A Replication Study of "How Do Natural Resources Influence Civil War?" by Michael Ross:

the Philippines from 1972 to 1996

Phuong N. Nguyen
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Abstract

"How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases" by Michael L. Ross has proven to be a major contribution to the resource curse literature. It was the first study to attempt to identify the causal mechanisms behind the resource wealth-civil war relationship. In this article I attempt to replicate Ross' study with the civil conflict in the Philippines from 1972 to 1996. Borrowing Ross' intermediate variables that link resource wealth to civil war, I evaluate the presence and predicted effect of each mechanism. I revise some of his causal mechanisms based on some inconsistencies in the original work, all justified in the article later on. Using the Philippines as the primary case for evaluation, I produce 13 outcomes either falsifying or validating the causal mechanisms. At times the findings are mixed, at which point I have described the complexities which make it unclear. I find that only 4 out of 13 of my findings are match Ross' outcomes: the looting mechanism (H1), the valuable territory mechanism (H8), the booty future mechanism (H12), and the retaliation mechanism (H13). Complexities of the case in the Philippines have affected these outcomes such as dual insurgency and intra-insurgency lack of unanimity. The coding itself has proven to be inconsistent and imperfect as well, influencing the outcome.

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Introduction

In 2004, Michael Ross published a paper titled, "How Do Natural Resources Influence

Civil War? Evidence from Thirteen Cases." Based on the work of past scholars such as Collier

and Hoeffler, Ross recognized the strong correlation between civil wars and natural resources.

He alludes to the work of scholars such as Fearon to fortify the claim that states that export oil

are more susceptible to civil war.[1] Fearon's work indicated that states with certain natural

resources experience prolonged civil conflict.[2] Additionally, Doyle and Sambanis' work found

that states dependent on primary commodity exports would also experience prolonged civil

conflict.[3] These isolated studies were failing to create a cohesive set of causal pathways bridging

the presence of natural capital to civil war, as well as identifying the specific effects of natural

capital on civil war. There are confident claims that natural resources have fueled civil conflict,

but we have yet to investigate and identify the processes that relate natural resources to conflict –

the causal mechanisms. Based on this observation, Ross set out to investigate not only what

causal pathways exist between natural resources and civil war, but also what specific impact the

pathways create. Assuming the validity of the resource curse, *how* do natural resources influence

civil war?

The exigency of this work is stated by Ross as follows: "Identifying the mechanisms that

link resources to civil war would make these theories [of the resource curse] more complete and

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[1] Michael L. Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," *International Organization 58,* (2004): 35.

[2] James D. Fearon, *Why Do Some Civil Wars Last So Much Longer Than Others?* (Thousand Oaks: SAGE Publications, 2004).

[3] Michael Doyle and Nicholas Sambanis, *International Peacebuilding: A Theoretical and Quantitative Analysis* (Washington D.C.: American Political Science Association*),* 779–801.

pervasive."[4] Ross believed that determining causal mechanisms would address three problems in

the literature surrounding resources and civil war. First, it would ultimately prove (or disprove)

the resource curse. Instead of natural resources being the catalyst to civil war, the theory of

endogeneity suggests that civil wars ensnare states into a condition of resource dependency.

Additionally, the natural resource-civil war correlation could be proven (or disproven) spurious,

meaning that civil war and resource dependence could be separately caused by a third

undetectable, immeasurable variable. Ross cites one of these variables as weak rule of law.[5]

Second, determining the causal pathways would also help to identify the effects of certain

resources on civil conflict. Contradictory evidence exists concerning the type of natural resource

that causes civil conflict; Collier and Hoeffler suggest that all natural resources cause civil

conflict onset equally, while Fearon and Laitin, and de Soysa believe that only oil causes civil

conflict.[6] Conflicting claims about the influence of primary commodities on duration of civil

conflict exist. Third and lastly, causal mechanisms may influence policy making to reduce the

possibility of onset, duration, and intensity of civil war. If it is proven that timber causes civil

war onset, the policies surrounding domestic and international timber handling can be adjusted to

reduce the likelihood of civil war. Determining the causal mechanisms in the natural resource-

civil war relationship would illuminate (1) the validity of the resource curse, (2) the

consequences of possessing certain resources, and (3) future policy decisions to reduce the onset,

duration, and intensity of civil war.[7]

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[4] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 36.

[5] Ibid.

[6] Paul Collier and Anke Hoeffler, *Greed and Grievance in Civil War: Working Paper CSAE WPS/2002-01* (Oxford: Oxford University Press, 2002).

James D. Fearon and David D. Laitin, *Ethnicity Insurgency, and Civil War* (Washington D.C.: American Political Science Association), 75-90.

Indra de Soysa, *Paradise is a Bazaar? Greed, Creed, and Governance in Civil War* (Thousand Oaks: SAGE Publications), 395-416.

[7] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 36-37.

Applying his own hypothesized causal mechanisms to 13 cases of civil war, Ross finds that only some of his hypothesized pathways hold. More specifically, Ross' analysis produced 8 findings in total:

1. Certain types of resources (gemstones, oil, drugs) have influenced civil conflict onset and duration;

2. Legal agricultural commodities did not have an effect on civil wars;

3. Little to no evidence was found to support two of the most commonly cited causal mechanisms;

4. Illegal drugs did not lead to the onset of conflict (although they did lengthen preexisting conflicts);

5. Resources played a different role in the sample's three separatist conflicts than they did in the ten non-separatist conflicts;

6. Resources did not necessarily make conflicts longer or more severe—at times they appeared to shorten conflicts and promote cooperation among opposing sides;

7. Most civil wars in the sample were influenced by natural resources through several mechanisms simultaneously, which may help account for the analytical muddle of some earlier studies;

8. Several unanticipated mechanisms linked resources and conflict in the thirteen cases: foreign intervention, futures contracts for war booty, and preemptive repression in resource-rich areas.

The two most widely cited causal mechanisms that were refuted in finding 3 are that oil, nonfuel minerals, and drugs cause civil conflict, while legal agricultural commodities do not and that natural resource wealth and civil conflict are bound by many mechanisms, several of which have

never been identified before.[8] Ross' work in 2004 became significant literature for the resource curse because while the resource wealth-civil conflict relationship has been investigated widely, Ross was first to illuminate potential causal mechanisms that support the relationship.

Theory

Ross' study set out to identify and determine the validity of the causal mechanisms between natural resources and civil war. The study was conducted based on the assumption that the correlation between natural resources and civil war was viable.

In his study, the independent variable is resource wealth dependence. The intermediate variables are hypothesized causal mechanisms; the Intermediate variables were predicted as a result of the independent variable. Hypothesis 1 is the looting mechanism; the idea that natural resources increase the probability of civil war. This independent variable -- the hypothesis-- is operationalized by budding rebel groups profiting from commodity extraction or indirect commodity possession.[9] Hypothesis 2 is the grievance mechanism. It is when resource exploitation leads to civil war. Evidence of this would be rebels criticizing resource related institutions in their propaganda or rebels making resource firms a target of their violence in the period leading up to civil war.[10] Hypothesis 3 is the separatist mechanism, when the onset of war is influenced by separatist sentiment caused by competition over natural resources. If this mechanism is true, we must first observe that it is a separatist conflict, then that the conflict began after the separatist region was identified as having exploitable resource wealth, and finally that the rebel group complains of an unfair distribution of resource wealth.[11] Hypothesis 4, the

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[8] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases,", 37-38.
[9] Ibid, 40-41.
[10] Ibid.
[11] Ibid, 42.

bureaucratic weakness mechanism, suggests that oil wealth will increase duration of civil war. It

is assuming that oil wealth weakens bureaucratic capacity. Ross concedes that there are no

observable implications of this hypothesis at the case study level. He rationalizes that this

mechanism would require stronger evidence of the relationship between oil and bureaucratic

weakness and bureaucratic weakness to conflict.[12] Thus, this hypothesis is not tested. Hypothesis

5 is another looting mechanism; it suggests that resource wealth will increase the duration of the

conflict. If this mechanism is true, there should be evidence that either side of the conflict has

profited from resources after the war began.[13] Hypothesis 6, the incentive mechanism, states that

resource wealth will increase duration of civil war by giving either side a financial incentive to

oppose peace covenants. Ross identifies the two circumstances in which this mechanism may be

confirmed. In the first circumstance, he specifies that high-level officers should exhibit a desire

to prolong the war due to war profits. This desire is evidenced when officers profit off of

resource looting, when officers are compensated less by a proposed peace treaty, or when

officers refused an unprofitable treaty. The second circumstance is when resource wealth

prolongs a conflict because it is beneficial to the rank and file. If true, it should be observed that

an army in the conflict has major disciplinary issues, disobedient soldiers personally benefit from

looting, and these disciplinary issues make peace agreements less plausible.[14] Hypothesis 7 is the

regional autonomy mechanism. It states that resource wealth increases civil conflict duration by

discouraging states from adhering to peace accords that takes from state autonomy to build

regional autonomy. Ross also deemed this mechanism difficult to verify.[15] He does not attempt

to test this hypothesis in his case study. Hypothesis 8, the valuable territory mechanism, claims

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[12] Ibid.
[13] Ibid, 43.
[14] Ibid, 44-45.
[15] Ibid.

that resource wealth increases the casualty of civil war by causing conflict over resource rich territories. Ross sets out to prove this hypothesis by looking for evidence of resource related battles over sites that hold little value in other measures.[16] Hypothesis 9 is the cooperative plunder mechanism, which states that resource wealth decreases casualties during civil war because it gives combatants a common resource to exploit and therefore encourages cooperation. If true, there should be evidence of wartime trade and cooperation in resource exploitation between both sides of the civil conflict.[17] These were the theoretical predictions that Ross set out to assess.

However, while conducting his case study, Ross encountered some unanticipated intermediate variables or mechanisms; there are 4 additional hypothesized causal mechanisms identified after he conducted his case study. Hypothesis 10 is the foreign intervention mechanism. This mechanism predicts that resource wealth increases probability of civil war by encouraging foreign aid towards rebel groups. Evidence of this mechanism would be, for example, a country enters a war with the objective of securing natural resources.[18] Hypothesis 11, the future booty mechanism, states that resource wealth increases likelihood of civil conflict by encouraging foreign aid toward rebel groups. These foreign actors are incentivized by access to natural resources that the rebels will obtain in the future. This hypothesis is demonstrated by the foreign support of a rebel group that promises (or later compensates the foreign power with) natural resources.[19] Hypothesis 12 also pertains to future booty. It states that resource wealth increases the sale of booty futures and helps to prolong civil war. Evidence of this mechanism is, for example, a country avoiding defeat in civil war by selling off natural resources, replenishing

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[16] Ibid, 46.
[17] Ibid.
[18] Ibid, 57.
[19] Ibid, 57-58.

funds for war and prolonging the conflict.[20] Hypothesis 13 pertains to the retaliation tactics of the state in civil war; it prophesizes that resource wealth gives the government to overreact to small offenses and increases the intensity of a separatist civil war. To demonstrate, a government could disproportionately react to an insignificant conflict by violating human rights, imposing martial law, terrorizing civilians. Hypothesis 13 is characterized by unnecessary, unwarranted retaliation to civilian challenges.[21]

The intermediate variable (the mechanisms) link the independent variable (resource wealth) to the dependent variable. In Ross' study, the dependent variable is the consequence of the causal mechanisms on the civil war. These consequences are categorized into 3 forms of influence: onset (O), duration (D), and/or intensity (I) of civil war. As specified in each mechanism, natural resources can either influence the beginning of civil war, the length of civil war, and/or the intensity of the civil war. Onset (O), or the beginning of civil war, is characterized by the production of at least 1,000 combatant deaths. The duration (D) is simply recognized by the impact on the length of the conflict i.e. conflict continuation or conflict cease. Intensity (I) is synonymous to the casualty rate.[22] Some independent variables, or hypothesized causal mechanisms, may be identical with different dependent variables, or impacts on civil war. Observe that both Hypothesis 1 and 5 are looting mechanisms, but Hypothesis 1 impacts the onset of civil war while Hypothesis 5 impacts the duration of civil war. Likewise, Hypothesis 10 and 12 both relate to the promise of future booty, the difference is that Hypothesis 10 influences onset of civil war while Hypothesis 12 influences the duration of civil war. To investigate each

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[20] Ibid, 58-59.
[21] Ibid, 60.
[22] Ibid, 38.

hypothesis, Ross had to first ascertain the presence of the causal mechanism, then demonstrate the causal mechanism's impact on the civil conflict.

TABLE 1. *Independent, intermediate, and dependent variables*

Ind. V		Int. V	Dep. V
Resource wealth dependence	H1	(Looting Mechanism) Resource wealth, or primary commodities, increase the probability of civil war by enabling nascent rebel groups to raise money either by extracting and selling the commodities directly, or by extorting money from others who do.	O
Resource wealth dependence	H2	(Grievance Mechanism) Resource wealth increases the probability of civil war by causing grievances over insufficiently compensated land expropriation, environmental degradation, inadequate job opportunities, and labor migration.	O
Resource wealth dependence	H3	(Separatist Mechanism) Resource wealth increases the probability of civil war by giving residents in resource-rich areas an incentive to form a separate state.	O
Resource wealth dependence	H4	(Bureaucratic Weakness Mechanism) Oil wealth increases the probability of civil war by weakening the state's bureaucratic capacity.	O
Resource wealth dependence	H5	(Looting Mechanism) Resource wealth tends to increase (decrease) the duration of civil wars when it provides funding to the weaker (stronger) side.	D
Resource wealth dependence	H6	(Incentive Mechanism) Resource wealth tends to increase (decrease) the duration of civil wars by offering combatants a financial incentive to oppose (support) a peace settlement.	D
Resource wealth dependence	H7	(Regional Autonomy M) Resource wealth tends to increase the duration of separatist civil wars by making it less likely that the government will adhere to a peace accord that gives the region fiscal autonomy.	D

Resource wealth dependence	H8	(Valuable Territory M) Resource wealth tends to increase the casualty rate during a civil war by causing combatants to fight for resource-rich territory that would otherwise have little value.	I
Resource wealth dependence	H9	(Cooperative Plunder M) Resource wealth tends to decrease the casualty rate during a civil war by causing combatants to cooperate in resource exploitation.	I
Resource wealth dependence	H10	(Foreign Intervention M) Resource wealth increases the likelihood of civil war by increasing the probability of foreign intervention to support a rebel movement.	O
Resource wealth dependence	H11	(Future Booty M) Resource wealth increases the probability of civil war by enabling rebel groups to sell future exploitation rights to minerals they hope to capture.	O
Resource wealth dependence	H12	(Future Booty M) Resource wealth tends to increase (decrease) the duration of civil wars by enabling the weaker (stronger) side to earn revenues by selling future exploitation rights to minerals they hope to capture.	D
Resource wealth dependence	H13	(Retaliation M) Resource wealth tends to increase the casualty rate during a separatist civil war by giving the government an incentive to react to small challenges with unusually harsh countermeasures.	I

Research Design

After determining the causal mechanisms that could potentially illuminate the natural resource-civil war relationship, Ross approached the research with a small-*N* design. This means he chose a small sample of cases to investigate the question, "how do natural resources influence civil war?" It was not feasible, although desirable, to conduct a large-*N* study since there was not sufficient nor quality data on a large number of civil wars. Hence, Ross selected 13 cases of civil conflict to investigate. The cases were the Congo Republic, Angola, Liberia, Indonesia, Congo

Republic, Congo Republic, Peru, Sierra Leone, Colombia, Sudan, Myanmar (Burma), Cambodia, and Afghanistan.[23] Ross selected these cases based on a "most likely" criteria; cases are chosen where the hypothesized causal mechanism is "most likely" to be true. After analysis, the case either verifies or falsifies the hypothesized causal mechanism. The employment of the "most likely" approach was justified by Ross as an approach that addressed concept validity and causal relationships, accounted for variables that are usually difficult to measure, as well as accommodated the variety of case-specific factors. He does concede that the "most likely" method, due to its emphasis on validity, allows for a biased sample that may produce findings not generalizable to a larger sample of cases. Additionally, the "most-likely" design doesn't allow for cross-national comparisons, nor does it address the frequency and gravity of the observed mechanisms. Ross believed that the "most likely" approach, despite these possible disadvantages, had high potential to verify existing hypotheses and produce new hypotheses for future, non-sample cases.[24]

Evaluating Data Access and Research Transparency

To validate Ross' 8 findings and research method, his data access, production transparency and analytic transparency must be evaluated. Data access refers to the data that the researcher used as evidence to support their claim. Ideally, all research will provide access to the data used to support the claim. If the data is unavailable, the author should explain why. In Ross' 2004 study, the data is cited inconsistently. There are citations made with no page numbers where Ross refers to a chapter, book or literature as a whole, such as on pages 46, 52, 53, 54, and

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[23] Ibid, 47.
[24] Ibid, 37.

more.[25] Additionally, some of the data is inaccessible with warning, but no explanation. Ross mentions data from secondary sources such as interviews, journalistic accounts, NGO reports, and studies; he has noted when the data referenced is missing and ambiguous, but he does not explain why the data is still relevant and credible.[26] This inaccessible data is not further justified, disparaging his data access.

Beyond data access, research should satisfy a degree of production transparency; researchers should offer a full account of the procedures used to collect or generate the data accessed or produced. In Ross' study, the production transparency is addressed in the introduction, as well as in sections "Hypotheses About Resources and Conflict" and "Case Selection." These 3 sections map out the research approach and provide moderate, though not satisfactory, rationale. In the introduction Ross explains his small-N, citing its convenience and restrictions. He also explains how he will evaluate his hypotheses by either falsifying or validating it through evidence. The section titled sections "Hypotheses About Resources and Conflict" outlines each hypothesis including its implied causal mechanism and impact on civil war. Additionally, potential evidence to support each hypothesis is exemplified in this section; this is how Ross specifies how he will validate or falsify his hypotheses. Some hypotheses, such as hypotheses 4 and 7, are deemed to be unobservable because they are too "diffuse and subtle" or "hard to verify."[27] These curt explanations were bewildering and poorly reasoned; proper production transparency would entail full disclosure of the reasons and evidence why these hypotheses were not investigated. I find that these hypotheses, though slightly adjusted, were not extremely difficult to investigate in my replication. In "Case Selection," Ross reveals the "most

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[25] Ibid, 46, 52-54.
[26] Ibid, 49.
[27] Ibid, 42, 45.

likely" criteria that which he applied to determine which cases to examine. He sets the time frame, defines terms such as "natural resource," and introduces primary exports/GDP as a main determinant. The literature is also supported by footnotes explaining why he omitted certain mechanisms or made certain amendments.[28] However, the table titled "Civil wars in the 1990s" shows how dissonant the actual selection of cases is from Ross' rationale.[29] If evaluating by primary exports/GDP and duration to select cases in a study to investigate the causal mechanisms between natural resources and civil war, why did Ross not select the cases with the highest primary exports/GDP? The sequential organization of the table from highest to lowest primary exports/GDP reveals arbitrary case selections with no explanation. Ross sets and then ignores his own parameters for evaluation, decreasing his production transparency.

Lastly, researchers should strive to provide analytic transparency. This means that the author guides the reader from the data to how they drew their analytic conclusions. Does the research clearly and logically explain the link between the data and the conclusions? Sections titled "Results from Case Studies" and "Unexpected Mechanisms" best exemplify Ross' degree of analytic transparency. In the results section, Ross shares his results in Tables 3 to 6. While the literature up to this point is well evidenced and empirically explained either in-text or through footnotes, the tables are unclear. Table 4, "Origins of conflict," cites all the mechanisms that contribute to the onset of civil war in the 13 cases. The falsification or validation of mechanism implies a binary result – "yes" or "no." However, the table leaves some mechanisms with "—" or no coding of a result, despite there being evidence discussed.[30] The analytic transparency is lacking. The section titled "Unexpected mechanisms" shows how Ross has augmented and

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[28] Ibid, 46.
[29] Ibid, P47.
[30] Ibid, 50.

adapted his hypotheses in the case study to accommodate unanticipated evidence of other causal mechanisms.[31] I believe this section is rich in analytic transparency, as all new hypotheses are thoroughly evidenced by specific cases with clear links between the data and conclusion.

Empirical Replication

My replication of his design was conducted on civil conflict in the Philippines within the time frame from 1972 to 1996. The research within this time frame has unearthed data on two insurgencies, the Communist insurgency by the New People's Army (NPA) and the Muslim insurgency by the Moro National Liberation Front (MNLF) and Moro Islamic Liberation Front (MILF). The NPA was formed in 1969 by the Communist Party of the Philippines with a long-term goal of overthrowing the regime of Ferdinand Marcos.[32] Simultaneously, the Muslim Independence Movement (MIM) formed the MNLF in 1969, headed by Nur Musuari. The objective of the MNLF was to gain autonomy from the state through peaceful political participation.[33] After a failed peace agreement in 1976 by the MNLF, the MILF split from the MNLF in 1981 (1984 according to other sources). The MILF was created by Salamat Hashim -- co-founder of the MNLF. Though they still pursued Moro independence, the MILF were less compromising and placed greater emphasis on their Moro identity, Islamic interpretation, and policy.[34] My replication study culminates evidence from both insurgencies during this time frame, despite the Muslim insurgency being separatist while the Communist insurgency was not,

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[31] Ibid, 56-61.

[32] Colin Hackett Kahl, "States, scarcity, and civil strife in the developing world" (Ann Arbor: Bell & Howell Information and Learning Company, 2000), 94-95.

[33] D. Cassman and Stanford Mapping Militant Project, "Moro Islamic Liberation Front," Stanford University, published August 2015, accessed May 2019, https://web.stanford.edu/group/mappingmilitants/cgi-bin/groups/view/309.

[34] Astrid S. Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines," *SAIS Review* vol. XXVII no. 2 (2007): 81, https://search-proquest-com.libproxy2.usc.edu/docview/231323480/fulltextPDF/95A239C66C3744B4PQ/1?accountid=14749.

because both civil conflicts provide relevant evidence about the 13 hypothesized causal mechanisms specified hitherto.

With those case-specific anomalies in mind, I began the replication. Like Ross, I utilized the same independent and dependent variables. My replication is also based on the assumption that there is a correlation between resource wealth (IV) and civil conflict (DV). Following Ross' model, the dependent variable is partitioned into influences on the onset, duration, and intensity of civil war. I also recycle his definitions of each potential impact (O,D, I) on civil war. The evidence used to validate or falsify each mechanism has, for the most part, been borrowed from Ross' original case study.
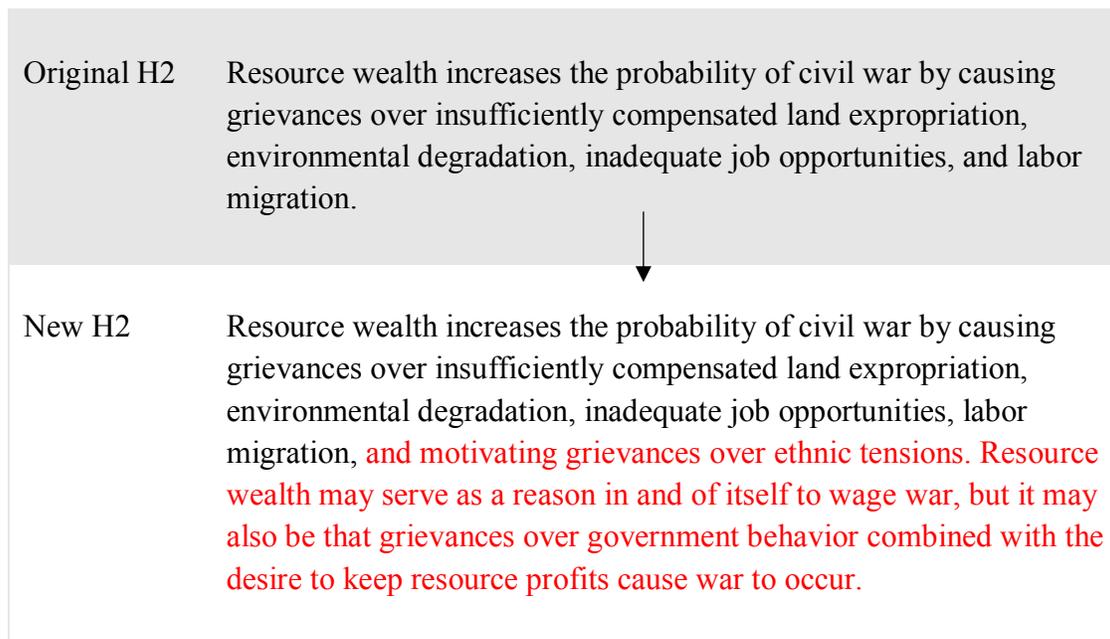
Unlike Ross, this replication was only conducted on one country. Hence, this replication does not have components of Ross' small-N study and "most likely" approach; the case has been preselected, and there are no other cases to juxtapose in this isolated replication of the Philippines. Another study may utilize this replication to do so (see Analysis and Implications).

Furthermore, though the essence of Ross' study was preserved, I conducted the replication study with some alterations to the intermediate variables. Hypothesis 2, the grievance mechanism, was augmented. Originally, the causal mechanism was that "resource wealth increases the probability of civil war by causing grievances over insufficiently compensated land expropriation, environmental degradation, inadequate job opportunities, and labor migration," as referenced in Table 1.[35] The revised codebook has altered the mechanism to include all of the above and, additionally, grievances over ethnic tensions. Resource wealth may serve as the sole

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[35] Ross, *How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases,* 37-38.
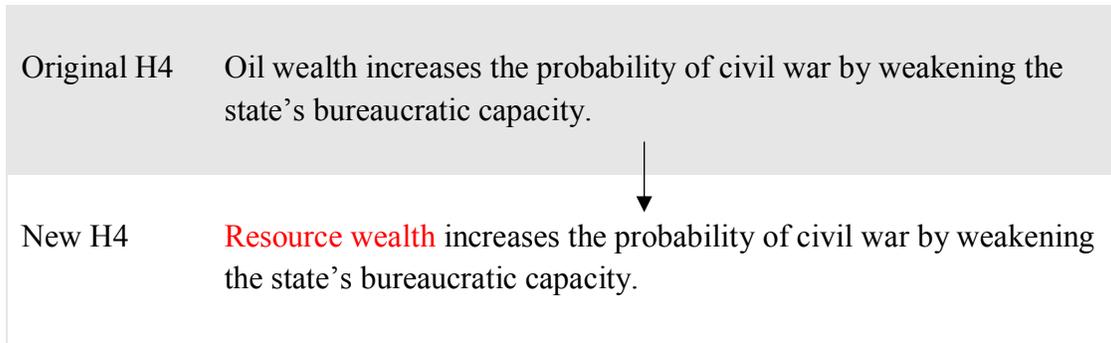
reason to wage war, but it may also be due to grievances over government behavior in addition to the desire to keep resource profits cause civil war. Evidence of this mechanism would still be the same as Ross has stated (See Theory), with the addition of grievances over ethnic tensions. Resource may or may not be at the core of the tensions; resources may be indirect influences shown through social, economic or political grievances.

Figure 1. *H2 alterations*

| Original H2	Resource wealth increases the probability of civil war by causing grievances over insufficiently compensated land expropriation, environmental degradation, inadequate job opportunities, and labor migration.
New H2	Resource wealth increases the probability of civil war by causing grievances over insufficiently compensated land expropriation, environmental degradation, inadequate job opportunities, labor migration, and motivating grievances over ethnic tensions. Resource wealth may serve as a reason in and of itself to wage war, but it may also be that grievances over government behavior combined with the desire to keep resource profits cause war to occur.

Hypothesis 4, the bureaucratic weakness mechanism, has been revised to include all resource wealth, not exclusive to oil. Ross chose to isolate oil in this hypothesis and deemed it unobservable, there exists evidence that all resources – not just oil -- could be found to influence bureaucratic capacity. Ross also did not investigate this mechanism, so no operationalization of the intermediate variable is provided in his original work. I found that this mechanism was operational through evidence of resource wealth leading to corrupt behavior from government officials that compromises the state's economic capacity or military capabilities.

Figure 2. *H4 alterations*

Original H4	Oil wealth increases the probability of civil war by weakening the state's bureaucratic capacity.
New H4	Resource wealth increases the probability of civil war by weakening the state's bureaucratic capacity.

Hypothesis 9 about cooperative plunder was also slightly altered. The initial mechanism read, "Resource wealth tends to decrease the casualty rate during a civil war by causing combatants to cooperate in resource exploitation."[36] After some difficulty replicating this finding for H9 due to a lack of specificity and evidence directly linking cooperative plunder and civil conflict intensity, H9 was changed to "resource wealth tends to decrease the casualty rate during a civil war by causing combatants to exhibit cooperation in sharing resource wealth." This allows for less formal evidence of cooperative plunder to be considered. For example, wartime trade and cooperation between rebels and/or the government in resource exploitation could be observed, which should lead to less bloodshed. Quantifying this bloodshed was, however, difficult (See Analysis and Implications).
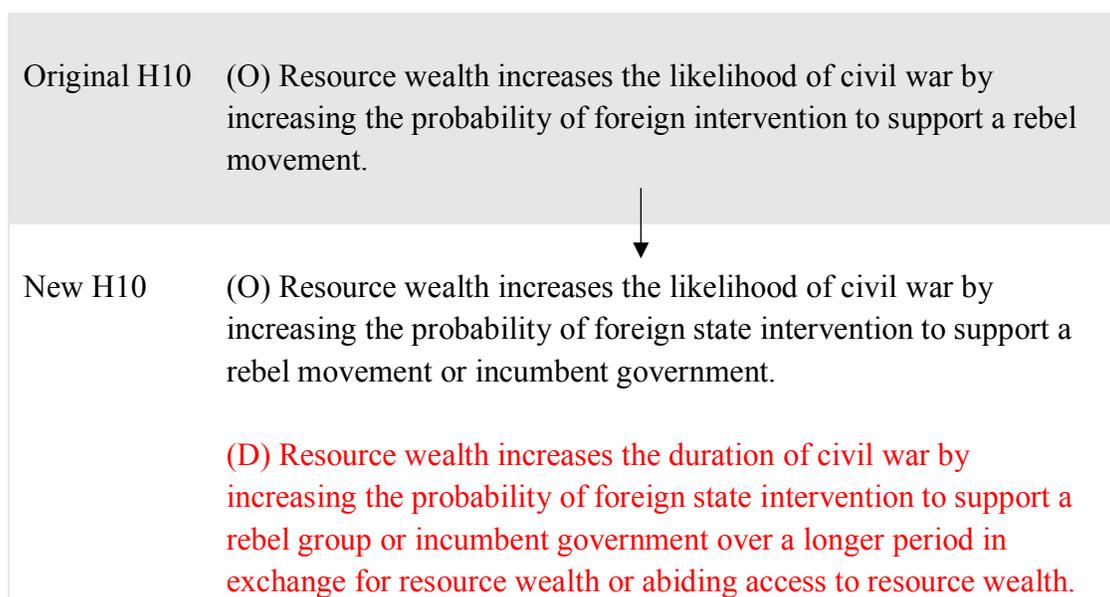
Figure 3. *H9 alterations*

Original H9	Resource wealth tends to decrease the casualty rate during a civil war by causing combatants to cooperate in resource exploitation.
New H9	Resource wealth tends to decrease the casualty rate during a civil war by causing combatants to exhibit cooperation in sharing resource wealth.

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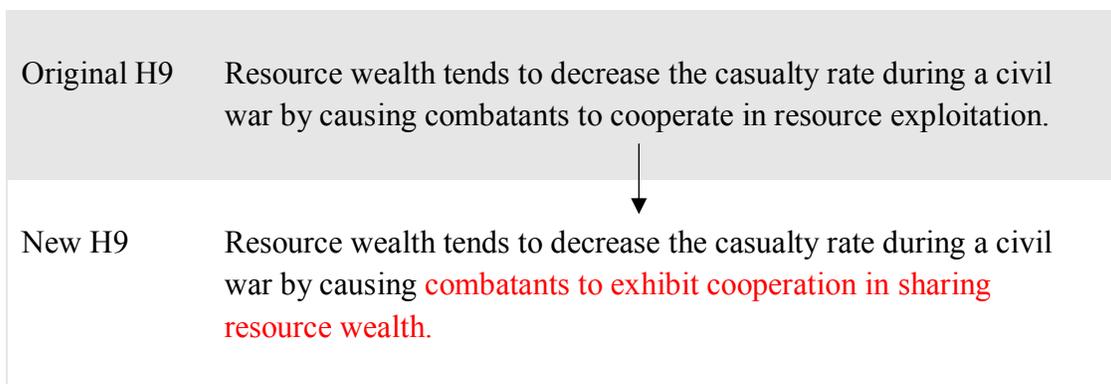
[36] Ibid, 40-41.

Hypothesis 10, the foreign intervention mechanism, was reviewed and determined to influence all 3 dependent variables of onset, duration, and intensity. H10 formerly only linked resource wealth to the onset of civil war. The new mechanism will include the mechanism as an intermediate variable feeding all 3 dependent variables, as it has been exhibited to do. Evidence of foreign intervention influencing onset of civil war would be external state sponsorship to either/or the rebel group and government before the first 1,000 combatant deaths in exchange for direct/indirect resource wealth. Evidence of this mechanism prolonging the duration of civil war would be external state sponsorship or support during the conflict to either/or the rebel group and government in exchange for direct/indirect resource wealth. Evidence of H10 increasing the intensity of civil war would be external state sponsorship or support to either/or the rebel group and government resulting in higher casualty rates in incentivized by direct/indirect resource wealth.
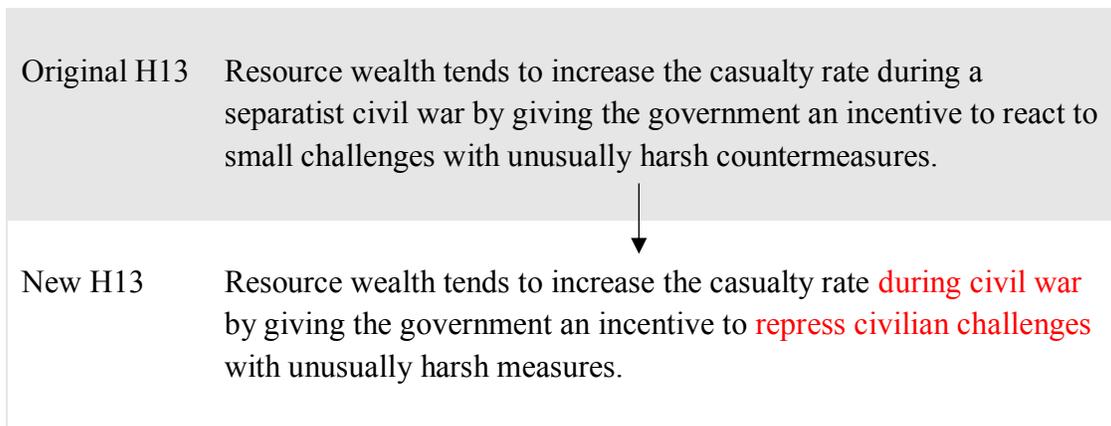
Figure 4. *H10 alterations*

Original H10	(O) Resource wealth increases the likelihood of civil war by increasing the probability of foreign intervention to support a rebel movement.
New H10	(O) Resource wealth increases the likelihood of civil war by increasing the probability of foreign state intervention to support a rebel movement or incumbent government. (D) Resource wealth increases the duration of civil war by increasing the probability of foreign state intervention to support a rebel group or incumbent government over a longer period in exchange for resource wealth or abiding access to resource wealth.

(I) Resource wealth increases the casualty rate of civil war by increasing the probability of foreign state intervention to support a rebel group or incumbent government's ability to wage warfare in exchange for natural resources or access to resource wealth.

Hypothesis 13, the retaliation mechanism, was modified to include all civil conflict, not only separatist conflict. There was no particular reason for this, and evidence was discovered that non-separatist civil conflicts can have instances of government over-retaliation. Additionally, the wording of "small challenges" was undefined. There was no rationale behind why only "small" challenges were relevant, thus that specificity was deemed unnecessary. Evidence for the new retaliation mechanism would be governments committing one-sided violence and/or indiscriminate violence against civilians in resource-rich areas. The mechanism would be further validated by contextual evidence of similar uprisings in non-resource-rich areas to compare government reactions.

Figure 5. *H13 alterations*

Original H13	Resource wealth tends to increase the casualty rate during a separatist civil war by giving the government an incentive to react to small challenges with unusually harsh countermeasures.
New H13	Resource wealth tends to increase the casualty rate during civil war by giving the government an incentive to repress civilian challenges with unusually harsh measures.

Most of the data collected was sourced from Google Scholar, USC Libraries and all of its associated databases. When possible, links to the database or PDF have been included. If there is

no link, it is because (1) there was a non-electronically published source or (2) the academic idea was mentioned indirectly in another (already cited) source. I have recorded which database was utilized for each source cited and even for sources that were consulted but not cited. In the same sheet, the search terms that produced each source have been recorded, along with the type of source and current number of academic citations per source. To access this collection of data, refer to the "Philippines Coding" excel file in the Appendix. The source searching process has been archived in sheets titled "Source Hunting" and "Sources." In terms of actual evidence, evidence organized by source may be found in the sheet titled "Citations Guide." Evidence organized by each hypothesis can be found in sheets "H1-H4," "H5-H9," "H10-H13." The key words, quotes, page numbers, and author's last names are included in these 3 sections under each reiterated hypothesis and corresponding dependent variable. The final coding of each hypothesis can be found in "Hypotheses" (See Table 5 and 6 as well).

Origins of conflict: Evidence

Table 2. *Origins of conflict (Onset influencing mechanisms)*

	Looting	Grievance	Separatism	Bureaucratic Weakness	Foreign Intervention	Future Booty
Philippines 1972-1996	No	Yes	Yes	Mixed	No*	No

*not enough evidence was collected to validate this mechanism, therefore it is falsified

The causal mechanisms that Ross predicted would influence the onset of civil conflict were H1, H2, H3, H4, H10, and H11 (as seen above). In my replication study on the Philippines from 1972-1996, I found almost no evidence of (H1) looting before the start of the civil conflict. The organization of the Muslim insurgency, the original MNLF separatist party, was cited as a

direct reaction to the 1968 Jabidah Massacre. Between 28-64 Moro (Muslim) recruits were murdered by government soldiers under the regime of Ferdinand Marcos.[37] There were no rebel preparations, specifically looting, for insurgency mentioned. On the contrary, Kaufman has referred to the site of the Muslim insurgency -- Mindanao, Philippines -- as a place that "lacks lucrative 'lootable resources' such as oil or diamonds and [that] there is no evidence that the resources it does have (such as timber) motivated the leaders of the Muslim insurgency."[38] Perhaps the reason why no looting occurred prior to the start of civil conflict was because no "lootable resources" were available. The looting mechanism hypothesized to result in the onset of civil war is, therefore, falsified by the lack of evidence and even countered by Kaufman's observation.

This finding is in line with Ross' finding in 2004. "There were no cases of the looting mechanism (H1) that Collier and Hoeffler suggest: in these thirteen cases, nascent rebel groups never gained funding before the war broke out from the extraction or sale of natural resources, or from the extortion of others who extract, transport, or market resources."[39] Both Ross' and my findings disprove the hypothesis that rebel groups fund their insurgencies through the resource sector.

The grievance mechanism (H2) accumulated a plethora of evidence. In the case of the Philippines, it is the most well-evidenced hypothesis that influences the onset of civil wars. There was evidence of grievances over environmental degradation, grievances over unequally distributed access and usage of natural resources, leading to social grievances over the

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[37] Astrid S. Tuminez, "Rebellion, Terrorism, Peace: America's Unfinished Business with Muslims in the Philippines," *The Brown Journal of World Affairs, 15(1),* (2008): 215, http://www.jstor.org.libproxy2.usc.edu/stable/24590961.
[38] Stuart J. Kaufman, "Symbols, Frames, and Violence: Studying Ethnic War in the Philippines," *International Studies Quarterly, 55(4),* (2011): 941, http://www.jstor.org.libproxy2.usc.edu/stable/41409806.
[39] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 50.

marginalization of ethnic Muslim minorities. Kahl illuminates the degree of environmental expropriation and degradation that took place in these areas of conflict, citing devastating rates of deforestation and coastal deterioration. Side effects of this environmental deterioration were migration, unemployment, and ethnic tensions.[40] Land ownership and the concept of "ancestral land" by Tuminez is a significant source of ethnic and religious tension leading to the onset of civil conflict. Tuminez refers to "ancestral land" as the symbol of prejudice against the Moro people in the Philippines. "The Moro story and persistent conflict in Mindanao is irrevocably linked to land, resources, and governance—the core components of ancestral do-main. Ancestral domain articulates the historical and legitimate foundation of Moro grievances."[41] Loss of ancestral land is a reminder to the Moro that they are second class citizens. This control over land is a social injustice etched into the history and policy of the Philippines; Tuminez, Buendia, Chavez, and Homer-Dixon all believe that these tensions over the access and exploitation of natural resources, specifically land, were one of the main drivers of conflict between Moro people and the Philippines government.[42] The grievances over environmental degradation and unfairly distributed resource wealth are connected to social grievances. Roque believed that "The proposition that environmental destruction leads to economic decline, economic inequity, and ultimately social conflicts is plausible." Two of those plausible circumstances of environmental degradation leading to economic and social detriment, he cites, are the Communist insurgency by

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[40] Colin Hackett Kahl, *States, scarcity, and civil strife in the developing world*, 121, 134.

[41] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines,", 86.

[42] Edgar Chavez and others, "Mindanao: Understanding Conflict," *John Hopkins SAIS* (2011): 111, http://stage.sais-jhu.edu/sites/default/files/Mindanao-Report_Complete_Report%20April%205_0.pdfChavez.

Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines," 86.

Rizal Buendia, "Mindanao Conflict in the Philippines: Ethno-Religious War or Economic Conflict," 17.

Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security 19(1),* (1994):15, 29, https://muse.jhu.edu/article/447316/pdf.

the NPA and the Muslim insurgency by the MNLF.[43] The stripping of power and through control of environment, namely a combination of environmental degradation and lack of land ownership, has lead the Moros to social exclusion in the Philippines. According to Holden and Kahl, Social exclusion leads to mass poverty, and mass poverty leads to insurgencies.[44] Holden and Jacobson reveal that "the NPA use the rhetoric of ideology (communism) to galvanize their members, and the MILF use the rhetoric of theology (Islam) to galvanize their members, but in both cases, it is ultimately the poverty and social exclusion that cause the movements to come into existence."[45] In both the Communist and Muslim insurgencies, resource wealth lead to environmental pressures that fueled social and economic inequalities. There was evidence of a vicious, endogenous cycle of grievances caused by resource wealth.

Further evidence for H2 shows that these grievances were utilized by rebel groups to rationalize their actions. Mining and logging companies were villainized by the locals, who saw the occupation of natural resources by these firms as a reminder of their social, political, and economic downfall. There was a "fear of mining" that manifested from the minig firms in people. This fear became the vehicle for the NPA to convince people that they will be displaced physically and spiritually by mining firms to increase recruitment. Holden believes this manipulated fear, this propaganda, is direct evidence of a "grievance motivated rebellion."[46]

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[43]Celso Roque and Maria Garcia, "Economic Inequality, Environmental Degradation and Civil Strife in the Philippines," paper prepared for the Project on Environmental Change and Acute Conflict (1993): 329-330, https://www.oregondigital.org/downloads/oregondigital:df70r755v.

[44] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 497.
Colin Hackett Kahl, *States, scarcity, and civil strife in the developing world*, 95.

[45] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 493.

[46] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," *The Canadian Geographer* 51 (4), (2007): 489.

Ross, however, found no evidence in his 13 cases that grievances caused by resource wealth motivated the onset of civil war. This dissonance is because Ross treats H2 as mutually exclusive from H3, meaning that H2 can only apply to non-separatist wars. "In general, however, no non- separatist civil wars were associated with complaints about land expropriation, environmental degradation, insufficient employment opportunities, or pressures caused by labor migration to resource-rich areas."[47] I have cited H2 as a counterpart to H3, because there is no reason for H2 to be only applicable to non-separatist civil conflict, it is not possible that any separatist civil war can take place without grievances, and evidence of H2 is necessary to validate H3. This difference in outcome is a matter of coding.

H3, the separatist mechanism, applies to only the Muslim insurgency in the Philippines. As a result of the above cited grievances (H2) caused by resource wealth, the only recourse for the Moro people was to secede. Mindanao, despite being the resource rich region that it is, is near the bottom of national rankings in terms of physical and socio-economic well-being. [48] The Moro people saw the slim likelihood of accommodation under the regime of the Philippines, having faced irreversible and relentless prejudice environmentally, economically, socially, and politically.[49] By the late 1960's, competition for land, resources, and political power fueled Muslim-Christian tension. Moro politicians who lost in unfair elections called for Moro independence.[50] Evidence shows the Moro want for regional autonomy caused by tensions over resource wealth and distribution.

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[47] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 51.
[48] Buendia, "Mindanao Conflict in the Philippines: Ethno-Religious War or Economic Conflict," 17
[49] Ibid, 20.
[50] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines," 80.

Ross only investigated 3 separatist wars in his 13 cases: Burma, Indonesia, and Sudan. He found that Indonesia and Sudan's resource wealth brought on the onset of separatist civil war. Burma, however, did not exhibit any ignition of separatist civil war brought on by natural resources. He concludes that there is "good" evidence that resource wealth encouraged the onset of separatist civil conflict.[51] My findings are in line with Ross' in that they so far prove that resource wealth causes the beginning of civil conflict, however I feel that the cases for H3 are sparse. Only ¾ cases investigated have validated this mechanism.

The weakening of a state's bureaucratic capacity by resource wealth causing the onset of civil war (H4) is disputable in the Philippines case. The observable implications of this mechanism include corruption and weak rule by the state. Corrupt elections and land distribution policies have plagued the Philippines since before 1972. The Marcos regime revealed kleptocratic tendencies in terms of access to land and mining regions. This corruption lead to the crumbling of state authority in the control of resources, making the management of land and mining sectors even more susceptible to corruption. There was a trend toward democratization and decentralization of power. But even the democracy was jaded.[52] However, in 1972, Marcos declared martial law, shifting the control of natural resources from the elite to the state. Although this may seem like Marcos is exercising the power of the state, the declaration of martial law is actually indicative of the state's desperateness. Additionally, martial law allowed the fraction of the traditional elite most closely aligned with Marcos and his family to monopolize certain resources. The martial law regime decreased overall bureaucratic authority but increased the

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[51] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 52.
[52] Boris Verbrugge, "Decentralization, institutional ambiguity, and mineral resource conflict in Mindanao, Philippines," *World Development 67* (2014): 452-453, https://www.sciencedirect.com/science/article/pii/S0305750X14003568.

bureaucratic power of a select few.[53] There is evidence of the state's bureaucratic weakening, and strong evidence confirming the corrupt nature of the state caused by resource wealth. Evidence validates H4.

Ross has not included the bureaucratic weakness mechanism in his tables recording the results of the onset mechanisms. He does not investigate this mechanism

H10 and H11 are not well-evidenced in the Philippines. These are the foreign intervention and booty future mechanisms presumably causing civil war onset. There is little evidence of foreign intervention before 1972. One source, Kaufman, states that "As early as 1969, the dissident Muslim Independence Movement (MIM) began receiving supplies from Sabah in Malaysia and sending men there for military training. Later, reportedly in response to the 1971 Manili mosque massacre, Libyan dictator Muammar Qaddafi intervened, providing military training and millions of dollars' worth of arms and supplies to Muslim rebels."[54] However, Kaufman later cites that these interventions were most likely motivated by ethnic relativity. In addition, as this is the only claim of foreign aid before 1972, I am reluctant to fully validate H10. In the case of H11, there is no evidence for the booty future mechanism causing onset of civil war at all. No sources cite the rebels nor the government promising resources that they will obtain in the future to foreign firms. Due to this paucity of evidence, both hypotheses are falsified by my findings.

Duration of Conflict: Evidence

Table 3. *Duration of conflict (duration influencing mechanisms)*

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[53] Colin Hackett Kahl, *States, scarcity, and civil strife in the developing world*, 125.
[54] Kaufman, "Symbols, Frames, and Violence: Studying Ethnic War in the Philippines," 941-942.

	Looting	Incentive	Regional Autonomy	Foreign Intervention	Future Booty	Net
Philippines 1972-1996	Yes	Yes	Yes	Yes	No*	Longer

*not enough evidence was collected to validate this mechanism, therefore it is falsified

The looting mechanism prolonging civil war (H5), not to be confused with the looting mechanism igniting civil war (H1), is well-evidenced. Rebels from both insurgencies and the government of the Philippines benefit from foreign investment in natural resources. Le Billon and Holden mention the "revolutionary taxes" that both the NPA and MILF imposed on foreign logging and mining companies. In return for paying taxes, the rebels allow the resource firms to peacefully operate in the resource rich areas, forestalling attacks on the facilities. Le Billon cited these taxes as a factor in the stalemate of the civil conflict.[55] Wayland remarks that such payments were the norm for mining companies in the Philippines at that time.[56] The government also found channels to profit off of the mining sector. President Ramos ratified the Mining Act of 1995, with incentives that encouraged mining and foreign investment in mining. There was a requirement that 40% of the mineral project would be managed by foreign firms. Foreign firms could now also own 100% of mining property. Holden believes this act is the main culprit in allowing the government to prolong the conflict.[57] The government encouraged foreign investment into their resources through policy, while the rebels capitalized off of their own self-

[55] Phillipe Le Billon, "Resources and armed conflicts," *The Adelphi Papers, 45:373* (2005): 39, https://doi.org/10.1080/05679320500129045.
William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 487.
[56] Joshua Wayland, "Natural resources, civil conflict, and the political ecology of scale*" Dissertation Order No. 10978690* (2018): 83, https://search-proquest-com.libproxy2.usc.edu/docview/2189112853?accountid=14749.
[57] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 479.

conjured "taxes." Profit off of resources is heavily evidenced in the Philippines by all combatants, validating the H5.

Ross also validated that looting mechanism contributes to duration of civil conflict. He classifies two kinds of natural resources that are lootable: those that are easily extracted such as drugs, gemstones, or timber, and those that indirectly profitable such as oil. The Philippines falls into the latter category. Utilizing tactics similar to those of insurgents in Colombia and Sudan, rebel forces have capitalized off of the country's geography. Like how Colombian insurgents threatened to blow up oil lines and ransomed workers, the NPA and MILF collected taxes from mineral and oil firms in exchange for their safe operations.[58] The government also created policies to profit off the land during the conflict. For Ross, 11 out of 13 cases validated this mechanism. My findings also validate this mechanism.

H6 is the incentive mechanism, it states that resource wealth tends to increase the duration of civil wars by offering combatants a financial incentive to oppose a peace settlement. The Philippines has supporting evidence for this causal mechanism. There is evidence of the failure of the Tripoli Agreement in 1976, the Autonomous Region in Muslim Mindanao (ARMM) in 1989 and the "Final Peace Agreement" in 1996. All efforts for peace were thwarted by the government's lack of accountability. After promising to reintegrate insurgents of the MNLF, it was revealed that the government auctions positions of high power were sold to the highest bidders. [59] Conflict continues due to the government's lack of commitment and trustworthiness. Additionally, esteemed Christian, land-owning families have a "track record of blocking the implementation of peace agreements, and some have actively lobbied against accommodating Moro ancestral domain claims," obviously because they would lose their

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[58] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 52-53.
[59] Tuminez, "Rebellion, Terrorism, Peace: America's Unfinished Business with Muslims in the Philippines," 215.

exclusive land rights and social status. [60] High level officers is not explicitly defined by Ross, so I believe that highly-esteemed benefactors of the war will qualify. There is enough evidence of many failed peace efforts and benefactors of the war regime that purposely delay peace to validate the incentive mechanism, though I believe further investigation is necessary as evidence is not widely cited.

Ross has mixed findings concerning the incentive mechanism. He finds that 5 cases show the presence of the causal mechanism, but 3 produce the opposite hypothesized result – the mechanism actually gave combatants an inducement to settle. [61] The other 8 do not exhibit evidence of mechanism 6. The results of Ross' investigation into H6 are mixed and I believe my findings are not satisfactory nor generalizable, though enough to validate H6 in this specific case.

Hypothesis 7 refers to separatist conflicts only. The regional autonomy mechanism is usually evidenced by stalled peace accords as a result of combatant distrust and reluctance to relinquish natural resources. There are many instances where peace accords have been stalled or failed in 1976, 1989, and 1996. The Tripoli Agreement, signed in 1976, was never implemented. [62] After the establishment of the ARMM in 1989, the Philippines did not grant the new region promised autonomy. Instead, ARMM could not achieve full fiscal independence and remained dependent on state subsidies. [63] Holden explains the state's insincerity and lack of accountability in establishing ARMM's autonomy as a result of the state's desire to access resources on lands occupied by the new region. Though most of Mindanao's geography is unexplored, it is the possibility of surrendering an invaluable, resource-rich area to the MILF that

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[60] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines,", 84.
[61] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 53.
[62] Tuminez, "Rebellion, Terrorism, Peace: America's Unfinished Business with Muslims in the Philippines," 215.
[63] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines," 82.

prevents the state from truly relinquishing the land. [64] Evidence clearly validates the hypothesis that resource wealth prolongs separatist civil conflict by discouraging states from committing to peace accords.

Ross believed that H7 was difficult to investigate. He does not attempt to test this hypothesis, and no finding is available for juxtaposition.

The foreign intervention mechanism (H10) is hypothesized to prolong civil conflict. There is evidence of this causal mechanism in the Philippines case. Since the Marcos regime, the Philippines government has been inviting multinational corporations to invest in their natural resources at the expense of the state's minorities. In the 1990's, the state pursued aggressive policies, particularly in mining, to combat economic struggle such as the Mining Act of 1995. They went as far as to make the first five years of operation tax-free for foreign investors.[65] These foreign investors settle into mineral and logging industries, where they become monetary fuel for combatants in civil conflict.[66] Despite insurgent opposition to foreign intervention, it is foreign sponsorship that sustains their combat and feeds the very inequalities they are trying to excise. "Inserting multinational mining corporations will not stop the social exclusion and poverty, and it will, through the mechanisms discussed above, aggravate the situation thus leaving the archipelago an impoverished land where violence remains a brutal aspect of daily life."[67] Holden believes that these multinational resource firms are not only sources of capital for combatants, but these firms exacerbate the social grievances of the people. The state bluntly

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[64]William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 490.

[65] Chavez and others, "Mindanao: Understanding Conflict," *John Hopkins SAIS* (2011): 115.
Boris Verbrugge, "Decentralization, institutional ambiguity, and mineral resource conflict in Mindanao, Philippines," 453.

[66]William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 487.

[67] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 497.

relies on foreign investment while insurgents are more hypocritical, though still accepting of foreign aid. There is sufficient evidence that resource wealth incentivizes foreign intervention in civil conflict and prolongs it.

Ross does not evaluate the foreign intervention mechanism for its effect on duration. The hypothesis has been augmented to include duration as a possible resulting dependent variable. Empirically, this is a mechanism that was recently added; Ross has no data on this intermediate variable relative to the new hypothesized dependent variable.

H12, the booty future mechanism that is hypothesized to prolong civil war duration, is not evidenced in any of my research. Tuminez does mention the Philippines government awarding service contracts to foreign investment firms for initial exploration of the Sulu Basin, but this action implies more conflict, prolonging the duration.[68] Though there is that sole instance of the government selling booty in the future, it seems to have a countereffect from the hypothesis since the government (stronger side) selling booty should decrease duration. Due to the lack of evidence and counterevidence, this mechanism is falsified.

Ross had mixed findings for H12. Of 13 cases, evidence of combatants promising booty in the future was only found in 4 cases – 1 of which had the opposite hypothesized effect.[69] Considering the inconsistencies in the operationalization of the intermediate variable, lack of evidence, and contradicting dependent variable, the booty future mechanism that prolongs civil conflict duration seems to be invalid.

Intensity of Conflict: Evidence

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[68] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines,", 84.
[69] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 53.

Table 4. *Intensity of conflict (intensity influencing mechanisms)*

	Valuable Territory	Cooperative Plunder	Foreign Intervention	Retaliation	Net
Philippines 1972-1996	Yes	No	Yes	No	Mixed

The valuable territory mechanism (H8) refers to the hypothesis that resource wealth increases the intensity of civil conflict by causing combatants to fight more frequently over resource-rich territory. There is evidence that more battles are fought in resource-rich areas.

The cooperative plunder mechanism (H9) is not only not evident in the Philippines case, it is disproved. None of the combatants on either side, the MNLF, MILF, NPA, the Philippines government, have exhibited any kind of cooperation. Even amongst the same rebel parties, there has been little cooperation. Moro leaders lacked a unification, hence the divergence of the MNLF from the MILF.[70] When the MNLF signed a peace accord in 1996, the MILF continued in combat against the state.[71] There was not even cooperation between members of the same insurgency. The cooperative plunder mechanism is not falsified in the Philippines case.

In Ross' findings, 8 cases exhibited cooperative plunder between parties. There were periods of intermittent peace and ceasefire in efforts to exploit and guard precious natural resources.[72] I believe what sets the Philippines case apart from the common case of cooperative plunder is the lack of unanimity within the insurgency.

There is evidence of the foreign intervention mechanism (H10) that does not fulfill the hypothesis of increasing combatant deaths. Ross does not evaluate H10 for intensity, so there is

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[70] Tuminez, "This Land Is Our Land: Moro Ancestral Domain and Its Implications for Peace and Development in the Southern Philippines,", 83.

[71] William Holden and R. Daniel Jacobson, "Mining amid armed conflict: nonferrous metals mining in the Philippines," 481

[72] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 56.

no data there either. The Philippines case has falsified this mechanism, but I believe more data needs to be consulted for generalizability.

There is evidence of the retaliation mechanism (H13) but no evidence of it threatening more lives during civil war in the Philippines. While martial law was declared in 1972 by Marcos, there is no evidence of increased intensity of conflict. The martial law regime was more political than violent.[73] This is the only instance in which an unreasonably harsh measure was taken by the government, but it does not prove the theoretical prediction. Therefore, the Philippines case falsifies this mechanism.

Ross also found little evidence of the retaliation mechanism. Only 2out of 3 cases exhibited evidence of harsh retaliations or repressions. There is evidence of H13 in cases of Indonesia and Sudan. Both conflicts experienced heightened casualties surrounding oil and gas. The majority of cases would falsify this mechanism.

Replication vs. Original Summary

Table 5. Summary of *all replication findings*

			Replication Finding	Ross Finding
H1	Looting Mechanism	O	No	No
H2	Grievance Mechanism	O	Yes	No
H3	Separatist Mechanism	O	Yes	Mixed (Yes / No / —)
H4	Bureaucratic Weakness Mechanism	O	Yes	
H5	Looting Mechanism	D	Yes	Mixed

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[73] Colin Hackett Kahl, *States, scarcity, and civil strife in the developing world*, 125.

H6	Incentive Mechanism	D	Yes	Mixed (Yes/No)
H7	Regional Autonomy Mechanism	D	Yes	
H8	Valuable Territory Mechanism	I	Yes	Mixed (**Yes** / No)
H9	Cooperative Plunder Mechanism	I	No	Mixed
H10	Foreign Intervention Mechanism	O, D, I	Mixed	
H11	Future Booty Mechanism	O	No	
H12	Future Booty Mechanism	D	No	Mixed (Yes / **No**)
H13	Retaliation Mechanism	I	No	Mixed (Yes / **No**)

Only 4 out of 13 of Ross' theoretical predictions were validated by my replication study. This means that the intermediate variable was present and evidence to lead to the predicted dependent variable. There is no evidence of the (H1) looting mechanism leading to the onset of civil war. The (H8) valuable territory mechanism is also substantially unanimous; though Ross' findings were mixed, there was a trend matching my finding that more battles are fought in resource-rich land resulting in more casualties. In the case of H12, only 4 of Ross' cases exhibited evidence of booty future, and 1 of those 4 leads to the opposite hypothesized outcome in civil war. My evidence from the Philippines insurgency falsifies the notion that future booty is used as an incentive during conflict and affects the duration. Both Ross and I have evidence to disprove H12. (H13) is also falsified by both of our findings; there is little to no complete

evidence of increased intensity due to the government repressing civilians with unusually harsh measures.

Table 6. *Summary of replication findings*

	Onset	Duration	Intensity
Philippines 1972-1996	Yes	Longer	Mixed

To mirror Ross' Table 3 on the summary of his findings, I have organized the findings of my replication by dependent variable.[74] Many, but not all of the mechanisms (H1, H2, H3, H4, H10, H11) influencing the onset of civil war were present. The same applies to the mechanisms prolonging the duration of civil conflict (H5, H6, H7, H10, H12); a substantial amount of evidence, but not every piece of evidence, showed that resource wealth prolonged civil conflict. Much less evidence was collected to prove the mechanisms stating that resource wealth increased the intensity of civil war (H8, H9, H10, H13). Evidence collected about the mechanisms influencing the intensity of civil war were contradictory.

Ross' summary of findings found that he had substantial evidence that his mechanisms linking resource wealth to the onset of civil war. [75]His findings on the duration of civil war caused by his hypothesized mechanisms are more mixed. While there is evidence of H5/H6 lengthening civil war, "that analysts should approach claims about the importance of the incentive mechanism skeptically: it may have lengthened two conflicts, but it shortened three others, and there was no evidence of it in several other conflicts where some have suggested it

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[74] Ibid, 49.
[75] Ross, "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," 52.

operates."[76] Ross also concludes that the intensity of civil war caused by his hypothesized mechanisms have a mixed finding, as some mechanisms offset others.[77]

Analysis and Implications

With the findings from this replication study, there are improvements we can make to academia and real-world policies. Though the literature surrounding the resource curse may be strengthened by this replication study, it is imperative that the coding is revised again to improve consistency, relevance and clarity. This replication study is a vehicle driving Ross' coding system towards improvement, with the ultimate goal of creating a transparent and accurate system to determine the causal mechanisms between resource wealth and its impact on civil war. In terms of policies, the greatest contribution that this paper could make is its emphasis on how natural resources may lead to ethnic and social grievances.[78] The fiercest drivers of civil conflict in the Philippines were the social grievances. These grievances were caused by policies that perpetuated a cycle of exclusion like the Mining Act of 1995 or land ownership policies favoring Christians. Policies, particularly the ones pertaining to the distribution of and access to resource wealth, must be considered more carefully to avoid creating or perpetuating social grievances that could lead to the onset and prolonging of civil war.

There is some observable dissonance between my replication study of the Philippines and Ross' original work. This dissonance is in part because of the complexity of the Philippines' civil conflict(s) from 1972-1996. The Philippines is an outlier case in that there are not one, but two insurgencies: the Muslim insurgency and the Communist insurgency. While I believe that both

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[76] Ibid, 55.
[77] Ibid, 56.
[78] Colin Hackett Kahl, *States, scarcity, and civil strife in the developing world*, 95.

are significant and should be examined, they should be examined under separate lenses. One is a separatist conflict while another one is not. There are certain mechanisms only applying to the separatist conflict, so the dataset will be much more cohesive if the conflicts were separated. Additionally, the Philippines is a unique case because there are denominations even within the Muslim insurgency. The Moro separatist movement itself is a chaotic one; while the MILF and MNLF share an identical goal, their means of achieving it differ. This distinct dichotomy within the same insurgency has led to complex data within the Muslim insurgency literature. To truly investigate each civil conflict, I suggest a separation of the two civil conflicts within the Philippines from 1972 to 1996 in order to accommodate the intricacies.

Another part contributing to some dissonance is the inconsistency of the coding method. I am suggesting that there is inter- inconsistency between the coding of Ross and my coding, as well as intra- inconsistency within my own coding. The former is referencing Ross' decision to overlook the evaluations of H4 and H7. Thus, there is no original data to standardize my findings. Additionally, the definition of intensity is rather general and obscure. There are very little cases were the exact casualty rate is cited. I would like to propose a revision of this definition. Both Ross and I had mixed and inconsistent evidence of most mechanisms influencing the intensity of civil conflict – perhaps due to the vague and inapplicable definition of intensity. The latter coding inconsistency is an error within the intermediate variables that have already been revised in my coding. The reason why H10 is "mixed" in table 5 is because that is in reference to 3 causal pathways. Empirically, H10 (O) would be "No," H10 (D) would be "Yes," and H10 (I) would be "No." However, since all three pathways are under one hypothesis, the sum of all evidence would be "mixed." There exist 2 looting mechanisms -- H1 (O) and H5 (D) -- as well as 2 booty future mechanisms -- H11 (O) and H12 (D). I believe the

coding would be more uniform and logical if we continue this model of separation between identical mechanisms with differing dependent variables. There should exist 3 foreign intervention mechanisms: H10 (O), H10 (D), and H10 (I).

Considering all the outliers and limitations of this case, this replication still holds validity and value. The case of the Philippines is, as I have mentioned, unconventional. This time frame harbors both separatist and non-separatist insurgencies. The fact that both insurgencies relied on direct and indirect resource income is telling of the relationship between natural resources-civil war. Another distinct characteristic of this case is the type of natural resource. Though it is not a conventionally "lootable" resource, the ways that rebels capitalize off the land illuminate the extent of the value of natural resources.[79] It could be that "unlootable" resources test humanity's true dependence on resource wealth as even the toughest resources to extract are circumvented by human creativity and desperacy in times of civil conflict. Future juxtaposition of civil conflict in the same countries or investigations into cases of "unlootable" resources may strengthen the resource curse literature.

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[79] Kaufman, "Symbols, Frames, and Violence: Studying Ethnic War in the Philippines," 941.

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