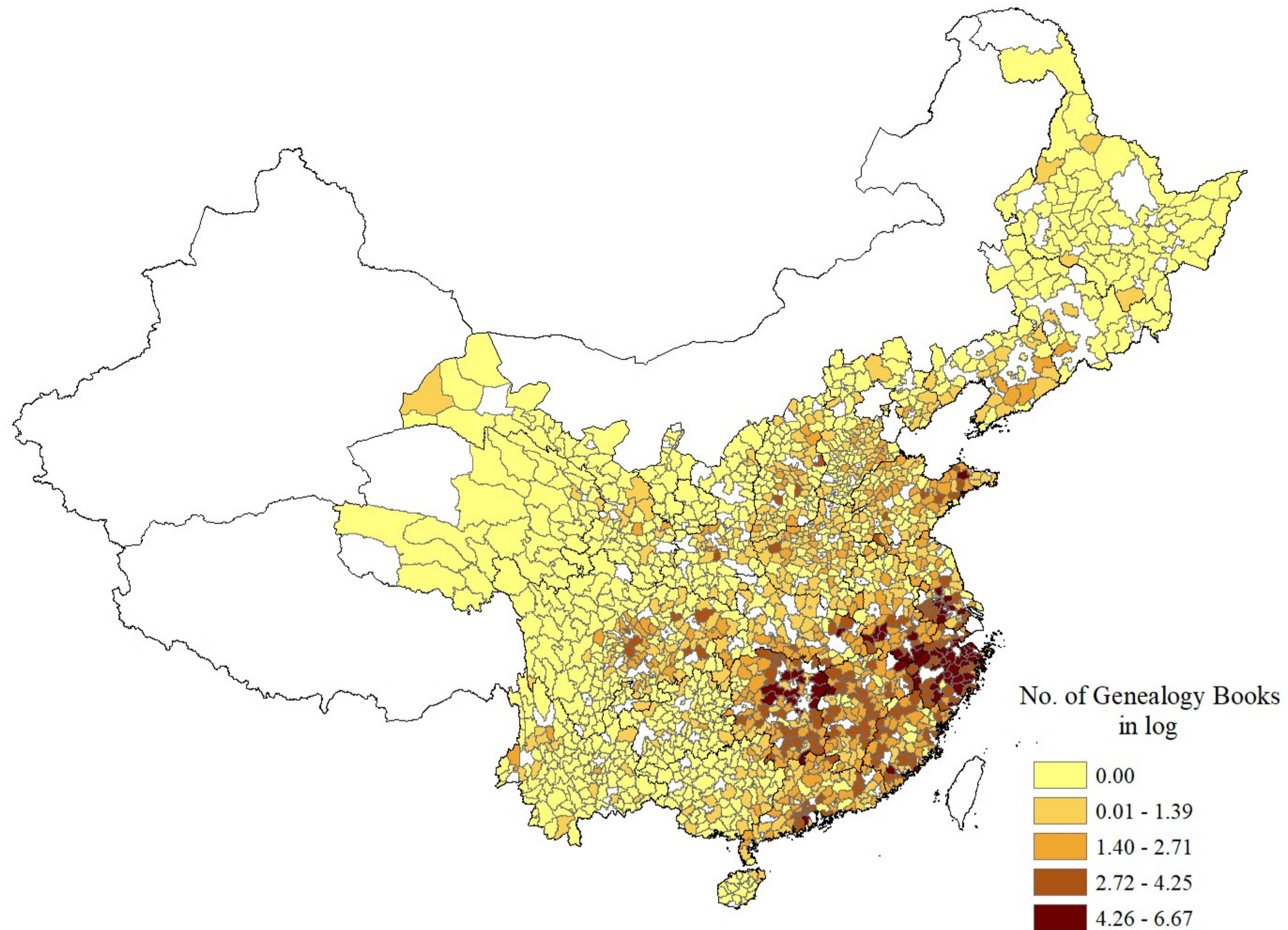
# Measuring Clan Density

- **County-year panel:** # Genealogies/population
  - *The General Catalog of Chinese Genealogy*, covering 52,401 genealogies
  - Count #genealogies compiled before 1950 in each county
- **CFPS:** Average number of genealogies in a community
- Both continuous and binary measures
- **Drawbacks:** do not capture inter-clan conflicts or embeddedness





# County-level Clan Density





# Roadmap

- Motivation
- Theory & Background
- **Data and Identification Strategies**
  - Data & Measurement
  - **Identification Strategies**
- Empirical Findings
- Conclusion

# Empirical Strategies: DID

- DID with the county-year panel
  - First difference: famine years vs. non-famine years
  - Second difference: low clan density vs. high clan density
  - S.E. clustered at the county (or prefecture) level

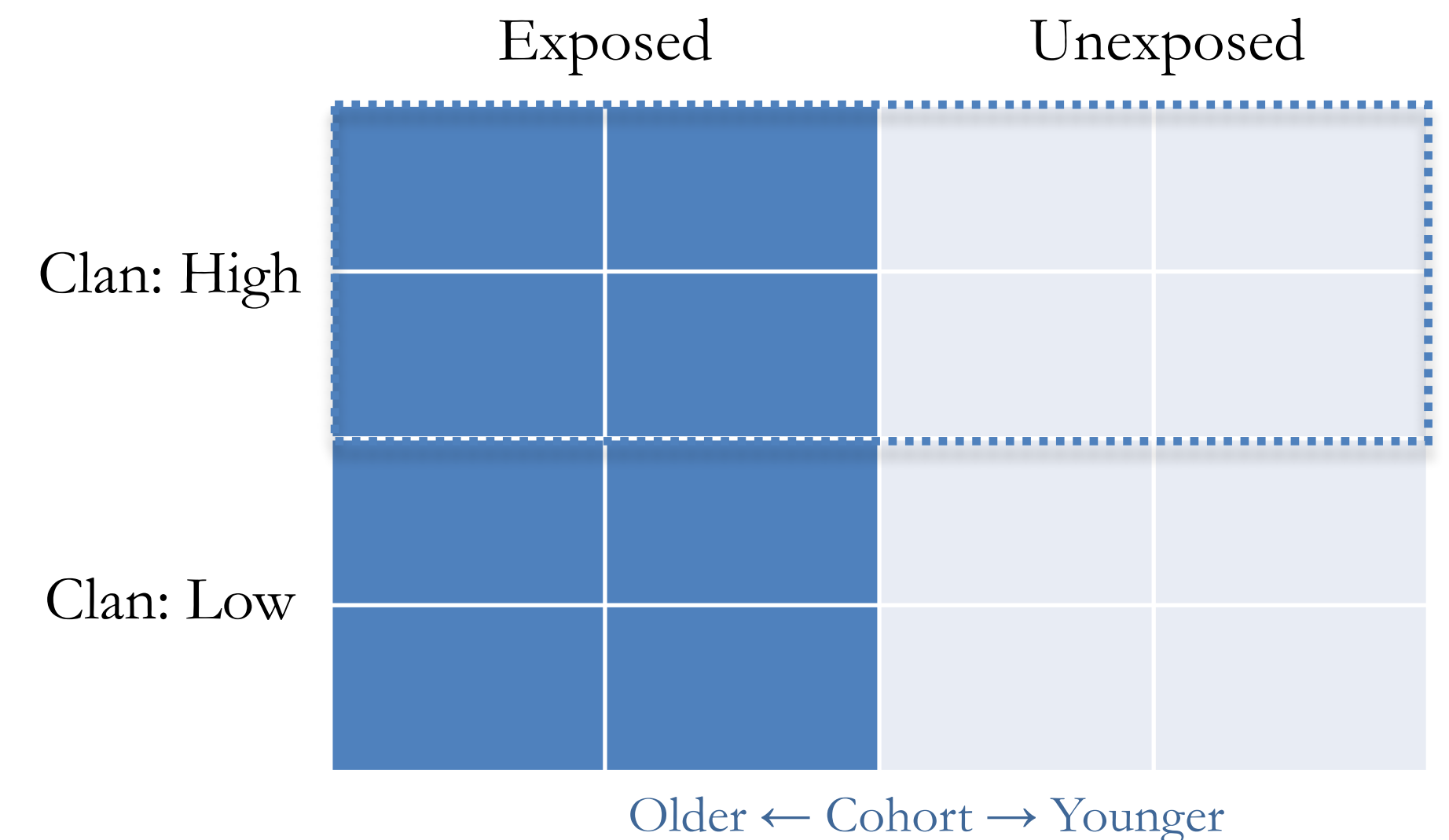
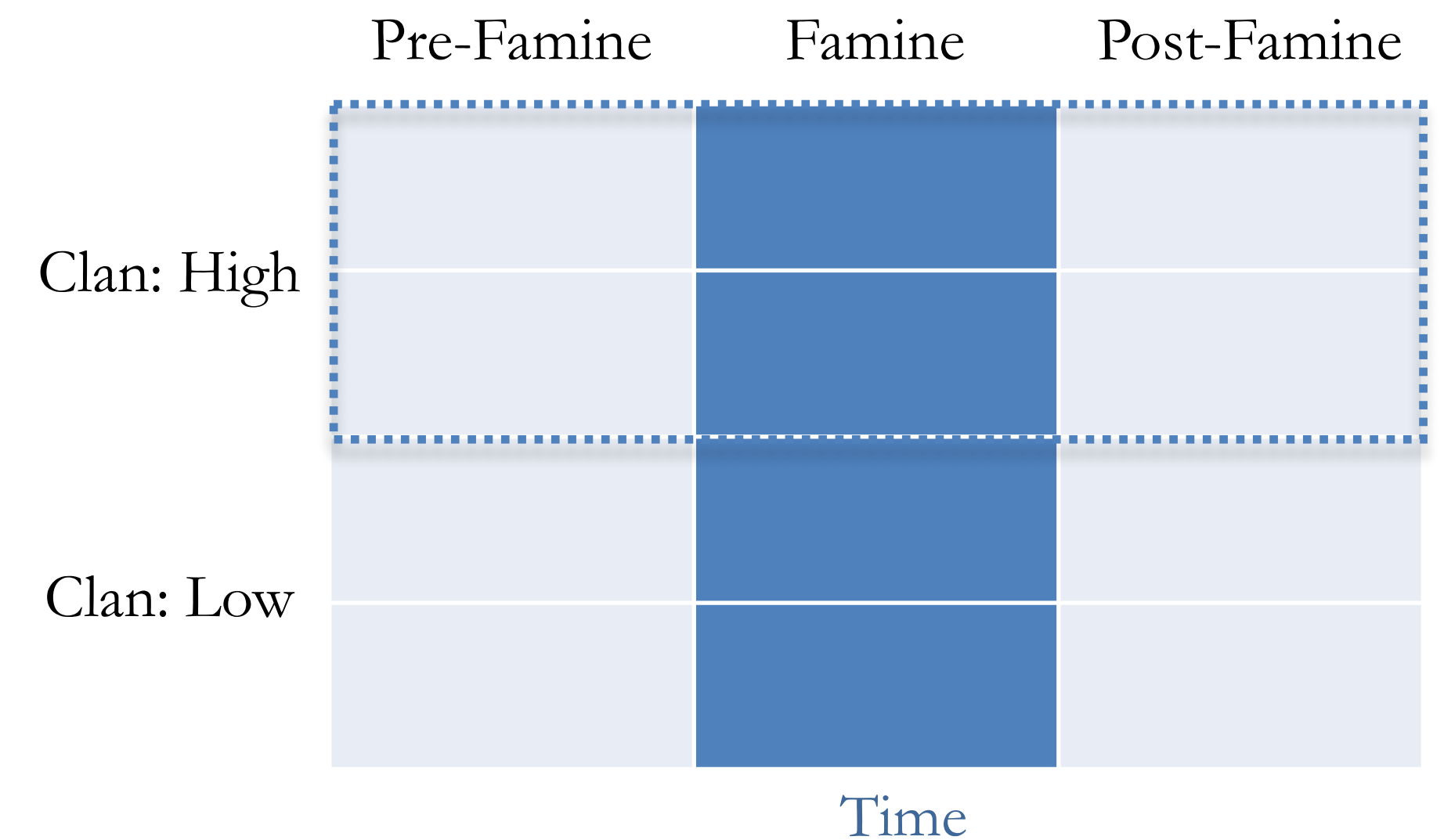
For county  $c$  in year  $t$

$$Mortality_{ct} = \beta Clan_c * Famine_t + \gamma X_c * Famine_t + \delta_c + \lambda_t + u_{ct}$$

- DID with the CFPS data
  - First difference: cohorts born before the famine vs. otherwise
  - Second difference: low clan density vs. high clan density
  - S.E. clustered at the village/neighborhood level

For individual  $i$  in cohort  $j$  at community  $k$

$$Hunger_{ijk} = \beta Clan_{ik} * Exposed_{ij} + \gamma X_{ijk} + \alpha_j + \sigma_k + \epsilon_{ijk}$$

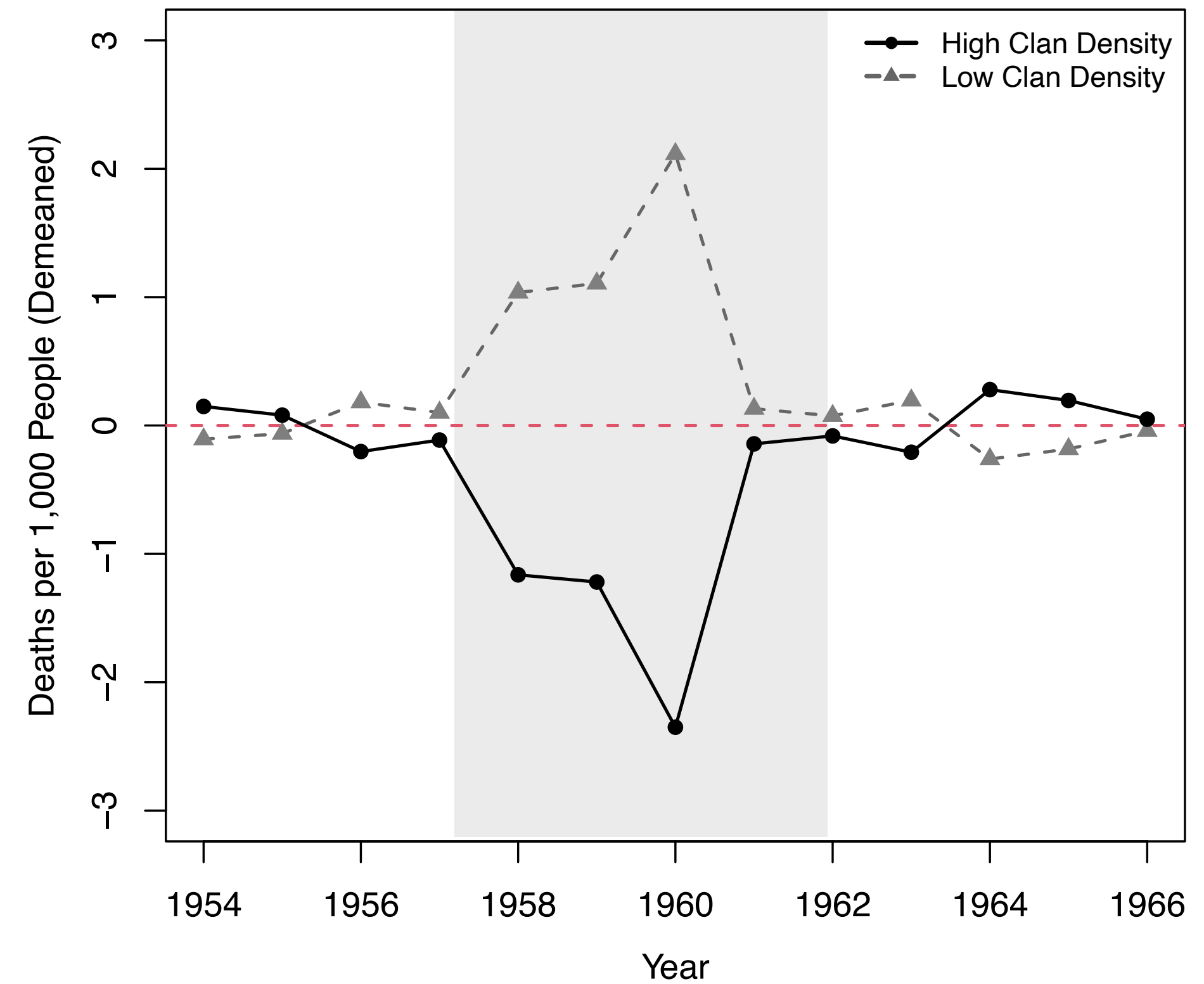
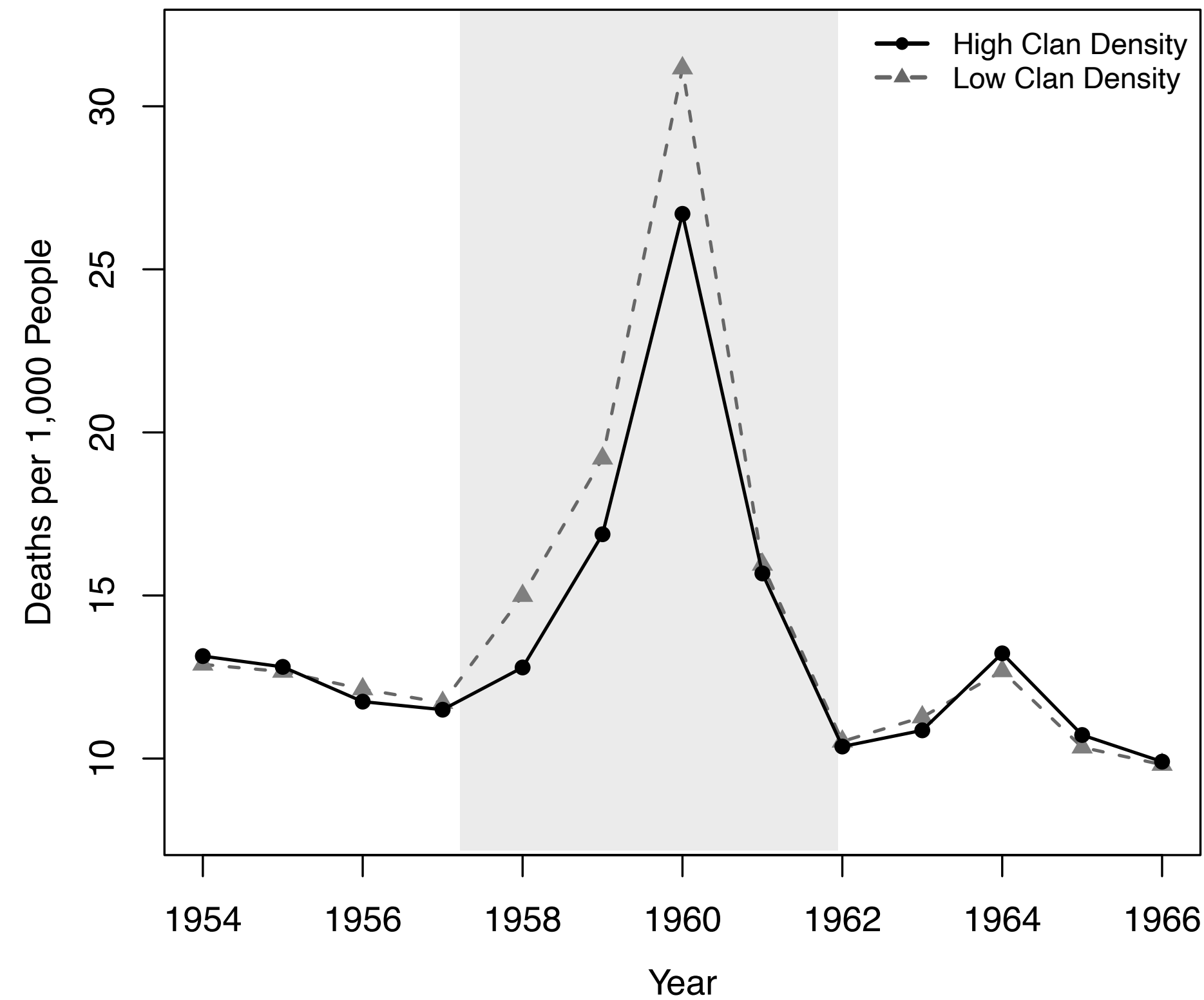


- In **comparative interruption designs**, DID identifies differential impact of a shock

# Roadmap

- Motivation
- Theory & Background
- Data and Identification Strategies
- **Empirical Finding**
  - From the county-year panel
  - From CFPS data
  - Mechanisms
- Conclusion

# Main Results — County-Year Panel



# Main Results — County-Year Panel

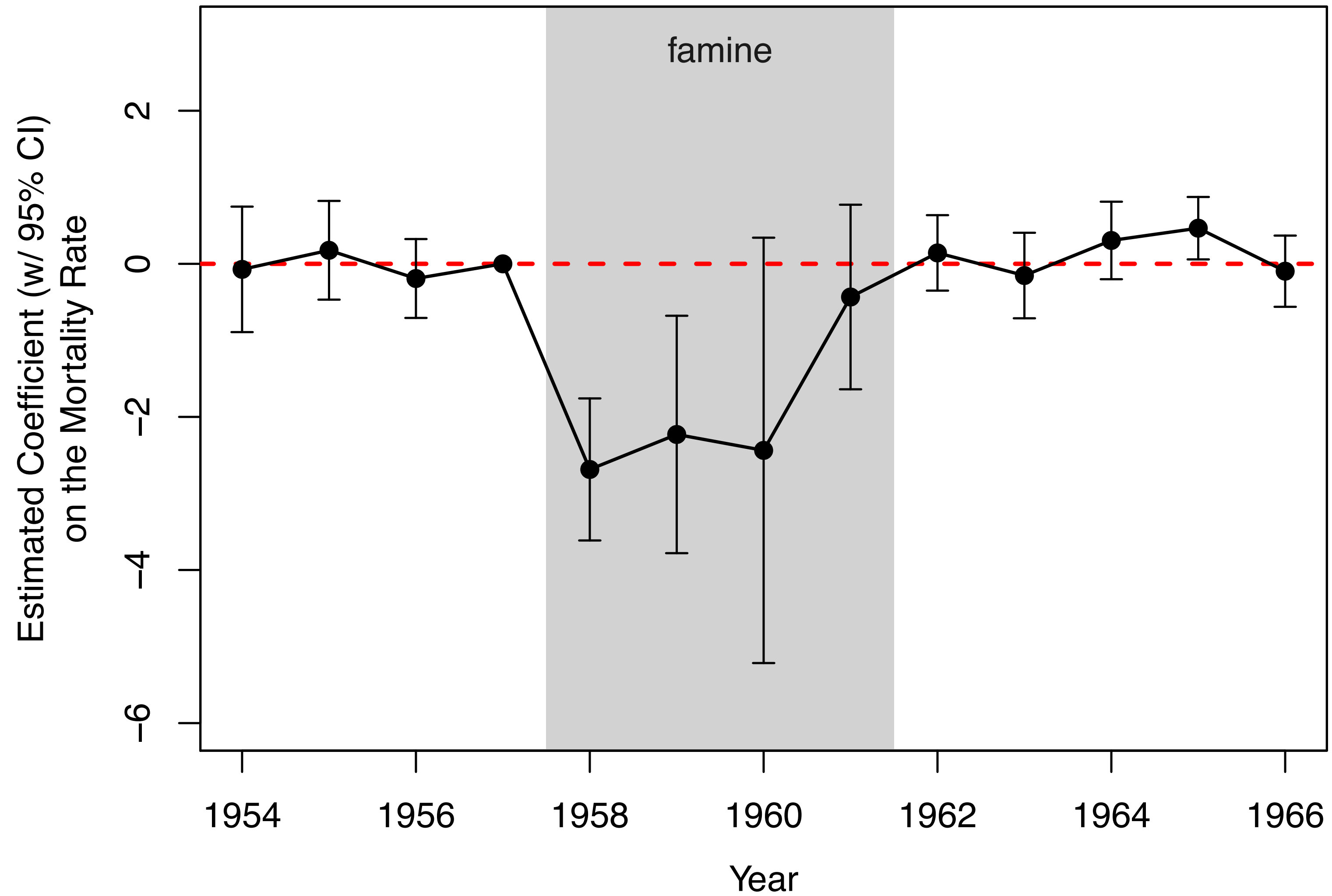


TABLE 1. CLANS AND MORTALITY RATE DURING THE GREAT FAMINE

	Outcome variable: Mortality rate (‰)					
	(1)	(2)	(3)	(4)	(5)	(6)
Outcome variable mean	13.997	13.997	13.997	13.997	13.997	13.997
High clan density x Famine period	-1.456*** (0.596)	-2.325*** (0.655)	-2.254*** (0.698)			
Log(#Genealogies/pop) x Famine period				-3.285*** (0.398)	-4.108*** (0.597)	-4.296*** (0.661)
Grain output (PC) x Famine period		0.006* (0.003)	0.005* (0.003)		0.005* (0.003)	0.005* (0.003)
Non-farming land ratio x Famine period		0.006 (0.031)	0.002 (0.033)		0.013 (0.031)	0.009 (0.033)
Urbanization rate x Famine period		-0.075** (0.031)	-0.076** (0.034)		-0.088** (0.030)	-0.087** (0.033)
Distance from Beijing x Famine period		0.004*** (0.001)	0.004*** (0.001)		0.004*** (0.001)	0.004*** (0.001)
Distance from provincial capital x Famine period		0.002 (0.003)	0.003 (0.003)		0.001 (0.003)	0.002 (0.003)
Historical migrants * Famine period		-0.078*** (0.011)	-0.081*** (0.012)		-0.053*** (0.011)	-0.055*** (0.013)
Crop suitability index for rice * Famine period		0.379** (0.160)	0.392** (0.171)		0.460*** (0.164)	0.479*** (0.175)
Share of minority * Famine period		-0.049*** (0.017)	-0.050*** (0.018)		-0.067*** (0.016)	-0.067*** (0.018)
Averaged years of schooling * Famine period		-0.822** (0.406)	-0.899** (0.431)		-0.505 (0.408)	-0.572 (0.434)
Observations	17,342	17,342	17,342	17,342	17,342	17,342
Number of counties	1,448	1,448	1,448	1,448	1,448	1,448
R-squared	0.388	0.407	0.428	0.390	0.409	0.430
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County-specific time trends	No	No	Yes	No	No	Yes



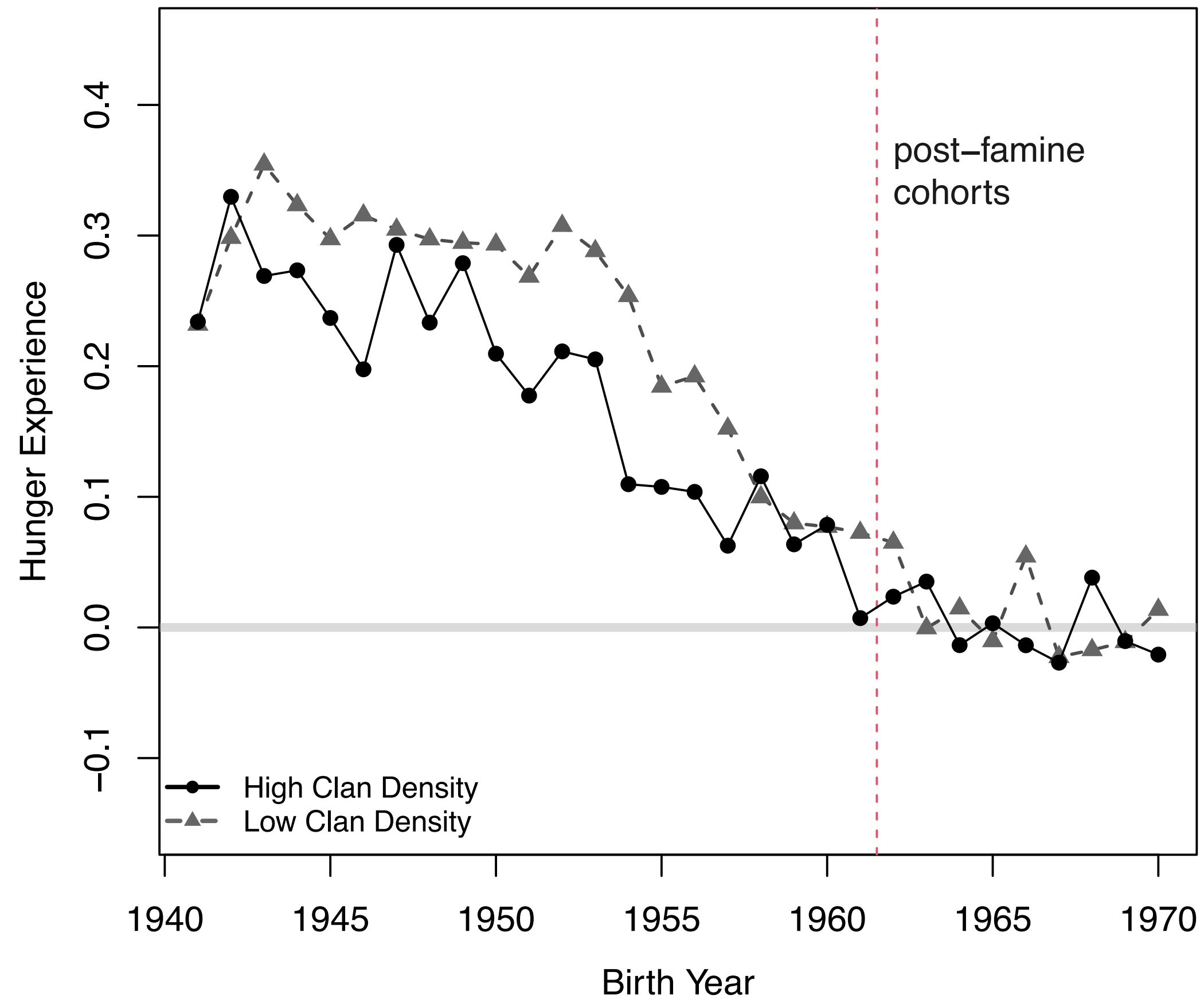
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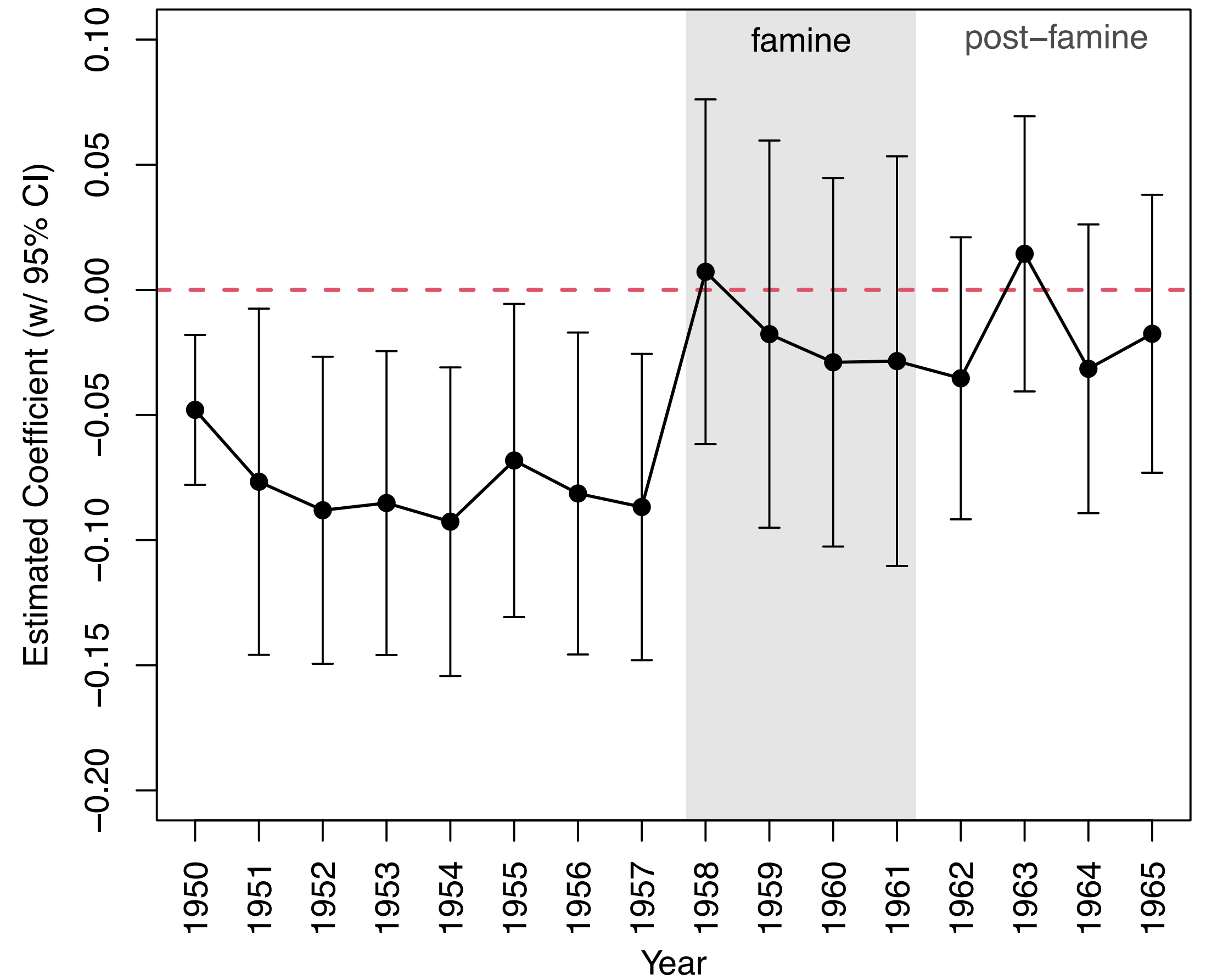
### *Effect Magnitude:*

Had every county in our sample had half as many clans as we measured, 1.77-1.97 million more people would have died during the famine years, an almost 10% increase in our current estimate.

# Results from CFPS

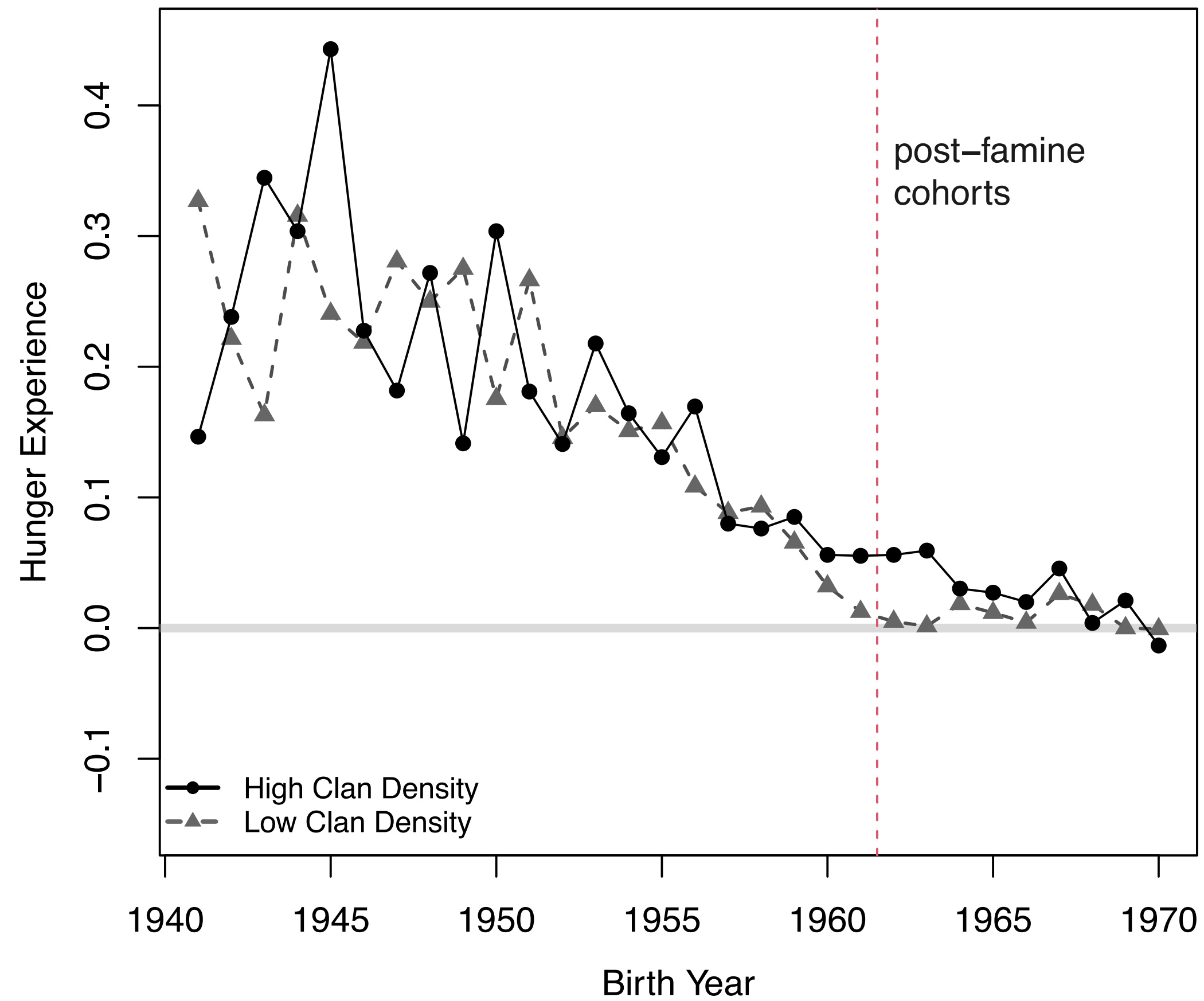


Rural Respondents Only

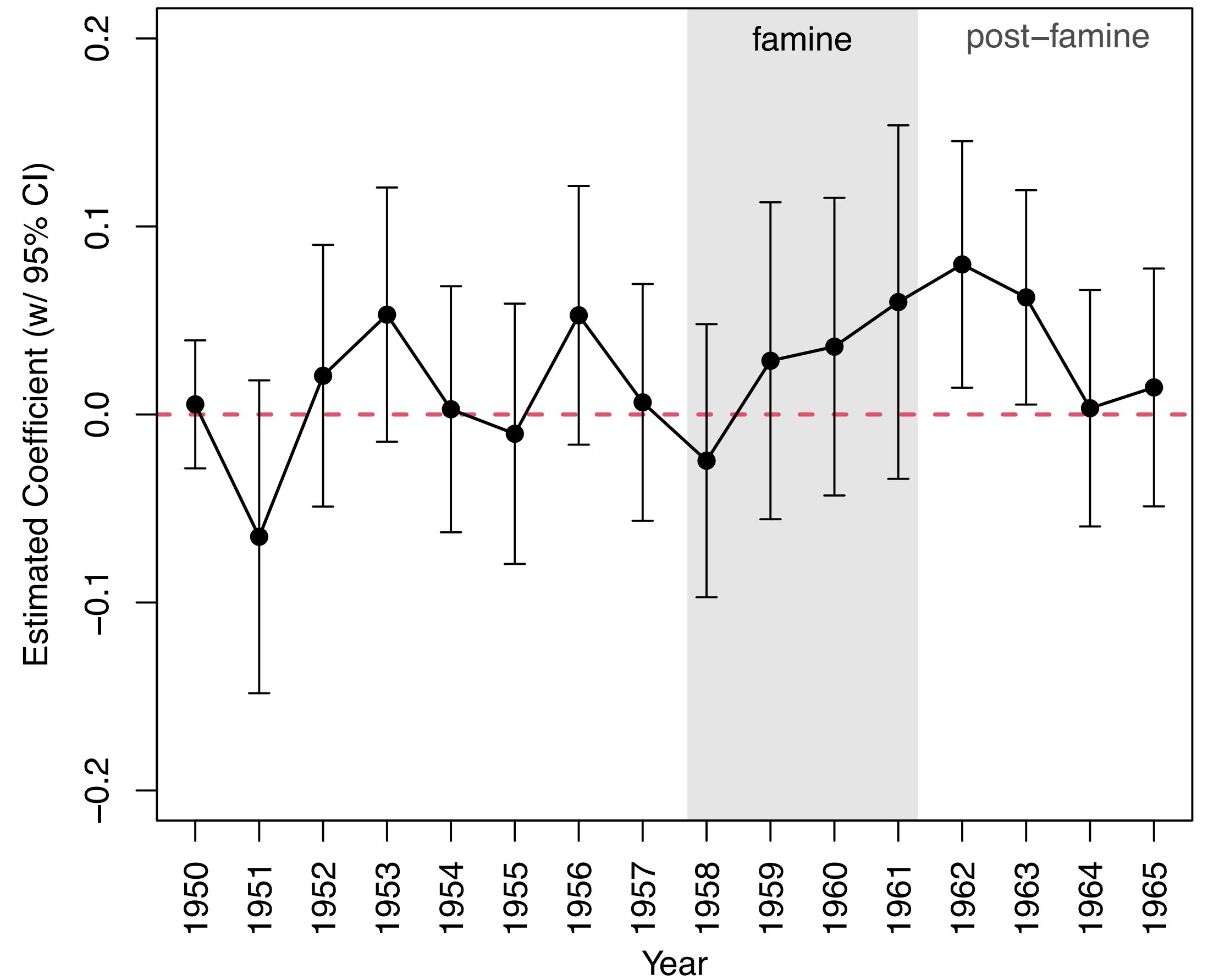


Rural Respondents Only

# Placebo: Urban Respondents



Urban Respondents Only



Urban Respondents Only

# Robustness Checks

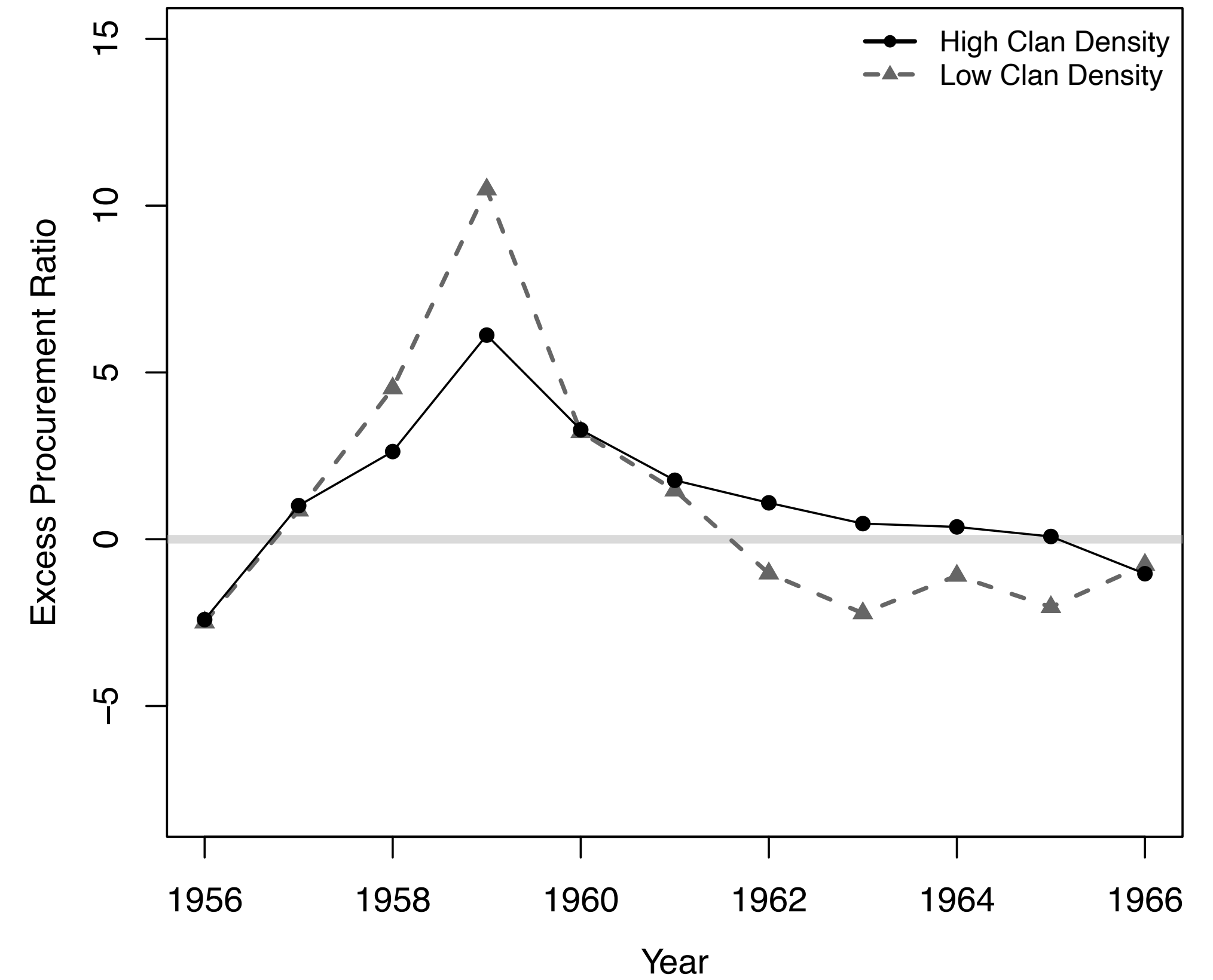
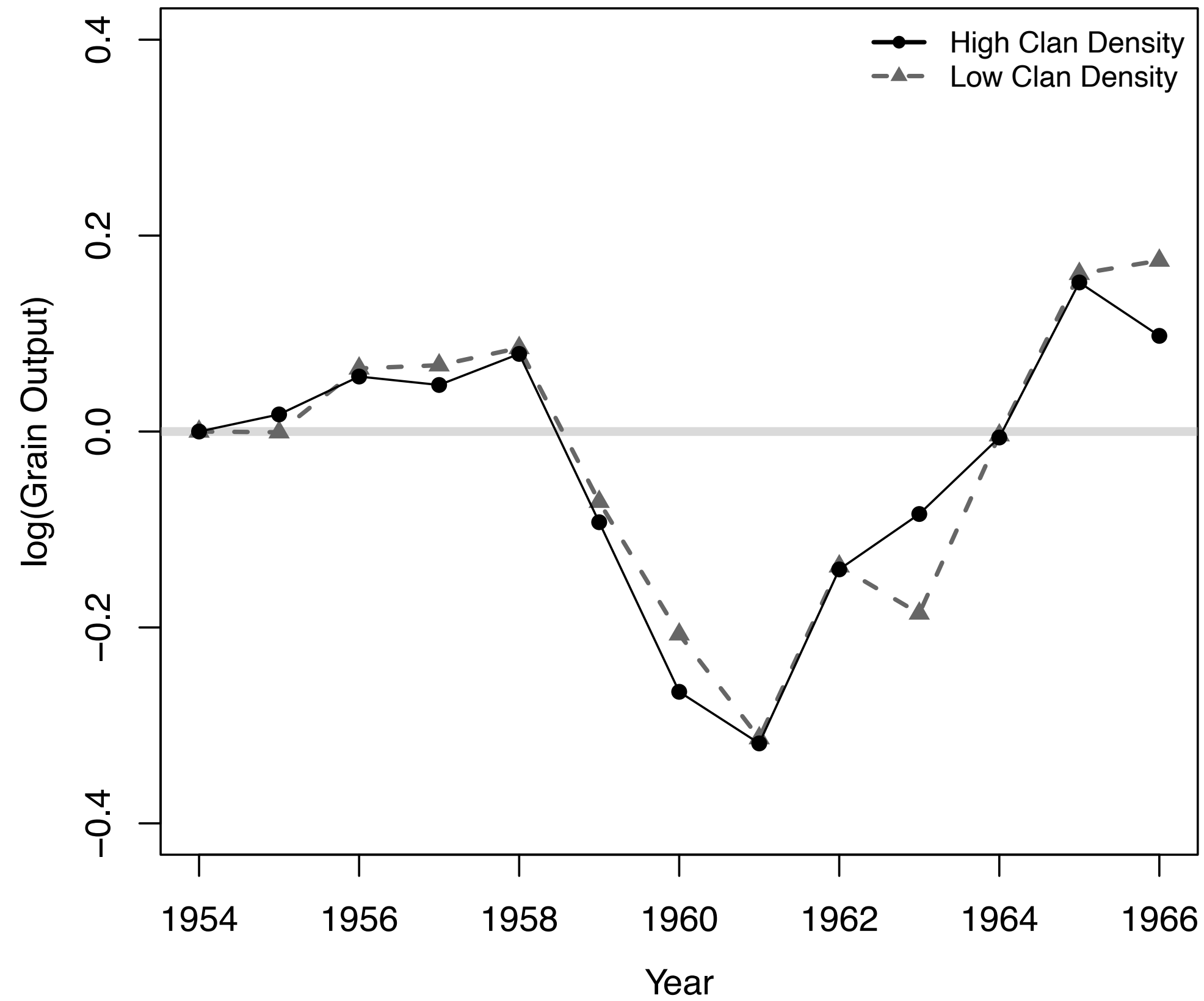
- Use relative cohort loss the outcome
- Horse-race with various covariates, e.g. religious beliefs; #Jinshi
- Drop counties with 0 genealogies
- Drop each of the 23 provinces
- S.E. clustered at higher levels
- Control for LDVs
- Control for spacial lags
- Look at effects by gender to rule out gender norms' effect



# Potential Mechanisms

- Clans managed to prevent a drastic drop in grain production
- Clans enabled peasants to resist excessive state procurement and conceal food
- Other survival strategies

# Grain Production & State Procurement



# Other Survival Strategies

- “Anti-state resistance” that required local officials assistance (Thaxton 2009)
  - Eat green (吃青): eat immature/unripe crops in the fields
  - Petty theft from the state granaries
  - Eat empty payroll (吃空饷): freeloading by over-reporting headcount of peasant workers who were hired for state projects
- Zweig (1989) call them “Janus-faced” local officials, those who were embedded in kinship networks and protected local communities from radical central directives
- Chen (2010) reports that these were more likely to happen when local leaders were heads/seniors of the lineage groups

# Concluding Remarks

- We examine the role of social organizations in disaster relief amid the deadliest famine in recorded human history.
- Higher clan density is associated with lower famine severity
- Local collective action against excessive state procurement may be driving the result
  - **Sen (1981)**: Food availability is not the primary cause of famines; it is people's entitlements vis-à-vis the state, their ability to command food through legal means, that matters
  - When such means are lacking, collective action (to resist or conceal information) is the key
- Broader implications...

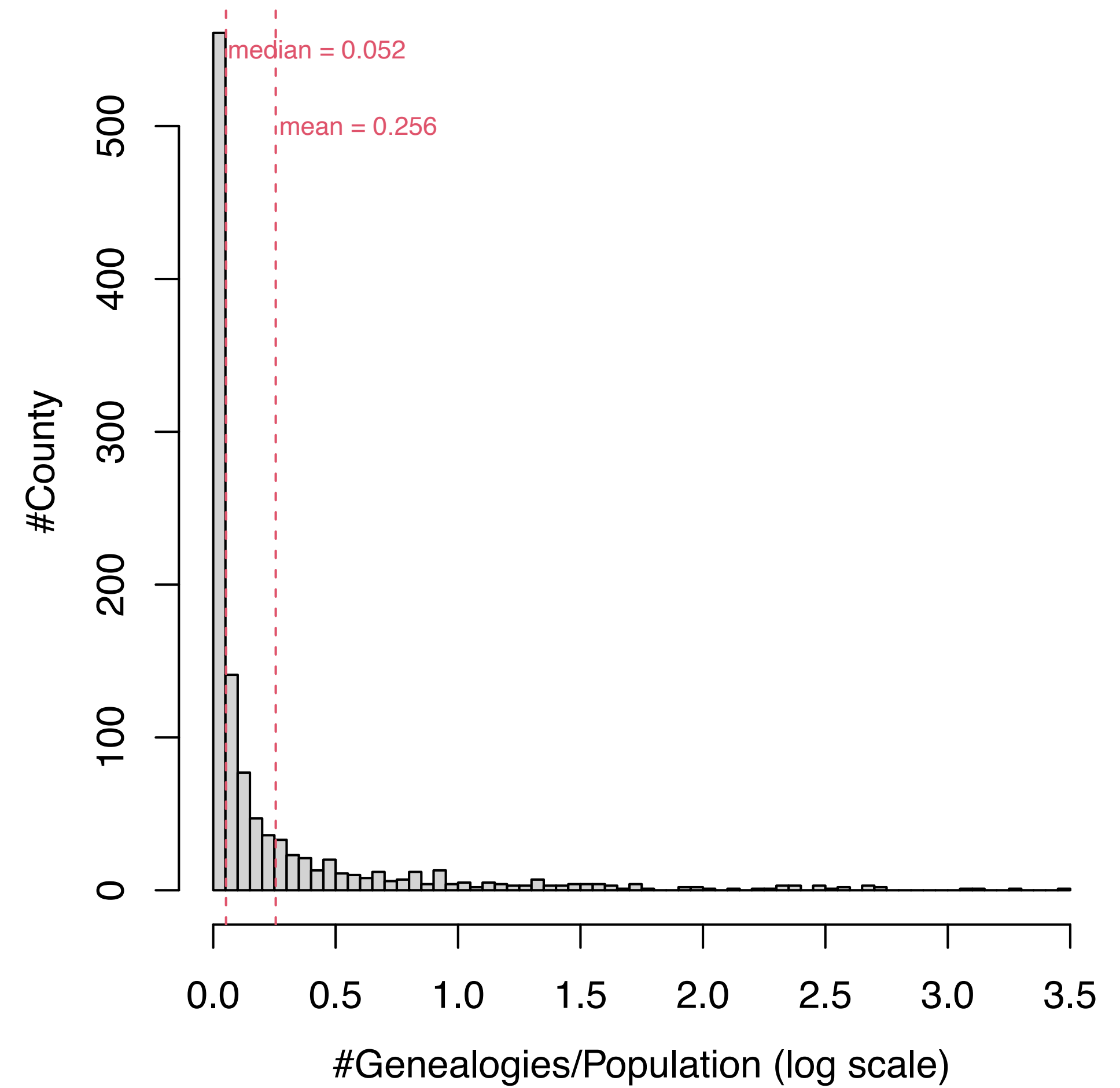
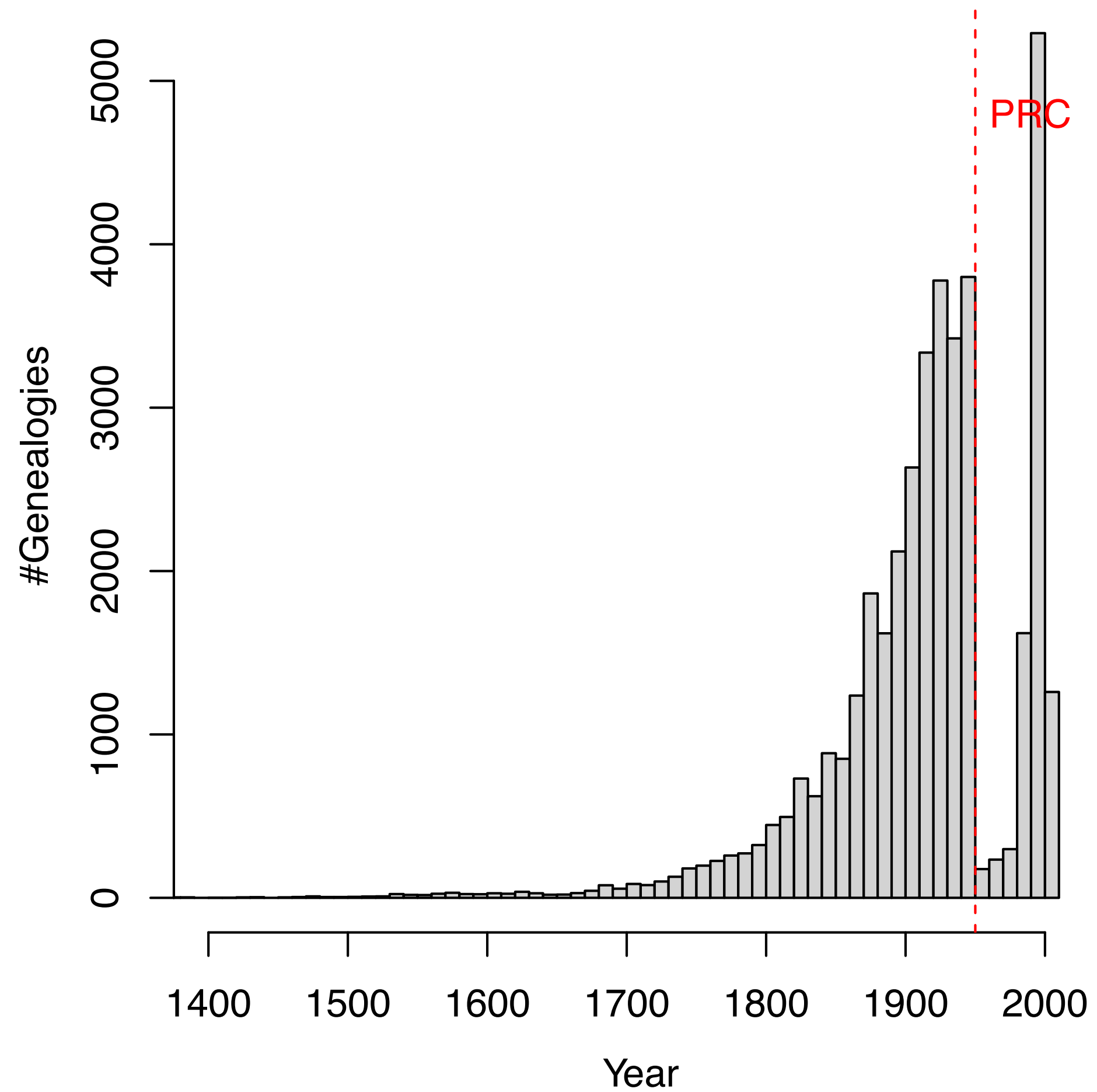


# Contributions

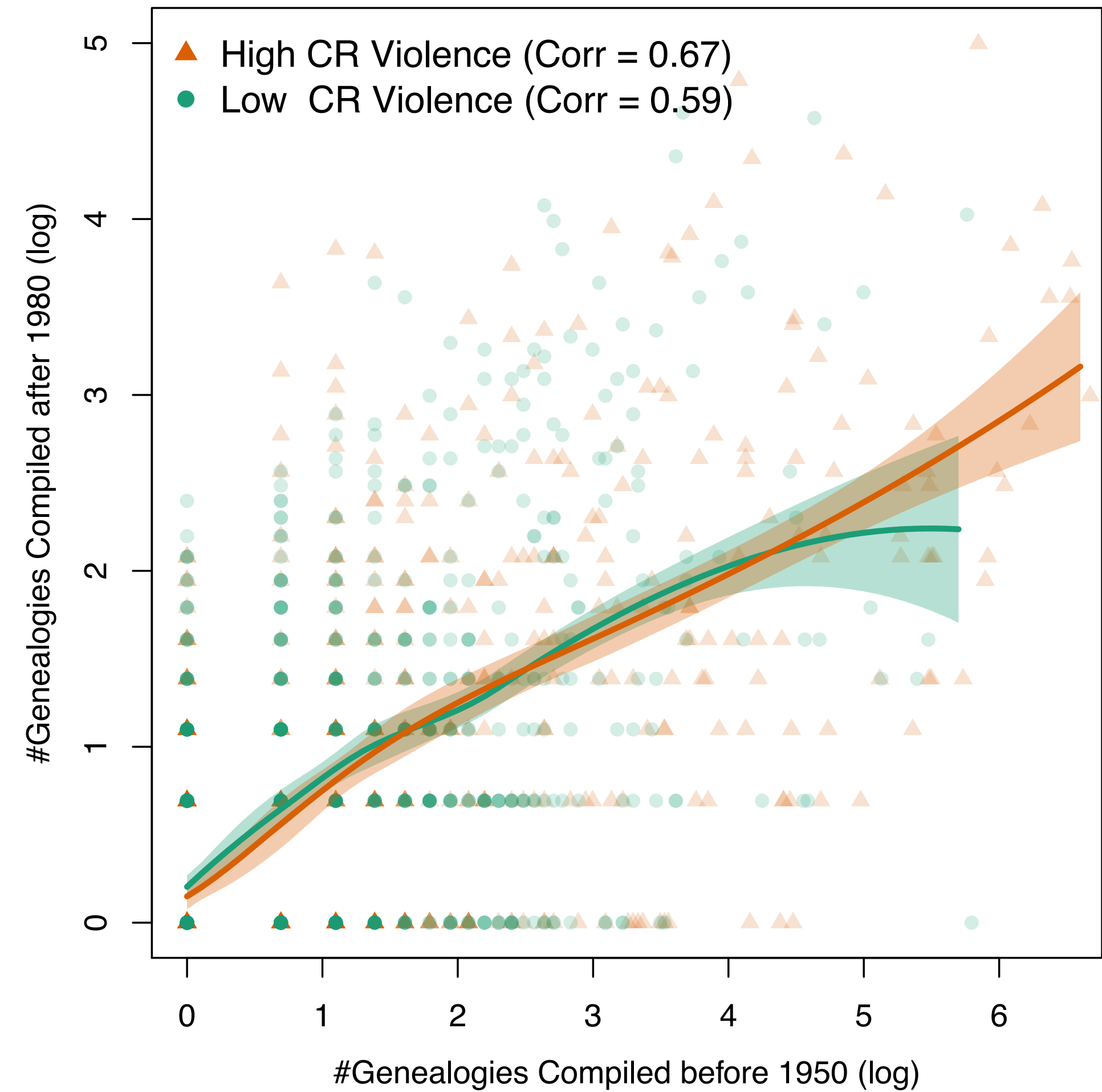
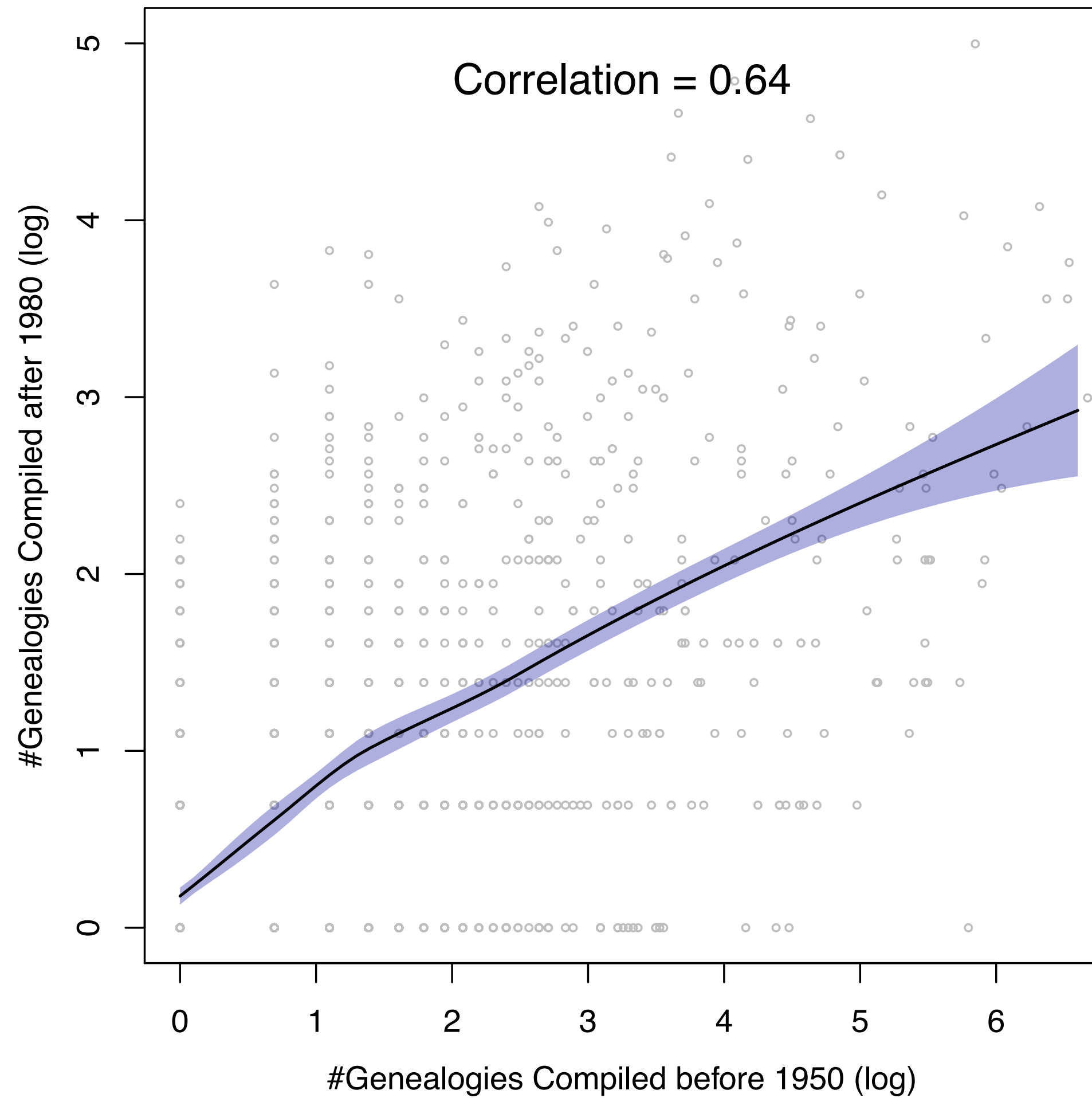
- Provide rare empirical evidence to shed light on state-society relations
  - With imbalanced power
    - Complex relations (Satyanath et al 2013; Mattingly 2020)
    - Strong states' inability to subdue society completely (O'Brien 2023)
    - Sparks for change
  - In disaster relief
    - Tsunami recovery in India in 2004 (Joshi & Aoki 2014)
    - Somali famine in 2011 (Maxwell et al 2016)
    - Shanghai COVID lockdown in 2022 (Han & Zhai 2023)
- Provide a new, local perspective to understand the variation in mortality in the Great Famine

# APPENDIX

# County-level Clan Density



# Clans Persistency and Survival Bias

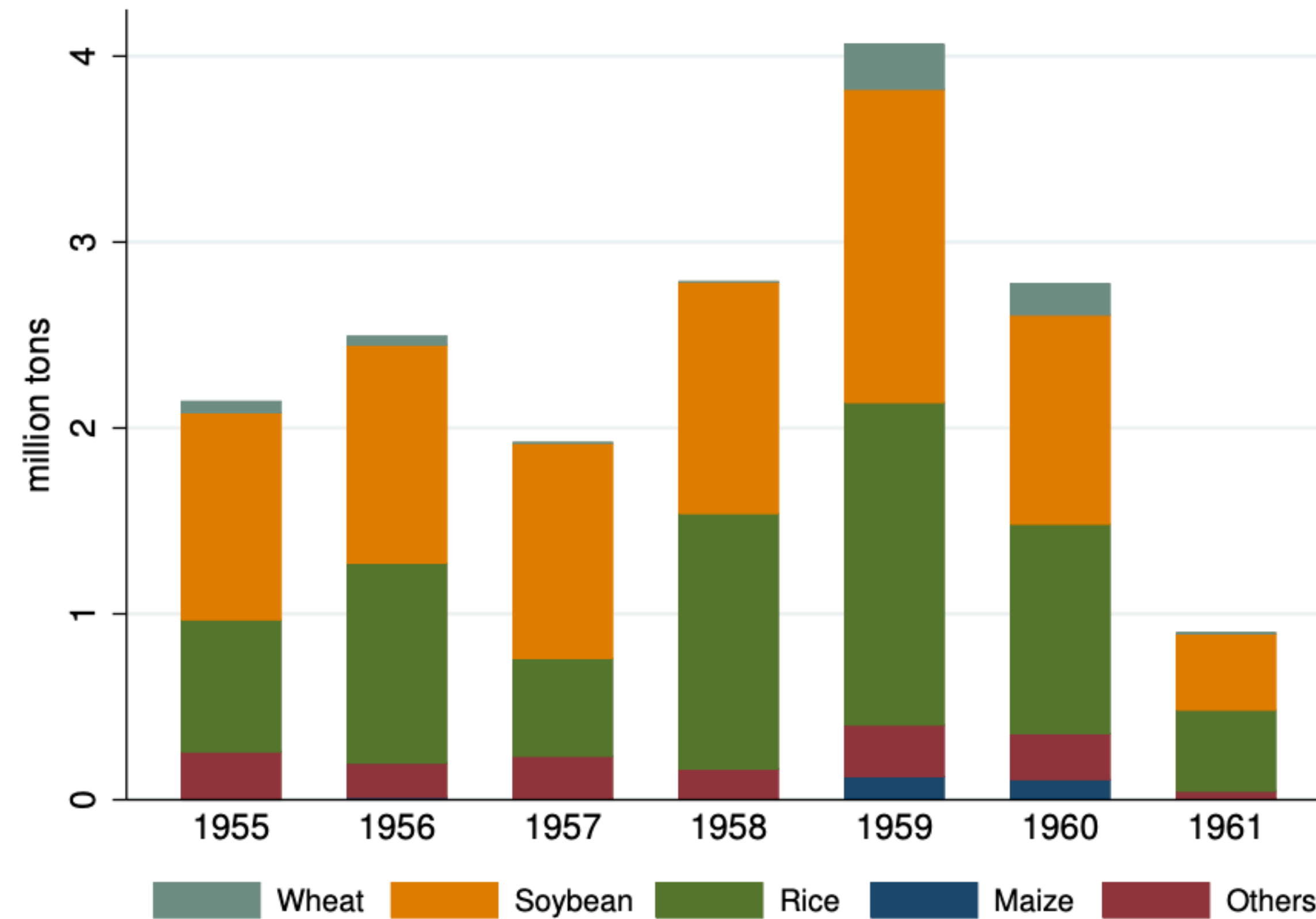


Culture Revolution violence data are from Andrew Walder's  
"China Political Events Datasets: 1966-1971"



# Grain Exports during the Famine

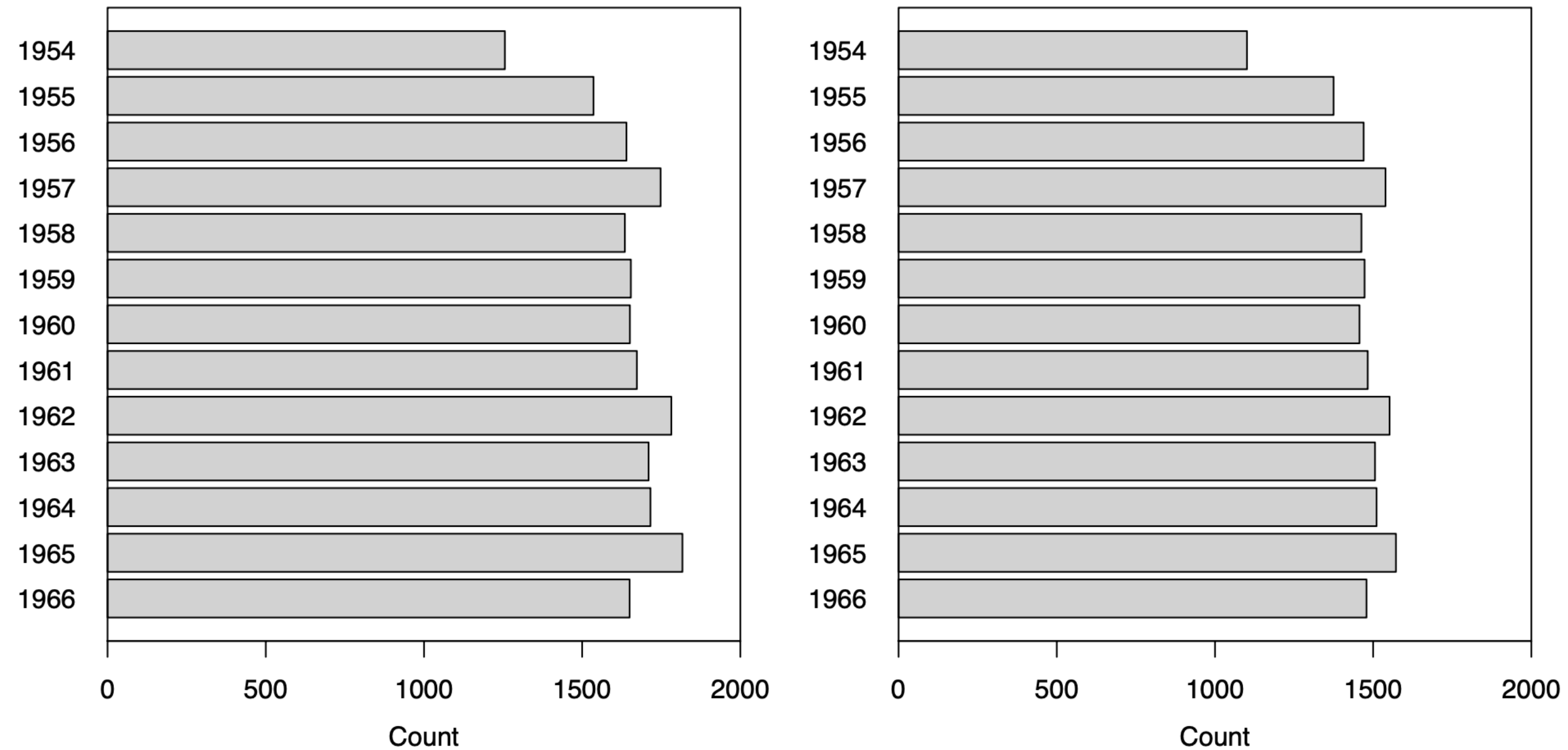
Figure 1: Composition of Grain Exports (1955-1961)



Kasahara and Li (2018)

# Sample Coverage

FIGURE A2. SAMPLE COVERAGE



(a) Mortality Data

(b) Grain Production Data

*Notes:* These counties are in 23 provinces of mainland China. Provinces that are not covered include three municipalities (Beijing, Shanghai, and Tianjin) and three minority autonomous regions (Inner Mongolia Autonomous Region, Tibet Autonomous Region, and Xinjiang Uyghur Autonomous Region).

# Clans and Inter-Household Relationships

TABLE A3. CLANS AND INTER-HOUSEHOLD RELATIONSHIPS

	Outcome variables							
	Relationship score				Visits during spring festival			
	With relatives		With neighbors		Visit relatives		Visit neighbors	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcome variable mean	0.00	0.00	0.00	0.00	0.80	0.80	0.51	0.50
<b>Panel A</b>								
Share of households keeping genealogies	0.199** (0.086)	0.197** (0.087)	0.209** (0.081)	0.171** (0.083)	0.167*** (0.021)	0.144*** (0.021)	0.166*** (0.039)	0.169*** (0.040)
Control Variables	No	Yes	No	Yes	No	Yes	No	Yes
Observations	14,795	12,145	14,795	12,145	14,697	12,076	14,652	12,038
R-squared	0.002	0.040	0.002	0.019	0.010	0.050	0.006	0.046
<b>Panel B</b>								
High genealogy share (dummy)	0.115*** (0.041)	0.108*** (0.041)	0.092** (0.039)	0.077* (0.040)	0.058*** (0.014)	0.049*** (0.013)	0.072*** (0.018)	0.068*** (0.018)
Control Variables	No	Yes	No	Yes	No	Yes	No	Yes
Observations	14,795	12,145	14,795	12,145	14,697	12,076	14,652	12,038
R-squared	0.003	0.041	0.002	0.019	0.005	0.047	0.005	0.044

*Notes:* Data are from CFPS 2010. Control variables include dummies for gender, ethnicity, household registration status and education level, and number of siblings. All regressions include dummies for birth year and community. Standard errors clustered at the community level are reported in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

A set of questions on interpersonal relationship in the CFPS concern the occurrence of five types of interactions over the preceding month: (1) play together; (2) share food or give gifts; (3) give help; (4) visit; (5) talk. We conduct a principal component analysis of these five variables to generate a relationship score.



# Clans and Informal Borrowing

	Outcome variable: Ever borrowed during last year (=1, yes)					
	Ever borrowed		Through informal channels		Through formal channels	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Outcome variable mean</i>	0.298	0.296	0.239	0.241	0.085	0.086
<b>Panel A</b>						
Share of households keeping genealogies	0.047* (0.027)	0.017 (0.028)	0.045* (0.025)	0.019 (0.025)	-0.003 (0.019)	-0.016 (0.019)
Control variables	No	Yes	No	Yes	No	Yes
Observations	14795	12145	14795	12145	14795	12145
Number of communities	649	649	649	649	649	649
R-squared	0.001	0.057	0.001	0.041	0.000	0.023
<b>Panel B</b>						
High genealogy share	0.026* (0.014)	0.010 (0.013)	0.017 (0.012)	0.001 (0.012)	0.007 (0.010)	0.003 (0.010)
Control variables	No	Yes	No	Yes	No	Yes
Observations	14795	12145	14795	12145	14795	12145
Number of communities	649	649	649	649	649	649
R-squared	0.001	0.057	0.000	0.041	0.000	0.022
<b>Panel C</b>						
Ancestral hall	0.059*** (0.021)	0.039* (0.022)	0.080*** (0.020)	0.069*** (0.021)	-0.028** (0.012)	-0.039*** (0.011)
Control variables	No	Yes	No	Yes	No	Yes
Observations	14795	12145	14795	12145	14795	12145
Number of communities	649	649	649	649	649	649
R-squared	0.002	0.058	0.003	0.044	0.001	0.024

*Notes:* Data are from CFPS 2010. Control variables include dummies for gender, ethnicity, household registration status, and education, and number of siblings. All regressions include dummies for birth year and community. Standard errors clustered at the community level are reported in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.



# Alternative Mortality Measure: Cohort Loss

TABLE A4. CLANS AND COHORT LOSS DURING THE GREAT FAMINE

	Outcome variable: Cohort loss index					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Outcome variable mean</i>	0.156	0.156	0.156	0.156	0.156	0.156
High clan density x Famine period	-0.017** (0.007)	-0.020*** (0.007)	-0.019** (0.008)			
Log(#Genealogies/pop) x Famine period				-0.003** (0.001)	-0.002* (0.001)	-0.002* (0.001)
Control variables	No	Yes	Yes	No	Yes	Yes
County-specific time trends	No	No	Yes	No	No	Yes
Observations	17,342	17,342	17,342	17,342	17,342	17,342
Number of counties	1,448	1,448	1,448	1,448	1,448	1,448
R-squared	0.659	0.661	0.692	0.658	0.661	0.692

*Notes:* All regressions include county and year fixed effects. Control variables include interactions between indicator of famine period and grain output, share of non-farming land, share of urban population in 1957, and distance from Beijing, distance from provincial capital, crop suitability index for rice, and averaged years of schooling and share of minorities. Standard errors clustered at the county level appear in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

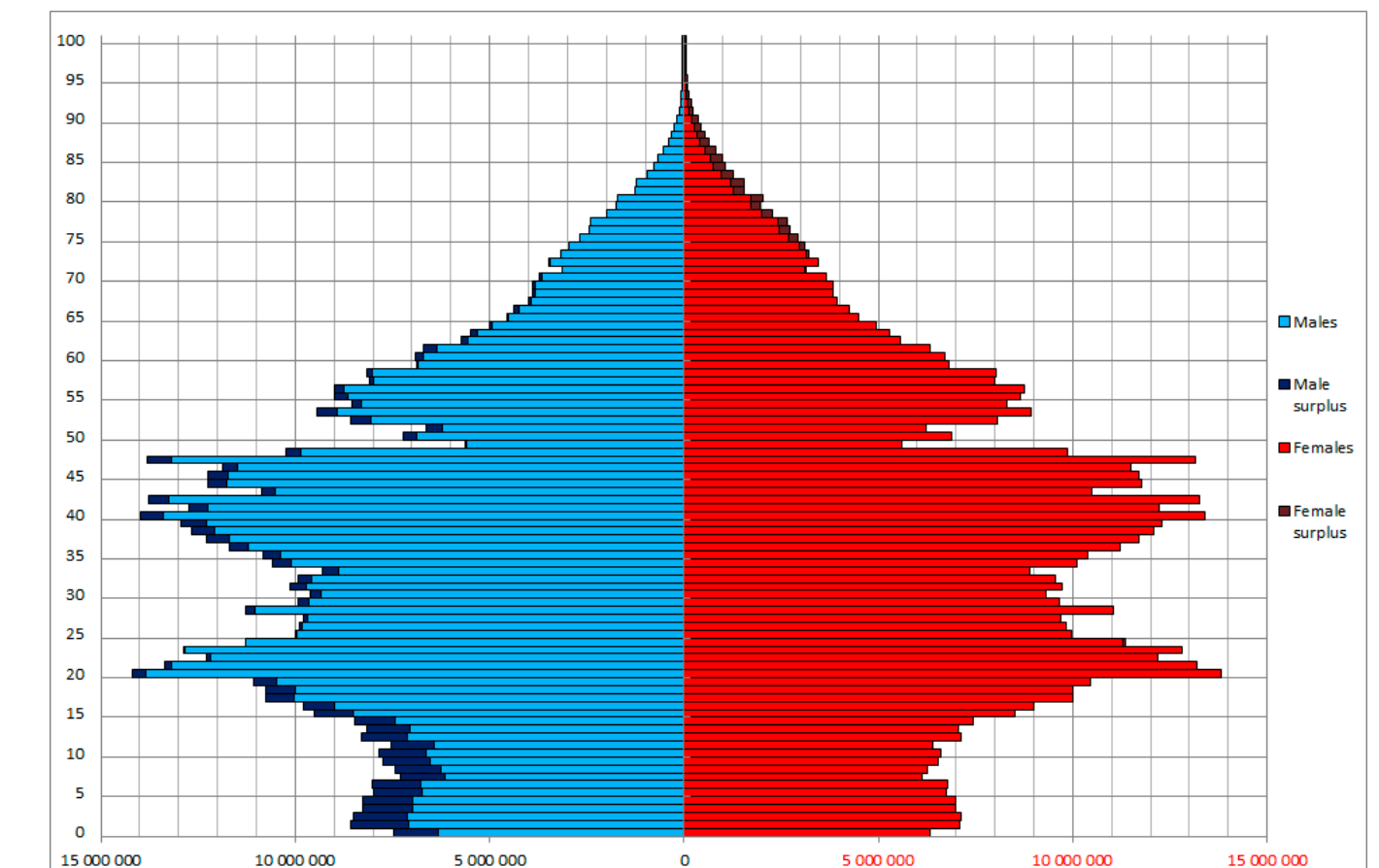


Figure 1: Population pyramid

# Religion and Hunger Experience

TABLE A5. RELIGIONS AND HUNGER EXPERIENCE

	Outcome variable: Experienced hunger			
	All (1)	All (2)	Rural (3)	Urban (4)
<i>Outcome variable mean</i>	0.143	0.144	0.165	0.114
<b>Panel A</b>				
Christian/Islam x Pre-Famine cohorts	0.009 (0.031)	0.011 (0.031)	-0.014 (0.045)	0.047 (0.043)
Control variables	No	Yes	Yes	Yes
Observations	18972	18720	10985	7735
Number of communities	576	576	313	263
R-squared	0.272	0.279	0.304	0.229
<b>Panel B</b>				
Buddhism/Taoism x Pre-Famine Cohorts	0.014 (0.021)	0.019 (0.022)	0.016 (0.028)	-0.001 (0.035)
Control variables	No	Yes	Yes	Yes
Observations	18972	18720	10985	7735
Number of communities	576	576	313	263
R-squared	0.273	0.279	0.304	0.229

*Notes:* Data are from CFPS 2010. Control variables include dummies for gender, ethnicity, household registration status and education level, and number of siblings. All regressions include dummies for birth year and community. Standard errors clustered at the community level are reported in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

We use the presence of churches, mosques, and Buddhist and Taoist temples to measure each of these religions, respectively.



# Clans and Hunger Experience by Gender

TABLE A6. CLANS AND HUNGER EXPERIENCE: BY GENDER

	Outcome variable: Experienced hunger					
	Men			Women		
	All	Rural	Urban	All	Rural	Urban
	(2)	(3)	(4)	(2)	(3)	(4)
<i>Outcome variable mean</i>	0.16	0.18	0.12	0.13	0.15	0.10
<b>Panel A</b>						
Share of households having genealogy x Pre-famine cohorts	-0.090** (0.040)	-0.102** (0.040)	-0.028 (0.065)	-0.066 (0.042)	-0.109** (0.053)	0.005 (0.065)
Observations	9218	5475	3743	9489	5508	3990
Number of communities	563	313	250	563	313	250
R-squared	0.297	0.321	0.250	0.302	0.329	0.255
<b>Panel B</b>						
High genealogy share x Pre-famine cohorts	-0.033 (0.021)	-0.061** (0.028)	0.012 (0.033)	-0.039* (0.021)	-0.062** (0.030)	-0.008 (0.030)
Observations	9218	5475	3743	9489	5508	3990
Number of communities	563	313	250	563	313	250
R-squared	0.296	0.320	0.250	0.302	0.330	0.255

*Notes:* Data are from CFPS 2010. Control variables include dummies for gender, ethnicity, household registration status and education level, and number of siblings. All regressions include dummies for birth year and community. Standard errors clustered at the community level are reported in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Controlling for Lagged Mortality Rate

TABLE A7. CLANS AND MORTALITY DURING THE GREAT FAMINE: CONTROLLING FOR LAGGED MORTALITY RATE

	Outcome variable: Mortality rate (‰)			
	(1)	(2)	(3)	(4)
<i>Outcome variable mean</i>	14.04	14.06	14.04	14.06
High clan density x Famine period	-1.933*** (0.542)	-1.731*** (0.533)		
Log(#Genealogies/pop) x Famine period			-3.916*** (0.501)	-3.766*** (0.487)
Lagged mortality rate	0.211*** (0.027)	0.112*** (0.037)	0.209*** (0.027)	0.111*** (0.036)
Lagged average mortality rate in other counties in the prefecture		-0.163*** (0.036)		-0.161*** (0.036)
Observations	15,519	15,356	15,519	15,356
Number of counties	1,375	1,361	1,375	1,361
R-squared	0.451	0.454	0.453	0.456
Control variables	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes



# Excluding Counties without Genealogies

TABLE A8. EXCLUDING COUNTIES HAVING NO GENEALOGIES

	Outcome variable: Mortality rate (‰)					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Outcome variable mean</i>	13.997	13.997	13.997	13.997	13.997	13.997
High clan density x Famine period	-1.830** (0.711)	-2.626*** (0.781)	-2.605*** (0.832)			
Lg(#Genealogies/pop) x Famine period				-3.562*** (0.445)	-3.950*** (0.627)	-4.139*** (0.695)
Observations	12848	12848	12848	12848	12848	12848
Number of Counties	1083	1083	1083	1083	1083	1083
R-squared	0.396	0.412	0.432	0.400	0.414	0.434
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
County-specific time trends	No	No	Yes	No	No	Yes

*Notes:* The sample is restricted to counties that have at least one genealogy book. The clan measure in panel A is a dummy variable denoting whether the number of genealogies (normalized by population size in 1953) in a county is above the mean level. The famine period is defined 1958–1960. All regressions control for interactions between indicator of famine period and grain output, share of non-farming land, share of urban population in 1957, and distance from Beijing, distance from provincial capital, historical migrants, crop suitability index for rice, and averaged years of schooling and share of minorities. Standard errors clustered at the county level appear in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .