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Border fortification and legibility: Evidence from Afghanistan

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Abstract

States often fortify their borders against militant threats. How do these efforts shape civilian welfare and perceptions in borderland communities? I conceptualize border fortification as a legibility-building endeavor. By bolstering state reach in areas of weak historical penetration, fortification enhances the government's capacity for monitoring, administration, and control. Yet, expanding state authority also disrupts traditional cross-border markets. A trade-off between security and corruption emerges in consequence. I provide evidence for this theory in a difference-in-differences framework, combining administrative records on violence and representative data from a NATO-commissioned survey fielded across Afghanistan. Fortification facilitates government information-collection, improving security provision and fostering civilian reliance on state forces. Enhanced state capacity is countervailed by negative economic impacts. By disturbing the informal borderland economy, fortification fuels criminalization and local opposition. Civilians rely on illicit economic entrepreneurs to sustain traditional market access. Higher smuggling rents fuel official corruption and bribe-taking. The findings point to a key dilemma inherent in border fortification strategies.

International borders are hardening around the world—12% of borders and 40% of countries are fortified. A growing literature studies the reasons for this trend, including populism, migration, and income inequality (Carter & Poast, 2017; Simmons & Kenwick, 2022). In the Global South, a distinct security logic is relevant. By interdicting insurgents' transnational logistics (Blair, 2024; Galula, 2006) and impeding conflict spillovers (Avdan & Gelpi, 2017), many border fortifications aim to blunt militant violence. The prevailing focus on why borders are hardening, and how this pattern shapes civil conflict, obscures a key question: how border fortifications impact borderland civilians most affected by their presence.

The residents of borderlands occupy a unique political space. Because they reside in remote, peripheral regions, they are often viewed with suspicion or neglect by central states (Andreas, 2003; Espejo, 2020). State incapacity, underdevelopment, and rugged terrain render borderland communities frequent sites of unrest, repression, and marginalization (Atzili, 2011; Lee, 2020). Absent state penetration, civilians play an important role in crafting unique forms of informal governance that characterize border ecosystems. Through social capital (Murtazashvili, 2016), illicit economic arrangements (Gallien, 2020), and bargaining with belligerent parties (Idler, 2019), borderland residents coordinate dense, informal institutions for

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the protection of their physical and socioeconomic interests. These institutions stand in tension with the emergence of formal state authority in borderlands.

Since 2001, the United States, driven by fears over transnational militancy, has pushed Global South states to extend capacity in their frontiers (Blair, 2023). Top-down pressure from Western donors aims to encourage developing states to emulate the "Westphalian model" of sovereignty by projecting authority into their peripheries (Frowd, 2018). Border fortification is a salient manifestation of this trend. In this paper I investigate what expanding state penetration of borderlands—through fortification—means for border communities. How does border fortification impact the security and livelihoods of civilians in conflict-affected border regions?

I argue that border fortification is best understood as a legibility-building endeavor. Borrowing from Scott (1998)'s framework, I contend that by expanding state reach into historically marginalized border regions, counterinsurgents aim to bolster their capacities for monitoring, administration, and fiscal extraction. A trade-off between security and economic criminalization emerges in response. By introducing a permanent government presence in border communities, fortification enhances the government's capacity to provide security and reduces the social distance between borderland citizens and central administrators. But gains in security may be countervailed by fortification-induced economic dislocation. Specifically, fortification entails efforts to formalize and control cross-border flows, disrupting traditional, informal markets (Andreas, 2003; Kim & Tajima, 2022). Resistance to economic formalization among borderland civilians manifests in economic criminalization and the growth of smuggling networks. These trends also raise the profitability of corruption among border guards. For borderland civilians and fortifying states, these dynamics imply a trade-off between security and economic informality inherent in fortification strategies.

I provide evidence for this theory using granular microdata on fortification, violence, and attitudes in Afghanistan, where the United States invested billions of dollars in border security operations from 2008 to 2016.[1] Leveraging the staggered construction of border fortifications across districts in a difference-in-differences framework, I show that border control had countervailing security and economic consequences. Fortification was associated with a large increase in government employment of legibility tactics—operations designed to improve information about the human and physical terrain of borderland communities. After fortification, increasing government presence encouraged borderland civilians to inform on militancy. Information honed the selectivity of government violence and improved the success of counterinsurgency missions. Improving government security provision saw state forces supplant traditional authorities as the preferred institution for addressing insecurity.

The economic consequences of border fortification undercut security gains. By raising the cost of licit and illicit cross-border traffic (Carter & Poast, 2020), fortification reduced economic well-being, incentivizing smuggling and criminality. Local backlash to state efforts, like customs enforcement, spurred greater civilian reliance on traffickers, who could subvert the interdiction-efficacy of border fortification. The expansion of illicit networks exacerbated corruption among border guards, who could demand higher bribes. Economic turmoil in borderland communities increased rural unrest.

This study makes several important contributions. First, prior work has focused on why borders are hardening (Simmons & Kenwick, 2022) and how interstate rivalries (Lee, 2020), ethnic inequality (Salehyan, 2009), and terrain (Carter et al., 2019) constrain the consolidation of state authority in borderlands. This literature makes extensive reference to the populations residing in border communities but does not explicitly theorize about their relationship with state authorities seeking to expand control. I provide evidence documenting positive impacts of border fortification on security as well as negative impacts on economic welfare. This study extends scholarship on the implications of fortification for borderland residents (e.g., Frowd, 2018; Idler, 2019) and clarifies debates over how state capacity affects conflict.

I also offer an important conceptual contribution by distinguishing the security and economic consequences of legibility. Classic work recognizes diverse impacts of state centralization, including development (Levi, 1988; Lee & Zhang, 2017; Migdal, 1988) and security (Mir, 2018a), as well as resistance (Garfias & Sellars, 2022; Scott, 1985), repression (Belge, 2016), economic exploitation (Christensen et al., 2021), and criminality (Getmansky, Grossman, & Wright, 2019). However, these outcomes tend to be studied in isolation. My theoretical framework and results bridge this gap by explicitly considering how fortification impacts objective and subjective conditions in affected communities. I find divergent effects of fortification on security and economic welfare, highlighting the unique and nuanced ways state and traditional authorities interact to shape borderlands.

Finally, this study provides an important quantitative microfoundation for evaluating border fortification policies. In spite of its policy significance, fortification is difficult to assess empirically. Credibly identifying downstream consequences of fortification is crucial given border hardening worldwide. Crafting programs that mitigate the risks associated

[1] As noted above, externally-financed border enforcement is increasingly common (Frowd, 2018).

with expanding legibility in peripheral areas is also an important priority for the international community. Understanding how fortification affects civilian welfare, and what can be done to reduce violent backlash to state reach, is central to this goal. This paper deepens our understanding of these dynamics in a highly relevant context and provides insights about how to improve future counterinsurgency efforts. In this regard, my findings complement rich qualitative work on borderland communities' adaptive responses to state presence (Espejo, 2020).

LEGIBILITY, STATE CAPACITY, AND WELFARE

The classical view of state-building understands rational, bureaucratic administration (Weber, 1976), a monopoly on force (Tilly, 1992), and a coherent national identity (Anderson, 1983) as the hallmarks of effective states. Legibility—"the breadth and depth of a state's knowledge" about its populace and its ability to organize that knowledge to facilitate administration—lies at the center of the state-building enterprise (Lee & Zhang, 2017; Scott, 1998). By systematizing knowledge about governed populations, administrators can arrange societies in a manner that facilitates security, taxation, and development. The primary challenge is that contextual knowledge about society's human terrain is often inaccessible to outsiders. Government bureaucrats must translate complex social landscapes into administratively useful information. This challenge is magnified, especially in conflict settings, because efforts to rationalize traditional practices may prompt opposition (Boone, 2003; Scott, 1985).

When successful, efforts to craft legibility facilitate state-building, with significant welfare-enhancing consequences. Effective governance fosters public goods provision (Migdal, 1988), security (Tilly, 1992), trust and compliance with government directives (Levi, 1988; Lee & Zhang, 2017), and the emergence of national identity (Anderson, 1983). At the local level, state-building can enhance citizens' abilities to advocate for their rights (McMurry, 2022), while encouraging investment and reducing violence (Blair et al., 2019; Müller-Crepon et al., 2021). These impacts are especially important for marginalized groups (Beath, Christia, & Enikolopov, 2013).

Yet, expanding state capacity may also undermine security and social welfare. Crucially, increasing legibility facilitates government control, which can be employed to repress minority groups (Belge, 2016) and empower central political elites against local power brokers and civilians (Garfias & Sellars, 2022). State-building efforts that exacerbate corruption or sectarianism are particularly likely to backfire (Karim, 2020; Mikulaschek et al., 2020). Where infrastructural investments limit civilian movement (Abrahams, 2022) and economic exchange (Amodio, Baccini, & Di Maio, 2021), legibility-building efforts may contribute to employment losses and social isolation (Gade, 2020). In these cases, investments in legibility risk enflaming conflict.

Several specific mechanisms are relevant. State penetration may threaten militant control in areas of low pre-existing government reach. In this instance, actors threatened by expanding state capacity may escalate violence to forestall the imposition of government authority (Crost, Felter, & Johnston, 2014; Sexton, 2016). State investments may also attract militant violence aimed at rent capture. At the core of these dynamics is the potential for legibility-building efforts to backfire by spurring local opposition to expanding state presence. Even in the absence of *violent* countermobilization, *economic* resistance is common (Scott, 1985). For example, after titling in Colombia, landholders interfered with government information-collection to reduce their tax burdens (Sánchez-Talanquer, 2020). Similarly, social networks helped miners evade formalization during a Burkinabe regulatory campaign (Côte & Korf, 2018). In the context of borders, resistance often takes the form of bribery, as smugglers collude with guards to undermine enforcement (Gavrilis, 2008).

Combining these insights suggests legibility-enhancing endeavors have diverse effects on the security and economic welfare of target populations. Efforts to build government capacity can increase the efficacy of government security provisions while spurring local backlash. I develop this argument in the context of border fortification. My theoretical framework specifically points to the role of expanding state penetration of borderlands as a device for cultivating legibility.

FORTIFICATION AS A LEGIBILITY-ENHANCING PROJECT

Rugged terrain (Carter, Shaver, & Wright, 2019), colonial borders (Atzili, 2011), and interstate rivalry (Lee, 2020) have undermined developing countries' abilities to project authority into their frontiers. As a result, borderlands are illegible to central administrators in many Global South settings. In Afghanistan, for instance, though hundreds of trails cross the border with Pakistan, guards maintained a permanent presence at fewer than 24 (Johnson & Mason, 2008). Thousands of people and millions of dollars of goods crossed the border without inspection.

Where militant groups operate transnationally, borderland illegibility is a particularly severe problem

(Galula, 2006; Idler, 2019; Salehyan, 2009). As Ellsberg (2003, p. 118) explained of border villages in South Vietnam:

> knowing what needed to be done required an understanding of circumstances at the village and hamlet level no one could acquire sitting in a provincial capital or district town or peering down from helicopters. Not only did you miss a lot that way… but more important, you visited many parts of the area only rarely.

Increasingly, governments pursue border fortification with an explicit counterinsurgent aim. Using infrastructure and surveillance, counterinsurgents attempt to interdict cross-border militancy (Blair, 2024). This strategy is best understood as legibility enhancing. By promoting state penetration into borderlands where government control is historically weak, fortification can hone information gathering (Brambor et al., 2020) and administrative capacity (Mann, 1984).

As conflict erodes order, population-centric counterinsurgency aims to win civilian "hearts-and-minds" and build stability through discriminate violence, good governance, and service provision (e.g., Berman et al., 2011; Lyall et al., 2013; Sexton & Zürcher, 2024). The success of population-centric strategies hinges on how legible conflict-affected regions are to government forces (Berman et al., 2018; Trinquier, 1964). For security forces, the benefit of legibility is that it facilitates selectivity. Information hones the ability of government forces to distinguish civilians from embedded insurgents (Kalyvas, 2006). Information is also important for ensuring that governance is responsive to local needs (Karim, 2020; Sexton & Zürcher, 2024), and that broader state-building efforts are protected from subversion (Hendrix & Young, 2014). Mir (2018a) shows that legibility is imperative to counterterror effectiveness because it allows governments to collect and process information about their populations and act on that information to suppress militancy.

Given the importance of information, legibility-building tactics—operations intended to improve government knowledge of the human and physical terrain of conflict-affected regions—form a central component of population-centric counterinsurgency (Mir, 2018b). Extant work focuses on the effects of individual legibility-building tactics like government tiplines civilians use to report insurgent activity (Shaver & Shapiro, 2021), censuses used to systematize population data (Lieberman & Singh, 2017), or resettlement into secure villages (Kalyvas & Kocher, 2009).[2] Extending Mir (2018b, pp. 40–49), in Table 1, I categorize a broader range of legibility-building tactics, which encompass a number of common counterinsurgent practices.

While these tactics are used by all manner of security forces, many are particular priorities of troops engaged in counterinsurgent border fortification. The Afghan Border Force (ABF) engaged in 12 of the 14 tactics described in Table 1.[3] In communities plagued by cross-border militancy, legibility tactics are especially important because border regions are often the most illegible to government forces at the outset of conflict (Lee, 2020). The marginal benefit of legibility-building tactics is greater where government information is worst ex ante. Moreover, borderlands are sites of intensive population and economic exchange (Carter & Poast, 2020; Simmons, 2005). Concentrated flows of people and goods across borders render legibility an especially important asset in borderland communities where insurgents seek haven. In sum, I argue border fortification is best understood as a legibility-building endeavor. The centrality of legibility to counterinsurgency means border fortifications targeting transnational militancy are perceived as important tools for bolstering state capacity in conflict-affected borderlands (Blair, 2024; Galula, 2006).

THEORY

I build and probe the plausibility of a theory about how border fortification fosters legibility in borderland communities, and how, in turn, fortification-induced legibility gains shape security and economic conditions. The theory has four actors: (1) an insurgent movement that leverages cross-border support from proximate states to contest control against a local counterinsurgent country; (2) a local government engaged in counterinsurgency against a transnational militant group; (3) civilians who reside in borderland communities within the local counterinsurgent state, who seek to maximize their survival and welfare, and who may offer support to insurgent or counterinsurgent forces; and (4) an external counterinsurgent state that encourages a local counterinsurgent partner to fortify its borders against transnational threats and offers resources and support to that end. The theory assumes that local and external counterinsurgent forces engage in a population-centric strategy. This means that counterinsurgent actors in the model seek to strengthen the administrative capacity of the local government by suppressing militancy; and that to do so, counterinsurgent actors require information about

[2] Legibility-building tactics may lower transaction costs of tipping, improving government information.

[3] Section A.1 (p. SI-2–SI-5) in the Online Appendix describes the importance of each tactic to the ABF.

TABLE 1 Counterinsurgent legibility-building tactics.

	Legibility-building operations in counterinsurgency			
	Activity	**Key examples**	**References**	**ABF activity**
Population and resource control	Mapping	Algeria, Iraq, Nicaragua, Vietnam	Trinquier (1964), Anderson (1983), Karimi (2019)	✓
	Census-taking	Algeria, Israel, Turkey	Galula (2006), Lee and Zhang (2017), Lieberman and Singh (2017)	
	Biometric documentation	Afghanistan, China, Ireland, Malaya	Woodward (2005), Shrout (2011), Voelz (2015)	✓
	Property logs	Colombia, Pakistan, Peru	Mir (2018b, Albertus (2020)	✓
	Forced resettlement	Algeria, Malaya, Vietnam, Zimbabwe	Khalili (2012), Erickson (2019)	
Human intelligence gathering	Arrests and detentions	Algeria, Kenya, Iraq, Syria	Teamey (2007), Benard et al. (2011)	✓
	Detainee release	Afghanistan, Iraq, Vietnam	Blair (2022)	✓
	Tiplines and informants	Afghanistan, Iraq, Ireland	Berman, Felter, and Shapiro (2018)	✓
	Amnesties and reintegration	Kenya, Nigeria, Nicaragua, Philippines	Long (2016), Dancy (2018), Jeffery (2018)	✓
	Community meetings	India, Iraq, Liberia, Philippines	Berman et al. (2013), A. R. Blair et al. (2019)	✓
Technology-enabled intelligence gathering	Ground surveillance	Afghanistan, Algeria, India	Galula (2006), Talmadge (1976), Israel (2010)	✓
	Aerial surveillance	Afghanistan, Pakistan, Somalia	Byman (2013), Blair et al. (2022)	✓
	Signals intercepts	China, Pakistan, Israel, Yemen	Berman et al. (2018), Christia et al. (2022)	✓
	Counter-reconnaissance	Afghanistan, Iraq, Vietnam	Kilcullen (2011), Sonin and Wright (2023)	✓

Note: This typology of legibility-building counterinsurgent operations builds on and extends Mir's (2018b) categorization. Afghan Border Force (ABF) Activity indicates whether the ABF engaged in the respective legibility-building tactic. (See Section A.1 in the Online Appendix) for a fuller description of each tactic, and its specific role for ABF forces.

civilian and insurgent activities, which they use to suppress violence while reducing civilian harm.[4]

These scope conditions are relatively general: more than 80% of insurgents receive some form of support from abroad, counterinsurgents regularly fortify their borders to interdict transnational militancy and counterinsurgent border fortification is often supported by powerful external states like the U.S. (Blair 2023, 2024). Moreover, *population-centric* counterinsurgency has been the modal strategy since 1945 (Berman, Felter, & Shapiro, 2018). I focus on *border fortification* because borderland communities are often disproportionately illegible to government administrators (Idler, 2019; Lee, 2020), and because regulating cross-border mobility (of people and goods) is a central state task (Tilly, 1992; Scott, 1998; Simmons, 2005) with deep political and socioeconomic consequences. Future work should examine whether the theory generalizes to other forms of security infrastructure outside border regions.[5]

Security and state capacity

Legibility is critical for government-civilian relations in counterinsurgency because civilians hold agency (Galula, 2006; Wood, 2003). Since they can choose to share or withhold information and resources, civilians can punish malfeasance by combatants (Condra & Shapiro, 2012). With greater civilian support, governments hold superior information about the activities of militants and can apply force selectively to disrupt attacks and deter enemy collaboration (Berman et al., 2013; Kalyvas, 2006). In turn, improving selectivity may endogenously increase civilian willingness to

[4] My theory extends accounts from Slater (2010), Lee and Zhang (2017), and Mir (2018a). Whereas Scott (1998) emphasizes legibility as a tool for fiscal extraction, these authors emphasize the informational benefits of legibility—particularly how information is employed to minimize anti-state political challenges. Because my focus is on legibility as information-gathering, I do not preclude predatory state behavior. Counterinsurgent actors may allow venal elites in the local government to enrich themselves at the expense of a well-functioning fiscal administration, so long as these elites cooperate in information-gathering to facilitate population-centric counterinsurgency (Slater & Kim, 2015). In Afghanistan, local strongmen were coopted into the ABF so they could hone information collection in borderland communities, while enriching themselves through corruption (Giustozzi & Isaqzadeh, 2013).

[5] Hypotheses are exploratory and theory building. Subsequent work should engage in preregistered, quasi-experimental tests (e.g., Sexton & Zürcher, 2023) to probe generalizability.

collaborate with government forces (Condra & Wright, 2019). One of the most important ways enhanced legibility and state penetration can manifest in counterinsurgent contexts, then, is through the government's capacity for discrimination. To the extent border fortification efforts entail state penetration of peripheral regions, these efforts should increase contact between government forces and local civilians, improving the information security forces have about insurgent networks, and thereby enhancing the ability of governments to disrupt insurgent attacks through selective violence.

H1. Border fortification increases civilian collaboration with government forces, improving their ability to disrupt rebel violence.

Government success in disrupting insurgent violence through selective targeting may translate into broader improvements in civilians' perceptions of state security provision (Karim, 2020; Mikulaschek, Pant, & Tesfaye, 2020). When government forces are perceived as discriminate and capable, citizens are deterred from insurgent collaboration (Kalyvas, 2006) and view state forces as more legitimate and effective (Beath, Christia, & Enikolopov, 2015; Condra & Wright, 2019). An implication is that counterinsurgent border fortification efforts that bolster legibility and improve the government's ability to wield discriminate violence can improve civilian perceptions of government security provision more broadly. Hence, fortification may promote civilian reliance on government forces.

Where fortification yields tangible improvements in security conditions, state penetration into border communities may also shape the basis of social identity. Specifically, by demonstrating state presence, border fortification may spur national identification. Sambanis and Shayo (2013) posit administrative investments increase national status and reduce domestic conflict, endogenously fostering national identification. Extending this insight, I argue that border controls that expand state reach into communities historically isolated from central authority can thereby promote national identification.[6]

H2. Border fortification increases civilian reliance on government security provision and social identification with the state.

Economic dislocation and backlash

The preceding discussion highlights how counterinsurgent border fortification enhances capacity and improves security in borderland communities. However, efforts to cultivate legibility often confront opposition and backlash, particularly when government administrators oversimplify complex dynamics (Scott, 1998) and alienate local elites (Boone, 2003; Garfias & Sellars, 2022). In these circumstances, both unintended consequences and resistance to state penetration are common (Scott, 1985). In the case of border fortification, backlash is most likely to trigger resistance over economic dislocation. Ultimately, then, security-enhancing fortification efforts risk exacerbating economic criminalization and corruption.

In conflict-afflicted regions, border communities are traditionally reliant on cross-border markets. Licit economic activities in these areas are often embedded in transnational insurgent logistical networks (Ahmad, 2017). When governments attempt to interdict militant activities, these markets are disrupted and militants adapt (Getmansky, Grossman, & Wright, 2019). For counterinsurgent forces, the central difficulty is that disrupting *illicit* cross-border networks relied on by militants and smugglers necessarily also dislocates *licit* (but informal) markets relied on by borderland civilians (Gallien, 2020; Idler, 2019). By obstructing licit trade flows, fortification may dislocate borderland economies (Carter & Poast, 2020).

Consider Iraq's border with Syria, which US forces fortified from 2003 to 2008. Fortification-induced efforts to regulate cross-border traffic and stem flows of arms and fighters impoverished border communities reliant on informal trade. Economic destitution became a liability for counterinsurgency. For instance, US officials noted: "[t]he biggest fear is you have a [militant] financier who comes through and builds a[n insurgent] cell… [t]hese towns are in dire need" (Tyson, 2006). Likewise in Indonesia, counterinsurgent border control immiserated borderland civilians. As Indonesian border police interdicted rebel-affiliated traffickers, guards "[were] reluctant to shut down smugglers completely because the poor people of the island ha[d] no other way to acquire affordable everyday goods" (Hastings, 2010, p. 192).

This argument builds on scholarship on the deleterious economic consequences of mobility restrictions (Clemens, 2011; Feigenberg, 2020). For instance, border restrictions on trade and movement in Israel disproportionately harm Palestinian communities. As Calì and Miaari (2018) and Abrahams (2022) document, checkpoints depress Palestinian employment, wages, and time-worked by increasing transit costs and blunting labor demand. Similarly, Amodio, Baccini, and Di Maio (2021) show trade restrictions tied to Israeli border fortification reduce manufacturing wages. Thus, to the extent border fortification increases the transaction costs of crossing borders, it is likely to blunt economic well-being of borderland residents.

[6] This expectation dovetails with evidence the West Bank barrier heightened Israeli nationalism (Simonneau, 2016). McMurry (2022) also finds improving perceptions of government capacity foster national identification.

H3. Border fortification reduces the economic welfare of civilians in borderland communities.

Economic dislocation associated with border fortification is likely to spur local opposition and resistance. Growing economic criminalization is a particularly powerful and common manifestation of backlash to fortification's negative economic consequences. By increasing the costs of economic exchange, fortification may increase local reliance on illicit economic entrepreneurs, like smugglers and traffickers (Andreas, 2003; Gavrilis, 2008). These actors specialize in subverting the efficacy of border controls and can leverage their knowledge of informal crossing routes to sustain cross-border flows in the face of fortification-induced market disruptions (Kim & Tajima, 2022). Simultaneously, heightened smuggling rents raise the payoffs to border police of corruption. Greater smuggling profits increase the bribes guards can demand. Over time, bargains between smugglers and corrupt officials can evolve into informal institutions in border communities (Gallien, 2020; Kim & Tajima, 2022), rendering criminalization durable. This argument extends classical work by Scott (1985), who documents quotidian forms of economic resistance to state centralization, like theft and sabotage.

In cases where border fortification induces particularly severe losses, economic criminalization can exacerbate longer-run conflict (Amodio, Baccini, & Di Maio, 2021), potentially offsetting initial security gains from legibility. Growing smuggling rents often spark competition between illicit economic entrepreneurs in smuggling communities (Laughlin, 2019). In Afghanistan's Kunar Province, for example, border fortification increased timber smuggling, sparking violent feuds between local tribes over control of crossing routes and forest rights (Bader et al., 2013). Insurgent intercession in these disputes helped militants build succor while sapping government security gains that accrued when ABF's presence was first established (Morgan, 2021). Similar dynamics also unfolded in Iraq (Blair, 2024).

H4. Border fortification increases economic criminalization, official corruption, and social unrest in borderland communities.

Combining these insights highlights a trade-off between security and economic backlash incumbent in border fortification efforts that aim to increase the legibility of borderland communities. Improving security and government capacity are likely to enhance some aspects of civilian life in borderlands. Indeed, civilian preferences for security may make worsening corruption a tolerable short-run cost of fortification (García-Ponce, Zeitzoff, & Wantchekon, 2021). However, the likelihood of economic criminalization means state administrators contemplating border enforcement must prepare for significant challenges, including the expansion of illicit economic networks and increasing graft. Over the long run, these latter effects can sap gains counterinsurgents derive from heightened legibility.

CONTEXT

I explore this theory in the context of Afghanistan, focusing on NATO-sponsored efforts to fortify the borders between 2008–2016. The United States-led war in Afghanistan began in 2001, and border insecurity was a chronic challenge throughout the conflict. Militants enjoyed extensive sanctuary in Afghanistan's neighbors, including Pakistan and Iran. Pashtun-dominated tribal areas spanning Afghanistan's eastern and southern borders with Pakistan formed the Taliban's traditional heartland, and these areas became a key focus of fortification efforts. In this setting, Afghan and US officials identified cross-border sanctuary as "the single most important problem in the war" (Coll, 2018, p. 517).

The difficulty of controlling Afghanistan's borders owes to rugged terrain, historical administrative weakness, and the constellation of Pashtun tribes straddling the Afghan frontier (Barfield, 2010, p. 54). In particular, Pashtun clans are divided by the Durand Line, which demarcates the modern Afghanistan-Pakistan border. The legitimacy of the Line is disputed by Afghan policymakers, who claim it was imposed by Britain and robs Afghanistan of traditional territories in contemporary Pakistan. Owing to the border's contested status, tribal domination, and ruggedness, it has evolved into a natural haven for transnational militant and criminal organizations (Johnson & Mason, 2008, pp. 68–69). From 2006, the Taliban organized their resurgence through havens along the Durand Line. By 2008, the magnitude of cross-border militancy reached untenable heights. NATO officials estimated one-third of all insurgent attacks were attributable to transnational support, and Afghan officials advocated counterinsurgency raids into Pakistan (Coll, 2018).

Recognizing the imperative of border control, Afghan and NATO forces initiated the Focused Border Development (FBD) program in late 2008. The aim of this effort was to raise and train the ABF, an agency tasked with policing the borderlands.[7] While ABF troops were advised and equipped by NATO, the goal of the FBD program was to create an Afghan-led border security capacity (Giustozzi &

[7] Whitlock (2021) details challenges facing the border advisory mission. Strategic incoherence threatened sustainability of tactical achievements.

Isaqzadeh, 2013).[8] To this end, ABF forces—most of whom were recruited within the province in which they deployed—co-located with small NATO advisory teams to staff hundreds of Afghan-controlled forts along Afghanistan's periphery.[9] ABF troops led legibility-building operations around these forts to improve the central government's knowledge of borderland populations. In total, forts were established in 52 of the 259 districts within Afghanistan's border-contiguous provinces. Fortification was concentrated in Kandahar and Nangarhar, transit hubs bordering Pakistan; Nimroz, a smuggling hub bordering Pakistan and Iran; and Kunduz, a Taliban stronghold near Tajikistan (Figure C-5, p. SI-23 in the Online Appendix). Figure 1 plots the expansion of fortification efforts across districts over time.

Of course, it is important to preface the succeeding analyses by recognizing that despite trillions of dollars in reconstruction spending, including billions spent on border enforcement, the government of Afghanistan collapsed in August 2021. Within the broader war effort, fortification was conceived as a tactical solution to a key strategic challenge—transnational insurgent sanctuary (Coll, 2018; Giustozzi & Isaqzadeh, 2013; Whitlock, 2021). Understanding the objectives and consequences of border fortification for the counterinsurgency effort is important given the defining role *transnational* dimensions of conflict played in Afghanistan. However, border forts were a relatively small investment in the scheme of reconstruction. The eventual collapse of the Afghan government was the result of a complex, multicausal process, within which border insecurity played a small, distinct role (Malkasian, 2021). I highlight issues around border fortification that offer a microcosm of broader challenges contributing to the Afghan collapse. For instance, growing economic criminalization and corruption resulting from border fortification-induced economic dislocation degraded the long-run legitimacy of the Afghan government. However, the effects identified in this paper represent a small portion of the total story of the collapse. Effects I identify illuminate important battlefield dynamics of the conflict in a specific period of time (2008–2016) and place (borderland communities). Tracing precisely how these dynamics fed into the Taliban's eventual takeover is beyond the scope of this project.

[8] Afghan officials selected fort locations and led US-funded construction.

[9] Figure A-1 (p. SI-2) in the Online Appendix details the design of ABF forts. No evidence suggests fortification caused large population movements. Forts were provisioned through the ANSF logistics system (Giustozzi & Isaqzadeh, 2013), meaning they did not drastically increase local economic exchange between civilians and troops.

DATA

I combine three novel sources of microdata. Descriptive statistics are available in Tables A-1 and A-2 (pp. SI-5–SI-6) in the Online Appendix.

Border fortification

I exploit information on Afghanistan's border security infrastructure from the US Government's GEOnet Names Server (GNS). The GNS records millions of infrastructure sites worldwide, including hundreds of security installations in Afghanistan. With this data, I chart the completion of border fortifications in Afghanistan at the district-quarter from 2008–2016. The core independent variable takes a value of 1 in all district-quarters in which a completed border fort exists, and 0 otherwise.[10] By exploiting variation in the extensive margin of fortification, this approximates an intent-to-treat design. Fortification is a bundled treatment that includes the presence of each border post and ABF forces manning it as well as legibility-building tactics employed in border monitoring.[11]

Administrative records

To capture conflict, I study administrative data compiled by NATO and Afghan forces. For the period from 2008 to 2014, the US military has declassified the complete record of 430,000+ Significant Activities (SIGACTs). This represents the universe of insurgent attacks on counterinsurgent forces. Additionally, the SIGACTs file contains granular information on a range of other events (Sonin & Wright, 2024), including meetings with community elders, civilian informing, policing, and smuggling. Section A.3 (pp. SI-6–SI-7) in the online Appendix describes the data-generating process. The systematic nature of collection helps mitigate concerns about reporting bias (Weidmann, 2016). Yet, the data are not without limitations. In particular, because SIGACTs were compiled by counterinsurgents, the capacity for event detection was greater in areas where troops deployed. I take a number of steps to mitigate concerns that border fortification merely increased observability of SIGACTs, including controlling for the presence of non-ABF counterinsurgency forces.

[10] Treatment never reverts in the study period. I find consistent evidence studying the intensity of fortification (Table C-11, p. SI-24, in the online Appendix).

[11] Section A.1 (pp. SI-2–SI-5) in the online Appendix offers additional details. Bundled treatments are common in the state-building literature (e.g., Blair et al., 2022; Haim et al., 2021). I attempt to tease apart mechanisms by comparing effects of fortification to other security infrastructure (Table C-14, p. SI-28 in the online Appendix).

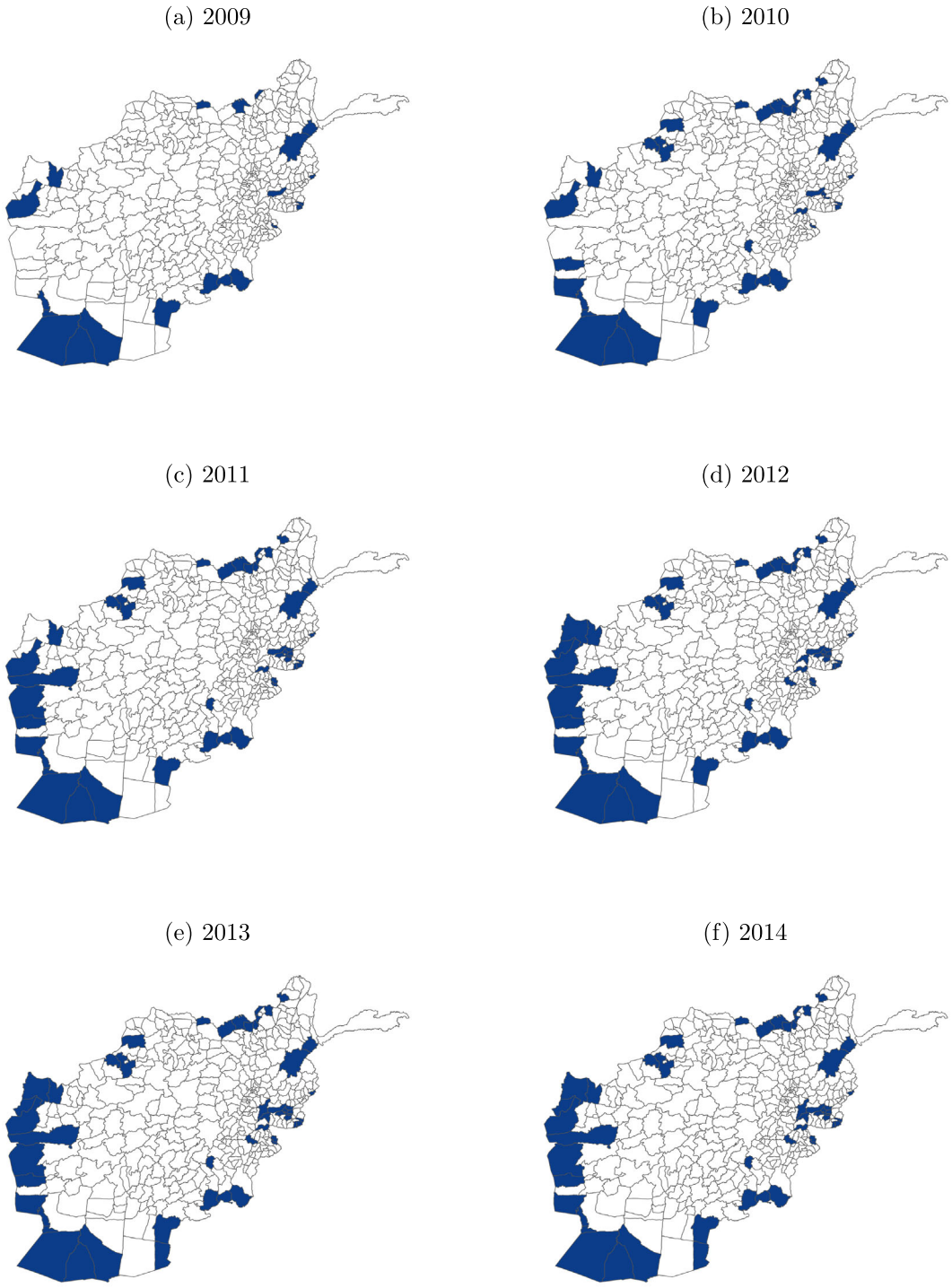

FIGURE 1 Border fortification in Afghanistan. Maps show the fortification status of Afghan districts across the years. Blue-shaded districts are fortified, and white-shaded districts are unfortified.

Survey

Representative opinion data come from the Afghanistan Nationwide Quarterly Assessment Research (ANQAR) survey. ANQAR includes several pertinent items, including questions about security, economic welfare, and corruption (Table A-3, p. SI-9 in the online Appendix).[12] I study 30 waves from 2008 to 2016. Section A.4 (pp. SI-7–SI-8) in the online Appendix describes the data collection and sampling process. ANQAR was commissioned by NATO

[12] Representative surveys are a validated tool for measuring economic activity in Afghanistan (Angrist et al., 2021, p. 231–232).

and administered by the Afghan Center for Socio-Economic and Opinion Research (ACSOR). ACSOR fielded the survey across Afghan districts selected via probability-proportional-to-size systematic sampling. In several conversations, ACSOR and NATO representatives confirmed that ANQAR was administered according to best practices: the survey was implemented by trained, locally recruited, gender-matched enumerators; enumerators received permission from village elders prior to household visits; and staff were never accompanied by counterinsurgent forces in the field. Confidence is further bolstered by high cooperation and low refusal and noncontact rates (section A.4, p. SI-8 in the Online Appendix), consistent with US surveys (Condra & Wright, 2019).

ESTIMATION STRATEGY

To probe the effect of border fortification, I leverage the staggered construction of forts across Afghan districts over time. Specifically, the empirical strategy exploits variation in border fortification over district-quarters, comparing fortified and non-fortified districts in border-contiguous provinces. I pair objective, administrative records of conflict with subjective, survey-based outcomes from ANQAR to ensure robustness. This strategy mitigates concerns about different biases in the SIGACTs and survey data (Fetzer et al., 2021; Lyall, Blair, & Imai, 2013).

While the spatial distribution of border forts was strategic, identification is supported by plausibly exogenous bureaucratic delays and idiosyncratic reallocation of US funds driven by high-level political reprogrammings. Border enforcement was funded in the context of the broader reconstruction, and, within this effort, project funding was subject to numerous, unanticipated bureaucratic hurdles, rendering the timing of project completion divorced from violence trends across district-quarters (Blair, 2024; Sexton, 2016). Table B-1 (p. SI-9) in the Online Appendix confirms that trends in combat do not predict fortification onset.

Exploiting the staggered implementation of fortification, I estimate a series of difference-in-differences models using a least-squares equation:[13]

$$Y_{d,t} = \delta(\text{Border Fortification}_{d,t-1}) + \alpha_d + \beta_t + \nu_{p\times t} + \gamma(X_{d,t-1}) + \varepsilon, \quad (1)$$

where d indexes districts and t indexes year-specific quarters. $Y_{d,t}$ are district-level outcomes. Border Fortification$_{d,t-1}$ denotes whether a district had a border fort in quarter $t-1$. α_d and β_t are district and year-specific quarter fixed effects. ν_{pxt} are Pashto share-by-quarter fixed effects, which absorb broad shifts across ethnolinguistic regions. $X_{d,t-1}$ is a vector of district-level covariates, including insurgent territorial control and deployments of NATO, Afghan National Security Force (ANSF), and Afghan Local Police (ALP) forces. ε are robust, district-clustered standard errors. Estimates are scaled using population weights.

The key identifying assumption is that in the absence of fortification, fortified and unfortified districts would experience common trends in outcomes. In Figure B-1 (pp. SI-11–SI-13) in the Online Appendix, I provide graphical evidence of parallel pre-trends. That outcomes are consistently parallel in the pre-treatment period builds confidence in the design. This strategy also assumes that fortification did not systematically coincide with other policy changes that could drive the focal effects. In Table B-2 (p. SI-10) in the Online Appendix, I show that border fortification did not impact four potentially confounding policies: counterinsurgent aid spending, deployment of other NATO or Afghan counterinsurgent forces, territorial control, or timing of security transitions to Afghan responsibility.

RESULTS

The empirical results comport with theoretical expectations, suggesting that border fortification: (1) increases legibility; (2) bolsters government security provision; and (3) causes market dislocation and economic backlash. I provide evidence of these dynamics in sequence.

Fortification increases legibility

My argument suggests conflict-affected borderlands are often uniquely illegible to state administrators, and that counterinsurgent border fortification aims to rectify knowledge deficits by extending government presence. In the context of Afghanistan, qualitative evidence (section A.1, pp. SI-2–SI-5 in the Online Appendix) suggests Afghan and NATO officials explicitly viewed border fortification as a legibility-building investment. For instance, Marine planners noted of borderlands in Hilmand:

> [W]e want to get [the ABF] established here, so they have the ability to be able to push west… [g]oing into the villages, collecting biometrics data, getting to know the elders, getting to know the lay of the land is going to help set them up for success. (Lopez, 2012)

[13] Section B.2 (pp. SI-9 – SI-10) in the Online Appendix gives the equation for ANQAR outcomes.

Further examples underscore the value of legibility tactics in which the ABF engaged. For instance, ABF troops undertook mapping exercises, systematizing village naming conventions and updating Soviet-era maps to facilitate patrols (Morgan, 2021, p. 17). Improved maps heightened the accuracy of counterinsurgent operations. During the mapping process, officials also visited a number of villages to which no representative of the Afghan state had *ever* been. On mapping visits, ABF forces met with elders at village shuras convened to deliberate on local governance issues (Aguila, 2012; Smith, 2010a). These meetings represented a critical tool for building government awareness of local economic and social problems (Murtazashvili, 2016; Malkasian, 2021), honing targeting of aid and security programs. At shuras, ABF officers also publicized opportunities for local insurgents to defect and reintegrate (Young, 2012) and worked with elders to identify wrongfully detained suspects (Stump, 2010) and reconcilable insurgent factions (SIGAR, 2019). Together these efforts contributed administratively useful knowledge, helping government forces mitigate civilian grievances and understand the organization of insurgent cells.

Similarly, border fortification prompted ABF guards to regularize customs procedures. By channeling cross-border traffic through designated routes, and by building technical monitoring capacities, US planners hoped fortification would expand the Afghan government's ability to extract customs revenue. United States-led export control programs supplied cargo monitoring equipment to border guards in Afghanistan (Frowd, 2018). In counterinsurgency, these served the dual purpose of helping security forces disrupt smuggling and enabling ABF officials to track cross-border exchange. In tandem with inspection equipment, fortification also spurred efforts to biometrically track borderland populations. ABF units at shuras and border crossings enrolled civilians in the Secure Electronic Enrollment Kit system (Mackie, 2012b), a portal for biometric record-keeping. This data enabled counterinsurgent forces to distinguish civilians from embedded Taliban fighters and disrupt cross-border recruitment networks (Rustine, 2011; Woodward, 2005), while trade registers aided in smuggling detection (Mir, 2018b, p. 42).

In Table 2, I establish that border fortification increased employment of legibility-building tactics. While declassified SIGACTs records do not reveal information about all tactics described in Table 1, they do describe six relevant operations: community meetings (i.e., shuras), counterinsurgent-initiated ground surveillance and counter-reconnaissance missions, arrests of insurgent suspects, and detainee releases and insurgent reintegrations mediated through local elders. Border fortification caused substantively large increases in employment of each of these legibility-building tactics, with substantive effects ranging from 2–16 percentage points (pp).

Two additional pieces of evidence help corroborate that fortification increased legibility and state presence in treated districts. First, expanding state penetration of borderlands implies not only that more legibility-building tactics are employed but also that the spatial scope of government-initiated missions is increasing. As ABF forces patrolled, they sought to expand the geographic extent of operations, visiting outlying communities within fortified districts. In Table B-3 (p. SI-15) in the Online Appendix, I measure the geographic dispersion of government-initiated counterinsurgency missions and find that fortification increased their spatial extent. Second, when Afghan government agencies like the ABF began operating in a district, they typically hired local civilians (Bate, 2023; Smith, 2010b), enhancing the government's local knowledge. Using data from ANQAR, I find that fortification was associated with a 6.6 pp increase in Afghan government employment (Table B-4, p. SI-15 in the Online Appendix).

Fortification increases informing and selectivity

The most important reason legibility is valuable in conflict zones is because it improves the information counterinsurgents possess about the civilian populace. With improved information, counterinsurgents can more effectively target violence, discriminating between civilians and insurgents and selectively targeting the latter (Berman, Shapiro, & Felter, 2011). Discrimination helps counterinsurgents avoid civilian abuse, endogenously begetting collaboration (Kalyvas, 2006). Hypothesis 1 anticipates that fortification-induced legibility gains increase pro-government informing and counterinsurgent success.

I consider these expectations in Table 3 and find robust support. Columns 1–6 consider civilian-provided tips, while columns 7–10 examine counterinsurgent discoveries of roadside bombs and caches. Fortification increased the extensive margin of all tips, and this effect was driven by tips about improvised explosive devices (IEDs), the type of insurgent attack most sensitive to collaboration. Fortification also increased levels of tips about insurgent-perpetrated civilian intimidation. Substantively, IED tips increased 16.3 pp on the extensive margin and nearly 2 per 100,000 residents in levels. Increasing civilian informing translated to greater counterinsurgent success. Bomb defusals and cache discoveries increased in fortified districts. Taking the estimate on

TABLE 2 Border fortification and legibility-building tactics.

	Elder shuras and jirgas	Surveillance operations	Counter-reconnaissance operations	Arrests and detentions	Detainees released	Insurgents reintegrated
	(1)	(2)	(3)	(4)	(5)	(6)
Extensive margin						
Border fortification	0.059†	0.140**	0.040†	0.143*	0.020*	0.160**
	(0.032)	(0.032)	(0.023)	(0.055)	(0.008)	(0.045)
Observations	5,180	5,180	5,180	5,180	5,180	5,180
Adjusted R^2	0.390	0.343	0.213	0.428	0.127	0.256
AIC	3,450	3,837	−101	4,255	−5,513	2,155
Per 100k population						
Border fortification	0.243*	0.672**	0.112*	1.682**	0.014†	0.329**
	(0.123)	(0.143)	(0.053)	(0.555)	(0.008)	(0.089)
Observations	5,180	5,180	5,180	5,180	5,180	5,180
Adjusted R^2	0.318	0.356	0.139	0.556	0.035	0.190
AIC	21,845	23,662	21,661	30,486	−338	12,736
District FE	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓
Pashto × quarter FE	✓	✓	✓	✓	✓	✓
Non-government control	✓	✓	✓	✓	✓	✓
NATO presence	✓	✓	✓	✓	✓	✓
ANSF presence	✓	✓	✓	✓	✓	✓
ALP presence	✓	✓	✓	✓	✓	✓

Note: Robust, district-clustered standard errors are in parentheses. Pashto is the Pashto-speaking share of district residents. Nongovernment control is an indicator for insurgent-controlled districts. NATO presence is the number of North Atlantic Treaty Organization/International Security Assistance Force battalions in a district. ANSF's presence is an indicator for the existence of an Afghan National Security Force base in a district. ALP presence is an indicator for Afghan Local Police operating in a district. The sample includes districts in border provinces. Estimates are scaled using analytic population weights.Abbreviations: AIC, Akaike information criterion; FE, fixed effects.
† $p < .10$; * $p < .05$, ** $p < .01$.

IEDs found/cleared, a back-of-the-envelope calculation suggests border fortification averted 22 civilian IED casualties on average. Qualitative reports are consistent. Reflecting on ABF's performance, one US advisor noted: "[they] exploited areas that were identified through intelligence sources. In those villages, locals were able to provide the AB[F] with valuable information about the enemy and their movements. … [N]umerous caches of explosives and weapons were discovered" (Mackie, 2012a).

Two additional analyses build confidence in the results. First, in Table C-1 (p. SI-16) in the Online Appendix, I corroborate SIGACTs-based estimates using ANQAR data on perceived selectivity of Afghan government-initiated operations and willingness to report IEDs. Across both measures, border fortification had a large, positive effect. Fortification increased perceptions that Afghan security forces were discriminant by 8.7–14.8 pp. Improving perceptions of selectivity were matched with increasing willingness to inform. Fortification boosted respondents' willingness to report IEDs by 16.7–31.1 pp. Second, in Table C-2 (p. SI-16) in the Online Appendix, I conduct a placebo test and find that the effect of border fortification on perceived selectivity is specific to Afghan government forces—those troops civilians were exposed to by virtue of fortification; in contrast, fortification had no effect on the perceived discrimination of NATO or insurgent violence.

Fortification increases reliance on government security

Improving perceptions of government selectivity and increasing civilian collaboration may translate to broader civilian reliance on government security provision. In Table 4, I find evidence for this. Columns 1–6 reveal that fortification increased counterinsurgent-initiated operations (19.3 pp), including police actions to secure borderland communities (7.8 pp), and incidences of local civilians carrying out pro-government activities (7 pp). Deglow and Sundberg (2021) underscore the importance of these developments:

TABLE 3 Border fortification, tips, and counterinsurgent success.

	Civilian tips						Counterinsurgent find/clears			
	All violent threats		Explosive threats		Threats against civilians		Explosive hazards		Weapons caches	
	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Border fortification	0.107*	0.399	0.163**	1.847†	0.130	0.307*	0.085†	5.641**	0.089*	1.698*
	(0.053)	(2.170)	(0.047)	(0.972)	(0.080)	(0.152)	(0.051)	(1.733)	(0.044)	(0.860)
Observations	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180
Adjusted R^2	0.413	0.469	0.461	0.476	0.213	0.185	0.526	0.641	0.467	0.464
AIC	2,755	45,228	3,470	38,150	4,687	18,922	3,126	43,914	3,581	36,704
District FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pashto × quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-government control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NATO presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ANSF presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ALP presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Robust, district-clustered standard errors are in parentheses. See notes from Table 2.
Abbreviations: AIC, Akaike information criterion; ALP, Afghan Local Police; ANSF, Afghan National Security Forces; FE, fixed effects; NATO,= North Atlantic Treaty Organization.
†$p < .10$, *$p < .05$, **$p < .01$.

providing basic security helped Afghan police units build legitimacy.

Improving reliance on government security provision is also borne out in survey data. Fortification caused a 5.7–6.3 pp increase in perceptions that the national government was most responsible for bringing security to respondents' communities (Table C-3, p. SI-17 in the Online Appendix). Increasing reliance on government security provision specifically shifted civilian reliance away (6.2–6.8 pp) from informal institutions like shuras, which play a key role in village protection in Afghanistan (Murtazashvili, 2016). Further, Table C-4 (p. SI-17) in the Online Appendix shows that border fortification increased confidence in Afghan counterinsurgency forces (17–19.3 pp) and boosted perceived accuracy and trustworthiness of government messaging (30.3–44.4 pp). These effects compliment growing reliance on government security provision and suggest state penetration enhanced the perceived efficacy and reliability of government forces.

Hypothesis 2 also anticipates that improving perceptions of government security provision foster national identification. Sambanis and Shayo (2013) formalize how state capacity alters identity—by reducing social distance between borderland civilians and central authorities, fortification could foster national identification. To explore this dynamic, I study respondents' self-description in national, ethnic, or tribal terms. As reflected in Table C-5 (p. SI-18) in the Online Appendix, fortification increased national identification by 11.2–11.6 pp. This finding comports with McMurry (2022)'s conclusion that legibility-building investments in historically marginalized communities bolster national identity by enhancing state legitimacy.

Yet, governing authorities' efforts to build identification with the state have confronted substantial opposition throughout Afghanistan's history (Murtazashvili, 2016). One important consequence is that centralization efforts have always been most successful among social groups with whom national administrators share kinship ties (Barfield, 2010). In the context of fortification, this dynamic saw key positions in the ABF allocated to influential kin of national and provincial authorities through patronage networks (Giustozzi & Isaqzadeh, 2013). For instance, Abdul Raziq, an ABF commander in Kandahar, was appointed through tribal links with President Karzai (Whitlock, 2021, p. 250). An implication of this dynamic is that border fortification may promote national identification more among borderland citizens sharing tribal affiliations with policymaking elites. For these communities, legibility intersects with identity-based affinity towards central officials, magnifying the impact of state reach. I consider this proposition in Figure C-1 (p. SI-18) in the Online Appendix and find that the effect of fortification on national identification was twice as large among respondents from powerful, government-connected tribes.

TABLE 4 Border Fortification and Government Security Provision.

	All counterinsurgent activities		Police actions		Supportive civilian events	
	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population
	(1)	(2)	(3)	(4)	(5)	(6)
Border fortification	0.193**	0.975**	0.078**	0.066**	0.070**	0.090**
	(0.056)	(0.191)	(0.028)	(0.020)	(0.023)	(0.025)
Observations	5,180	5,180	5,180	5,180	5,180	5,180
Adjusted R^2	0.344	0.296	0.174	0.084	0.160	0.091
AIC	4,520	22,887	−2,239	6,203	−3,281	3,934
District FE	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓
Pashto × Quarter FE	✓	✓	✓	✓	✓	✓
Non-government control	✓	✓	✓	✓	✓	✓
NATO presence	✓	✓	✓	✓	✓	✓
ANSF presence	✓	✓	✓	✓	✓	✓
ALP presence	✓	✓	✓	✓	✓	✓

Note: Robust, district-clustered standard errors are in parentheses. See notes from Table 2.
Abbreviations: AIC, Akaike information criterion; ALP, Afghan Local Police; ANSF, Afghan National Security Forces; FE, fixed effects; NATO, North Atlantic Treaty Organization.
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$.

Fortification reduces economic welfare

Positive effects of fortification on legibility and security may mask negative economic consequences of border enforcement. In particular, border fortification raises transaction costs of cross-border exchange (Carter & Poast, 2020), reducing economic well-being of borderland civilians. Several related dynamics underpin this relationship. Security infrastructure can curtail freedom of movement, contributing to spatial misallocation of labor (Abrahams, 2022; Feigenberg, 2020). Longer wait-times at border crossings also reduce labor demand and working hours (Calì & Miaari, 2018). Customs enforcement at border posts creates trade-impeding bureaucratic frictions (McCallum, 1995). In counterinsurgent settings, these impacts can have profound disruptive consequences. Where civilians rely on cross-border markets traditionally unencumbered by state enforcement, introducing border controls can exacerbate destitution and unemployment (Idler, 2019). Over the long run, economic dislocation may facilitate insurgent recruitment (Tyson, 2006).

To probe Hypothesis 3, in Table 5, I consider two ANQAR questions about household finances and employment. Columns 1–5 examine whether respondents report that their households draw monthly income. Columns 6–10 examine respondent satisfaction with labor market conditions. Absent reliable administrative data on economic conditions, these questions allow a next-best assessment of fortification's financial consequences. Results are striking. In fortified districts, the probability a household reported receiving monthly income declined by 3 pp. Declining incomes were matched by growing labor market pessimism. Fortification increased reported dissatisfaction with job availability 16–24.4 pp.

To better understand why fortification reduced income and job satisfaction, I study additional labor market outcomes in Table C-6 (p. SI-19) and Figure C-2 (p. SI-19) in the Online Appendix. Border fortification reduced the probability respondents reported being employed full-time (17.7-19.3 pp). Reductions in full-time employment were greatest for sectors most reliant on traditional cross-border markets—agriculture (13.8 pp) and unskilled labor (8.7 pp).[14] Declining full-time employment corresponded with increasing part-time employment, suggesting border fortification decreased income by reducing working time, not increasing outright unemployment. This result aligns with Calì and Miaari (2018) finding that Israeli border fortifications diminished hours-worked.

Qualitative evidence comports with these findings, highlighting various ways fortification reduced economic welfare in Afghan borderland communities. Border hardening significantly increased the time border crossing took, depressing labor mobility and trade. As fortifications restricted informal crossings, civilians who could previously transit Afghanistan's

[14] Growing public-sector employment partially offset this effect (Table B-4, p. SI-15 in the Online Appendix). Expanding government employment was a deliberate strategy to counter negative effects of fortification (Calì & Miaari, 2018, p. 137).

TABLE 5 Border fortification and economic well-being.

	Household draws monthly income					Dissatisfied with employment situation				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Border fortification	−0.030†	−0.031*	−0.030†	−0.030*	−0.030*	0.232**	0.232**	0.244**	0.160**	0.163**
	(0.015)	(0.016)	(0.016)	(0.015)	(0.015)	(0.012)	(0.012)	(0.014)	(0.012)	(0.013)
Observations	154,676	154,676	154,676	152,577	152,577	37,242	37,241	37,234	37194	37,194
Adjusted R^2	0.082	0.084	0.084	0.090	0.090	0.070	0.071	0.072	0.246	0.246
AIC	68,817	68,543	68,493	65,249	65,242	49,811	49,753	49,690	41,958	41,947
District FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Demographic controls		✓	✓	✓	✓		✓	✓	✓	✓
Ethnicity FE			✓	✓	✓			✓	✓	✓
Security/governance controls				✓	✓				✓	✓
Survey conditions controls					✓					✓

Note: Robust, district-clustered standard errors are in parentheses. Demographics are age and its squared term, gender, and education. Ethnicity fixed effects parameterize respondents' self-identified ethnic backgrounds. Security/governance controls are measures of economic status, indices of perceived performance of the national and district governments, indicators for the reported presence of police and military officials at least weekly, and perceived territorial control. Survey conditions are measures denoting a respondent's level of comfort and comprehension as assessed by the enumerator, along with the number of other people present during the interview. The sample includes districts in border provinces. Estimates are scaled using sampling weights.
Abbreviations: AIC, Akaike information criterion; FE, fixed effects.
†$p < .10$, *$p < .05$, **$p < .01$.

borders without interference now had "to travel for days or weeks to cross the border and reach relatives, [jobs, or pastures]" (Sahill, 2021). Longer wait-times at border crossings reduced time allocated to income-generating activities. ABF enforcement exacerbated delays because forts channeled traffic through fewer monitored crossings, "le[aving] the road[s] congested" (Meister, 2012). Patrol vehicles further degraded road infrastructure, slowing commercial trucking. Expanding customs enforcement also frustrated businesspeople unaccustomed to bureaucratic regulations. One trader reported that Afghan civilians were "driven to desperation by the bureaucracy involved in getting goods across the border" (Babak, 2013). Depressed trade reduced supplies of consumer goods, causing price hikes that compounded destitution in borderland communities. Sahill (2021) noted: "[w]hile employment has tumbled, prices of staple foods have skyrocketed without the ease of cross-border trade." To mitigate fortification-induced immiseration, borderland civilians increasingly resorted to smuggling and corruption (Babak, 2013).

Fortification exacerbates criminalization and corruption

Hypothesis 4 anticipates that by dislocating markets, border fortification increases economic criminalization, corruption, and social unrest—the means local elites use to resist legibility-building (Scott, 1985). In countries plagued by transnational militancy, insurgent–criminal networks control borderland economies (Idler, 2019). In these settings, fortification-linked barriers to trade exacerbate economic informality by increasing demand for smuggling to subvert border controls (Gavrilis, 2008). Illicit economic entrepreneurs resist state enforcement by expanding their trafficking networks, ensuring their privileged positions are insulated from market disruptions (Whitlock, 2021). Border guards demand larger bribes as smuggling rents grow (Gallien, 2020). Economic immiseration and expanding illicit networks spur social unrest.

Table 6 studies these expectations using data on criminal economic activities like smuggling, illicit finance (corruption/counterfeiting), and ransom kidnapping.[15] These illicit but widespread livelihood activities contributed significantly to the informal economy of Afghan border communities (Ahmad, 2017) and formed a key source of insurgent financing and resilience (Sonin & Wright, 2024). I find that border fortification exacerbated economic criminalization across illicit revenue-generating activities, both on the extensive margin and in levels. Fortification caused an increase in smuggling (10.1 pp), particularly of narcotics (7.6 pp) and arms (9 pp), while also increasing illicit finance (9.4 pp) and ransom kidnapping (13 pp). Growing illicit economies helped militants survive temporary setbacks from counterinsurgency and build long-run local influence (Coll, 2018, pp. 269, 534). As one ABF commander lamented: "[w]hen there's corruption [and smuggling]… when leaders take your money, harass you, make problems for you, people will support the Taliban… [i]f you take away corruption, you take away the reason to support the Taliban" (Rahmani, 2017).

[15] Effects are specific to economic crimes (Figure C-3, p. SI-20 in the Online Appendix), suggesting fortification did not merely increase crime detection.

TABLE 6 Border fortification and illicit economic activities.

	All smuggling		Narcotics smuggling		Arms smuggling		Illicit finance		Ransom kidnapping	
	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population	Extensive margin	Per 100k population
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Border fortification	0.101*	0.335*	0.076**	0.164*	0.090*	0.247*	0.094†	0.185†	0.130**	0.159
	(0.043)	(0.141)	(0.028)	(0.066)	(0.041)	(0.124)	(0.049)	(0.110)	(0.049)	(0.137)
Observations	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180
Adjusted R^2	0.349	0.357	0.383	0.361	0.226	0.194	0.338	0.324	0.193	0.175
AIC	4,069	20,684	269	14,479	3,330	16,734	4,166	18,606	4,058	15,777
District FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pashto × Quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-government control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NATO presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ANSF presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ALP presence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Robust, district-clustered standard errors are in parentheses. See notes from Table 2.
Abbreviations: AIC, Akaike information criterion; ALP, Afghan Local Police; ANSF, Afghan National Security Forces; FE, fixed effects; NATO, North Atlantic Treaty Organization.
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$.

Several additional results build support for this finding. First, I find that border fortification was associated with increasing opium-poppy cultivation, particularly in districts with more suitable agroclimatic conditions (Table C-7, p. SI-21 in the Online Appendix). Second, ANQAR data reveal growing civilian reliance on illicit economic entrepreneurs (Table C-8, p. SI-21 in the Online Appendix). Qualitative evidence suggests that these elites resisted state efforts that impinged on local economic interests (Morgan, 2021). Fortification specifically increased favorability toward smugglers (2.2–2.4 pp) and perceived economic importance of local elites (2.5–2.7 pp).

Third, in Table 7, I examine perceptions of police corruption. Guards responsible for border enforcement can demand larger bribes as illicit economic activities expand. Columns 1–5 and 6–10 respectively study respondent experiences of police impropriety and corruption. Across models, border fortification increased perceived police misbehavior (4.6–5.4 pp) and police corruption (9.3–9.7 pp). Combining these estimates with information on bribe prices (UNODC, 2012), a back-of-the-envelope calculation implies fortification caused an additional $2.1 million in graft in the average district, or $37—12% of average quarterly income—in additional bribes per borderland resident. In an extension of these results (Table C-9, p. SI-22 in the Online Appendix), I consider how smuggling dynamics intersect with fortification to shape graft. Kim and Tajima (2022) show that border enforcement exacerbates corruption where the state is unable to punish corrupt officials, and where guards and smugglers hold long time horizons because of shared knowledge of trafficking routes and inelastic black-market demand. Both of these criteria characterize Afghanistan. While using fortification to enhance legibility, the central government had little interest in punishing malfeasant border officials. Rather, ABF positions were distributed as patronage (Giustozzi & Isaqzadeh, 2013), which helped enhance the local security benefits of fortification (Whitlock, 2021). Precisely, as I argue, the Kabul regime traded revenue lost to graft for short-run security benefits of borderland legibility. Second, guards and smugglers interacted repeatedly because locations of smuggling routes were well-known (Johnson & Mason, 2008), and narcotic cultivation was integral to borderland livelihoods. As expected, official corruption associated with border fortification was worst along smuggling corridors.

Finally, in Table C-10 (p. SI-23) in the online Appendix, I consider how border fortification shaped social strife. Using data on tribal feuds and demonstrations, I generate a measure of rural unrest in borderland communities. I find fortification increased unrest (9.1 pp) and especially intertribal disputes (3.4 pp). This finding comports with qualitative reports about how border enforcement enflamed social tensions between smuggling tribes over economic dislocation (Bader et al., 2013). Importantly, by mediating these disputes, insurgents established a foothold in borderland communities disrupted by border fortification (Morgan, 2021, pp. 76–87).

TABLE 7 Border fortification and corruption.

	Witnessed police behave improperly					Experienced police corruption				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Border fortification	0.054*	0.052*	0.052*	0.046*	0.046*	0.097**	0.096**	0.096**	0.094**	0.093**
	(0.022)	(0.021)	(0.020)	(0.019)	(0.019)	(0.028)	(0.026)	(0.026)	(0.034)	(0.034)
Observations	140,417	140,417	140,417	139,251	139,251	109,489	109,489	109,485	71,720	71,720
Adjusted R^2	0.112	0.119	0.119	0.153	0.153	0.098	0.106	0.106	0.149	0.149
AIC	128,804	127,611	127,555	121,291	121,232	112,696	111,684	111,628	65,686	65,640
District FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-specific quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Demographic controls		✓	✓	✓	✓		✓	✓	✓	✓
Ethnicity FE			✓	✓	✓			✓	✓	✓
				✓	✓				✓	✓
Security/governance controls										
Survey conditions controls					✓					✓

Note: Robust, district-clustered standard errors are in parentheses. See notes from Table 5.
Abbreviations: AIC, Akaike information criterion; FE, fixed effects.
† $p < .10$, * $p < .05$, ** $p < .01$.

EXTENSIONS

Temporal dynamism

In Figures C-6 and C-7 (pp. SI-25–SI-27) in the online Appendix, I explore temporal dynamism in the effect of border fortification on security and economic outcomes. Dynamic effects are likely if fortification-induced legibility gains take time to facilitate government security provision, or if fortification-induced economic disruptions worsen over time. Militant and civilian adaptations to fortification may also attenuate the long-run efficacy of border enforcement (Getmansky et al., 2019). This means short-run security gains generated by border fortification are likely to decay. Probing these dynamics with successively longer treatment lags reveals that the security benefits of fortification unfold in the short run, but largely attenuate within 1 year. In particular, civilian informing decays between two and four quarters post-fortification, while the extensive margins of IED neutralizations and cache-finds exhibit similar patterns.[16] These findings are consistent with Mir (2018a)'s conclusion that legibility-building investments can quickly translate into counterinsurgent success. Turning to the broader issue of government security provision, fortification also briefly increased counterinsurgent operations, police actions, and supportive civilian-initiated activities, though these effects decayed within four or five quarters of fortification.

[16] More optimistically, border fortification durably increased levels of IED neutralizations and cache discoveries.

In contrast, economic responses to border fortification unfold when fortification-induced market disruptions are realized (Carter & Poast, 2020). This process takes more time as illicit and informal economic entrepreneurs in borderland communities mobilize. Consistent with this interpretation, economic backlash, including smuggling and corruption, was modestly more durable than security gains in fortified areas. Smuggling increased for six quarters after fortification. Narcotic smuggling—the illicit livelihood activity many borderland residents turned to to recoup fortification-linked income losses—was durably greater in fortified areas. Increasing smuggling corresponded with growing favorability toward traffickers. Illicit finance and ransom kidnapping also persisted at least five quarters, reinforcing durable economic criminalization resulting from fortification. Civilians were attuned to these dynamics—experiences of police impropriety and corruption persisted at least five quarters after border fortification. Ample qualitative evidence suggests these patterns undermined the long-run security benefits of border fortification by degrading popular perceptions of state legitimacy (Babak, 2013; Rahmani, 2017).

Together, these findings underscore the important point that border fortification is unlikely to generate *durable* security gains in borderland communities. Counterinsurgents cannot fortify their way to victory. Indeed, if negative economic consequences of fortification allow insurgent groups to capitalize on market disruptions and integrate into growing smuggling networks, as occurred in Afghanistan, fortification could exacerbate long-run borderland insecurity.

In Afghanistan, ABF corruption aggravated intratribal rivalries, on which the Taliban capitalized to expand recruitment over time (Coll, 2018, pp. 139–142, 224). In turn, rising insurgent violence undermined trust in the police and deteriorated the broader state-building project (Deglow & Sundberg, 2021).

Security infrastructure

I focus on *border* fortification because borderlands in conflict-affected developing countries are often uniquely illegible to state administrators and essential to transnational militants. Moreover, legibility is particularly valuable in borderlands where concentrated, cross-border flows are central to local livelihoods. These features render legibility building through infrastructural investment common and important in border communities. Nevertheless, aspects of my argument could also apply to other counterinsurgent forces without a specific border security mandate. Anywhere state reach is deficient, legibility gains from expanding infrastructure could impact security and economic conditions. I verify that the effects of border fortification hold while controlling for other security infrastructure (Table C-13, p. SI-28 in the Online Appendix), like non-ABF police and military installations. In Table C-14 (p. SI-28) in the Online Appendix, I also assess differences between the effects of border fortification and other counterinsurgent presence. Wald tests reveal that the effects of border fortification are statistically distinguishable from the effects of other infrastructure for 70% of the main outcomes. These tests underscore the unique role border enforcement plays in counterinsurgent contexts, and highlight the specific consequences of legibility-building in borderland communities.

Robustness

I take various additional steps to address threats to identification. First, two-way fixed effects estimators yield a variance-weighted average treatment effect. When already-treated units act as controls, changes in treatment effects over time may bias the overall estimate (Goodman-Bacon, 2021). Table C-12 (p. SI-24) in the Online Appendix confirms the findings are unchanged using an imputation estimator. Second, covariates in the survey-based analyses are potentially endogenous. In Table C-15 (p. SI-29) in the Online Appendix, I address concerns about post-treatment bias owing to inclusion of these parameters. Third, survey-based estimates rely on individual-level data, but treatment is at the district-level data. If potential outcomes cluster-correlate, precision may be artificially inflated in individual-level regressions. In Table C-16 (p. SI-29) in the Online Appendix, I collapse survey outcomes to the cluster level, taking the district mean response within each wave. Encouragingly, the main results are robust while reestimating mean perceptions in a district-quarter panel.

Fourth, in Table C-17 (p. SI-30) in the Online Appendix, I explore heterogeneity in the effect of border fortification, specifically considering whether effects vary geographically. The effects of border fortification were greatest in areas of eastern and southern Afghanistan bordering Pakistan—precisely where the Taliban's transnational network was concentrated. Economic resistance to border fortification was also particularly severe in northern Afghanistan, where smuggling routes to Central Asia and Europe originate.

CONCLUSION

While the conventional wisdom on counterinsurgency suggests border control is critical for defeating transnational insurgents (Galula, 2006; Trinquier, 1964), I argue that this unqualified prescription neglects an important trade-off between security and economic criminalization. On the one hand, fortification increases the legibility of borderland communities to government officials, increasing the selectivity of government violence, increasing civilian collaboration with counterinsurgent forces, and improving perceptions of state security provision. These efforts may bolster state capacity and spur national identification. Yet, by dislocating borderland economies, fortification also spurs economic backlash. Fortification-linked disruptions in cross-border exchange reduce income, labor market satisfaction, and working time. These negative economic consequences spur backlash, which manifests as economic criminalization. Local economic elites resist infringements on informal cross-border trade by expanding their influence. Growing illicit economic networks exacerbate corruption. These effects unfold dynamically, out-lasting short-run security benefits derived from border fortification. The balance states strike between security and economic criminalization, then, bears crucially on the success of border fortification efforts.

These findings address important gaps in the study of border security in conflict. Prior work has advanced our understanding of border enforcement but has primarily focused on factors that motivate border hardening (e.g., Simmons & Kenwick, 2022) or the consequences of border control for militancy (e.g., Blair, 2024). The primary contribution of this paper is to focus attention on *civilians* in borderland communities—those people most affected by border fortification. By recentering the perspectives and welfare of this unique class of historically

marginalized individuals, this paper sheds new light on the local consequences of border fortification. I combine novel administrative and survey-based measures and provide a rich exploration of mechanisms that help explain why fortification may have countervailing consequences for security and the economy.

The evidence I present suggests that border fortification is a legibility-enhancing endeavor. Expanding state penetration of borderland communities helps foster security. I provide a theoretical microfoundation for this shift. By increasing the government's information about borderland residents, fortification hones discrimination in targeting, encourages pro-government civilian informing, and increases civilian reliance on and identification with the central state. These results support a long-standing theoretical account about the importance of information for the selectivity of counterinsurgent violence, and ultimately for the broader trajectory of government security provision (Berman et al., 2011). I also find evidence consistent with a theoretical mechanism proposed by Frowd (2018): that fortification can reduce social distance between government authorities and borderland citizens.

My findings also illustrate a stark negative consequence of fortification for borderland economic life. By dislocating traditional, cross-border markets and informal livelihood activities, fortification spurs local economic resistance. Recent work has shed light on opposition to state centralization campaigns (Garfias & Sellars, 2022), and classical scholarship highlights the diverse ways legibility may backfire (Boone, 2003; Scott, 1985). My results clarify how fortification efforts exacerbate economic criminalization, attenuating security benefits by increasing graft and cementing the importance of informal, illicit entrepreneurs in the economic life of border communities.

The intertemporal trade-off between security and corruption incumbent in counterinsurgent border control raises key policy implications. Above all, the findings cast doubt on the value of border fortification as a state-building tactic. While expanding capacity in borderland communities may bolster legibility and security provision in the short run, these effects are often countervailed by economic resistance and criminalization over the longer run. This dynamic implies short-term tactical gains governments accrue are unlikely to translate into strategic counterinsurgency success. In the Afghan case, modest improvements in security were offset by deleterious economic impacts of fortification. Smuggling, graft, and unrest countervailed the strategic value of near-term tactical victories like bomb clearances.

Still, in the face of transnational militancy, it is often infeasible for governments not to pursue some form of border enforcement (Andreas, 2000; Gavrilis, 2008). To the extent counterinsurgent border fortification occurs, border control efforts should be accompanied by investments in development and anti-corruption reforms. By providing licit economic opportunities in affected border communities, governments may be able to stem the growth of the illicit economy following fortification. Absent development assistance and anti-corruption measures, fortification-induced economic criminalization is likely to undercut security gains. Simultaneously, state administrators should recognize that the economic welfare of borderland residents in conflict-affected regions is knitted into a broader social fabric. Informal, cross-border flows and local economic elites play an important, traditional role in these settings. Fortification efforts that seek to coopt rather than supplant informal institutions may be more successful. Crafting sound policies also requires considering human rights issues at stake, how combatants may benefit from economic criminalization and the quality of state institutions. The welfare of borderland citizens should be at the center of debates over border fortification and how to balance the trade-off between security and economic dislocation.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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