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Abstract:

The Democratic Republic of Congo (DRC) has grappled with persistent conflict throughout its history, with recent outbreaks highlighting the need for a solution. This paper investigates the greed hypothesis, which holds that armed non-state actors are motivated by the profitability of natural resources to launch uprisings against the state. Utilizing regression analysis, we investigate the correlation between the prices of various rare metals, in relation to deaths due to armed conflict. Our findings reveal a statistically significant positive correlation between the price of gold and armed conflict-related deaths, particularly in the Kivu provinces and post-2003. Conversely, we observe a decline in conflict-related deaths outside of the Kivu provinces in response to increases in copper prices prior to 1997. The implications of this result are aligned with the greed theory, suggesting that non-state actors are, at least in part, motivated by the profitability of natural resources. The findings have significant implications for policy interventions, highlighting the need for more specialized and informed approaches.

Keywords: DRC, resource curse, greed, civil war, Zaire

Introduction

The Democratic Republic of Congo (DRC) has been characterized by persistent conflict throughout its tumultuous history. From the Katanga Rebellion in the immediate aftermath of independence, to the overthrow of Mobutu and Congo wars, it seems as though conflict has consistently encompassed the nation. The recent resurgence of conflict, most notably the activities of the M23 rebel group and their involvement in exploiting natural resources highlights the pressing need to find a solution. However, no solution can be achieved without a nuanced understanding of the various actors and root causes of the ongoing conflict.

Researchers have long sought to explain conflict in Africa through various lenses of analysis. However, one explanation stands out as more applicable when analyzing the DRC. The greed hypothesis holds the idea that armed non-state actors are motivated by the profitability of natural resources to launch a violent uprising against the state. This theory treats the rebel group as an entrepreneurial actor, whose main interest is to seek profit, possibly due to reasons such as limited employment opportunities, or unequal distribution of resources. This paper seeks to answer the following question: Does greed cause civil conflict in the Democratic Republic of the Congo? This paper will study the effect of an increase in natural resource prices (representing the independent variable) on deaths due to armed conflict (dependent variable). If armed groups were motivated by profitability, as suggested by the greed theory, an increase in natural resource prices will lead to an increase in deaths as a result of armed conflict.

Answering this question would yield various implications for the political situation in the DRC. Establishing that greed is responsible for civil conflict would lead policymakers and international actors to address the root causes of resource-based violence, such as governance, corruption, and economic inequality. Understanding what drives violence could inform a more specialized intervention, targeting the root causes of violence. This would ultimately aid in the goal of creating a sustainable peace in the country. Furthermore, these findings could contribute to a deeper understanding of conflict dynamics in other resource-rich regions extending beyond the DRC.

In the following paper, I will argue that greed (independent variable) leads to civil conflict (dependent variable). This argument will be made using three major parts. First, I explore existing literature surrounding civil conflict and the resource curse in Africa. These include various theories and explanations such as ethnic fractionalization, colonial legacies, and poor governance. Then, I provide an empirical analysis, studying the impact of an increase in natural resource prices on deaths as a result of civil conflict. This analysis will utilize linear regression, with data sourced from Armed Conflict Location and Event Data Project (ACLED) and the United States Geological Survey (USGS), considering various resource prices as independent variables. Finally, I discuss the implications of the analysis, providing insights into potential policy recommendations and areas for further research based on the empirical evidence.

Literature Review:

Civil Conflict:

Existing literature on civil conflict in Africa is diverse, encompassing various theories and explanations. Most notably, ethnic fractionalization is often seen as a root of civil conflict in Africa. Researchers cite that ethnic fractionalization contributed significantly to economic underdevelopment in Africa (Easterly & Levine 1997). A cross-country analysis suggests that ethnic diversity is associated with low schooling levels, political instability, high government deficits, and poor infrastructure. This explanation, when applied to the DRC, has some qualitative basis. Major rebel groups operating in the Eastern DRC, such as the NDC and NDC-R historically held ethnic ties to the Nyanga people, while the M23 rebel group is backed by the Tutsi-led government in Rwanda, to counter the FDLR, made up of former Hutu orchestrators of the Rwandan genocide (Orogun 2003). These ethnic motivations of rebel groups seem to support the fractionalization hypothesis.

However, researchers have also argued that ethnic fractionalization may not be the root cause of civil conflict in the DRC. Instead, ethnic groups split across borders may be a more accurate source of civil conflict than the ethnic fractionalization theories (Engelbert 2000). Ethnic groups split across borders are less likely to view the state as legitimate, and more likely to participate in civil conflict. This concept is deemed 'Horizontal Legitimacy,' and there exists a strong correlation between legitimacy, and economic growth. The logic of this theory is supported empirically when applied to Africa at large. Furthermore, it seems to have some basis in the DRC. Rebel groups such as the M23, and FLDR, which remain the two most powerful armed groups in Eastern Congo, are made up of Tutsi and Hutu people respectively. Both groups are of Rwandophone descent, split across Eastern Congo, Rwanda, and Uganda.

However, some researchers argue there is little basis to conclude that ethnic fractionalization causes civil conflict. Instead, civil war is more common when one ethnic group dominates a country or makes up 50-85% of the population (Collier, Hoeffler & Sambanis 2005). However, few countries in Africa align with this criteria, the DRC not being one of them. Instead, civil war is demand driven, where grievance more broadly can also motivate armed struggle. In this explanation, rebels motivated by harm done to their group by the ruling coalition challenge the state, causing civil war. This harm is not necessarily limited to ethnicity, but can also be affected by geography, class, or other factors. However, there is also a supply-driven explanation, arguing that the existence of natural resources causes civil conflict, as rebel groups seeking to profit compete with the state for control over such resources (Collier, Hoeffler & Sambanis 2005). Under this hypothesis, the main actors involved in civil war include: the state, and the rebel group(s). The state's main policy interest is to seek the preservation of its authority, either for the benefit of the leader, or the benefit of its people. The rebel group's main interest is to seek profit, possibly due to reasons such as limited employment opportunities, or unequal distribution of resources. According to their hypothesis, this dynamic being present in a country makes it more likely to lead to civil war. This theory remains a highly appealing explanation for conflict in the Democratic Republic of the Congo, and thus will be explored by the research question.

There exists various pieces of qualitative evidence to support this theory. Case studies of the political situation in Eastern Congo suggest that there is significant illegal gold-mining taking place in the region (Vogel, Musamba & Radley 2018). In particular, in the eastern Great Lakes region, which is home to notorious rebel organizations drawing transnational fighters and support from across East Africa. Small, artisanal gold mines, often lacking industrial technology and safety measures, operate across the Kivu provinces. GIS, and geo-spatial technology, used to map over 427 mines in Eastern Congo, suggests that various armed groups, such as the NDC-R, associated with M23 and Rwanda-backed militias, have captured numerous mines across the region (IPIS 2024). In addition, local village communities have taken arms to defend themselves from these highly-organized rebel groups, often surviving through subsistence gold-mining operations.

In addition, when analyzing the various conflicts of the DRC, it remains clear that there is a geographic pattern. In 1960, a newly independent DRC faced a secession attempt from the Katanga region, a region rich in copper and other mineral deposits (Gonze 1962). This war of secession was backed by several major foreign powers, including Belgium, Apartheid South Africa, and the United States, each of which had economic and political interests in the region. Today, various rebel organizations operate in the Kivu provinces, where rich gold, tantalum, and tungsten reserves lie. These rebel groups have ties to foreign powers such as Rwanda and Uganda (Muleefu 2013). The resource-motivated nature of these groups, both in a newly independent Congo, and a 65-year old Congo, remains a commonality.

Resource Curse:

The resource curse is a well-documented phenomenon in many developing countries. It refers to the surprisingly high rate of underdevelopment in countries that are rich in natural resources. Researchers seeking to explain this phenomenon have often cited the overreliance on resource exports for revenues, which prevents the development of other industries (Torvik 2001). They have also cited the rentier-state dynamics which cause corruption and unequal distribution of resource benefits in endowed countries. While existing research is rigorous, it is largely confined to the effects of natural resources on corruption and good governance.

Particularly in Africa, research on the resource curse has been disproportionately confined to governance. For example, the discovery and exploitation of natural resources in Angola and Nigeria thinned the line between the state and its people, causing the state to be less accountable to its citizens (King 2009). When the state is reliant on its people for revenue, such as in the form of taxation, it forces the state to be more accountable in its actions. However, this dynamic is weakened with the discovery of natural resources. Countries who have recently discovered natural resources can learn from the mistakes of Nigeria and Angola, who have faced significant problems as a result of natural resource endowments.

Furthermore, the presence of natural resources, particularly in Africa, delayed democratic transition (Jensen & Wantchekon 2004). Countries with natural resources, after the cold war, were less likely to transition into democracy, as leaders used natural resources to cement their hold on power. This suggests that the presence of natural resources and primary commodities in many cases may lead to less democratic governance. The ability of

leaders to use natural resources to reinforce their hold on power is a well-documented phenomenon in resource-curse literature.

When applied to the DRC, the resource curse hypothesis remains a highly appealing theory for explaining underdevelopment in the country. In terms of natural resource endowments, the DRC is among the wealthiest countries in the world, despite which, it remains among the poorest countries in terms of GDP Per Capita, and Human Development Index. Earlier throughout its history, dictators such as Mobutu Sese Seko used the country's natural resource wealth to purchase support from both domestic and foreign actors. Resource rents earned from the country's vast copper and rare earth resources helped fund Mobutu's regime for decades (Askin & Collins 1993). However, this existing research on the resource curse is distinct from the greed hypothesis. The greed explanation for civil conflict is another form of the resource curse that extends the scope beyond just poor governance or Dutch disease.

Another form of the resource curse manifests itself in the form of enclave economies, or economies where resources are disproportionately concentrated in a given area, and make up a significant portion of the country's exports (Leonard & Strauss 2003). Countries reliant on enclave production are disproportionately more prone to violent conflict. This is due to enclave economies providing both leaders and rebels with the ability to finance conflict. Leaders are also able to use resource rents to reinforce their hold over power, leading to poor governance and high unemployment, resulting in civil conflict. African countries that are reliant on enclave production, are disproportionately more likely to be involved in conflict. This serves as another form of manifestation for the resource curse, as enclave economies lead to grievances among the population, provoking civil conflict.

The enclave economies theory also provides a necessary distinction to make when discussing civil war. The geographic distribution of resources will be taken into account in analyzing violent conflict. In the case of the DRC, violent conflict is disproportionately more common in the Kivu provinces. For this reason, the empirical analysis will distinguish between three different independent variables: Total Conflict Deaths, including all provinces; Kivu Only; including only the Kivu provinces, as well as Sans Kivu; including all provinces but Kivu.

This paper will largely seek to answer the following question: Does greed cause civil conflict in the DRC? We use the greed theory as a framework of analysis, while taking into account the geographic distribution of various natural resources.

Empirical Analysis:

We measured the independent variable (greed) using data on the market price of natural resources from 1997 to 2022. The dependent variable (civil conflict) was measured using deaths as a result of civil conflict from 1997 to 2023. If the supply-driven explanation is correct, an increase in the market value of a natural resource should, according to the theory, yield an increase in deaths as a result of civil conflict. This is because, under the assumption that financial gain is the primary motive of a rebel organization, an increase in the price of natural resources should motivate an entrepreneurial rebel group to seek greater control over more resource-producing areas.

The independent variables include various natural resources, including Tantalum, Copper, Gold, Tungsten, and Cobalt. These resources represent the largest source of export revenue for the DRC, according to the Observatory for Economic Complexity (OEC). Each of these resources was further split into two time periods for each resource: 1997 - 2019, as well as 2003 - 2019. This is due to possible confounding factors relating to the Second Congo War, which ended in 2003. Deaths due to the Second Congo War may not have any correlation with natural resource prices, as the war was largely motivated by distinct political interests. Data on the market values of these resources over time was acquired from the United States Geological Survey.

The dependent variables were split into three categories: “Total conflict deaths,” counting all conflict-related deaths in the DRC in a given time period; “Kivu deaths,” counting only deaths in the Nord and Sud Kivu provinces; and finally, “Sans Kivu,” counting only deaths outside of the Kivu provinces. This may assist in isolating the effects of certain minerals due to their geographic distributions. Most conflict-related deaths since 2003 have occurred in the Kivu provinces, and most rebel groups taking part in illegal mining operate in the Kivu provinces. Data on deaths as a result of violent conflict was acquired through the Armed Conflict Location & Event Data Project (ACLED).

The quantitative results are presented in table 1.

Table 1

	Tantalum		**Copper**		**Gold**		**Tungsten**		**Cobalt**	
	1997 - 2019	2003 - 2019	1997 - 2018	2003 - 2018	1997 - 2022	2003 - 2022	1997 - 2019	2003 - 2019	1997 - 2019	2003 - 2019
Total	-0.271	-0.076	-0.353	0.004	0.091	0.482	-0.367	-0.060	-0.041	0.083
	(0.21)	(0.26)	(0.21)	(0.27)	(0.20)	(0.21**)	(0.20)	(0.26)	(0.22)	(0.26)
Kivu Only	-0.003	0.033	-0.081	-0.028	0.391	0.507	-0.030	0.000	0.096	-0.093
	(0.22)	(0.26)	(0.22)	(0.27)	(0.19**)	(0.20**)	(0.22)	(0.26)	(0.06)	(0.26)
Sans Kivu	-0.378	-0.251	-0.431	0.057	-0.230	0.340	-0.492	-0.151	0.081	0.374
	(0.20)	(0.25)	(0.20**)	(0.27)	(0.20)	(0.22)	(0.19**)	(0.26)	(0.22)	(0.24)

The upper number of each category is the correlation coefficient, underneath which is the standard error.

There is a statistically significant correlation between the price of gold, and deaths due to armed conflict. These findings show that an increase in the price of gold is positively correlated with an increase in deaths due to armed conflict. This effect is greater in the Kivu provinces, and post-2003, but shows little significance across all provinces since 1997. The effects of independent variable gold were statistically significant. Furthermore, an increase in the price of copper, when considering data from prior to 1997, is correlated with a decline in deaths due to armed conflict outside of the Kivu provinces. The effects of price increases in Tantalum, and Cobalt were insignificant across all measured time periods.

These empirical findings have great implications for the greed theory. As increases in the price of gold are often followed by increases in armed conflict, it suggests that armed groups may increase their operations in relation to the profitability of their actions. This entrepreneurial behavior in adjusting actions in relation to profitability

suggests that armed groups may be motivated by the existence of natural resource endowments. In at least some cases, an abundance of natural resources can exacerbate internal conflict, rather than contribute to economic development. It also poses implications for the resource curse hypothesis, possibly serving as supporting evidence.

The insignificance of minerals such as Tantalum can be explained by the relatively low value of the mineral when compared to gold. While the insignificance of the mineral cobalt can partly be explained by the lack of cobalt deposits in the Kivu provinces, where most armed conflict is currently located. Furthermore, the findings in relation to copper and tungsten have differing implications, suggesting the opposite of the resource curse theory. While copper is largely located in the Katanga region in the southeastern part of the DRC, the state has received considerable resource rents from mines whose control was leased to Zimbabwe. While historically, the Katanga war of secession was fought due to this issue, the modern DRC has a high degree of control over this region.

An increase in resource rents from this source could have potentially allowed the Congolese government to enforce peacekeeping operations, or decrease unemployment, thus lowering the probability of armed conflict. However, the correlation between tungsten prices and armed conflict deaths is less explicable, as most tungsten is located in the Kivu provinces, where, as discussed earlier, the state's authority is being challenged. A possible explanation for this disparity is that tungsten prices could have some causal connection with copper prices, thus serving as a confounding factor. This finding serves as evidence of the non-universal characteristics of the resource curse. The resource curse, while it may pose challenges to statebuilding, is not a universally condemning factor that cannot be overcome.

Limitations:

There are a variety of limitations that may impact the validity and reliability of the data conclusions cited above. Just because rebel organizations may increase their operations to a greater extent in the wake of increased profit potential, does not signify that their primary purpose is to exploit natural resources, as an organization is capable of having more than one motive. Even if a rebel organization is motivated by a desire to make profits, it does not signify their only motive, nor does it signify that that was the causal motive for the emergence of the organization.

Qualitative evidence suggests that many of the organizations that engage in illegal resource mining often also hold motives unrelated to profits. For example, the NDC was initially founded to ensure greater representation for the Nyanga people in the national army and government. The FDLR was founded in order to re-take Hutu control of Rwanda after the Tutsi-backed liberation. These explanations align with the grievance-oriented explanation for civil war. The existence of grievances among populations that engage in illegal resource mining may support the idea that these rebel organizations did not necessarily emerge due to profitability. However, it is unlikely that these rebel organizations could have extended their operations to such an extent without the profitability of natural resources. Future research should attempt to distinguish the extent to which rebel groups are able to expand their operations using natural resources, which can expand upon what is currently known about the resource curse.

Conclusion:

The Democratic Republic of Congo (DRC) remains entrenched in conflict, with various armed groups vying for control over lucrative natural resources. While numerous theories have been proposed to explain civil conflict in Africa, the supply-driven explanation, particularly the concept of greed, resonates strongly when analyzing the situation in the DRC. The paper has presented a nuanced examination of the greed theory, supported by both qualitative and quantitative evidence. The finding that an increase in the price of gold causes an increase in armed conflict suggests a significant role of greed in motivating rebel groups, while the finding that an increase in copper prices causes the opposite, suggests the multifaceted nature of the resource rents.

The support for the greed theory has great implications for future peace in the DRC. A long-term solution to conflict that addresses the root causes of conflict must take into account the distribution of natural resources in the DRC. The findings signify the importance of governance and resource management policies that ensure equitable access to and benefit-sharing of natural resource wealth. Future efforts to mitigate conflict in the DRC should not just focus on suppressing rebels, but also addressing the underlying economic inequalities that fuel such activities in the first place. Furthermore, the effect of the international community on this conflict should not be underestimated. The exploitation of the DRC's natural resources for consumer goods in developed countries often fuels the demand and violence as a result of increased prices for natural resources. In the future, all of these factors must be taken into account when formulating a multifaceted strategy to end civil conflict in the Democratic Republic of the Congo.

Bibliography:

“Acled Brief: Rwanda-Backed M23 Rebels Advance toward Goma in Eastern DR Congo.” ReliefWeb, March 4, 2024. https://reliefweb.int/report/democratic-republic-congo/acled-brief-rwanda-backed-m23-rebels-advance-toward-goma-eastern-dr-congo.

Askin, Steve, and Carole Collins. "External collusion with kleptocracy: can Zaïre recapture its stolen wealth?." *Review of African Political Economy* 20, no. 57 (1993): 72-85.

“Conflict in the Democratic Republic of Congo | Global Conflict Tracker.” Council on Foreign Relations. Accessed March 5, 2024. https://www.cfr.org/global-conflict-tracker/conflict/violence-democratic-republic-congo.

“Copper Supplies Facing Threats; Rebel Forces Are Reported near Katanga Mines-Strike Grips Rhodesia.” The New York Times, August 8, 1964. https://www.nytimes.com/1964/08/08/archives/copper-supplies-facing-threats-rebel-forces-are-reported-near.html.

“Data Export Tool.” ACLED, March 7, 2024. https://acleddata.com/data-export-tool/.

Easterly, William, and Ross Levine. "Africa's growth tragedy: policies and ethnic divisions." *The quarterly journal of economics* (1997): 1203-1250.

Englebert, Pierre. “Pre-Colonial Institutions, Post-Colonial States, and Economic Development in Tropical Africa.” Political Research Quarterly 53, no. 1 (March 2000): 7. https://doi.org/10.2307/449244.

Gonze, Collin. "Katanga Secession: The New Colonialism." *Africa Today* 9, no. 1 (1962): 4-16.

Ipis Map. Accessed March 10, 2024. https://www.ipisresearch.be/mapping/webmapping/drcongo/v6/?story=mining_and_conflict_2024.https://doi.org/10.1177/0010414004266867.

Jensen, Nathan, and Leonard Wantchekon. "Resource wealth and political regimes in Africa." *Comparative political studies* 37, no. 7 (2004): 816-841.

“Katanga Insurgency.” Wikipedia, December 7, 2023. https://en.wikipedia.org/wiki/Katanga_insurgency.

King, Richard. "An institutional analysis of the resource curse in Africa: Lessons for Ghana." *Consilience* 2 (2009): 1-22.

Leonard, David K., and Scott Straus. *Africa's stalled development: international causes and cures*. Lynne Rienner Publishers, 2003.

Muleefu, Alphonse. "Beyond the Single Story: Rwanda's Support to the March 23 Movement (M23)." *Amsterdam LF* 5 (2013): 106.

“National Minerals Information Center.” National Minerals Information Center | U.S. Geological Survey. Accessed March 10, 2024. https://www.usgs.gov/centers/national-minerals-information-center.

“Nduma Defense of Congo-Renovated.” Wikipedia, November 20, 2023. https://en.wikipedia.org/wiki/Nduma_Defense_of_Congo-Renovated.

Orogun, Paul S. "Crisis of government, ethnic schisms, civil war, and regional destabilization of the Democratic Republic of Congo." *World Affs.* 165 (2002): 25.

Rupert, James. “In Congo, Peace Means a Halt to ‘Brutal, Illegal Mining.’” United States Institute of Peace, March 8, 2024. https://www.usip.org/publications/2024/03/congo-peace-means-halt-brutal-illegal-mining.

Sambanis, Nicholas, and Paul Collier. Understanding civil war. Washington: TheWorld Bank, 2005.

Torvik, Ragnar. "Learning by doing and the Dutch disease." *European economic review* 45, no. 2 (2001): 285-306.

Vogel, Christoph, Josaphat Musamba, and Ben Radley. "A miner’s canary in eastern Congo: Formalisation of artisanal 3T mining and precarious livelihoods in South Kivu." *The Extractive Industries and Society* 5, no. 1 (2018): 73-80.