

VIOLENCE IN AFRICAN PETROL STATES

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ABSTRACT

Fluctuations in global petroleum prices can explain part of the variation in political violence in three African petrol states: Angola, Nigeria, and Algeria. As petrol states, all these countries have depended on imports of food and other basic commodities purchased with oil export receipts. Thus, when petrol prices and the economic performance of these countries fall, the states decrease imports to their citizenry. In turn, disaffected populations become open to recruitment by rebel leaders or political entrepreneurs who oppose the highly centralized and exclusive patrimonial African petrol states. Wealthy petrol states usually choose to meet violent opposition with violence because acceding to rebel demands only incites others to take up arms against the state. The process of violent rebellion and state countermeasures is shown using two regression models of violence during civil war periods and non-civil war periods.

VIOLENCE IN AFRICAN PETROL STATES

One can understand why violent opposition movements are not co-opted in economically weak less developed countries, but why do they continue to manifest themselves in various forms throughout resource-rich countries? Specifically, what factors cause violence in African petrol states to arise, and why do resource-rich governments choose to engage these movements with violence rather than simply co-opt them with state wealth?

Using the dependent variable *violence*, this paper uses two main regression models – a civil war model and a non-civil war model – to assess causes of the variation in politically related violence in resource-rich petrol states. This paper finds that, other things being equal, changes in African petrol state violence are partially explained by variations in global petroleum prices. Specific evidence from three states – Angola, Nigeria and Algeria – demonstrates that when petrol states depend upon food commodities imported with oil monies, the African petrol state makes up revenue shortages by decreasing the importation of goods to its citizenry. This generally leads to the recruiting of disaffected and impoverished citizenry by political entrepreneurs who pursue rival political and economic goals.

After reviewing petrol state literature and statistical/econometric-based civil war analyses, I offer theoretical explanations and statistical findings. Then, I support them with qualitative evidence and conclude that variations in global petroleum prices explain variations in violence in African petrol states.

AFRICAN PETROL STATES: BACKGROUND ANALYSIS

How does one recognize a petrol state? First, its export structure is predominantly based on oil. Three of the states on the panel described below have export structures ranging from 75% to 98% oil over the 26 years analyzed. Correlatively, gross domestic products (GDP) are linked directly to the global demand for oil, which was especially evident in the 1970s when petrol states' GDPs were rapidly increasing (Karl, 1999, 6-7). Petrol states generally suffer from "Dutch Disease," which occurs when oil revenues overvalue the exchange rate and make other sectors uncompetitive in global markets. As a result, the non-oil economy declines, leading to increasing reliance on oil. In addition, petrol states generally become rentier states receiving monies from outside of the country, which makes their populations unnecessary since they do not need to rely

C. LOONEY: AFRICAN PETROL STATES

on taxes as a revenue source (Karl, 1999, 5-6). Thus, the state becomes an isolated entity, completely autonomous from any pressures that do not threaten its vital input: petrol dollars. Because there are no democratic avenues for the populace to make grievances known, violence is usually the only means to draw attention to grievances; however, while petrol states may be autonomous from their populations, their structure and governing behaviors hinder their ability to quell violence.

State structures are weak. In particular, African state structures are weak because generally, they are remnants from colonial times. European powers created state structures within their colonial territories in order to promote their interests while claiming they were "civilizing" barbaric peoples. However, the African states that Europeans established lacked essential democratic attributes such as checks, balances, and transparency (Berman, 1998, 314). Furthermore, in many instances after African states gained independence, local elites merely took over the role of the colonial power. Why would they change the state structures that were designed so efficaciously to accommodate corrupt governance?

Since oil monies are poorly accounted for in these countries and oil companies do not disclose how much states receive, corruption abounds, most obviously manifested in the clandestine pocketing of oil revenues, but more fully demonstrated in government policies (Karl, 2003, 26). For instance, domestic investments occur, but are generally directed at lavish projects that predominantly benefit those who conceive them. This altering of government policy to benefit individuals, or rent-seeking, becomes the political norm and the number of rent-seekers, or patrons, increases during booms along with new grievances about current distributions (Karl, 2003, 19, 21, 24). By contrast, busts obviate petrol dollars while patrons of the governments still expect revenues to continue, which can drastically affect the stability of the state (Karl, 2003, 19, 21, 24).

Distributive policies keep these states stable. Money flows into the pockets of regional leaders and central government coteries that are essential to keeping dictators in power. As a result, decreases in oil prices affect the state before the general population. Thus, when a state's networks become agitated, it may resort to brazen maneuvers such as denying its citizens basic goods. African petrol states do, however, have International Financial Institutions (IFI) to fall back on in a crisis.

IFIs such as the World Bank Group, and Export Credit Agencies (ECA) play a crucial role in contributing to short-term regime stability in African petrol states by promoting the principle of comparative advantage. ECAs are specifically designed to increase exports from lesser-developed countries to the developed world (Karl, 2003, 7). ECAs finance projects in high risk localities and are not, like the World Bank, restricted by socio-environmental regulations (Karl, 2003, 15-16). For example, while U.S. President Ronald Reagan was supporting UNITA rebels and trying to oust the MPLA government during the Angolan Civil War, U.S. ECAs (Export-Import Bank and the Overseas Private Investment Corporation) were contributing to MPLA's hold on Luanda (Karl, 2003, 17). It is obvious that without Angola's resource wealth, financial institutions would not have considered venturing into a country so ridden with civil war.

THE EVOLUTION OF STATISTICAL STUDIES

Statistical variables need to be derived and interpreted through some sort of causal template. In 1998, Collier and Hoeffler ran two regression models on the determinants of occurrence and duration of civil wars in all countries from 1960-1992. They derived their variables from a "rebel utility function," specifying the theoretical cost-benefit analysis guiding a political leader's decision to rebel. They interpreted their regression results through the analytical framework that the rebel utility function provided. While an exact presentation of this function is beyond the scope of this paper, what follows is a simplified explanation derived from their landmark work, "On Economic Causes of Civil War." Their results not only exemplify how statistical results pertaining to violence can be interpreted, but also demonstrate the link between primary commodity exports (e.g., oil) and civil war.

“The objective of rebellion is either to capture the state or secede from it. In general, the incentive for rebellion is the product of the probability of victory, which depends upon the capacity of the government to defend itself” (Collier and Hoeffler, 1998, 564). If the taxable capacity within a state increases, military capacity also increases. This decreases the probability of conflict. Per capita income serves as a proxy for taxable capacity. If secession is the motivation, then natural resources may be in the calculus to initiate violence; primary commodity exports as percent of GDP proxy natural resources. Ethno-lingual divisions are also included in the models. From the Singer and Small data on civil wars from 1960-1992, Collier and Hoeffler used a probit model to assess what variables increased the probability of civil war and a tobit model to assess the variables that explain the duration of civil wars.

Their tobit model incorporates more variables, so it is better at elucidating significance, but unable to show precise effect (Collier and Hoeffler, 1998, 568). The probit model tells us that, with other things equal, for each dollar increase in per capita income, the probability of a civil war decreases by 0.1 %. The Ethno-lingual fractionalization index was insignificant in explaining the occurrence of civil war, and the primary commodity exports effect is nonmonotonic, which means that “until extremely high levels of primary commodity export dependence is reached (after about 26%), the risk of civil war declines” (Collier and Hoeffler, 2002, 16-17). Collier and Hoeffler’s study provides empirical evidence that violent opposition towards government is related to economic factors, which corroborates this paper’s thesis. Low per capita income in petrol states is directly correlated to the Dutch Disease and distributive/rent-seeking policies. It should be noted, however, that Angola, Nigeria, and Algeria all have primary commodity export structures in the upper 90 percent, which suggests that petrol states are not as susceptible to civil war as lesser-developed countries.

In “On the Incidence of Civil War in Africa” (2002), Collier and Hoeffler focused their analysis to isolate Africa from the rest of the developing world. The study was initiated following the Stockholm International Peace Research Institute’s (SIPRI) assessment in 1999 that “Africa is the most conflict ridden continent of the world and the only region in which the number of armed conflicts is on the increase” (Collier and Hoeffler, 2002, 13). In this study, their global panel set was expanded from their 1998 study by incorporating the years 1992 to 1999. The panel is composed of “161 countries for eight five-year periods: 1960-1964, 1965-1969, . . . , 1995-1999.”

Collier and Hoeffler focused on five-year periods leading up to civil wars and had 750 observations of which “46 were characterized by civil wars.” The ratio of primary commodity exports to GDP is only slightly higher with the average being 19% in Africa and 17% in the rest of the developing world (Collier and Hoeffler, 2002, 21). However, per capita income is nearly double in the rest of the developing world compared to Africa and GDP growth disparities are even greater (Collier and Hoeffler, 2002, 24-25). This finding corroborates this paper’s argument by illustrating that disenfranchisement of citizenry leads to violence. What greater disenfranchisement can there be than denying citizenry food?

This paper focuses on more than civil war, which is not the only serious violence that occurs in Africa. Collier and Hoeffler drew on Singer and Small’s definition of civil war, according to which at least 1,000 battle deaths must occur, with the stronger forces sustaining a minimum of 5% of the casualties (Collier and Hoeffler, 1998, 567-568). Using this definition as a basis for data collection obviously excludes many acts of political violence. Collier and Hoeffler’s studies do not focus on occasional incidents of violence, and their dependent variables are based only on whether or not a war started and how many years it continued. Because violence is an amorphous phenomenon, this study focuses on a wider range of acts of recorded violence dependent upon different conditions.

“Greed and Grievance” literature explores whether conflict arises for economic (greed) or political reasons (grievances) while Collier and Hoeffler’s work chiefly focuses on economic incentives. For instance, their regression model is interpreted through a cost-benefit analytical framework (a rebel utility function). Recent research on this topic by others suggests that civil

C. LOONEY: AFRICAN PETROL STATES

wars may start for political reasons then turn economic (Cater, 2003, 28-29). Although cost-benefit frameworks can provide a basis for statistical analysis on the economics of civil war, quantifying grievances is extremely difficult. Even Collier and Hoeffler had to rely heavily on proxies and then stretch their inferences in order to interpret their regression through an economic analytical framework.

The following regression analyses, however, focus specifically on African petrol states and all annually recorded political violence, including acts during and not during civil wars from 1980 to 2006. Focusing on all recorded acts of political violence may more satisfactorily explain variations in violence. Because what causes changes in severity during the course of a quarter century conflict such as the Angolan Civil War? Where and how do UNITA, MEND, and others recruit their followers and what makes the citizenry vulnerable to recruitment? What variables are most conducive to violence in an African petrol state? By treating each violent act as its own entity, this study hopes to offer a new quantitative perspective on violence in African petrol states.

DEFINING VIOLENCE

Finding data capable of measuring the dependent variable *violence* was difficult because this study focuses on annual data from 1980-2006, and annual data collection pertaining to violence or proxies for it in Angola, Nigeria, Algeria, and the Sudan is very difficult. Two sources were chosen to represent the dependent variable *violence*, one primary and one secondary. The primary source was the Memorial Institute for the Prevention of Terrorism (MIPT) database, which includes data from RAND and MIPT concerning anti-government violence, violence against civilians, acts of terror and intrastate warfare. MIPT is comprehensive, providing when possible the date, deaths, and group responsible for each incident. These groups are primarily rebel organizations such as the National Union for the Total Independence of Angola (UNITA) and the Front for the Liberation of the Cabinda Enclave in Angola; Southern People's Liberation Army in Sudan; the multitude of Islamic resistance organizations in Algeria; Movement for the Emancipation of the Nigerian Delta (MEND) in Nigeria and others. Finally, to ensure comprehensive measurement of the dependent variable *violence*, incidents and waves of violence cataloged in Paul Collier and Nicholas Sambanis's World Bank Study, *Understanding Civil War: Volume 1: Africa*, were added to the RAND-MIPT data. Each incident, wave, and RAND-MIPT case could have resulted in zero to hundreds of casualties; however, in order to standardize the dependent variable, each case was labeled as one incident. In the regression models, for incidents lasting longer than a year, there was merely another 1 added for each consecutive year the incident or wave continued. This resulted in 466 incidents to compose the dependent variable *violence* across a panel set of four countries: Algeria, Angola, Nigeria, and Sudan. Nigeria and Angola were chosen because they are Sub-Saharan Africa's oldest and largest oil producers. They are also notorious for human rights abuses cited by Human Rights Watch, The International Crisis Group and many others (Karl, 2003, 8). Sudan is also synonymous with human rights abuses and is a relatively new oil producer. Algeria was chosen to include a North African oil producer. Next, the independent variables are listed followed by a theoretical model that links violence and African petrol states.

The list of variables includes X_1 : Population; X_2 : Structure of Exports (Oil/Petroleum); X_3 : Global Petrol Prices; X_4 : OPEC's Share Of World Oil Production; X_5 : Military Expenditures; X_6 : Oil Exports in OPEC Countries; X_7 : Unemployment; X_8 : Foreign Direct Investment (FDI); X_9 : Percentage of Males Enrolled in Secondary Education; X_{10} : Percentage of Population that are Males 0-14; X_{11} : GDP Per Capita and X_{12} : Ethnic Division. This data was gathered from the Penn World Table (X_1 & X_{11}); World Bank Development Indicators (X_2 ; X_7 ; X_8 ; X_9 ; X_{10}); Energy Information Administration (X_3); *The Economist* 2006 (X_4); SIPRI Military Database (X_5); OPEC Website (X_6); and Collier and Hoeffler's "On the Incidence on Civil War Dataset" (X_{12}).

THE LOONEY THEORETICAL MODEL (LTM): CAUSAL AND INTERPRETIVE FRAMEWORK

Foreign investment in the oil sector usually favors foreign companies and contributes to the longevity of corrupt regimes. This investment continues even in risky environments because organizations such as ECAs and Bretton Woods Institutions keep a central government intact even when turmoil abounds throughout a state’s territory (X₈). Thus, a relationship ensues that allows a state to exist dependent upon the global demand for a product instead of the welfare of its citizenry. Patron-client relationships that were institutionalized in poor government structures under colonial rule are hyper-agitated (either strengthened or weakened) by variations in global petrol prices (X₂, X₃, X₄, & X₆). At a point of weakness, political entrepreneurs may arise to incorporate themselves in the network, but their demands are not met because that would give other groups the incentive to take up arms against the state; that is why violent opposition is met with force (X₅). These entrepreneurs gain recruits amongst the rank-and-file because oil wealth is accumulated through high capital/low labor means which, when combined with the petrol state’s lopsided economy and corrupt domestic investment strategies, means a paucity of economic opportunities resulting in low incomes and poor living conditions. In many cases, basic needs of the population are met, if at all, through imports of food commodities and other primary goods. Thus, if the patronage web is agitated by fluctuations in global prices, state leaders will not hesitate to sacrifice these imports to make sure patronage flows to the necessary elements that contribute to their hold on power; the untaxed citizenry is obviously not one of those elements. This leaves populations full of disaffected youth and, in many instances, poor young men who may organize (or be organized) and then embark on whatever means necessary to incorporate themselves into a system that denies them access (X₇, X₉, X₁₀ and X₁₁). All of these occurrences are exacerbated by increases in population (X₁) and ethnic division (X₁₂).

MULTICOLLINEARITY IN THE DATA

The problem of multicollinearity required a more selective testing of causes of political violence. Strong correlations existed between Population and Male Population 0-14, OPEC Exports, and Unemployment; between GDP Per Capita and Oil Exports in OPEC Countries, Unemployment and Percentage of Male Population Enrolled in Secondary Education; between Military Expenditures and Unemployment; between Oil Exports in OPEC Countries and Population, GDP Per Capita, Military Expenditures, Unemployment, Percentage of Male Population Enrolled in Secondary Education, and Male Population 0-14; and between Unemployment and FDI. While a few of these high correlations are interesting, they make drawing reliable inferences impossible. The variables that were chosen for the final model were simply part of the combination that resulted in the highest R² while simultaneously avoiding multicollinearity. Two models were used to assess both civil war and non-civil war violence. So if there are statistically significant variables in both models, it is safer to base an argument upon such significance. Moreover, this serves as a bridge between the aforementioned civil war studies and this one.

REGRESSION RESULTS

Table 1: Explaining All Acts Of Violence from 1980-2006

Variable	β (partial slope)	T-Ratio
X ₁ Population	.000	2.745
X ₃ Global Petrol \$	-.921	-3.280
X ₅ Military Exp.	2.452	1.813

C. LOONEY: AFRICAN PETROL STATES

X ₁₁ GDP/Capita	.008	2.794
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R² = .362 Error Terms were normally distributed

Table 2: Explaining Violence During Periods Not Declared as Civil War from 1980-2006

Variable	β (partial slope)	T-Ratio
X ₁ Population	8.71E-005	.581
X ₃ Global Petrol \$	-.628	-2.344
X ₅ Military Exp.	4.256	1.584
X ₁₁ GDP/Capita	.003	.320

R² = .470 Error Terms were normally distributed

In Table 1, the independent variables incorporated into the model account for approximately 36.2% of the variation in violence in Algeria, Angola, Nigeria, and the Sudan during the years 1980-2006. T-ratios show that all of the variables are statistically significant; however, military expenditures (X₅) is borderline significant. With other variables equal, for each 1% increase in military expenditures relative to GDP, violence increases by about two incidents. When looking at Table 2, military expenditures are slightly less significant; however, the decline in significance does not compare to the declines in the other variables, so one could assume significance based on that observation. Military expenditures could increase to meet violent opposition or simply increase to support a repressive regime that is forcing deprivation on its citizenry through self-aggrandizing policies.

Population and GDP per capita are significant in Table 1; however, their partial slopes are small and GDP per capita is positive, which is unexpected. With other variables equal, for each dollar increase in GDP per capita, there is a .008 increase in violent incidents. This increase could occur because GDP per capita plays more of an integral role in predicting civil war or there is a time lag between economic deprivation and expression of grievance. Looking at population, there is no interpretable marginal effect on the number of violent incidents by an increase of one person, but that would obviously change with more substantial increases in population. In Table 2, however, neither population nor GDP per capita are remotely significant.

The variable that remains significant in both models is X₃: the Global Price of Petrol. In Table 1, with other variables equal, for each dollar increase in the global price of petroleum, there is an approximate decrease of one violent incident. In Table 2, for each dollar increase in the global price of petroleum, with other variables equal, there is a 0.6% reduction in violent incidents. From this information, it is not difficult to conclude that variations in African petrol state violence can be partially explained by changes in the global price of oil, but how? What is the sequence of events? Those explanations require a case-by-case analysis of the states that constitute the panel.

ANGOLA

Oil exports in Angola have led to an extravagant military, excessive patronage, and poor living conditions for the citizenry (Cater, 2003, 32). The Angolan state has not adequately diversified into other potentially lucrative sectors such as agriculture and fisheries, and the lack of economic

opportunity led to a 1990s mass urban migration. The burgeoning underemployed urban sector was dependent upon primary commodities imported by the state with oil monies (Le Billion, 2001, 59).

Phillipe Le Billion corroborates the regression results by noting that war intensified when "oil prices in the mid 80s collapsed" (2001, 64). This corresponds exactly with the regression results. Causally speaking, this means that basic commodities stopped flowing into a war-ridden state and Angolan leaders were determined to preserve the state by keeping the necessary actors' pockets filled rather than providing basic needs to the citizenry. This left the citizenry open to recruitment by leaders of opposition movements such as UNITA.

NIGERIA

"Oil has in fact transformed the face of Nigerian politics and the struggles for power. It has concentrated and centralized its federal structure, over-bloated the state apparatus, roles and expenditures and turned the nation into a huge distributive state" (Ikelegbe, 2006, 31). The Nigerian government primarily distributes oil revenues and has no need for its large population. The few taxes that are collected in Nigeria, particularly at the state level, are derived from a population that has a per capita income of less than a dollar a day, which can never compare to \$300 billion dollars in oil revenue (Karl, 2003, 5). Nigerian citizens do not have a financial stake in the survival of their state and thus have no bargaining power when the state stops distributing goods to them.

Like Angola, the Nigerian state was dependent upon imports for subsistence, which is a classic symptom of the "Dutch Disease." Thus, during the 1980s drop in global petroleum prices, imports of basic goods diminished (Lewis, 1996, 81). This partially explains how organizations such as MEND have gained support. Not only are farming, fishing, and traditional means of subsistence devastated by oil production in the Delta region, but the availability of basic imports on which citizens rely are dependent upon petrol prices. Nigeria has met MEND and similar groups with severe oppression, which can be supported by the positive relationship between military expenditures and violence shown in the regression results and the historical record of African petrol states.

ALGERIA

Algeria, a North African country, also fits the regression results. Algeria experienced a gradual migration to the cities before its civil war, and the country experienced increasing neglect of the agricultural sector consistent with rapid industrialization funded by the oil sector (Lowi, 2005, 224). Two years before the outbreak of civil war, Algeria was importing 75% to 80% of its food supply with petrol dollars (Lowi, 2005, 224 and Swearingen, 1990, 23). As Algerian food subsidies along with falling oil prices began to take their toll on state coffers, the Algerian economy turned to the International Monetary Fund (IMF), which recommended that Algeria cut those subsidies. "The resulting substantial rises in food prices helped to precipitate the October 1988 riots" (Swearingen, 1990, 25). In fact, from the 1980-85 oil crises to the mid 1990s, the Algerian government behaved as petrol states predictably do, by cutting imports and distributions to their citizens as oil prices fell. This encouraged disenfranchised citizens who became involved in the multitude of opposition groups and Algerian black market activities to change their position in a system that denies them access or inconsistently aids subsistence.

CONCLUSIONS

Angola, Nigeria, and Algeria all relied on basic commodities imported by petrol dollars. However, when oil export revenues declined, so did the state's distribution of basic necessities, which in the cases discussed led to riots and rebellion. This paper's regression results illustrate that variations in petrol prices partially explain violence in African petrol states. Thus, petrol states could have avoided episodes of violent opposition had they not cut imports/subsidies

C. LOONEY: AFRICAN PETROL STATES

when the state patron-client structures were agitated by decreases in petrol prices. However, that is how they chose to act and they defended their behavior with draconian and despotic measures.

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