

CHAPTER 4

Conflict and Natural Resources: Is the Latin American and Caribbean Region Different from the Rest of the World?

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Oil-rich countries have civil wars at significantly higher rates than oil-poor countries. While other studies have demonstrated this pattern at a global level, this chapter demonstrates that it is equally valid in the Latin American and Caribbean (LAC) region. It also describes one important anomaly. In the LAC region, oil is only linked to government conflicts, while in the rest of the world, oil heightens the danger of both government conflicts (in which rebels fight for control of the central government) and secessionist conflicts (in which they fight for a sovereign state). This is not because the region produces petroleum with unusual properties, but because it is uniquely “secession-proof.” Lessons about conflict prevention in oil-producing states developed at a global level are also valid for the LAC region.

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INTRODUCTION

The LAC region has a long history of violent conflict over mineral resources. The 1879–83 War of the Pacific, fought among Bolivia, Chile, and Peru, was triggered by a dispute for control of the nitrate-rich desert of Atacama. The 1932–35 Chaco War between Bolivia and Paraguay was fought over a region that was believed to have significant oil reserves. In recent decades, petroleum-rich Bolivia, Mexico, and Peru have all suffered from violent conflicts; in the Ecuadorian Amazon, oil exploitation has led to repeated clashes between lowland Indians and the government. Since the 1980s, Colombia's long-running civil war has been closely linked to the discovery and transportation of oil. The number of nonviolent conflicts over mining is also large. According to one dataset, there were close to 200 active mining-related conflicts around the region in 2013. Most were over land rights, labor practices, and environmental protection (see Table 4.1).

This chapter shows that the incidence of violent conflict in the LAC region is strongly correlated with oil wealth, a pattern that is consistent with the concept of a “resource curse,” which broadly refers to the ways that an abundance of petroleum wealth can lead to certain economic, social, and political ailments—including slow or volatile economic growth, weak and undemocratic governance, and violent insurgencies. In general, other types of resource wealth—including nonfuel mineral wealth—are

Table 4.1

Recent Mining-related Disputes in Latin America and the Caribbean

Country	Number of conflicts
Chile	33
Peru	33
Mexico	27
Argentina	26
Brazil	20
Colombia	12
Bolivia	8
Ecuador	7
Guatemala	6
Panama	6
Dominican Republic	4
Nicaragua	4
El Salvador	3
Honduras	3
Costa Rica	2
French Guiana	1
Trinidad and Tobago	1
Uruguay	1
Total	197

Source: www.conflictosmineros.net.

not associated with the same harmful outcomes (Ross, 2003 and 2004b). Since the early 2000s, the global commodity boom has led to new oil and gas discoveries in many countries, including Brazil, Ecuador,

Guyana, French Guiana, and Suriname, raising the possibility that a resource curse may spread to new countries in the near future.

The petroleum-rich countries in the LAC region have avoided many facets of the resource curse. Compared to oil exporters in the rest of the world, their economies have been relatively strong (Lederman and Maloney, 2007), and their governments have been relatively democratic (Dunning, 2008). When it comes to violent conflict, however, these countries have been less fortunate. The LAC region's oil-producing states have suffered from the same high rates of conflict as those in the rest of the world, with an important qualification. Everywhere else petroleum wealth tends to heighten the danger of two types of conflict: government conflicts (in which rebel movements attempt to win control of the central government) and secessionist conflicts (in which rebel movements seek to establish an independent, sovereign state); in the LAC region, however, oil is only linked to government conflicts. This is not because petroleum in Latin America and the Caribbean has unusual properties, but because the region is "secession-proof": no separatist conflicts have taken place there for over a century. The region's great anomaly is not the absence of oil-based secessionist conflicts, but the absence of all secessionist conflicts.¹

¹ This chapter refers interchangeably to "secessionist," "separatist" and "independence" movements, as well as to the terms "rebellion" and "insurgency."

The LAC region's oil-producing states have suffered from the same high rates of conflict as those in the rest of the world.

This chapter raises more questions than it answers. It describes, but does not seek to explain, the proliferation of lower-level conflicts around mining projects—a critical phenomenon that deserves sustained attention. Other studies have analyzed the chain of events that link resources to violent conflict (Ross, 2004b and 2006; Dube and Vargas, 2013), while this chapter touches only briefly on these causal mechanisms. It offers a perspective on the absence of separatist rebellions in the LAC region for the last century, showing that cross-national studies of secessionist conflict do a poor job of accounting for the LAC states, and suggests several factors that might make the region different. A more careful analysis of these and other issues are left for future research.

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THE RESOURCE CURSE

The resource curse can be defined as the perverse effects of a country's natural resource wealth on its economic, social, or political well-being. While many studies report evidence that is consistent with the idea of a resource curse, there is considerable disagreement about the mechanisms that connect resource wealth to social or political dysfunction, the conditions under which they are likely to occur, and the policy interventions that might help (see Chapter 3 of this book for more details on the resource curse).

The notion that natural resource wealth can have perverse consequences has a long and distinguished intellectual history. Early modern philosophers such as Machiavelli, Bodin, and Montesquieu argued that when countries had favorable resource endowments, their citizens became myopic and slothful. Adam Smith's *The Wealth of Nations* stressed the dangers of mineral wealth.

Of all those expensive and uncertain projects, however, which bring bankruptcy upon the greater part of the people who engage in them, there is none perhaps more ruinous than the search after new silver and gold mines (...). They are the projects, therefore, to which of all others a prudent law-giver, who desired to increase the capital of his nation, would least choose to give any extraordinary encouragement (Smith, 1776: Chapters 7 and 18).

The notion that natural resource wealth can have perverse consequences has a long and distinguished intellectual history.

Political scientists who study the resource curse draw more proximately on the work of scholars in the Middle East who, beginning in the 1970s, revived the concept of the "rentier state" to explain the peculiar qualities of the region's oil-producing governments.² Mahdavy (1970: 428) is widely credited with giving the term its contemporary meaning: a state that receives substantial rents from "foreign individuals, concerns, or governments." Beblawi (1987: 50) later developed a more precise definition, suggesting that a rentier state was one where the rents are paid by foreign actors, where they accrue directly to the state, and where "only a few are engaged in the generation of this rent (wealth), the majority being only involved in the distribution or utilization of it."

Both Mahdavy and Beblawi argued that governments funded by external rents were freed from the need to raise taxes; this made them less accountable to their citizens, and hence less likely to deploy these rents in ways that promoted economic

² The concept of a "rentier state" dates back to at least the beginning of the 20th century, when Lenin used the term to vilify European governments that earned interest on their loans to non-European governments (Lenin [1917], 1975).

development. Their argument encapsulates two of the most prominent claims in the resource curse literature: rents damage both government accountability and economic growth.

Interest in the idea of a resource curse gained further attention following Gelb's (1988) analysis of how six oil-rich states—Algeria, Ecuador, Indonesia, Nigeria, Trinidad and Tobago, and Venezuela—responded to the oil shocks of the 1970s. Overlapping studies by Auty (1990 and 1993) examined both oil and non-oil mineral exporters; a seminal working paper by Sachs and Warner (1995) reported a negative correlation between a country's dependence on natural resource exports and its subsequent economic growth; and Karl (1997) explored the disappointing political and economic outcomes in Venezuela—and, more briefly, in Algeria, Iran, Indonesia, and Nigeria—following the oil shocks of the 1970s.³

An explosion of research since 2000 has led to four distinct claims about the perverse effects of oil wealth.⁴ The first claim is that

petroleum wealth is economically harmful, particularly through its effects on growth volatility.⁵ The second is that petroleum wealth can weaken the quality of institutions—that is, the effectiveness of the government bureaucracy, the incidence of corruption, the rule of law, and more broadly, the state's capacity to promote economic development (Besley and Persson, 2010; Isham et al, 2005; Sala-i-Martin and Subramanian, 2003). The third is that oil wealth tends to make governments less democratic, by both helping autocrats entrench themselves in power and weakening checks and balances in low and middle income democracies (Jensen and Wantchekon, 2004; Ross, 2001 and 2012; Tsui, 2010).⁶ Finally, the fourth suggests that two types of natural resources—petroleum and alluvial diamonds—could likely trigger the onset of a civil war, which can be broadly defined as a violent conflict between a government and a rebel army that causes more than a certain number of battle-related deaths (Sambanis, 2004).

³ Many also drew on Corden and Neary's (1982) work on the concept of the Dutch Disease, although both researchers and journalists came to confuse the Dutch Disease with the resource curse.

⁴ Only petroleum is consistently correlated with less democracy and more corruption, but both petroleum and alluvial diamonds are statistically associated with civil wars (Fearon, 2005; Lujala, Gleditsch, and Gilmore, 2005; Ross, 2003 and 2006). Several studies suggest that other kinds of minerals have similar effects, although the issue is far from settled (see, for example, Collier, Hoeffler, and Rohner, 2009).

⁵ For more detailed reviews of recent work on the economics of the resource curse, see Frankel (2012), van der Ploeg (2011), and Wick and Bulte (2009).

⁶ Further insight on this pattern has come from a series of subnational studies in democracies, including in Argentina (Gervasoni, 2010); Brazil (Brollo et al., 2013; Monteiro and Ferraz, 2010), and the United States (Goldberg, Wibbels, and Mvukiyehe, 2009; Wolfers, 2009), all of which find that oil windfalls (and similar exogenous revenue windfalls) tend to lengthen the terms in office of elected local officials. This does not necessarily imply that oil strengthened or weakened these regimes, only that it had pro-incumbent effects.

There is no universally accepted cut-point for identifying these conflicts; different datasets employ different thresholds of battle deaths, such as 25, 100, or 1,000 in a calendar year. Analyses by Collier and Hoeffler (1998), Le Billon (2001), and Reno (1995 and 1998), among others, focus on the links between natural resource wealth and the onset, duration, and intensity of violent conflict.⁷

One of the most important findings from the last decade of research is that location matters: the likelihood that resource wealth will trigger, prolong, or intensify a conflict seems to depend on where within a country's boundaries it is found. If oil is offshore, it has no effect on a country's conflict risk; if it is onshore, it may have a large effect (Lujala, 2010; Ross 2012). Conflict is also more likely if these resources are found in regions that are poor relative to the national average and populated by marginalized ethnic groups (Østby, Nordås, and Rød, 2009; Basedau and Richter, 2011); in regions with a highly concentrated ethnic group (Morelli and Rohner, 2010); and in regions where ethnic entrepreneurs use resource wealth to promote collective resistance to the central government (Aspinall, 2007). Conflicts that take place near regions with petroleum or alluvial diamond wealth also appear to last longer (Buhaug, Gates, and Lujala, 2009; Lujala, 2010; Lujala, Gleditsch,

and Gilmore, 2005), and become more severe (De Luca et al., 2012; Lujala 2009; Weinstein 2007).⁸

The salience of location has opened the door to more fine-grained, intra-country comparisons. Dube and Vargas (2013), for example, use municipal-level data from Colombia to estimate the effects of both coffee and petroleum price shocks on rebel and paramilitary violence. They find that higher coffee prices tend to reduce violence in the coffee-producing regions (perhaps by drawing labor out of the conflict and into the coffee sector), while higher oil prices tend to boost violence in oil-rich regions (possibly by creating more lucrative opportunities for predation). Their findings closely match the predictions of a model by Dal Bó and Dal Bó (2011), in which exogenous shocks can raise or lower conflict risks, depending on whether they occur in labor-intensive or capital-intensive sectors.

OIL AND CIVIL WAR

While many studies find that oil wealth is associated with a heightened risk of civil war, there is no consensus about the mechanisms behind this pattern. One class of theories suggests that natural

⁷ For earlier surveys of this literature, see Ross (2004a and 2006). A separate body of research (e.g., Gleditsch, 2012) asks whether the scarcity of renewable resources can trigger violent conflict.

⁸ Besley and Persson (2010) develop and test a related model in which resource rents increase the likelihood of conflict, conditional on the ex ante inability of the state to facilitate peaceful transactions between groups.

resource wealth leads to violence by affecting the government—either making it administratively weaker, and hence less able to prevent rebellions, or by increasing the value of capturing the state, and hence inducing new rebellions (Besley and Persson, 2010; de Soysa, 2002; Fearon, 2005; Le Billon, 2005). An alternative view is that natural resource wealth leads to conflict by affecting insurgents, not governments. For instance, rebels from an ethnically marginalized region could be motivated by the prospect of establishing an independent state, so that locally generated resource revenues would not have to be shared with the rest of the country. They could also finance a rebellion by either looting the resource itself (if it is a “lootable” resource, such as alluvial gemstones or oil) or extorting money from companies and workers who operate in their territory (Collier, Hoeffler, and Rohner, 2009; Dal Bó and Dal Bó, 2011; Ross, 2012).

Many other conditions have also been linked to civil war. Perhaps the most robust are a country’s income and population: those that are poorer and larger have more frequent conflicts. Somewhat less robust correlates include slow or negative economic growth, political instability, disorder in the initial years of sovereign independence, ethnolinguistic fractionalization, religious fractionalization, noncontiguous territory, mountainous terrain, small military establishments, and war-prone and undemocratic neighbors. Fearon (2005),

Hegre and Sambanis (2006), and Sambanis (2004) show that many of these factors are not robust to changes in model specification, the period covered by the sample, the duration of each observation (i.e., whether country observations are grouped in one- or five-year periods), and the definition of civil war.

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Many of these factors can be incorporated into a theory of rebellion focusing on the viability of insurgent movements, which should be more likely to emerge when the costs of joining a rebel organization are sufficiently low, and the benefits are sufficiently high.⁹ In countries with lower incomes, the opportunity costs of joining a rebellion—represented by the prevailing wage for unskilled male laborers—will be lower. Rebel groups are also more likely to elude capture in countries with larger populations, mountainous terrain, noncontiguous

⁹ Collier and Hoeffler (2004) developed the canonical model of insurgent viability, drawing on earlier models of conflict from Hirschleifer (1991) and Skaperdas (1992). For reviews of the literature on theories of civil war, see Blattman and Miguel (2008) and Kalyvas (2007).

territories, and neighboring countries that allow them to take shelter. The benefits are represented by the rebel soldiers' wages, which usually come from funding from foreign powers, donations (including food and shelter) from locals who support the rebels' aims, and money earned by insurgents themselves through criminal activities, such as extortion, kidnapping, and the sale of contraband.

This simple cost-benefit model of insurgent viability suggests three ways that a country's oil wealth might affect the likelihood of a rebellion. It might influence the costs by affecting citizens' incomes. If one makes the simple assumption that more oil leads to higher incomes—if not through jobs, then through larger government benefits—then it should also make it harder for insurgents to recruit soldiers, thus reducing the danger of civil war.¹⁰

Oil can also raise the benefits of joining a rebel army. First, oil wealth may lead to increased donations to the rebel groups from local residents who believe they would be better off if they could form an independent state that would give each of them a larger share of the

wealth.¹¹ This does not necessarily mean that local insurgents initiate the conflict. Governments may trigger the conflict themselves by preemptively launching campaigns of repression and terror in anticipation of independence movements (Ross, 2004b). Second, oil wealth could make it easier for rebels to profit through crime, such as stealing oil, ransoming oil workers, and extorting money from oil companies that are trying to avoid conflict (such as theft, kidnapping, and sabotage). Insurgents also target other types of businesses, but oil companies are likely to be more lucrative targets for various reasons, such as: they are more willing than other large firms to work in remote and unstable regions; the contrast between their high fixed costs and small variable costs gives them a strong incentive to stand their ground to earn back their initial investments in fixed assets; and the availability of resource rents enables

¹⁰ If oil wealth instead leads to lower incomes, perhaps through calamitous mismanagement, it would boost the danger of armed conflict. But in most cases, oil wealth seems to make countries richer in the long run; see, for example, Alexeev and Conrad (2009).

¹¹ Of course, the central government should be able to anticipate this independence movement. So why would it not simply give locals a larger share of their region's petroleum revenues, to forestall a rebellion? In fact, many governments follow this strategy, allocating to local governments a disproportionate share of their region's mineral revenues (Ahmad and Mottu, 2003; Brosio, 2003). But these arrangements are not always sufficient. Unless the central government is willing to cede all of a region's petroleum revenues to the local governments, residents would still gain larger benefits if they were independent. More subtly, secessionists may distrust the government's promises of revenue sharing, fearing that if they disarm, the government will renege on its commitments (Fearon, 2004; Walter, 2002).

them to remain profitable while incurring high security costs, as well as financial losses from theft, extortion, and the payment of ransoms for kidnappings.

In short, oil wealth may either deter rebellions by raising incomes, induce them by making independence profitable in oil-producing regions, or give rebels an easy way to raise money. But the conflict-inducing effects of oil wealth should outweigh its conflict-detering effects, as long as the rise in incomes (which are diffused across the entire population) are less than the rise in benefits to locals in the oil-producing region from secession or predation.

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This simple model has three implications for analyzing the conflicts of LAC countries. First, the impact of oil should depend on a country's overall income level: since one hundred dollars per capita in oil income has a larger impact on wages in poor countries than in rich ones, a given amount of oil wealth would more likely trigger insurrections in low-income countries than in high-income ones. Second, the value of oil production should be

associated with both separatist civil wars, funded by citizens who seek independence in oil-producing regions, and governmental civil wars, funded by insurgents through petroleum-related predation. Some of the underlying conditions that cause insurgencies, according to the model, have changed over time. This points to the third implication: the incidence of petroleum-related civil wars should have grown, due to two factors. First, in the 1970's, governments began to capture a much larger share of the oil rents that formerly went to international oil companies, thanks to OPEC's growing influence, and a wave of expropriations. This has gradually raised the benefits for residents in oil-producing regions to establish their own sovereign governments. Second, due to the growing demand for oil in the 1970s and 1980s, petroleum firms moved into poorer regions of poorer countries (e.g., in Colombia, Indonesia, Nigeria, Sudan, and Yemen) where oil extraction was more likely to trigger new conflicts.¹²

A STATISTICAL ANALYSIS OF OIL AND CIVIL WAR

It is possible to illustrate the link between oil and violent conflict with logistic regressions, using civil war onsets as the dependent variable. The measure of civil war onsets

¹² From 1970 to 2006, the number of states earning at least US\$100 per capita in oil and gas income (in constant 2000 U.S. dollars) rose from 15 to 56.

is constructed from the Armed Conflict Dataset (version 4), which is the most comprehensive and transparent dataset on violent conflict.¹³ The dataset defines conflict as “a contested incompatibility that concerns government and/or territory, where the use of armed force between two parties, at least one of which is a government, results in at least 25 battle-related deaths” in a single calendar year. This is the lowest threshold in any major dataset for identifying violent rebellions. It has the advantage of capturing conflicts that are politically important but nonetheless have produced relatively few casualties, and the disadvantage of excluding the largely nonviolent struggles around mining projects that are listed in Table 4.1. Since the present analysis focuses on domestic conflicts rather than international ones, it is restricted to “Type 3” (intrastate conflict) and “Type 4” (internationalized intrastate conflict) events. Using these data, the current study uses a variable called *Domestic Conflict Onset*, which takes the value “1” during the year that a conflict begins and zero otherwise.

¹³ The Armed Conflict Dataset is maintained by the Uppsala Conflict Data Program (UCDP) at the Department of Peace and Conflict Research, Uppsala University, Sweden, and the Centre for the Study of Civil War at the Peace Research Institute Oslo (PRIO) in Oslo, Norway, and is available at: http://www.pcr.uu.se/research/ucdp/datasets/ucdp_prio_armed_conflict_dataset/. The website also has greater detail on how they define conflict and a full listing of the armed conflicts in the dataset.

To avoid double counting conflicts that restart after a brief lull, only insurrections that arise after two or more consecutive years of peace are included. Using the Armed Conflict Dataset, variables have been created to measure two subcomponents of Domestic Conflict Onset: the onset of conflicts for control of the national government (*Government Conflict Onset*) and the onset of separatist conflicts (*Separatist Conflict Onset*).

The key independent variable is *Oil Income per capita*, which is the annual value of a country’s oil and natural gas production, divided by its population. This measure was chosen over other common indicators of resource wealth because it is both implied by the model and is less likely to be influenced by other variables of interest; in particular, it should not be biased upwards in poorer countries, which have higher conflict risks. Measures that only consider a country’s petroleum exports, instead of its production, will be biased upwards in countries that are too poor to consume their production domestically. For example, on a per capita basis, the United States produces more oil than Angola or Nigeria, but both export more than the United States, which is wealthier and consumes all of its oil domestically.

Similarly, measures of a country’s dependence on oil production or exports (i.e., using GDP or total exports as the denominator) will conflate information about the size of a country’s petroleum sector with that about the size of the rest of the

economy. Even if two countries export the same quantity of oil, the poorer country will have a smaller GDP and, hence, a higher oil-exports-to-GDP ratio, making it hard to know if a given outcome has been caused by the presence of oil or the absence of other kinds of economic activity. It also opens the door to several endogeneity problems. For example, having a high oil exports-to-GDP ratio might cause civil war, but it could also be a result of civil war (or the domestic instability that often precedes civil war), which could reduce investment in sectors that can be easily relocated to other countries (e.g., manufacturing) and leave sectors that are not easily relocated or can function in enclaves (e.g., oil extraction) in a dominant position.

The present analysis begins by developing a core model that includes only the Oil Income measure and the two explanatory variables that are most robustly linked to civil war: income and population. As a robustness check, it later adds the other explanatory variables in the highly influential Fearon-Laitin model (see Fearon and Laitin, 2003).

To identify the variables that are linked to a dichotomous dependent variable, scholars typically use logistic regression. But King and Zeng (2001) have shown that logistic regression does a poor job of estimating the likelihood of rare events, and civil war onsets are quite rare (between 1960 and 2006, just 193 such conflicts began in

about 6,800 country-years). To correct this problem, the model incorporates the King-Zeng “rare events logit” estimator.

To address the problem of temporal dependence, the present analysis follows Beck et al. (1998) by adding three cubic splines to each model, and controlling for the number of years since the end of the previous conflict in the same country.¹⁴ It lags all explanatory variables by a single period (to help mitigate endogeneity) and clusters standard errors by country. The natural log (plus one) of each of the right-hand side variables (*GNI per capita*, *Population* and *Oil Income per capita*) is used to mitigate their non-normal distributions.

Table 4.2 displays the results of these reduced-form estimations. The first column shows that the two control variables—*Income* and *Population*—are each significantly correlated with *Domestic Conflict Onset* in the expected direction: states with lower incomes and larger populations are more prone to civil war. The *Oil Income* variable is added in column 2; it is positively correlated with *Domestic Conflict Onset* and statistically significant at the $p=.01$ level. This is consistent with the model’s first implication, that *Oil Income* is associated with a heightened likelihood of civil war.

¹⁴ An earlier set of estimations (Ross, 2006) shows that an alternative method of addressing temporal dependence, adopted by Fearon and Laitin (2003), produced virtually identical results.

Table 4.2

Recent Mining-related Disputes in Latin America and the Caribbean

	(1) All countries	(2) All countries	(3) High- income countries	(4) Low- income countries	(5) All countries	(6) Separatist conflicts	(7) Government conflicts	(8) 1960– 1990	(9) 1991– 2006	(10) All countries
Income (log)	-0.311 (5.06)***	-0.437 (6.27)***	-0.490 (2.66)***	-0.280 (2.81)***	-0.410 (6.25)***	-0.457 (2.56)***	-0.411 (5.48)***	-0.329 (4.46)***	-0.587 (4.81)***	-0.320 (3.59)***
Oil Income (log)		0.131 (3.44)***	0.115 (1.33)	0.124 (2.92)***		0.139 (2.05)**	0.132 (3.09)***	0.074 (1.65)*	0.194 (3.34)***	0.104 (2.80)***
Oil Income*					0.109 (3.45)***					
Polity										
Polity²										
Ethnic Fractionalization										0.438 (2.94)***
Religious Fractionalization										-0.040 (3.01)***
Mountains (log)										1.260 (3.32)***
Noncontiguous										-0.766 (2.12)**
New State										0.093 (1.68)*
Instability										0.589 (2.47)**
Countries	169	169	169	140	169	169	169	156	169	154
Observations	6382	6382	1831	4551	6382	6382	6382	3747	2635	5507

Source: Author's elaboration.

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%. Robust z statistics in parentheses. "High-income" is defined as above \$5,000 (constant 2000 dollars), and "low income" as below \$5,000. Each estimation includes a constant, a variable measuring years since the previous conflict, and three cubic splines to correct for temporal dependence. Standard errors are clustered by country, and the explanatory variables are lagged for one year. Estimations are carried out with Stata 10.1, using rare-event logistic regression.

Columns 3 and 4 show the sample according to income: the model in column 3 includes only states with high incomes (above \$5,000 in constant 2000 U.S. dollars) and the model in column 4 only includes states with low or middle incomes (below \$5,000). Oil Income is significantly linked to *Domestic Conflict Onset* only among low- and middle-income states. The model in column 5 shows that an interaction term, *Oil Income* Income (log)*, is strongly linked to conflict onsets, consistent with the second implication, that oil will have a larger effect in low-income countries.¹⁵

Columns 6 and 7 show that Oil Income is associated with both *Separatist Conflict Onset* and *Government Conflict Onset*, respectively. This is consistent with the third implication, that oil is linked to both separatist and government conflicts.

Columns 8 and 9 illustrate the sample according to time periods: the 1960–1990 “Cold War” era and the 1991–2006 “post-Cold War” era. The *Oil Income* variable is significantly linked to *Domestic Conflict Onset* in both periods, but its statistical and substantive significance is much greater in the latter period, consistent with the fourth implication, that the conflict-inducing qualities of oil have risen over time.

¹⁵ For ease of interpretation, the Income variable in the interaction term is a one-to-five cardinal variable indicating a country’s income quintile, with “5” indicating the lowest quintile and “1” the highest. This means that a larger interaction term—indicating more oil, lower incomes, or both—should be associated with a higher civil war risk.

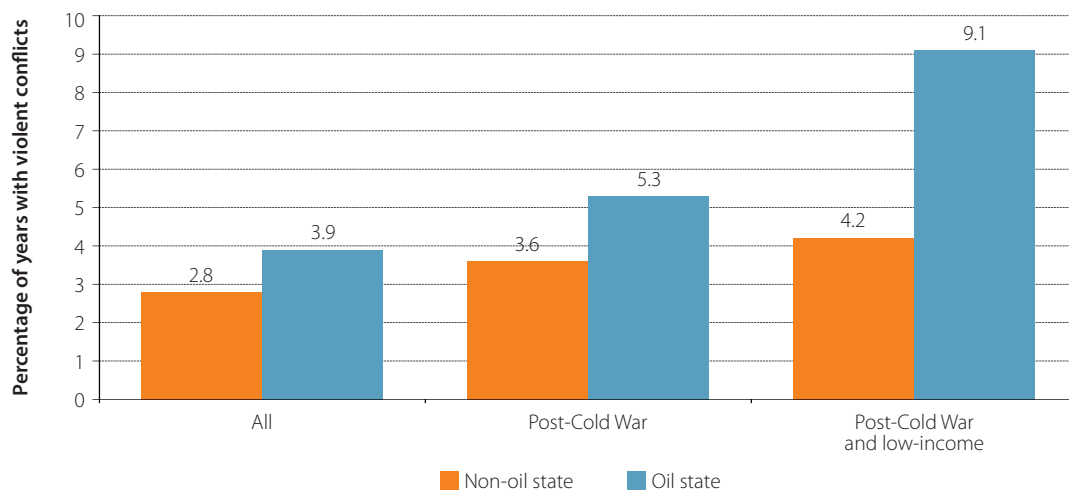
Finally, as a robustness test, all of the right-hand side variables in the Fearon-Laitin civil war model (Fearon and Laitin, 2003) that had not already been accounted for are added to the model. The *Oil Income* variable remains highly significant.

How large is oil’s impact on the threat of civil war? One simple way to address this question is to compare the conflict rate—that is, the number of conflicts per 100 country-years—of oil and non-oil states under different conditions. As Figure 4.1 shows, between 1960 and 2006, the conflict rate in the oil states for countries at all income levels was more than 35 percent higher than in non-oil states—even though the oil states were on average more than twice as rich as the non-oil states which, in theory, should have made them more peaceful.¹⁶ In the post-Cold War era, the conflict rate in the oil states has been about 50 percent higher than the rate in non-oil states. Among low and middle-income states since 1960, the oil states had conflict rates about 75 percent higher, while among low and middle-income countries in the post-Cold War period conflict, rates were more than twice as high in the oil states as the non-oil states.

¹⁶ Herein, countries are classified as “oil-producing” if they generate at least US\$100 per capita from oil or natural gas in a calendar year (using constant 2000 U. S. dollars). From 1960 to 2006, the mean income of the non-oil states was US\$3,962 per capita, versus US\$8,738 per capita for the oil states, in constant 2000 U.S. dollars. The average populations of the two groups were almost identical.

Figure 4.1

Annual Conflict Rate, Oil and Non-oil States, 1960–2006



Source: Author's elaboration.

PATTERNS OF OIL AND CONFLICT IN THE LAC REGION

From 1960 to 2011, there were 24 intrastate conflicts in the region, in 18 different countries, according to the Armed Conflict Dataset (ACD) (see Table 4.3). The ACD classified nine of them as major conflicts (i.e., they caused at least 1,000 battle-related deaths in a single year). Seven of the 24 conflicts—including two major ones—began in countries that were generating at least US\$100 dollars per capita in oil and gas, and an eighth conflict broke out in a state that subsequently became a major oil producer (Colombia). Other datasets, using different definitions of civil war, identify either nine or ten major conflicts during this period, although they do not code minor ones.

In Table 4.3, the countries classified as “oil-producing” (i.e., those that generated at least US\$100 per capita in oil revenues in the year the conflict began) are in italics. Colombia became an oil-producing country in 1974, after its conflict began. The years listed for the onset of conflict are from the ACD; the other datasets are less complete, and may also identify different years as the onset. Some datasets treat long-running conflicts as two or three consecutive conflicts. Cells with a single asterisk indicate that a given dataset counts this as a conflict; when a dataset treats this event as two or three consecutive but independent conflicts, the cells are marked with two or three asterisks.

Table 4.3**Intrastate Conflicts in Latin America and the Caribbean, 1960–2011**

Country	Year	ACD (all)	ACD (major)	Fearon-Laitin	Sambanis	Wimmer-Min
Cuba	1961	*				
<i>Venezuela</i>	1962	*				
Argentina	1963	*				
Dom. Rep.	1965	*		*	*	*
Guatemala	1965	*	*	*	**	***
Peru	1965	*				
Colombia	1966	*	**	*	*	*
Bolivia	1967	*				
El Salvador	1972	*				
Uruguay	1972	*				
<i>Argentina</i>	1973	*	*	*	*	
Chile	1973	*				*
Nicaragua	1978	*	**	**	**	**
El Salvador	1979	*	*	*	*	*
<i>Peru</i>	1981	*	**	*	*	*
Suriname	1986	*				
Haiti	1989	*		*	*	
Panama	1989	*				
Paraguay	1989	*				
<i>Trinidad</i>	1990	*				
<i>Venezuela</i>	1992	*				
<i>Mexico</i>	1994	*				
Haiti	2004	*				
<i>Peru</i>	2007	*				
Total		24	9	9	10	10

Source: Author's elaboration

Notes: The ACD runs through 2006, the Wimmer-Min data through 2001, and the Fearon-Laitin and Sambanis datasets through 1999.

From 1960 to 2011, there were 24 intrastate conflicts in the region, seven of which began in countries that were generating at least US\$100 dollars per capita in oil and gas.

Table 4.4 offers a first assessment of the figures in Table 4.3, showing the conflict rates of both oil- and non-oil producing countries in the LAC region and the rest of the world. Differences that are statistically significant (using either a Chi-square test or—when expected frequencies fall below five—a Fisher’s exact test) are marked with asterisks.

Table 4.4 indicates three patterns. First, during the Cold War, the LAC region had civil wars at the same rate as the rest of the world, a pattern that held for both oil- and non-oil producing countries. Second, since 1990, the LAC region has become much more peaceful than the rest of the world, partly because the rate of new conflicts rose in the rest of the world, and partly because it fell in the LAC region. Third, since 1990, oil-producing countries in both the LAC region and the rest of the world had higher conflict rates than non-oil producing countries. In Latin America and the Caribbean, the difference between the oil and non-oil states falls short of statistical significance ($p=.172$) in Fisher’s exact test, provided the

Table 4.4

Conflict Onset Rates in Oil versus Non-oil Producing Countries

	Rest of the world	LAC region
1960–1990		
Oil-producing countries	2.70	2.44
Non-oil producing countries	2.32	2.38
1991–2006		
Oil-producing countries	5.76*	1.75*
Non-oil producing countries	4.06***	0.31***
Overall		
All states and periods	3.27**	1.81**

Source: Author’s elaboration.

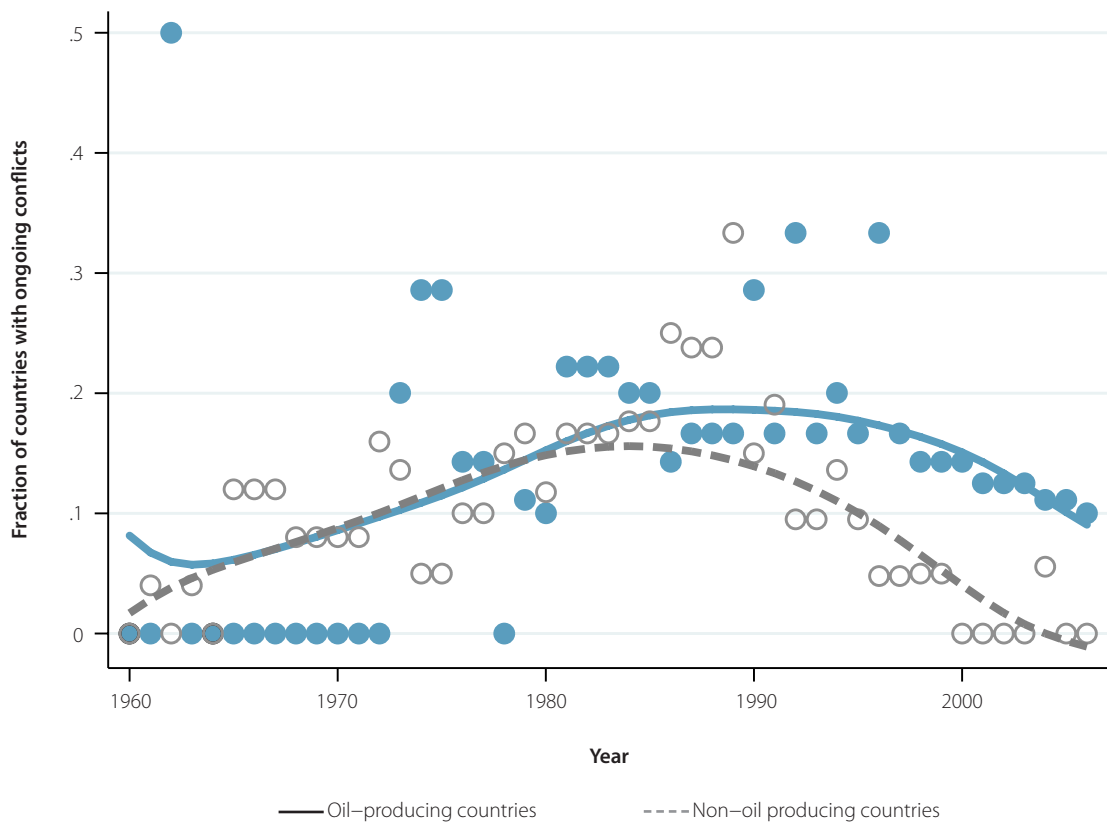
Notes: *** $p < .01$, ** $p < .05$ level, * $p < .10$ in Pearson’s χ^2 test (rows two, four, and five) or a one-sided Fisher’s Exact Test (rows one and three). Tests are for values in rows (i.e., the rest of world versus the LAC region).

post-Cold War era is treated as 1991–2006. If 1990 is included in the period, the difference between the oil and non-oil states becomes statistically significant at the .10 level ($p=.058$). Looking at conflict rates over time, the region's oil-producing countries have had notably more ongoing conflicts since about 1980 (Figure 4.2).

Since 1990, the LAC region has become much more peaceful than the rest of the world, partly because the rate of new conflicts rose in the rest of the world, and partly because it fell in the LAC region.

Figure 4.2

Ongoing Conflicts in the LAC Region, 1960–2006



Source: Author's elaboration.

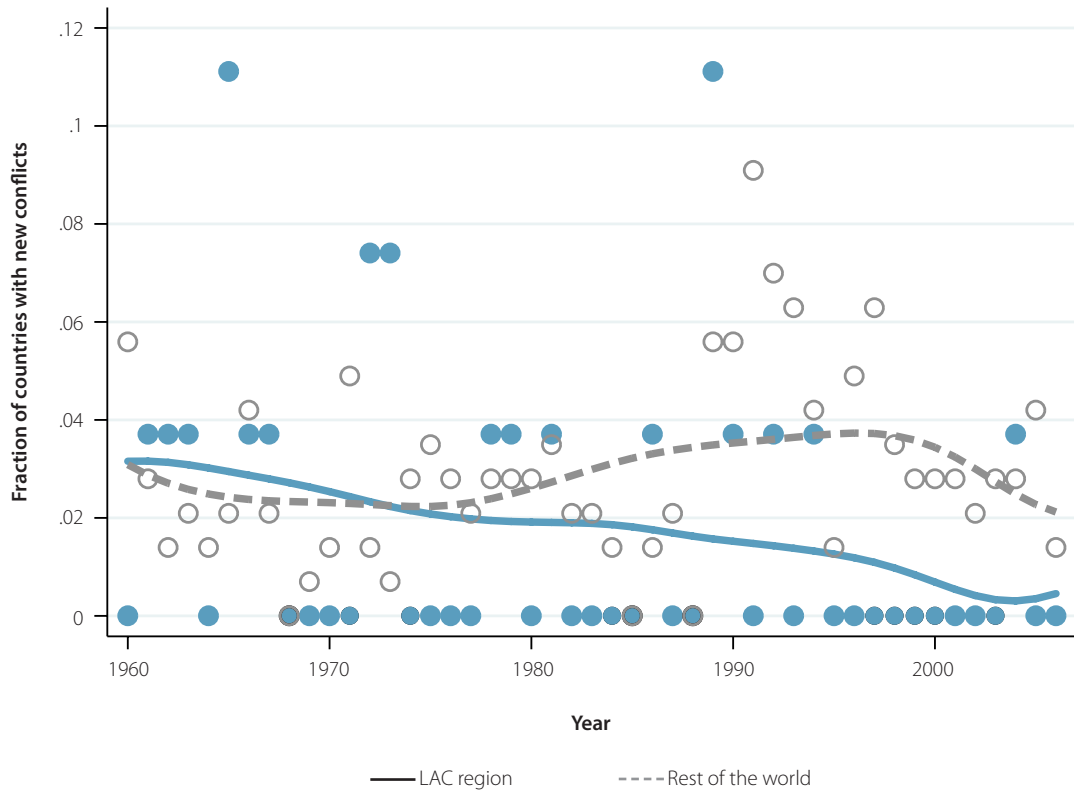
Figure 4.3 shows how conflict rates in the LAC region have diverged from the rest of the world since 1960. In the 1960s and 1970s, the region had new civil wars at the same rate as the rest of the world; but since the 1980s, the rate of new conflicts there has fallen sharply relative to the rest of the world.

It is possible to observe a similar pattern when looking at ongoing conflicts, instead of only new ones, although now the LAC region diverges from the rest of the world a few years later, around 1990 (Figure 4.4).

Perhaps the most striking anomaly in the LAC region is the kind of civil wars it

Figure 4.3

Conflict Onsets in the LAC Region and the Rest of the World, 1960–2006



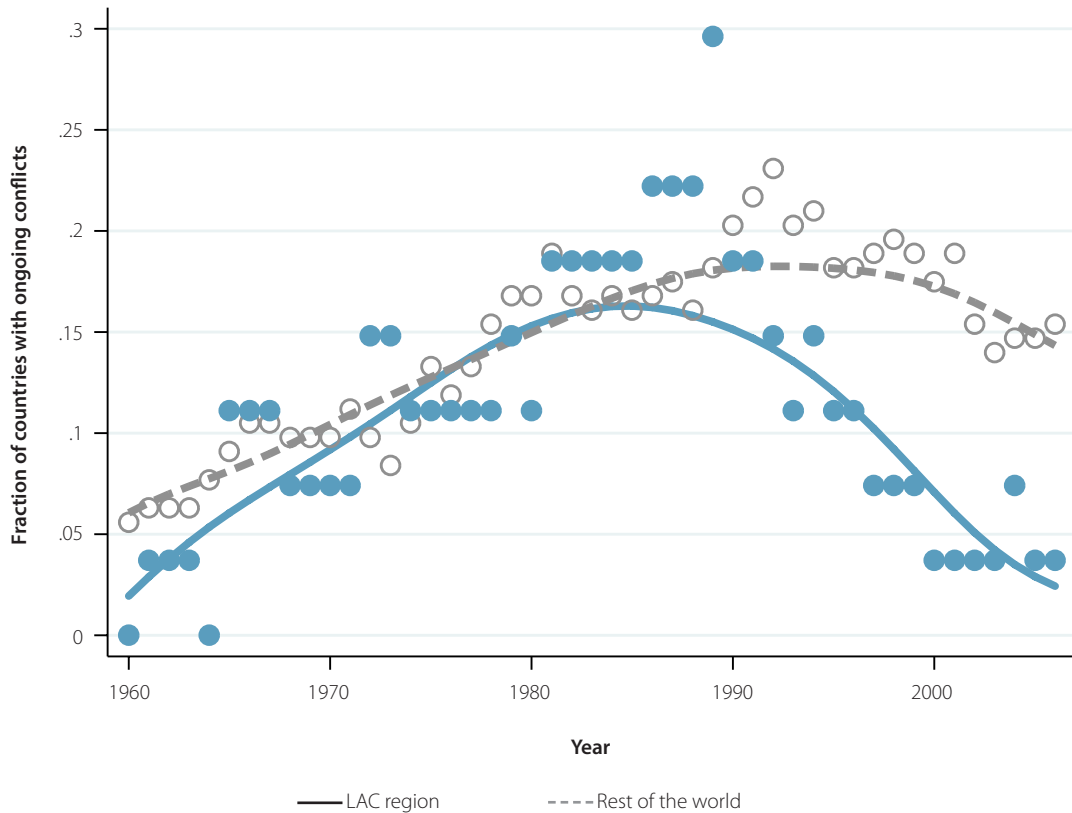
Source: Author's elaboration.

has had (Table 4.5). During the Cold War (1960–1990), the region suffered from civil war onsets at about the same rate as the rest of the world, but it had a significantly higher rate of government wars and a much lower rate of separatist wars (in fact, there were none at all). In the post-Cold

War era (1991–2006), the rate of both government and separatist conflicts in the rest of the world rose; most notably, the rate of separatist conflicts doubled. In the LAC region, however, the rate of government conflicts fell sharply, while the number of separatist wars remained at zero.

Figure 4.4

Ongoing Conflicts in the LAC Region and the Rest of the World 1960–2006



Source: Author's elaboration.

Table 4.5

Conflict Onset Rates by Type

	Rest of the world	LAC Region
1960–1990		
Government conflicts	1.49*	2.39*
Separatist conflicts	1.15***	0.00***
All conflicts	2.64	2.39
1991–2006		
Government conflicts	1.97**	0.69**
Separatist conflicts	2.53***	0.00***
All conflicts	4.5***	0.69***

Source: Author's elaboration.

Notes: ***p<.01, ** p<.05 level, * p<.10 in Pearson's Chi² test (rows one and three) or a one-sided Fisher's Exact Test (rows two, four, five and six). Tests are for values in rows (i.e., the rest of world versus the LAC region).

Since the 1980s, the rate of government conflicts in the LAC region has gone from atypically large to atypically small. Since 1990, its oil producing countries have had a higher conflict rate than its non-oil producing countries.

In short, the LAC region differs from the rest of the world in two broad ways: it had no separatist conflicts—either during the Cold War or since—and since the 1980s, its rate of government conflicts has gone from atypically large to atypically small. The region is similar to the rest of the world in one important way: since 1990, its oil-producing

countries have had a higher conflict rate than its non-oil producing countries. The absence of separatist conflicts in the LAC region is especially striking, and remains true even going back further in time. According to the ACD, from 1948 to 2011, the region had 36 major conflicts in 19 different countries, yet none of them involved a separatist movement.

Other civil war datasets, which use narrower definitions of civil war, show the same absence of separatist conflict (Table 4.6). The Correlates of War dataset, which contains information on civil wars in all countries since 1816, identifies three types of civil wars: intercommunal conflicts, which most scholars do not treat as civil wars since the government is not a party to the conflict; conflicts

Table 4.6**Conflicts in Latin America and the Caribbean (by type)**

Dataset	Government conflicts	Separatist conflicts	Last separatist conflict
UCPD/PRIO (1946–2011)	36	0	-
Correlates of War (1900–2001)	27	1	1932: Brazil versus the Paulistas
Wimmer-Min (1900–2001)	30	1	1918: Haiti versus the United States

Source: Author's elaboration.

Note: The Correlates of War dataset does not identify separatist conflicts, but rather “local” conflicts, a category that includes both separatist and regional conflicts.

over control of the central government; and conflicts over local issues, a category that is somewhat broader than, and includes, all secessionist conflicts. Between 1900 and 2001, the dataset recorded 27 conflicts in the region over control of the central government, but just one local conflict—Brazil's Paulista War (also known as the Constitutional Revolution of 1932).

The Correlates of War dataset has been criticized on a number of grounds, including the consistency of its definitions of conflict (see, for example, Sambanis, 2004). Recently, Wimmer and Min (2009) have compiled a more comprehensive list of conflicts between 1816 and 2001 that includes 64 wars left out of the Correlates of War data and develops a new typology of conflicts by their purpose. They identify the most recent secessionist war in the Americas as the 1918 Caco War in Haiti—a revolt against the United States occupation—and the one

before that, the Spanish-Cuban War of 1895. On the Latin American continent in particular, Wimmer and Min identify the most recent separatist conflict as the 1859 Battle of Cepeda between the Argentine government and the provincial government of Buenos Aires (they classify the Paulista War in Brazil as non-secessionist).

Table 4.7 compares the LAC region to others, providing both the total number of separatist conflicts in each region since 1948 and the rate of separatist conflicts (i.e., the number of separatist conflicts divided by the number of sovereign country-years). South Asia had the highest rate of separatist conflicts, followed by the former Soviet Union, East and Southeast Asia, the Middle East and North Africa, Sub-Saharan Africa, Central and Eastern Europe, and Western Europe. The LAC region is the only one that had no wars of secession.

Table 4.7

Separatist Conflicts by Region, 1948–2006

Region	Separatist conflicts	Sovereign country-years	Separatist conflict rate
South Asia	20	346	5.78
Former Soviet Union	11	257	4.28
East and Southeast Asia	27	674	4.01
Middle East	11	775	1.42
Sub-Saharan Africa	26	1903	1.37
Central and Eastern Europe	7	538	1.30
Western Europe	5	893	0.56
LAC region	0	1197	0.00

Source: Author's elaboration.

Note: Data on separatist conflicts are from the ACD.

The estimations in Table 4.8 tell the same story as the cross-tabs in Tables 4.4 and 4.5. The data for each model are now restricted to the post-Cold War period, when differences have emerged between the LAC region and the rest of the world. The first column shows once again the core model displayed in Table 4.2, column 9. Column 2 includes a dummy variable for the LAC region, which is negatively associated with civil war onsets.¹⁷

Column 3 includes both the *Latin America and Caribbean* dummy, and a variable interacting *Oil Income* and *Latin America and the Caribbean*, to see if oil has

a distinctive effect on conflict in the LAC region; it is far from statistical significance and its inclusion has little impact on the *Oil Income* variable. This implies that oil does not have a distinctive impact on conflict in the region—in other words, oil is linked to higher conflict rates in the LAC region, just as it is in the rest of the world.

Stata cannot estimate a model of separatist conflicts that includes the *Latin America and Caribbean* dummy, since the region has had no separatist conflicts. But in a model of government conflicts, shown in column 4, the *Latin America and Caribbean* dummy loses statistical significance at conventional levels, which may suggest that the negative effect of *Latin America and the Caribbean* on all domestic conflicts, displayed in column 2, is largely caused by the absence of separatist conflicts.

¹⁷ In these estimations the dummy variable marks the countries of both Latin America and the Caribbean; a dummy variable covering only Latin America produces similar results.

Table 4.8
Civil War Onsets, 1991–2006

	(1) All conflicts	(2) All conflicts	(3) All conflicts	(4) Government conflicts only
Income (log)	-0.587 (4.81)***	-0.520 (4.46)***	-0.517 (4.42)***	-0.598 (3.60)***
Population (log)	0.231 (2.89)***	0.224 (2.86)***	0.222 (2.85)***	0.015 (0.14)
Oil Income (log)	0.194 (3.34)***	0.185 (3.35)***	0.182 (3.21)***	0.214 (2.75)***
Latin America and the Caribbean		-1.009 (1.96)**	-1.012 (0.75)	-0.508 (0.89)
Latin America and the Caribbean* Oil Income			0.043 (0.16)	
Countries	169	169	169	169
Observations	2,635	2,635	2,635	2,635

Source: Author's elaboration.

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%. Robust z statistics in parentheses. Each estimation includes a constant, a variable measuring the number of years since the previous conflict, and three cubic splines to correct for temporal dependence. Standard errors are clustered by country, and the explanatory variables are lagged for one year. Estimations are carried out with Stata 10.1, using rare-event logistic regression.

The absence of secessionist wars explains why oil states in the LAC region had fewer conflicts than oil states in the rest of the world. Table 4.9 displays the rate of both separatist and government conflicts in the oil states since 1990. While LAC oil states have had slightly fewer government conflicts than oil states elsewhere,

the difference is not statistically significant; but oil-producing countries in the LAC region have had significantly fewer separatist conflicts, and consequently fewer total conflicts. Outside of the region, oil states had separatist and government conflicts at identical rates; in the region, oil states only suffered from government conflicts.

Table 4.9**Conflict Onset Rates among Oil-Producing Countries, 1991–2006**

	Rest of the world	LAC region
Government conflicts	2.88	1.75
Separatist conflicts	2.88*	0.00*
All conflicts	5.76*	1.75*

Source: Author's elaboration.

Notes: * $p < .10$ in a one-sided Fisher's Exact Test. Tests are for values in rows (i.e., rest of the world versus the LAC region).

Separatist conflicts make up a large fraction of the oil-related conflicts outside of the LAC region. As illustrated in Table 4.10, from 1960 to 2006, eight separatist conflicts broke out in states that were generating at least US\$100 per capita in oil income, and where petroleum extraction was either under way in the secessionist region (Angola, Iran-Arabistan, Iran-Kurdistan, Iraq, Nigeria-Niger Delta, and Russia) or about to begin (Indonesia and Yemen).¹⁸ Eight additional conflicts began in petroleum-rich regions of countries that did not cross the US\$100 per capita threshold—either because oil had been discovered but not yet extracted (Pakistan-Bangladesh,

Bangladesh-Chittagong Hills, Nigeria-Biafra, and Sudan) or because oil was relatively scarce at the national level, even though it was abundant in the secessionist region (China, India, Pakistan-Baluchistan, and Turkey).

Outside of the LAC region, separatist conflicts between 1960 and 2006 were widely distributed among petroleum-producing regions: five were in the Middle East, four in Africa, four in South Asia, two in East or Southeast Asia, and one in Russia. Clearly petroleum wealth was not wholly responsible for any of these conflicts, as all of them took place in regions whose populations had strong historical or political grievances that long predated petroleum extraction. However, case studies suggest that oil played a role in the motivations of separatist groups in many of the conflicts.¹⁹

In Latin America and the Caribbean, petroleum has sometimes been extracted from regions populated by marginalized ethnic communities, such as those listed in Table 4.10, but without triggering separatist insurgencies. For example, the exploitation of oil in the Ecuadorian Amazon since the 1970s has led to widespread soil and water contamination, conflicts over land rights, and organized protests and marches in support of indigenous rights (Sawyer, 1997). Also, Mexico's oil-rich Chiapas State

¹⁸ Three of these eight conflicts (in Indonesia, Iran, and Iraq) waxed and waned over time, and hence are counted by the ACD as multiple independent conflicts.

¹⁹ See, for example, Ross (2005) on Aceh; Said (2007) on Chechnya; International Crisis Group (2006a, 2006b) on the Niger Delta; and Anderson (1999) on Sudan.

Table 4.10

Separatist Conflicts in Petroleum-Producing Regions

Country	Conflict years	Country income (in real 2000 U.S. dollars per capita)	Region
Angola	1975–2007	\$861	Cabinda
Bangladesh	1974–92	\$243	Chittagong Hill Tracts
China	1991–	\$422	Xinjiang
India	1990–	\$317	Assam
Indonesia	1975–2005	\$303	Aceh
Iran	1966–	\$1053	Kurdistan
Iran	1979–80	\$1747	Arabistan
Iraq	1961–	\$1100	Kurdistan
Nigeria	1967–1970	\$267	Biafra
Nigeria	2004–	\$438	Niger Delta
Pakistan	1971	\$275	Bangladesh
Pakistan	1974–77	\$280	Baluchistan
Russia	1999–2001	\$1613	Chechnya
Sudan	1983–2005	\$293	South
Turkey	1984–	\$2091	Kurdistan
Yemen	1994	\$443	South

Source: Author's elaboration.

Notes: Country income is for the year the conflict began, or the closest year for which data are available.

has been home to an armed rebellion led by the Ejército Zapatista de Liberación Nacional (EZLN) since 1994. The group's first "Declaration from the Lacandon Jungle" demanded that the government suspend the robbery of natural resources. Later, declarations blamed the government's intransigence on its desire to retain control of

Chiapas's oil wealth. In both cases, groups from these regions pushed for changes in government policies, not independence.

What explains the absence of separatist conflicts in the LAC region? For some historians in the region, the absence of separatist conflicts in the last century, and ethnically based separatist movements

for even longer, may be self-evident and unremarkable.²⁰ While several studies explore the scarcity of interstate wars in the region (Centeno, 2003; Kacowicz, 1998; Dominguez, 2003), none try to explain the absence of separatist wars.

The social and economic marginalization of the region's indigenous populations may have deprived them of the resources they would need to mobilize independently, sending them into alliances of convenience with better-endowed but more ideologically oriented rebel groups.

Although a full analysis of these “missing” separatist conflicts is beyond the scope of this paper,²¹ two explanations seem promising. First, most LAC states are relatively old, having gained independence in the early 19th century; this could explain the absence of separatism, either due to causation (as national boundaries became more widely accepted over time) or selection (as less cohesive states fell apart, while more cohesive states endured). This argument seems consistent with the history of conflict in the LAC region; one database

identifies 13 secessionist wars in the region between 1816 and 1900 (Wimmer and Min, 2009). The second factor is the pattern of mobilization of the region's indigenous communities. In the 20th century, these populations tended to mobilize for conflict along class lines, rather than ethnic ones. Instead of seeking their own sovereign states, they fought to overthrow incumbent governments and the economic and military elites they typically represented. According to Cleary (2000: 1133), indigenous people have often taken part in the region's insurgencies, but they have done so “as peasants or workers and not as indigenous people.” Crawford Young (1975: 428) observed that:

Indians qua Indians are not collective actors in the national political arena. They are actors on occasion as peasants (...) more often they are acted upon by parties of populist ideology led by elites of middle class origin.

Perhaps the region's indigenous groups mobilized along class lines because they lacked the requisite financial and human resources to organize along ethnic ones. According to resource mobilization theory, disaffected groups need access to a variety of resources in order to develop into a social movement (McCarthy and Zald, 1977; Tilly, 1978). The social and economic marginalization of the region's indigenous populations may have deprived them of the resources they would need to mobilize

²⁰ See, for example, Centeno (2003) and Van Cott (2005).

²¹ For a closer look at this problem, see Ross (2010).

independently, sending them into alliances of convenience with better-endowed, but more ideologically oriented rebel groups (e.g., Sendero Luminoso in Peru, the Ejército Zapatista de Liberación Nacional in Mexico, and a series of leftist movements in Guatemala).²²

CONCLUSIONS

At a global level, oil-producing countries are more likely to have civil wars than non-oil producing ones—especially in the post-Cold War era, and particularly among low- and middle-income countries. This chapter suggests that the LAC region's oil-producing countries partially fit the worldwide pattern. Compared to other countries in the region, they have had government conflicts at a higher rate, but separatist conflicts at the same rate. Yet the real anomaly is not oil's inability to induce secessionist rebellions, but the complete absence of them in the region for the last century. This implies that the conflict-inducing qualities of the oil industry are no different in Latin America and the Caribbean than anywhere else. Petroleum extraction seems to touch off the same kind of frustrations and protests, trigger the same demands for distributive

justice, and contribute to the same kinds of sabotage and extortion in the region—most visibly in Colombia, Bolivia, Ecuador, and Mexico—as it does in the rest of the world. Yet, neither mineral wealth nor any other set of circumstances has caused marginalized ethnic communities in the region to fight for independence.

Perhaps the dearth of violent ethnic separatism offers a clue to an even larger puzzle, which Miguel Centeno (2008: 160) articulates in a review of recent scholarship on Latin American history:

It is remarkable how a relatively small minority was able to retain power, even after the (temporary) arming of subalterns. The independence wars (of the nineteenth century) and the subsequent caudillo states did open up opportunities for those without Spanish blood. Why did control over power and arms not translate into a racial revolution? The relative continuity of racial hierarchy after independence seems to be one of the paradoxes of the nineteenth century.

Observers have offered many plausible ideas for reducing conflict risk in resource-rich countries, such as the direct distribution of resource revenues to citizens; the decentralization of resource revenues to local governments; greater transparency in revenue flows between companies and governments, including project-level reporting; better techniques for revenue smoothing

²² Although most of these alliances were with leftist groups, some were not. For example, Nicaragua's Miskito Indians received covert military assistance from the United States in their conflict with the Nicaraguan government in the early 1980s.

to reduce the boom-and-bust pattern that is characteristic of mineral-based economies; and improved efforts to change the relationships between extractive companies and local communities, by reducing negative externalities and generating positive ones, including better jobs and development opportunities (Ross, 2013).

This chapter raises more questions than it can answer. Further research is needed in many of the areas it touches upon, including the causal mechanisms that connect oil

wealth to violent conflict in specific cases; why secessionist conflicts have virtually disappeared in the region, even as they persist everywhere else; and how lower-level conflagrations develop and persist around mine sites. Most urgently, it is important to carefully consider the policy implications and identify interventions that can help end persistent resource-based conflicts and, more importantly, prevent new ones from breaking out.

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