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Rebel Natural Resource Exploitation and Conflict Duration

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Abstract

How does natural resource wealth influence the duration of civil conflicts? We theorize that the exploitation of natural resources can strengthen rebels' "power to resist" the government, but this depends on *how* rebels earn funding from those resources. Distinguishing between the extortion and smuggling of natural resources, we posit that smuggling in particular is more likely to give rebels the flexibility and mobility needed to effectively resist government repression. We then test this proposition empirically using new data that identify not only whether rebels profit from resources but also how they do so. We find that only when rebels smuggle natural resources do civil conflicts last significantly longer. In contrast, conflicts in which rebel groups earn money from extorting natural resource production are not significantly more likely to endure. This finding is of special interest because past work has largely ignored how rebels earn income from natural resources and the implication this distinction might have on conflict processes.

Keywords

civil wars, resource extraction, rebellion, conflict resolution

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Why do some civil wars last longer than others? Existing research identifies a range of factors influencing conflict duration. The nature of the conflict matters; ethnic (Licklider 1995; de Rouen and Sobek 2004), "sons of the soil" (Fearon 2004), separatist (Balch-Lindsay and Enterline 2000), and irregular conflicts (Balcells and Kalyvas 2014) tend to last longer. The characteristics of the warring parties, including their number, relative strength, fighting capacity, and geographic location, also influence conflict duration (Buhaug, Gates, and Lujala 2009; Cunningham 2006; Cunningham, Gleditsch, and Salehyan 2009). Third-party intervention often lengthens civil conflicts (Balch-Lindsay and Enterline 2000; Regan 2002), although international actors also can help enforce settlements (Walter 1997). Contextual influences on conflict duration include a country's per capita income, inequality, population (Collier, Hoeffler, and Söderbom 2004), level of ethnic polarization (Collier, Hoeffler, and Söderbom 2004; Montalvo and Reynal-Querol 2010), and geographic size (Balch-Lindsay and Enterline 2000).

Several studies identify a relationship between the duration of civil conflict and natural resources (Ross 2004a, 2004b). Conflicts last longer when the rebel group derives substantial funding from contraband sources such as opium and diamonds (Fearon 2004; see also Weinstein 2007), and when they take place in areas where oil, natural gas, and gemstones are located (Buhaug, Gates, and Lujala 2009; Lujala 2010). We make a new contribution to this line of research. Using original data, we investigate how rebel exploitation of natural resources—not simply the presence of resources in a conflict zone—influences conflict duration. We also consider a wider range of natural resources than has been included in previous studies. While drugs and diamonds provide significant funding for some rebel movements, many other natural resources also fund rebellion. In Côte d'Ivoire, for example, the Forces Nouvelles were known for exploiting diamonds but also earned millions of dollars from cocoa. This new data set allows us to test—across a large number of rebel groups—the argument that rebels who actually earn income from natural resources are able to survive longer.

We also contribute to theory, identifying specific mechanisms linking natural resources to conflict duration. Conventional wisdom holds that natural resources provide rebels with income that can be used to purchase weapons and recruit fighters, potentially increasing their military capacity and lengthening the war. This argument is at the root of many case studies that allude to resources "fueling" a given conflict (Ross 2004a). In terms of the two dimensions of rebel strength proposed by Cunningham, Gleditsch, and Salehyan (2009), this corresponds to an increase in rebels' "power to target" their enemies. Although the argument about resources and rebel fighting capacity is persuasive, the presumed impact on conflict duration is undermined by evidence that civil wars involving stronger rebel groups tend to end more quickly (Cunningham, Gleditsch, and Salehyan 2009). States can find it difficult to achieve a decisive victory against weak rebel groups, which often engage in guerilla tactics, whereas they are more likely to offer concessions to stronger groups (Cunningham, Gleditsch, and Salehyan 2009; Buhaug, Gates, and Lujala 2009; Thomas 2014), resulting in shorter conflicts.

We propose a solution to this tension in the literature by focusing on a second dimension of rebel strength: the "power to resist" government repression (Cunningham, Gleditsch, and Salehyan 2009). Rebels with significant power to resist may lack the strength to defeat a state or to impose sufficient costs to secure negotiated settlements but can avoid government repression that threatens their survival. The ability to resist is thus unlikely to lead to rebel victory but could lead to longer conflicts. The exploitation of natural resources can strengthen rebels' power to resist, we argue, depending on *how* rebels earn funding from those resources. We distinguish between extorting natural resource production and smuggling natural resources and posit that smuggling is more likely to give rebels the flexibility and mobility needed to effectively resist government repression. We then test this proposition empirically using a data set that identifies not only whether rebels profit from resources but also how they do so. Only when rebels smuggle natural resources do civil conflicts last significantly longer. In contrast, conflicts in which rebel groups earn money from extorting natural resource production are not significantly more likely to endure. This finding suggests that the different strategies used by rebel groups to profit from natural resources have distinct political and military consequences, a possibility that has been overlooked in past research.

Natural Resources and Conflict Duration

Why might natural resource wealth lead to longer conflicts? Existing scholarship suggests several mechanisms. First, natural resources could prolong conflicts by making it more difficult to reach peace agreements. Drawing on work within the bargaining framework (Walter 1997; Wagner 2000), natural resources may aggravate commitment problems between the state and rebels. Each side demands greater concessions in return for giving up the opportunity for sole control of valuable resources and combatants worry that any agreement on the distribution of revenues could be rescinded in the future (Ross 2012). This makes it more difficult to agree to a settlement to the conflict that is credible: "the more the government has to give away, the more tempted it will be to renege when it is again in a strong position" (Fearon 2004, 295-96; see also Collier, Hoeffler, and Söderbom 2004). This problem is aggravated by the fact that there often is little transparency about the scale of resource revenues in a country, leading rebels to fear they would be denied their fair share (Walter 1997; Fearon 2004; Cunningham 2006; Ross 2012). Natural resources also may lead rebels to develop "illusions of invulnerability," causing them to believe that they do not need to negotiate with the state, possibly lengthening conflicts further (Bapat 2005).

Developing a theory based on such commitment problems, Fearon (2004) finds that rebel funding from contraband is associated with lengthier civil wars. Doyle and Sambanis (2000) conclude that primary commodity exports hinder the chances of peacebuilding, while Stedman (2001) shows that the presence of lootable resources harms the prospects for peace agreements, leading to longer conflicts. In sum,

resource-exploiting rebels may be reluctant to give up access to resource revenues in any sort of settlement and may not trust the government to provide an agreed share, making them unlikely to sign a peace agreement and lengthening the conflict.

Second, natural resources may affect conflict duration by sustaining a rebel group's ability to fund its operations over longer periods of time. Rebels who have a steady stream of revenues from natural resources should be able purchase more weapons and recruit more soldiers, even when their prospects on the battlefield are not particularly good. In contrast, a group without such resource revenues may find it more difficult to obtain weapons and recruits, ultimately forcing it to concede. Collier, Hoeffler, and Söderbom (2004) show that a decline in the price of a country's primary commodity exports shortens conflict, possibly by squeezing rebel finances. Using case studies, Ross (2004a) finds support for the notion that natural resources may increase conflict duration, but only if they are controlled by the weaker side in the conflict. Because rebel movements are generally weaker than the state, the expectation is that when rebels have funding from natural resources that allow them to sustain their operations, civil conflicts should last longer. When legal economic opportunities are scarce, rebel movements with control of natural resources should be especially effective at recruitment (Elbadwi and Sambanis 2000), helping them to sustain their movements over a longer period. At the state level, overreliance on resource rents also might create poor economic conditions, reducing the opportunity costs for individuals to join rebel movements, and providing new recruits to sustain conflicts (Collier, Hoeffler, and Söderbom 2004; Walter 2004). Thus, resource revenues can allow rebels to continue purchasing weapons and recruiting soldiers, sustaining their struggle for longer periods.

The argument about resource revenues sustaining rebel operations assumes that rebels do not use such revenues to increase their fighting capacity vis-à-vis the state. If they purchase enough arms or recruit enough soldiers to become stronger than the state, as discussed earlier, the government is more likely to make concessions, leading to shorter conflicts (Cunningham, Gleditsch, and Salehyan 2009; Buhaug, Gates, and Lujala 2009; Thomas 2014). But if rebels simply use resource revenues to sustain their operations (and their profits) without building their fighting capacity to the point that it rivals that of the state, wars may continue for very long periods of time. Indeed, some rebels may attach a lower priority to victory than to maintaining control over natural resources and the resulting profits (Buhaug, Gates, and Lujala 2009; de Rouen and Sobek 2004; see Ross 2004a for examples from Liberia and the Democratic Republic of the Congo). In some cases, the government may not feel sufficiently threatened to pursue a resolution to the conflict, whether through fighting or negotiation, especially if the violence is at a low level and located in peripheral areas far from the center of political control (Mukherjee 2014). The mechanism linking resource revenues to rebel capabilities, therefore, is not about the relative fighting capacity of rebels and state forces so much as it is about sustaining operations over time.

Third, natural resource exploitation may influence conflict duration by enhancing rebels' power to resist, allowing them to evade government repression. In defining

this dimension of rebel strength, Cunningham, Gleditsch, and Salehyan (2009) focus on controlling territory in peripheral areas, though the concept also includes other ways in which rebels can evade government attacks (e.g., by escaping across international borders). Consistent with this idea, research shows that conflicts last significantly longer when the rebel group operates near a remote international border where they often are better positioned to avoid government authorities (Buhaug, Gates, and Lujala 2009; Mukherjee 2014). Among these "peripheral insurgencies," conflicts involving natural resources are especially lengthy (Fearon 2004), suggesting that resource wealth may contribute to the power to resist. The presence of resources may motivate a rebel group to obtain control over a particular territory, as with the Revolutionary United Front's seizure of diamond-rich areas in Sierra Leone. But revenues from natural resources also can facilitate territorial control by allowing rebels to buy weapons or co-opt local elites. Resource revenues also can make it easier for rebels to negotiate (or bribe) their way across international borders and establish safe havens outside of the country. The relationship between natural resources and rebels' power to resist has not received much attention in existing research, but it is explored more extensively in the next section.

One empirical difficulty with existing studies of the relationship between natural resources and conflict is that it is not always clear whether rebels are directly profiting from natural resources. The unit of analysis for many studies is the country, and it is possible that rebels may not profit directly from natural resources, even in resource-rich countries. Recent empirical research has sought to address this gap by examining the impact of the presence of natural resources within a conflict zone. An important work is by Fearon (2004), who collected data on rebel income from a few high-profile resources. Lujala, Gleditsch, and Gilmore (2005) find that diamonds only impact conflict onset and incidence when they are easily extractable. Primary diamonds (those that require extensive mining operations to extract) are found to decrease conflict onset and incidence, while secondary, or alluvial, diamonds increase conflict incidence. The logic is that rebel groups typically do not have the expertise or capital to engage in extensive mining operations, whereas they can easily extract diamonds located near the surface to fund their violence. Similarly, Lujala (2010) finds that oil impacts the onset of conflict only when it is located within the state, not offshore. These studies are based on a limited range of natural resources, however, and do not directly measure whether or how rebels are profiting from the resources. More extensive data at the level of the rebel group are needed to gain a more thorough understanding of the impact of natural resources on conflict dynamics.

Smuggling and Extortion of Natural Resources

Building on past insights, our starting point is that direct rebel funding from natural resources should lengthen civil conflicts. While this theoretical claim is well established in the literature (e.g., Fearon 2004), little empirical work has measured in a

systematic way whether and how rebels directly profit from natural resources, a point to which we return below. This leads to our first hypothesis:

> **Hypothesis 1:** Civil wars in which the rebel group earns income from natural resources last longer than civil wars in which the rebel group does not earn income from natural resources.

We move beyond simply demonstrating a relationship between rebel natural resource exploitation and conflict duration, however, to better understand the underlying mechanisms. We do so by disaggregating the different strategies used by rebels to profit from natural resources, arguing that these strategies have differing effects on rebels' power to resist (Cunningham, Gleditsch, and Salehyan 2009). Rebel groups that smuggle natural resources have a greater power to resist government repression than groups that extort natural resource production and thus should be involved in particularly long conflicts. Smuggling networks provide sources of income that are not concentrated in any one geographic area, or even based on any one resource, making it more difficult than extortion operations for the state to shut down. This mobility and flexibility of funding streams provide a distinct power to resist, allowing groups to continue their conflict with the state.

In disaggregating the strategies through which rebel groups profit from natural resources, we distinguish between *extortion* and *smuggling*. Rebel groups that engage in extortion essentially demand a share of the income generated from natural resources in exchange for refraining from violence against the producers (miners, growers, etc.). Classic examples include the control of alluvial diamond areas by rebel groups in Sierra Leone and Angola during civil wars in the 1990s and the threat of violence to extort income from growers of coca in Colombia and opium in Afghanistan. While much of the existing literature focuses on how rebels can profit primarily from lootable resources, they also can extort fixed, nonlootable natural resources such as oil or other minerals that have low weight to price ratios or require large amounts of fixed physical capital to extract. This may involve taking an oil production facility by force and then controlling production, for example, as was the case with the Islamic State of Iraq and Syria. Alternatively, groups may allow production to continue uninterrupted but receive payments from the producers in return for not using violence. The Ejercito de Liberacion Nacional used this extortion strategy to earn millions of dollars annually from oil companies in Colombia (Offstein and Aristizábal 2003; Ross 2012). Extortion is particularly effective against resource extraction concentrated in specific geographic locations or "point resources" (Le Billon 2001). This concentration allows rebels to use their armed personnel to monitor production. Such supervision is important because rebel movements may lack the expertise to actually extract natural resources. Rebels who are able to operate near the extraction site can more easily monitor output and ensure that they receive the payments they expect, and they can threaten to use violence to prevent producers from fleeing or stopping production.

Smuggling, by contrast, involves the illicit transport of goods within countries and across international borders. In some cases, the smuggled goods are illegal such as narcotics. In others, the goods are licit, but smugglers move them clandestinely to avoid customs or seizure. Rebels are valuable participants in smuggling networks because their specialization in the use of force can be used to punish rival smugglers, counter law enforcement efforts, control key areas such as border crossings, and protect goods in transit. Rebel movements can participate in smuggling networks even if they do not exercise influence over the locations where such resources are extracted.[1] Instead, smuggling typically involves moving resources from the production site to markets, often over long distances and across borders. Successful resource smuggling requires rebels to exercise great levels of "energy, discretion, and luck" (Adler 1993).

Extortion and smuggling thus are distinct strategies through which rebels profit from natural resources and have differing effects on conflict duration. This mechanism is distinct from the commitment problem discussed earlier, which suggests that natural resources lengthen conflicts by making it harder for warring parties to reach a peace agreement. Whether rebels are smuggling natural resources or extorting their production, the very fact that they are earning profits is likely to reduce their willingness to sign an agreement that could limit their access to resource revenues. Extortion and smuggling also are similar when it comes to the second mechanism of sustaining rebel operations; both strategies of natural resource exploitation allow rebels to continue to purchase weapons and recruit troops, even if they do not increase their fighting capacity vis-à-vis the state. Instead, we argue that extortion and smuggling have distinct effects on rebels' power to resist, the third mechanism, thus driving the relationship between natural resources and conflict duration. In this sense, then, *how* rebel groups profit from natural resources matters.

We expect natural resource smuggling to increase rebels' power to resist state repression, thereby lengthening conflict, for two reasons. First, smuggling networks are inherently mobile and are not rooted to a specific geographic area. Smuggling typically involves the maintenance of criminal networks over large territories, often along porous borders or in areas that lack state control. To avoid interdiction, rebels use multiple transit routes, often across inhospitable terrain, and cross borders at many points. Al Qaeda in the Islamic Maghreb (AQIM), for example, operates across remote areas of the Sahel, allowing it to not only survive government attacks but to profit and grow (Thornberry and Levy 2011). The skills that permit rebel groups to avoid government interdiction of their smuggling operations also allow them to evade attacks, thus lengthening conflicts. When the government or other actors do manage to assert control over a geographic area or border crossing, as when government troops and international peacekeepers recaptured northern Mali in 2013, rebels like AQIM shift their smuggling operations to other locations. Therefore, a key component of a rebel group's power to resist is its ability to relocate to new areas with minimal disruption to its funding streams.

Second, smuggling operations are flexible in that rebel groups do not have to rely on any one natural resource. Groups involved in the smuggling of diamonds, for example, may smuggle drugs or other resources as well. The use of smuggling allows for greater diversification of income, making these groups more resilient to everything from price fluctuations to government assaults on their funding streams. Moreover, rebels often use the same networks to procure supplies to fight against the government. The state and the international community often aim to limit supplies and arms from entering conflict zones, making it more difficult for rebels to continue conflicts. Groups with effective smuggling operations should be better able to "beat" sanctions and maintain the flow of supplies and arms to their movement, allowing them to sustain their conflict with the state for longer periods. The flexibility afforded by natural resource smuggling networks thus enhances a rebel group's power to resist.

Importantly, while we expect funding from smuggling to help rebel groups continue their conflict with the state, we do not expect it to lead to a significant increase in the likelihood of rebel victory. Our argument is that smuggling enhances rebels' power to resist government repression and to sustain their operations for longer periods. It does not necessarily give them greater power to target the state and win the conflict outright (Cunningham, Gleditsch, and Salehyan 2009). Additional analyses reported below are consistent with this distinction; we find that rebel groups funded by smuggling operations engage in longer conflicts, but they are not more likely to win.

There are numerous cases of rebels using profits from natural resource smuggling to support lengthy conflicts. Rebel groups in the African Sahel, for example, have capitalized on centuries-old trading networks to fund their rebellions. The Armed Islamic Group (GIA), the Movement for Oneness and Jihad in West Africa, and AQIM have earned millions of dollars by smuggling drugs throughout the region. Rebels often offer wages that are significantly higher than legitimate employment in the area (Smith 2014) and provide goods such as fuel, food, and cigarettes to the local population, helping their smuggling networks endure. A common link between GIA, AQIM, and the Group for Salafist Preaching and Combat is the leadership of Mokhtar Belmokhtar who earned the nickname "Mr. Marlboro" for his involvement in cigarette smuggling. Recruits under his leadership have been involved in smuggling operations for decades. His knowledge of the area, strategic marriages into important Berber and Tuareg families, and connections to some state authorities have helped reinforce his smuggling networks. The income earned by these groups from resource smuggling has been used to fund attacks in several states. Outside the Sahel, Hezbollah maintains a global smuggling network stretching from the Americas to Africa, which has allowed it to sustain its operations for decades. In Burundi, the long-standing National Council for the Defense of Democracy rebels earned significant income over the years by smuggling coffee from the Democratic Republic of the Congo to be sold internationally (Nindorera 2012), even though they were unable to gain control of their own country's coffee industry (Oketch and Polzer 2002).

Building on this line of reasoning, our second hypothesis is as follows:

Hypothesis 2: Civil wars in which the rebel group earns income from smuggling natural resources last longer than civil wars in which the rebel group does not engage in smuggling natural resources.

In contrast to smuggling, extortion of natural resource production is not expected to enhance rebels' power to resist. As discussed above, extortion generally involves point resources such as minerals or drugs that are concentrated in specific geographic areas. This concentration facilitates extortion; if rebels can deploy violence in the area surrounding resource sites, they can coerce producers to work for them or to hand over a share of their income.[2] But this geographic concentration also limits the mobility of rebels who rely on revenues from extorting these resources and exposes them to government attack. The locations of point resources are common knowledge, making it easier for the government to identify where rebels operate. This, combined with the resources' economic value, allows governments to target such areas. Consistent with this idea, Lujala (2009) finds that conflict intensity is highest in areas with natural resources. In seeking to resist government incursions, rebel forces typically are weaker than government forces (Cunningham, Gleditsch, and Salehyan 2009). This relative weakness is compounded by the fact that government forces often are more highly mechanized than rebels (Lyall and Wilson 2009; Kalyvas and Balcells 2010), making them well suited to conventional military objectives such as seizing territory. When a government manages to reassert control over resource-rich areas, as in Angola and Sierra Leone in the early 2000s, rebel groups that rely on extorting the production of those resources are denied a key revenue stream, making it difficult to sustain their operations. The lack of mobility of natural resource production sites thus reduces the ability of rebels who extort such sites to evade attack.

Extortion of natural resource production also limits the flexibility of rebel income. Rebels who engage in extortion typically can only profit from natural resources that are in areas where they exercise influence. Their ability to diversify income sources depends entirely on what natural resources are available or can be grown in a given area. Even for rebel groups that earn money from their extortion of agricultural products, shifting to a new crop can be difficult depending on the suitability of the climate and the soil. Some crops such as coffee and cocoa take years before they bear fruit, making diversification a long-term proposition at best. The inability to quickly shift to another source of revenue thus makes rebels who extort resource production particularly dependent on the resource(s) available in areas where they operate.

In summary, while extorting natural resource production may benefit rebels by allowing them to sustain their operations (continuing to buy weapons and recruit troops, etc.), it also makes them a more obvious target for state repression because it

takes place within a specific geographic area. Governments often seek to retake control of resource-rich areas, increasing conflict intensity, though at times they may allow rebels to continue their extortion operations in peripheral areas. Because extortion does not provide as resilient and diversified a funding stream as smuggling, government takeovers can significantly reduce rebel income and hinder operations. The resulting effect of extortion on conflict duration is thus more ambiguous, leading to the following hypothesis:

Hypothesis 3: Civil wars in which the rebel group earns income from extorting the production of natural resources should not last any longer than civil wars in which the rebel group does not earn income from extorting natural resources.

Finally, as we have argued, a major advantage for rebel groups that smuggle is the ability to use their networks and routes to transport a variety of resources. Groups with multiple funding sources should be more resilient to attempts by other actors to cut off their funding. This suggests that rebels who are able to smuggle multiple natural resources should engage in particularly long civil conflicts. It could be argued, though, that a diversity of funding sources—regardless of the strategy used to exploit those sources—is what drives the relationship between natural resources and conflict duration. In other words, being able to fund a rebellion from *many* natural resources makes it more difficult for the government to cut off funding, leading to longer conflicts. If this were correct, we would expect that the impact of extortion and smuggling on conflict duration would be the same once we account for the diversity of a group's natural resources.

Our theory, however, implies that even after accounting for the diversity of resources, we still expect groups that engage in smuggling to fight lengthier conflicts, while groups that extort natural resources do not. The reason is that smuggling increases the rebel's power to resist, while extortion does not. Groups that smuggle *more* resources presumably have a greater power to resist. Considering the *number* of natural resources exploited by each rebel group, then, allows us to examine two additional implications of our theory:

Hypothesis 4: Civil wars in which the rebel group earns income from smuggling a greater number of natural resources last longer than civil wars in which the rebel group earns income from smuggling a smaller number of natural resources.

Hypothesis 5: Civil wars in which the rebel group earns income from extorting the production of a greater number of natural resources should not last any longer than civil wars in which the rebel group earns income from extorting a smaller number of natural resources.

Research Design

To measure our key independent variables, we use new data (Walsh et al. 2018) on rebel group exploitation of natural resources from 1990 to 2009, the last year for which we have data on the durations of conflicts. The data are measured yearly at the level of the rebel-state dyad based on the list of conflicts compiled by the Uppsala Conflict Data Program (UCDP; Harbom, Melander, and Wallensteen 2008). The data include a wide variety of natural resources such as gems, drugs, oil, cocoa, timber, coffee, and others. While there is some disagreement over which resources matter for the continuation of civil conflict (Ross 2004a, 2004b), the data in this study include only resources that provide significant funding for the rebel group. For a group to be considered as profiting from natural resources, there must be evidence from the source material that the rebel group was both directly earning income from natural resources and that such income contributed in a meaningful way to the group's ability to engage in rebellion.[3] The data set begins in 1990 because of a specific interest in rebel funding in the post–cold war era. While this may limit the generalizability of our results, the fact that the end of the cold war resulted in a reduction in state sponsorship of rebel groups allows us to conduct our analyses on a more recent and homogeneous period.

The Rebel Contraband Dataset has several advantages over past measures used to assess relationships between natural resources and conflict dynamics. For one, it measures a rebel group's direct ability to profit from natural resources. While work such as Lujala, Gleditsch, and Gilmore (2005) and Buhaug, Gates, and Lujala (2009) have significantly refined past state-level measures by accounting for natural resources within specific conflict zones, they do not directly measure whether rebel groups actually earned money from those resources. Fearon (2004) codes data on rebel funding from natural resources, but the measure includes primarily funding from narcotics and gems and does not vary over time. While these types of resources likely have a large influence on civil conflicts (Ross 2004a), there is a wide variety of other natural resources that fund rebellion. Like Fearon (2004), the Rebel Contraband Dataset measure is also at the dyadic level, but it is measured yearly, allowing us to identify changes over time.

Especially relevant for this study is that the data set records not only whether a rebel group earned revenue from each natural resource in a given year but also how it did so. The theoretical explanations in this article rely on differences between rebel groups engaged in smuggling operations and those engaged in extorting the production of natural resources. The data set codes a rebel group as involved in smuggling if it earns income by directly engaging in or protecting those who smuggle natural resources. Smuggling is conceptually distinct from extortion as it does not require rebel groups to control resource locations or to be involved in the production of the resource. From its base in Lebanon, for example, Hezbollah earned income by smuggling diamonds out of Sierra Leone (Wege 2012). Hezbollah also engaged in smuggling drugs out of Lebanon, to be sold transnationally, as well as assisting

Table 1. Number and Percent of Dyad Years with Funding Strategy (1990–2012).

	Natural Resources	Extortion	Smuggling
No funding from this source (0)	309 (53%)	415 (71%)	362 (62%)
Funding from this source (1)	277 (47%)	171 (29%)	224 (38%)

several groups on multiple continents to smuggle drugs (Steinitz 2003; Clarfield 2010; Levitt 2013). The Hezbollah case shows that rebels involved in resource smuggling operations can earn large sums of money even in countries where they do not control territory or have traditional military operations. It also demonstrates the diversity of ways rebels can earn income through smuggling.

A rebel group is coded as being involved in extortion if it uses violence or the threat of violence to earn money from the production of natural resources. Examples include coercing workers to extract resources, hiring miners directly, or demanding protection money from legitimate producers. Extortion is an ongoing activity, distinct from one-off theft. This is significant because many rebels will engage in small-scale looting that is unlikely to have the same influence on their ability to fund rebellion. While "conflict diamonds" in Sierra Leone and Angola are oft-cited examples of rebels engaging in extortion of natural resources, rebel movements can earn income by extorting a wide range of natural resources. Several groups in conflict with the Indian government, for example, have earned large sums by extorting producers in the natural resource sector. In the Indian state of Odisha, the People's War Group has extorted both workers and contractors in the timber industry (Ghosh 1995; Ramana 2003). The United Liberation Front of Assam extorted the owners of tea plantations for decades, earning millions of dollars (Asia Watch 1993; Asian News International 2009).

The Rebel Contraband Dataset therefore provides us with measures of rebel groups directly profiting from a wide variety of natural resources while also accounting for how rebels profit from the resource. In addition to indicating whether the group earned funding overall from any natural resource (*Natural Resources*), the data set identifies whether a rebel group earned income specifically through *Extortion* or *Smuggling*.[4] Each of these three dichotomous variables is coded 1 if the group profited from the given strategy or 0 if the rebel group did not profit from the strategy in that year. These represent the key independent variables for our analyses. As indicated in Table 1, rebel groups earned funding from natural resources in 47 percent of the dyad-years in the sample. In terms of specific strategies, smuggling was used in 29 percent of the dyad-years and extortion in 38 percent.

Dependent Variable and Methodology

The dependent variable for our analysis is the duration of armed conflict and is calculated using information from the UCDP Conflict Termination Dataset (Kreutz

2010). The data set provides the start and end dates of all civil conflicts that occurred during the period 1946–2009. Conflicts are coded as ending in a given year if there is a peace agreement, a cease-fire agreement, or if one of the warring parties completely defeats the other side. Conflicts also are coded as ending if there is "low activity," that is, when a conflict results in less than twenty-five battle-related deaths in a year. Each dyad is then observed annually as ongoing or ending, allowing for the inclusion of time-varying covariates. Combining the data on conflict termination with the data on resource exploitation by rebels, our sample includes all conflict dyad years for 195 conflicts that occurred between 1990 and 2009. To account for right censoring of the data, we code any conflict that was ongoing in 2009 (the final year of the UCDP data) as a censored observation. Standard errors are clustered on the conflict dyad to account for potential unobserved heterogeneity across conflicts.

To analyze how the independent variables influence the duration of conflict, we use semiparametric Cox proportional hazard models. The Cox model is a useful alternative to parametric models because it does not specify a distributional form for the duration. We therefore have no need to assume a specific form, such as a Weibull distribution, for the baseline hazard. The model provides information on how our set of covariates, including natural resource exploitation by rebel groups, either increases or decreases the baseline hazard. The hazard rate of civil conflict termination at year t for conflict dyad i is a function of the baseline hazard rate, h_0t, and the covariates. Using an exponential link function, the overall hazard rate for conflict dyad i is $h_i(t) = h_0(t)^{e_{x_i}}$, so that the baseline hazard corresponds to the case where all covariates are set to 0. Although the Cox model requires an assumption of proportional hazards, Schoenfeld residuals for the models reported in this article indicate that this assumption is not violated (see Online Appendix).

In addition to the variables capturing natural resource exploitation, we include control variables that have been found to influence conflict duration. Several are drawn from the Non-state Actor Dataset (Cunningham, Gleditsch, and Salehyan 2012). *Territorial Control* is a binary measure that is coded as 1 if the rebel group in the dyad controlled any territory during the conflict, and 0 otherwise. *Mobilization Capacity* is an ordinal variable assessing the ability of a rebel group to mobilize its members, relative to the government it is fighting. It ranges from a value of 1, indicating low mobilization capacity, to a value of 3, indicating high mobilization capacity. Similarly, *Arms Capacity* measures the ability of the group to procure arms, relative to the government. As per the findings of Cunningham, Gleditsch, and Salehyan (2009), *Territorial Control* is expected to increase conflict duration, while *Mobilization Capacity* and *Arms Capacity* are expected to reduce the length of conflicts. Conflicts that are mobilized along ethnic lines have been found to last longer than nonethnic conflicts (de Rouen and Sobek 2004), so we also include a binary indicator of *Ethnic Conflict*. Additionally, Thyne (2017) finds that coups d'état can significantly reduce the duration of civil conflicts. We therefore include an indicator that captures whether a coup attempt occurred in a given year of each conflict. The variable, *Coup*, is drawn from data compiled by Powell and Thyne

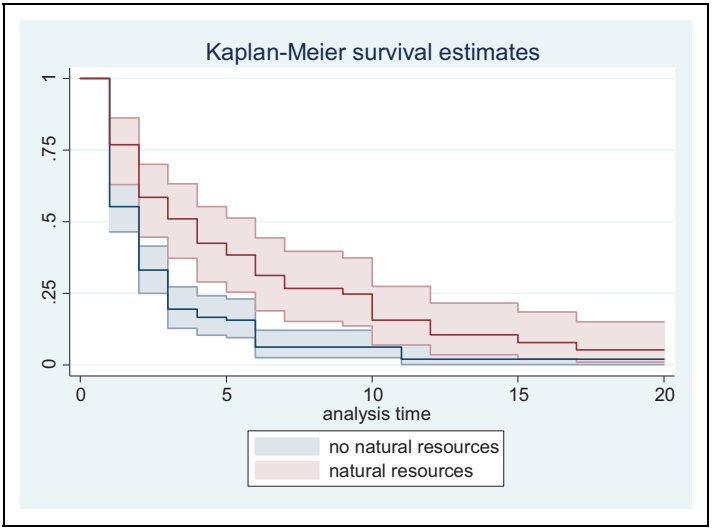

Figure 1. Survival estimates of armed conflict by natural resource exploitation, 1990–2009.

(2011, 252) and captures "overt attempts by the military or other elites . . . to unseat the sitting head of state using unconventional means."

Intervention by foreign states in civil conflicts can influence both the duration of conflict and the duration of peace (e.g., Regan 2002; Fortna 2004). To account for the possibility that natural resource exploitation and conflict duration may both be linked to foreign intervention, we include a binary variable, *International Intervention,* which equals 1 if a foreign state intervened and 0 otherwise (Cunningham, Gleditsch, and Salehyan 2009). Finally, we control for several state-level characteristics including the natural log of the state's gross domestic product (GDP) per capita as well as the natural log of its *Population* (Heston, Summers, and Aten 2012). We also control for the level of democracy in each state, using the measure from the Polity IV project (Gurr, Marshall, and Jaggers 2010). The variable, *Democracy*, ranges from −10 to 10, with higher values indicating more democratic institutions.

Empirical Analysis

We first present tests of Hypothesis 1 that natural resource exploitation by rebel groups is associated with the duration of armed conflict. Figure 1 depicts Kaplan–Meier survival estimates with 95 percent confidence intervals of armed conflicts in the data.[5] The figure displays the probability that a conflict will continue, given that it has already lasted a specific number of years. As the figure demonstrates, the probability that any conflict will continue declines dramatically in the first ten years and approaches zero as conflicts get closer to the twenty-year mark, the longest duration for a conflict in the data. We are interested primarily, however, in the

Table 2. Multivariate Duration Analysis—Natural Resources and Armed Conflict.

	Model 1	Model 2
Natural resources	—	−.55**
	—	(.17)
Territorial control	−.24	−.22
	(.14)	(.14)
Mobilization capacity	−.13	−.28
	(.28)	(.27)
Arms capacity	.64**	.52**
	(.20)	(.20)
Coup	.01	−.03
	(.17)	(.17)
International intervention	−.38	−.22
	(.19)	(.19)
Ethnic conflict	−.12	−.01
	(.24)	(.23)
Ln(GDP per capita)	−.06	−.07
	(.07)	(.07)
Democracy	.01	.02
	(.01)	(.01)
Ln(Population)	−.15**	−.14**
	(.05)	(.05)
Observations	586	586
Subjects	195	195
Failures	162	162

Note: Robust standard errors, clustered on conflict dyad, are in parentheses.
*$p < .05$.
**$p < .01$ (two-tailed).

difference between the two lines in the figure. The lower line is the survival estimate for conflicts where the rebel group does not exploit natural resources in a significant way, while the upper line shows the estimate for conflicts where the rebel group earns significant revenues from natural resources. At every point in the analysis, these latter conflicts are substantially more likely to continue than conflicts that do not involve the exploitation of natural resources. The average duration of conflicts that do not involve natural resource exploitation by rebels is 2.9 years. If resource exploitation does occur, however, the average duration time increases by nearly three years to 5.71.

Table 2 displays the results of two Cox proportional hazard models where the dependent variable is the hazard of conflict termination. Model 1 includes several independent variables that have been linked to conflict duration in previous studies and serves as a baseline model for our analysis. The results suggest that at least one of the factors identified by Cunningham, Gleditsch, and Salehyan (2009) is related to the likelihood that a conflict will end after a specific number of years. Conflicts are

significantly more likely to end if the group has a high arms procurement capacity. Such groups are able to pose greater challenges to the state and may be more likely to force concessions or defeat the government outright. The findings are consistent with those reported by Cunningham, Gleditsch, and Salehyan (2009). On the other hand, we find that conflicts are significantly less likely to end in countries with larger populations. The logic of this finding suggests that larger populations may complicate the pursuit of peace for a variety of reasons. We find no significant relationship between territorial control and conflict duration.

Using the baseline model specification in model 1, we then add the measure of rebel natural resource exploitation. The results are listed in the second column (model 2) of Table 2, and they indicate that rebel exploitation of *Natural Resources* has a significant and negative association with the likelihood of conflict termination. In other words, when the rebel group in a civil conflict earns revenues from the exploitation of natural resources, conflicts are less likely to end. Additionally, with the exception of *Arms Capacity* and *Ln(Population)*, none of the other covariates included in the model significantly correlate with the duration of conflict. Overall, the information presented in Figure 1 and Table 2 provides support for Hypothesis 1: rebel natural resource exploitation, on average, increases conflict duration.

In Table 3, we turn our attention to the next two hypotheses. Hypothesis 2 expects that the smuggling of natural resources by rebel groups will increase the duration of conflict because such groups are better able to avoid government repression and thus fight longer. In contrast, Hypothesis 3 expects that the extortion of natural resource production will have no significant influence on the duration of conflict because the benefits to the rebel group of resource funding will be offset by the higher risk of government repression. Model 3 displays results that include the baseline covariates as well as the *Smuggling* variable. The coefficient for the *Smuggling* variable is statistically significant and negative, suggesting that when rebel groups smuggle natural resources, conflicts are substantially less likely to end. In model 4, *Extortion* is also significantly related to the duration of conflict. But in model 5, when extortion and smuggling are included in the same model, we find that *Extortion* no longer has a significant influence, while *Smuggling* increases conflict duration. Finally, in model 6, we interact *Extortion* and *Smuggling* to isolate those effects when a group engages in one strategy but not the other. The coefficient for *Smuggling* is negative and significant, indicating that the hypothesized relationship holds when groups do not engage in *Extortion* simultaneously. The *Extortion* coefficient, on the other hand, is insignificant. This suggests that *Extortion* has no significant relationship with conflict duration when groups do not simultaneously engage in *Smuggling*. In all four models, *Ln(Population)* and *Arms Capacity* continue to influence our dependent variable.

Figure 2 shows the Kaplan–Meier survival estimates conditional on whether the rebel group smuggles natural resources. The figure indicates that at every point in a conflict's duration, the conflict is more likely to continue to the next year if the rebel group smuggles natural resources. When a rebel group smuggles resources, the mean

Table 3. Multivariate Duration Analysis: Natural Resource Extortion, Smuggling, and Conflict.

	Model 3	Model 4	Model 5	Model 6
Extortion	—	−.46*	−.25	−.36
	—	(.22)	(.22)	(.30)
Smuggling	−.61**	—	−.53**	−.59**
	(.18)	—	(.18)	(.21)
Extortion × smuggling	—	—	—	.22
	—	—	—	(.44)
Territorial control	−.26	−.19	−.23	−.23
	(.14)	(.13)	(.13)	(.14)
Mobilization capacity	−.23	−.20	−.26	−.27
	(.27)	(.27)	(.27)	(.27)
Arms capacity	.58**	.61**	.57**	.55**
	(.19)	(.19)	(.19)	(.19)
Coup	−.04	−.01	−.04	−.03
	(.17)	(.17)	(.17)	(.17)
International intervention	−.33	−.31	−.29	−.26
	(.20)	(.19)	(.20)	(.20)
Ethnic conflict	.02	−.12	.01	.01
	(.23)	(.24)	(.23)	(.23)
Ln(GDP per capita)	−.04	−.08	−.06	−.06
	(.07)	(.07)	(.07)	(.07)
Democracy	.01	.01	.02	.02
	(.01)	(.01)	(.01)	(.01)
Ln(Population)	−.15**	−.13*	−.14**	−.14**
	(.05)	(.05)	(.05)	(.05)
Observations	586	586	586	586
Subjects	195	195	195	195
Failures	162	162	162	162

Note: Robust standard errors, clustered on conflict dyad, are in parentheses. GDP = gross domestic product.
*$p < .05$.
**$p < .01$ (two-tailed).

duration of conflicts increases to 6.14 years. Taken together, the results from our models suggest that natural resources influence the duration of conflict but that the smuggling of natural resources seems to be driving this effect. One final empirical issue is worth noting here. While our models indicate support for a relationship between smuggling and conflict duration, the possibility remains that the relationship is endogenous: groups that survive longer may subsequently be more capable of engaging in smuggling activity. But that logic also suggests that such groups would have greater capabilities to engage in extortion as well. And indeed, longer lasting groups are more likely to engage in both kinds of activities. Yet smuggling robustly predicts conflict duration, while we find very little evidence to suggest extortion

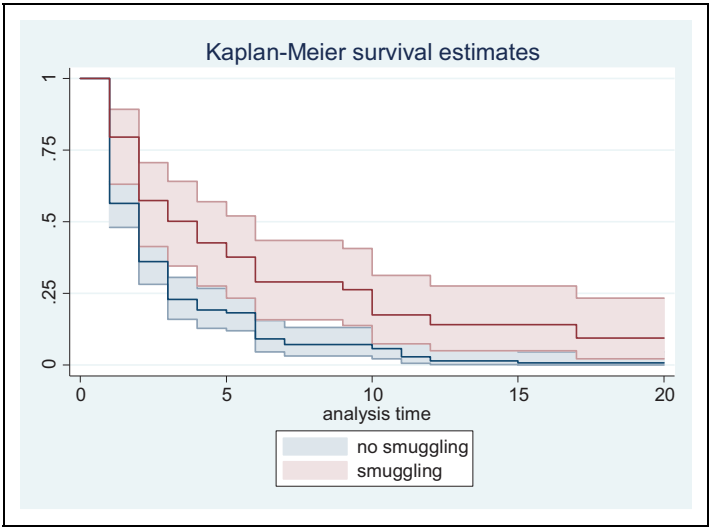

Figure 2. Survival estimates of armed conflict by natural resource smuggling, 1990–2009.

predicts duration. This divergence in effect suggests that endogeneity is unlikely to be driving our results. We also note that controlling for the *Mobilization Capacity*, *Arms Capacity*, and *Territorial Control* may partially address the endogeneity problem, as we are explicitly accounting for groups with greater capabilities (assuming that the development of those capabilities is driven, in part, by their survival time). We address the problem of endogeneity more directly in robustness tests, described in more detail below.

In Table 4, we explore evidence for a more nuanced implication of our theory. If smuggling reduces the likelihood of conflict ending because those groups are better able to resist government repression, then groups with more diverse smuggling operations should pose the greatest challenge for governments. Conflicts with such groups should therefore last longer than conflicts where groups have less diverse smuggling operations. Model 7 includes two count variables that measure the diversity of a group's natural resource funding streams: the number of natural resources extorted by the rebel group and the number of natural resources smuggled by the group. As expected by Hypothesis 4, the more natural resources that a group smuggles, the less likely a conflict will end. By contrast, as per Hypothesis 5, the number of natural resources whose production is extorted by the rebel group does not significantly influence conflict duration. We conclude that not only the *act* of smuggling but also the *diversity* of resources smuggled is associated with the length of civil conflicts.

Finally, in Table 5, we consider the possibility that the duration of civil conflicts is driven by region-specific dynamics. If, for instance, longer conflicts are more likely to occur in the regions of the world that also have the greatest natural resource

Table 4. Multivariate Duration Analysis—Number of Natural Resources Exploited.

	Model 7
Number of resources extorted	−.16
	(.09)
Number of resources smuggled	−.37**
	(.10)
Territorial control	−.20
	(.14)
Mobilization capacity	−.28
	(.27)
Arms capacity	.52**
	(.19)
Coup	−.03
	(.17)
International intervention	−.20
	(.19)
Ethnic conflict	−.02
	(.23)
Ln(GDP per capita)	−.04
	(.06)
Democracy	.02
	(.01)
Ln(Population)	−.15*
	(.05)
Observations	586
Subjects	195
Failures	162

Note: Robust standard errors, clustered on conflict dyad, are in parentheses. GDP = gross domestic product.
*$p < .05$.
**$p < .01$ (two-tailed).

endowments (or smuggling of those resources), then our previous results may be spurious. We therefore introduce regional dummy variables into our earlier models, using Europe as the reference category. The results demonstrate that our key expectations are robust to the inclusion of the regional variables: in model 8, exploitation of *Natural Resources* is significantly associated with a reduction in the likelihood of a conflict ending, while *Smuggling* has a similar influence in models 10, 11, and 12. And the results from four of the five models suggest that conflicts in the Middle East and sub-Saharan Africa last longer, on average, than conflicts in other regions of the world.

In a series of analyses available in the Online Appendix to this manuscript, we conduct several robustness checks. First, we account for the fact that multiple conflicts can end in the same period. This poses a potential problem for the estimation of a partial likelihood function, so we use both the Breslow and Efron methods to

Table 5. Regional Dummies.

	Model 8	Model 9	Model 10	Model 11	Model 12
Natural resources	−.59**	—	—	—	—
	(.17)	—	—	—	—
Extortion	—	−.43	—	−.16	−.29
	—	(.22)	—	(.22)	(.30)
Smuggling	—	—	−.70**	−.65**	−.72**
	—	—	(.18)	(.18)	(.20)
Extortion × smuggling	—	—	—	—	.26
	—	—	—	—	(.43)
Territorial control	−.32	−.26	−.37*	−.35*	−.35*
	(.14)	(.14)	(.14)	(.14)	(.14)
Mobilization capacity	−.20	−.14	−.15	−.17	−.19
	(.27)	(.28)	(.26)	(.26)	(.26)
Arms capacity	.42*	.56**	.44*	.44*	.42*
	(.20)	(.20)	(.20)	(.19)	(.20)
Coup	−.02	.01	−.04	−.04	−.04
	(.16)	(.17)	(.17)	(.16)	(.16)
International intervention	−.24	−.37	−.33	−.31	−.28
	(.20)	(.20)	(.20)	(.20)	(.21)
Ethnic conflict	.01	−.11	.06	.05	.05
	(.23)	(.25)	(.22)	(.23)	(.23)
Ln(GDP per capita)	−.11	−.08	−.08	−.09	−.10
	(.10)	(0.10)	(.09)	(.09)	(.10)
Democracy	.01	.01	.01	.01	.01
	(.01)	(.01)	(.01)	(.01)	(.01)
Ln(Population)	−.14*	−.13*	−.16*	−.15**	−.15**
	(.05)	(.06)	(.05)	(.06)	(.06)
Middle East	−.63*	−.52	−.68*	−.65*	−.66*
	(.29)	(.30)	(.29)	(.28)	(.28)
Asia	−.48	−.33	−.51*	−.48	−.50
	(.26)	(.27)	(.26)	(.26)	(.26)
Africa	−.61*	−.39	−.70**	−.67*	−.68**
	(.26)	(.26)	(.26)	(.26)	(.26)
Americas	−.49	−.32	−.49	−.44	−.48
	(.30)	(.31)	(.30)	(.30)	(.30)
Observations	586	586	586	586	586
Subjects	195	195	195	195	195
Failures	162	162	162	162	162

Note: Robust standard errors, clustered on conflict dyad, are in parentheses. GDP = gross domestic product.
*$p < .05$.
**$p < .01$ (two-tailed).

account for how the risk of failure changes depending on the sequencing of events occurring in the same year. The results are comparable to those reported here, and our key conclusions do not change. Second, we consider how the independent

variables affect the *way* a conflict ends. The UCDP Conflict Termination Dataset provides information on the specific mechanism that terminates each conflict. We find that there is no significant relationship between the natural resource variables and the likelihood that a conflict will end by peace agreement or by total victory of one side over the other.[6] By contrast, natural resource exploitation, and smuggling in particular, significantly reduce the likelihood that a conflict will end due to low activity.[7] This finding supports our expectation that such activities strengthen a rebel group's ability to simply survive and to resist defeat at the hands of the government. We also explicitly allow for potential variation in how a conflict ends by estimating stratified competing risks models, and our conclusions do not change from those reported in this article. Third, we consider the possibility that our reported effects may be driven primarily by the location where a conflict takes place (see Buhaug, Gates, and Lujala 2009). We control for the natural log of the distance between the conflict center and the capital. Accounting for the location of the conflict does not change our conclusions.

Fourth, as mentioned previously, there is the possibility that longer surviving groups are better able to smuggle natural resources. This poses a problem for causal inference because while we can observe a group that smuggles and when its conflict ends, we cannot observe when the conflict would end had that same group *not smuggled*. In other words, we cannot observe a group that smuggles in the counterfactual scenario where it does not smuggle. If groups that smuggle are systematically different than those that do not smuggle, and if those differences also influence conflict termination, the estimated effect of smuggling will be biased. While we addressed this potential issue earlier in this article, we also matched observations in our sample by propensity scores. The technique relies on other observable covariates, but it offers a number of advantages (Ho et al, 2007). Most importantly, it allows us to compare groups that are identical on nearly every dimension (including their longevity) except whether they smuggle (or extort) natural resources. The procedure therefore allows us to create a sample where the control and treatment groups are balanced across the covariates. We then use the matched sample to test our hypotheses and find no differences from the results reported here. The results are also robust to alternative matching techniques. Fifth, we consider the possibility that the extortion of specific types of resources may be related to conflict duration. We test the effect of extorting lootable resources as well as the specific categories of minerals, drugs, and oil. While the extortion of minerals is significantly and negatively related to conflict termination, none of the other categories show consistent relationships. This affirms our conclusion that extortion is generally unrelated to conflict duration. Finally, we test the sensitivity of our results by clustering standard errors alternatively on the country and the rebel group and find no important differences from our main results. Overall, we find robust evidence that natural resource exploitation by rebel groups, and smuggling of natural resources in particular, significantly increase the duration of civil conflict.

Conclusion

Conflicts in which rebels earn income from natural resources tend to last longer. The relationship between natural resources and conflict duration is driven by smuggling operations. In contrast, wars in which rebels extort natural resource production are not significantly more likely to continue than other conflicts. Instead of focusing on how resource wealth affects rebels' fighting capacity, or power to target, as other studies have done, we argue that smuggling natural resources increases rebels' power to resist state repression by providing a source of funding that is not tied to a specific geographic location and can easily be diversified to include other smuggled resources and goods. Any benefits to rebels of extorting natural resource production, on the other hand, are offset by additional security risks, resulting in a more ambiguous effect on the duration of civil conflict.

The findings of this research have important theoretical and practical implications. The distinct results for smuggling versus extortion suggest that scholars have not given sufficient attention to the social and political consequences of how rebels benefit from natural resources. Past studies have differentiated based on various characteristics of the natural resources themselves (e.g., lootable vs. nonlootable), but this research project compares instead the different strategies (smuggling vs. extortion) through which rebel groups profit from natural resources. From a policy-making perspective, the finding that natural resource smuggling is especially likely to lengthen civil conflicts implies that renewed attention should be given to the extensive resource smuggling operations that sustain many rebel groups.

Authors' Note

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Some rebels engage in both extortion and smuggling; an example is the Taliban in Afghanistan, which has both extorted and smuggled opium. Model 5 in our empirical results assesses the interaction of these variables.
2. In the Online Appendix, we present evidence that rebels who extort natural resource production are more likely to control territory than those who smuggle natural resources.
3. The data were coded from United Nations reports, newswires, reports from nongovernmental organizations, books, and academic articles. Please see the section of the codebook included in the Online Appendix for more information about the data collection process.
4. We recognize that the values of *Natural Resources, Extortion,* and *Smuggling* are not randomly assigned across rebel groups or within the same rebel group over time. This is a more general issue in the study of the "resource curse"; for example, the capacity of states to extract resources is determined, in part, by their level of political and economic development (see the discussion in Ross 2012). Rebel organizations' ability to profit from natural resources likely depends on a number of factors including the existence of such resources where they operate, proximity to natural travel routes between resources and consumers, alternative sources of finance such as external support, the wealth of the country, and so on. Ideally, we would first model rebels' choice of whether and how to profit from resources and then use the resulting findings to help model the effect of each choice on conflict duration (see Fortna, 2015, for an important example of this approach applied to terrorism in the context of civil wars). But doing so would be especially challenging in the scope of a single article. A key reason is that we lack good data on where rebel groups operate within and across countries. This is due, in part, to strong incentives for at least some rebel groups to operate clandestinely. Absent such information, it is difficult to know whether rebels have a realistic opportunity to extort and/or smuggle resources. Collecting information about where rebels operate, or could plausibly operate, as well as the location of natural resources, would be a sizable research task itself. Our partial solution to this problem is to include as covariates in our models of conflict duration many of these potentially conditioning factors including rebel control of territory and their military capacity, the country's regime type, gross domestic product per capita, world region, and so on. Our research design, then, is best described by Lieberman (2016) as "associational/predictive," and following his criterial framework for assessing contributions, we focus primarily on advancing existing theory, measuring the key independent variables, and assessing the robustness of the relationships between independent and dependent variables. In the discussion of these results, we are careful to acknowledge that these relationships, while consistent with the hypotheses we introduce, are correlational.
5. The Kaplan–Meier estimates are not conditional on the covariates we include in the larger models and instead represent the baseline survival rates.
6. We also have no theoretical basis to believe that peace agreements or total military victory should be influenced by natural resource exploitation.
7. A conflict ends due to low activity if it results in fewer than twenty-five battle deaths in a given year.

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