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Quid pro quo: How the wartime economy shapes violent contestation of the state after war

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WIDER Working Paper 2024/45

Quid pro quo: how the wartime economy shapes violent contestation of the state after war

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Abstract: Why do some conflict-affected areas remain an arena of violent contestation of the state, while others transition to peace? I suggest that economic networks developed during intrastate conflict—i.e. wartime economies—give rise to continued pockets of insecurity. The significance of the wartime economy for local livelihoods sustains an interdependence between rebels and communities that permits rebels to remain locally embedded as they protect resource extraction and trade. It also creates the perception that state expansion could threaten collective survival, raising costs of effective counterinsurgency. Drawing on novel subnational data on Peru, an instrumental variables approach, and interviews with community members, government officials, and experts, I demonstrate that areas linked to the wartime economy see more violent attacks after conflict termination as a function of how the civic perception of governance actors has developed in the area. The findings underscore the limitations of coercive state capacity and the centrality of civilians in shaping governance.

Key words: post-conflict violence, state building, illicit economy, drug trade, instrumental variable

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1 Introduction

The origin and maintenance of the state's monopoly on violence is a central concern in the social sciences. It is considered a key characteristic of the modern state and an important determinant of economic and political development (e.g., Gerth and Wright Mills 1948; Tilly 1985; Olson 1993; Robinson and Acemoglu 2012). Yet, many contemporary states have only a limited capacity to implement and enforce rules and lack a legitimate monopoly on violence (cf Risse and Stollenwerk 2018; Stollenwerk 2018).

Internal armed conflict poses a primary challenge in this regard. But in the post-conflict period, states are often still unable to enforce their rule across their entire territory, engendering pockets of continued insecurity and violence even as peace agreements are implemented or military victories consolidate. Why do some conflict-affected areas remain violent post-conflict, while others transition to peace?

Limited coercive state capacity is often perceived as the culprit (e.g., McBride et al. 2011; De Juan and Pierskalla 2015; Walter 2015). But this explanation fails to acknowledge that persistence of armed violence is not limited to 'weak' states, i.e. states that lack a well-funded and trained army and police force (Mukherjee 2014; Kleinfeld and Barham 2018). In turn, an emerging literature on governance in areas of 'limited statehood'¹ offers an alternative framework centred on the relationship between civilians and the state to understand trajectories of statebuilding (Risse and Stollenwerk 2018; Karim 2020; Lake 2022). I build on this to propose that the wartime economy can play a critical role in limiting transitions to peace by shaping relationships between communities, rebel groups, and the state.

The wartime economy encompasses the 'organisation and development of a society's legal and illegal resource flows in support or as a result of conflict and violence' (Kurtenbach and Rettberg 2018: 2). These resource flows often remain vital to collective economic survival post-conflict in areas in which economic networks developed during conflict. This helps rebel groups maintain a relationship of interdependence with respective communities. Rebels continue to protect resource extraction and trade and employ violence against any actor threatening the wartime economy, including the state (Felbab-Brown 2005; Cheng 2018; Krauser 2020). Communities, in turn, accept rebels' violent presence to safeguard their livelihood, which allows rebels to remain locally embedded, run military operations, and to some extent even govern areas that may be increasingly under control of the state. These dynamics also affect perceptions of the state, which limits security forces' access to intelligence to engage in

¹ i.e. 'areas where the state lacks the ability to make and implement decisions and/or lacks a monopoly on the use of force' (Risse 2011)

effective counterinsurgency, giving rise to continued pockets of insecurity (see Kalyvas 2006; Berman et al. 2011).

I develop and test this argument in the context of Peru with a multi-method approach. I build on interviews conducted with communities linked to the wartime economy as well as government officials and experts. I empirically probe the argument by combining novel geo-referenced data on violent clashes involving remnants of the rebel group, Sendero Luminoso, and the Peruvian state security forces from 2004 to 2020 with data on coca cultivation during and after the conflict.² My analysis leverages spatial variation in coca cultivation during the conflict, instrumented by a novel coca suitability index, which measures plausibly exogenous differences in the suitability of land for the cultivation of coca for drug production.

The case of Peru offers important insight for the study of war-to-peace transitions as it depicts an interesting subnational variation in continued violence, even though existing political science theories would suggest that several factors would have facilitated the consolidation of peace. Peru displays relatively high coercive state capacity (including in areas still affected by violence), has seen high economic growth post-conflict as well as significant state-driven development (including in areas permeated by the presence of the rebel group, Sendero Luminoso). It has also repeatedly held democratic elections since the end of war and established a truth and reconciliation commission to guide efforts to address the needs of conflict-affected communities and victims. Nonetheless, armed violence between Sendero Luminoso and the state has persisted in some localities but not others since the end of a two-decade-long civil war in 2000.³ Studying these patterns in post-conflict violence can help elucidate causal mechanisms, as potentially confounding factors known to explain the persistence of state-based conflict can be more clearly isolated (Gerring 2007).

The findings reveal that areas linked to the wartime economy see more violent attacks after conflict termination. Interview data suggest that this is a function of how civic perception of the state and the rebel developed after war. Additionally, I demonstrate that districts which cultivate coca for drug production today but were *not* tied to the wartime economy see *no* armed violence post-conflict. This lends further support to my claim that the wartime economies' relational legacy plays a crucial role for understanding why the local economy is linked to the continued violent contestation of the state.

This study bridges research on the legacies of armed conflict with research on state–society relations and statebuilding by advancing how economic networks developed during wartime

² Coca cultivation and trade was the primary source of revenue for Sendero during war.

³ In most years armed clashes have resulted in less than 25 battle-related deaths, a commonly used threshold to consider armed conflict to be *active*. For instance, in 2021 armed clashes resulted in 20 deaths according to UCDP. See <https://ucdp.uu.se/statebased/631>.

shape civilians' relationship to governance actors post-conflict. It relates to literature that elaborates on the importance of civilians in sustaining or supporting certain orders of governance (Levi 1988; Bourdieu 1977, 1994; Migdal and Schlichte 2016). It therefore also complements recent work that highlights the importance of the relationship between civilians and governance actors for the success of statebuilding projects (e.g., Levi 2018; Karim 2020; Lake 2022) and especially the endurance of social and relational structures established during war (e.g., Daly 2012; Bateson 2017; Osorio et al. 2021). The article also expands a well-established literature on the role of resources for governance and conflict, which tends to emphasize the role of revenues and structures of governance around resource extraction and trade (e.g., Fearon and Laitin 2003; Collier and Hoeffler 2004; Ross 2004). Lastly, the findings engage with a growing literature on the importance of civilian attitudes for shaping conflict dynamics by showing that civilian attitudes remain critical to peace also *after* war ends (e.g., Kaplan 2017; Hirose et al. 2017; Krause 2017; Mikulaschek et al. 2020).

The findings are also relevant from a policy perspective. Persistent instability poses an important threat to the long-term consolidation of peace and puts severe stress on socio-economic development (Sexton et al. 2019). The findings suggest that to sustainably dismantle a non-state actor, perceptions of the state need to change. For example, development projects, which might have facilitated a transition to peace elsewhere, are often insufficient in areas linked to the wartime economy because communities have grown too independent and suspicious of the state. To sustainably dismantle the interdependence which sustains rebels, the state needs to build trust to reinstate a functioning social contract. Civilians are willing to shift allegiance towards the state if they *credibly* conceive that there will be a long-term shift in the state's policy towards addressing their needs, economic needs being just one of them.

2 Peace and statebuilding after war

Today, most of the armed conflicts are a reflection or extension of conflicts from decades ago (Strand and Hegre 2021). In fact, approximately half of all countries emerging out of civil war eventually experience armed conflict again. Some scholars of conflict recurrence argue that structural factors such as weak state capacity, weak institutions, or bad governance explain instability after war (e.g., McBride et al. 2011; De Juan and Pierskalla 2015; Walter 2015). While this finding should not be understated, persistence of armed violence is not limited to 'weak' or badly governed states. For example, middle to high capacity states are *more* likely to see continued low-intensity armed conflict or social violence (see Mukherjee 2014; Kleinfeld and Barham 2018).

Scholars studying statebuilding in areas of limited statehood also increasingly challenge the prominent notion that reinforcing coercive capacity—the ability to control citizens and repress

dissent—will improve security. In turn, they highlight the importance of civilian perception of state authority and demonstrate that the establishment of an effective monopoly on violence requires security agents to be viewed by civilians as contributing to *their* security (Lake 2022; Karim 2020). This is a critical step to generating public buy-in to the ‘idea of the state’, which ensures that civilians participate in the practices that ultimately create a *legitimate* state (Lake 2022: 860).

Emerging scholarship on the legacy of violent conflict offers additional insights into why some states are unable to expand their authority into certain areas after conflict ends. Scholars find that dynamics and structures pertaining to past conflict have a lasting effect. Armed conflict reconstructs social, political, and economic order, carrying important ramifications for how societies operate and are (or can be) governed after conflict ends. Having experienced armed conflict makes countries more susceptible to experiencing war again as well as other types of violence such as homicides or interpersonal violence (e.g., Archer and Gartner 1976; Collier and Hoeffler 2004; Rivera 2016; Østby et al. 2019; Daly 2012; Osorio et al. 2021). This scholarship also takes into account the fact that experiences and responses to violence can vary significantly across space, time, and population groups and affect transitions to peace. Specifically, varying patterns of violence or state repression can affect how civilians perceive the use of violence, the legitimacy of state security forces or non-state armed groups post-conflict, holding significant implication for the state’s ability to re-establish a monopoly on violence in certain places (Bateson 2017; Deglow 2016).

Substantial amount of research also establishes the role of ‘rebel governance’, acknowledging that during war insurgent groups often establish or co-opt governance structures that may even run in parallel to the state (e.g., Arjona et al. 2015; Arjona 2016; Risse and Stollenwerk 2018). These play a paramount role in understanding war-to-peace transitions (e.g., Cheng 2018; Daly 2012; Osorio et al. 2021). Wartime governance shapes how communities organize and develop during conflict and can interfere with how civilians engage with the state post-conflict (e.g. Arjona 2016).

Across these different bodies of literature, we see reflected the importance of the relationship between civilians and a multitude of governance actors to better understand what limits the state’s ability to implement and enforce rules or decisions in the post-conflict era and potentially establish a legitimate monopoly on violence (cf Risse and Stollenwerk 2018; Stollenwerk 2018). In what follows, I build on this literature to explain why areas in which a wartime economy developed are more prone to see continued post-conflict violence through a ‘legitimacy’ mechanism. Legitimacy is defined as the ‘population’s sense of obligation or willingness to accept [a given governance actor’s] authority’ (Risse and Stollenwerk 2018: 404).

2.1 Quid pro quo

Civilians play an essential role during war—not only because they are a source of new recruits. Communities react to violence and can change armed actors’ behaviour, shape successes on the battle field, and even help defeat those that challenged the state (e.g., Krause 2018; Kaplan 2017; Schubiger 2021). Civilian agency is increasingly being recognized in shaping trajectories of armed conflict—but how do they affect the consolidation of peace? While some communities actively engage in peacemaking (Autesserre 2021), the literature suggests that the civilian population plays a decisive role through their willingness to share actionable insight with the state, which affects the success of counterinsurgency campaigns (e.g., Kalyvas 2006; Berman et al. 2011; Lyall et al. 2013; Mikulaschek et al. 2020).

Civilian decision-making, however, is not binary. The experience of war leads to the destruction and reconstruction of infrastructure, social ties, and local economies. The presence of lootable resources makes some areas more prone to be targeted for control by insurgent groups and therefore become a part of the wartime economy. Previous research links natural resources to violence through their potential for revenue generation for respective warring actors, including in the post-conflict phase (see Fearon and Laitin 2003; Collier and Hoeffler 2004; Ross 2004; Rettberg and Ortiz-Riomalo 2016; Cheng 2018). Instead, I highlight how the economic impetus of the wartime economy shapes the relationship between civilians, rebels, and the state, engendering pockets of instability even as peace consolidates elsewhere.

Wartime economies often create significant economic impetus; at times being the sole driver of local economic activity. Labour-intensive resources tend to provide economic opportunities for a large number of civilians living in areas of extraction or trade. Economic opportunities, however, do not only arise for producers, traders, or people involved in the ‘extraction’ process. The wartime economy often also plays a key role in generating income to local businesses like restaurants, hotels, or pharmacies. I argue that this creates a strong interest at a community level to remain engaged within these economic networks. Even as conflict ends, a vast majority of its members remain dependent upon them to secure a livelihood. Economic networks that developed during war tend to remain intact, regardless of whether the intensity of armed violence drops and the country is considered to be at ‘peace’.

Insurgents hold an important position within these networks. They usually establish governance structures in areas linked to the wartime economy to maintain territorial control and exploit revenues in the future (Olson 1993). Although the level and diversity of ‘rebel governance’ varies by type of actor, capacity, location, and pre-war governance structures, one of the most essential services provided is security (Arjona et al. 2015; Arjona 2016; Kaplan 2017). This can include reducing violence at extraction sites, protecting against other warring actors, and

protecting resource extraction as well as trade to maintain revenue generation (Sánchez De La Sierra 2020; Krauser 2020; Bellows and Miguel 2009; Salehyan et al. 2014).

The legitimacy insurgents uphold due to their role in the wartime economy could thus be equated to what the statebuilding literature establishes as ‘performance-based’ legitimacy, which derives from the effective delivery of goods and services (Stollenwerk 2018). Since insurgents and civilians share the maintenance of the wartime economy as a goal, civilians perceive the continued violent presence of the insurgents as necessary to their survival as long as insurgents continue to provide expected services such as the protection of the wartime economy. As the country transitions to peace, the continuation of the wartime economy can reinforce an interdependence between insurgents and communities that permits insurgents to remain locally embedded, giving rise to pockets of continued insecurity even if the state holds sufficient coercive capacity to dismantle the insurgents. In contexts where the state is not ‘weak’, civilian support for the insurgents denotes something more than reluctant acquiescence as the state offers a credible threat to the insurgents and could offer protection to civilians (Blair and Kalmanovitz 2016).

Civilians are vital in sustaining or supporting certain orders of ‘governance’. I argue that the economic value of the wartime economy for the community can create the environment necessary for the insurgent to contest state authority during peacetime (Levi 1988; Bourdieu 1977, 1994; Migdal and Schlichte 2016). Civilians enmeshed in the ‘practice’ of participating in an economic network that developed during war allow insurgents to still operate and govern in an area that, in many other ways, has come to be controlled by the state after war has come to an end (see Bourdieu 1977). The continuation of the wartime economy therefore feeds into a collective willingness to engage and accept the insurgent’s authority and favours the persistence of ‘multilayered governance’.

Although insurgents likely face constraints in operational capacity post-conflict, their continued capacity to protect the (often illicit or informal) extraction and trade of resources serves as the basis to retain a limited form of legitimacy, which creates at the minimum tacit support (e.g. to not share intelligence with the state) for rebels to maintain a violent campaign (Wickham-Crowley 1987). For the state to successfully (re-)establish a monopoly on violence, the population would need to comply with the state’s rule *and* not support any actor challenging state authority (Migdal and Schlichte 2016; Karim 2020; Lake 2022). Yet, in areas in which the wartime economy developed, the state is likely seen as a threat to collective survival.

The wartime economy thus plays an important role in shaping the perception of governance actors as a function of whether this actor can help sustain or could potentially infringe upon the continuation of the wartime economy. This is why state expansion and the elimination of the insurgent is perceived negatively as it could limit or even halt the illicit or informal

economic activity on which the wartime economy is built. Even if alternative revenue streams (often provided by the state) exist, these are often not viable alternative livelihood options in the absence of large-scale development projects or significant economic support to the area, such as agricultural subsidies and infrastructure projects. This creates an important divergence in the perceived legitimacy of the violent presence of the insurgents in comparison to the state in areas in which wartime economies are operating during peacetime.

This divergence in legitimacy also further increases the costs of engaging in effective counterinsurgency campaigns in the absence of civilian support (see Kalyvas 2006; Berman et al. 2011). Civilian support is crucial for the survival of a warring actor and can explain subnational patterns of violence during war (Berman and Matanock 2015; Linke et al. 2015). But local intelligence is even more vital within contexts of protracted instability (Berman et al. 2011). Counterinsurgency campaigns are extremely costly without being able to identify insurgents (Lyall and Wilson 2009). Should the state try to attack the insurgent without enough intelligence, this could backfire. Indiscriminate targeting tends to shift support in favour of the insurgent and encourage individuals to join (Findley and Young 2007; Lyall et al. 2013). Additionally, handling insurgents badly and incurring too many military deaths or civilian casualties could also threaten incumbent governments' political survival (Gartner 2008). The civilian population thus plays a decisive role for the successful expansion of state authority through their willingness to share actionable insight with the state (e.g., Kalyvas 2006; Berman et al. 2011; Lyall et al. 2013; Mikulaschek et al. 2020).

Overall, the continuation of the wartime economy gives rise to pockets of insecurity as insurgents remain able to violently contest the state in these localities even as other factors may limit their capacity to re-ignite armed conflict elsewhere. Effectively re-establishing a monopoly on violence is more difficult in these areas because governance and market structures run parallel to the state and remain critical to communities' survival post-conflict, which dissuades civilians from fully participating in the practices that make the state (Lake 2022).

From this argument, I derive the following main hypothesis:

Hypothesis 1: Areas associated with the wartime economy see more armed clashes after conflict ends than other post-conflict areas.

I also test several empirical expectations related to the proposed mechanism and alternative explanations linking the wartime economy to violence. We should observe low levels of violence against civilians in the post-conflict era. The decision of a rebel group to refrain from such repression reflects the need for civilian resources by the rebel group and/or demand for 'governance' by civilians (even if just at the most basic level, e.g. the provision of security) (Weinstein 2006; Loyale et al. 2023).

Hypothesis 2a: Areas which were involved in the extraction of labour-intensive lootable resources during war, i.e. the wartime economy, see low levels of violence against civilians after conflict ends.

Rebels that enjoy some level of legitimacy are also more likely to be locally embedded, allowing them to hide and gather sufficient local intelligence to actively target state security forces.

Hypothesis 2b: Clashes in the post-conflict era are more likely to be staged by the rebel group than the state.

Similarly, local embeddedness also reduces the state's capacity to effectively combat the rebels when staging an attack or being attacked. I thus also expect violent clashes to be more lethal for state security forces (relative to rebels).

Hypothesis 2c: Clashes in the post-conflict era see more fatalities on the side of state security forces than rebels.

Finally, the main competing explanation to the proposed legitimacy mechanism relies on a logic around 'lootability' and a 'feasibility' mechanism. If the relational legacy of the wartime economy does not matter but rather the presence of lootable resources is what explains violence, we should be able to also observe armed clashes in areas that have been linked to the extraction or trade of lootable resources (in this case coca) only since peacetime.

Hypothesis 3: Areas linked to the illicit extraction of lootable resources only since the end of conflict also see armed clashes.

3 The case of Peru

3.1 Case selection

I use the case of Peru to examine how the wartime economy has affected the persistence of the violent contestation of the state since the end of armed conflict in 2000. Post-conflict Peru offers an interesting context to carefully analyse the proposed argument, for several reasons. First, we can observe interesting variation in the continuation of armed violence across conflict-affected areas. Second, Peru can be considered a 'pathway case' (Gerring 2007), which allows to isolate several potentially confounding factors to elucidate causal mechanisms. Most prominently, the Peruvian state displays high coercive state capacity—particularly in areas where Sendero is

still present (see Dargent et al. 2017)⁴—and no other violent non-state actor remains active or has emerged. Further, Peru has repeatedly held democratic elections that are considered to be free and fair and experienced significant economic growth as well as state-driven reduction of poverty since the end of armed conflict (including in areas associated with the wartime economy) (Coppedge et al. 2023; Schady 2000; Orihuela 2012).

Finally, the Peru case benefits from important data availability. Testing the proposed argument requires disaggregated data, which can be particularly difficult to obtain for post-conflict countries, as these often lack the infrastructure to collect high-quality data. I create a new geo-referenced dataset on armed violence using disaggregated local reports on political violence in Peru, combined with data on coca cultivation during and after the conflict from relevant organizations and qualitative data collected from fieldwork in relevant areas.

3.2 Case background

The armed conflict Peru experienced a two-decade-long armed conflict, involving two different rebel groups: Sendero Luminoso and Movimiento Revolucionario Tupac Amaru (MRTA). I focus on Sendero because they established substantial control over territory, a wartime economy and continue to operate until today.

Sendero Luminoso (formally known as PCP—Partido Comunista del Peru) was founded by Abimael Guzmán in the 1970s. Sendero initiated its armed struggle in 1980 and quickly rose to power, eventually gaining control of various parts of the country (Taylor 2017). But as Sendero started to engage more heavily in violence against civilians and impose a radical rule of law, communities started to organize in so-called *rondas campesinas* (peasant patrols) to resist Sendero (Degregori 1998). Once the government realized how effective *rondas* were at defeating Sendero, they co-opted them and forced communities to form *rondas* (Degregori et al. 1996). These *rondas* (or *comités de autodefensa* [CADs], self-defence committees) were integral to Sendero’s demise as they provided the government with better intelligence and made counterinsurgency more discriminate and effective. This also fed into growing opposition against Sendero, who in response to losing power targeted civilians more intensely and indiscriminately (Degregori et al. 1996).

In 1992 Guzmán and other high-ranking members were captured, sparking widespread demobilization. Remaining members decided to regroup under the leadership of Oscar Ramírez Duránd, alias ‘Feliciano’, in Peru’s two largest coca-producing regions: the Alto Huallaga Valley and the Valley of the Rivers Apurimac, Ene, and Mantaro (VRAEM). But leadership split again when Feliciano was captured in 1999. Two significantly weakened rival factions

⁴ For instance, the state has placed 52 military bases in one of the most violent areas, the Valley of the Rivers Apurimac, Ene and Mantaro (VRAEM), and staffed them with 8,000 soldiers (Caretas 2019).

emerged: the Alto Huallaga faction, which remained loyal to Guzmán, and the VRAEM faction, which allegedly cut ties with Guzmán. While armed violence persisted across these two regions, levels of violence dropped significantly after the mid-90s, and the state declared to have won the armed conflict in 2000.

The wartime economy Sendero gained control of Alto Huallaga, a historically coca-producing valley, in 1987, while coca cultivation in the VRAEM mainly evolved as a result of the armed conflict (Heuser 2019). Although Sendero initially did not want to extract profits from the drug economy, it eventually started taxing and protecting the drug trade, resulting in a yearly income of at least US\$30 million (Felbab-Brown 2005). But Sendero was never directly involved in cocaine production. Instead, it formed an alliance with local drug processing and trafficking groups called *firmas* and extracted revenue by controlling drug smuggling routes and collecting ‘*cupos*’ (taxes) from drug traffickers and coca farmers (Van Dun 2016; Felbab-Brown 2005).

Sendero gained civilian support in coca valleys by protecting farmers from abusive drug traffickers and helping them negotiate better prices. Additionally, Sendero used resource revenues to finance public services such as access to running water. However, its primary source of support was protection against the implementation of anti-narcotics state policies. For instance, Sendero launched one of its most successful attacks in 1989, after the Peruvian government had started spraying coca fields in the Alto Huallaga with herbicides. This kind of protection provided Sendero with vast civilian support despite communities perceiving Sendero as similarly abusive due to its harsh and bloody rule of law (Gonzales 1994). Success of any counterinsurgency operations in the coca valleys thus became a function of whether the state could credibly signal that it would allow coca cultivation, as this shifted peasants’ allegiance (Gonzales 1994; Felbab-Brown 2005; Weinstein 2006). This is unsurprising because coca cultivation is the most labour-intensive stage of cocaine production and sustains the livelihood of many communities. For instance, 48% of total net family income in the VRAEM in 2000 originated from coca cultivation (Bedoya Garland 2003).⁵

Sendero in the post-conflict era Post-2000 Sendero has continued to operate, albeit at lower capacity, in both the Alto Huallaga and the VRAEM. The state claims that Sendero is a drug-trafficking terrorist group that targets state security forces to protect its financial interests. However, expert interviews and data collected for this project suggest a more complex story. Although Sendero factions are known to mainly protect the drug trade, they remain focused on retaining civilian support. Reports published by the Defensoría del Pueblo, an independent government agency, repeatedly record political propaganda activities by Sendero. Interviews

⁵ See Appendix A for more information about how Peru’s drug market is structured.

and propaganda leaflets also indicate that Sendero continues to hold aspirations to gain political power. In fact, the VRAEM faction has attempted to transform itself into the Militarized Communist Party of Peru (MPCP), in order to be able to run in elections (Saffon 2020).

4 Research design

4.1 Identification

My main analysis leverages spatial variation in coca cultivation during the conflict as a measure of the wartime economy. Yet, the decision to cultivate coca is not random and likely depends on socio-economic factors or the presence of violent actors. For instance, districts that grow coca are more likely to lack labour opportunities that offer better wages and thus make coca cultivation an attractive option to sustain one's livelihood. I therefore employ an instrumental variable (IV) approach, using a novel coca suitability index built using satellite data.⁶ Suitability to grow coca is plausibly exogenous to violence or other factors that might predict violence. With this I estimate the effect of coca production on violence.

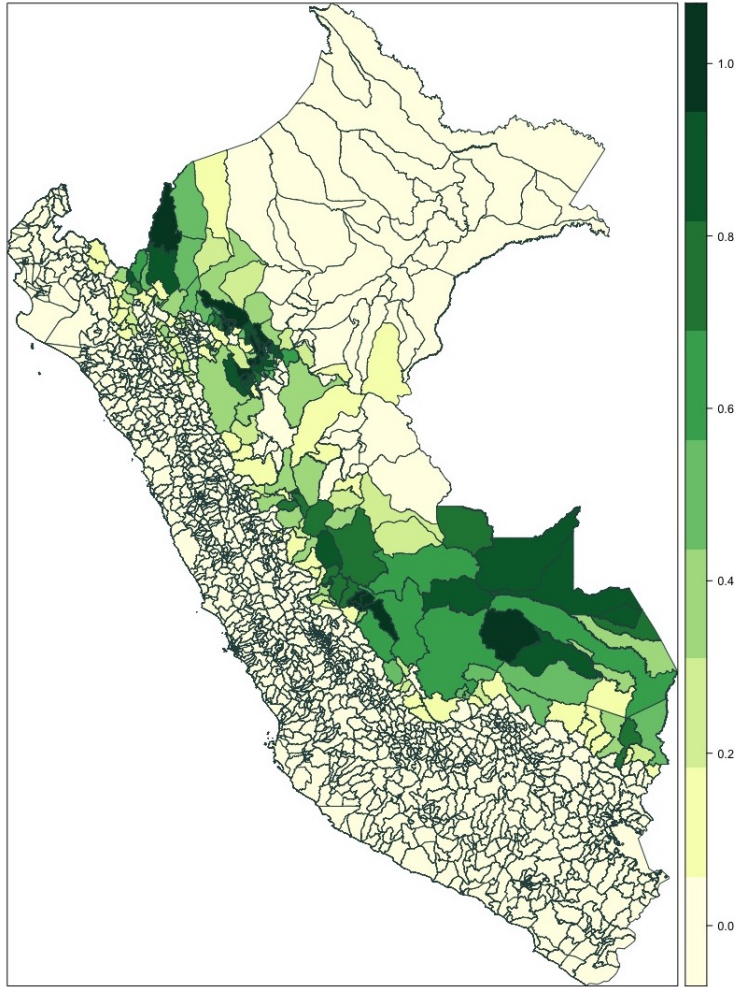
Coca suitability To estimate the effect of coca cultivation on armed conflict, I exploit the fact that coca leaves are only suitable for drug trafficking if they contain the alkaloid cocaine. Specifically, two species of the coca plant called *Erythroxylum* i) *E.coca* and ii) *E. novogranatense* are most commonly cultivated for this purpose since they both produce the alkaloid cocaine (Plowman 1984). According to botanical research, a certain set of conditions need to be in place, for coca leaves to contain cocaine:

1. Elevation: 300–2,000 meters above sea level (Plowman 1984);
2. Precipitation: 500–4,000 mm year (Plowman 1979);
3. Soil: pH 3.5–6.0 (Johnson and Foy 1996);
4. Temperature: 19–27 degrees Celsius (Acock et al. 1996);
5. Light levels: PPFD>155 μ mol/m²/s (Acock et al. 1996).⁷

⁶ This index extends beyond existing approaches to operationalize suitability of land for coca production (most notably Mejia and Restrepo 2013 and Sviatschi 2022) by collecting extremely granular satellite data on varying conditions that affect not only plant growth but alkaloid content (i.e, the amount of cocaine possible to extract), which is critical for further processing for the drug trade. This also makes it a more appropriate measure for coca suitability for the purpose, using it to instrument for the development of the wartime economy in areas of limited statehood.

⁷ They grew the plants under a 12-hr photo period. To convert the PPFD to daily light integral, I multiply the PPFD by 12 hours x 3,600 s/hr. Hence, ideal light levels are minimum 6.696.000 μ mol/m²/day. The data on

Figure 1: Coca suitability (mean) across districts



Source: author's elaboration based on data described in the next paragraph. Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

I build a coca suitability index (CSI) based on these conditions. Raw data are collected at a resolution of 30 arc seconds (1km^2). Measures of soil acidity are taken from the Harmonized World Soil Database version 1.2 (FAO, IIASA, ISRIC, ISS-CAS, and JRC 2012).⁸ Average temperature, precipitation, and solar radiation are computed as the mean across the years 1970–2000 using the WorldClim version 2.1 dataset (Fick and Hijmans 2017). Elevation data are taken from NASA's Shuttle Radar Topography Mission (SRTM) (CGIAR-CSI 2018). To calculate the index, I first assign the value 1 to each grid (about 1km^2) within districts that meet all the conditions, and 0 otherwise. I then calculate the share of 'suitable' land for each district by taking the sum of grids that meet the conditions divided by the total number of grids. This results in a CSI that ranges from 0 to 1 (see Figure 1: darker greens denote higher shares of land suitable for coca cultivation). In the analysis, however, I use a dummy of the CSI

solar radiation is measured in $\text{kJ/m}^2/\text{day}$. I use the formula: $1\text{kJ} = 2018 \mu\text{mol}$ (Faust and Logan 2018), so that $6.696.000 \mu\text{mol/m}^2/\text{day} = 3,318 \text{kJ/m}^2/\text{day}$.

⁸ I use the indicator T_PH_H2O.

to facilitate interpretation, assigning the value 1 when any share of land is suitable for coca cultivation.

4.2 Data

Quantitative data

I collect an extensive dataset at the district level, aggregated to district boundaries of the year 1993 to ensure consistency. This yields 1,793 districts.⁹

Armed violence I collect data on violence in Peru from 2004 to 2020 based on monthly reports of Defensoría del Pueblo, an independent government agency. The reports track social and political conflict¹⁰ and specifically also rebel activity (Defensoría del Pueblo n.d.). For most events the descriptions include perpetrator, date and location, and number of victims. Importantly, reports are not only based on open-source data or news reports, but information is collected directly via local Defensoría offices. Staff also travel to remote areas to collect testimonies from affected communities. This directly decreases reporting bias often found in other databases that rely mostly on news reports from major newspapers.

Based on the detailed nature of the reports, my main dependent variable is the *number of violent clashes between Sendero Luminoso and state security forces* at the district level across years. For purposes of getting a broader understanding of rebel activity, I also code other events involving Sendero Luminoso as one of the perpetrators, such as violence against civilians, incursions, raids, and propaganda activity.

In total I record 186 violent clashes. We can see a clear variation in the continuation of armed violence across previously conflict-affected areas in Figure 2. Red districts experienced armed conflict between 1980 and 2000 and also saw armed violence between security forces and Sendero Luminoso between 2004 and 2020. Those shaded in green experienced violence during armed conflict but not afterwards. I also record three clashes in areas previously not affected by violence during the armed conflict (orange).

⁹ Census data was also available for the year 1981 but was unfortunately missing for an extensive set of districts. An earlier year for which census data would have been available is 1972. However, aggregating districts from 2020 to 1972 boundaries would extensively reduce our ability to understand subnational variation in violence today. Taking the year of 1993 offered a good compromise.

¹⁰ Defensoría defines a social conflict as an event with at least one of the following features: (i) threat to the integrity of people's life or health, (ii) damage to private or public property, (iii) obstruction to freedom of movement, (iv) impediment of the exercise of public authority, and (v) obstruction of public services delivery.

Figure 2: Areas affected by armed violence during and after the conflict

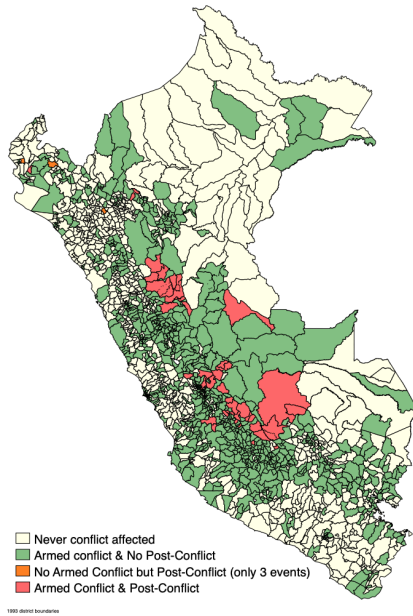
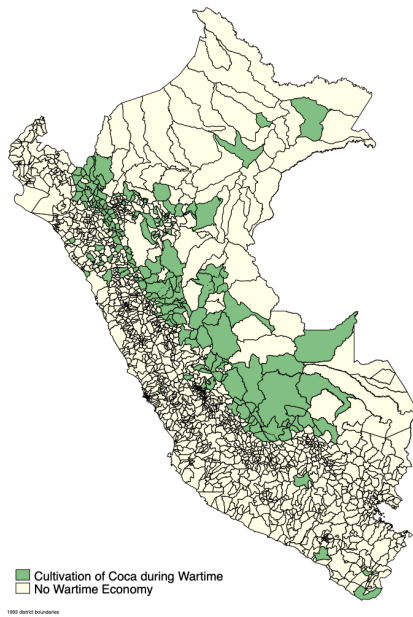


Figure 3: Coca production during wartime



Source: author's elaboration based on data described in Sections 4.1 and 4.2. Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

Location of the wartime economy My main independent variable is a measure of which areas were involved in the wartime economy. I use data from Peru’s agricultural census in 1994, which records whether districts cultivated coca and how many hectares (INEI 1994). The census was conducted a year before anti-narcotics policies started to be enacted in Peru and while armed conflict was still at levels that would be classified as civil war, i.e. above 1,000 battle-related deaths. These areas should reflect quite accurately districts that cultivated coca during the war for the main purpose of financing rebel activity. As a robustness test I explicitly estimate the effect of coca production during wartime in areas controlled by Sendero Luminoso during armed conflict (as opposed to other armed actors such as MRTA; see Appendix E).

Covariates I also include a set of ‘pre-treatment’ covariates, i.e. before the onset of armed conflict, that could conceivably influence both coca cultivation during wartime and post-conflict armed clashes. Using data from the national census (INEI 1981, 1972), I control for the *literacy rate*, the *share of households with a dirt floor*, and the *electrification rate*.¹¹ Pre-conflict socio-economic development might explain both, why people would have become involved in the wartime economy to sustain their livelihood and rebel activity post-conflict, as trajectories of marginalization do not necessarily change. I also consider *state capacity* as an important determinant of rebels’ ability to control resource extraction and build a wartime economy as well as their ability to establish a stronghold, enabling them to perpetrate violence more easily, including in the post-conflict era. I draw on historical data on road density (in 1973) and number of state personnel (in 1972) as proxies for state reach. I also include a measure of exposure to land reform in the 1970s, which has been linked to improved counterinsurgency and could have plausibly influenced rebels’ ability to establish a wartime economy as well as drive conditions that would limit rebels’ ability to stage attacks after conflict termination (Albertus 2020). Data are taken from Albertus (2020).

Qualitative data

Capturing the underlying causal mechanisms linking past structures such as the legacy of a wartime economy to current processes of political contention requires understanding of the political and security contexts as well as people’s beliefs and living situations. In an effort to build and substantiate theoretical claims made in this paper, I collect data from interviews conducted during three months of field work in Lima and Ayacucho. Combined with other secondary sources, these interviews provide the basis for understanding whether civilian support plays a role in explaining why areas involved in the wartime economy continue to be focal points of armed violence. The qualitative evidence included in this paper is by no means exhaustive.

¹¹ The 1981 census data is missing for several districts. I therefore use the 1972 literacy rate as the main covariate in the main specification. I check the robustness of results using the 1981 data for available districts. Both effect size and significance level remain consistent.

Instead, interviews and secondary data are provided to illustrate the causal mechanisms put forward and support the quantitative analysis.

In total I collected 41 interviews. Twenty interviews were conducted with experts related to the armed conflict or the drug trade, the majority in Lima and some in Huamanga, the capital city of Ayacucho (one of the most conflict-affected departments). The other 21 interviews were conducted with community members and local officials in the districts of Huanta and Llochegua in Ayacucho, located in the VRAEM (Valley of the Rivers Apurimac, Ene and Mantaro, one of the most violent areas). The diverse interviews provide different insights to understand the relevance of the drug trade today, the logic of rebel operations, the social organization of communities linked to the drug trade and their understanding of Sendero Luminoso post-conflict as well as their perceptions of the state and structures of marginalization. Further details on the interviews are provided in Appendix B.

4.3 Model specification

To test my main hypothesis, I use the two-stage least squares (2SLS) estimator.

For the first stage I regress actual coca production on coca suitability:

$$CocaProduction_{i1994} = \alpha_1 + \beta_1 CSI_i + \beta_2 X_i + \epsilon_i. \quad (1)$$

I then fit the second stage to estimate violent attacks as follows:

$$Violence_i = \alpha_2 + \lambda_{2SLS} \widehat{CocaProduction}_i + \beta_3 X_i + \epsilon_i. \quad (2)$$

The subscript i denotes a district. X_i is a matrix of district-level covariates, which are the same set in both stages. I also present results without including covariates. I include robust standard errors.

For the IV approach to estimate the local average treatment effect, several assumptions need to be met. The *exclusion restriction* implies that suitability for coca cultivation only affects violence through its effect on coca production. I argue this is a plausible assumption as the exact combination of these climatic and geographic factors does not predict any other variable that would conceivably explain variation in violence. While for instance altitude alone could be an indicator for how inaccessible an area is, by introducing this specific set of conditions, we see a very unique variation of suitability across and within districts. One way this assumption could be violated is through spatial dependence in the outcome (Betz et al. 2020). I take this into account by additionally estimating spatial two-stage least squares (S2SLS) models with spatial connectivity (W) being modelled based on contiguity (geographic proximity), given that this

is the theoretically most appropriate variable through which units in the data are related to each other. The estimated effect size and significance level remain consistent with the main 2SLS specification.

The *monotonicity* assumption implies that there are no defiers. Districts are *not* less likely to cultivate coca as a result of being assigned treatment, i.e. being suitable. This seems plausible, given that coca cultivation is financially attractive to rural communities. The instrument is also *relevant*: I show that the coca suitability index reaches an F-statistic over 200 in the first stage, which indicates that it is a strong instrument (Angrist and Pischke 2008).¹² I also assume that coca suitability is randomly assigned. Coca suitability is independent of potential outcomes and potential treatment assignments, which allows me to suggest that the first stage measures the causal effect of coca suitability on coca production. As suitability was assigned by nature, this assumption seems plausible. However, to show the robustness of results I also include a set of covariates that at least would invoke conditional independence (Sovey and Green 2011).

Lastly, I also assume that the potential outcomes for each district i are unrelated to the treatment status of other districts (stable unit treatment value assumption). This assumption is problematic because the CSI is based on ideal conditions. Under these conditions, farmers are able to grow coca plants of high quality (i.e. a high cocaine content). But it is possible to cultivate coca under less than ideal conditions, e.g. at lower altitudes. The caveat is that the alkaloid content of these leaves is much lower. At times farmers still decide to cultivate coca in less suitable areas because prices for other products such as cacao or coffee have plummeted and they cannot survive otherwise. This is also apparent from the smaller amount of hectares that ‘unsuitable’ districts cultivate, relative to suitable ones (see Appendix D). This concern is addressed by taking into account spatial interdependence in the instrument and estimating a spatial two-stage least squares models, because ‘ideal’ areas are located close to less ideal areas (see Table 2).

5 Results: the effect of the wartime economy on violent contestation of the state after war

Table 1 presents the results of a 2SLS approach using the coca suitability index (CSI) to instrument for involvement in the wartime economy. I report first- and second-stage estimations as well as the reduced-form estimates with and without covariates. Whether certain additional covariates are added or dropped does not change the estimates. The first-stage estimation shows

¹² Moreover, the CSI is still predictive but less so for coca cultivation during peacetime. This is probably due to repeated eradication efforts across some of the most suitable areas, forcing coca production to take place in less suitable areas. See Appendix C.

that if a district is suitable for coca cultivation, coca cultivation increases by approximately 42.5%; this effect is highly significant ($p < .001$). The F statistic at 200 suggests that the CSI is a strong instrument. In the second stage, I use the fitted values from the first stage and find that districts which cultivated coca during the conflict, i.e. were involved in the wartime economy, see 1.2 more violent clashes—in line with the theoretical expectation that the wartime economy contributes to the violent contestation of the state after war (Hypothesis 1). The reduced-form estimates show a robust positive association between the CSI and post-conflict armed violence, giving further confidence in the results.

Table 1: The wartime economy and armed violence (2SLS)

Model	First stage	Second stage	Reduced form	First stage	Second stage	Reduced form
Dependent variable	Wartime economy	Armed violence	Armed violence	Wartime economy	Armed violence	Armed violence
Coca suitability index	0.425*** (0.300)		0.518 *** (0.083)	0.425 *** (0.030)		0.520** (0.188)
Wartime economy		1.218** (0.437)			1.223** (0.436)	
Covariates	No	No	No	Yes	Yes	Yes
Constant	0.037*** (0.004)	-0.023 (0.019)	0.022* (0.008)	0.025 (0.018)	-0.371* (0.197)	
Kleibergen-Paap rank Wald F statistic	200.04		7.56	44.55		2.10
Observations	1793	1793	1793	1793	1793	1793

Note: see details about included covariates in the data section. * $p < .05$ ** $p < .01$ *** $p < .001$. Robust standard errors in parentheses.

The estimated effect sizes may seem small, but taking into account that the average district only sees .1 armed clashes and the standard deviation of armed clashes is 1.3, the reported effect is quite large. Another way to think about these results is to consider that the IV approach estimates a local treatment effect, which is the effect of the wartime economy on armed clashes for compliers, i.e. districts that are suitable for coca cultivation and cultivated coca during the war. The control group includes all districts that did not cultivate coca during the war. Approximately 10% of districts were involved in the wartime economy. If instead 50% would have been involved in the wartime economy, Peru would have potentially seen 930 armed clashes, instead of 186.

The results are robust to using the intensity of armed violence as an alternative outcome, measured as the number of casualties or injured persons in violent clashes. I find that districts involved in the wartime economy see almost four more casualties or injured persons as a result of violent clashes (Appendix C). Finally, a critical concern is that these results do not account for spatial interdependence. In Table 2, I estimate a spatial two-stage least squares models (S-2SLS). This model includes a spatial lag for the outcome and the instrument (see Betz et al. 2020). The estimated effect size and significance level remain consistent with the main 2SLS specification. The standard errors are smaller though, suggesting efficiency gains in the estimate when accounting for spatial interdependence.

Table 2: The wartime economy and armed violence (S-2SLS)

Model	Bivariate	Multivariate
Dependent variable	<i>Armed violence</i>	<i>Armed violence</i>
Wartime economy	1.278*** (0.229)	1.263*** (0.207)
Covariates	No	Yes
Constant	-0.030 (0.474)	-0.272* (0.103)
Spatial ρ_y	1.210 (0.775)	0.278 (0.367)
Spatial γ_{CSI}	-0.764 (0.474)	-0.243 (0.275)
Observations	1793	1792

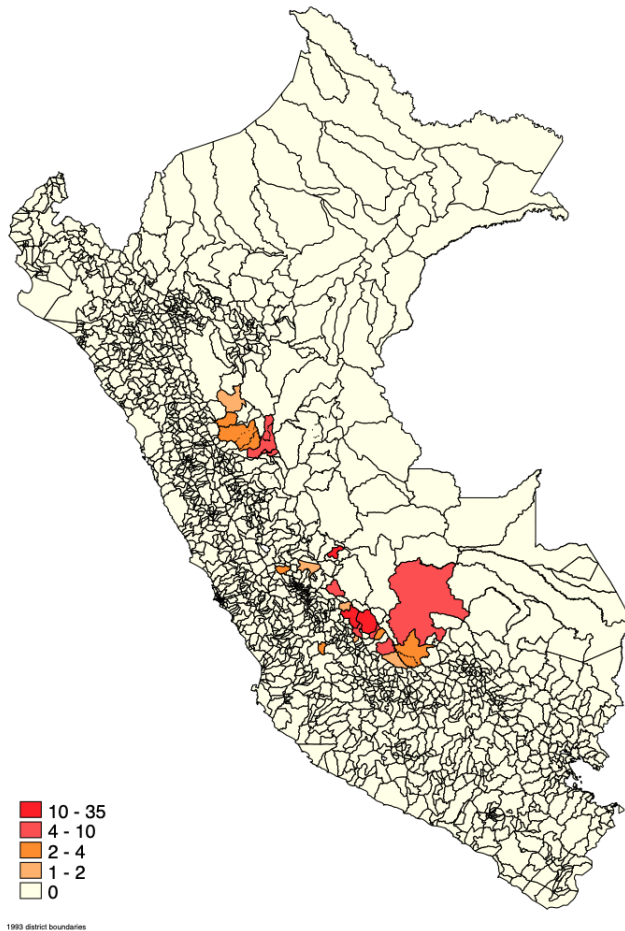
Note: *p <.05 **p<.01 ***p<.001. Robust standard errors in parentheses.

Overall, these results provide strong support for the argument that the wartime economy gives rise to continued violent contestation of the state after war in the post-conflict phase. While the evidence carefully demonstrates a causal link, we cannot be sure *why* we are observing this effect. In the following I test several empirical expectations linked to the ‘legitimacy’ mechanism as well as prominent alternative explanations.

5.1 Probing the mechanisms linking the wartime economy to post-conflict violence

To unpack why the wartime economy gives rise to pockets of instability, I draw on in-depth interview data collected in areas linked to the wartime economy as well as detailed coding of non-violent and violent events involving Sendero between 2004 and 2020 (based on Defensoría reports). The interview data capture how civilians view the wartime economy and relate to Sendero Luminoso and the state. The detailed event data provide a better understanding of rebel activity and the nature of the violent clashes since the end of the civil war.

Figure 4: Number of clashes by district 2004–20



Source: author's elaboration based on data collected from Defensoría del Pueblo (see Section 4.2). Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

The data reveal interesting insights into how the wartime economy is impacting post-conflict violence. To start, across all 1,793 districts,¹³ only 128 districts have seen violent activity by Sendero after 2004. Figure 4 shows that these events occur in areas linked to the wartime economy, namely the provinces of Huanta and La Mar in Ayacucho (which are located in the VRAEM; centre-south of Peru) and the province of Leoncio Prado in Huanuco (located in Alto Huallaga, centre-north of Peru).

Taking into account Sendero's vast presence throughout the country, we can see that the organization was able to maintain a functioning rebel infrastructure post-conflict in areas associated with the wartime economy but not others. The interview data with community members in areas linked to the wartime economy (including areas that are part of trade routes) suggest that such a pattern is driven by i) a collective dependence on the continuation of the wartime economy, ii) an acknowledgement of the important role Sendero plays in maintaining the drug trade as well as a perception that the group is no longer a threat to civilians, and iii) a deep mistrust in the state and especially its security forces.

¹³ Today, more districts exist, for the analysis they have been aggregated to the 1993 district boundary

A school teacher living in Huanta (Ayacucho), a key location within drug trading routes out of the VRAEM,¹⁴ explained how the wartime economy shapes local life: ‘Everyone is directly or indirectly linked to the drug trade here. If the VRAE[M]¹⁵ did not exist, there would be nothing in Ayacucho—it sustains all economic activity [...] At best you have a choice between working in agriculture or the drug trade.’¹⁶ Similarly, another respondent stated: ‘There is no work for mothers and single women, they go to harvest coca. No one here is really rich or makes much money. We do not make real profit from this. The income we have is not really enough to feed our families. We do not have access to a market to sell other products such as maize, yuca, plantains [referring to the precarious infrastructure]. There is a local market, but not really for lots of products. Only two or three, like avocados [...] Only those that grow coca can make a living. In 1995 was the last time the coca price plummeted, there was so much poverty in the area back then.’¹⁷

This shows that coca and the drug trade are not necessarily seen in just a positive light. It is an important driver of economic activity and helps to keep many people out of poverty, yet is not the source of enrichment many people may believe it to be and has cost many families their young sons who end up working as drug traffickers. Coca is nonetheless critical for survival for many. A representative of the state-owned national coca company (ENACO) expressed this, saying that ‘People are willing to die for coca’.¹⁸ Similarly, another respondent in Huanta explained, ‘*Yo voto por la cocita*’¹⁹, which translates to ‘I vote for coca’, reflecting that politicians’ stances on coca often decide local elections²⁰.

This sentiment is shared by various respondents: coca defines economic, social, and political life in areas linked to the wartime economy. Specifically, economic dependence on the continuation of the wartime economy is at the root of civilian perception of Sendero and the state.²¹ Communities emphasize their generally dire economic situation and see drug trafficking as the only way to survive and keep out of poverty. Even in cases where respondents themselves do not directly own coca fields or engage in the drug business, they point out that many businesses

¹⁴ See: <https://insightcrime.org/news/analysis/shining-path-leader-offers-rare-glimpse-into-peru-drug-trade/>.

¹⁵ The VRAE was extended to include the Mantaro river valley in 2012. Various interviewees notably omitted the M when talking about the area.

¹⁶ Interview 2

¹⁷ Interview 17

¹⁸ Interview 1

¹⁹ Interview 3

²⁰ See also: <https://elcomercio.pe/peru/los-nuevos-alcaldes-en-el-vraem-y-sus-estrechos-vinculos-con-gremios-cocaleros-hoja-de-coca-dirigentes-exasesores-cocaleros-radicales-cultivos-ilegales-remanentes-de-sendero-luminoso-narcoterrorismo-noticia/>.

²¹ Interviews 16, 17, 18, 19

run based off revenue locally generated because of the drug trade. A logic summarized well by a shop owner living in the VRAEM, who stated: ‘We live here from coca and cacao. But really the money comes from coca, if coca does not do well, we do not do well.’²²

This collective dependence on the wartime economy explains why we observe such a localized pattern of violent events in areas linked to the wartime economy but not other areas in which Sendero maintained control during war. Relationships across people involved in the drug trade are complex, reciprocal and mutually beneficial to some degree (van Dun 2019). The survival of the wartime economy thus relies extensively on networks of long-lasting relationships, which Sendero appears to have been able to sustain to an extent that allows them to still operate despite the fact that the state has an extremely strong presence in these areas. Mainly, Sendero has played a critical role in expanding the drug trade and sustaining it post-conflict, mainly by providing protection to drug trafficking, as cultivation and the sale of coca leaves (to a corresponding state authority) in itself is legal. Albeit no longer a necessarily relevant political authority, Sendero has remained locally embedded in these areas because people rely on its protection for collective economic survival. This has allowed Sendero to secure the necessary legitimacy to operate in the face of a militarily much stronger state, keeping in mind that the military has several bases within the areas that see violent clashes and has received both military training and significant military aid from the United States and should be equipped to confront this insurgency (Flynn et al. 2019).

Looking further at the data, 38.59% of the 482 events recorded are violent clashes between state security forces and Sendero.²³ Merely two events involved the killing of civilians (one cacao farmer and one local leader) by Sendero, possibly for being involved in voluntary coca plant eradication programmes.²⁴ These low levels of civilian targeting are remarkable, considering Sendero’s rather bloody reputation during the war and suggest that Sendero has switched tactics since the end of the civil war. This is in line with Hypothesis 2a (areas involved in the wartime economy see low levels of violence against civilians), which would support a legitimacy mechanism in so far that it demonstrates that Sendero does not rely (heavily) on repression to be able to operate and violently challenge the state.²⁵ In the absence of repression, acceptance of Sendero’s continued operation in the area arguably denotes something more than acquiescence—especially when the state could credibly dismantle Sendero.

²² Interview 24

²³ Only seven of these violent clashes are directly related to coca cultivation or eradication, i.e. attacking eradication personnel or security forces protecting eradication efforts.

²⁴ This usually refers to pulling up or otherwise eradicating coca crops.

²⁵ There have been events of civilian killings, but in comparison to conflict levels, these are extremely low and rare. In fact, since 2010 the data shows complete absence of civilian targeting.

The interviews provide further support for such an assertion. Civilians note a shift in their relationship with Sendero since at least the end of the conflict. Notably, various interviewees assert that Sendero is no longer a *threat*. A coca farmer narrated his community's relationship to Sendero and the state: 'Around 1995 Sendero started to change its strategy, they stopped attacking us. But also we have the CADs [civilian self-defence forces]. If Sendero switches strategy again, we will defend ourselves. But for now they just fight crime. There is no need to get rid of Sendero. Sendero is not bad. And the police, they do nothing. They also could not fight Sendero, they do not know where they are. We do. But the state, it has no legitimacy here, we do not get any support. This is "no man's land"—*no one controls it*'.²⁶

It has to be highlighted that there appears to be no ideological support of Sendero as a political actor. Instead, Sendero is perceived as a necessary actor operating in the shadows to sustain the drug trafficking business. For instance, one respondent explained: 'Sendero is still there, they still stage attacks but in the outskirts and not often. If you do not oppose them, they do not attack you.'²⁷ A local community member who used to be part of the local self-defence force (CAD) at the height of conflict in the 1980s explained the complexity of this interdependence: 'Sendero is now the biggest ally to drug trafficking. They can operate because the communities lack economic opportunity, education; they are completely abandoned [...] the state has only militarized the area but does not provide health services, or universities, or technical institutes, there is not even justice provision [...] Since the pacification of the area, drug trafficking has increased because there is no market for licit products. DEVIDA [the Peruvian government's drug enforcement agency] invests in the area, but there is so much corruption. Even the *co-calers* [coca farmers] do not have money, they are left with so little because they have to pay for all the inputs. You do not make much profit. But it's still the best option to make a living out here, since there are no alternatives. For instance, we could make chocolate, we have won prizes, but no one buys it. And there is no support for the poor.'²⁸

This logic of interdependence is also reflected in Sendero's activity beyond the use of violence. The second most recorded type of event involving Sendero Luminoso between 2004 and 2020 is political propaganda (~34% of events). This includes activities like the distribution of leaflets, painting of walls, or the holding of speeches in front of communities. Interestingly, most of them are strictly *non-violent* in contrast to the conflict era, in which Sendero was known for forcibly recruiting civilians. I code propaganda events as violent if they included any implicit or explicit threat of violence, e.g. when Sendero members were visibly heavily armed, even if they did not injure or kill anyone, or if the leaflet included a direct reference to potential

²⁶ Interview 26, emphasis added

²⁷ Interview 21

²⁸ Interview 18

killings. Only five propaganda events were violent. These included instances in which they left behind leaflets after the use of explosives to destroy infrastructure, engaged in the killing of civilians they accused of being whistleblowers, and one event of forced recruitment of children (across all events this is the only one that includes children). Notably, these events involving violence took place in 2009 or early 2010 and have not occurred since.

A local representative of Defensoría del Pueblo who has traveled across the Ayacucho region explained this pattern: ‘Sendero is present in many areas, mostly where drugs flow through. They are still holding propaganda activities, they hold speeches, they visit the schools and try to indoctrinate the local population. There is not much news around this because their impact is minimal at the moment.’²⁹ Similarly, another respondent and former member of Sendero suggested: ‘Sendero is still active inside different social organizations and even in some government posts. But right now it is not the time to re-initiate a war.’³⁰ Interviews with civil society and government representatives also suggest that Sendero has purposefully reduced civilian targeting because it understands its dependence on communities to maintain its violent campaign.

Together this evidence would indicate that a dynamic of interdependence between civilians and rebels—each relying on the other to survive—plays an important role in explaining why we see continued violent contestation of the state in areas linked to the wartime economy. Yet, the perception of the state plays an equally important role and offers an important entry point to understanding what policies could be implemented to pacify respective areas. One respondent noted: ‘With Sendero, it is basically a cold war now. There is peace but Sendero is still there to mostly engage in drug trafficking. But it could be a time bomb. There needs to be better education and development.’³¹ Several respondents stress, throughout their interviews, the feeling of being left behind by the state, which reinforces their perception that coca is the only way to ensure their collective survival.³²

One coca farmer described his community’s economic situation: ‘Here in the village, we grow coca. We are about 140 families living from the cultivation of coca. I do it to sustain my family, to be able to send my children to school, and to learn something, to have a better life than I have. I have been cultivating coca all my life. There is no good alternative. The “*roya amarilla*” [translation: coffee leaf rust; a fungal disease affecting the coffee plant] destroyed all coffee plantations. Also, people do not own large plots of land. But coca, you can get a decent amount of money from a small plot of land. That is how we are organized here, many people

²⁹ Interview 5

³⁰ Interview 4

³¹ Interview 18

³² Interviews 15, 17, 19, 20, 21, 23, 25

own small plots of land.’³³ Another respondent elaborated: ‘We are frowned upon because of the issue of drugs, drug trafficking, and terrorism. But we grow coca out of necessity [...] The agricultural production is underdeveloped, we lack technology and farmers are not being paid market prices because they have to cover high costs of transportation. So most do not even sell their products [...] But we are not completely abandoned. The state does provide *something* but it’s lacking in health and education. And the security provision is absent. We have security because of the CAD [community self-defence forces]. They have been important historically, we know their work to have pacified the area.’³⁴

The continuation of the wartime economy and support for Sendero is thus also a function of limited access to formal economic markets in areas of coca cultivation. This fuels civilian’s perception of being continuously marginalized across different dimensions—economic just being one that crystallizes clearly across the interviews. For instance, political marginalization is also mentioned a few times, namely in relation to the continuous declaration of a state of emergency in the VRAEM. This policy allows the armed forces to maintain order alongside the national police but it also suspends certain democratic checks and balances, reinforcing sentiments of political marginalization. This may also be contributing to high levels of mistrust in the state.

Several of the interviews call to attention that no one trusts the state and especially not its security apparatus. Amid the militarization of the area, many communities have maintained their civilian self-defence forces (CADs) emanating from the war because they believe that the state is not able to provide security to *them*. While these self-defence forces do not seem very well equipped, their continued existence is striking.³⁵ According to interviews, their main purpose in the post-conflict era has been to attend to local security concerns, as the CADs no longer engage in fighting Sendero (their original purpose).³⁶

The CADs exist locally and consist of rotating volunteers, financed collectively (mostly through small contributions by local businesses who also benefit from better security). They are mostly called to attend to matters such as cases of domestic violence or petty crime, as the police is perceived to be ineffective to provide protection and at worst will exploit the situation to extort civilians.³⁷ For instance one respondent stated: ‘The police only gets involved if there is

³³ Interview 27

³⁴ Interview 16, emphasis added

³⁵ A total of 915 CADs exists that are recognized by the Peruvian armed forces see <https://data.larepublica.pe/nueva-ley-de-comites-de-autodefensa-entre-el-fracaso-de-la-seguridad-ciudadana-y-un-real-reconocimiento/>.

³⁶ In fact, several respondents reiterate that they are not worried about a resurgence of violence against civilians, while also emphasizing that they stand firm in their belief that Sendero knows that, should they become violent again, they remain equipped to defeat them.

³⁷ Interviews 2, 3, 9, 15, 16, 17, 18, 19

something to gain.’³⁸ Similarly, a current member of the CAD elaborated: ‘Security provision is difficult. The state only helps, when there is money involved. Usually when there is an incident related to drugs. But otherwise there is no public order, we need to provide it with the CADs.’³⁹ Another community member suggested: ‘The state does not do anything, they are all corrupt [referring to the police]. We are mistreated, we are robbed, we are exposed to violence. The CADs are the only ones we can count on [...] there is only justice for the rich.’⁴⁰ When I inquired further about the role of Sendero in this, the respondent replied: ‘Sendero is still alive but they do not do anything to us [...] if anything they protect against the eradication of coca. The eradication of coca is a serious problem, it pushes down the price of coca, it ruins the economy.’⁴¹

The interviews thus reflect significant reliance on coca and the drug trade for economic survival, severe mistrust or even contempt for the state, and an acceptance of—at times even somewhat outspoken support towards—Sendero as the protector of coca. This suggests that the continuation of the wartime economy is critical to Sendero’s continued violent contestation of the state after war. But rather than just being a source of revenue for Sendero, it provides the group with an important means to garner legitimacy and remain locally embedded. This allows Sendero to operate in an area that sees extensive military presence (as well as sustained civilian self-defence capacity).

A deeper look at the nature of violent events shows that Sendero is able to consistently stage attacks against the state while avoiding major casualties (in line with Hypothesis 2b and 2c). Of the 186 violent clashes recorded since 2004, over 75% are initiated by Sendero (see Figure 5). And yet, in most of these clashes (70%), state security forces were injured or killed while Sendero members were only killed or injured in 20% of clashes. This discrepancy may be in part the result of the targeted recruitment of recently trained soldiers to become members of Sendero Luminoso, specifically often snipers.⁴² It may also reflect that the state’s counterinsurgency campaign is driven by a focus on containment rather than active military defeat. Yet, given the state’s military superiority, such a pattern in violence indicates that Sendero must be locally strongly embedded and that the state simply does not seem to have sufficient intelligence to successfully mount attacks against Sendero.

³⁸ Interview 2

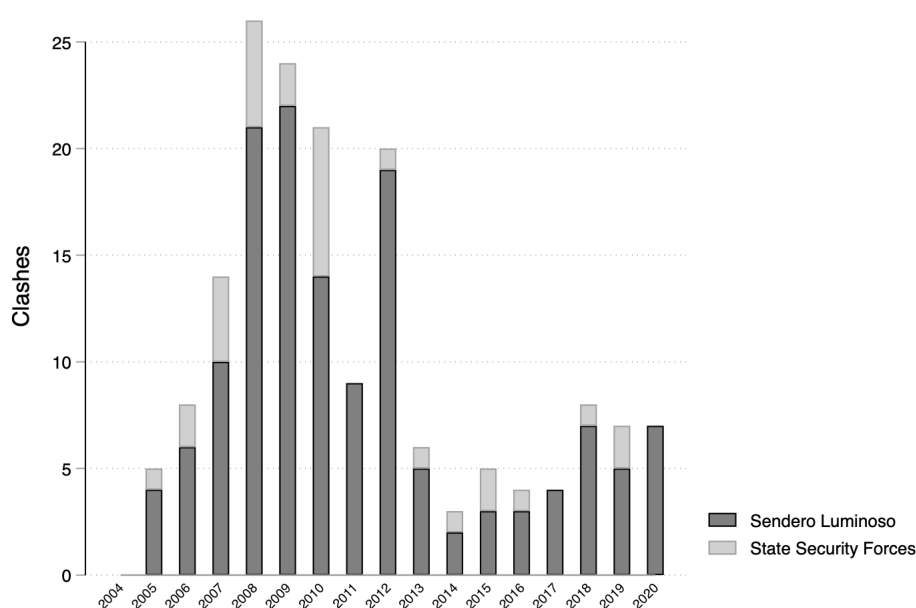
³⁹ Interview 15

⁴⁰ Interview 25

⁴¹ Interview 25

⁴² Interview 6

Figure 5: Violent clashes by initiator



Source: author's elaboration based on data collected from Defensoría del Pueblo reports (see Section 4.2).

A lack of local intelligence—arising from a lack of trust in the state security forces as reiterated in several interviews—would especially explain why attacks have often resulted in high numbers of casualties on the side of the military. For instance, after one of the bloodiest attacks in 2008 in Huancavelica, the only surviving military reports in an interview that community members knew of an armed column that was prowling the area the previous week and preparing a revenge attack yet did not share such information (Vera 2019).

Notably, state forces have managed to capture or kill 21 members of Sendero Luminoso since the end of conflict. However, there were only two significant hits: the capture of ‘Artemio’ in February of 2012, which led to the fall of the Alto Huallaga faction as he was the leader of the faction operating in that area, and the killing of ‘Alipio’, military strategist and second in command of the faction in the VRAEM, in August 2013. But such ‘successes’ were the result of months-to-years-long infiltration operations to gather local intelligence with only a third of these operations resulting in an actual clash between the two actors.

Finally, the data also show that all districts with coca cultivation today but not during wartime see *no* armed clashes over the entire period of observation, in support of Hypothesis 3. This does not serve as evidence of the legitimacy mechanism but demonstrates that a prominent mechanism—i.e. ‘feasibility’ drives violence—is not sufficient to explain where we see violence. This is also apparent if we analyse which districts witness violent clashes even though they never produced coca during war or peacetime. Apart from districts linked to the extractive part of the wartime economy, only districts that have been and remain key along transporting routes of the drug trade during the war also see violent clashes post-conflict. This makes

sense given that civilians living along drug trafficking routes also rely heavily on the economic benefits provided by sustaining the wartime economy and perceive Sendero as a key actor to maintain these structures.

5.2 Additional observations

Economic networks developed during war appear critical to sustaining a violent campaign against the state in the post-conflict era. The evidence provided thus far highlights the importance of relationships between communities and respective governance actors to explain why these networks are so persistent. This insight also offers an important entry point to understanding what policies could be enacted to pacify areas in which a wartime economy developed. To illustrate this, I provide an additional analysis of why the Alto Huallaga and the VRAEM factions have taken different paths since conflict ended. While the Alto Huallaga faction was recently dismantled, the VRAEM faction remains active. I suggest that local differences in civilian perception of the respective Sendero factions and the state were key and jointly reinforced each other to result in such different governance outcomes.

Although the event data show that both factions have predominantly refrained from engaging in repressive or very violent behaviour towards local populations post-conflict, there are clear differences in their relationship with civilians. Namely, the Alto Huallaga faction did not value civilian support as much as the VRAEM faction. The Huallaga faction's leader, Artemio, emphasized close ties to the 'higher echelons of the drug industry' over local civilian support (van Dun 2019: 1041). This is also evident in the data, the majority of civilian targeting committed is attributable to the Alto Huallaga faction alone. It continued to target and kill civilians it claimed had shared intelligence on them, often targeting community leaders in areas that had decided to agree to voluntary eradication programmes offered by the state. This arguably negatively affected civilian support towards Sendero in the Alto Huallaga.

Meanwhile, the VRAEM faction explicitly changed its strategy in the targeting of civilians. Starting in October 2007, they actively communicated a new strategy by distributing leaflets where they vowed to no longer target civilians and exclusively engage in a fight against the state.⁴³ This is also accompanied by a stop in raids on local communities, where they used to, for instance, steal food or medicine. Instead, communities report Sendero Luminoso members coming to buy necessities and leave again or coming to hold speeches. Another very common 'interaction' occurs through propaganda, e.g. Sendero distributes leaflets. Community members and leaders also told me about encounters with *Senderistas* and the surprise of realizing that they were not trying to forcefully recruit new members but would only try to convince them

⁴³ Note that there have been reports of Sendero keeping captive civilians of the indigenous group Ashanika (BBC 2015).

to join and tell them why they are fighting the state security forces. But, as I argued previously, it is not just support for Sendero that matters.

The Huallaga faction was more actively targeted by counter-rebels in the immediate post-conflict phase. Yet, their counterinsurgency campaign remained unsuccessful until the capture of its leader Florindo Eleuterio Flores Hala, alias Artemio, in 2012. His capture was the result of intelligence work conducted by the Special Investigations Division of the Anti-Drug Directorate (Dirandro) of the National Police of Peru (PNP). According to Dirandro, their strategy mostly entailed leaving Sendero without any local support (Ministerio del Interior 2018). How did they manage to garner enough local intelligence leading up to the capture? A temporary but very credible shift in Peru's anti-narcotics policy in the summer of 2011 may have been key in swaying some community members to inform on Sendero or at least refrain from sharing intelligence about police advances in the area.

The government gained popularity in mid-2011 by reversing its anti-narcotics policies, e.g. temporarily halting eradication. Although communities in the Alto Huallaga remained dependent on the wartime economy in the early 2000s, the region was being increasingly targeted for development programmes and experienced heavy use of eradication (in contrast to the VRAEM), which contributed to dissatisfaction. In 2011, however, newly elected president Ollanta Humala appointed Ricardo Soberon as head of Peru's national anti-drug agency DEVIDA (*Comision Nacional para el Desarrollo y Vida sin Drogas*) on 6 August 2011. This was a surprising move. Soberon was seen by conservatives as a bad choice due to his prominent opposition towards US-supported anti-narcotics policy. In turn, prior and during his appointment he enjoyed support by the national coca growers' union CONPACCP (the National Confederation of Agricultural Producers of the Coca Valleys of Peru), which had its strongest support in the Alto Huallaga at the time. According to drug policy expert Kathryn Ledebur, '[f]or the first time in Peru you had a drug control chief with legitimacy with the affected coca-grower population'.⁴⁴

Soberon had worked closely for years with many coca growers, specifically in the Alto Huallaga, and wanted to implement a new strategy with an emphasis on arresting the big drug traffickers and money launderers, seizing illegal drug shipments, halting the influx of chemicals used to process cocaine, and stopping penalizing peasants who grow coca. On 16 August 2011 it was announced that eradication would be put on halt until the government would have time to re-evaluate its anti-narcotics approach. This move came as a surprise to observers and even US officials (BBC 2011); the US ambassador at the time, Rose Likins, said she had not been informed of this policy change prior to its announcement and said it had not been coordinated

⁴⁴ See: <https://www.sandiegouniontribune.com/sdut-peru-replaces-drug-czar-who-downplayed-coca-fight-2012jan10-story.html>.

with the US government, who pays for Peru's eradication programme and considers it integral to combating the illegal drugs trade.

Although, this halt was reversed after only a month and was met with calls for an 'indefinite national strike' by CONPACCP, Soberon continued to enjoy their active support,⁴⁵ as he continued to lobby US officials in favour of alternative development programmes for coca farmers, and insisted on reducing forced eradication. In an interview just months before Artemio's capture, Soberon stated: 'We have reached a basic understanding with the United States about Peru's new policy, which implies a bit less funding from them for eradication and interdiction, and a bit more funding for alternative development' (Stauffer 2011). It is conceivable that the appointment of Soberon in conjunction with development programmes credibly signalled, at least to some community members involved in the wartime economy, that the presence of Sendero was no longer necessary; specifically if it entailed being exposed to an overtly violent non-state actor, unable to provide the necessary protection to local livelihoods. This provides some support to the claim that community members may share intelligence with the state if they *believe* that their livelihood would be secured in the absence of a functioning wartime economy.

Another factor that might explain differences in the survival of the two factions is the history of coca cultivation and involvement in the drug trade in the respective areas. The Alto Huallaga was the main producing coca valley prior to armed conflict and controlled by local *firmas* with whom Sendero created ties to take control in 1987; meanwhile coca cultivation in the VRAEM evolved as a result of the armed conflict (Heuser 2019). This might have allowed Sendero to attain a more central role within the drug trade but also made them depend more heavily on the civilian population to maintain that role post-conflict. Consequently, differences in dependencies and power hierarchies between Sendero, *firmas*, and the population could come to explain why it has survived in the VRAEM but not in the Alto Huallaga.

The VRAEM faction continues to challenge the state until today and according to the government consists of about 300 to 400 members. While state officials repeatedly claimed in the early 2000s that the remnants in the VRAEM were not an active threat, the Peruvian state has placed around 52 military bases in the VRAEM, and staffed them with 8,000 soldiers (Caretas 2019). But the military forces rely heavily on the intelligence work of the local police, and com-

⁴⁵ In their communiqué in response to the reversal of the eradication halt, CONPACCP wrote: 'Agents of US interests, like [former interior minister] Fernando Rospigliosi have unleashed a campaign of destruction against one of the few specialists in drug traffic, Ricardo Soberon [...] They say that Soberon's closeness to the *cocaleros* is a defect, when in reality, it is a logical consequence of his work as an analyst who has studied deeply the problematic of coca leaf cultivation and who could, if they let him do his job, propose solutions that transcend mere repression and criminalization of the weakest link in the chain, which in this case is the growers, and not the grand narcos and the apparatus that they have created around the commercialization of cocaine hydrochloride and its derivatives.' – CONPACCP communiqué, 2011

munities are not willing to provide such intelligence (Yaranga 2019). Although the VRAEM has been under a state of emergency since 1999 and most of the military bases are located in this area (Saffon 2020), the Peruvian government only admitted to the continued presence and threat posed by Sendero Luminoso in the VRAEM in 2007. It subsequently created the *Comando Especial de las Fuerzas Armadas* to tackle drug trafficking and terrorist activities in the area. *Operacion Excelencia 777* was launched and according to state sources successfully raided and destroyed several rebel camps in 2007. Nonetheless, Sendero remains active in the area.

In fact, Sendero Luminoso has maintained its stronghold in the VRAEM and specifically in Vizcatan del Ene where they also have active collaborators who share intelligence about counter-insurgents with them (Vera 2019; Gorriti 2022). And while the state now considers itself to be at war in the VRAEM, the VRAEM faction appears to have acquired some degree of legitimacy by garnering support from coca growers directly (van Dun 2019). Aside from actively refraining from targeting civilians, the VRAEM faction also started in early 2002 to signal to communities their willingness to have an amicable relationships. For instance, they offered seeds and other supplies as well as money to local farmers or were buying goods from communities and paying them over price and in dollars. Further, areas involved in the drug industry in the VRAEM have seen increases in living standards in comparison to other marginalized rural areas not involved in the drug trade.

6 Conclusion

As countries transition to peace, what explains the persistence of instability? This article suggests that the wartime economy causes continued violent contestation of the state after war. Combining an instrumental variable approach with in-depth interviews and detailed event data in Peru, I show that the wartime economy feeds into a collective willingness of communities to engage and accept the rebel's authority because of its role in protecting the wartime economy. Local dependence on the continuation of the wartime economy to ensure their livelihood is key and creates an important interdependence as rebels also rely on civilian support to limit state access to intelligence and thus reduce the effectiveness of counterinsurgency. This allows for pockets of instability to persist even though the reach of the state has expanded into these areas after war ended. Severe mistrust in the state reinforces this dynamic and is aggravated by a militarized counterinsurgency strategy.

Effectively re-establishing a monopoly on violence in these areas is difficult because the continuation of the wartime economy during peacetime favours 'multilayered governance' post-conflict (see Loyle et al. 2023). Economic structures established during war can thus explain variations in war-to-peace transitions, which is an important extension of previous work on the

effects of wartime governance (e.g., Daly 2012; Osorio et al. 2021). This also has implications for research on how resources shape conflict that is heavily influenced by a focus on economic rationales. Looking at how economic structures developed during war shape relationships to governance actors provides a new perspective to understanding when and why resources can cause violence.

Highlighting how the wartime economy shapes orders of ‘governance’ by affecting perceptions of governance actors also offers important entry points for policy makers. It suggests that the state needs to offer an alternative to sustaining local livelihoods, but that development projects which could facilitate a transition to peace elsewhere are likely insufficient because these communities have grown too independent of the state. To reinstate a functioning social contract, the state needs to go beyond the provision of basic public services. This is even more noteworthy as other research suggests that the current counterinsurgency campaign has important negative ramifications for local populations, as funds are allocated towards defence and away from public service provision, ultimately reinforcing marginalization—which serves as a breeding ground for further instability and other forms of violence (Sexton et al. 2019).

Most importantly, relationship-building between civilians and the state may be the most effective way to successfully build the ‘state’ (Karim 2020; Lake 2022). Karim (2020) shows the positive effect of relationship-building activities between police official and locals in marginalized areas of Liberia. My findings suggest that engaging in similar relationship-building activities in areas linked to the wartime economy could be very fruitful.

But containment of violence can only be a first step towards building sustainable peace in these areas. It is necessary to rethink current policies and their effect on the perception of the state and its agents. In Peru, militarized responses and discourses that frame *cocaleros* (coca farmers) as *narcos* (an abbreviation of the word *narcotraficantes*, drug traffickers) need to be limited. These approaches have stigmatized and victimized populations in coca-cultivating areas, to an extent which makes it incredibly difficult to build a relationship between civilians and the state. Such narratives can inadvertently reinforce the legitimacy of the rebel and strengthen the boundary between the state and the local communities by reinforcing a view of ‘us vs. them’.

This is also important to consider in other ‘post-conflict’ contexts like Colombia, Afghanistan, Sierra Leone, or the Democratic Republic of the Congo. International efforts have focused on training security personnel and expanding coercive state capacity but have paid less attention to how communities relate to the state and other governance actors. For instance, to the surprise of many, the Taliban quickly returned to power after the withdrawal of international troops in 2021. But a heavily militarized counterinsurgency strategy had contributed to severe mistrust in a government established by the international community and pushed civilians towards the Taliban. The Taliban may not have enjoyed widespread public support per se but remained an

important governance actor throughout their 21-year long insurgency, also backed by significant revenue through opium poppy cultivation and drug trade. These dynamics ultimately set the stage for a quick takeover.⁴⁶

Finally, the empirical study of the continuity of armed violence at lower levels addresses a critical flaw of the wider quantitative literature on peace, which often defines a sustained drop in the number of battle-related deaths as a state of ‘stability’ or even peace. The findings suggest that it is important to move beyond traditional definitions of armed conflict to understand the consolidation of peace and statebuilding in conflict-affected settings.

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⁴⁶ See: <https://www.project-syndicate.org/podcasts/the-return-of-the-taliban>.

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Appendix

A The drug market in Peru

Coca, the raw material for cocaine, has historically been grown in Peru and the Andes. Coca cultivation is legal in Peru and leaves are supposed to be sold to National Enterprise of Coca (*Empresa Nacional de la Coca*, ENACO). However, most of the coca production is sold illegally as it is fairly unprofitable to sell to ENACO. Drug production, however, only really began after the 1970s as the demand for cocaine increased and accelerated during the armed conflict. Before that, coca was mostly cultivated for traditional purposes.

In contrast to Mexico and Colombia, Peru's drug production is mainly controlled by family clans, referred to as *firmas* (Van Dun 2016). While Sendero increasingly gained control over the main coca valleys, it cooperated with the *firmas* rather than fighting them (van Dun 2019). Nowadays, several international cartels are known to operate in Peru and to be involved in the drug trade but they do *not* control territory and there is no record of a Peruvian cartel as such. This organizational set-up has reduced the risk of detection but also of violence amongst armed non-state actors (Pachico 2012; van Dun 2012).

Coca is cultivated on very small parcels of less than one hectare—hence individual ‘*cocaleros*’ (coca farmers) do not have much control over coca supply nor do they enrich themselves by cultivating coca. The crop can be harvested three to six times a year, depending on field slope, age of the plantation, and the agricultural techniques applied.⁴⁷ Specifically, in areas where coca is cultivated for illicit markets, like the VRAEM, *cocaleros* heavily use fertilizers and pesticides.

Coca cultivation is the most labour-intensive stage of cocaine production and sustains the livelihood of many communities. For instance, 48% of total net family income in the VRAEM in 2000 came from coca cultivation (Bedoya Garland 2003). While coca cultivation is not necessarily very profitable for the farmers, it is more lucrative than other local labour alternatives or alternative crops.

In Peru, most of the coca leaves are only processed into cocaine paste (*pasta basica de cocaína*—PBC). It is then trafficked to neighbouring Bolivia and Brazil for further processing. Most of it is transported on small planes or on foot by ‘*mochileros*’ (backpackers), relying

⁴⁷ In general, the first harvest is carried out between February and March. This is the period of highest precipitation and, consequently, the volume of coca leaf is higher than for any other harvests. The second harvest takes place three to four months later, i.e. between May and June. The third harvest, between August and September, and the fourth harvest, between November and December, are less productive because they coincide with the dry season.

heavily on employing mostly young males. Some of it is also trafficked out of ports and from Lima's international airport, either hidden in freight or using drug mules.⁴⁸ Anti-drug policies were actively introduced in 1995, when the National Plan for the Prevention and Control of Drugs was launched. Peru receives financial aid from the USA to implement this plan as part of the US 'War on Drugs'. It is important to note that Peru does not allow the use of chemical spray to fumigate coca crops with herbicides. Instead, it combines manual eradication with substitution schemes to encourage farmers to cultivate legal alternatives. These policies, however, have done little to really diminish production but rather displace cultivation (at times only temporarily until fields become fertile again). Coca farming still represents a large fraction of income for peasants, and cultivation has increased in recent years according to UNODC data.

B Field work

B1 Site selection, interview sampling, and analysis

I selected the two sites based on the high conflict intensity they experienced during conflict. Yet, the two sites vary in terms of actual coca cultivation and extent to which the local population economically relies nowadays on the drug trade. While Huanta is not directly involved in coca cultivation, many people in and around Huanta own *chacras* (parcels of land) in the jungle area where coca can be cultivated. But mostly, many businesses rely on the drug trade indirectly as Huanta is one key transporting route for the drug trade. Nonetheless, not all livelihoods are directly linked to the drug trade as Huanta is also very close to Huamanga, the department capital. In contrast, Llochegua is today one of the biggest producers of coca leaves. Most people depend on the drug trade directly or indirectly. Not everyone cultivates coca but local businesses and livelihoods depend highly on revenue streams from the drug trade.

To identify interviewees, I followed two strategies. For expert interviews, I followed a snowball system and asked interviewees to recommend others whom they believed I should speak with. The primary goal was to obtain contextual and background information. For interviews in the communities, I worked with a research assistant, who was familiar with the areas and who could identify relevant community members and leaders to speak to. I also combined this with a snowball system. Across the potential pool of interviewees, I explicitly made sure to include women as interviewees. On the one hand, male interviewees would not necessarily recommend women to talk to and on the other hand women themselves would often not consider themselves

⁴⁸ Today, the main destinations are Europe and Asia but also urban areas in Brazil and Chile, rather than the American market (which is catered to by Colombia after the air interdiction campaign in the 1990s).

relevant to talk to. The interviewees also spanned a spectrum in terms of their role within the community.

The interviews were conducted in person and in Spanish (without a translator). Expert interviews were semi-structured but tailored to each interviewee's background. Interviews in Huanta and Llohegua were semi-structured but left room for interviewees to elaborate on questions or issues they found relevant, at times leading to prolonged conversations. All interviews started with a detailed informed verbal consent procedure and interviewees were aware that they could terminate the interview at any point.

I analyzed the interview data qualitatively with a view towards identifying commonalities and variation in interviewees responses across and within communities or fields of expertise (Small and Calarco 2022). My analysis combines the interview data with field notes on informal interactions and observations as well as secondary qualitative data. I do not necessarily claim to have interviewed enough people as to have reached a point of saturation where additional interviews did not yield any or little new information (Small 2009). However, across the number of interviews, one could conceive a consensus in terms of important mechanisms and issues apparent across interviews.

B2 Interview questionnaire

All interviews were conducted in Spanish. The following questions are translated into English.

1. Background of respondents
 - (a) Community
 - (b) District
 - (c) Gender
 - (d) Year of birth
 - (e) Since when have you lived here?
 - (f) Where did you use to live?
2. Professional occupation: How do you make a living? (can name various jobs)
3. Do you have an ID? (Why not?)

4. Did you go to school?
If yes, what is your highest earned degree?
5. What are the public services most people have access to?
 - potable water
 - sanitation
 - electricity
 - primary education
 - secondary education
 - health services (specify what kind)
6. Are these services provided by the state? *Which ones aren't?*
7. Can you tell me more about the quality of these services?
8. If children want to attend secondary school, where do they have to go?
9. To go to university, where do young people from this district go?
10. What is the state for you?
11. How can you feel the presence of the state in this district?
12. Does the state play an important role in this district? *In what sense?*
13. Do you think the state cares about the people in this district?
14. Do you think the needs of people like you are important in current politics? *Why?*
15. If you wanted to influence policy making, would you have the option to do so?
16. What are ways to participate politically?
17. How are important decisions that affect this district taken? Who takes them?
18. Who participates in making political decisions in this district?
19. How do people make a living in this district?
20. What are the economic opportunities in this district?

21. Do many young people migrate to other areas in order to find economic opportunities?
22. Are you happy with the quality of life you have?
23. Would you say the quality of your life has improved or worsened in the last ten years?
24. Would you say the quality of your life is comparatively better or worse than that of your parents?
25. Do you think the quality of life of your children will be better or worse than yours?
26. What is the relationship between the state and the local population in this district?
27. Do people trust the state? *Why (not)?*
28. How corrupt is the police here?
29. How corrupt are other state authorities?
30. Is there trust in the judicial system?
31. Who is responsible for bringing justice?
32. Is justice being made in a just way?
33. Who has the right to arrest someone?
34. Who holds people accountable if they have done something wrong?
35. Who is the highest authority in this district?
36. How do they get to that post? Are they elected? By whom?
37. What are their responsibilities?
38. Are there other responsibilities they should have?
39. Do you receive any social welfare benefits or do you participate in any state-funded programme? *If yes, which programme(s)?*
40. Would you say the state...
 - is there to help you?
 - fulfills its responsibilities?

- does not do anything?
- only makes things worse?

Why?

41. What could the state do to create legitimacy?
42. What are the biggest problems this district has?
43. Which social organizations exist in your community? What is their role?
44. Do they have the ability to influence local decision making and politics?
45. Does this district depend much on coca cultivation for its economic survival?
46. What happens in times when the price of coca plummets?
47. Are there social conflicts because of public service provision or bad governance within Peru? From your perspective, would you say that your community has similar issues?
48. How are problems of bad governance resolved?
49. How likely is it that such disputes will turn violent?
50. Is this district safe?
51. Who is responsible for bringing safety?
52. What kind of crime exists in this areas? Is there much crime?
53. Is it common or even necessary to be involved in illicit activities in order to make a living?
54. Have there been problems between the police or military and organized groups in this area?
55. Is there a group in this area, whose activities are watched by the state?
56. According to news reports, an armed group called Sendero Luminoso operates in this area. Have you heard of any incidents related to them?
57. Are they violent with people like you?
58. Do they only attack state forces?

59. What do you think motivates their activity?

C Intensity of armed violence

Table C1: The wartime economy and intensity of armed violence (2SLS)

Model	First stage	Second stage	Reduced form	First stage	Second stage	Reduced form
Dependent variable	Wartime economy	Armed violence	Armed violence	Wartime economy	Armed violence	Armed violence
Coca suitability index	0.425*** (0.030)		1.507 ** (0.511)	0.425 *** (0.030)		1.526** (0.512)
Wartime economy		3.546** (1.188)			3.590** (1.189)	
Covariates	No	No	No	Yes	Yes	Yes
Constant	0.037*** (0.004)	-0.065 (0.055)	0.042 (0.016)	0.025 (0.018)	-0.780 (0.480)	-0.690 (0.489)
Kleibergen-Paap rank Wald F statistic	200.04		8.68	44.55		2.40
Observations	1793	1793	1793	1792	1792	1792

Note: see details about included covariates in the data section. *p <.05 **p<.01 ***p<.001. Robust standard errors in parentheses.

In Table C1, I employ the same specification as described in the research design section but use intensity of violence as the dependent variable. Intensity is measured as the sum of casualties and injured people as a result of armed clashes between Sendero and state security forces. The results remain in line with expectations and demonstrate a positive effect of the wartime economy on the intensity of armed violence. Namely, districts suitable for coca cultivation that were involved in the wartime economy see on average 3.5 victims as the result of armed violence. In contrast, the average district only sees 0.3 victims. The effect size is as big as one standard deviation, which is rather substantial and similar to the main specification using the number of armed clashes.

D Coca production and suitability during war and peacetime

In the following, I show that the coca suitability index is more predictive of production of coca during wartime than today by regressing the CSI on coca production in 1994 and 2017, respectively. I also include as covariates indicators of socio-economic development (literacy rate, dirt floor, and electrification rate) from census data for the years 1993 and 2007. Table D1 shows that while the CSI predicts 41% of coca cultivation during wartime, this decreases to 25% during peacetime. This decrease is likely the result of eradication campaigns by the state, which have significantly reduced the ability and or incentive of farmers to cultivate coca in some of the most suitable areas, e.g. the Alto Huallaga. The lower predictive power should strengthen the credibility of the results provided here.

Table D1: Predictive power of the coca suitability index

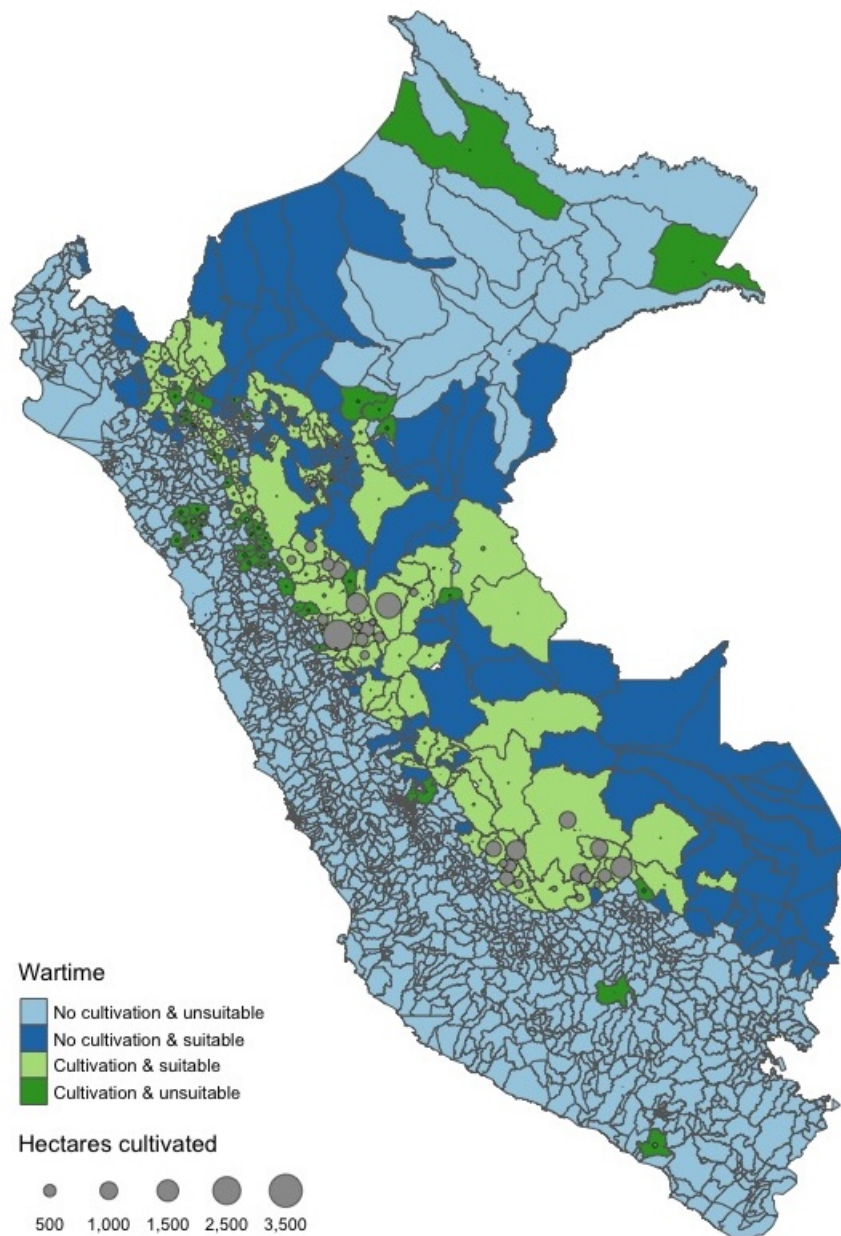
Model	Wartime production	Peacetime production
CSI	0.418*** (0.030)	0.256*** (0.028)
Covariates	Yes	Yes
Constant	0.097 (0.074)	0.124 (0.093)
Observations	1792	1792

Note: *p <.05 **p<.01 ***p<.001. Robust standard errors in parentheses.

In addition, Figures D1 and D2 show the spatial variation of coca cultivation by suitability of land for coca cultivation. The figures also include bubbles to depict the amount of hectares cultivated in each district, and it is visible that in general unsuitable districts produce much less coca. When comparing Figures D1 and D2, one can also see that during wartime coca cultivation was more spread out geographically and different regions produced substantial amounts of coca. Nowadays coca production has become heavily centred in the VRAEM. The Alto Hualaga, which was the traditional coca cultivation valley, barely produces any coca today. This is the result of the combination of eradication campaigns and development programmes. In comparison, districts in the VRAEM have increased their production far beyond levels previously seen thanks to fertilizers and heavy pesticides.

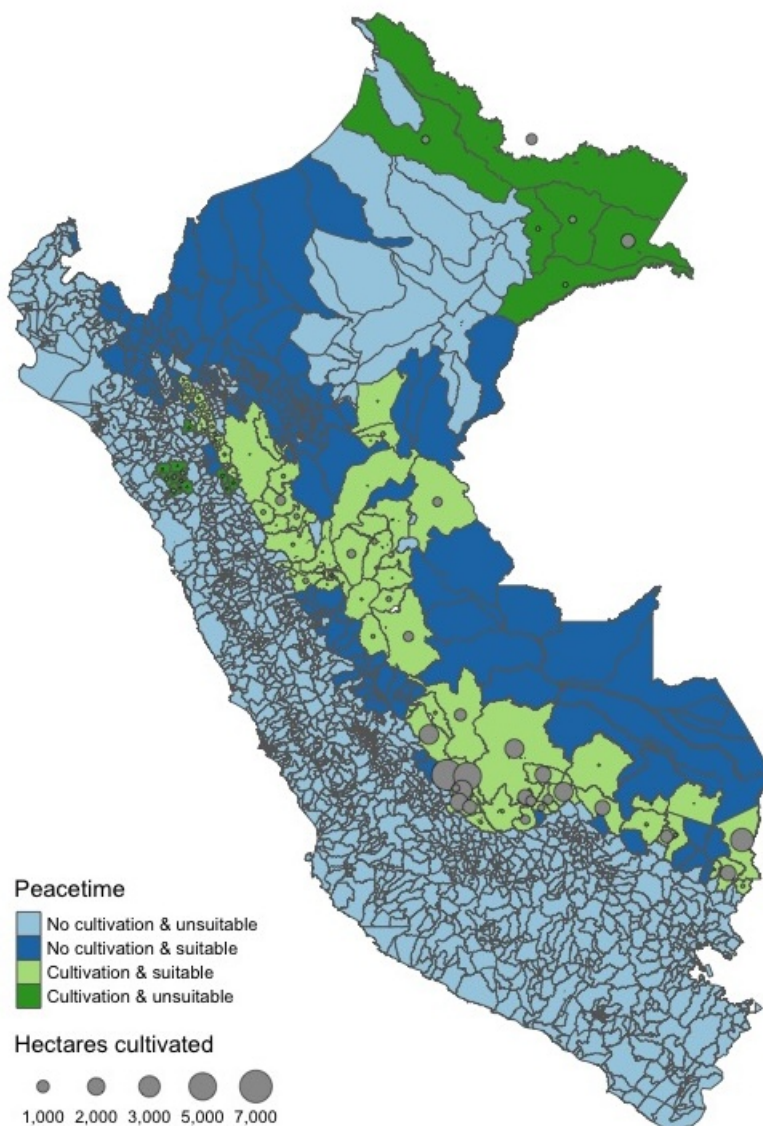
Even though less districts overall produce coca, coca cultivation has expanded to other areas that are less suitable. We can see that during peacetime cultivation of coca has substantially expanded to border regions between Peru and Colombia. This may be the result of the expansion of Colombian actors into these areas. However, cultivation has been limited in quantity due to the mostly unfavourable conditions for growing high-quality coca leaves for cocaine production. Coca cultivation has also expanded into the border region between Peru and Bolivia. Here, involvement in the drug trade has become more lucrative due to the proximity to Bolivia, where today most of Peru's coca paste is being processed into cocaine for further export into Brazil and Europe. In contrast to the border region with Colombia, these areas are highly suitable and farmers can produce coca with high cocaine content.

Figure D1: 1994



Source: author's elaboration based on data described in Sections 4.1 and 4.2. Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

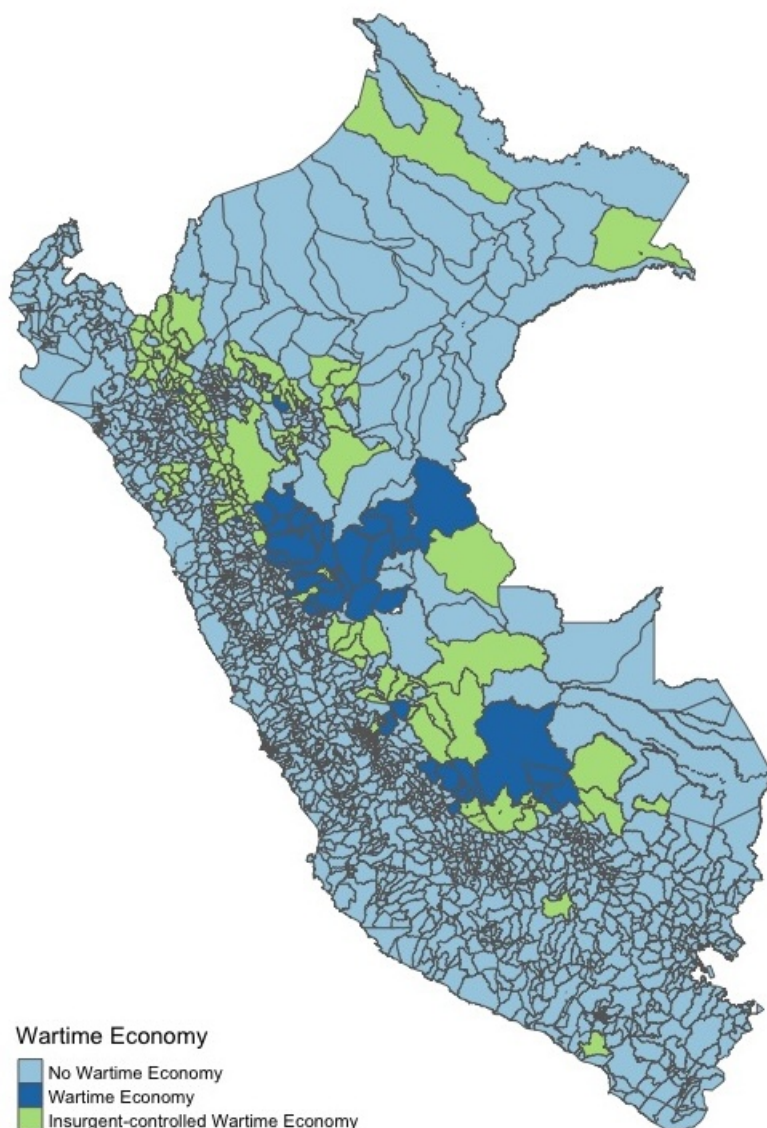
Figure D2: 2017



Source: author's elaboration based on data described in Sections 4.1 and 4.2. Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

E Territorial control

Figure E1: Wartime economy and Sendero strongholds



Source: author's elaboration based on data described in Sections 4.1 and 4.2. Map created with R using 1993 shape files at the district level, downloaded from [GADM](#) (admin level 3).

As a further robustness test, I compare the effect of coca production during wartime in areas controlled by Sendero Luminoso during armed conflict with the effect in areas that were not controlled by Sendero. Across the 188 districts that produced coca during conflict, only 44 were under Sendero control (see Figure E1). As in the main specification, I instrument coca production using the coca suitability index (CSI) described above. Territorial control is measured by looking at whether the district had a mayor in 1989. This is based on the reasoning that ‘the ability of the guerrillas to prevent official elections from being held in the area’ is the best proxy for guerrilla control (McClintock 1989: 80). Table E1 shows that cultivation of coca in areas not under Sendero control during wartime are positively associated with armed clashes post-conflict but this effect cannot be distinguished from zero and is also substantially small.

In contrast, areas involved in the wartime economy and under Sendero control see on average 2.4 armed clashes. This effect is statistically significant at the 95% level and also substantially quite large (almost double the standard deviation). These results suggest that it was likely easier to maintain control over resource extraction also during peacetime in areas where Sendero had previously established control and built a relationship with the civilian population (regardless of whether this was necessarily a positive relationship).

Table E1: The wartime economy and armed violence by areas of control

Model	Under Sendero control	No Sendero control
Dependent variable	<i>Armed violence</i>	<i>Armed violence</i>
Wartime economy	2.418** (0.946)	0.639 (0.410)
Covariates	Yes	Yes
Constant	-0.962 (0.537)	-0.002 (0.061)
Observations	485	1302

Note: *p <.05 **p<.01 ***p<.001. Robust standard errors in parentheses.