The Long Shadow of Civil Conflict: Forced Clearance, Resettlement, and Persistent Underdevelopment

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Abstract

We study the economic and social legacies of the Great Clearance, a wartime coercive policy through which the Qing state forcibly removed residents from China's southeastern coast between 1661 and 1683. Using a boundary-discontinuity design, we show that places inside the formerly cleared zone remain less developed than nearby places outside it, more than three centuries after the policy ended and the coast reopened. Historical records show clans helping displaced residents regroup, reestablish property claims, and rebuild common assets during resettlement. This organizational response may have facilitated reconstruction while later narrowing the geographic and social reach of trust and economic activity. Consistent with this interpretation, formerly cleared places exhibit stronger and more concentrated clan organization, residents are more rooted in family and locality, and economic activity is more concentrated within narrow relational and geographic networks. These findings suggest that civil conflict can leave long-run economic legacies not only through physical destruction, but also through the coercive policies it induces and the social organization of recovery after they end.

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1 Introduction

Civil conflicts destroy physical capital, kill and displace people, and disrupt trade and production (Federle et al., 2026). These costs can be enormous. Yet the destruction of reproducible capital and the loss of life need not permanently alter a place's economic trajectory. In standard growth models, output can recover as productive assets are rebuilt and the labor force replenishes over time, provided that the underlying conditions of economic activity remain unchanged. Empirical evidence likewise documents recovery after some episodes of wartime destruction (Davis and Weinstein, 2002; Miguel and Roland, 2011; Takeda and Yamagishi, 2026). To what extent does this imply that civil conflict is largely a temporary economic shock whose effects dissipate over time? Or can a temporary civil conflict leave lasting economic and social effects even after physical reconstruction? If so, what carries those effects forward?

Answering this question requires accounting not only for the physical destruction caused by war, but also for the coercive policies through which states wage it. During wartime, governments may empty territory, forcibly relocate residents, restrict movement, or seize and reallocate property in order to deny an opponent supplies, information, or local support. Such policies do more than destroy buildings or move people. By separating communities from land, they can unsettle property claims, local authority, and the relationships through which collective action is organized. Despite the prevalence of such policies in civil conflicts, we know little about whether the changes they set in motion can leave persistent local legacies after their immediate destruction has been repaired and the coercive policy itself has ended.

We study the Great Clearance of 1661–1683 in Fujian Province, China, a wartime policy through which the Qing state forcibly removed residents from the southeastern coast during its conflict with the Zheng regime based in Taiwan.[1] The aim was to sever the regime's access to mainland supplies, information, and commercial contacts. In 1661 the Qing central government set thirty *li* inland from the coast as the general benchmark for the evacuation zone, and provincial and local officials translated this benchmark into an enforceable boundary in coastal Fujian.[2] They drove residents in-

[1] Chinese sources call the policy *qianjie*, literally the relocation of the boundary; it is commonly known in English as the Great Clearance.

[2] Gu (1983, pp. 62–64).

land, burned settlements and vessels, and barred residence and economic activity inside the cleared zone; troops garrisoned the line, and unauthorized crossing carried the death penalty.[3] Clearance remained in force for more than two decades. When Qing forces defeated the Zheng and took Taiwan in 1683, the military rationale disappeared: the coast reopened, the implemented boundary lost its legal and administrative force, and former residents were permitted to return.

To identify the long-run effects of clearance, we reconstruct the boundary that officials implemented in Fujian and compare nearby modern townships across it. Fujian sits at the center of the Great Clearance and preserves unusually detailed records of this boundary. We reconstruct it using the *Historical Atlas of Fujian Province* and surviving accounts that trace its course through named settlements and local landmarks.[4] The reconstructed line separates places exposed to forced clearance on its coastal side from nearby places that remained outside the cleared zone on its inland side (Figure 1). Following geographic boundary-discontinuity designs (Keele and Titiunik, 2015; Cattaneo, Titiunik and Yu, 2025), we compare modern townships located within 18,km of the line on its formerly cleared and inland sides.

This boundary-discontinuity design identifies the long-run effect of clearance if, absent the policy, potential outcomes would have varied smoothly across the implemented boundary. This continuity assumption is plausible because, after the coast reopened, the line lost its legal and administrative status and the state no longer maintained it as a formal, continuous physical barrier. The historical treatment therefore did not remain bundled with a modern jurisdiction or an enforced border. We also show that predetermined geographic, climatic, and economic conditions do not change discontinuously at the line.

We start by documenting a persistent development gap on the formerly cleared side more than three centuries after reopening. In our preferred specification, which includes townships within 18 km of the line on both sides, nighttime-light intensity is approximately 56 percent lower on the formerly cleared side than on the inland side. The discontinuity survives changes to the spatial design—including alternative bandwidths, township assignment rules, grid-based samples, and boundary partitions—

[3] Gu (1983, pp. 64–66); Liu (2013, pp. 13–14); and Jiang (1983, pp. 164–165), discussed by Tan (2010, p. 194).

[4] Fujian Provincial Local Gazetteer Compilation Committee (2004); Du Zhen, *Yuemin xunshi jilue*, juan 4, Siku edition, pp. 1035–1066; and Ye (2015, pp. 116–124).

controls for historical port access and flexible geographic trends, and appears in every annual measure from 2000 to 2018.

One concern is that the implemented line may have been drawn to keep better-developed places outside the clearance zone. To address this concern, we use the Qing central government's general thirty-*li*-from-the-coast rule as an instrument for actual clearance under the implemented line. The first stage confirms that townships within thirty *li* of the coast are 57.3 percentage points more likely to be assigned to the clearance zone. Using this rule as an instrument yields an estimate similar in magnitude to the baseline. We also find no discontinuity at artificial distance cutoffs elsewhere.

To characterize the economic activity underlying the nighttime-light gap, we examine a range of contemporary outcomes. We find that the development gap does not reflect a simple failure of population recovery; instead, it reflects a less intensive and more agrarian local economy on the formerly cleared side. Total township population shows no statistically detectable discontinuity at the boundary, but population density, nighttime lights per resident, and the built-up share of land are lower. Commercial and service establishments are scarcer, and township reference points lie farther from the nearest hospital and bank. Annual firm registrations per resident are approximately 43 percent lower, with the shortfalls concentrated in commerce and services rather than manufacturing; agricultural registrations are somewhat higher. At the individual level, working-age residents complete 0.863 fewer years of schooling and are 13.6 percentage points more likely to work in agriculture, yet employment, weekly hours, and reliance on labor income show no comparable discontinuities. Together, these patterns indicate that population returned to the coast, but local economic activity remained less densely organized, less market-oriented, and more agricultural.

How can a wartime policy that lasted little more than two decades leave a development gap more than three centuries after it ended? Historical evidence points to the organization of resettlement after the clearance was lifted. Permission to return did not restore the settlements or the records of who had owned what.[5] Rebuilding homes and villages, bringing land back into cultivation, and reestablishing local economic life required labor, resources, information, and coordination that individual households could not easily provide alone. These demands gave particular importance to clan-

[5] Gu (1983, pp. 64–65); Zheng (2017, pp. 259–263).

based organizations. Clans could locate scattered members, retain knowledge of prior claims, pool labor and capital, and rebuild common property.[6] The clearance therefore raised the value of organizational capacities that clans already possessed. Those capacities could help communities reconstruct after return, but they could also make cooperation and exchange less likely to extend beyond local kin networks long after the coast reopened.

We present three sets of empirical findings consistent with this historical interpretation. First, formerly cleared places exhibit stronger and more concentrated clan organization today. Townships on the formerly cleared side are 13.0 percentage points more likely to contain a recorded ancestral hall—a physical center of clan activity—more than triple the inland-side rate. The evidence points not merely to more clan organization, but to its concentration in a few larger groups. In genealogy records, a smaller number of clans accounts for a larger share of recorded lineages on the formerly cleared side. The same pattern appears in contemporary business records: registered representatives of individual businesses are more concentrated among a few surnames. Taken together, these findings suggest that clan-based organization is both more prominent and more concentrated in formerly cleared places, in historical lineage records and in contemporary economic organization.

Second, census and survey data indicate that residents of formerly cleared places are more tightly rooted in family and locality. They are 14.0 percentage points more likely to hold local household registration, 15.2 percentage points more likely never to have left their registered locality, and, among those not relying primarily on labor earnings, 5.5 percentage points more likely to rely on relatives for support. They also marry earlier, have more children, and live in larger households. Their reported attitudes point to stronger particularism: respondents express greater trust in relatives but lower trust in business people and public authorities. They are also more likely to view using personal connections to obtain a business license as acceptable, rather than waiting for the formal requirements to be met. Taken together, these patterns point to a social orientation in which family and locality define the primary radius of trust, support, and economic coordination.

Finally, we find that economic activity in formerly cleared places is organized within

[6] Zheng (2017, pp. 55–56, 79–84, 262–263); see also Zheng (2016, pp. 35–42).

narrower relational and geographic networks. Firms on the formerly cleared side are about five percentage points more likely to register as private enterprises, a category in China more commonly associated with individual or family control, and correspondingly less likely to use limited-liability or shareholding forms (Li and Zhu, 2015; Cai et al., 2013; Lu and Tao, 2009). Government-procurement records show a similarly local pattern of exchange. After accounting for the separate tendency of buyers and suppliers on the formerly cleared side to match locally, contracts in which both parties are on that side are 17.0 percentage points more likely to link buyers and suppliers in the same township, relative to an inland same-town rate of 16.3 percent. This excess same-town matching appears not only in consulting and construction, where local information and technical knowledge may help explain it (McMillan and Woodruff, 1999; Guiso, Sapienza and Zingales, 2009), but also for standardized goods, for which such local knowledge is less necessary. These patterns suggest that the family- and locality-centered orientation documented above also extends to how firms are organized and whom they trade with.

Together, these organizational, social, and economic patterns are consistent with reconstruction strengthening clan-based ties that facilitate coordination locally while limiting exchange beyond them. We also examine three alternative explanations for the development gap, including contemporary industrial investment, public infrastructure, and social disorder, and find no evidence that they are discontinuously worse on the formerly cleared side.

Our findings contribute to several strands of literature. The first studies the long-run consequences of conflict and state coercion. Existing studies show that conflict, coercive institutions, and state violence can leave lasting effects through land institutions, population composition, trust, local governance, and collective action (Dell, 2010; Acemoglu, Hassan and Robinson, 2011; Nunn and Wantchekon, 2011; Lowes and Montero, 2021; Bellows and Miguel, 2009; Gilligan, Pasquale and Samii, 2014). We focus on a different stage in this process: what happens after the coercive policy itself has ended. The Qing state emptied a contiguous coastal territory, reopened the same land after the military objective disappeared, and ceased to use the historical boundary for legal or administrative purposes. Yet economic and organizational differences persist at that boundary today. Our findings highlight recovery and reconstruction as

a potential source of historical persistence even after the original coercive institution no longer operates.

The second studies forced and coercive migration: displaced populations, their integration into receiving communities, and the economic adjustment of places affected by population removal (Bazzi et al., 2016; Becker et al., 2020; Bauer, Braun and Kvasnicka, 2013; Chaney and Hornbeck, 2016). The Great Clearance combines these margins in a setting where the state emptied an entire region and later reopened the same land to partial return and new settlement. This sequence directs attention to the place that was cleared and to the institutions through which repopulation was organized. Our findings indicate that forced displacement can leave a place-level legacy not only by changing who lives where, but also by changing how communities reconstruct claims, collective action, and local economic relations once return becomes possible.

Finally, we join research on kinship, culture, and institutional change. Much of this literature examines the deep historical origins of kinship organization and its consequences for cooperation and development (Greif, 1994; Greif and Tabellini, 2017; Tabellini, 2008, 2010; Enke, 2019; Schulz et al., 2019; Kung and Wu, 2025). Our setting highlights an additional margin: a discrete political shock can change the local importance of institutions that already exist. By scattering clan members and destroying settlements before the coast reopened, the clearance raised the value of what clans could already do: preserve local knowledge, mobilize resources, and coordinate reconstruction and property claims. Whether through adaptation by existing clans or selection favoring clans with greater organizational capacity, reconstruction could embed clan organization more deeply in local society. The contemporary evidence pairs stronger clan organization with cooperation and exchange that are more concentrated within particular relationships and narrow geographic networks. More generally, institutions need not persist only because they survive a shock unchanged; recovery can increase the value of capacities they already possess.

More broadly, our findings speak to how the conditions of settlement shape social organization. Research on frontier expansion shows that open land, high mobility, and weak inherited constraints can foster individualism with persistent consequences for collective action (Bazzi, Fiszbein and Gebresilasse, 2020, 2021). The reopened Fujian coast presented a different coordination problem. The land was not open but previ-

ously owned, and its owners were dispersed; formal state authority remained, but returning residents and new settlers confronted erased property markers, scattered communities, and ruined common assets. These conditions rewarded organization through clans over individual autonomy. The comparison suggests that settlement does not leave a single social legacy: the organizations that endure depend on the coordination problems settlers face and the capacities available to solve them.

Section 2 describes the Qing–Zheng conflict, the Great Clearance, and the reconstruction of the coast after reopening. Section 3 reconstructs the implemented boundary and develops the empirical design. Section 4 documents the long-run development effects. Section 5 examines clan organization, family and local continuity, trust and cooperation, economic organization, and alternative explanations. Section 6 concludes.

2 Historical Background

2.1 The Qing–Zheng Conflict

The Great Clearance grew out of the dynastic conflict that followed the Qing conquest of Beijing in 1644. The fall of the Ming capital did not end resistance to Qing rule. Former Ming officials and military commanders went on resisting across southern China, and the new dynasty consolidated its control only gradually over the following decades. Fujian, which faces Taiwan across the strait, became one of the principal mainland theaters of this resistance (Figure 1).[7]

Fujian's coastal geography made it economically valuable and difficult for the Qing to control. Its mountainous interior meets a long coastline broken by bays, estuaries, islands, and natural harbors. By the seventeenth century, coastal communities combined farming with fishing, salt production, shipping, and trade. These bays and harbors linked coastal production to inland and maritime markets, and moved people, vessels, and supplies along the coast.[8]

The same coastal network sustained the Qing's principal maritime opponent, Zheng Chenggong, known in many Western accounts as Koxinga. Zheng commanded a military-commercial organization that combined naval and land forces with merchants and

[7] Struve (1988, pp. 641–725) and Gu (1983, pp. 60–62).
[8] Wang and Duan (2020, pp. 184, 188–191).

commercial agents. From bases at Xiamen and Kinmen, his forces relied on merchant vessels, port markets, and mainland storage and transshipment points for grain and other supplies. Because the network was embedded in coastal settlements and markets, no naval blockade could sever it. Cutting Zheng's supply required emptying the land behind the shoreline.[9]

Zheng's campaign against Taiwan increased the strategic importance of these mainland connections. In 1661, he crossed the Taiwan Strait and attacked the Dutch colony on Taiwan, which surrendered the following year.[10] Success would give the Zheng regime a defensible base beyond the reach of Qing armies. But Taiwan could not feed and supply that regime on its own; the mainland coast remained its lifeline. Against this background, the Qing central government sought to sever the mainland connections on which Zheng forces depended. The Great Clearance became a major instrument of this strategy.

2.2 The Great Clearance

In 1661, the Qing central government converted this strategy into a policy of territorial clearance. It ordered residents along sections of China's southeastern seaboard to move inland. The order extended across several coastal provinces, including Fujian. The central order specified thirty *li* inland from the coast as the general benchmark for the evacuation zone.[11] Under the conversion we adopt throughout, thirty *li* corresponds to roughly eighteen kilometers.

The thirty-*li* benchmark did not by itself determine the boundary on the ground. Provincial and local officials translated it into a line that could be marked and enforced in coastal Fujian.[12] The line separated settlements ordered to evacuate on its seaward side from the inhabited interior immediately beyond it.

Enforcement was immediate and violent. Officials and troops drove residents to its inland side and prohibited residence, cultivation, construction, trade, and coastal travel in the evacuated zone. Residents who evaded removal or crossed back could be summarily executed.[13] Military posts guarded the boundary and its principal crossings.

[9] Tan (2010, pp. 193–197), Wang and Duan (2020, pp. 186–187), and Feng (2000, pp. 92–93).
[10] Andrade (2020, pp. 149–163) and Li (2013, p. 108).
[11] Gu (1983, pp. 62–64); see also Zheng (2022, pp. 39–42).
[12] Du (1986, juan 4, pp. 1035–1066) and Ye (2015, pp. 116–124).
[13] Gu (1983, pp. 64–66), Liu (2013, pp. 13–14), and Zheng (2022, pp. 42–44).

Maritime enforcement served the same objective: vessels and other means of coastal access were destroyed or disabled, waterways were obstructed, and goods were barred from crossing the line.[14]

The clearance was intended to make the evacuated zone unusable, not merely uninhabited. The Qing central government ordered all buildings within the zone to be destroyed. Contemporary records describe houses and walls demolished or burned, trees felled, and standing crops cut; one account reports that fires set to residents' houses "burned for months without cease."[15] Fan Chengmo later estimated that more than twenty thousand *qing* of farmland had been abandoned and described coastal houses and fields as having "turned into saline wasteland."[16] A 1700 Zhangpu gazetteer records that fishing grounds, tidal flats, and offshore production sites had fallen out of use. Du Zhen reported that the sea ban obstructed maritime commerce through Fujian's ports.[17] Residents were dispersed, the built environment destroyed, and coastal agriculture, fishing, and trade broadly interrupted.

The clearance ended after Qing forces defeated the Zheng and took Taiwan in 1683. The Qing central government then ordered the coastal lands inspected and reopened, while local implementation of return and land allocation continued into 1684.[18] The implemented boundary no longer separated land where settlement was prohibited from land where it was permitted.

2.3 Reopening and Reconstruction

Reopening created a problem of reconstruction, not simply one of return. Families who returned found their fields gone to waste, their settlements razed, and their kin scattered for more than twenty years. With buildings and other physical markers gone, it was often difficult to determine where a household or group had previously lived and which land it had held. Reestablishing a settlement required residents to recover earlier claims, bring land back into cultivation, rebuild common assets, and reconnect

[14] Jiang (1983, pp. 164–165), quoted in Tan (2010, p. 194).

[15] Gu (1983, pp. 64–65), quoting *Changle Fuqing fujie tuji* and *Pubian jishi*.

[16] Fan Chengmo, "Tiaochen Minsheng lihai shu," in *Qingchao jingshiwen zheng xubian*, vol. 2, juan 84 (2011), p. 284; Wang and Duan (2020, p. 191). Translation by the authors. One *qing* equals one hundred *mu*.

[17] Lin and Chen (1700, juan 8, p. 11); Gu (1983, p. 69), citing Du (1986).

[18] Du (1986, juan 1) and Liu (2013, pp. 35–38).

people returning at different times and from different places.

The Qing government did more than authorize return. It instructed officials to restore land where prior ownership could be established and allowed a three-year grace period before reclaimed land became taxable.[19] These measures addressed taxation and the restoration of documented claims, but they could not recreate missing evidence of local ownership. A 1700 Zhangpu gazetteer described the problem directly: "Fields lay waste and owners dispersed; all was open desolation, and private and temple lands could no longer be distinguished."[20] The account shows why official restoration rules could not resolve every local claim once owners were dispersed and physical markers had disappeared. Determining claims was only one part of reconstruction: returning communities also had to reconnect dispersed members and mobilize labor and resources to rebuild common assets.

Clans possessed institutions suited to these tasks. A clan, or *zongzu*, was a descent-based organization, usually centered in a single settlement, whose members traced ancestry to a common forebear. Genealogies recorded members and branches; ancestral halls provided recognized places for collective deliberation and the administration of common property; and sacrificial property, known locally as *zhengchang*, could finance ritual and other collective expenditures. These institutions long predated the clearance.[21] The clearance destroyed ancestral halls and other physical assets, but it could not destroy descent ties or genealogical knowledge. Those survived dispersal, and they were what allowed scattered branches to find one another again. Rebuilding an ancestral hall restored a forum for collective decisions and recreated a common asset. By marking a clan's reestablishment in a settlement, it could also support claims of prior collective presence.

The Chen clan in Nanyu illustrates collective resource mobilization during reconstruction. Its genealogy records that the clearance destroyed the principal ancestral hall and dispersed the clan's members. After reopening, the returning branches regrouped, pooled contributions, and rebuilt the hall in 1684.[22]

A 1706 agreement from Hongjiang illustrates a second function. The agreement

[19] Du (1986, juan 1, fol. 7); see also Liu (2013, p. 36).
[20] Lin and Chen (1700, juan 8, p. 6). Translation by the authors.
[21] Zheng (2017, pp. 55–56, 79–84, 262); see also Zheng (2016, pp. 35–42).
[22] Zheng (2017, p. 263), transcribing *Nanyu Chenshi zupu*, fourth-revision manuscript, 1985, "Jianzhi yange xiuli zhi," fols. 8b–9b (Dongshan County Library, K820.9/N17).

settled a dispute over house sites that had lain abandoned long enough for their ownership and boundaries to become unclear. When two individuals attempted to collect rent, elders from the relevant clan branches assembled in an ancestral hall and examined whether the claimants descended from the branches historically associated with the sites. They rejected the claims and placed the disputed sites and a stone well under the sacrificial property of the principal hall.[23] Where buildings and boundary markers no longer provided evidence of possession, descent information and a recognized collective forum allowed claims to be evaluated and common property to be reconstituted.

The Nanyu and Hongjiang records illustrate two complementary functions of clan organization during reconstruction: mobilizing members and resources to rebuild common assets, and preserving information and authority through which contested claims could be resolved. Reconstruction could consequently reshape local clan organization through two processes. Under *adaptation*, existing clans strengthened their collective institutions to meet the demands of rebuilding. Under *selection*, clans already better able to mobilize members, resources, and claims were the ones that returned and reestablished themselves. Both channels imply stronger clan institutions in formerly cleared communities. Selection implies something further: reconstructed settlements organized around fewer clans, each capable of returning collectively and defending its claims.

3 Empirical Strategy

This section translates the historical clearance boundary into an empirical design. We reconstruct the boundary implemented on the ground, define township assignment and the estimation sample, present the boundary-discontinuity specification, and discuss identification.

3.1 The Implemented Boundary

Our baseline design defines historical clearance exposure using the implemented boundary —the line as officials actually traced and marked it in coastal Fujian. As Section 2

[23] Zheng (2017, p. 262), transcribing a 1706 agreement from Hongjiang.

explains, the Qing central government's thirty-*li* benchmark was translated by provincial and local officials into a locally implemented line. This implemented line, rather than a uniform buffer from the coast, is the treatment boundary in the baseline analysis.

We reconstruct the implemented line from the plate "Coastal Clearance in the First Year of the Kangxi Reign" in the *Historical Atlas of Fujian Province* (Fujian Provincial Local Gazetteer Compilation Committee, 2004). Using a georeferenced version of the plate, we trace the boundary as a GIS polyline. Contemporary accounts name the settlements and landmarks through which the line passed. We use them both to locate the relevant portions of the plate and to check the traced polyline against the written record. The final polyline defines the historical boundary used for township assignment. Figure 1 maps this boundary, Figure 2 presents the atlas plate and local details, and Appendix A documents the source materials and digitization procedure.

3.2 Assignment and Sample

We overlay the reconstructed boundary with township polygons representing Fujian's 2018 administrative geography. Treatment assignment is based on each polygon's position relative to the boundary. Polygons on the coastal side, including those intersected by the line, are classified as cleared, whereas polygons lying wholly inland form the comparison group. We then compute each polygon's centroid and its geodesic distance to the nearest point on the line. That nearest point also assigns the township to a boundary segment. We sign distance positive for cleared townships and negative for inland ones.

We first drop a small number of administrative units whose detached territories fall on both sides of the historical boundary and so cannot be assigned to one side. We use a symmetric 18 km window around the implemented boundary, corresponding to the paper's operational conversion of the court's thirty-*li* benchmark. The baseline sample contains 399 townships: 240 cleared and 159 inland. As checks on spatial assignment, we report estimates that exclude townships intersected by the line and estimates based on regular spatial cells rather than modern township polygons. Appendix Table B.2 reports the corresponding sample composition and assignment diagnostics.

3.3 Boundary Discontinuity Design

The design compares nearby townships that lie on opposite sides of the line but share the same local segment of it. Within the baseline 18 km window, we allow the relationship between outcomes and signed distance to differ by clearance status. The specification pools these local comparisons across the reconstructed boundary while allowing average outcome levels to vary along the line.

Following geographic regression discontinuity designs (Lee and Lemieux, 2010; Keele and Titiunik, 2015) and the pooling-based boundary framework developed by Cattaneo, Titiunik and Yu (2025), we estimate

$$Y_{ib} = \alpha_b + \tau\, \mathit{Cleared}_i + \beta_0 D_i + \beta_1 \left(\mathit{Cleared}_i \times D_i\right) + \varepsilon_{ib}, \tag{1}$$

where Y_{ib} is the outcome for township i associated with boundary segment b, $\mathit{Cleared}_i$ indicates assignment to the formerly cleared side and is reported as *Coastal Side* in the tables, and D_i is signed distance from the implemented boundary. The specification allows separate linear distance trends on the two sides: the inland-side slope is β_0, while the formerly cleared-side slope is $\beta_0 + \beta_1$.

We divide the implemented boundary into 40 equal-length segments and associate each township with the segment containing its nearest location on the line. The segment fixed effects α_b absorb average differences along the historical boundary, so that τ comes from comparisons within a segment, net of the two distance trends. Unless otherwise indicated, standard errors are clustered by township, the level at which historical exposure is assigned.

3.4 Identification

Identification requires that, absent the Great Clearance, potential outcomes would vary smoothly in distance across the implemented boundary. In practical terms, terrain, coastal access, and other spatial conditions may vary gradually across locations, but they should not shift discretely at the historical line for reasons unrelated to the clearance. Conditional on the separate distance trends and boundary-segment fixed effects, nearby inland townships associated with the same portion of the line provide the comparison for townships on the formerly cleared side. Under this continuity assumption,

τ identifies the pooled local long-run effect of clearance assignment for contemporary places near the implemented boundary.

The Qing central government's thirty-*li* principle did not translate mechanically into a boundary at a uniform distance from the sea. Fujian's irregular coastline made such a boundary difficult to mark and enforce on the ground. Provincial and local officials therefore traced the implemented line through named settlements and recognizable landmarks. The resulting boundary followed the Qing central government's general rule but departed from a uniform coastal buffer in particular places. Because its precise local course emerged from this implementation process, the implemented line may partly reflect local conditions that were also relevant for later development. We therefore examine whether the baseline comparison depends on these local departures from the central government's general rule.

Two features of the setting provide direct support for the boundary comparison. First, after the coast reopened, the implemented line ceased to have legal or administrative status and was not maintained as a formal, continuous physical barrier. It therefore does not coincide with an enduring modern jurisdiction or policy boundary. Second, in the preferred 18 km sample, we find no statistically detectable discontinuities in terrain, climate, or Ming-era courier stations. Balance is less uniform at narrower bandwidths, a concern we address directly in the bandwidth robustness analysis below.[24]

Finally, we complement the baseline design with a rule-based specification derived from the Qing central government's thirty-*li* benchmark. We apply the benchmark uniformly to the historical coastline, using eighteen kilometers as its metric operationalization, and define a rule-based cleared zone extending inland from the coast. Within the baseline township sample, rule-based assignment equals one when the township center lies inside this zone. We use this assignment as an instrument for implemented clearance in a specification that includes fixed effects for the 40 boundary segments. The baseline design follows the boundary that officials actually implemented, whereas the rule-based specification uses the component of clearance predicted by the central government's general benchmark. The comparison therefore asks whether the results depend on the local departures that shaped the implemented line; Section 4 reports

[24] At the 10- and 15-km bandwidths, some terrain and climate characteristics differ across the boundary; Appendix Table C.1 reports the complete balance results.

the first-stage and two-stage least-squares estimates.[25]

4 Long-Run Development Effects

This section documents the long-run economic consequences of the Great Clearance. We first use nighttime lights to establish the main development discontinuity, and we examine its stability across years, bandwidths, and spatial assignments. A rule-based specification then examines whether the result depends on the boundary's precise local course. We then characterize the form of this development gap through settlement intensity, local market access, and firm entry across sectors. Finally, we use census data to examine whether the same boundary also separates residents' education and employment structure.

4.1 The Nighttime-Light Discontinuity

Following a large literature that uses nighttime lights to measure local economic activity (Henderson, Storeygard and Weil, 2012; Donaldson and Storeygard, 2016), we use the annual NPP–VIIRS-like series constructed by Chen et al. (2021). The baseline outcome is the inverse hyperbolic sine of township nighttime-light intensity, averaged over 2000–2018. We transform each annual observation before averaging.

Figure 3 compares 2018 nighttime lights by distance from the coast in California and Fujian. In California, nighttime lights increase toward the coast, consistent with the familiar concentration of economic activity in coastal areas. Fujian displays the opposite gradient: townships within the eighteen-kilometer equivalent of the Qing central government's thirty-*li* benchmark are dimmer than nearby townships farther inland. This reversal raises the possibility that the Great Clearance disrupted the usual coastal advantage.

To distinguish historical clearance exposure from coastal proximity itself, we replace distance from the coast with signed distance from the implemented boundary in Figure 4. Negative values denote the inland side, while positive values denote the formerly cleared coastal side. The figure plots binned residual nighttime lights and separate

[25] The two eighteen-kilometer distances use different reference lines: the rule-based zone is measured inland from the historical coastline, whereas the baseline analysis window is measured on both sides of the implemented boundary.

linear fits on the two sides of the boundary. The fitted relationship drops visibly at the implemented line, providing the graphical counterpart to the preferred boundary specification reported in Table 2.

Table 2 reports a sequence of specifications, from the unadjusted cross-boundary difference to our preferred one. Column (1) reports the difference in nighttime lights between the two sides of the implemented boundary. Column (2) allows separate linear distance trends on the formerly cleared and inland sides, and Column (3) further includes fixed effects for the 40 boundary segments. The preferred estimate in Column (3) is -0.822 inverse-hyperbolic-sine units. Under the large-value approximation, this magnitude corresponds to approximately 56 percent lower nighttime-light intensity on the formerly cleared side. Because inverse-hyperbolic-sine coefficients depend on the units of the underlying variable, Appendix Table D.5 also reports a Poisson pseudo-maximum-likelihood estimate in levels, which implies a similar proportional difference.

Because the baseline outcome averages nighttime lights over 2000–2018, we also estimate the preferred specification separately for each year. Figure 5 reports the annual estimates. The coefficients are negative in every year and do not display a structural change around the 2013 transition between the two underlying nighttime-light sources. The average discontinuity is therefore neither concentrated in a small number of years nor attributable to the change in the underlying satellite series.

Robustness. We ask whether the estimated discontinuity depends on the geographic scope of the comparison, the assignment of townships intersected by the boundary, or the treatment of spatial correlation; Table 3 reports the results. Panel A varies the bandwidth from 10 to 25 km. The estimates remain negative throughout, ranging from -1.538 to -0.775. Panel B excludes townships intersected by the implemented line and yields an estimate of -1.190. Clustering by county or allowing residuals to be spatially correlated within 50 or 100 km reduces precision but does not alter the conclusion. Appendix D reports additional checks using alternative spatial units, controls, functional forms, local estimators, and boundary partitions. The nighttime-light discontinuity therefore does not depend on a single bandwidth, the baseline assignment of boundary-intersected townships, or the treatment of spatial correlation. Because bal-

ance is less uniform in the 10- and 15-km samples, Appendix Table D.2 reestimates the nighttime-light discontinuity with terrain and climate controls at every bandwidth. On the common complete-case samples, adding the full set of controls attenuates the coefficient from -1.552 to -0.971 at 10 km and from -1.192 to -0.693 at 15 km; the corresponding controlled estimates at 18, 20, and 25 km are -0.727, -0.700, and -0.676. All five estimates remain negative and statistically significant. The attenuation is largest in the two narrowest samples, while the substantive conclusion persists across bandwidths.

The preceding checks vary how the discontinuity is estimated around the implemented line. Table 4 addresses a different question: whether the result depends on the precise local course of that line. We apply the Qing central government's general thirty-*li* rule uniformly to the historical coastline and use the resulting rule-based assignment as an instrument for implemented clearance within the baseline township sample. Rule-based assignment increases the probability of implemented clearance by 57.3 percentage points, with a Kleibergen–Paap first-stage statistic of 86.1. The resulting two-stage least-squares estimate is -0.626, compared with -0.822 in the baseline boundary specification. The negative nighttime-light difference thus remains when implemented clearance is predicted from the Qing central government's common rule rather than from the precise local departures of the implemented line.

Finally, Appendix Figure D.5 compares the observed discontinuity with two falsification distributions, with the artificial-cutoff comparison estimated within the same narrow window used for the placebo cutoffs. The first places artificial cutoffs away from the implemented boundary, while the second reallocates clearance status among townships within the same boundary segment. None of the 5,000 simulated estimates in either exercise is as extreme as the estimate obtained from the actual boundary. A comparable nighttime-light drop appears neither at nearby artificial cutoffs nor when clearance status is reassigned among townships along the same portions of the boundary.

4.2 Settlement, Local Markets, and Firm Entry

Reopening allowed population to return, but the return of residents did not necessarily restore the same density of settlement and market activity as in the neighboring

interior. We therefore ask whether the modern difference lies in the number of people living in each township or in the intensity with which population, built activity, services, and firms are organized across space. Table 5 brings together evidence on these dimensions.

Population recovery and local market development. If the long-run difference reflected continued depopulation, formerly cleared townships should contain fewer residents. Panel A of Table 5 examines this possibility using population from the 2000, 2010, and 2020 censuses, together with land-cover and nighttime-light measures. We harmonize the three census rounds to the township boundaries used in the analysis and average population across the three years. We divide this measure by township area to obtain population density. We average impervious-surface share over 2000–2018 and normalize average light intensity by population.

The coefficient on total township population is positive but imprecisely estimated, so the data do not show a clear population shortfall at the boundary. The differences instead appear in settlement intensity. Population density is lower by 0.261 inverse-hyperbolic-sine units on the formerly cleared side. Impervious-surface share is 11.1 percentage points lower relative to an inland-side mean of 27.0 percent, and nighttime lights per resident are lower by 0.817 inverse-hyperbolic-sine units. The modern difference is therefore not a precisely estimated deficit in population totals, but a settlement pattern that is less dense, less built-up, and less economically intensive than in the neighboring interior.

The economic significance of this contrast depends on whether less intensive settlement is also accompanied by a thinner network of local markets and services. Fixed establishments depend not only on the total number of potential users, but also on how densely demand is concentrated around them. Townships with similar populations may therefore support different numbers of commercial and service nodes, and leave residents at different distances from basic facilities.

Panel B examines these margins using point-of-interest records collected by Amap in 2017. We assign geocoded commercial establishments, public facilities, and service locations to townships. The density outcomes count total and business POIs per 10,000 residents and apply the inverse hyperbolic sine transformation. The access outcomes

measure the log distance in meters from the township reference point to the nearest hospital and bank.

Formerly cleared townships contain fewer mapped local nodes. Total POI density is lower by 0.549 inverse-hyperbolic-sine units, and business POI density is lower by 0.691. Township reference points are also farther from the nearest hospital and bank, with estimated log-distance differences of 0.971 and 0.572, respectively. Similar population totals therefore do not translate into equally dense networks of local markets and services. Appendix E reports the corresponding boundary plots for these outcomes.

Firm formation and sectoral differentiation. Local market recovery is not only spatial but also dynamic. A developed local market must not only contain businesses and service nodes, but also continue to generate new firms. Business-registration records allow us to examine this margin over 2000–2018. For each township, we construct annual registrations per 10,000 residents, retain years with no observed entry as zeros, average the resulting measure across the 19-year period, and apply the inverse hyperbolic sine transformation. These outcomes capture the flow of new registrations rather than the stock of firms operating at a particular date.

Panel C of Table 5 shows that annual firm entry is lower by 0.562 inverse-hyperbolic-sine units on the formerly cleared side, corresponding to approximately 43 percent fewer registrations. Small-firm and individual-business registrations show similar declines. The difference therefore extends beyond the current distribution of market nodes to the rate at which local economies continue to generate new businesses.

The sectoral results in Panel D distinguish a general constraint on firm formation from a difference concentrated in activities that depend more directly on local exchange. A general constraint should reduce entry across agriculture, manufacturing, commerce, and services. A thinner local market, by contrast, should be especially visible in commerce and producer services tied to local consumers and exchange among businesses.

The estimates support the latter interpretation. Agricultural entry is higher by 0.258 inverse-hyperbolic-sine units on the formerly cleared side, while manufacturing entry changes little. By contrast, entry in traditional commerce, which includes wholesale and retail, is lower by 0.523, and entry in producer services is lower by 0.908. The

pattern is not one of uniformly weaker firm formation. New entry is oriented more strongly toward agriculture and less toward the commerce and business services that deepen local exchange. Appendix Table E.1 reports the complete sector classification.

Population returned to the formerly cleared coast, but the local economy that emerged around it has thinner markets and is more oriented toward agriculture. The Census evidence below examines whether the same pattern appears in residents' human capital and employment.

4.3 Education and Employment

The preceding results show that the formerly cleared coast now contains broadly similar populations, but has thinner local markets and firm entry oriented more strongly toward agriculture. We next ask whether current residents exhibit corresponding differences in schooling and employment. We use the one-percent micro sample of the 2010 Population Census, restricting the analysis to residents aged 16–59 in townships within 18 km of the reconstructed boundary. Clearance status and distance to the boundary are assigned at the township level. Table 6 reports the main estimates. Appendix Table E.2 reports additional demographic and hukou outcomes; marriage, household structure, and fertility outcomes are reported in Appendix Table F.2.

Schooling. The Census reports each individual's highest level of education, which we convert into completed years of schooling, ranging from zero years for no schooling to 19 years for graduate education. Working-age residents on the formerly cleared side complete 0.863 fewer years of schooling, about 8.8 percent below the inland-side mean of 9.86 years.

Employment structure. Census industry codes allow us to identify employment in agriculture, forestry, animal husbandry, sideline production, and fishery. To distinguish the sector in which residents work from their overall labor supply, we also examine whether individuals are currently working, their weekly work hours, and whether labor income is their main source of livelihood.

Agricultural employment is 13.6 percentage points higher on the formerly cleared side, relative to an inland-side rate of 11.7 percent. The estimated difference therefore

more than doubles the inland agricultural-employment rate. By contrast, current employment, weekly work hours, and reliance on labor income change little at the boundary. The difference lies in the sector in which residents work, not in whether they work or how much they work.

Together, the Census evidence extends the development difference from places and firms to current residents. Working-age residents on the formerly cleared side have less formal schooling and are substantially more likely to work in agriculture, while current employment and weekly work hours change little at the boundary. Read alongside the settlement and firm-entry results, these outcomes locate the long-run difference in the intensity and sectoral organization of local development rather than in total population or a general withdrawal from work. They also sharpen the central question of persistence: why did population return without restoring equally dense settlement and local markets?

5 Kinship Organization and the Persistence of Local Difference

The historical evidence points to clan organization as a central response to the reconstruction problem. Returning residents had to reconnect dispersed members, recover claims whose physical markers had disappeared, pool resources, and rebuild common property. Clans already possessed relationships, records, and collective institutions suited to these tasks. Their role in reconstruction provides a concrete reason why population could return while local development remained organized differently from the neighboring interior.

This account implies a sequence of contemporary outcomes. Reconstruction should have left its most direct imprint on clan institutions themselves: the physical infrastructure available for collective activity and the distribution of recorded clan organization across local groups. If this form of organization remained important in local society, it should also appear in a closer continuity between family and place, and in trust that varies by relationship. Finally, if the same organizing principle extended into economic activity, it should be visible in registered enterprise types and in the geography of realized exchange. We examine these implications in that order before turning to modern

alternative explanations.

5.1 Contemporary Clan Organization

We begin with the most direct organizational outcomes, reported in Table 7. Ancestral halls are the physical infrastructure through which clans assemble and administer common affairs, and we take their presence as our most direct measure of clan organization. Catalogued genealogies show whether recorded clan organization is evenly spread across local groups or more concentrated. The surnames of registered business representatives let us ask whether a corresponding concentration appears in a contemporary economic domain.

Ancestral halls. Ancestral halls provide the clearest observable measure of contemporary clan infrastructure. Section 2.3 described what a hall did for a clan: it housed records, hosted collective deliberation, and anchored common property. If reconstruction embedded clan organization more deeply in formerly cleared communities, the contemporary stock of halls should reflect it.

We assemble geocoded records of ancestral halls and aggregate them to modern townships. Panel A of Table 7 shows that formerly cleared townships are 13.0 percentage points more likely to contain a recorded ancestral hall, more than tripling the inland-side rate of 5.7 percent. They also contain 0.162 more recorded halls, compared with an inland-side mean of 0.069, and the population-normalized measure yields the same pattern. The difference therefore appears on both the extensive and the intensive margin.

Catalogued genealogies. Genealogies preserve a different part of clan organization: the information through which a clan identifies its members and locates its branches within a common history. Compiling and maintaining these records requires coordination across members and generations (Zheng, 2017, pp. 55–56, 79–84), a demand that became especially relevant once the clearance had dispersed members and disrupted knowledge of earlier settlement.

In historical China, a common surname did not by itself define a clan. Clan identity rested on descent from a recognized common ancestor and an associated ancestral

place, so families sharing the same surname but tracing descent to different ancestors or ancestral places belonged to different clans. We therefore assign each genealogy catalogue entry to a clan using both its surname and its recorded clan designation, and measure how evenly those records are spread across catalogue-defined clans within a township.

Panel B shows no statistically detectable difference in either the probability of observing a catalogued genealogy or the total number of records. The concentration index is instead 0.030 higher on the formerly cleared side, against an inland-side mean of 0.011, indicating that the available genealogical material is more concentrated across catalogue-defined clans on the formerly cleared side.

This contrast is important because it separates organizational concentration from a general increase in genealogical preservation. Formerly cleared places do not simply contain more catalogued genealogies. Rather than many clans accounting for similar amounts of recorded material, a few documented clans account for much larger shares. In a setting where return was incomplete and local presence had to be reestablished, this distribution indicates that the organizational work of maintaining descent records and sustaining a durable local presence became concentrated within fewer groups. Panel A therefore shows a larger physical infrastructure for clan activity, while Panel B shows that the documented organizational base behind it is more concentrated.

Business representation. The genealogy results could, by themselves, reflect differences in the historical preservation and cataloguing of records. We therefore ask whether a similar concentration is visible in a contemporary economic domain. Using business-registration records from 2000 to 2018, we identify the registered legal representatives of individual businesses, count the same representative only once within each township, and calculate surname concentration in townships with at least twenty valid representatives. The concentration index is adjusted for differences in the number of representatives observed across townships.

Panel C shows that adjusted surname concentration is 0.040 higher on the formerly cleared side, relative to an inland-side mean of 0.069. The shares of representatives bearing the most common surname and the three most common surnames are also 6.5 and 7.0 percentage points higher, on inland-side bases of 16.2 and 35.0 percent.

A common surname does not establish that individual representatives belong to the same clan. The surname measures instead ask whether registered business representation is spread broadly across local family names or concentrated among a few of them. All three measures point to the latter pattern: the surname distribution of contemporary business representatives is more concentrated on the formerly cleared side. The concentration observed in the genealogy catalogue is therefore accompanied by a similar concentration in a contemporary administrative record, rather than appearing only in historical sources.

5.2 Family, Place, and Trust

The contemporary clan evidence raises a second question: whether these organizational differences are accompanied by closer continuity between family and place. Clans connected individuals to relatives, ancestral settlements, and family-based support. If this form of local organization remained important, formerly cleared places should exhibit greater residential continuity and greater reliance on relatives. Panel A of Table 8 shows that working-age residents on the formerly cleared side are 14.0 percentage points more likely to hold household registration within their county of residence and 15.2 percentage points more likely never to have left their registered locality, relative to inland-side means of 53.7 and 47.8 percent. Among individuals whose principal livelihood does not come from labor earnings, reliance on relatives is 5.5 percentage points higher.

Additional census outcomes point to corresponding differences in family formation and household structure. The probability of being married shows no discontinuity, but marriage occurs nearly one year earlier among respondents with a recorded age at first marriage. Working-age respondents live in households with 0.8 more rostered members. Among women with nonmissing fertility responses, the number of children ever born is 0.268 higher; among mothers, the number of sons ever born is 0.172 higher (Appendix Table F.2). Panel B of Table 8 also shows less reported family discord in the Chinese Social Survey. These outcomes indicate closer continuity between family, registration, and place, rather than merely a difference in population totals across the boundary.

Closer family and local ties do not imply uniformly higher trust in everyone nearby.

The sharper question is whether reported trust differs with the relationship between the respondent and the other party (Tabellini, 2008; Enke, 2019; Guiso, Sapienza and Zingales, 2009). The Chinese Social Survey shows higher trust in relatives on the formerly cleared side, but lower trust in public authority and business people.[26] Trust in teachers and doctors is also higher, whereas the estimate for trust in neighbors is negative and is not distinguishable from zero under small-cluster inference (Appendix Table F.3). Taken together, the estimates vary with the identity and social role of the other party rather than indicating a generalized rise or decline in interpersonal trust.

The survey also provides a related measure of how respondents approach formal economic procedures. It presents a business-license scenario in which one prospective operator prefers to wait until the formal requirements are satisfied, while another proposes using personal connections and providing benefits to officials to obtain the license immediately. Respondents on the formerly cleared side are more likely to endorse the relationship-based response. Unlike the trust questions, this item directly asks whether personal relationships should be used as a practical means of navigating a formal economic procedure.

5.3 Firm Organization and Localized Exchange

Survey responses do not reveal how firms are organized or how trading partners are actually matched. We therefore turn first to firms' registered organizational forms and then to realized government-procurement contracts. Panel A of Table 9 uses enterprise-year tax-survey records. The share of firms registered in the private-enterprise categories is 5.6 percentage points higher on the formerly cleared side, relative to an inland-side mean of 24.2 percent, and the share in the remaining limited-liability and shareholding categories is 5.5 percentage points lower, relative to a mean of 35.2 percent. The nearly offsetting estimates reveal a distinct composition of registration types on the formerly cleared side, with greater reliance on private registration, a form more commonly associated in China with individual or family control (Li and Zhu, 2015; Cai et al., 2013; Lu and Tao, 2009).

[26]The CSS boundary sample covers nine townships and between 102 and 133 respondents. Table 8 reports conventional township-clustered standard errors together with Webb wild-cluster-bootstrap p-values as a small-cluster sensitivity check; significance symbols are based on the conventional standard errors. Appendix Table F.3 reports additional relationship-specific trust outcomes and the corresponding Webb p-values.

Government procurement provides evidence from realized exchange. Panel B of Table 9 uses deduplicated contract announcements from the China Government Procurement Network between 2017 and 2025. Each contract connects a public buyer to a supplier, and both endpoints are separately assigned to the formerly cleared or inland side using their township locations. The coefficient of interest is the interaction between buyer and supplier clearance status. Conditional on the separate buyer- and supplier-side discontinuities, the interaction asks a simple question: when both parties sit on the formerly cleared side, do they trade within the same township more often than their two locations alone would predict? The interaction is 0.170, or 17.0 percentage points of excess same-town matching, against a same-town rate of 16.3 percent when both endpoints are inland. The corresponding same-county interaction is close to zero, locating the additional matching within the township, and these contracts are also larger, by 0.180 inverse-hyperbolic-sine units.

One possible explanation is that buyers select nearby suppliers because consulting and construction projects require local technical knowledge or project-specific information. If this were the entire explanation, the same-town interaction should be much weaker for standardized goods. Using contract titles and principal-item descriptions, we separate standardized goods, consulting services, and construction projects; Panel C reports the results by category. The excess same-town interaction is 19.8 percentage points for standardized goods and is also positive for consulting and construction. The procurement pattern is therefore not confined to transactions in which local technical knowledge is likely to be especially valuable. The two sources therefore point in the same direction: firms on the formerly cleared side rely more heavily on private organizational forms, while contracts involving buyers and suppliers on that side exhibit excess matching within the same township. The relational pattern is therefore visible not only in survey responses, but also in the organization of firms and the geographic formation of actual trading relationships.

5.4 Modern Alternative Explanations

The historical boundary no longer governs legal status or public administration, but later state investment could still have evolved differently across its two sides. If preferential investment in the inland side generated the present-day gap, industrial parks

and communications infrastructure should display a common inland-side advantage. Panels A and B of Table 10 examine this prediction. Neither measure differs significantly at the boundary: the industrial-park estimates are in fact positive on the formerly cleared side (0.083 and 0.108, both imprecisely estimated), and cell-phone base stations excluding 5G show no discontinuity. The two sets of infrastructure therefore do not exhibit the joint inland-side advantage implied by this account. Appendix G reports industrial-park counts and separate estimates for 2G, 3G, and 4G stations.

Panel C considers a broader material explanation. If the development gap reflected a general deficit in household infrastructure, basic amenities should be uniformly worse on the formerly cleared side. Using the 2010 Census, we examine household amenities reported for working-age individuals, including access to piped water, a kitchen, a flush toilet, bathing facilities, and gas as the primary cooking fuel. None of the five differs significantly at the boundary, and the point estimates are not uniformly signed: piped water, kitchens, toilets, and gas cooking are lower on the formerly cleared side by between 0.4 and 6.0 percentage points, while bathing facilities are 2.0 points more common. The evidence therefore does not display the broad deficit spanning basic household infrastructure that this account requires.

Panel D asks whether contemporary crime and social disorder could account for the lower level of economic activity. This explanation predicts more recorded crime on the formerly cleared side. The level specifications point to lower recorded crime on the formerly cleared side, while the inverse-hyperbolic-sine and extensive-margin specifications yield less uniform estimates. Across the alternative measures, there is no consistent evidence of higher recorded crime on the formerly cleared side. The results therefore provide little support for an explanation based on greater contemporary disorder. Because recorded crime tends to co-vary with the density of commercial activity that this paper is trying to explain, we treat this test as suggestive rather than decisive; it nonetheless runs opposite to what a disorder-based account would predict. Appendix Table G.3 reports the extensive margin and alternative transformations.

Across these outcomes, the modern development gap is not accompanied by a consistent inland-side advantage in industrial and communications investment, a broad deficit in household amenities on the formerly cleared side, or higher recorded crime. These joint patterns make it difficult to attribute the economic and organizational dis-

continuities to any of these modern accounts alone.

Taken together, the evidence connects the reconstruction problem documented historically to a consistent pattern of contemporary organization at the same boundary. Formerly cleared townships combine stronger clan infrastructure and a more concentrated documented clan and surname base with closer continuity between family and place. The same orientation appears in economic activity: private-enterprise registration is more common, and realized procurement contracts exhibit excess same-town matching when both endpoints lie on the formerly cleared side. The measured differences in modern investment, household infrastructure, and recorded crime do not reproduce this joint pattern. These outcomes are consistent with the organizations mobilized during reconstruction having shaped how economic and social differences persisted after the clearance boundary ceased to operate.

6 Conclusion

The Great Clearance was a temporary military policy, yet the places it emptied remained economically distinct more than three centuries after the coast reopened. We reconstruct the boundary implemented along the Fujian coast and estimate the policy's long-run effects in a spatial regression discontinuity design. Average nighttime-light intensity over 2000–2018 is approximately 56 percent lower on the formerly cleared side. This difference does not arise simply because the cleared coast failed to repopulate. We find no statistically detectable discontinuity in total population across the historical boundary, but formerly cleared places are less intensively settled, contain thinner local markets, have lower levels of human capital, and rely more heavily on agriculture. The long-run difference therefore lies not in whether the coast was repopulated, but in how settlement and economic activity were organized after return.

The historical and contemporary evidence points to an organizational response that outlasted reconstruction itself. Reopening restored the coast to settlement, but it did not automatically reconstitute the communities dispersed by the clearance. Historical records describe clans regrouping members, pooling resources, rebuilding common property, and coordinating collective claims as residents returned. Today, formerly cleared places contain more ancestral halls, while their catalogued genealogies

are concentrated among a narrower set of clans and their registered business representatives are drawn from a narrower distribution of surnames. Residents are also more rooted in family and place, and realized procurement contracts exhibit excess same-town matching when both the buyer and supplier are located on the formerly cleared side. Together, these findings shift the account of persistence from population return alone to the organizations through which return was coordinated.

Reconstruction through clans carried a cost that only appeared later. During return, organizing through kin lowered the price of collective claims, resource pooling, and rebuilding common property. Once those ties became the organizing principle of local economic life, they also bounded it: cooperation and exchange grew easier within the lineage and the village, and harder beyond them. This intertemporal tradeoff offers a unified interpretation of stronger clan organization and greater local rootedness alongside thinner markets, less spatially intensive development, and greater reliance on agriculture. It also helps explain how population could return to the coast without restoring the economic advantage ordinarily associated with coastal access.

More broadly, the Great Clearance shows that institutional persistence need not depend on the continued operation of the original coercive rule. The clearance did not create clans; it raised the returns to organizational capacities that clans already possessed. When coercion empties a place and disrupts its property and social order, ending the policy can reopen the territory without restoring the community that previously occupied it, and the organizations mobilized to solve that second problem may go on shaping local development long after the problem itself is gone. The clearance line disappeared. The institutions that reconstruction made valuable did not.

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Figures

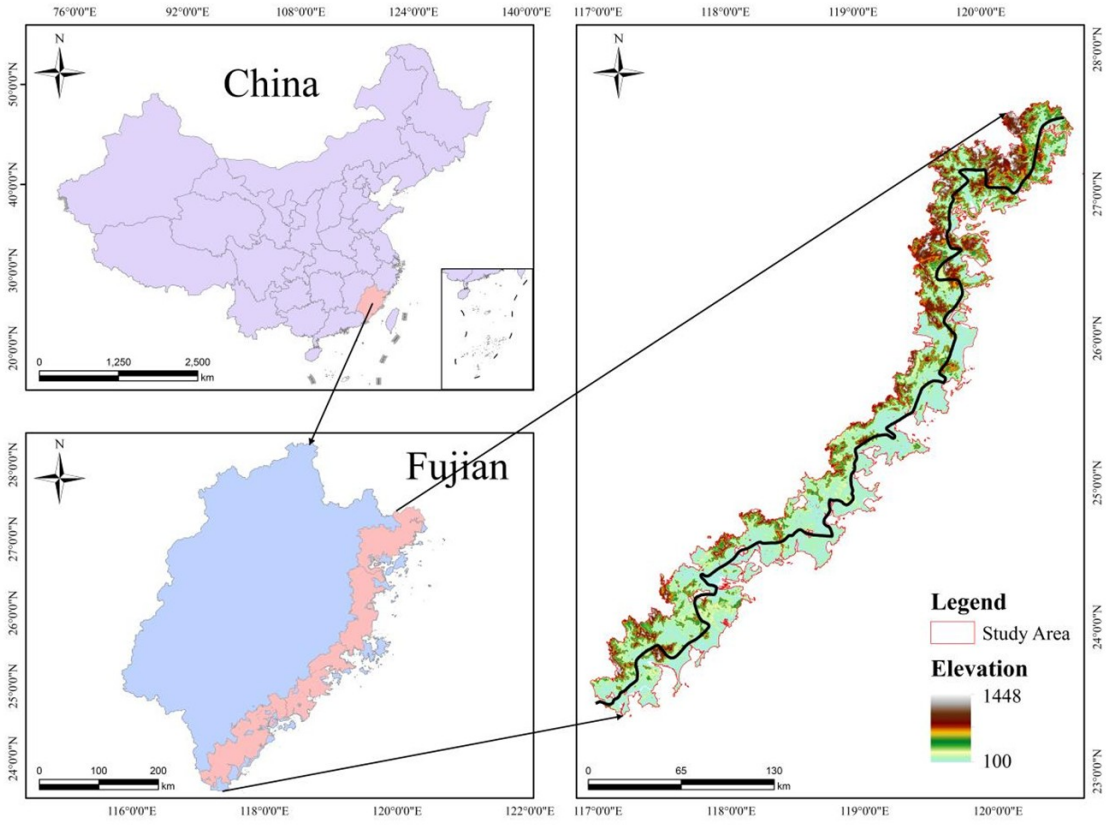


Figure 1: The Great Clearance Boundary and Coastal Terrain in Fujian

Notes: This figure locates the study area and maps the reconstructed boundary used in the empirical analysis. The upper-left panel places Fujian on China's southeastern coast. In the lower-left panel, the red-shaded coastal area denotes the study region, while the blue area shows the remainder of Fujian Province. The right panel enlarges the study region and overlays the locally implemented Great Clearance boundary, shown by the black line, on coastal terrain. Land between the implemented boundary and the sea was subject to clearance, whereas the adjoining inland area remained inhabited. The elevation color scale runs from 100 to 1,448 meters, with lighter green indicating lower terrain and darker colors indicating higher elevations. Figure 2 presents the historical atlas evidence used to reconstruct the implemented boundary.



Figure 2: Historical Atlas Evidence for the Implemented Boundary

Notes: This figure reproduces the plate "Coastal Clearance in the First Year of the Kangxi Reign" from the *Fujian Sheng Lishi Dituji* [*Historical Atlas of Fujian Province*], compiled by the Fujian Provincial Local Gazetteer Compilation Committee and published in Fuzhou by Fujian Map Publishing House in 2004 (Fujian Provincial Local Gazetteer Compilation Committee, 2004). The plate depicts the cleared coastal zone and traces the implemented boundary relative to the settlements and recognizable local landmarks recorded along its course. The two inset photographs show examples of local markers associated with the implementation of the boundary. We georeference the atlas plate, use the mapped settlements and landmarks to locate its boundary trace, and digitize that trace as a GIS polyline. Figure 1 maps the resulting line together with the coastal study area and terrain. Appendix A presents the accompanying textual sources and the reconstruction procedure.

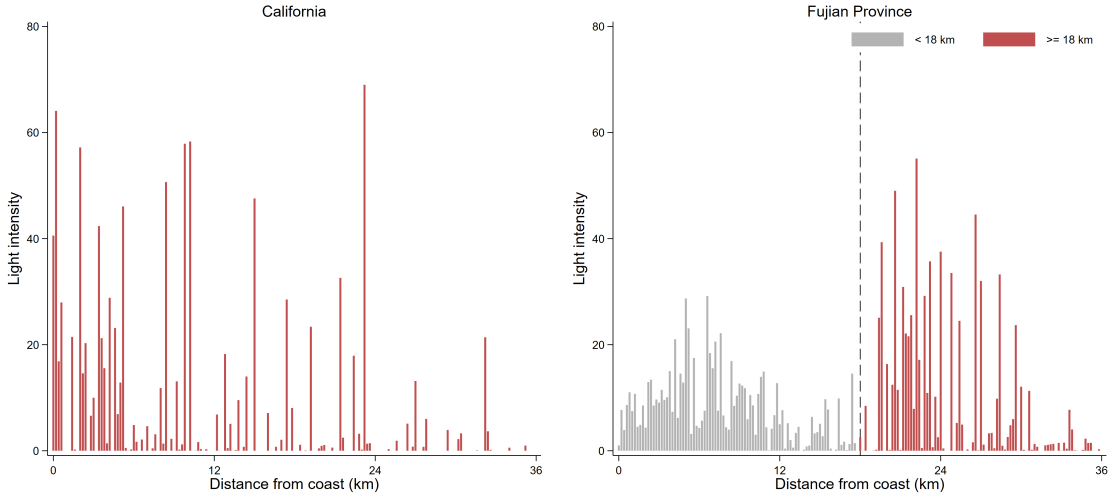


Figure 3: Nighttime Lights by Distance from the Coast: California and Fujian

Notes: This figure relates 2018 nighttime-light intensity to distance from the coast for locations within 36 km of the shoreline. In the Fujian panel, the underlying observations are townships. Townships are grouped into 200-meter intervals according to their distance from the coast, and the height of each bar is the mean nighttime-light intensity of the townships in the corresponding interval. The California panel applies the same construction to Census county subdivisions. In the Fujian panel, the dashed line at 18 km marks the paper's metric equivalent of the Qing central government's thirty-*li* benchmark. Gray bars represent distance intervals within this benchmark, while red bars represent intervals farther inland. Together, the two panels place Fujian's coastal gradient in comparative perspective and motivate the implemented-boundary analysis in Figure 4. Nighttime-light data are drawn from the NPP–VIIRS-like series constructed by Chen et al. (2021).

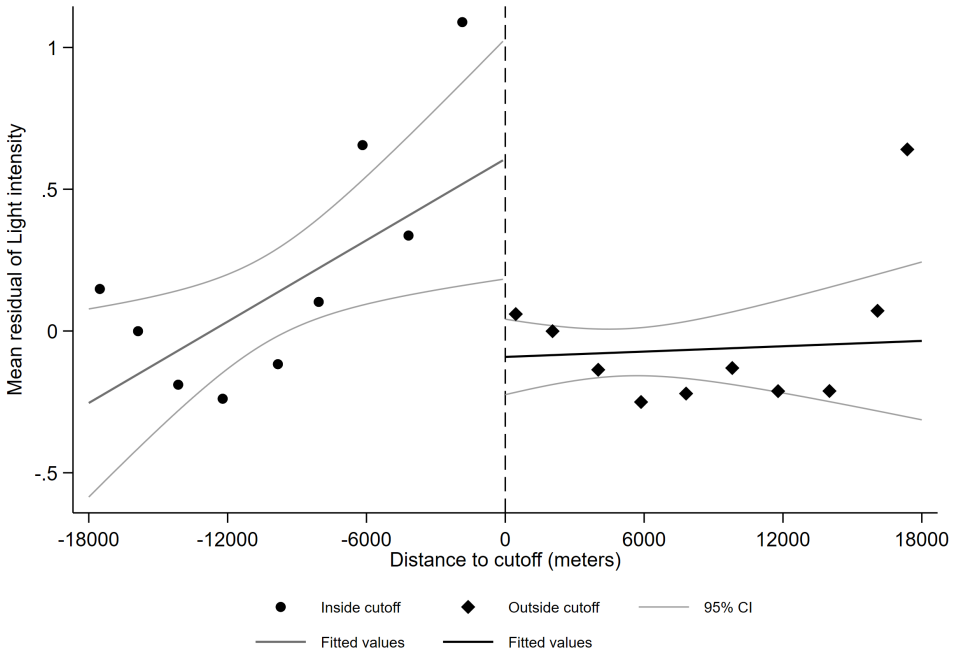


Figure 4: Nighttime-Light Discontinuity at the Implemented Boundary

Notes: This figure relates township nighttime-light intensity to signed distance from the locally implemented Great Clearance boundary. The sample contains 399 townships located within 18 km of the line. The outcome is the township average of annual inverse-hyperbolic-sine nighttime-light intensity over 2000–2018. We first residualize the outcome with respect to fixed effects for the 40 boundary segments, thereby allowing average nighttime-light levels to vary along the reconstructed line. Negative distances denote the adjoining inland side, while positive distances denote the formerly cleared coastal side. Markers report mean residual nighttime lights within two-kilometer distance bins. Separate linear relationships and their pointwise 95 percent confidence intervals are then estimated on the two sides using the underlying township observations, with standard errors clustered by township. The vertical dashed line marks the implemented boundary. The figure provides the graphical representation of the preferred boundary specification reported in Table 2.

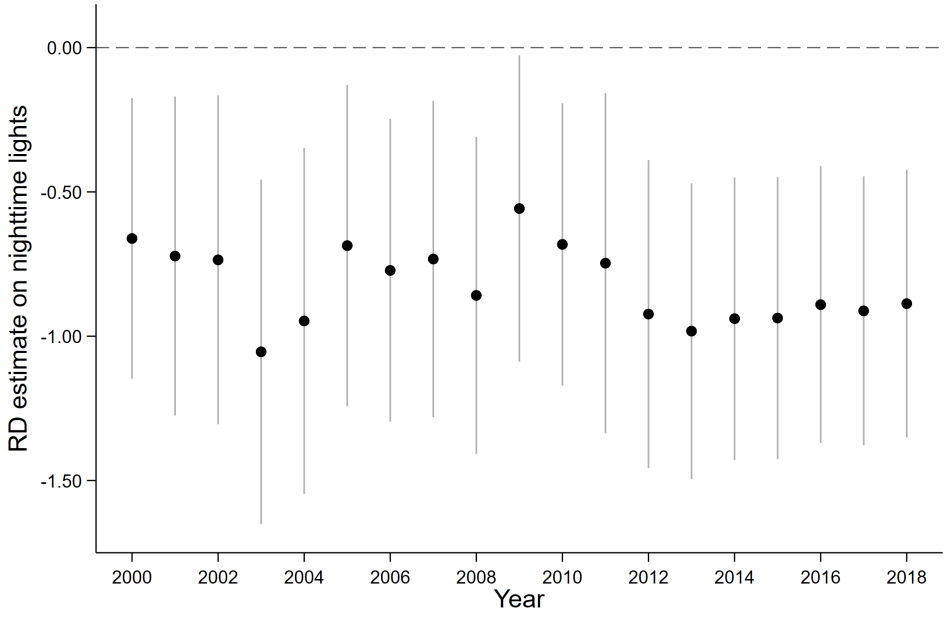


Figure 5: Annual Estimates of the Nighttime-Light Discontinuity

Notes: This figure reports annual estimates of the nighttime-light discontinuity from 2000 through 2018. Each point is the coefficient on formerly cleared status from a separate annual regression using the baseline sample of 399 townships within 18 km of the locally implemented boundary. Each regression allows separate linear distance trends on the formerly cleared and inland sides and includes fixed effects for the 40 boundary segments. The dependent variable is annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation. Vertical bars report 95 percent confidence intervals based on standard errors clustered by township, and the horizontal dashed line marks zero. Negative estimates indicate lower nighttime-light intensity on the formerly cleared side. The harmonized nighttime-light series spans the 2013 transition between its underlying satellite sources (Chen et al., 2021).

Tables

Table 1: Continuity in Predetermined Characteristics

	Coastal-side discontinuity	Inland-side mean	Observations
A. Geography			
Mean slope	0.270	10.409	399
	(1.133)		
Share with slope below 10 degrees	-0.418	7.143	399
	(0.814)		
Log mean elevation	0.161	4.254	399
	(0.261)		
Log terrain ruggedness	0.010	2.701	399
	(0.116)		
B. Climate			
Mean temperature	-0.107	19.737	393
	(0.112)		
IHS mean precipitation	0.003	7.871	393
	(0.005)		
Mean wind speed	-0.067	2.269	399
	(0.112)		
C. Historical transport			
Ming courier station	-0.032	0.063	399
	(0.068)		

Notes: This table reports township-level continuity tests for predetermined characteristics at the reconstructed Great Clearance boundary. The first numeric column reports the coefficient on *Coastal Side*, which equals one for townships on the coastal, formerly cleared side of the boundary and zero for townships on the inland side. The second numeric column reports the mean of the dependent variable on the inland side, and the third reports the number of observations. The sample consists of townships located within 18 km of the reconstructed boundary. A small number of irregular administrative units are excluded before forming the sample because their detached territories prevent an informative single assignment relative to the boundary. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Panel A reports terrain characteristics. *Mean slope* is the average slope within the township, measured in degrees; *Share with slope below 10 degrees* is the percentage of township land below that threshold; *Log mean elevation* measures average township elevation; and *Log terrain ruggedness* measures local variation in elevation. Panel B reports climate characteristics. *Mean temperature* is the township average over 1900–2020, *IHS mean precipitation* measures average township precipitation over 2000–2018, and *Mean wind speed* is township-average wind speed. The temperature and precipitation regressions contain 393 observations because of differences in source-data coverage. Panel C reports an indicator equal to one if the township contains a Ming courier station identified in the historical courier-station data. The inland-side mean and number of observations are calculated separately for the estimation sample used in each row. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: The Great Clearance and Nighttime Lights

	Average nighttime light intensity		
	(1)	(2)	(3)
Coastal Side	-0.544***	-1.045***	-0.822***
	(0.133)	(0.300)	(0.253)
Sample	Full sample within 18 km		
Geographic smooth function		✓	✓
Boundary-segment fixed effects			✓
Observations	399	399	399
R-squared	0.044	0.053	0.597

Notes: This table reports the baseline township-level estimates of the nighttime-light discontinuity at the implemented Great Clearance boundary. The nighttime-light data are drawn from the annual NPP–VIIRS-like series constructed by Chen et al. (2021). For each year, township nighttime-light intensity is transformed using the inverse hyperbolic sine and winsorized at the 1st and 99th percentiles. The dependent variable averages these annual values over 2000–2018. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the implemented boundary and zero for townships on the inland side. The sample consists of 399 townships located within 18 km of the boundary. A small number of irregular administrative units are excluded before forming this sample because their detached territories prevent an informative single assignment relative to the boundary. Column (1) reports the unadjusted difference in nighttime lights between the two sides. Column (2) includes separate linear functions of signed distance on the formerly cleared and inland sides. Column (3), the preferred specification, further includes fixed effects for the 40 equal-length boundary segments. Signed distance is positive on the formerly cleared side and negative on the inland side. Standard errors clustered by township are reported in parentheses. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.

Table 3: Robustness of the Nighttime-Light Result

Panel A. Alternative bandwidths

	Bandwidth around the implemented boundary				
	10 km	15 km	18 km	20 km	25 km
	(1)	(2)	(3)	(4)	(5)
Coastal Side	-1.538***	-1.148***	-0.822***	-0.775***	-0.907***
	(0.384)	(0.275)	(0.253)	(0.233)	(0.195)
Sample bandwidth	10 km	15 km	18 km	20 km	25 km
Geographic smooth function	✓	✓	✓	✓	✓
Boundary-segment fixed effects	✓	✓	✓	✓	✓
Mean dep. var. (inland side)	1.823	1.646	1.705	1.738	1.627
Observations	267	345	399	438	487
R-squared	0.698	0.626	0.597	0.607	0.612

Panel B. Alternative sample and spatial inference

	Exclude cross-boundary towns	County clusters	Conley HAC 50 km	Conley HAC 100 km
	(1)	(2)	(3)	(4)
Coastal Side	-1.190***	-0.822***	-0.822**	-0.822**
	(0.340)	(0.305)	(0.403)	(0.374)
Sample bandwidth	18 km	18 km	18 km	18 km
Geographic smooth function	✓	✓	✓	✓
Boundary-segment fixed effects	✓	✓	✓	✓
Mean dep. var. (inland side)	1.705	1.705	1.705	1.705
Observations	271	399	399	399
R-squared	0.586	0.597	—	—

Notes: This table reports selected robustness checks for the township-level nighttime-light discontinuity at the implemented Great Clearance boundary. The dependent variable is the 2000–2018 average of annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation; the annual transformed values are winsorized at the 1st and 99th percentiles before averaging. Each column reports the coefficient on *Coastal Side*, which equals one for townships on the coastal, formerly cleared side of the implemented boundary and zero for townships on the inland side. Before forming the estimation samples, a small number of irregular administrative units are excluded because their detached territories prevent an informative single assignment relative to the boundary. Unless otherwise indicated, each specification includes separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments, with standard errors clustered by township. Panel A varies the symmetric bandwidth around the implemented boundary from 10 to 25 km. Column (3) reproduces the preferred 18 km specification reported in Column (3) of Table 2. Panel B retains the 18 km bandwidth and examines alternative sample and inference choices. Column (1) excludes townships intersected by the implemented boundary and otherwise retains the preferred specification. Column (2) uses the full baseline sample and clusters standard errors by county. Columns (3) and (4) retain the baseline point estimate and sample but report Conley spatial-HAC standard errors based on Bartlett kernels with distance cutoffs of 50 and 100 km, respectively. The Conley procedure does not report an R^2. The inland-side mean is calculated separately for the estimation sample used in each column. Additional checks using alternative controls, functional forms, estimators, spatial units, and boundary partitions are reported in Appendix Tables D.1, D.3, and D.5. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.

Table 4: Rule-Based Assignment and Nighttime Lights

	Implemented clearance First stage (1)	Nighttime lights IHS 2SLS (2)
Rule-based assignment	0.573***	
	(0.062)	
Implemented clearance		-0.626**
		(0.260)
Boundary-segment fixed effects	✓	✓
Mean dep. var. (inland side)	0.000	1.705
Observations	399	399
R-squared	0.405	0.571
Kleibergen–Paap rk LM statistic		48.915
p-value		< 0.001
Kleibergen–Paap rk Wald F		86.108

Notes: This table reports a township-level instrumental-variable analysis based on the Qing central government's general thirty-*li* rule. *Rule-based assignment* equals one when a township's centroid lies within the zone extending eighteen kilometers inland from the historical coastline—the paper's operationalization of the thirty-*li* rule—and zero otherwise. *Implemented clearance* equals one for townships on the coastal, formerly cleared side of the reconstructed boundary implemented during the Great Clearance and zero for townships on the inland side. Column (1) reports the first-stage regression, in which implemented clearance is the dependent variable and rule-based assignment is the excluded instrument. Column (2) reports the two-stage least-squares estimate for nighttime lights, instrumenting implemented clearance with rule-based assignment. The dependent variable in Column (2) is the 2000–2018 average of annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation; the annual transformed values are winsorized at the 1st and 99th percentiles before averaging. Both columns use the baseline sample of 399 townships located within 18 km of the implemented boundary. A small number of irregular administrative units are excluded before forming this sample because their detached territories prevent an informative single assignment relative to the boundary. Both columns include fixed effects for the 40 equal-length boundary segments. Standard errors clustered by township are reported in parentheses. For each column, the mean row reports the inland-side mean of the dependent variable. The Kleibergen–Paap rk LM statistic tests the null of underidentification, and the Kleibergen–Paap rk Wald F statistic summarizes first-stage relevance. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Settlement Intensity, Local Markets, and Firm Entry

Panel A. Settlement Intensity

	Population density (IHS)	Total population (IHS)	Impervious surface (%)	Nighttime lights per capita (IHS)
Coastal Side	-0.261**	0.128	-11.101*	-0.817***
	(0.117)	(0.195)	(5.648)	(0.209)
Mean dep. var. (inland side)	0.444	1.985	26.996	1.025
Observations	370	370	399	370
R-squared	0.403	0.301	0.481	0.429

Panel B. Local Market Thickness and Access

	Mapped local nodes		Distance to nearest service	
	POIs per 10,000 (IHS)	Business POIs per 10,000 (IHS)	Hospital (log meters)	Bank (log meters)
Coastal Side	-0.549***	-0.691***	0.971***	0.572**
	(0.177)	(0.222)	(0.302)	(0.254)
Mean dep. var. (inland side)	6.602	6.198	6.950	6.968
Observations	370	370	399	399
R-squared	0.495	0.487	0.323	0.299

Panel C. Firm Entry by Registration Type

	All-firm entry (IHS)	Small-firm entry (IHS)	Individual-business entry (IHS)
Coastal Side	-0.562***	-0.538***	-0.448***
	(0.151)	(0.145)	(0.149)
Mean dep. var. (inland side)	4.815	4.653	4.343
Observations	370	370	370
R-squared	0.425	0.429	0.388

Panel D. Firm Entry by Sector

	Agriculture	Manufacturing	Traditional commerce	Producer services
Coastal Side	0.258*	-0.178	-0.523***	-0.908***
	(0.155)	(0.137)	(0.162)	(0.208)
Mean dep. var. (inland side)	1.286	2.848	3.833	2.277
Observations	370	370	370	370
R-squared	0.591	0.475	0.375	0.496

Notes: This table reports township-level estimates for settlement intensity, local markets, and firm entry. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the reconstructed Great Clearance boundary and zero for townships on the inland side. The sample consists of townships within 18 km of the reconstructed boundary. A small number of irregular administrative units with detached territories are excluded because they cannot be assigned informatively to a single side of the boundary. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Panel A measures settlement intensity. Population is averaged across the 2000, 2010, and 2020 censuses after harmonizing the three rounds to the analysis townships. Population density divides average population by township land area, and both population measures are transformed using the inverse hyperbolic sine. Impervious-surface share is the average percentage of township land classified as impervious over 2000–2018. The nighttime-lights-per-capita outcome normalizes average nighttime-light intensity over 2000–2018 by average population, expressed per 10,000 residents, and applies the inverse hyperbolic sine transformation. Panel B uses geocoded point-of-interest records collected by Amap in 2017. The first two outcomes measure total and business-related POIs per 10,000 residents and are transformed using the inverse hyperbolic sine. The access outcomes measure log distance in meters from the township reference point to the nearest hospital and bank; positive coefficients indicate greater distance and therefore weaker access. Appendix Figure E.2 reports the corresponding boundary plots for these four outcomes. Panels C and D use new business registrations from 2000–2018. Annual registrations are expressed per 10,000 residents, averaged over the 19 years, and transformed using the inverse hyperbolic sine; township-years with no observed registration are coded as zero. Panel C distinguishes all firm registrations, small and micro firm registrations, and individual-business registrations. Panel D reports firm entry in agriculture, manufacturing, traditional commerce, and producer services. Traditional commerce combines wholesale and retail, while producer services combine technology-related and business-service activities. Appendix Table E.1 reports the complete sectoral classification. Outcomes normalized by population are available for townships with nonmissing population data. The mean row reports the inland-side mean of the dependent variable in the corresponding estimation sample. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Education and Employment among Working-Age Residents

Panel A. Schooling and Employment Sector

	Years of schooling	Agricultural employment
Coastal Side	-0.863***	0.136***
	(0.287)	(0.029)
Mean dep. var. (inland side)	9.858	0.117
Observations	42,595	32,130
R-squared	0.075	0.239

Panel B. Overall Labor-Market Engagement

	Currently working	Weekly work hours (IHS)	Labor income as main source
Coastal Side	0.028	0.136	0.025
	(0.030)	(0.161)	(0.030)
Mean dep. var. (inland side)	0.733	3.557	0.735
Observations	42,595	40,597	42,595
R-squared	0.025	0.035	0.025

Notes: This table reports individual-level estimates using the one-percent micro sample of the 2010 Population Census. The sample consists of residents aged 16–59 living in townships within 18 km of the reconstructed boundary implemented during the Great Clearance. A small number of irregular administrative units whose detached territories prevent a single spatial assignment are excluded before forming the sample. *Coastal Side* equals one for individuals residing in townships on the coastal, formerly cleared side of the boundary and zero for individuals residing on the inland side. Clearance status and signed distance to the boundary are assigned at the township level. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Years of schooling are constructed from the highest level of education reported in the Census: no schooling is assigned 0 years, primary school 6 years, junior middle school 9 years, senior middle school 12 years, college diploma 15 years, university degree 16 years, and graduate education 19 years. Agricultural employment is defined for respondents with a reported industry code and includes agriculture, forestry, animal husbandry, sideline production, and fishery. *Currently working* equals one when the respondent reports currently working. *Weekly work hours* measures hours worked during the preceding week and is transformed using the inverse hyperbolic sine. *Labor income as main source* equals one when the respondent identifies labor income as the principal source of livelihood. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Clan Organization and Surname Concentration

Panel A. Contemporary Clan Infrastructure

	Number of ancestral halls	IHS number of ancestral halls	Any ancestral hall	Halls per 1,000 residents
Coastal Side	0.162**	0.130**	0.130**	0.004**
	(0.077)	(0.061)	(0.065)	(0.002)
Mean dep. var. (inland side)	0.069	0.056	0.057	0.002
Observations	399	399	399	370
R-squared	0.128	0.142	0.156	0.114

Panel B. Catalogued Genealogies

	Any catalogued genealogy	IHS number of catalogue records	Catalogue-defined clan concentration
Coastal Side	0.013	-0.136	0.030**
	(0.071)	(0.321)	(0.013)
Mean dep. var. (inland side)	0.063	0.235	0.011
Observations	399	399	399
R-squared	0.067	0.069	0.055

Panel C. Surname Concentration among Registered Business Representatives

	Adjusted surname concentration	Top-1 surname share	Top-3 surname share
Coastal Side	0.040***	0.065***	0.070***
	(0.013)	(0.020)	(0.025)
Mean dep. var. (inland side)	0.069	0.162	0.350
Observations	387	387	387
R-squared	0.437	0.436	0.555

Notes: This table reports township-level estimates of contemporary clan organization and surname concentration among registered business representatives. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the reconstructed Great Clearance boundary and zero for townships on the inland side. The sample consists of townships within 18 km of the boundary. A small number of irregular administrative units with detached territories are excluded because they cannot be assigned informatively to a single side of the boundary. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Panel A uses geocoded records of ancestral halls (*zongci*) and reports their number, presence, and prevalence per 1,000 residents. Panel B uses catalogued genealogies from the Shanghai Library Chinese Genealogy Knowledge Service Platform. Catalogue entries are assigned to catalogue-defined clans using their recorded surnames, ancestral origins, and clan designations. Entries sharing a surname but recording different ancestral origins or descent traditions are treated as belonging to different clans. The panel reports the presence and number of catalogue records and their concentration across catalogue-defined clans. Panel C uses the surnames of registered representatives of individual businesses recorded between 2000 and 2018. Each representative is counted once within a township, and the sample is restricted to townships with at least 20 valid representatives. The outcomes measure overall surname concentration and the shares of representatives accounted for by the most common surname and the three most common surnames. The mean row reports the inland-side mean of the dependent variable in the corresponding estimation sample. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Family, Place, and Relationship-Specific Trust

Panel A. Local Rootedness and Reliance on Relatives

	Local household registration	Never left registered locality	Reliance on relatives for support
Coastal Side	0.140***	0.152***	0.055**
	(0.053)	(0.047)	(0.026)
Mean dep. var. (inland side)	0.537	0.478	0.838
Observations	42,595	42,574	10,563
R-squared	0.185	0.151	0.025

Panel B. Family Relations and Relationship-Specific Trust

	Family discord	Trust in relatives	Trust in teachers and doctors
Coastal Side	-0.068***	0.288***	0.524***
	(0.011)	(0.006)	(0.063)
Webb p-value	0.079	0.056	0.062
Mean dep. var. (inland side)	0.057	0.971	0.738
Observations	133	132	128
R-squared	0.044	0.067	0.070

Panel C. Public and Market Trust and Informal Procedures

	Trust in public authority	Trust in business people	Business-license connections
Coastal Side	-0.662**	-0.677***	0.716***
	(0.202)	(0.041)	(0.144)
Webb p-value	0.039	0.082	0.050
Mean dep. var. (inland side)	0.509	0.281	0.229
Observations	102	126	132
R-squared	0.062	0.055	0.106

Notes: Panel A uses residents aged 16–59 in the one-percent micro sample of the 2010 Population Census. Panels B and C use respondents aged 16–59 in the 2015 Chinese Social Survey. *Coastal Side* equals one for observations assigned to the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for observations assigned to the inland side. Clearance status and signed distance are assigned at the township level. In Panel A, local household registration equals one when an individual's household registration is located within the county of residence. Never left registered locality equals one when the respondent reports never having left the registered locality. Reliance on relatives for support is defined among individuals whose principal livelihood does not come from labor earnings. In Panels B and C, family discord equals one when a respondent reports serious family conflict during the preceding twelve months. Trust outcomes equal one for responses of "quite trusting" or "very trusting" and zero for lower-trust responses; "hard to say" responses are treated as missing. Trust in teachers and doctors equals one when the respondent reports high trust in both groups. Public authority combines trust in the police, judges, and Party or government cadres. Business-license connections equals one when the respondent favors using personal connections to obtain a business license rather than waiting until the formal requirements have been met. All regressions use observations within 18 km of the implemented boundary, include separate linear functions of signed distance on the two sides, and include fixed effects for the boundary segments represented in the estimation sample. The mean row reports the inland-side mean in each column's estimation sample. Township-clustered standard errors are reported in parentheses. For the CSS outcomes in Panels B and C, Webb wild-cluster-bootstrap p-values are reported as a small-cluster sensitivity check (Webb, 2014; Roodman et al., 2019). Significance symbols are based on the conventional township-clustered standard errors, not on the Webb p-values. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Firm Organization and Localized Exchange

Panel A. Registered Organizational Form

	Limited-liability or shareholding firm	Private firm
Coastal Side	-0.055**	0.056**
	(0.024)	(0.027)
Mean dep. var. (inland side)	0.352	0.242
Observations	113,146	113,146
R-squared	0.080	0.048

Panel B. Geographic Scale of Procurement

	Same-county supplier	Same-town supplier	Contract amount (IHS)
Cleared buyer × cleared supplier	-0.004	0.170***	0.180**
	(0.033)	(0.065)	(0.090)
Mean dep. var. (both inland)	0.423	0.163	1.666
Observations	77,910	77,910	77,671
R-squared	0.644	0.393	0.282

Panel C. Same-Town Matching by Contract Type

	Standardized goods	Consulting services	Construction projects
Cleared buyer × cleared supplier	0.198**	0.178**	0.092*
	(0.081)	(0.073)	(0.052)
Mean dep. var. (both inland)	0.169	0.164	0.154
Observations	31,352	10,924	5,120
R-squared	0.429	0.344	0.429

Notes: Panel A uses enterprise-year observations for Fujian firms in the national enterprise tax survey from 2007 to 2016. The dependent variables identify limited-liability or shareholding registration (codes 150, 151, 159, and 160) and private-enterprise registration (codes 170–174), respectively. *Coastal Side* equals one for enterprises located in townships on the coastal, formerly cleared side of the reconstructed Great Clearance boundary and zero for enterprises on the inland side. The regressions use the 18 km sample and include separate linear functions of signed distance on the two sides of the boundary, fixed effects for the 40 equal-length boundary segments, and year fixed effects. Standard errors are clustered by township. Panels B and C use government-procurement contracts from 2017 to 2025 for which both the buyer and supplier are located in sample townships within 18 km of the boundary. The reported coefficient is the interaction between cleared-side buyer and supplier indicators, conditional on their corresponding main effects. These regressions include separate distance functions and boundary-segment fixed effects for the buyer and supplier, year fixed effects, and buyer–supplier distance. Standard errors are clustered by buyer township. In Panel B, same-county and same-town matching indicate that the buyer and supplier share the corresponding administrative code; contract amount is measured in 10,000 yuan and transformed using the inverse hyperbolic sine. Panel C reports same-town matching separately by contract type. The mean rows report the inland-side mean in Panel A and the mean among contracts with both endpoints on the inland side in Panels B and C. A small number of irregular administrative units with detached territories are excluded from both samples. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Observable Implications of Alternative Explanations

Panel A. Industrial Parks

	Any industrial park	Industrial parks per 10,000 residents (IHS)
Coastal Side	0.083	0.108
	(0.112)	(0.133)
Mean dep. var. (inland side)	0.654	0.555
Observations	399	370
R-squared	0.217	0.292

Panel B. Communications Infrastructure

	Cell-phone base stations, excluding 5G (IHS)	Base stations per 10,000, excluding 5G (IHS)
Coastal Side	-0.132	-0.268
	(0.430)	(0.296)
Mean dep. var. (inland side)	2.680	1.811
Observations	399	370
R-squared	0.392	0.463

Panel C. Household Amenities

	Piped water	Kitchen	Flush toilet	Bathing facility	Gas cooking
Coastal Side	-0.060	-0.004	-0.030	0.020	-0.050
	(0.037)	(0.036)	(0.040)	(0.023)	(0.040)
Mean dep. var. (inland side)	0.851	0.840	0.790	0.883	0.638
Observations	42,502	42,502	42,502	42,502	42,502
R-squared	0.136	0.053	0.033	0.020	0.107

Panel D. Recorded Crime

	Crime count	Crime per 10,000 residents
Coastal Side	-48.898**	-8.808***
	(23.338)	(2.815)
Mean dep. var. (inland side)	58.409	10.028
Observations	399	370
R-squared	0.213	0.201

Notes: Panels A, B, and D report township-level estimates, while Panel C reports individual-level estimates using residents aged 16–59 from the one-percent micro sample of the 2010 Population Census. The sample is restricted to townships located within 18 km of the reconstructed Great Clearance boundary. A small number of irregular administrative units whose detached territories prevent an informative single spatial assignment are excluded. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the boundary and zero for townships on the inland side. In Panel C, clearance status and signed distance are assigned according to the individual's township of residence. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Standard errors clustered by township are reported in parentheses. Panel A reports whether a township contains an industrial park and the inverse hyperbolic sine of the number of industrial parks per 10,000 residents. Panel B reports the inverse hyperbolic sine of the number of cell-phone base stations excluding 5G, both in total and per 10,000 residents. Panel C reports binary indicators for whether the individual's household has access to piped water, a kitchen, a flush toilet, bathing facilities, and gas as its primary cooking fuel. Panel D reports the number of recorded crimes and the number per 10,000 residents. Per-capita outcomes use average township population across the 2000, 2010, and 2020 censuses. The mean row reports the inland-side mean of the dependent variable in the corresponding estimation sample. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The Long Shadow of Forced Clearance: State Violence, Kinship, and Persistent Underdevelopment

Online Appendix

Yiming Cao Kun Ma Kewei Zhang

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A Historical Sources and Boundary Reconstruction

A.1 Chronology of the Great Clearance and Coastal Reopening

The Great Clearance formed part of the prolonged conflict between the Qing state and the Zheng regime rather than an isolated population policy. Figure A.1 fixes the sequence relevant to the paper: the dynastic conflict began in 1644, the clearance order initiated forced coastal evacuation in 1661, the Zheng regime consolidated its position in Taiwan in 1662, and the Qing conquest of Taiwan in 1683 removed the principal military rationale for the policy. Broad reopening followed in 1684. This sequence separates the temporary period of forced clearance from the subsequent reconstruction of coastal communities.

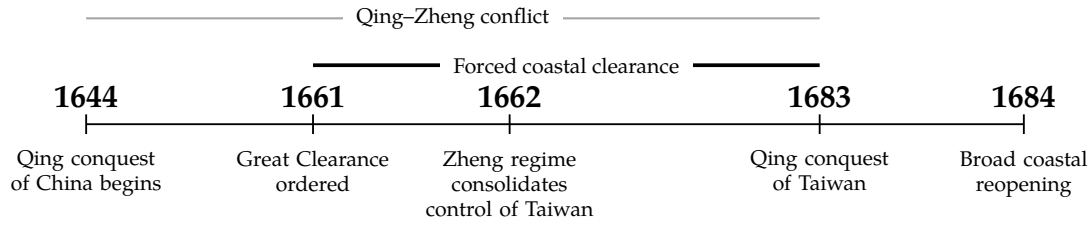


Figure A.1: Timeline of the Great Clearance and Coastal Reopening

Notes: This figure summarizes the principal events defining the historical setting and the period of clearance exposure. The gray upper line denotes the broader Qing–Zheng conflict, beginning with the Qing conquest in 1644 and ending with the Qing conquest of Taiwan in 1683. The black segment denotes the main period during which forced coastal clearance remained in effect. In 1661, the Qing central government ordered residents along the southeastern coast to move inland as part of its campaign to sever the Zheng regime's mainland supply network. The Zheng regime consolidated control of Taiwan in 1662 and continued to confront the Qing from across the Taiwan Strait. The Qing conquest of Taiwan in 1683 removed the principal military basis for the clearance, and broad coastal reopening followed in 1684. Reopening ended the formal restriction but initiated the separate process of return, property recovery, and local reconstruction examined in the remaining historical evidence. The timeline is schematic; horizontal spacing represents the sequence of events and is not proportional to elapsed time. Sources: Struve (1988, pp. 641–725) for the Qing conquest and southern resistance; Gu (1983, pp. 62–66) for the 1661 clearance order and its enforcement; Tan (2010) for the Zheng regime in Taiwan and the Qing conquest of the island; and Liu (2013, pp. 35–38) for the termination of the restrictions and coastal reopening.

A.2 Historical Map Evidence for the Implemented Boundary

The chronology establishes the period of clearance, but the empirical analysis also requires the spatial boundary implemented along the Fujian coast. We reconstruct this line primarily from the plate "Coastal Clearance in the First Year of the Kangxi Reign" in the 2004 *Historical Atlas of Fujian Province*. The plate depicts the cleared coastal zone relative to named settlements and recognizable landmarks. Historical accounts provide corresponding descriptions of the places through which the boundary passed. Figure A.2 places the historical map layer against modern township geography and shows the continuous boundary trace reconstructed from this evidence. Whereas Figure 2 reproduces the underlying historical source, this figure provides the visual link between that source and the implemented boundary mapped in Figure 1.



Figure A.2: Historical Atlas Evidence and the Reconstructed Implemented Boundary

Notes: This figure overlays the historical map evidence on modern township geography. The colored historical layer reproduces the plate "Coastal Clearance in the First Year of the Kangxi Reign" from the *Fujian Sheng Lishi Dituji* [*Historical Atlas of Fujian Province*], compiled by the Fujian Provincial Local Gazetteer Compilation Committee and published in Fuzhou by Fujian Map Publishing House in 2004 (Fujian Provincial Local Gazetteer Compilation Committee, 2004). The gray outlines in the background show modern township boundaries. The thick red trace follows the inland edge of the cleared coastal zone depicted in the historical plate and represents the reconstructed locally implemented boundary. The inset photographs show local sites associated with the mapped boundary. Named settlements and landmarks in the atlas are compared with corresponding descriptions in Du Zhen's *Yuemin xunshi jilue*, juan 4, pp. 1035–1066, and in the local historical evidence assembled by Ye (2015, pp. 116–124). The resulting trace is the implemented boundary shown without the historical layer in Figure 1.

The atlas provides a continuous representation of the implemented line. Surviving boundary markers provide a different form of evidence: they show how the clearance order was physically recorded and recognized at particular locations along the Fujian coast.

A.3 Local Corroboration of Boundary Implementation

Historical maps and textual accounts describe the course of the implemented boundary across the province. Local boundary markers provide place-specific material evidence of its enforcement. Figure A.3 presents two surviving examples from Yunxiao and Fuqing counties. Their inscriptions explicitly associate the marked locations with the imperial clearance order, corroborating that the general policy was translated into locally recognizable boundaries.



Panel A. Yunxiao County: *Zhi feng qianjie* Panel B. Fuqing County: *Fengzhi qianjie*

Figure A.3: Local Boundary-Marker Evidence

Notes: Panel A shows a surviving marker from Yunxiao County bearing the four-character inscription *Zhi feng qianjie*, meaning "clearance by imperial order." Panel B shows a marker bearing the inscription *Fengzhi qianjie*, which carries the same meaning. The latter was discovered in January 2022 along the old route from Humei Village to Longwo Temple in Chengtou Town, Fuqing County. The Fuqing marker measures 106 centimeters in length and 28 centimeters in width. Staff of the Fuqing Municipal Museum removed it from the site for preservation in the Fuqing Overseas Chinese Museum. These examples, found in two different parts of coastal Fujian, provide material evidence that the clearance order was marked at identifiable local sites. The markers now survive as historical artifacts rather than functioning administrative boundaries. Source for Panel B: Fuqing Municipal Museum; discovery information reported by Fuzhou News Network on January 13, 2022.

Figures A.1–A.3 establish the clearance chronology, the course of the implemented boundary, and local physical evidence of enforcement. The remaining subsections organize documentary evidence on the policy, subsequent disruption and reconstruction, and the relationship between the central government's thirty-*li* rule and local im-

plementation.

A.4 Historical Exposure, Disruption, and Reconstruction

The preceding figures establish the timing and spatial implementation of the Great Clearance. This subsection turns to the substance of the historical treatment and the reconstruction problem that followed reopening. Table A.1 summarizes the principal components of the clearance regime. Table A.2 then organizes the evidence on material destruction, displacement, return, and organizational reconstruction. Concise surviving formulations are reproduced in the original language together with the authors' English translations.

Table A.1: Historical Evidence on the Clearance Regime

Policy dimension	Selected source evidence	English rendering and relevance	Source and locator
Strategic objective	Policy accounts describe restrictions on food, timber, iron, vessels, and other supplies that could sustain the Zheng regime from the mainland.	The clearance sought to sever the Zheng regime's access to mainland supplies, information, and commercial contacts, rather than merely to regulate ordinary coastal migration.	Gu (1983, pp. 62–64).
General relocation rule	"离海三十里，村社田宅悉焚弃。"	"Villages, fields, and houses within thirty *li* of the sea were all burned or abandoned." The formulation combines the general spatial benchmark with the removal of population and assets from the coastal zone.	Gu (1983, pp. 62–65); see also Zheng (2022, pp. 39–42).
Enforced military boundary	Inspection records describe boundary ditches, walls, barriers, beacon towers, garrisons, and troops stationed along portions of the line.	The boundary operated as an enforced military frontier separating the evacuated coastal zone from the inhabited inland side.	Du Zhen, *Yuemin xunshi jilue*, juan 4, Siku edition, pp. 1035–1066; Ye (2015, pp. 116–124).
Restrictions seaward of the line	"寸板不许下海，界外不许闲行，出界以违旨立杀。"	"Not a single plank was permitted to go to sea; movement beyond the boundary was prohibited; unauthorized crossing was punishable by immediate execution." Residence, cultivation, trade, navigation, and movement within the cleared region were therefore subject to coercive enforcement.	Gu (1983, pp. 64–66); Liu (2013, pp. 13–14); Zheng (2022, pp. 42–44).

Notes: This table summarizes the historical evidence defining the Great Clearance as a combination of forced relocation, destruction, restrictions on coastal activity, and military enforcement. Original-language excerpts are reproduced where the sources provide concise descriptions of the policy. English renderings are the authors' translations.

Table A.2: Disruption and Reconstruction after Reopening

Historical margin	Selected source evidence	English rendering and relevance	Source and locator
Panel A. Destruction and Displacement			
Destroyed settlements and abandoned land	“离海三十里，村社田宅悉焚弃。”	“Villages, fields, and houses within thirty *li* of the sea were all burned or abandoned.” Local records likewise describe demolished houses and fields left uncultivated during the clearance.	Gu (1983, pp. 64–65), citing *Changle Fuqing fujie tuji* and *Pubian jishi*.
Loss of collective property and dispersal	“祖祠焚毁，屋舍丘墟，而坟墓亦复凄然。族人分散各处，不可胜纪。”	“The ancestral hall was burned, houses were reduced to ruins, and the graves were left desolate. Clan members dispersed to places too numerous to record.” The account records the simultaneous destruction of housing, ritual property, and the dispersal of clan members.	Zheng (2017, p. 263), transcribing *Nanyu Chenshi zupu*, fourth-revision manuscript, 1985, fols. 8b–9b, Dongshan County Library, K820.9/N17.
Land abandonment and interrupted production	Inspection and gazetteer records describe uncultivated fields and disrupted coastal production following evacuation.	The clearance removed labor and productive activity from the coastal zone, leaving returnees to restore fields, housing, and local economic life after reopening.	Fan Chengmo, “Tiaochen Minsheng lihai shu,” in *Qingchao jingshiwen zheng xubian*, vol. 2, juan 84 (2011), p. 284; Lin and Chen (1700, juan 8, p. 11).
Panel B. Reopening and Organizational Reconstruction			
Coastal reopening	After the Qing conquest of Taiwan, the state authorized return to the coastal settlements, although the timing and implementation of reopening varied across localities.	Reopening removed the formal prohibition on return but did not itself restore destroyed property, displaced populations, or local institutions.	Du Zhen, *Yuemin xunshi jilue*, part I, juan 1, fols. 2 and 7; Liu (2013, pp. 35–38).

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Table A.2: Disruption and Reconstruction after Reopening, continued

Historical margin	Selected source evidence	English rendering and relevance	Source and locator
Incomplete return and reassembly	“族人复鸠集铜山，止略过半。”	“Clan members again assembled at Tongshan, but only slightly more than half returned.” Return therefore required the identification and reassembly of surviving members rather than the simple resumption of a fully preserved community.	Zheng (2017, p. 263), transcribing *Nanyu Chenshi zupu*, fourth-revision manuscript, 1985, fols. 8b–9b, Dongshan County Library, K820.9/N17.
Property claims and encroachment	Gazetteers and local records describe uncertain field boundaries, occupied house sites, disputed graves, and competing claims over communal property after prolonged absence.	Returning households required information about prior possession and collective capacity to defend or adjudicate property claims.	Lin and Chen (1700, juan 8, p. 6); Zheng (2016, pp. 35–42).
Reconstruction of collective property	Local records describe the rebuilding of ancestral halls, the restoration of genealogies, and the recovery or re-establishment of communal assets.	Reconstruction required pooled labor, finance, historical knowledge, and rules governing common property.	Zheng (2017, p. 263), transcribing *Nanyu Chenshi zupu*, fourth-revision manuscript, 1985, fols. 8b–9b, Dongshan County Library, K820.9/N17.
Collective coordination	A 1706 agreement from Hongjiang records collective arrangements used to resolve claims and coordinate reconstruction after reopening.	The case illustrates how existing organizations could mobilize members, enforce agreements, and reconstruct local institutions.	Zheng (2017, p. 262).

Notes: Panel A presents historical evidence on the material and organizational disruption created by the clearance. Panel B presents evidence on return, property claims, and the reconstruction of settlement and collective institutions after reopening. The original excerpts describe particular localities and are not interpreted as province-wide aggregates. English renderings are the authors’ translations.

The historical evidence shows that reopening changed the problem faced by coastal communities rather than simply reversing the clearance order. Returnees had to recover property, reconnect dispersed members, and reconstruct shared assets and local institutions. These tasks created a particular role for organizations capable of preserving information, mobilizing resources, and coordinating collective claims.

A.5 From the Qing Central Government's Thirty-*Li* Rule to the Implemented Boundary

The Qing central government expressed the intended inland reach of the evacuation through a general thirty-*li* benchmark. Local implementation translated this general rule into a boundary that followed identifiable settlements, routes, and landmarks along Fujian's irregular coast. Table A.3 distinguishes the general rule from its local implementation and summarizes the sources used to reconstruct the implemented line.

Table A.3: The Central Rule, Local Implementation, and Boundary Sources

Rule, implementation margin, or source	What the evidence records	Use in the analysis	Source and locator
Panel A. General Rule and Local Implementation			
Central-government rule	The intended reach of the coastal evacuation was commonly expressed as thirty *li* inland from the coastline.	Defines the general rule used to construct rule-based assignment, rather than the locally implemented treatment boundary.	Gu (1983, pp. 62–64); Zheng (2022, pp. 39–42).
Coastal geography	Peninsulas, bays, islands, harbors, river mouths, routes, and the distribution of settlements complicated point-by-point application of a uniform coastal distance.	Explains why equal distance from the coastline need not imply equal placement relative to the boundary enforced locally.	Du Zhen, *Yuemin xunshi jilue*, juan 4, Siku edition, pp. 1035–1066; Ye (2015, pp. 116–124).
Administrative implementation	Provincial and local officials translated the general benchmark into a boundary that could be identified, marked, guarded, and enforced in particular localities.	Establishes the implemented line as the measure of historical exposure in the baseline boundary design.	Du Zhen, *Yuemin xunshi jilue*, juan 4, Siku edition, pp. 1035–1066; Ye (2015, pp. 116–124).
Panel B. Sources Used to Locate the Implemented Boundary			
Historical atlas	The plate "Coastal Clearance in the First Year of the Kangxi Reign" depicts the cleared coastal zone and its inland boundary.	Provides the principal continuous spatial source for the reconstructed line.	Fujian Provincial Local Gazetteer Compilation Committee (2004).

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Table A.3: The Central Rule, Local Implementation, and Boundary Sources, continued

Rule, implementation margin, or source	**What the evidence records**	**Use in the analysis**	**Source and locator**
Textual and local accounts	Inspection records and local histories identify named settlements, routes, and recognizable landmarks through which the boundary passed.	Provide place-specific checks on corresponding portions of the atlas boundary.	Du Zhen, *Yuemin xunshi jilue*, juan 4, Siku edition, pp. 1035–1066; Ye (2015, pp. 116–124).
Local boundary markers	Surviving markers in Yunxiao and Fuqing bear inscriptions associating their locations with the imperial clearance order.	Provide physical corroboration of implementation at identifiable local sites.	Figure A.3.
Reconstructed implemented line	The atlas trace and corresponding place-based evidence are combined into the continuous line shown in Figures A.2 and 1.	Defines clearance status and signed distance in the baseline spatial discontinuity design.	Figures A.2 and 1.

Notes: This table distinguishes the Qing central government's general thirty-*li* rule from the boundary implemented along the Fujian coast. The baseline design follows the reconstructed implemented boundary. The rule-based specification applies the thirty-*li* principle uniformly to the historical coastline, using the paper's eighteen-kilometer operationalization, to predict implemented clearance.

The historical atlas, textual accounts, and surviving local markers jointly identify the boundary implemented during the clearance. Appendix B begins from this reconstructed line and describes township assignment, signed distance, boundary segmentation, and construction of the baseline estimation sample.

B Data Sources and Variable Construction

This appendix describes how the reconstructed implemented boundary is mapped onto modern townships, how treatment status and distance to the boundary are constructed, and how the principal outcome datasets are harmonized to the resulting analysis geography.

B.1 Township Sample and Treatment Assignment

Figure B.1 displays the modern township geography surrounding the reconstructed implemented boundary. It provides the spatial link between the historical boundary documented in Appendix A and the township-level treatment assignment used in the empirical analysis.

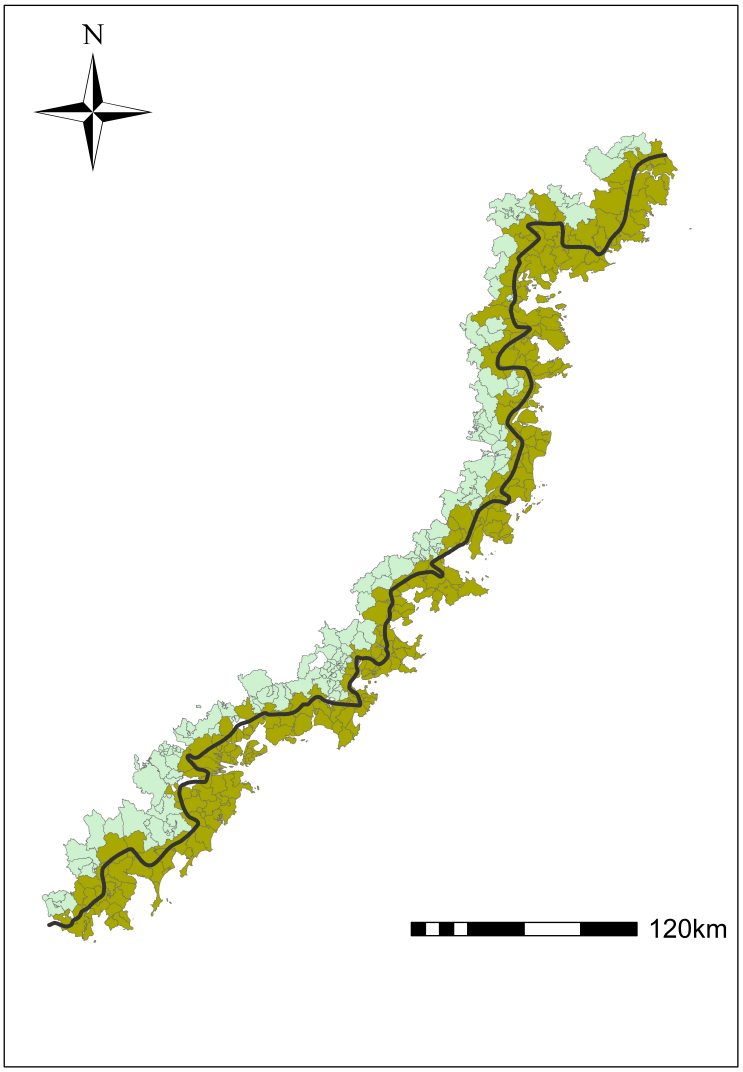


Figure B.1: Township Sample and Treatment Assignment

Notes: This figure displays the township sample used in the empirical analysis. The thick dark line denotes the boundary implemented during the Great Clearance. Township polygons are distinguished according to whether they lie on the coastal, formerly cleared side or on the adjoining inland side of the boundary. The displayed sample consists of townships located within 18 km of the implemented boundary. Table B.1 formally defines treatment status and signed distance, describes the treatment assignment for townships intersected by the boundary, and summarizes the alternative grid-cell samples used in the robustness analysis.

The assignment procedure produces a local comparison between townships on the formerly cleared coastal side and geographically proximate townships on the inland side. The 18 km analysis window in Figure B.1 is measured from the implemented boundary. It is distinct from the eighteen-kilometer coastal zone used to operationalize the Qing central government's general thirty-*li* rule in the rule-based assignment exercise.

Table B.1 formalizes the construction of township treatment status, signed distance, and boundary-segment assignment. The treatment indicator is determined by the township polygon's position relative to the implemented boundary, whereas the township center point is used to construct distance and associate each township with a local portion of the boundary.

Table B.1: Township Treatment Assignment and Boundary Distance

Component	**Construction**	**Use in the analysis**
Implemented boundary	The reconstructed GIS polyline marks the inland limit of the coastal region evacuated during the Great Clearance.	Boundary for township assignment and distance measurement.
Clearance status	Township polygons on the coastal side of the implemented boundary, including polygons intersected by the line, are classified as formerly cleared. Polygons lying wholly inland form the comparison group.	Treatment indicator $Cleared_i$, reported as *Coastal Side* in the tables.
Township center point	A center point is calculated for each township polygon. It is used for proximity calculations but does not determine clearance status.	Reference location for distance and segment assignment.
Signed distance	Geodesic distance is measured from the township center point to the nearest point on the implemented boundary. It is positive on the formerly cleared side and negative inland.	Running variable D_i in Equation 1.
Boundary segment	The implemented boundary is divided into 40 equal-length segments. Each township is associated with the segment containing its nearest point on the line.	Boundary-segment fixed effect α_b.
Baseline analysis window	The sample retains townships whose center points lie within 18 km of the implemented boundary.	Preferred sample of 399 townships: 240 formerly cleared and 159 inland.

Notes: This table describes the construction of the baseline township design illustrated in Figure B.1. Treatment status follows the township polygon's position relative to the implemented boundary; the township center point is used only to measure distance and identify the nearest boundary segment. The 18 km analysis window around the implemented boundary is distinct from the eighteen-kilometer coastal zone used to operationalize the Qing central government's general thirty-*li* rule.

B.2 Rule-Based Assignment

The baseline design assigns historical exposure using the boundary implemented along the Fujian coast. As a complementary boundary-specification check, we construct rule-based assignment by applying the Qing central government's general thirty-*li* benchmark uniformly to the historical coastline. Under the paper's operational conversion, this produces a coastal zone extending eighteen kilometers inland. Figure B.2 compares the inland edge of this rule-based zone with the reconstructed implemented boundary.

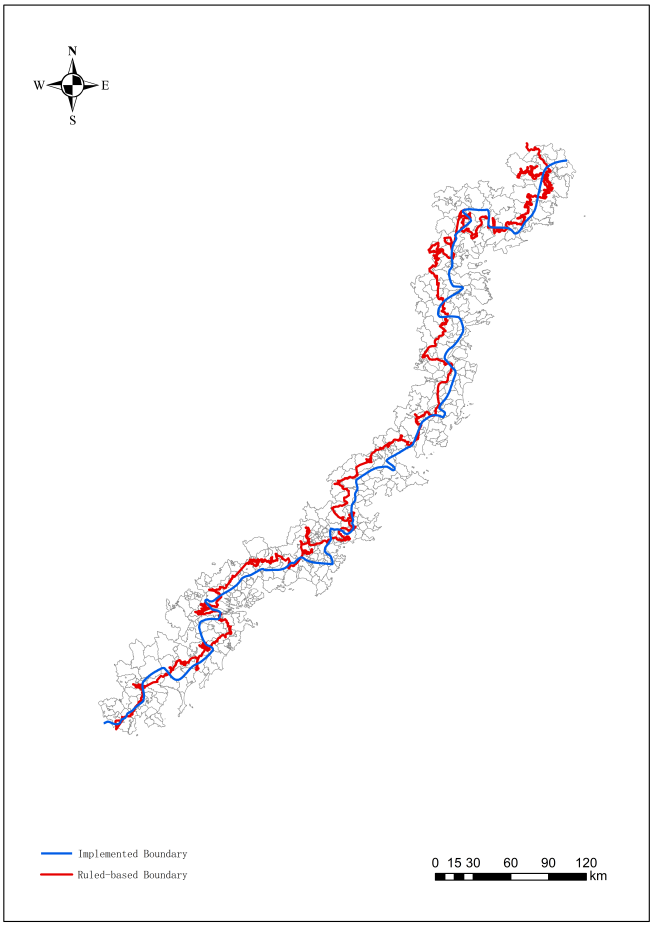


Figure B.2: Implemented and Rule-Based Clearance Boundaries

Notes: This figure compares the reconstructed boundary implemented along the Fujian coast with the boundary implied by a uniform application of the Qing central government's general thirty-*li* benchmark. The blue line denotes the implemented boundary reconstructed from the historical atlas, textual accounts, and local boundary evidence. The red line denotes the inland edge of the rule-based zone obtained by extending the historical coastline eighteen kilometers inland. Gray lines show modern township boundaries. The rule-based line is a constructed predictor of clearance rather than an alternative reconstruction of the boundary enforced locally. The baseline spatial-discontinuity design uses the implemented boundary. In the complementary instrumental-variable exercise, a township receives rule-based assignment when its center point lies within the eighteen-kilometer coastal zone.

The two boundaries follow the same broad coastal corridor but diverge in particular localities because officials translated the central benchmark into a line that could be identified, marked, guarded, and enforced on the ground. The instrumental-variable specification uses rule-based assignment to predict implemented clearance within the baseline township sample. The corresponding first-stage and two-stage least-squares estimates are reported in Table 4.

B.3 Baseline Sample Composition

Table B.2 reports the composition of the township sample across the bandwidths used in the analysis. It also summarizes the number of township polygons intersected by the implemented boundary and the corresponding samples obtained when these polygons are excluded.

Table B.2: Township Sample Composition across Alternative Bandwidths

	Bandwidth around the implemented boundary				
	10 km	15 km	**18 km**	20 km	25 km
Panel A. Township Sample Composition					
Total townships	267	345	**399**	438	487
Formerly cleared side	184	217	**240**	246	259
Inland side	83	128	**159**	192	228
Boundary segments represented	40	40	**40**	40	40
Counties represented	32	42	**44**	45	48
Panel B. Township Polygons Intersected by the Boundary					
Boundary-intersected townships	127	128	**128**	128	128
Share of bandwidth sample (%)	47.6	37.1	**32.1**	29.2	26.3
Sample excluding intersected townships	140	217	**271**	310	359

Notes: This table reports the composition of the township sample across symmetric bandwidths around the implemented Great Clearance boundary. Bandwidth is defined by the absolute geodesic distance from the township center point to the nearest point on the implemented boundary. Panel A reports the total number of townships, assignments to the formerly cleared and inland sides, represented boundary segments, and counties. Panel B reports ordinary continuous township polygons intersected by the implemented boundary. These townships are retained and assigned to the formerly cleared side in the baseline design. The final row reports the sample size obtained when intersected townships are excluded. The preferred 18 km sample is shown in bold.

B.4 Data Sources and Principal Variable Construction

Table B.3 summarizes the sources, coverage, spatial matching, and construction of the principal variables used in the analysis.

Table B.3: Data Sources and Principal Variable Construction

Data module	Source and period	Original unit	Spatial matching	Principal variable construction
Panel A. Development Outcomes				
Nighttime lights	Annual NPP–VIIRS-like nighttime-light series constructed by Chen et al. (2021), 2000–2018.	Raster cell.	Raster values are aggregated to townships and, in robustness specifications, to regular grid cells.	Annual light intensity is transformed using the inverse hyperbolic sine and winsorized at the 1st and 99th percentiles. The baseline outcome averages the resulting annual values over 2000–2018.
Population and settlement	Population from the 2000, 2010, and 2020 population censuses; impervious-surface records for 2000–2018.	Census geography and raster cell.	The three census rounds are harmonized to the analysis townships; impervious surface is aggregated within township polygons.	Total population is averaged across the three census years. Population density divides this average by township land area. Impervious-surface share is averaged over 2000–2018. Nighttime lights per capita normalize average light intensity by population.
Points of interest	Geocoded Amap point-of-interest records, 2017.	Geocoded location.	POIs are assigned to townships; access measures use the township reference point and the nearest facility.	Total and business POIs are expressed per 10,000 residents and transformed using the inverse hyperbolic sine. Access outcomes are the log distance in meters to the nearest hospital and bank.
Business registrations	Business-registration records, 2000–2018.	Registered business.	Records are assigned to townships and aggregated by township, registration year, firm type, and sector.	Annual registrations are expressed per 10,000 residents, years without registrations are retained as zeros, and annual values are averaged over 2000–2018 before applying the inverse hyperbolic sine. Sectoral outcomes use the industry recorded at registration.

Continued on next page

Table B.3: Data Sources and Principal Variable Construction, continued

Data module	Source and period	Original unit	Spatial matching	Principal variable construction
Education and employment	One-percent micro sample of the 2010 Population Census.	Individual.	Individuals are matched to their townships of residence; clearance status and distance are assigned at the township level.	The analysis uses residents aged 16–59. Education categories are converted into completed years of schooling. Agricultural employment is defined from reported industry codes. Weekly work hours are transformed using the inverse hyperbolic sine.
Rural Fixed Observation Points	Fujian Rural Fixed Observation Point survey, 2000–2015.	Household–year and individual–year observations.	Survey villages are geocoded and assigned clearance status, signed distance, and boundary segments according to their locations relative to the implemented boundary.	Household income and expenditure are winsorized at the 1st and 99th percentiles before applying the inverse hyperbolic sine transformation. Per capita measures divide household totals by rostered household size. Agricultural work is measured as the share of the year spent in agricultural activities.
Panel B. Clan Organization, Trust, and Exchange				
Ancestral halls	Geocoded ancestral-hall (*zongci*) records.	Ancestral hall.	Hall locations are assigned to townships.	The outcomes measure the number and presence of ancestral halls and the number of halls per 1,000 residents.
Catalogued genealogies	Shanghai Library Chinese Genealogy Knowledge Service Platform.	Catalogue entry.	Catalogue locations are matched to townships.	Each catalogue entry is counted once. Entries are grouped into clans using surname together with recorded ancestral origin and lineage designation. Outcomes measure presence, record counts, and the concentration of records across catalogue-defined clans.

Continued on next page

Table B.3: Data Sources and Principal Variable Construction, continued

Data module	Source and period	Original unit	Spatial matching	Principal variable construction
Business surnames	Legal representatives of individual businesses in the 2000–2018 business-registration records.	Registered representative.	Representatives are assigned to the township of registration and counted once within each township.	The analysis uses townships with at least 20 valid representatives. Outcomes measure overall surname concentration and the shares accounted for by the most common surname and the three most common surnames.
Family and trust	Chinese Social Survey, 2015.	Individual respondent.	Respondents are matched to nine sample townships; clearance status and distance are assigned at the township level.	Trust indicators equal one for "quite trusting" or "very trusting." Additional outcomes measure family discord and support for using personal connections in the business-license scenario.
Local rootedness	One-percent micro sample of the 2010 Population Census.	Individual.	Individuals are matched to their townships of residence.	Outcomes indicate household registration within the current county, never having left the place of registration, and reliance on other family members among individuals whose principal livelihood is not labor earnings.
Firm organization	National enterprise tax survey for Fujian firms, 2007–2016.	Enterprise–year.	Enterprises are matched to the township of registration.	Official registration-form indicators identify limited-liability or shareholding enterprises using codes 150, 151, 159, and 160, and private enterprises using codes 170–174.
Government procurement	Deduplicated contract announcements from the China Government Procurement Network, 2017–2025.	Procurement contract.	Public buyers and suppliers are separately geocoded to townships.	Outcomes indicate same-county and same-town matching and the inverse hyperbolic sine of contract amount. Contract types are identified from contract titles and principal-item descriptions. The main regressor interacts buyer and supplier clearance status.

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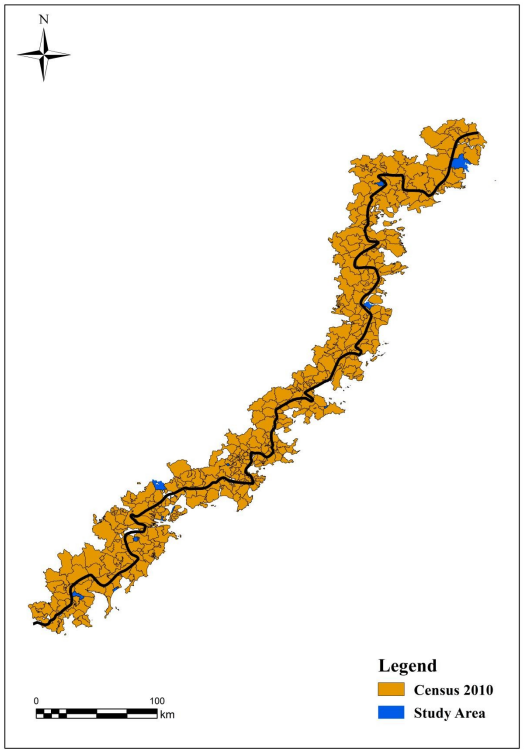
Table B.3: Data Sources and Principal Variable Construction, continued

Data module	Source and period	Original unit	Spatial matching	Principal variable construction
Panel C. Modern Alternative Explanations				
Industrial parks	Geocoded industrial-park records.	Industrial park.	Park locations are assigned to townships.	Outcomes measure whether a township contains an industrial park and the inverse hyperbolic sine of industrial parks per 10,000 residents.
Communications infrastructure	Geocoded cell-phone base-station records.	Base station.	Base stations are assigned to townships.	Outcomes measure the inverse hyperbolic sine of non-5G base-station counts and non-5G stations per 10,000 residents.
Household amenities	One-percent micro sample of the 2010 Population Census.	Individual and household.	Household amenities are attached to sampled working-age individuals; clearance status is assigned at the township level.	Binary indicators measure piped water, access to a kitchen, a flush toilet, bathing facilities, and gas as the principal cooking fuel.
Recorded crime	Township-level administrative crime records.	Recorded incident.	Crime records are aggregated to townships.	Outcomes measure recorded crime counts and recorded crimes per 10,000 residents.

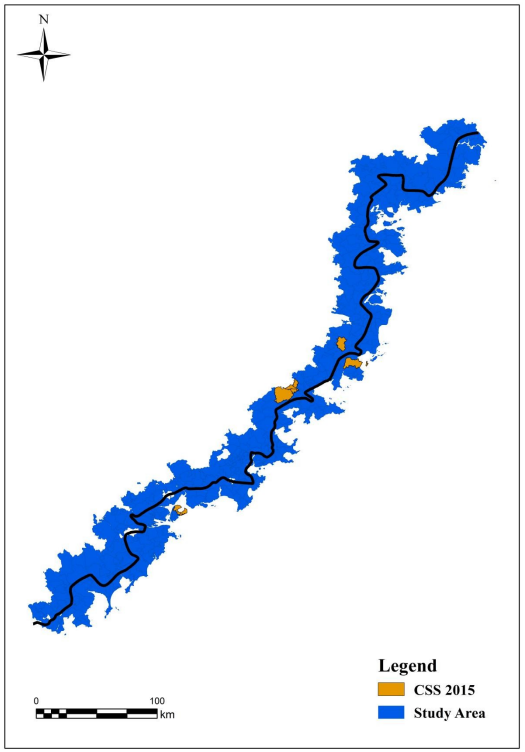
Notes: This table summarizes the data sources and construction of the principal variables used in the paper. Geocoded records and raster data are assigned or aggregated to the township geography described in Figure B.1 and Table B.1. Individual, enterprise, and transaction records retain their original observation units, while clearance status and distance are assigned from the corresponding township locations. Exact estimation samples and observation counts are reported in the respective tables.

B.5 Spatial Coverage of Supplementary Microdata

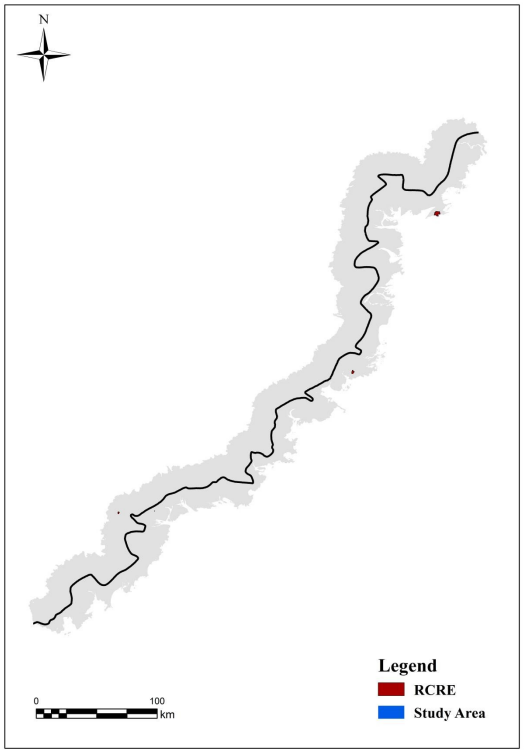
Figure B.3 displays the geographic coverage of the three microdata sources used in the individual-, household-, and village-level analyses.



Panel A. 2010 Population Census



Panel B. 2015 Chinese Social Survey



Panel C. Rural Fixed Observation Points

Figure B.3: Spatial Coverage of Supplementary Microdata

Notes: This figure displays the locations represented in the three supplementary microdata sources. Panel A shows the 2010 one-percent Population Census sample matched to the analysis townships. Panel B shows respondents from the 2015 Chinese Social Survey, covering nine sample townships. Panel C shows the villages represented in the Rural Fixed Observation Points data. These differences in geographic coverage determine the samples available for the corresponding individual-, household-, and village-level analyses.

B.6 Measurement and Coverage Checks

Table B.4 examines whether the completeness of the business-registration records changes at the implemented boundary.

Table B.4: Completeness of Business-Registration Records

Outcome	Mean dep. var. (inland side)	RD estimate	Std. error	Townships
Core registration fields complete	0.927	0.022	(0.029)	399
Business scope reported	0.932	0.022	(0.029)	399

Notes: This table reports township-level estimates using business-registration records from 2000–2018. *Core registration fields complete* is the share of records reporting both business scope and industry; *Business scope reported* is the share reporting business-scope information. The sample contains 399 townships within 18 km of the implemented Great Clearance boundary. All specifications include separate linear functions of signed distance on the two sides and fixed effects for the 40 equal-length boundary segments. The mean column reports the inland-side mean in the corresponding estimation sample. Standard errors clustered by township are reported in parentheses.

C Boundary Support and Predetermined Characteristics

This appendix examines the geographic support for the boundary comparison and the continuity of predetermined characteristics across the implemented Great Clearance boundary.

C.1 Sample Support at the Boundary

Figure C.1 displays the distribution of the baseline township sample by signed distance from the implemented boundary.

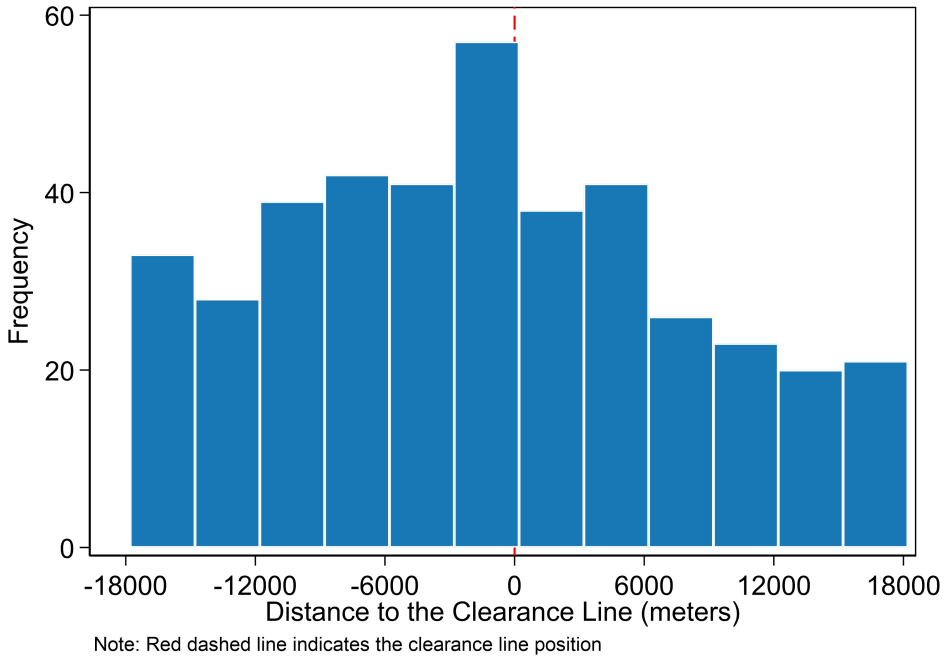


Figure C.1: Sample Support by Signed Distance

Notes: This figure reports the number of township center points within three-kilometer bins of signed distance from the implemented Great Clearance boundary. The sample contains 399 townships located within 18 km of the boundary. Negative distances denote the adjoining inland side, while positive distances denote the coastal, formerly cleared side. The red dashed line marks the implemented boundary. Township counts across alternative bandwidths are reported in Table B.2.

C.2 Predetermined Geography and Historical Infrastructure

Figure C.2 maps pre-clearance transportation and administrative infrastructure relative to the implemented Great Clearance boundary.

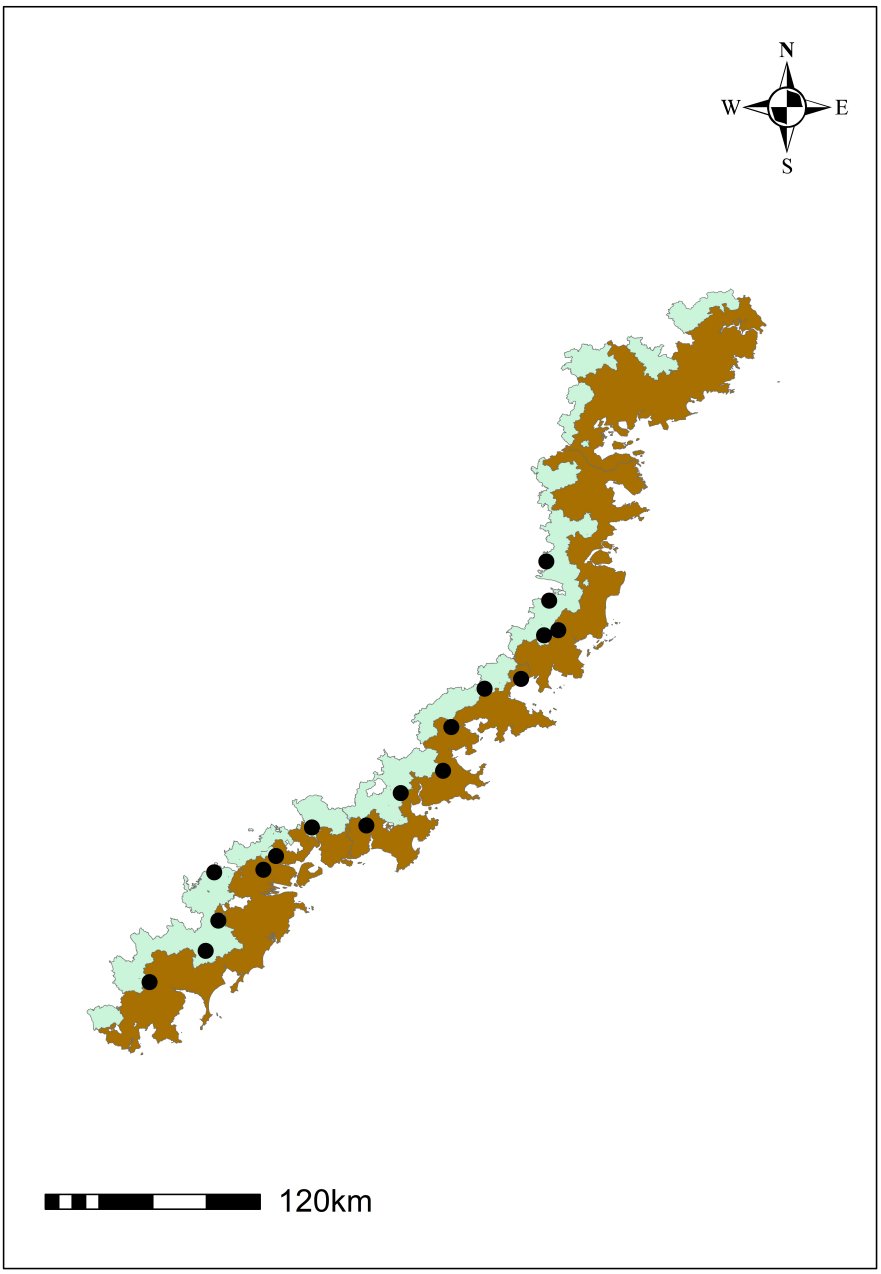
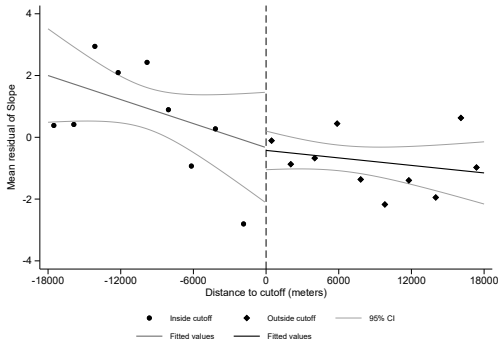


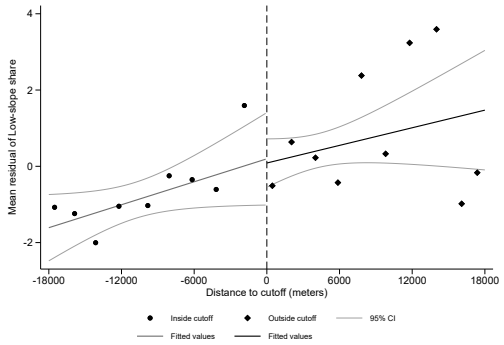
Figure C.2: Ming Courier Stations and Pre-Clearance Infrastructure

Notes: This figure maps geocoded Ming courier stations relative to the implemented Great Clearance boundary. The stations predate the clearance and measure local exposure to official communications and transportation infrastructure. The corresponding township indicator equals one when a township contains at least one station. The baseline estimate is reported in Table 1; estimates across alternative bandwidths appear in Table C.1.

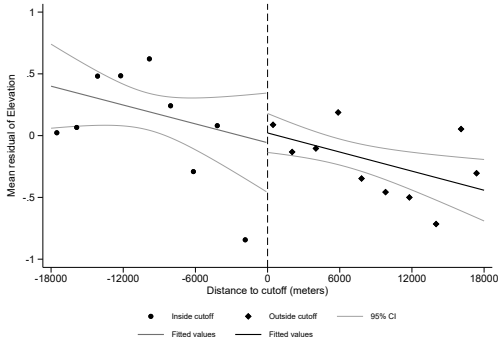
C.3 Terrain, Climate, and Land-Cover Balance



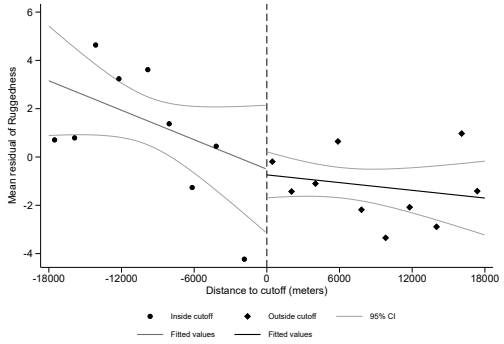
Panel A. Mean slope



Panel B. Share with slope below 10 degrees



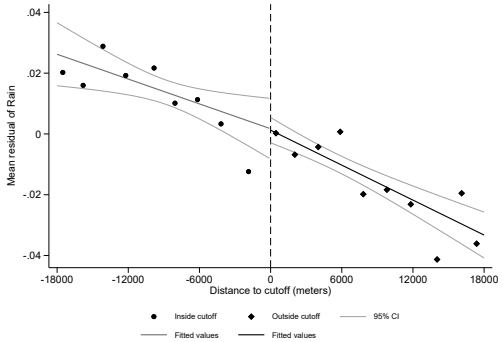
Panel C. Elevation



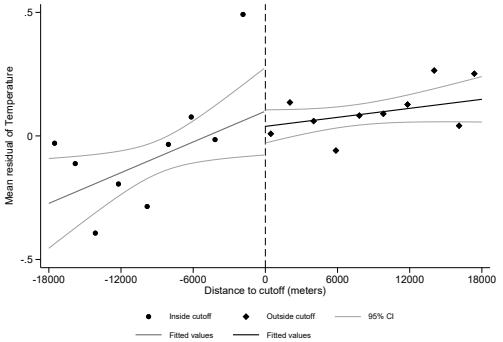
Panel D. Terrain ruggedness

Figure C.3: Terrain Characteristics at the Implemented Boundary

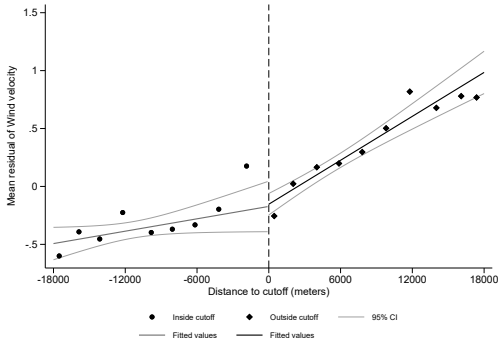
Notes: This figure displays township terrain characteristics by signed distance from the implemented Great Clearance boundary. Panels A–D report mean slope, the share of township land with slope below 10 degrees, elevation, and terrain ruggedness, respectively. The sample contains townships within 18 km of the boundary. Negative distances denote the adjoining inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned means after residualizing each outcome with respect to the 40 boundary-segment fixed effects. Solid lines show separate linear fits on the two sides, gray lines show pointwise 95 percent confidence intervals, and the vertical dashed line marks the implemented boundary. Corresponding estimates and observation counts are reported in Table C.1.



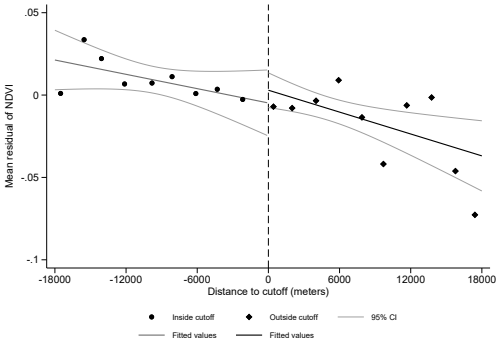
Panel A. Mean precipitation



Panel B. Mean temperature



Panel C. Mean wind speed



Panel D. NDVI

Figure C.4: Climate and Land-Cover Characteristics at the Implemented Boundary

Notes: This figure displays township climate and land-cover characteristics by signed distance from the implemented Great Clearance boundary. Panels A–D report mean precipitation, mean temperature, mean wind speed, and NDVI, respectively. The sample contains townships within 18 km of the boundary, subject to source-specific coverage. Negative distances denote the adjoining inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned means after residualizing each outcome with respect to the 40 boundary-segment fixed effects. Solid lines show separate linear fits on the two sides, gray lines show pointwise 95 percent confidence intervals, and the vertical dashed line marks the implemented boundary. Corresponding estimates and exact observation counts are reported in Table C.1.

C.4 Continuity of Predetermined Characteristics across Alternative Bandwidths

Table C.1: Predetermined Characteristics across Alternative Bandwidths

	Symmetric bandwidth around the implemented boundary				
	10 km	15 km	**18 km**	20 km	25 km
Panel A. Terrain					
Mean slope	2.983*	2.644**	0.270	-0.200	0.024
	(1.743)	(1.248)	(1.133)	(1.036)	(0.865)
Inland-side mean	9.534	10.493	10.409	10.430	10.884
Observations	267	345	399	438	487
Share with slope below 10 degrees	-0.978	-1.364	-0.418	-0.165	-0.074
	(1.475)	(0.903)	(0.814)	(0.743)	(0.660)
Inland-side mean	7.414	7.150	7.143	7.094	6.877
Observations	267	345	399	438	487
Log mean elevation	0.920**	0.723***	0.161	0.091	0.193
	(0.370)	(0.278)	(0.261)	(0.238)	(0.192)
Inland-side mean	4.108	4.301	4.254	4.237	4.341
Observations	267	345	399	438	487
Log terrain ruggedness	0.283	0.239*	0.010	-0.047	-0.028
	(0.193)	(0.133)	(0.116)	(0.104)	(0.088)
Inland-side mean	2.609	2.700	2.701	2.706	2.746
Observations	267	345	399	438	487
Panel B. Climate					
Mean temperature	-0.431***	-0.358***	-0.107	-0.135	-0.138
	(0.157)	(0.124)	(0.112)	(0.112)	(0.102)
Inland-side mean	19.839	19.766	19.737	19.664	19.598
Observations	266	342	393	431	480
IHS mean precipitation	0.006	0.010*	0.003	0.002	-0.000

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Table C.1: Predetermined Characteristics across Alternative Bandwidths, continued

	Symmetric bandwidth around the implemented boundary				
	10 km	15 km	**18 km**	20 km	25 km
	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
Inland-side mean	7.855	7.863	7.871	7.883	7.887
Observations	266	342	393	431	480
Mean wind speed	-0.026	0.012	-0.067	0.012	0.060
	(0.196)	(0.124)	(0.112)	(0.101)	(0.087)
Inland-side mean	2.511	2.360	2.269	2.166	2.101
Observations	267	345	399	438	487
Panel C. Land Cover					
NDVI	0.013	0.007	0.008	0.016	0.009
	(0.021)	(0.014)	(0.013)	(0.012)	(0.012)
Inland-side mean	0.664	0.664	0.666	0.671	0.672
Observations	178	226	251	272	308
Panel D. Pre-Clearance Infrastructure					
Any Ming courier station	-0.045	-0.061	-0.032	-0.044	-0.055
	(0.136)	(0.081)	(0.068)	(0.057)	(0.048)
Inland-side mean	0.072	0.062	0.063	0.052	0.044
Observations	267	345	399	438	487

Notes: This table reports township-level continuity estimates for predetermined characteristics across alternative symmetric bandwidths around the implemented Great Clearance boundary. Each entry is the coefficient on *Coastal Side* from a separate regression; *Coastal Side* equals one for townships on the coastal, formerly cleared side and zero for townships on the inland side. Every specification includes separate linear functions of signed distance on the two sides and fixed effects for the 40 equal-length boundary segments. The preferred 18 km specification is shown in bold. The inland-side mean and number of observations are reported below each coefficient. Standard errors clustered by township are reported in parentheses. Sample sizes vary with source-specific spatial coverage. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D Nighttime Lights: Robustness and Alternative Specifications

This appendix examines whether the nighttime-light discontinuity depends on the geographic scope of the comparison, township assignment, spatial aggregation, boundary partition, geographic controls, functional form, outcome construction, estimator, or treatment of spatial dependence. We first vary the bandwidth, assignment rule, and inference procedure. We then consider alternative spatial units and boundary partitions, account for historical port access and geographic trends, vary the outcome and estimator, and conclude with two falsification exercises.

D.1 Bandwidth and Township Assignment

The preferred specification uses a symmetric 18 km window around the implemented boundary. We first examine whether the nighttime-light discontinuity depends on the geographic scope of this comparison.

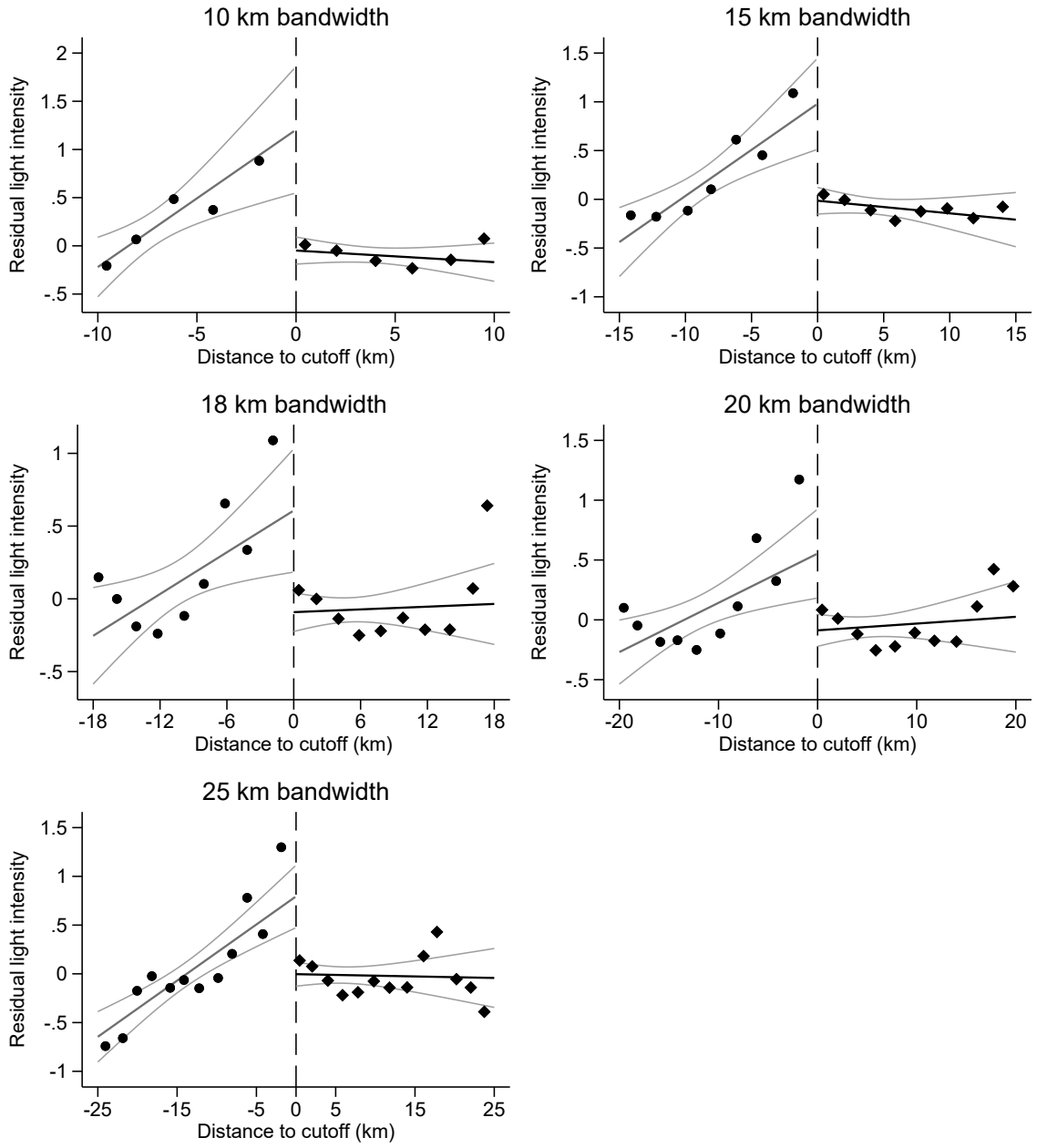


Figure D.1: Nighttime-Light Discontinuity across Alternative Bandwidths

Notes: This figure plots township nighttime-light intensity against signed distance from the implemented Great Clearance boundary using symmetric bandwidths of 10, 15, 18, 20, and 25 km. The outcome is the township average of annual inverse-hyperbolic-sine nighttime-light intensity over 2000–2018. In each panel, the outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the adjoining inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned means of residual nighttime lights. Solid lines report separate linear fits on the two sides using the underlying township observations, and gray lines report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding regression estimates are reported in Panel A of Table D.1.

Table D.1: Nighttime-Light Robustness: Bandwidth, Township Assignment, and Inference

Specification	Estimate	Std. error	Inland-side mean	Observations	R^2
Panel A. Alternative Bandwidths, Baseline Sample					
10 km bandwidth	-1.538***	0.384	1.823	267	0.698
15 km bandwidth	-1.148***	0.275	1.646	345	0.626
18 km bandwidth (preferred)	**-0.822*** **	**0.253**	**1.705**	**399**	**0.597**
20 km bandwidth	-0.775***	0.233	1.738	438	0.607
25 km bandwidth	-0.907***	0.195	1.627	487	0.612
Panel B. Alternative Bandwidths, Excluding Boundary-Intersected Townships					
10 km bandwidth	-1.623***	0.612	1.823	140	0.680
15 km bandwidth	-1.421***	0.407	1.646	217	0.608
18 km bandwidth	**-1.190*** **	**0.340**	**1.705**	**271**	**0.586**
20 km bandwidth	-1.161***	0.322	1.738	310	0.604
25 km bandwidth	-1.098***	0.279	1.627	359	0.614
Panel C. Alternative Inference, Preferred 18 km Sample					
County-level clustering	-0.822***	0.305	1.705	399	0.597
Conley spatial HAC, 10 km cutoff	-0.822***	0.295	1.705	399	—
Conley spatial HAC, 25 km cutoff	-0.822**	0.374	1.705	399	—
Conley spatial HAC, 50 km cutoff	-0.822**	0.403	1.705	399	—
Conley spatial HAC, 100 km cutoff	-0.822**	0.374	1.705	399	—
Conley spatial HAC, 250 km cutoff	-0.822***	0.222	1.705	399	—
Conley spatial HAC, 500 km cutoff	-0.822***	0.178	1.705	399	—

Notes: This table extends the bandwidth, township-assignment, and inference checks reported in Table 3. The unit of observation is a township. The dependent variable is the 2000–2018 average of annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation; annual transformed values are winsorized at the 1st and 99th percentiles before averaging. Each row reports the coefficient on *Coastal Side*, which equals one for townships on the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for townships on the inland side. A small number of irregular administrative units whose detached territories prevent a single spatial assignment are excluded before the samples are formed. Panel A varies the symmetric bandwidth while retaining the baseline township assignment. Panel B repeats the bandwidth exercise after excluding township polygons intersected by the implemented boundary. Regressions in Panels A and B include separate linear functions of signed distance on the two sides, fixed effects for the 40 equal-length boundary segments, and township-clustered standard errors. Panel C retains the preferred 18 km baseline sample and specification but changes the construction of the standard errors. Conley spatial-HAC standard errors use Bartlett kernels with the reported distance cutoffs; the Conley procedure does not report an R^2. The inland-side mean is calculated separately for each estimation sample. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.

Table D.2: Nighttime-Light Estimates with Terrain and Climate Controls

	10 km	15 km	**18 km**	20 km	25 km
Baseline sample	-1.538***	-1.148***	**-0.822*** **	-0.775***	-0.907***
	(0.384)	(0.275)	**(0.253)**	(0.233)	(0.195)
Baseline, common sample	-1.552***	-1.192***	**-0.930*** **	-0.865***	-0.954***
	(0.403)	(0.288)	**(0.270)**	(0.247)	(0.204)
Terrain controls	-0.991***	-0.705***	**-0.738*** **	-0.698***	-0.719***
	(0.319)	(0.212)	**(0.184)**	(0.167)	(0.149)
Climate controls	-1.229***	-0.879***	**-0.789*** **	-0.685***	-0.813***
	(0.390)	(0.271)	**(0.242)**	(0.214)	(0.190)
Terrain and climate controls	-0.971***	-0.693***	**-0.727*** **	-0.700***	-0.676***
	(0.302)	(0.200)	**(0.174)**	(0.159)	(0.136)
Baseline-sample observations	267	345	**399**	438	487
Common-sample observations	253	324	**375**	413	462
R-squared, common-sample baseline	0.703	0.645	**0.621**	0.629	0.633
R-squared, full controls	0.831	0.814	**0.825**	0.832	0.830

Notes: This table reports township-level estimates of the nighttime-light discontinuity across alternative symmetric bandwidths around the implemented Great Clearance boundary. The dependent variable is the 2000–2018 average of annual inverse-hyperbolic-sine nighttime-light intensity. Each entry reports the coefficient on *Coastal Side*. The first specification reproduces the baseline estimate in each bandwidth. The remaining specifications use a common complete-case sample, so changes in the coefficient reflect the addition of controls rather than changes in sample composition. Terrain controls comprise mean slope, the share of land with slope below 10 degrees, log mean elevation, and log terrain ruggedness. Climate controls comprise mean temperature, inverse-hyperbolic-sine mean precipitation, and mean wind speed. All specifications include separate linear functions of signed distance on the two sides of the implemented boundary and fixed effects for the 40 equal-length boundary segments. Standard errors clustered by township are reported in parentheses. The preferred 18 km specification is shown in bold. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.2 Alternative Spatial Units

Figure D.2 compares the nighttime-light discontinuity across township and regular-grid samples using the preferred linear distance specification.

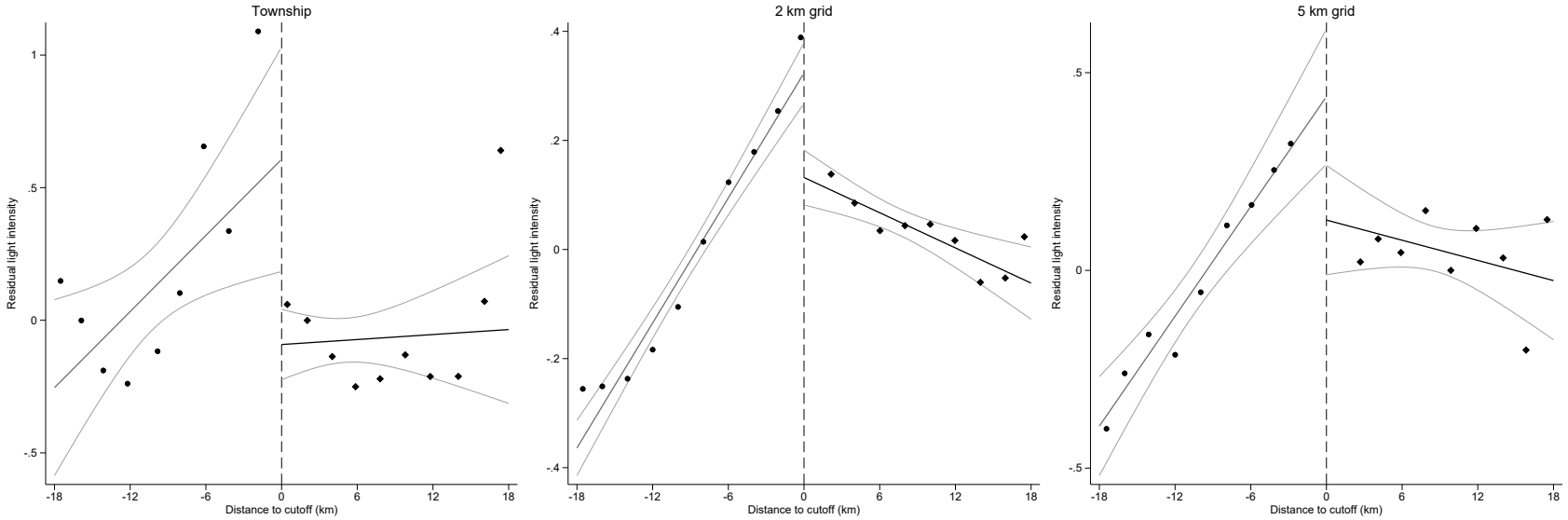


Figure D.2: Nighttime-Light Discontinuities across Spatial Units

Notes: This figure relates nighttime-light intensity to signed distance from the implemented Great Clearance boundary across alternative spatial units. The outcome is the 2000–2018 average of annual inverse-hyperbolic-sine nighttime-light intensity measured at the indicated spatial unit. Panel A uses townships, Panel B uses regular 2×2-km grid cells, and Panel C uses regular 5×5-km grid cells. Grid cells intersected by the implemented boundary are excluded. All panels use a symmetric 18 km window, fit separate linear functions of signed distance on the two sides of the boundary, and residualize the outcome with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the formerly cleared coastal side. Markers report binned outcome means, solid lines report fitted relationships, and gray curves report pointwise 95 percent confidence intervals. The corresponding estimates are reported in Table D.3.

Table D.3: Spatial-Unit and Boundary-Partition Robustness

Panel A. Alternative Spatial Units

	Townships (preferred)	Regular 2×2-km grid cells	Regular 5×5-km grid cells
Coastal Side	**-0.822*****	-0.182***	-0.305**
	(0.253)	(0.038)	(0.119)
Observations	**399**	5,005	741
R-squared	**0.597**	0.428	0.484

Panel B. Alternative Boundary Partitions

	20 segments	25 segments	30 segments	35 segments	**40 segments (preferred)**
Coastal Side	-0.737***	-0.747***	-0.881***	-0.732***	**-0.822*****
	(0.254)	(0.243)	(0.235)	(0.254)	**(0.253)**
Observations	399	399	399	399	**399**
R-squared	0.518	0.564	0.585	0.598	**0.597**

Notes: This table examines the sensitivity of the nighttime-light discontinuity to the spatial unit of observation and the partition of the implemented Great Clearance boundary. The dependent variable is the 2000–2018 average of annual inverse-hyperbolic-sine nighttime-light intensity measured at the indicated spatial unit. Panel A compares the baseline township sample with regular 2×2-km and 5×5-km grid-cell samples. Grid cells intersected by the implemented boundary are excluded, and standard errors are clustered by grid cell. Panel B retains the township outcome and varies the number of equal-length boundary segments used to construct local fixed effects. All specifications use a symmetric 18 km window around the implemented boundary and include separate linear functions of signed distance on the two sides. Panel A uses the baseline partition into 40 equal-length boundary segments. The preferred specifications are shown in bold. Figure D.2 provides the corresponding graphical comparison across spatial units. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.3 Historical Port Access and Geographic Trends

Historical ports provide a natural measure of coastal access that may be correlated with both local economic activity and the placement of the implemented clearance boundary. Figure D.3 shows their spatial distribution. Table D.4 examines whether the nighttime-light discontinuity changes after controlling for port proximity and broader geographic trends.

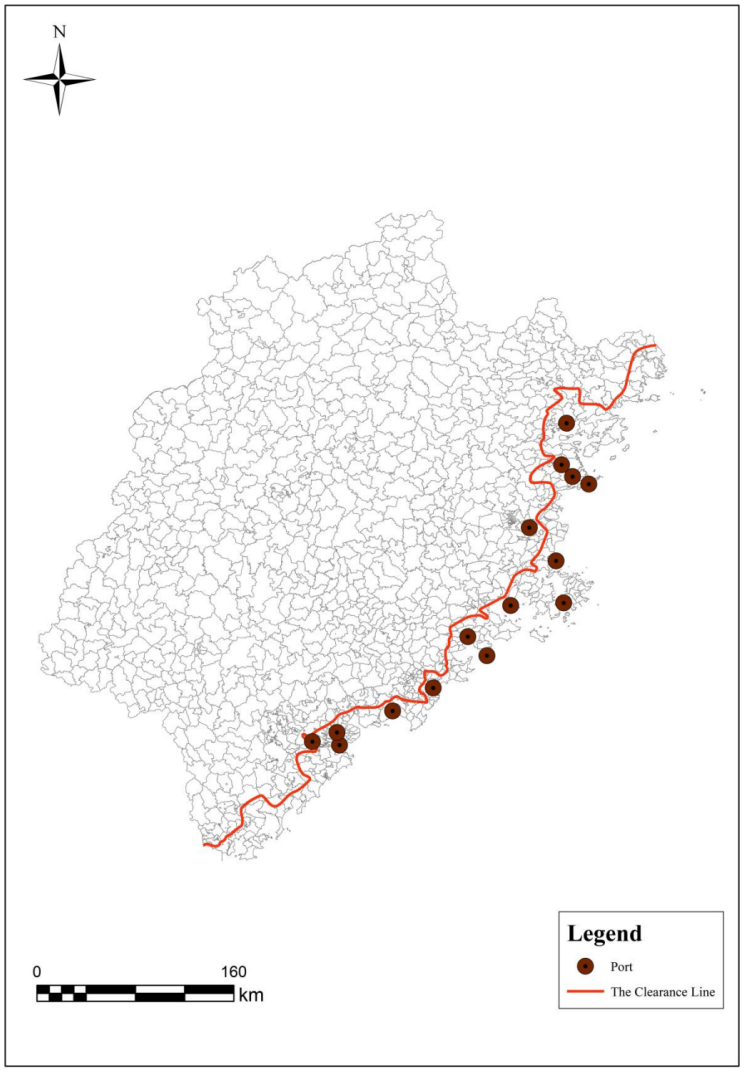


Figure D.3: Historical Ports and the Implemented Great Clearance Boundary

Notes: This figure maps historical port locations relative to the implemented Great Clearance boundary. Brown markers denote historical ports, the red line denotes the implemented boundary, and the gray outlines denote township polygons. These port locations are used to calculate each township's distance to the nearest historical port. The corresponding nighttime-light specifications are reported in Table D.4.

Table D.4: Nighttime-Light Robustness to Port Access and Geographic Trends

Panel A. Historical Port Access

	Baseline specification	Historical-port controls	
		Distance to nearest port	Port distance × Coastal Side
Coastal Side	**-0.822*****	-0.862***	-1.151***
	(0.253)	(0.249)	(0.277)
Mean dep. var. (inland side)	1.705	1.705	1.705
Observations	**399**	399	399
R-squared	**0.597**	0.608	0.616

Panel B. Geographic-Coordinate Controls

	Baseline specification	Geographic-coordinate controls		
		First order	Second order	Third order
Coastal Side	**-0.822*****	-0.812***	-0.831***	-0.852***
	(0.253)	(0.239)	(0.228)	(0.229)
Mean dep. var. (inland side)	1.705	1.705	1.705	1.705
Observations	**399**	399	399	399
R-squared	**0.597**	0.632	0.645	0.647

Notes: This table reports township-level estimates of the nighttime-light discontinuity after accounting for historical port access and geographic-coordinate trends. The dependent variable is the 2000–2018 average of annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation; the annual transformed values are winsorized at the 1st and 99th percentiles before averaging. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for townships on the inland side. All specifications use the preferred 18 km sample, include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments, and cluster standard errors by township. The baseline columns reproduce the preferred specification in Table 2. In Panel A, the second column controls for distance to the nearest historical port, while the third column additionally interacts port distance with *Coastal Side*. In Panel B, first-order controls include longitude and latitude; second-order controls add their squares and interaction; and third-order controls further add the corresponding cubic and third-order interaction terms. The mean row reports the inland-side mean in each column's estimation sample. Standard errors are reported in parentheses. Preferred specifications are shown in bold. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.4 Functional Form, Outcomes, and Local Estimation

Figure D.4 compares local-linear nighttime-light estimates across alternative kernels. Table D.5 then reports robustness to the distance specification, outcome definition, and estimator.

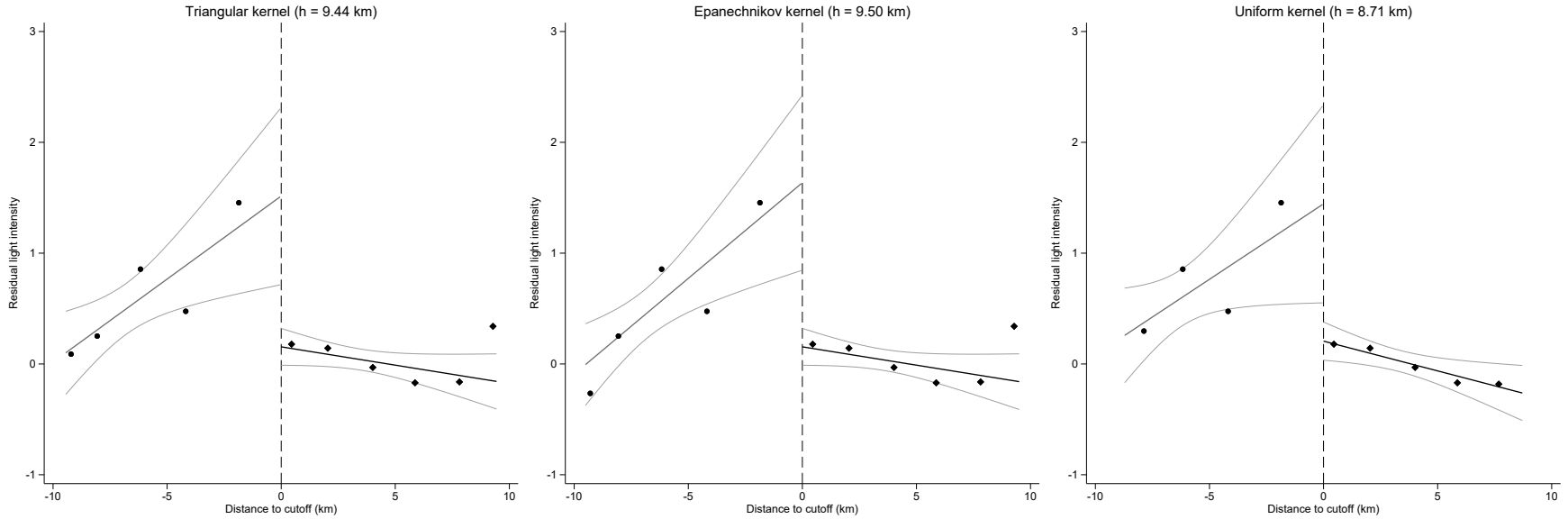


Figure D.4: Nonparametric Nighttime-Light Estimates under Alternative Kernels

Notes: This figure reports local-linear estimates of the nighttime-light discontinuity under alternative kernel choices. The outcome is the 2000–2018 average of annual inverse-hyperbolic-sine township nighttime-light intensity, residualized with respect to fixed effects for the 40 equal-length boundary segments. The panels use triangular, Epanechnikov, and uniform kernels, respectively. Each kernel uses its own mean-squared-error-optimal bandwidth, reported in the panel title. Signed distance is negative on the inland side and positive on the formerly cleared coastal side. Markers report binned outcome means, solid lines report the local-linear fits, and gray curves report pointwise 95 percent confidence intervals. The corresponding bias-corrected estimates, robust standard errors, bandwidths, and sample sizes are reported in Panel C of Table D.5.

Table D.5: Nighttime-Light Robustness: Functional Form, Outcomes, and Estimators

Panel A. Running-Variable Functional Form

	Linear (preferred)	Quadratic
Coastal Side	**-0.822*****	-2.003***
	(0.253)	(0.543)
Observations	**399**	399
R-squared	**0.597**	0.621

Panel B. Outcome Definition and Estimator

	IHS light OLS	$\log(1+\text{light})$ OLS	Raw light OLS	Raw light PPML
Coastal Side	**-0.822*****	-0.718***	-4.291**	-0.774***
	(0.253)	(0.209)	(1.888)	(0.250)
Observations	**399**	399	399	399
R-squared	**0.597**	0.604	0.461	—

Panel C. Nonparametric Local-Linear Estimates

	Triangular kernel	Epanechnikov kernel	Uniform kernel
Coastal Side	-1.486**	-1.489***	-1.451***
	(0.618)	(0.571)	(0.539)
Selected bandwidth	9.44 km	9.50 km	8.71 km
Observations	250	252	233

Notes: This table examines robustness of the nighttime-light discontinuity to the running-variable functional form, outcome definition, and estimator. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for townships on the inland side. Panels A and B use the preferred 18 km township sample, include fixed effects for the 40 equal-length boundary segments, and cluster standard errors by township. Panel A compares separate linear and quadratic functions of signed distance on the two sides of the boundary. Panel B varies the transformation of average annual nighttime lights over 2000–2018 and reports OLS or Poisson pseudo-maximum-likelihood estimates. Panel C reports bias-corrected local-linear estimates of the mean annual IHS outcome after residualizing it with respect to boundary-segment fixed effects. Each kernel uses its own mean-squared-error-optimal bandwidth, and robust standard errors are reported in parentheses. Preferred specifications are shown in bold. $^{*}\ p<0.10$, $^{**}\ p<0.05$, $^{***}\ p<0.01$.

The quadratic distance specification and the nonparametric local-linear estimates are both larger in magnitude than the baseline, at -2.003 and between -1.451 and -1.489, while the Poisson pseudo-maximum-likelihood estimate of -0.774 is close to it. The preferred linear specification is therefore not the most negative estimate available.

D.5 Falsification Exercises

Figure D.5 compares the observed nighttime-light discontinuity with distributions generated from artificial cutoffs and within-segment treatment permutations.

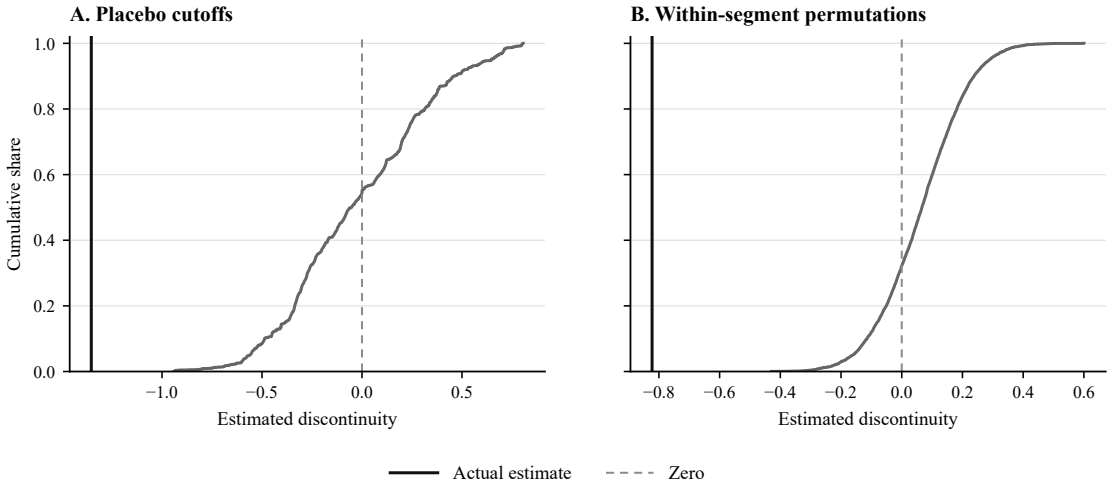


Figure D.5: Placebo Cutoffs and Within-Segment Treatment Permutations

Notes: This figure compares the estimated nighttime-light discontinuity at the implemented Great Clearance boundary with two falsification distributions. The outcome is the 2000–2018 average of annual township nighttime-light intensity after applying the inverse hyperbolic sine transformation. Panel A places 5,000 artificial cutoffs between 9 and 25 km from the implemented boundary on either side and estimates separate linear distance relationships within a symmetric 8 km window around each cutoff. The solid vertical line marks the estimate obtained at the implemented boundary using the same window (-1.354; $N = 219$). Panel B randomly reallocates clearance status among townships within each of the 40 boundary segments, preserving the observed number of formerly cleared townships in every segment and retaining the preferred 18 km sample. The solid vertical line marks the estimate under the observed assignment (-0.822; $N = 399$). In both panels, the gray curve reports the empirical cumulative distribution of 5,000 simulated estimates, and the dashed vertical line marks zero. None of the simulated estimates is more negative or larger in absolute value than the corresponding estimate obtained from the implemented boundary.

Across alternative samples, spatial units, boundary partitions, controls, functional forms, outcome definitions, and estimators, the estimated nighttime-light difference remains negative. The falsification exercises further show that a discontinuity of comparable magnitude does not arise at nearby artificial cutoffs or under within-segment reassignment of clearance status.

E Local Development: Additional Results and Graphical Evidence

E.1 Settlement Intensity and the Built Environment

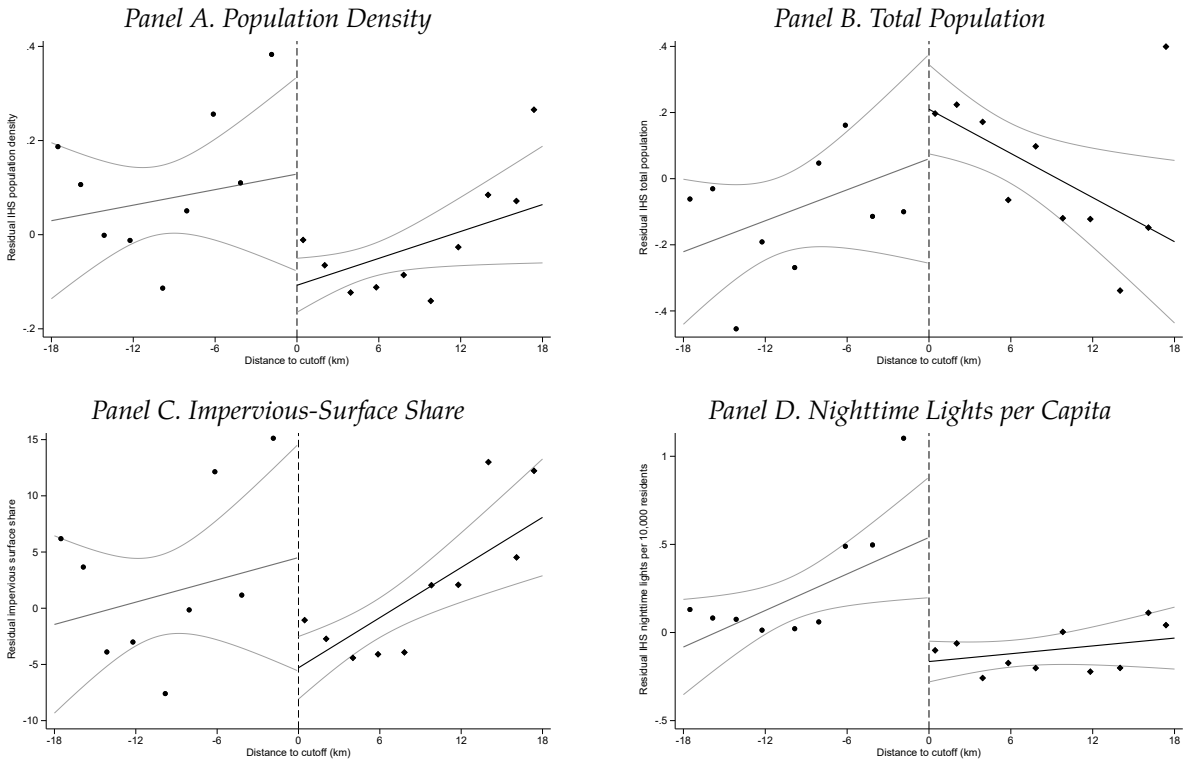


Figure E.1: Settlement Intensity and the Built Environment at the Implemented Boundary

Notes: This figure relates four measures of settlement intensity to signed distance from the implemented Great Clearance boundary. Panels A and B report inverse-hyperbolic-sine population density and total population, respectively; both measures average population across the 2000, 2010, and 2020 censuses. Panel C reports the average percentage of township land classified as impervious over 2000–2018. Panel D reports the inverse hyperbolic sine of average nighttime-light intensity over 2000–2018 per 10,000 residents. Panels A, B, and D contain 370 townships, while Panel C contains 399. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins. Solid lines report separate linear fits on the two sides using the underlying township observations, and gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel A of Table 5.

E.2 Local Market Thickness and Service Access

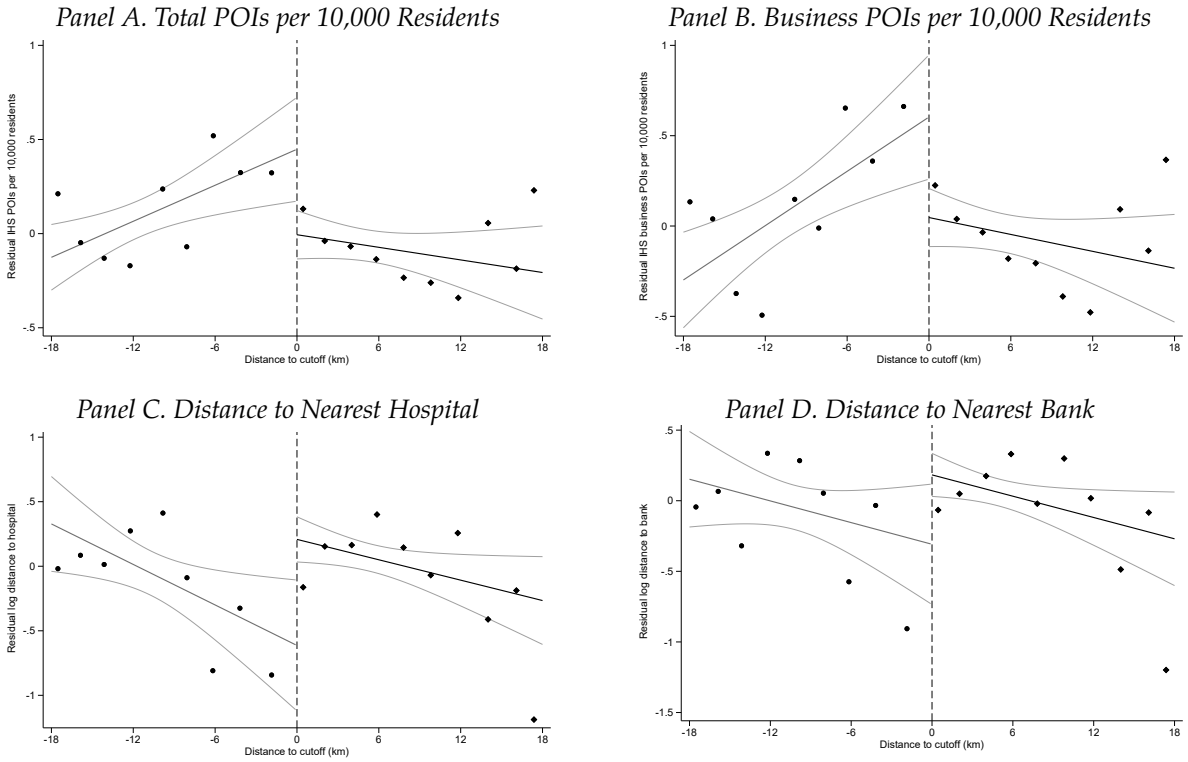


Figure E.2: Local Market Thickness and Access at the Implemented Boundary

Notes: This figure relates measures of local market thickness and service access to signed distance from the implemented Great Clearance boundary. Panels A and B report the inverse hyperbolic sine of total and business POIs per 10,000 residents, respectively, using geocoded Amap records from 2017. Panels C and D report log distance in meters from the township reference point to the nearest hospital and bank; larger values indicate weaker access. Panels A and B contain 370 townships, while Panels C and D contain 399. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins. Solid lines report separate linear fits on the two sides using the underlying township observations, and gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel B of Table 5.

E.3 Registered Economic Activity

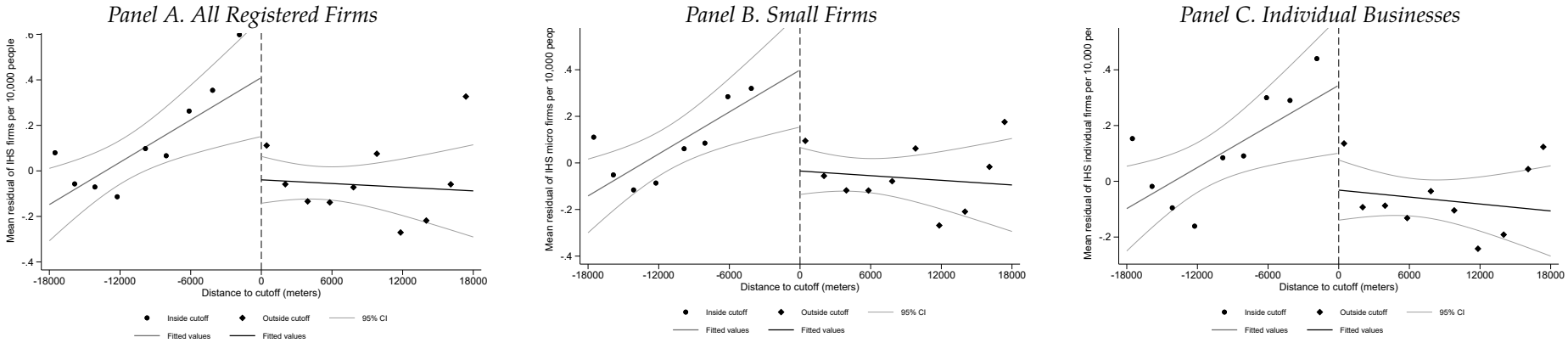


Figure E.3: Registered Economic Activity at the Implemented Boundary

Notes: This figure relates registered economic activity to signed distance from the implemented Great Clearance boundary. Panels A–C report the inverse hyperbolic sine of all registered firms, small firms, and individual businesses per 10,000 residents, respectively. The small-firm category includes small and micro firms. The outcomes are constructed from annual business registrations over 2000–2018: annual counts are normalized by population, averaged across years, and then transformed. Each panel contains 370 townships. Outcomes are residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins; solid lines report separate linear fits using the underlying township observations; and gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel C of Table 5.

E.4 Sectoral Firm Entry

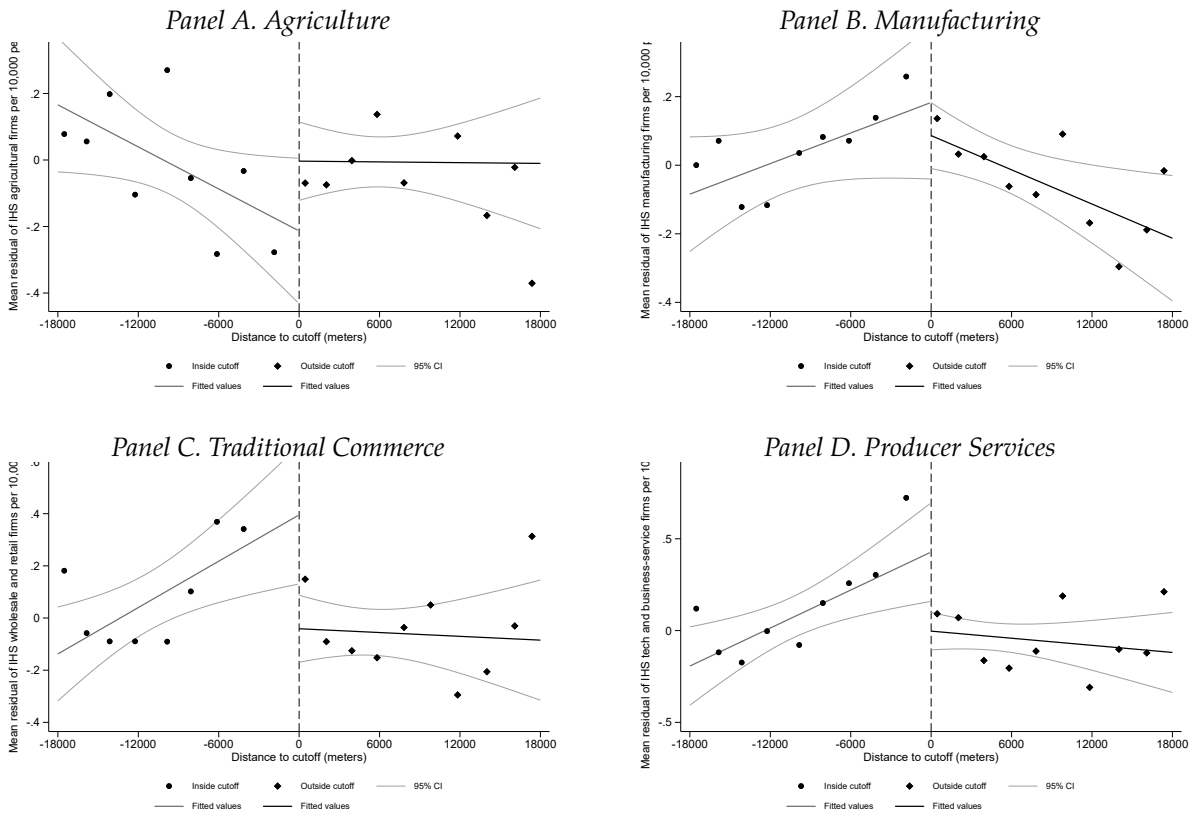


Figure E.4: Sectoral Firm Entry at the Implemented Boundary

Notes: This figure relates sector-specific firm entry to signed distance from the implemented Great Clearance boundary. Panels A–D report the inverse hyperbolic sine of annual registrations per 10,000 residents in agriculture, manufacturing, traditional commerce, and producer services, respectively. Traditional commerce combines wholesale and retail; producer services combine technology-related and business-service activities. Annual registration rates are averaged over 2000–2018 before transformation. Each panel contains 370 townships. Outcomes are residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins; solid lines report separate linear fits using the underlying township observations; and gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel D of Table 5.

Table E.1: Firm Entry across the Complete Sector Classification

Panel A. Agriculture, Manufacturing, and Commerce

	Agriculture	Manufacturing	Traditional commerce
Coastal Side	0.258*	-0.178	-0.523***
	(0.155)	(0.137)	(0.162)
Mean dep. var. (inland side)	1.286	2.848	3.833
Observations	370	370	370
R-squared	0.591	0.475	0.375

Panel B. Services

	Restaurants and lodging	Producer services	Consumer services	Finance and real estate
Coastal Side	-0.727***	-0.908***	-0.584***	-0.921***
	(0.205)	(0.208)	(0.189)	(0.204)
Mean dep. var. (inland side)	2.186	2.277	2.081	1.744
Observations	370	370	370	370
R-squared	0.440	0.496	0.404	0.479

Notes: This table extends the sectoral firm-entry results in Panel D of Table 5 and Figure E.4. The unit of observation is a township. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for townships on the inland side. The sample contains 370 townships located within 18 km of the boundary for which population data are available. Outcomes are constructed from business registrations over 2000–2018. Annual registrations are expressed per 10,000 residents, years with no observed registration are retained as zeros, annual values are averaged over the 19 years, and the resulting averages are transformed using the inverse hyperbolic sine. Traditional commerce combines wholesale and retail, while producer services combine technology-related and business-service activities. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

E.5 Education and Employment

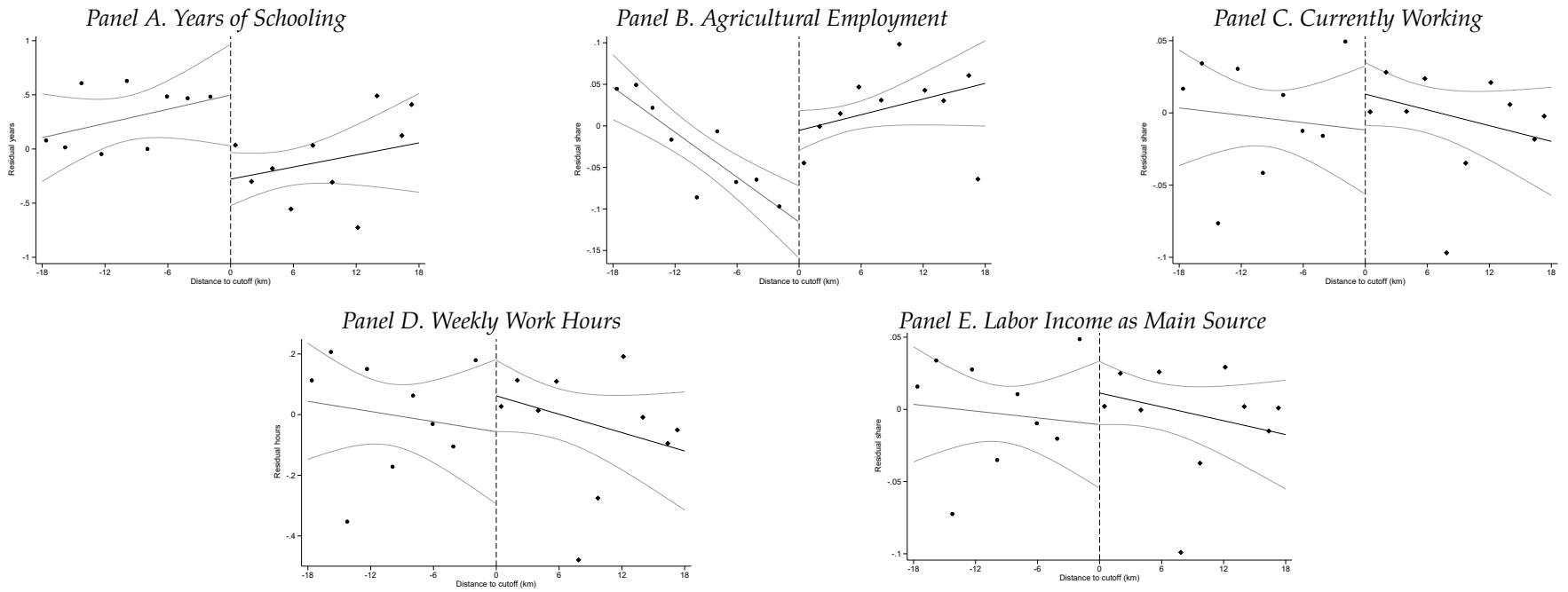


Figure E.5: Education and Employment at the Implemented Boundary

Notes: This figure relates education and employment outcomes to signed distance from the implemented Great Clearance boundary using residents aged 16–59 in the one-percent micro sample of the 2010 Population Census. Panels A–E report years of schooling, agricultural employment, current employment, inverse-hyperbolic-sine weekly work hours, and an indicator for labor income as the respondent's main source of livelihood. Clearance status and distance are assigned at the township level. Outcomes are residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins; solid lines report separate linear fits using the underlying individual observations; and gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Table 6.

Table E.2: Additional Census-Based Individual Characteristics

	Age	Male	Agricultural hukou
Coastal Side	-0.546	0.024**	0.228***
	(0.600)	(0.012)	(0.058)
Mean dep. var. (inland side)	35.273	0.497	0.701
Observations	42,595	42,595	42,574
R-squared	0.024	0.002	0.103

Notes: This table reports additional individual-level estimates using residents aged 16–59 in the one-percent micro sample of the 2010 Population Census. The sample consists of individuals residing in townships within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for individuals on the coastal, formerly cleared side and zero for individuals on the inland side. Clearance status and signed distance are assigned at the township level. *Male* and *Agricultural hukou* are binary indicators. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. Marriage, marriage timing, household size, and fertility outcomes are reported in Table F.2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

E.6 Rural Household Outcomes

Table E.3: Rural Household Income, Expenditure, and Agricultural Work

	Household income (IHS)	Per capita household income (IHS)	Household expenditure (IHS)	Per capita household expenditure (IHS)	Share of year in agricultural work
Coastal Side	-0.727***	-0.303***	-0.956***	-0.798***	0.433***
	(0.046)	(0.047)	(0.053)	(0.060)	(0.041)
Mean dep. var. (inland side)	11.566	10.257	11.340	10.029	0.484
Observations	7,939	4,623	7,937	4,623	2,008

Notes: This table reports estimates using the 2000–2015 Fujian Rural Fixed Observation Point survey. The unit of observation is a household-year in columns (1)–(4) and an individual-year in column (5). The samples contain geocoded survey villages located within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for observations in villages on the coastal, formerly cleared side of the boundary and zero for observations on the inland side. All specifications include separate linear functions of signed village-to-boundary distance on the two sides, year fixed effects, and fixed effects for the 40 equal-length boundary segments. Household income and expenditure are winsorized at the 1st and 99th percentiles before applying the inverse hyperbolic sine transformation; per capita outcomes divide the corresponding household total by household size. The final outcome measures the share of the year spent in agricultural work. The mean row reports the inland-side mean in each column's estimation sample. Heteroskedasticity-robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F Clan Organization, Local Rootedness, and Localized Exchange

This appendix supplements the mechanism evidence presented in the main text. It organizes the additional evidence along three links: contemporary organizational traces associated with reconstruction, continuity between family and place, and the geographic scope of firm organization and realized exchange. Modern alternative explanations are examined separately in Appendix G.

F.1 Organizational Traces of Reconstruction

Figures F.1–F.3 provide the graphical counterparts to the organizational outcomes reported in Table 7. The figures report only the linear specifications used in the main analysis. Measurement and sample construction are summarized after the figures.

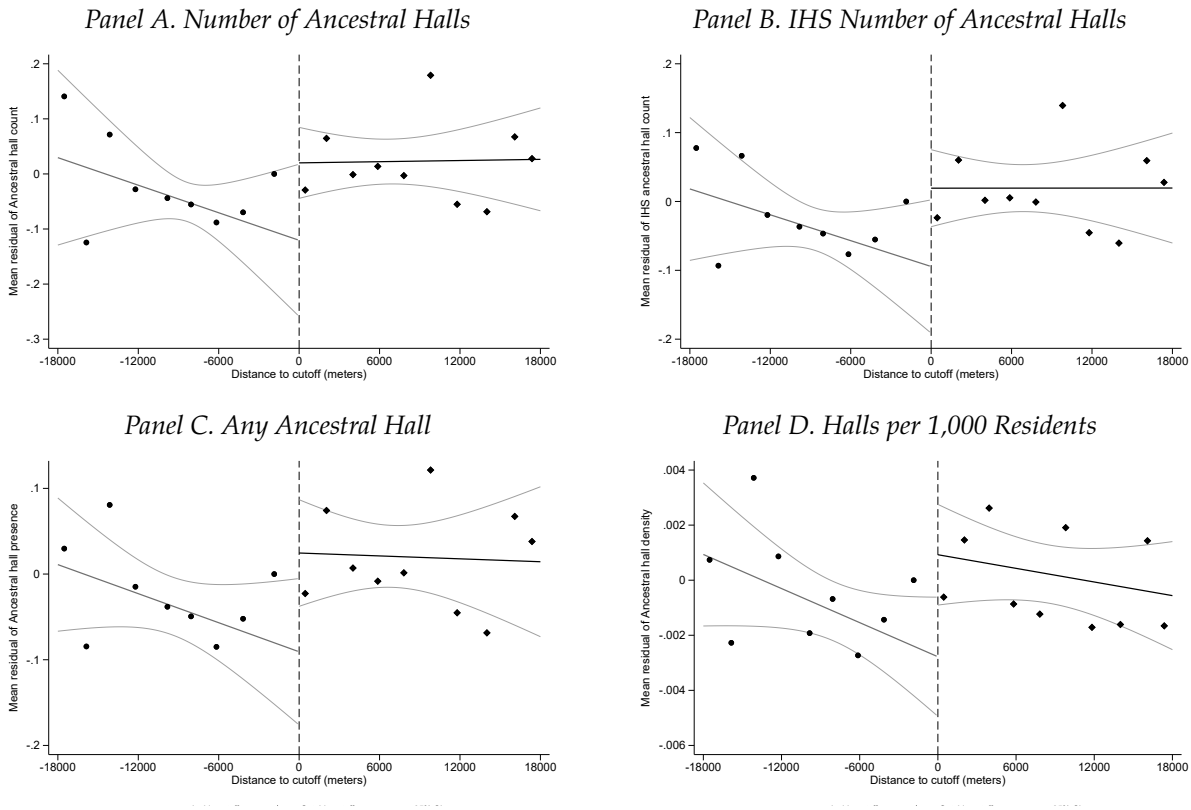


Figure F.1: Ancestral Halls at the Implemented Boundary

Notes: This figure relates contemporary ancestral-hall outcomes to signed distance from the implemented Great Clearance boundary. Panels A–D report the number of ancestral halls, its inverse-hyperbolic-sine transformation, an indicator for any ancestral hall, and halls per 1,000 residents, respectively. Panels A–C contain 399 townships; Panel D contains the 370 townships with nonmissing population data. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side and positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins. Solid lines report separate linear fits on the two sides using the underlying township observations; gray curves report pointwise 95 percent confidence intervals based on standard errors clustered by township. The vertical dashed line marks the implemented boundary. Corresponding estimates are reported in Panel A of Table 7.

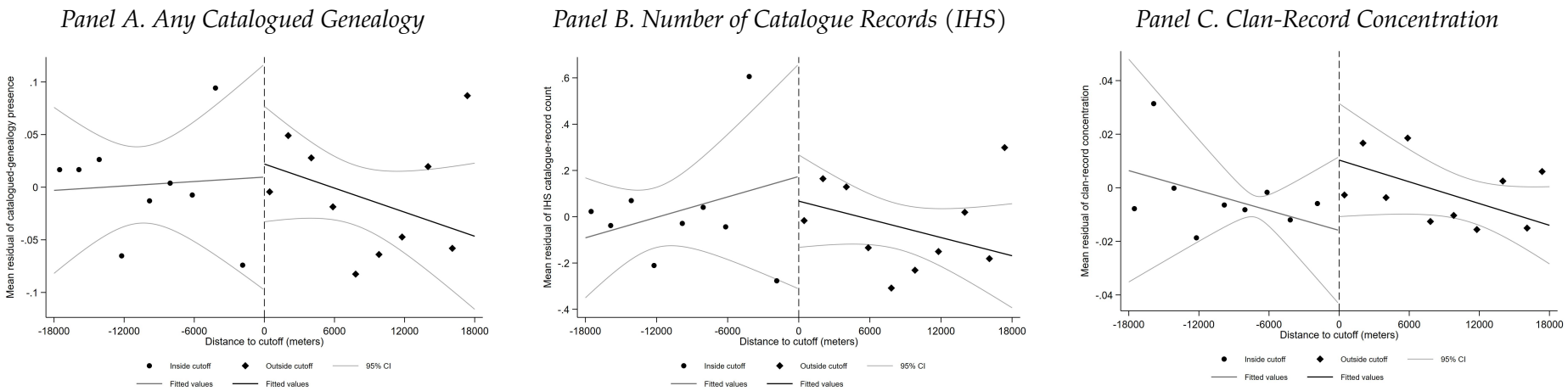


Figure F.2: Catalogued Genealogies at the Implemented Boundary

Notes: This figure relates measures constructed from the Shanghai Library Chinese Genealogy Knowledge Service Platform to signed distance from the implemented Great Clearance boundary. Panel A reports whether a township has any matched catalogue record. Panel B reports the inverse hyperbolic sine of the number of matched catalogue records. Panel C reports the concentration of catalogue records across catalogue-defined clans. The sample contains 399 townships located within 18 km of the boundary. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins. Solid lines report separate linear fits on the two sides using the underlying township observations, and gray curves report 95 percent confidence intervals. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel B of Table 7.

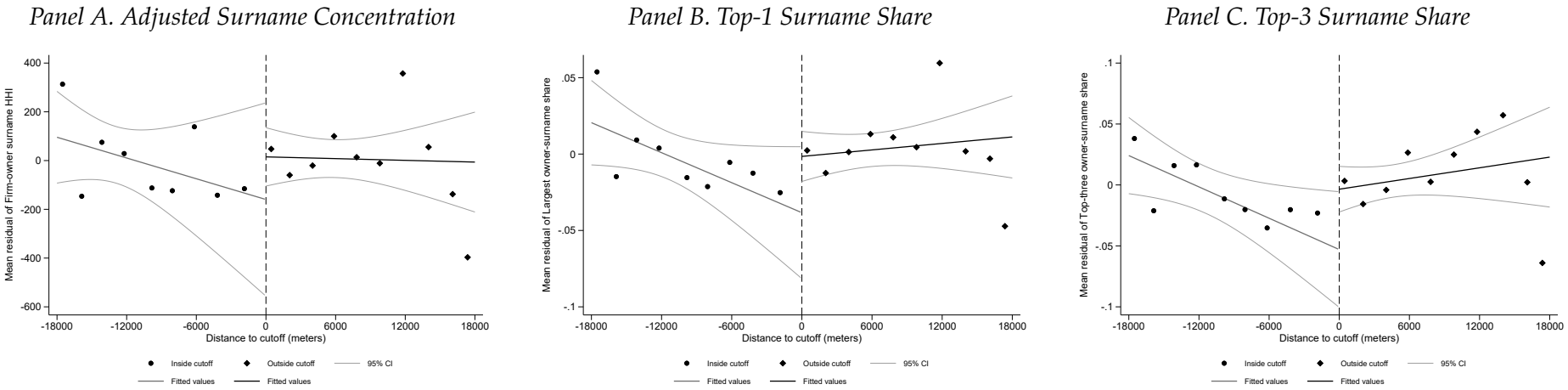


Figure F.3: Surname Concentration among Individual-Business Representatives

Notes: This figure relates surname concentration among registered representatives of individual businesses to signed distance from the implemented Great Clearance boundary. Panel A reports surname concentration adjusted for the number of valid representatives. Panels B and C report the shares of representatives accounted for by the most common surname and the three most common surnames, respectively. The measures use business registrations from 2000–2018, count each representative once within a township, and restrict the analysis to 387 townships with at least 20 valid representatives. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the formerly cleared coastal side. Markers report mean residual outcomes within two-kilometer distance bins. Solid lines report separate linear fits on the two sides using the underlying township observations, and gray curves report 95 percent confidence intervals. The vertical dashed line marks the implemented boundary. The corresponding estimates are reported in Panel C of Table 7.

F.2 Construction of Organizational Measures

Table F.1: Construction of Clan-Organization and Surname-Concentration Measures

Measure	Construction	Outcome definition
Panel A. Contemporary Ancestral Halls		
Ancestral-hall records	Geocoded records identify ancestral halls (*zongci*) and assign each matched location to an analysis township.	The underlying count is the number of matched halls within the township.
Number and presence	Townships without a matched record are assigned a count of zero.	Outcomes are the number of halls, its inverse-hyperbolic-sine transformation, and an indicator for any hall.
Halls per 1,000 residents	The number of halls is divided by average township population and expressed per 1,000 residents.	The population-normalized outcome is available for 370 townships.
Panel B. Catalogued Genealogies		
Catalogue records	Records come from the Shanghai Library Chinese Genealogy Knowledge Service Platform. Each catalogue entry is counted once, irrespective of the number of volumes.	Outcomes indicate any matched record and report the inverse hyperbolic sine of the number of records.
Catalogue-defined clans	Entries are grouped using surnames together with recorded ancestral origins and lineage designations. Different origins or branches define different clans.	The classification distinguishes catalogue-defined clans from surnames alone.
Clan-record concentration	The measure is $\sum_g s_g^2$, where s_g is clan g's share of records matched to the township.	Higher values indicate concentration among fewer catalogue-defined clans.
Panel C. Surnames of Individual-Business Representatives		
Registered representatives	The measures use surnames of individual-business legal representatives recorded during 2000–2018. Each representative is counted once within a township.	The sample contains 387 townships with at least 20 valid representatives.
Adjusted surname concentration	Let $H = \sum_s p_s^2$ and let N denote the number of representatives. The adjusted measure is $(H - 1/N)/(1 - 1/N)$.	The measure accounts for concentration mechanically associated with the number of representatives.
Top-surname shares	Representatives are ranked by surname frequency within each township.	Outcomes report the shares represented by the most common surname and the three most common surnames.

Notes: This table describes the township-level organizational measures reported in Table 7 and displayed in Figures F.1–F.3. Panel A describes ancestral halls, Panel B catalogued genealogies, and Panel C surnames of registered individual-business representatives. A shared surname among business representatives does not necessarily identify membership in the same clan.

F.3 Additional Census Evidence on Family and Household Structure

Table F.2 reports additional census outcomes on marriage, household structure, and fertility.

Table F.2: Additional Census Evidence on Family and Household Structure

	Married	Age at first marriage	Household size	Children ever born	Sons ever born
Coastal Side	-0.028	-0.946***	0.800***	0.268***	0.172***
	(0.024)	(0.182)	(0.207)	(0.061)	(0.040)
Mean dep. var. (inland side)	0.706	23.850	4.039	1.552	0.886
Observations	42,595	30,736	42,595	16,036	15,140
R-squared	0.010	0.047	0.067	0.072	0.038

Notes: This table reports individual-level estimates using residents aged 16–59 in the one-percent micro sample of the 2010 Population Census. The sample consists of individuals residing in townships within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for individuals on the coastal, formerly cleared side and zero for individuals on the inland side. Clearance status and signed distance are assigned at the township level. Married is the census indicator for married respondents. Age at first marriage is defined among respondents with a recorded age at first marriage. Household size is the number of persons in the respondent's household roster. Children ever born is defined among women with nonmissing fertility responses. Sons ever born is the absolute number of sons and is defined among women who report at least one child. All regressions include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F.4 Additional Relationship-Specific Trust Outcomes

Table F.3 reports relationship-specific trust outcomes not shown separately in Table 8.

Table F.3: Additional Relationship-Specific Trust Outcomes

	Trust in neighbors	Trust in friends	Trust in colleagues	Trust in teachers	Trust in doctors
Coastal Side	-0.887**	0.231	0.218	0.116***	0.772***
	(0.357)	(0.279)	(0.278)	(0.031)	(0.044)
Webb p-value	0.227	0.543	0.548	0.240	0.084
Mean dep. var. (inland side)	0.754	0.887	0.877	0.896	0.769
Observations	127	125	117	130	128
R-squared	0.071	0.035	0.075	0.044	0.082

Notes: This table reports respondent-level estimates using the 2015 Chinese Social Survey. The sample consists of respondents aged 16–59 residing in nine surveyed townships within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for respondents on the coastal, formerly cleared side and zero for respondents on the inland side. Clearance status and signed distance are assigned at the township level. Each outcome equals one when the respondent reports being "quite trusting" or "very trusting" toward the indicated group and zero for lower-trust responses; "hard to say" responses are treated as missing. All regressions include separate linear functions of signed distance on the two sides and fixed effects for the boundary segments represented in the estimation sample. The mean row reports the inland-side mean in each column's estimation sample. Township-clustered standard errors are reported in parentheses. Webb wild-cluster-bootstrap p-values, calculated using Webb's six-point auxiliary distribution with 10,000 replications, are reported separately as a small-cluster sensitivity check (Webb, 2014; Roodman et al., 2019). Significance symbols are based on the conventional township-clustered standard errors, not on the Webb p-values. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F.5 Firm Organization and Localized Exchange: Robustness

Table F.4 examines whether the excess same-town procurement matching reported in Panel B of Table 9 is sensitive to alternative bandwidths, specifications, and methods of inference.

Table F.4: Localized Government Procurement: Robustness

Panel A. Alternative Bandwidths

	12 km	15 km	18 km (baseline)
Cleared buyer × cleared supplier	0.281***	0.216***	0.170***
	(0.090)	(0.078)	(0.065)
Mean dep. var. (both inland)	0.267	0.214	0.163
Observations	45,570	60,060	77,910
R-squared	0.462	0.420	0.393

Panel B. Alternative Specifications

	Baseline	No distance control	Quadratic distance	No year fixed effects
Cleared buyer × cleared supplier	0.170***	0.390***	0.140**	0.170***
	(0.065)	(0.061)	(0.059)	(0.065)
Mean dep. var. (both inland)	0.163	0.163	0.163	0.163
Observations	77,910	77,910	77,910	77,910
R-squared	0.393	0.238	0.497	0.392

Panel C. Alternative Inference

	Cluster: buyer township	Cluster: supplier township	Cluster: buyer county	Robust standard errors
Cleared buyer × cleared supplier	0.170***	0.170***	0.170**	0.170***
	(0.065)	(0.055)	(0.078)	(0.004)
Mean dep. var. (both inland)	0.163	0.163	0.163	0.163
Observations	77,910	77,910	77,910	77,910
R-squared	0.393	0.393	0.393	0.393

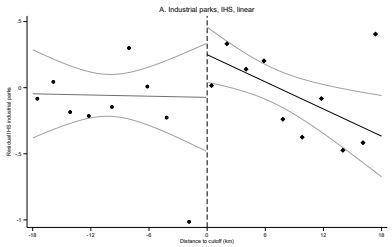
Notes: The unit of observation is a government-procurement contract from 2017 to 2025. The dependent variable equals one when the buyer and supplier are located in the same township. The reported coefficient is the interaction between indicators that the buyer and supplier are each located on the formerly cleared side, conditional on the two corresponding main effects. The mean row reports the same-town matching rate among contracts for which both endpoints are on the inland side. The baseline specification uses contracts whose buyer and supplier townships are both within 18 km of the implemented boundary and includes separate side-specific linear functions of signed distance and boundary-segment fixed effects for the buyer and supplier, year fixed effects, and the inverse hyperbolic sine of buyer–supplier physical distance. Physical distance is winsorized at the 1st and 99th percentiles before transformation. Panel A varies the buyer and supplier bandwidths jointly. Panel B compares the baseline specification with specifications that omit the buyer–supplier distance control, include a quadratic rather than linear buyer–supplier distance control, or omit year fixed effects. Panel C reports standard errors clustered by buyer township, supplier township, or buyer county, together with heteroskedasticity-robust standard errors. Buyer-township clustering is the baseline. A small number of irregular administrative units with detached territories are excluded, while ordinary townships intersected by the boundary remain in the sample and are assigned to the formerly cleared side. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

G Additional Evidence on Modern Alternative Explanations

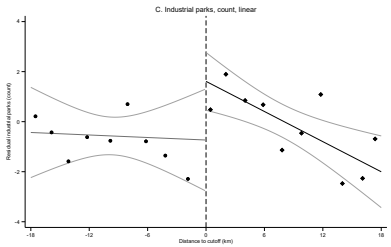
The main analysis considers three modern explanations for the long-run development gap: systematically lower modern investment, broad material deprivation, and greater contemporary disorder. This appendix examines additional outcomes associated with each account.

G.1 Later State Investment and Communications Infrastructure

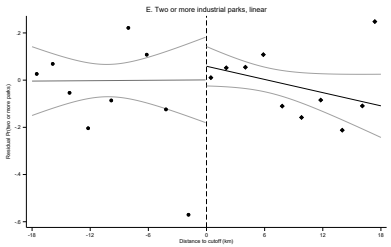
If later government investment systematically favored the inland side, industrial parks and successive generations of communications infrastructure should exhibit a common inland-side advantage. Figure G.1 presents linear boundary plots, and Table G.1 reports the corresponding estimates.



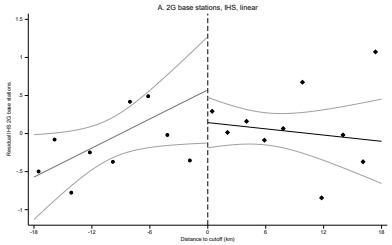
Panel A. Industrial-park count, IHS



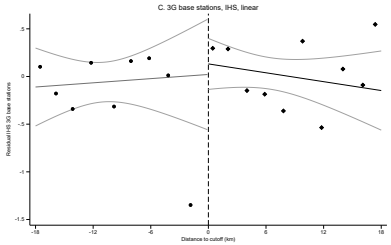
Panel B. Industrial-park count



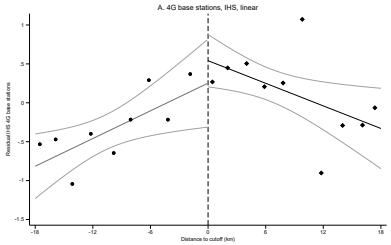
Panel C. Two or more industrial parks



Panel D. 2G base stations, IHS



Panel E. 3G base stations, IHS



Panel F. 4G base stations, IHS

Figure G.1: Industrial Parks and Communications Infrastructure at the Implemented Boundary

Notes: This figure relates additional measures of industrial parks and communications infrastructure to signed distance from the implemented Great Clearance boundary. Panels A–C report industrial-park outcomes, and Panels D–F report 2G, 3G, and 4G base-station outcomes. All panels use townships within 18 km of the boundary and residualize the outcome with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned residual means, solid lines report separate linear fits on the two sides, and gray curves report pointwise 95 percent confidence intervals. Table G.1 reports the corresponding estimates.

Table G.1: Additional Measures of Industrial and Communications Infrastructure

Panel A. Industrial-Park Intensity

	Industrial-park count (IHS)	Industrial-park count	Two or more industrial parks
Coastal Side	0.347	2.507*	0.063
	(0.278)	(1.372)	(0.116)
Mean dep. var. (inland side)	1.325	3.597	0.528
Observations	399	399	399
R-squared	0.327	0.279	0.288

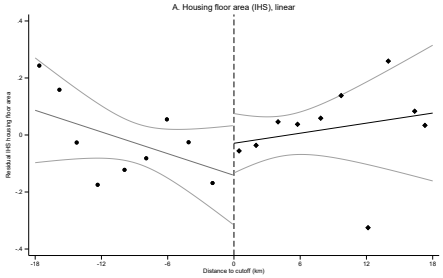
Panel B. Communications Technology

	2G base stations (IHS)	3G base stations (IHS)	4G base stations (IHS)
Coastal Side	-0.585	0.101	0.164
	(0.450)	(0.381)	(0.390)
Mean dep. var. (inland side)	1.949	1.330	1.671
Observations	399	399	399
R-squared	0.345	0.354	0.391

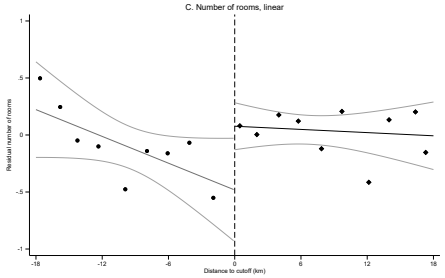
Notes: This table extends the industrial-park and communications-infrastructure results in Panels A and B of Table 10. The unit of observation is a township. *Coastal Side* equals one for townships on the coastal, formerly cleared side of the implemented Great Clearance boundary and zero for townships on the inland side. All regressions use the 18 km sample, include separate linear functions of signed distance on the two sides of the boundary, and include fixed effects for the 40 equal-length boundary segments. Panel A reports the industrial-park count in levels and after an inverse-hyperbolic-sine transformation, together with an indicator for whether a township contains at least two industrial parks. Panel B reports inverse-hyperbolic-sine counts of 2G, 3G, and 4G base stations. The underlying industrial-park and generation-specific base-station counts are winsorized at the 1st and 99th percentiles before transformation. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. A small number of irregular administrative units with detached territories are excluded, while ordinary townships intersected by the boundary remain in the sample and are assigned to the formerly cleared side. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.

G.2 Housing Quality and Material Living Conditions

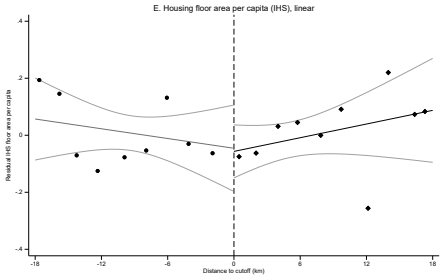
The basic-amenity outcomes in Panel C of Table 10 do not show a common shortfall on the formerly cleared side. Figure G.2 and Table G.2 extend this comparison to housing space and dwelling durability.



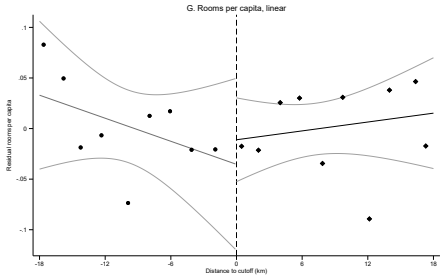
Panel A. Housing floor area, IHS



Panel B. Number of rooms



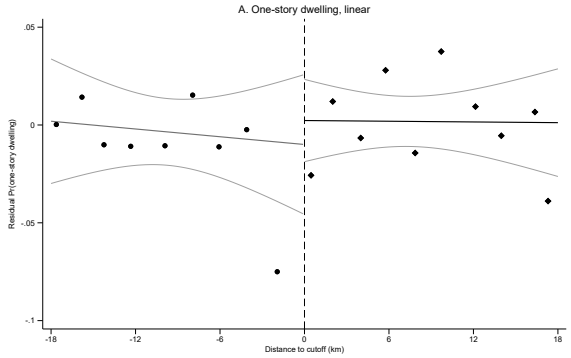
Panel C. Housing floor area per capita, IHS



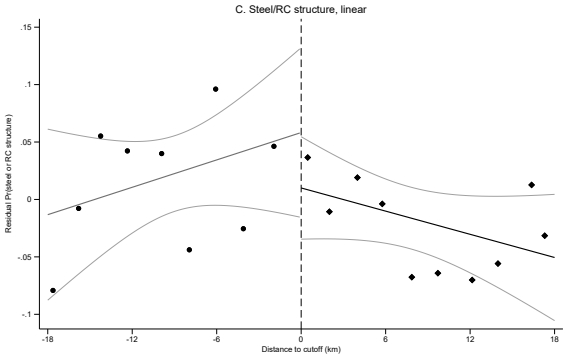
Panel D. Rooms per capita

Figure G.2: Housing Quality and Material Living Conditions at the Implemented Boundary

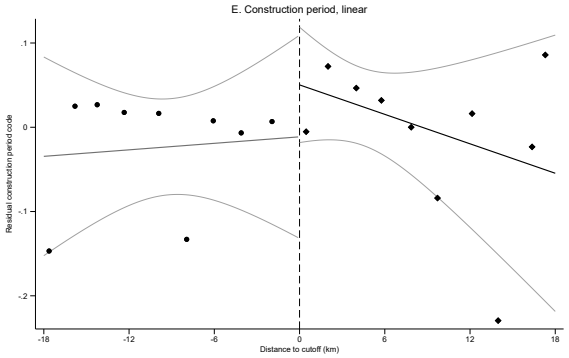
Notes: This figure relates additional measures of housing space and dwelling quality to signed distance from the implemented Great Clearance boundary. Panels A–D report housing-space outcomes; Panels E–G, continued on the following page, report dwelling durability and structure. The sample consists of respondents aged 16–59 in the one-percent micro sample of the 2010 Population Census whose townships lie within 18 km of the boundary. Treatment status and signed distance are assigned at the township level. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned residual means, solid lines report separate linear fits on the two sides, and gray curves report pointwise 95 percent confidence intervals. Table G.2 reports the corresponding estimates.



Panel E. One-story dwelling



Panel F. Steel or reinforced-concrete structure



Panel G. Dwelling construction period

Figure G.2: Housing Quality and Material Living Conditions at the Implemented Boundary, continued

Notes: Panels E–G report additional measures of dwelling durability and structure. The sample consists of respondents aged 16–59 in the one-percent micro sample of the 2010 Population Census whose townships lie within 18 km of the implemented Great Clearance boundary. Treatment status and signed distance are assigned at the township level, and each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned residual means, solid lines report separate linear fits on the two sides, and gray curves report pointwise 95 percent confidence intervals. Table G.2 reports the corresponding estimates.

Table G.2: Additional Housing Quality and Material Living Conditions

Panel A. Housing Space

	Housing floor area, IHS	Number of rooms	Housing floor area per capita, IHS	Rooms per capita
Coastal Side	0.147	0.675**	0.002	0.034
	(0.132)	(0.303)	(0.113)	(0.057)
Mean dep. var. (inland side)	5.036	3.381	3.755	0.902
Observations	42,502	42,502	42,502	42,502
R-squared	0.169	0.114	0.106	0.053

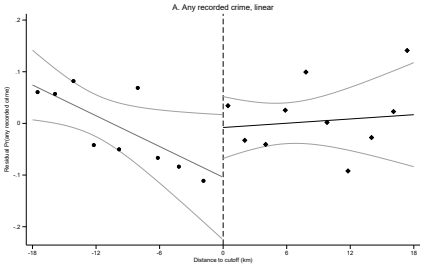
Panel B. Housing Durability and Structure

	One-story dwelling	Steel or reinforced-concrete structure	Dwelling construction period
Coastal Side	0.014	-0.060	0.061
	(0.024)	(0.051)	(0.077)
Mean dep. var. (inland side)	0.142	0.531	5.974
Observations	42,502	42,502	42,502
R-squared	0.098	0.065	0.040

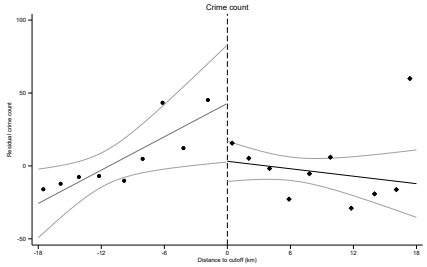
Notes: This table reports additional individual-level estimates using respondents aged 16–59 in the one-percent micro sample of the 2010 Population Census. The outcomes describe the household dwelling associated with each respondent. The sample contains respondents whose townships lie within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for respondents on the coastal, formerly cleared side and zero for respondents on the inland side. Treatment status and signed distance are assigned at the township level. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Ordinary township polygons intersected by the boundary are retained and assigned to the formerly cleared side; a small number of irregular administrative units with detached territories are excluded. Housing floor area is transformed using the inverse hyperbolic sine. Housing floor area per capita divides household floor area by rostered household size before applying the same transformation. The dwelling-construction outcome retains the categorical coding used in the census. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. The five basic-amenity outcomes reported in Panel C of Table 10 are not repeated. $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$.

G.3 Alternative Measures of Recorded Crime

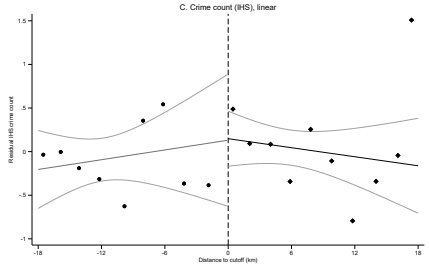
Figure G.3 and Table G.3 report recorded crime on the extensive margin, in levels, and under inverse-hyperbolic-sine transformations.



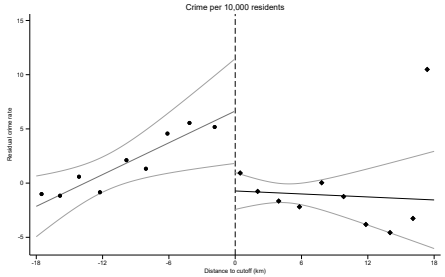
Panel A. Any recorded crime



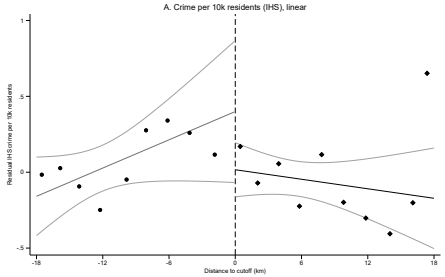
Panel B. Crime count



Panel C. Crime count, IHS



Panel D. Crime per 10,000 residents



Panel E. Crime per 10,000 residents, IHS

Figure G.3: Alternative Measures of Recorded Crime at the Implemented Boundary

Notes: This figure relates five measures of recorded crime to signed distance from the implemented Great Clearance boundary. Panel A reports whether a township records any crime. Panels B and C report the recorded crime count in levels and under an inverse-hyperbolic-sine transformation. Panels D and E report recorded crimes per 10,000 residents in levels and under the same transformation. The first three panels contain 399 townships; the population-standardized panels contain 370 townships with nonmissing population data. Each outcome is residualized with respect to fixed effects for the 40 equal-length boundary segments. Negative distances denote the inland side, while positive distances denote the coastal, formerly cleared side. Markers report binned residual means, solid lines report separate linear fits on the two sides, and gray curves report pointwise 95 percent confidence intervals. Table G.3 reports the corresponding estimates.

Table G.3: Alternative Measures of Recorded Crime

	Any recorded crime	Crime count	Crime count, IHS	Crime per 10,000 residents	Crime per 10,000 residents, IHS
Coastal Side	0.121	-48.898**	-0.020	-8.808***	-0.471
	(0.080)	(23.338)	(0.467)	(2.815)	(0.296)
Mean dep. var. (inland side)	0.893	58.409	3.431	10.028	2.457
Observations	399	399	399	370	370
R-squared	0.123	0.213	0.258	0.201	0.257

Notes: This table reports township-level estimates for five measures of recorded crime. The sample contains townships within 18 km of the implemented Great Clearance boundary. *Coastal Side* equals one for townships on the coastal, formerly cleared side and zero for townships on the inland side. All specifications include separate linear functions of signed distance on the two sides of the boundary and fixed effects for the 40 equal-length boundary segments. Ordinary township polygons intersected by the boundary are retained and assigned to the formerly cleared side; a small number of irregular administrative units with detached territories are excluded. Column 1 reports an indicator equal to one when at least one recorded incident is observed in the township. Columns 2 and 3 report recorded crime counts in levels and under an inverse-hyperbolic-sine transformation. Columns 4 and 5 report recorded crimes per 10,000 residents in levels and under the same transformation. Population-standardized outcomes use average township population across the 2000, 2010, and 2020 censuses. The mean row reports the inland-side mean in each column's estimation sample. Standard errors clustered by township are reported in parentheses. The level outcomes in columns 2 and 4 are also reported in Panel D of Table 10. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.