

Natural Resources and Civil War: An Overview

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Abstract

Since the mid-1990s there has been a growing body of research on the causes of civil wars. One of the most surprising and important findings is that natural resources – in particular, oil and gemstones – play a key role in triggering and prolonging these conflicts.

This paper summarizes recent findings on natural resources and civil war. It explains four ways that resources increase the hazard of civil war: by harming a country's economic performance; by making its government weaker, more corrupt, and less accountable; by giving people who live in resource-rich regions an incentive to form an independent state; and by helping finance rebel movements. These patterns help explain the unusually high rate of civil wars in Sub-Saharan Africa, a region with many resource-dependent states.

Introduction

Since the mid-1990s there has been a growing body of research on the causes of civil wars. One of the most surprising and important findings is that natural resources play a key role in triggering, prolonging, and financing these conflicts.

The “natural resources” that cause these problems are largely oil and hard-rock minerals – including oil, gold, coltan, diamonds, and other gemstones. Sometimes other types of resources – notably timber – also play a role. And if drugs are considered a natural resource, they too have played an important role in several conflicts. Table One lists seventeen recent conflicts that are linked to natural resources. In eight of these conflicts, gemstones are one of the resources; in six conflicts, the resource is oil or natural gas; in five, it is some type of illicit drug; and in three cases, it is timber. In most of the conflicts, multiple resources play a role.

Over half of the conflicts in Table One are in Africa. Since many African states are highly-dependent on oil, gas, and mineral exports, they are unusually prone to resource-related conflict. Conversely, the region’s mineral abundance helps explain why a growing share of the world’s civil wars taken place in Africa.¹ In most regions of the world, the end of the Cold War led to a sharp drop in the number of civil wars, as the U.S., Soviet Union, and France reduced their financial support for peripheral insurgencies. Between 1992 and 2001, the number of armed conflicts *outside* of Africa dropped by half; yet in Africa the number of conflicts has stayed roughly the same [Figure Two]. Moreover, within Africa, armed conflicts have grown more severe. During the 1970’s and 1980’s, half of all intrastate conflicts in Africa could be classified

¹ Another important reason for this trend is the persistence of poverty in Africa; poverty significantly raises the risk of civil war.

as civil wars – that is, they generated at least one thousand battle-related deaths each year. In the 1990’s, two-thirds of Africa’s intrastate conflicts were civil wars. Africa had seven civil wars in the 1970’s, eight in the 1980’s, and fourteen in the 1990’s [Figure Two].

Before proceeding, it is important to emphasize two points. First, natural resources are never the *only* source of a conflict. Any given conflict is brought about by a complex set of events; often poverty, ethnic or religious grievances, and unstable governments also play major roles. But even after these factors have been taken into account, studies consistently find that natural resources heighten the danger that a civil war will break out, and once it breaks out, that conflict will be more difficult to resolve.

Second, natural resource dependence never makes conflict inevitable. Resource wealth raises the danger of civil war, but for every resource-rich country that has suffered from violent conflict, two or three have avoided it. Civil wars are still rare events. Outside of Africa, they are also getting rarer.

This article gives an overview of what recent scholarship can tell us about the role that natural resources play in civil wars. It describes four main pathways by which resources lead to armed conflict: through their effects on economies; through their effects on governments; through their effects on people living in resource-rich regions; and through their effects on rebel movements.²

² Important studies that touch on the role of natural resources in civil wars – and which I draw on in this article – include: Keen 1998; Collier and Hoeffler 1998, 2001; Elbadawi and Sambanis 2001; Fearon and Laitin 2002; Fearon 2002; Hegre 2002; Reynal-Querol 2002; Doyle and Sambanis 2001; De Soysa 2002; Buhaug and Gates 2002; and Ross 2002a, 2002b.

1. Resource Dependence and Economic Performance

Resource dependence appears to make countries more susceptible to civil war through two economic effects: by reducing growth and by increasing poverty.

Economic Growth

It may seem paradoxical that a ‘gift’ from nature of abundant oil, gold, or gemstones tends to cause economic distress. Yet study after study has found that resource-dependent economies grow more slowly than resource-poor economies.³ A recent report by the World Bank, for example, looked at the economic performance in the 1990s of countries that had large mining sectors.⁴ It found that in countries with medium-sized mining sectors (between 6 and 15 percent of all exports), GDP per capita *fell* at an average rate of 0.7 percent a year over the course of the decade. In countries with large mining sectors (between 15 and 50 percent of exports), GDP per capita dropped by an average of 1.1 percent a year, while in countries with very large mining sectors (over 50 percent of exports) GDP per capita dropped by a remarkable 2.3 percent a year. Collectively these mining states saw their GDP per capita fall at 1.15 percent a year – a drop over the course of the decade of almost 11 percent.⁵

This is a catastrophic record on economic grounds alone. But it also has implications for susceptibility of these states to civil war: recent studies suggest that

³ There is still much speculation about why this occurs. See Sachs and Warner 2001; Gylfason 2001; Manzano and Rigobon 2001; Leite and Weidemann 1999; Sala-i-Martin and Subramanian 2003. Ross 1999 reviews many earlier studies.

⁴ This study looked only at non-fuel minerals, i.e., not oil or natural gas.

⁵ World Bank 2002; see also Ross 2002c.

when a country's growth rate turns negative, a civil war is more likely to break out.⁶ In the three years leading up to the war in the Democratic Republic of Congo, for example, GDP growth averaged -5.56 percent; in the three years before the Congo Republic's civil war, growth was -1.94 percent; on the eve of Liberia's civil war, growth averaged -1.34 percent.⁷

Poverty Rates

A country's reliance on non-fuel mineral exports – and possibly oil exports as well – also tends to create atypically high poverty rates. A key reason is that resource-rich governments do an unusually poor job of providing education and health care for their citizens. One study found a strong correlation between greater dependence on oil and mineral exports and higher child mortality rates: for each increase in minerals dependence of five points, the mortality rate for children under the age of five rose by 12.7 per thousand; for each five point increase in oil dependence, the under-five mortality rate rose by 3.8 per thousand.⁸

Again, this pattern is intrinsically worrisome, but it also has consequences for a state's susceptibility to violent conflict. The greater a country's poverty, the more likely it is to face a civil war.⁹ Not surprisingly, people are more likely to rise up against their government when their economic predicament is bad and getting worse. Rebel groups find it easier to recruit new members when there is widespread poverty and

⁶ Collier and Hoeffler 2001; Hegre 2002.

⁷ Figures are taken from World Bank 2001.

⁸ Ross 2001b. Minerals and oil dependence was measured as the ratio of exports to GDP.

⁹ Collier and Hoeffler 2001; Fearon and Laitin 2002; Elbadawi and Sambanis 2002.

unemployment, since it makes the prospect of combat and looting seem more attractive by comparison.

A glance at the world's most oil dependent states, and most mineral dependent states, illustrates these patterns. Table Two lists the world's 20 most mineral-dependent states; eleven of them are classified by the World Bank as "highly-indebted poor countries" – the most troubled category of states – even though they earn large sums of foreign exchange from the sale of their resources. Since 1990, five of them have had civil wars.

Table Three lists the world's 20 most oil-dependent states. Here, too, the record is grim. Three of the top six states are classified as "highly-indebted poor countries," and once again, five of the 20 have suffered from civil wars in the 1990s.¹⁰

2. Resource Dependence and Governance

Natural resource dependence also has an impact on governments.¹¹ A strong and effective government should be able to offset some of the economic and social problems caused by resource dependence. But resource dependence tends to influence governments themselves, making them more susceptible to conflict. This seems to occur through three mechanisms: corruption, state weakness, and reduced accountability.

¹⁰ Resource dependence may also "dutch disease" effects, but it is not evident that this makes states more susceptible to civil war.

¹¹ Several recent studies suggest that oil and mineral dependence hurt economic growth primarily by damaging the institutions of governance. See Isham et al. 2003; Sala-i-Martin and Subramanian 2003.

Corruption

The first mechanism is government corruption. There is strong evidence that when a government gets more of its revenue from oil, minerals, and timber, it is more likely to be corrupt.¹² Part of this problem is due to the sheer volume of resource revenues: governments can only absorb, and effectively track, limited amounts of money. Resource wealth often floods governments with more revenue than they can effectively manage. Resource revenues also tend to be collected by governments in ways that are unusually difficult for citizens to track – and unusually easy for crooked officials to divert; hence some of it winds up in off-budget accounts or the pockets of government officials, and is never heard of again.

Other problems stem from the volatility of resource revenues. For the last century, the international prices for primary commodities – including oil and minerals – have been more volatile than the prices for manufactured goods.¹³ Since 1970, this volatility has grown worse.¹⁴ This means that when countries become more dependent on oil and minerals exports, they also become more vulnerable to economic shocks. Case studies suggest that the sudden ebb and flow of revenues tends to overwhelm normal budgeting procedures, promote corruption, and weaken the ability of government agencies to remain free from political interference.¹⁵

¹² Sachs and Warner (1999) find a strong correlation between resource dependence and a widely-used measure of corruption; studies by Gylfason (2001) and Leite and Weidmann (1999) produced similar results. Marshall (2001) also reports evidence of unusually high corruption rates in the minerals sectors of many countries.

¹³ Grilli and Yang 1988.

¹⁴ Reinhart and Wickham 1994.

¹⁵ Gelb (1988) for example, found that the oil booms of the 1970's were generally associated with a sharp drop in the efficiency of public investments, which indicates that corruption levels were rising. Similarly, Collier and Gunning (1999) found that

Ironically, the nationalization of foreign oil and minerals firms in the 1950s, 1960s, and 1970s made states more vulnerable to these kinds of revenue shocks. Before nationalization, foreign corporations typically captured and repatriated a large fraction of any resource rents, including those created by resource shocks. This "drain" of wealth was much resented by developing-state governments. Yet ironically, the repatriation of resource windfalls provided these governments with the unintended benefit of insulating state institutions from the volatility of international commodity markets. By expropriating foreign corporations -- at a time when resource prices were growing even more variable -- resource-exporting governments unwittingly exposed themselves to large market shocks.

In theory, governments should be able to buffer their economies against these market shocks by setting up stabilization funds, and perhaps, savings funds. Yet in practice, these funds are often poorly managed and may wind up doing more harm than good.¹⁶

There are, unfortunately, many examples of resource-linked corruption. One of the most egregious cases is Angola. According to an IMF report, almost \$1 billion disappeared from the Angolan government's accounts in 2001 alone due to corruption. Fiscal discrepancies over the previous several years represented between 2 and 23 percent of the country's gross domestic product. Most of these losses were linked to the country's dependence on oil. Large fractions of the signing bonuses for oil contracts

commodity booms in developing states, for a wide range of products, were associated with a subsequent fall in investment efficiency. Ross's (2001c) study of the Malaysian, Indonesian, and Philippine timber sectors reports that rising timber prices led to heightened levels of corruption, and the dismantling of institutions that had earlier protected the forest sector from misuse.

¹⁶ Ascher 1999; Davis et al. 2001.

disappeared, and the state oil company, Sonangol, was criticized for managing the country's oil receipts through 'a web of opaque offshore accounts,' even though Angolan law requires that the funds be handled by the central bank.¹⁷

Weak Government

Natural resource revenues can, ironically, weaken governments – making them less likely to resolve social conflicts and provide public goods, like health care and education.

There are two ways this can happen. One way is by retarding the effectiveness of a state's bureaucracy. Some scholars have found that when governments are funded through oil or mineral revenues instead of taxes, they are left with weaker governments. Much of a government's "strength" comes from its capacity to extract taxes from the population – a capacity that often takes decades to develop. A government that fails to develop this ability may also be unable to establish the type of bureaucracy that can provide effective public goods, and ameliorate social conflicts. The result may be a heightened danger of civil war.¹⁸

A second route is by weakening the state's territorial control. If a country has resources that are highly valuable, and can be mined with little training or investment – such as alluvial gemstones, coltan or tanzalite – it will be difficult for the government to provide law and order in the extractive region. These kinds of mineral deposits attract large numbers of artisanal miners to what are typically rural, "frontier" regions, where the government's influence is weak. Land claims in these areas become valuable, yet the weakness of the government's authority makes it hard for claimants to enforce or protect

¹⁷ Cauvin 2002. Also see Global Witness 2002.

¹⁸ Mahdavy 1970; Beblawi 1987; Karl 1997; Fearon and Laitin 2003.

their property rights through legal measures. As a result, they often resort to extralegal measures, including violence, to establish claims and adjudicate disputes. The utility of violence creates a demand for organizations – like criminal gangs, warlords, and rogue military units – that for a price will use extralegal means to enforce mineral claims.¹⁹ In addition, the high value-to-weight ratios of these minerals make them difficult to tax and easy to smuggle; these qualities produce high corruption levels inside the government, and large smuggling operations outside of it. The combination of weak, corrupt government authority, and strong criminal organizations can facilitate the rise of rebel movements.²⁰

The case of Sierra Leone illustrates how alluvial minerals, scattered over a wide area, can weaken a government's territorial control and lead to civil war. From the 1930s to the 1960s, Sierra Leone had a robust, mineral-based economy that produced iron ore, gold, bauxite, and rutile (titanium oxide), in addition to diamonds.²¹ Most of these resources were mined by foreign firms or state-owned companies that provided the government with large revenues, and enormous patronage resources. But in the 1970s and early 1980's Sierra Leone's iron ore and kimberlite diamonds were worked out. The mining of alluvial diamonds by informal methods became, by default, the country's main source of non-agricultural wealth.

¹⁹ This mechanism has been discussed by several scholars. See, for example, Michelle Garfinkel and Stergios Skaperdas (eds.), *The political economy of conflict and appropriation*. New York: Cambridge University Press (1996);

²⁰ See Reno 1995, 1998; Ross 2002b.

²¹ Sierra Leone had both *kimberlite* diamonds, which are diamonds located deep underground and can only be extracted with heavy equipment, and *alluvial* diamonds, which are scattered in the soil of alluvial plains, and can be extracted by unskilled workers with little training or equipment.

The Sierra Leone government had long had difficulty exercising its authority over the diamond fields, which was home to tens of thousands of unlicensed miners, plus a network of armed gangs, private armies and paramilitary forces that sold protection services to miners and traders.²² Even before civil war broke out in 1991, Sierra Leone's growing dependence on alluvial diamonds was causing problems for the government: instead of generating revenues, the diamond fields were generating extraordinary levels of corruption. In 1988 official diamond exports were worth \$22,000, while illicit diamond exports were worth perhaps \$250 million.²³

As long as the national economy was otherwise in good shape, the government was able to manage the corruption, warlords, and private armies in the diamond fields. But in the 1980s the country entered an economic crisis, due to the high price of imported oil, dropping commodity prices, the mining out of kimberlite diamond and iron ore deposits, and economically ruinous government policies. From 1975 to 1990, government revenues dropped from 14.5 percent to just 3.9 percent of GDP. Moreover, in 1985 the politically artful President, Siaka Stevens handed power over to his less adept successor, Joseph Momoh.

Collectively, these changes led to the deterioration of the central government's influence over the diamond-rich areas. Hence when a small group of insurgents called the Revolutionary United Front – totalling just one hundred men – crossed the border from Liberia in March 1991, the Sierra Leone government was too weak to repel them.

²² In fact, the mining area was the site of social unrest as early as 1955. See Reno (1995) op. cit.; Paul Richards, *Fighting for the Rain Forest: War, Youth, and Resources in Sierra Leone*. Oxford: James Currey (1996).

²³ William Reno, *Warlord Politics and African States*, Lynne Rienner, Boulder (1998), p. 120.

Instead, the country was drawn into a civil war that lasted ten years, caused between 20,000 and 50,000 deaths, and displaced at least one-third of the population.

Unaccountable Government

The third effect is reduced government accountability. Governments that get their income from natural resources become less democratic – and hence, less accountable – than countries that rely on other revenue sources, such as taxation.

One reason for this pattern is that when governments have an abundance of revenues, they use part of their surplus to quell dissent. Sometimes they do this through tax policies: resource-rich governments commonly use their revenues to reduce or eliminate taxes on their populations; in the absence of taxes, people are less likely to demand accountability from their government.²⁴ Other times they do it through spending: greater patronage can also dampen latent pressures for democratization. In some cases governments use their largesse to prevent the formation of independent social groups that might eventually demand political rights.²⁵ Of course, all undemocratic rulers use their fiscal powers to reduce dissent, but governments in resource-rich states tend to have extra revenues at their disposal.

A second reason is that oil and mineral-rich governments spend an unusually large fraction of their revenues on the military, which also helps them repress dissent.²⁶ Figure Three illustrates this pattern: it charts the average military spending (as a fraction of Gross National Income) of the twenty most oil and mineral-dependent, and the twenty

²⁴ Ross forthcoming.

²⁵ Moore; Vandewalle; Bellin.

²⁶ Ross 2003

least oil and mineral-dependent, states in the developing world between 1989 and 1999. Military spending is consistently between two and four times greater in the mineral-rich states than in the mineral-poor states.

There are other ways that an extractive industry can boost the influence of the armed forces. Sometime the industry is controlled by the military, which gives the military more independence from, and greater influence over, the civilian government. In Indonesia, for example, the military has a large stake in many forest concessions, and collects fees from oil, gas, and mineral companies. Since this money goes to the military directly, it does not pass through the central government's normal budgeting procedures, and the legislature has no influence over how it is spent. The result is that the extractive sector helps make the military less accountable to the civilian government, undermining Indonesia's fragile democracy.

Once again, the harm that resource dependence does to democracy is intrinsically deplorable, but it can also make states more vulnerable to civil war. Several studies have found a link between a government's accountability and the likelihood that it will suffer from a civil war.²⁷ Governments that are less than fully democratic are less able to resolve the grievances of their citizens, and hence may be more prone to outbreaks of violent conflict.

It is easy to see how the effects of resource dependence on economies and governments can reinforce one another, creating a trap. Economic volatility, and low growth, tend to destabilize governments. When governments are unstable, they cannot manage their economies well and properly mitigate economic volatility and slow growth.

²⁷ See Hegre 2002 for a careful discussion of this issue.

Many countries – including Algeria, the Democratic Republic of Congo, Liberia, and Sierra Leone – have fallen into these conflict traps.

3. Resource Abundance and Secessionist Movements

Resource wealth tends to promote civil wars through a third mechanism, by giving people who live in resource-rich areas an economic incentive to form a separate state.²⁸ Table Four lists nine secessionist civil wars in regions that have abundant mineral resources.²⁹

The regions that suffered from resource-inspired insurrections have several elements that set them apart from similar, but non-rebellious regions. One is that before the resource was exploited, people in these areas had a distinct identity – whether ethnic, linguistic, or religious – that set them apart from the majority population. Another is that local people typically bore many of the costs of the extraction process itself – due to land expropriation, environmental damage, and the immigration of labor from other parts of the country. Finally, there was commonly a widespread belief that the central government was unfairly appropriating the wealth that belonged to them, and that they would be richer if they were a separate state. Interestingly enough, this final belief is sometimes mistaken.

The case of Aceh, Indonesia, offers a good illustration.³⁰ In many ways, Aceh – a province on the northern tip of the island of Sumatra – was an unlikely place for a

²⁸ Important analyses of this problem include Le Billon 2001; Collier and Hoeffler 2002; Fearon 2002.

²⁹ Since any region might be perceived as having some type of resource, I have limited this list to regions that had significant oil or mineral industries in operation, or under development, at or near the time that the civil war began.

Examples can also be found in wealthy states: Collier and Hoeffler [2002] describe the case of Scotland, where a peaceful independence movement emerged in the early 1970s, following a sharp rise in the value of North Sea oil.

separatist rebellion. Aceh played an important role in throwing off Dutch colonial rule in the 1940s, and establishing the Indonesian republic. Although the Acehnese consider themselves ethnically distinct from the rest of Indonesia's population, they adhere to the same religion (Islam) and generally speak the national language (Bahasa Indonesia). Aceh had one of the highest rates of economic growth of any province in Indonesia in the 1970s and 1980s; by the late 1990s Aceh was at or above the national average in per capita income, and in most welfare categories.

Yet a secessionist movement was formed in Aceh in 1976, just as a large natural gas facility was beginning its operations. The facility generated local resentments in at least four ways: the site's construction displaced hundreds of families and several entire villages; the area's development created a wave of immigration and subsequently an anti-immigrant backlash; the discharge of chemicals, plus periodic gas leaks, caused health problems among locals; and the influx of revenues, and the large police and military presence, led to exceptionally high levels of corruption.

But the most important source of discontent was the belief that the jobs and the revenues from the natural gas plant were not being adequately shared with the people of Aceh. This issue was seized upon by the separatist movement, popularly known as GAM (*Gerakan Aceh Merdeka*). GAM propaganda suggested that if independent, the Acehnese would become wealthy like the citizens of Brunei, the tiny oil-rich sultanate on the island of Borneo. This claim was wildly exaggerated, by at least an order of magnitude; but it was widely believed, reflecting the low credibility of the Indonesian government. Although small at first, by the late 1990s GAM won widespread support

³⁰ This account is based on Ross 2002d.

among the population, partly due to the brutality and ineptitude of the government's anti-insurgency campaign.

The civil war in the Sudan was also triggered, in part, by a dispute over how to divide the benefits of mineral wealth. In 1983 Sudanese President Numeiry took a series of measures that upset the delicate balance between the predominantly Muslim north and the heavily Christian and Animist south; among them was his decision to place newly discovered oil in the country's south under the jurisdiction of the north, and to build an oil refinery in the north instead of the south. The Sudan People's Liberation Army (SPLA) subsequently complained that the north was stealing the resources of the south, including oil; demanded that work cease on a pipeline to take oil from the south to the refinery in the north; and in February 1984, attacked an oil exploration base, killing three foreign workers and bringing the project to a halt.³¹ Instead of responding to the SPLA's demands, however, the government waged a campaign of astonishing brutality. To date, the conflict has killed an estimated two million people.

These essential features – an ethnically distinct population that bears too many of the costs of resource extraction, and enjoys too few of the benefits – are repeated in most of the other cases and have repeatedly led to long and bitter civil wars.³²

4. Rebel Financing

To assemble and sustain a fighting force of hundreds or thousands of soldiers, a rebel group needs a regular source of income.³³ Before the end of the Cold War, successful

³¹ O'Ballance 2000, Anderson 1999.

³² According to Fearon 2002, separatist insurgencies over natural resources tend to last longer than any other type of civil war.

rebel groups in the developing world were typically financed by foreign powers – most often the U.S., the Soviet Union, and France. Since the Cold War ended, insurgent groups have been forced to find other ways to bankroll themselves; many have turned to the natural resource sector.³⁴

Why natural resources? There are probably two reasons: the extraction of natural resources can produce unusually large profits (i.e., rents); and their production is tied to a specific location and cannot be easily moved. These characteristics make natural resource firms – particularly mineral firms – unusually susceptible to looting, or extortion, on a sustained basis. If rebels instead try to loot or extort money from manufacturing firms, the firms will move to a safer area, or be forced out of business. But mining firms cannot move, and they often earn enough money to pay off rebel groups and still earn a profit. These characteristics – plus the location of most resource industries in rural areas, remote from government centers – make resources an ideal source of income for rebel groups.

There are three main ways that rebels raise money from resources: through the direct looting and sale of resources; through the sale of resource futures; and through extortion and kidnapping.

Direct Resource Looting

There are many examples of rebel groups that have financed themselves by selling natural resources. In general, these are resources that can be easily exploited by small

³³ This argument is developed by Collier and Hoeffler 2001.

³⁴ Keen 1998.

numbers of workers with little training, and little or no investment – such as gemstones, coltan, or timber. Since the late 1980s there have been seven prominent examples:

- Angola's UNITA, which over the course of the 1990s sold hundreds of millions – perhaps even several billion – dollars worth of diamonds;³⁵
- Afghanistan's Northern Alliance, which in the 1990s financed itself through the sale of \$40-60 million of lapis lazuli annually;³⁶
- A variety of groups in Burma associated with the Kachin, Wa, and Shan peoples, sustained their armies in the 1970s and 1980s by selling jadeite, rubies, sapphires, timber, and opium;³⁷
- Cambodia's Khmer Rouge, which at their peak in the early 1990s earned between \$120 and 240 million a year from the sale of rubies and timber;³⁸
- A range of armies in the Democratic Republic of Congo have systematically looted the country from the beginning of the current conflict, in 1998, to the present; these include both foreign forces (particularly those from Rwanda, Uganda, and Zimbabwe) and domestic militias [notably the factions of the Rassemblement congolais pour la démocratie (RCD), the Maï Maï, and the Mouvement de libération congolais (MLC)]. Among the looted goods have been diamonds, gold, coltan, timber, and coffee.³⁹

³⁵ Le Billon 1999.

³⁶ Rubin 2000.

³⁷ Lintner 1999; Smith 1999

³⁸ Brown and Zasloff 1998; Le Billon 2000.

³⁹ See UN Panel of Experts, 2001.

- In the early 1990s in Liberia, Charles Taylor’s National Patriotic Front of Liberia was thought to be earning some \$75 million a year from taxing the sale of diamonds, timber, rubber, cannabis, and iron ore;⁴⁰
- In Sierra Leone in the mid-to-late 1990s, the Revolutionary United Front (RUF) sustained itself largely by producing between \$25 million and \$125 million in diamonds per year.⁴¹

In some of the conflicts that began during the Cold War but continued after it, insurgents were forced to switch from foreign funding to natural resource funding. In Angola, for example, UNITA (National Union for the Total Independence of Angola) was financed by the United States and South Africa for most of the 1970s and 1980s. In the mid-1980s, however, UNITA set up bases in the diamond-rich provinces of northeast Angola. At first it gained revenue by attacking mines and establishing protection rackets; later it began to act more like a government, controlling and taxing both mines and artisanal miners. For a time, UNITA received income from both the diamond trade and its foreign sponsors; but the end of the Cold War, and the end of apartheid in South Africa, left UNITA with no outside support.

After the breakdown of a 1991-92 peace initiative, UNITA launched a brutal offense that brought all of Angola’s diamond-rich areas under UNITA’s control. Over the course of the 1990s UNITA raised hundreds of millions – perhaps even several billion – dollars from diamond sales. Although vast sums were lost in corruption, the revenues also helped sustain UNITA as a military force.⁴²

⁴⁰ Ellis 1999.

⁴¹ UN Panel of Experts, 2000.

⁴² . [Fowler; GW; Le Billon 1999; Human Rights Watch 1999].

Cambodia's Khmer Rouge went through a similar transition. From 1979 to the late 1980s, the Khmer Rouge – largely exiled in Thailand – was financed by the Chinese government. But at the end of the 1980's the Chinese government curtailed its support, which forced the Khmer Rouge to adopt a new financial strategy. In December 1988 Khmer Rouge leader Pol Pot explained the strategy to his troops:

We are spending many tens of millions of baht to augment the assistance of our foreign friends, but that is still not enough and there are many shortages. It is thus imperative that we find ways to develop the natural resources that exist in our liberated and semi-liberated zones as assets to be utilized in the fight against the [Vietnamese-backed Cambodian government] [quotes in Thayer, 2/7/91].

Shortly after this speech, the Khmer Rouge captured a strip of Cambodian territory that was rich with ruby and sapphire deposits, and commercially-valuable timber, and gave mining and logging licenses to Thai companies [Abuza 1993]. These arrangements produced a substantial income for the Khmer Rouge, which enabled it to continue its fight until 1997.⁴³

Sale of Future Rights to War Booty

There is also a less common – but possibly more dangerous – type of resource transaction: the sale of future exploitation rights to the spoils of war. The seven examples above cover the sale of resources already captured by the rebels; but sometimes

⁴³ [Thayer 2/7/91; BZ 251-2], Le Billon

combatants sell exploitation rights to natural resources that are not yet under the seller's control, but which the seller hopes to capture in battle.

Since these transactions are for the sale of *future* exploitation rights, they might be called “booty futures.” They are similar to other types of commodity futures. But while normal markets for commodity futures – like the Chicago Board of Trade – are formal, regulated, centralized at a single location, and have many buyers and sellers, the wartime market for booty futures is informal, often covert, has no fixed location, and includes a relatively small number of actors. It only operates in Africa, at least so far.

The booty futures market can help solve the financing problems that prospective rebel movements often face, provided that they wish to do battle in a resource-rich country. If an aspiring rebel group has no money, but stands a chance of capturing valuable resources in combat, it can sell off the future right to exploit the resources it hopes to capture, either to a foreign firm or a neighboring government. The rebels can then use this money to pay soldiers and buy arms, and thus gain the capacity to capture the promised resource.⁴⁴

The market for booty futures is in some ways more dangerous than the standard market for conflict diamonds and other wartime commodities, since the booty futures market tends to benefit the weakest combatants. When a combatant in a civil war sells natural resources that are under their control, it indicates they are in a relatively strong military position, since they control a valuable piece of territory. But if they must sell resource futures, it implies they are in a weak position, since they have not yet captured the resource whose value they hope to exploit. The sale of booty futures is a tool of the

⁴⁴ On the growing importance of private military firms, see Singer 2001.

weak against the strong: it helps fund groups that are too poor, or too feeble, to capture territory on their own, and might otherwise be forced to surrender. It hence tends to fund the initiation of civil wars that might otherwise never begin, or help lengthen wars that are on the verge of ending.

The sale of booty futures is also dangerous because it has self-fulfilling properties. If the rebel group was unable to sell the future right to exploit the resource, it might not have the funds it needs to capture the resource itself. Selling the future right to the resource makes its seizure possible. Without the futures market, the rebel offensive – and perhaps the conflict itself – would be less likely.

The trade in booty futures can not only help initiate conflicts, it can lengthen pre-existing conflicts. If either side in a civil war is near defeat, and it is fighting for control of resource-rich territory, it can try to sell off the future right to exploit the resources it hopes to capture or retain on the battlefield. Again, the sale of booty futures can have self-fulfilling properties: the sale of future rights enables the army to actually capture or hold the resource itself. Instead of being defeated or forced to the negotiating table, the army is able to continue fighting – thus lengthening the war.⁴⁵

In the 1997 civil war in Congo-Brazzaville, the private militia of former President Denis Sassou-Nguesso was funded, in part, by the sale of future exploitation rights to the Congo's substantial oil reserves. On the eve of the conflict, Sassou received substantial

⁴⁵ The sale of booty futures is not an entirely new phenomenon. In 1960, the Katanga rebellion in the Democratic Republic of Congo, led by Moïse Tshombe, was bankrolled by a Belgian mining firm, Union Minière du Haut Katanga; in exchange, the firm apparently sought future mineral rights. See Gibbs 1991. During Algeria's war of independence, the Italian oil company ENI reportedly supplied money and arms to the National Liberation Front (FLN) in exchange for future "considerations". See Le Billon 2002a.

assistance from a French oil company, Elf-Aquitaine (now TotalFinaelf). Some reports suggest he received \$150 million in cash; others state that Elf helped him purchase arms.⁴⁶ These funds enabled him to defeat the incumbent president, Pascal Lissouba, following a four-month war that destroyed much of Brazzaville and cost 10,000 lives.

At two separate junctures, the sale of booty futures – this time by the government – prolonged the Sierra Leone war. In March 1995, the rebel RUF had taken control of the country's main diamond fields and advanced to within 20 miles of the capital. To stave off defeat, the government offered future mining rights to the Kono diamond fields – then in rebel hands – to Branch Energy, a South African company. In exchange, the government received the services of a South African mercenary firm, Executive Outcomes, which was closely linked to Branch Energy. The strategy proved highly successful for the government: by the end of 1995, Executive Outcomes had captured the Kono diamond fields, turned them over to Branch Energy to manage, and put RUF on the defensive. It was somewhat less successful for Executive Outcomes, which was never fully paid for its services by the cash-strapped government.⁴⁷

The Sierra Leone government also traded diamond futures for military support a second time, two years later, when it once again teetered on the edge of defeat. In May 1997, the government of President Ahmad Tejan Kabbah was overthrown by a group of junior military officers and was forced into exile. To finance a counteroffensive, Kabbah decided to sell \$10 million diamond futures to Rakesh Saxena, a banker from Thailand. Saxena, in December 1997; he then used the proceeds to hire the services of Sandline, a

⁴⁶ See Galloy and Gruénai 1997; Johannesburg Mail and Guardian 1997.

⁴⁷ This transaction is discussed in John L. Hirsch, *Sierra Leone: Diamonds and the Struggle for Democracy* (Boulder: Lynne Rienner, 2001).

London-based mercenary firm. Over the next three months, Sandline and Nigerian forces (who were operating under the authority of the Economic Community of West African States) launched a military offense that forced the junta from power. In March 1998, Kabbah returned to Freetown, the Sierra Leone capital, and was restored as President.⁴⁸

These booty future swaps – and similar trades in the Democratic Republic of Congo, Liberia, and Angola – have in each case helped initiate a war or prolong one that appeared to be ending.⁴⁹

Extortion and Kidnapping

Under certain circumstances, rebels can earn large sums by extorting money from, and kidnapping the workers of, resource firms. Although extortion and kidnapping are endemic in conflict zones, oil, gas, and mining industries are exceptionally susceptible to them – partly because they may operate in remote areas, partly because mines cannot be relocated to safer areas, and partly because they earn rents, and therefore may remain profitable even after paying off extortionists.⁵⁰

Extortion and kidnapping have been important features of the Colombian civil war, and they have also played smaller roles in the wars in Sudan and Aceh, Indonesia. In Colombia and Sudan, the targeted resource was oil – or rather, a long oil pipeline that ran through contested territory. In Aceh, it was a natural gas facility.

⁴⁸ Ibid.; Africa Confidential, "Chronology of Sierra Leone: How diamonds fuelled the conflict," from www.africa-confidential.com/special.htm. Downloaded August 15, 2001.

⁴⁹ See Ross 2002a.

⁵⁰ Kidnappings are often carried out by other types of criminal organizations as well, including paramilitary groups and rogue police units.

In Colombia, oil must be transported to the coast from the unstable interior through pipelines that are hundreds of miles long. In 2000, the pipelines were bombed 98 times. Colombia's rebel groups have used these attacks to extort an estimated \$140 million annually; this windfall has enabled one group, the National Liberation Army (ELN), to grow from fewer than 40 members to at least 3,000.⁵¹

Colombia's rebel groups have also turned kidnapping into a major industry. According to a government study, between 1991 and 1999 they earned a remarkable US \$1.5 billion from kidnap ransoms; many victims were associated with the oil industry.⁵²

The problem has been compounded, ironically, by the growing use of kidnap insurance. Insurance helps individual victims of kidnapping. But it also encourages the growth of the kidnapping industry by making ransom payments swifter and easier, and reducing the precautions that potential victims should exercise.

Conclusion

This paper reviews what scholars have learned about the role that resources play in conflict. It suggests that resource dependence can promote civil war through four types of effects: by harming a country's economic performance; by making its government weaker, more corrupt, and less accountable; by giving people who live in resource-rich regions an incentive to form independent states; and by helping finance rebel movements.

Many of the countries suffering from resource-based conflicts are stuck in low-level development traps. In these countries – most of them in Africa – poverty, weak governance, and violent conflict reinforce one another. Left to their own devices, these

⁵¹ Dunning and Wirpsa 2002.

⁵² Pax Christi Netherlands 2001.

countries will generate extraordinary hardships for their own citizens, and ultimately, impose substantial costs on the international community.

It is easier to explain these problems than to craft viable solutions. Some partial remedies might include: measures to encourage export diversification in resource-dependent countries; reducing the volatility of resource revenues; increasing the transparency of resource payments by firms to governments; increasing government transparency in the management of resource revenues; preventive diplomacy; restricting the trade of high-risk, conflict-related commodities; banning the sale of future rights to war booty; and restricting the payment of ransoms to kidnappers.

Some steps have already been taken. A major effort to restrict the trade in ‘conflict diamonds’ was launched in May 2000, at a conference in Kimberley, South Africa. The ‘Kimberley Process’ entails an agreement by the diamond industry to trade only diamonds that can be certified as originating from legitimate sources.⁵³ Even if it works as planned, the Kimberley Process only addresses one of several conflict commodities: rubies, sapphires, jadeite, and lapis lazuli, coltan, and even timber have also been used to finance recent conflicts. All of these resources are highly ‘lootable’ – that is, they can be extracted by unskilled workers, and have high value-to-weight ratios. These qualities also make them difficult to control through national and international regulations.

As difficult as it may seem to prevent civil wars, it has grown easier in the last ten years. The funding that natural resources provide to warring governments and rebels can, in principle, be stopped; the funding that the great powers once provided to combatants

⁵³ For an excellent account of the Kimberley Process, see Le Billon 2002b.

could not. Ten years ago, before there was much of an internet, financial transparency was a weak tool; now it is becoming a strong one. The conflicts in Angola and Cambodia were brought to an end, in part thanks to the efforts of international NGOs and United Nations to cut off natural resource funding. If the international policy community wishes to reduce the hazard of civil war, particularly in Africa, the natural resource trade could play an important role.

Table One: Civil Wars Linked to Resource Wealth, 1990-2002

Country	Duration	Resources
Afghanistan	1978-2001	Gems, opium
Angola	1975-2002	Oil, Diamonds
<i>Angola (Cabinda)</i>	1975-	Oil
<i>Burma</i>	1949-	Timber, tin, gems, opium
Cambodia	1978-97	Timber, gems
Colombia	1984-	Oil, gold, coca
Congo, Rep.	1997	Oil
Congo, Dem. Rep.	1996-97	Copper, coltan, diamonds, gold, cobalt
Congo, Dem. Rep.	1998-	Copper, coltan, diamonds, gold, cobalt
<i>Indonesia (Aceh)</i>	1975-	Natural gas, marijuana
<i>Indonesia (W Papua)</i>	1969-	Copper, gold
Liberia	1989-96	Timber, diamonds, iron, palm oil, cocoa, coffee, marijuana, rubber, gold
<i>Morocco</i>	1975-	Phosphates, oil
<i>Papua New Guinea</i>	1988-	Copper, gold
Peru	1980-1995	Coca
Sierra Leone	1991-2000	Diamonds
<i>Sudan</i>	1983-	Oil

Separatist conflicts are listed in italics.

Table Two: Non-fuel Mineral Dependent States

	<i>State</i>	<i>Minerals Dependence</i>
1.	Botswana	35.1
2.	Sierra Leone*	28.9
3.	Zambia*	26.1
4.	United Arab Emirates	18.2
5.	Mauritania*	18.4
6.	Bahrain	16.4
7.	Papua New Guinea	14.1
8.	Liberia*	12.5
9.	Niger*	12.2
10.	Chile	11.9
11.	Guinea*	11.8
12.	Congo, Dem. Rep.*	7.0
13.	Jordan	6.3
14.	Bolivia*	5.8
15.	Togo*	5.1
16.	Central African Republic*	4.8
17.	Peru	4.7
18.	Ghana*	4.6
19.	Bulgaria	4.0
20.	Angola*	3.6

*Highly Indebted Poor Country; **bold** signifies a civil war since 1990.

Mineral Dependence is the ratio of non-fuel mineral exports to GDP; figures are for 1995.

Table Three: Oil Dependent States

	<i>State</i>	<i>Oil Dependence</i>
1.	Angola*	68.5
2.	Kuwait	49.1
3.	United Arab Emirates	46.3
4.	Yemen*	46.2
5.	Bahrain	45.7
6.	Congo (Brazzaville)*	40.9
7.	Nigeria	39.9
8.	Oman	39.5
9.	Gabon	36.1
10.	Saudi Arabia	34.3
11.	Qatar	33.9
12.	Algeria	23.5
13.	Papua New Guinea	21.9
14.	Libya	19.8
15.	Iraq	19.4
16.	Venezuela	18.3
17.	Norway	13.5
18.	Syria	13.5
19.	Ecuador	8.6
20.	Bhutan	6.8

*Highly-Indebted Poor Country; **bold** signifies a civil war since 1990.
Oil Dependence is the ratio of oil, gas, and coal exports to GDP; figures are for 1995.

Table Four: Mineral Resources and Secessionist Movements

Country	Region	Duration	Resources
Angola	Cabinda	1975-	Oil
Burma	Hill tribes	1949-	Tin, gems
Congo, Dem. Rep	Katanga/Shaba	1960-65	Copper
Indonesia	West Papua	1969-	Copper, gold
Indonesia	Aceh	1975-	Natural gas
Morocco	West Sahara	1975-88	Phosphates, Oil
Nigeria	Biafra	1967-70	Oil
Papua New Guinea	Bougainville	1988-	Copper, gold
Sudan	South	1983-	Oil

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