CAUSAL LINKS OR MERE STATISTICAL ASSOCIATIONS?

Testing the opportunity cost and the natural resource predation causal mechanisms in the context of the First Liberian civil war (1989-1997)

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Abstract

Despite a pressing need to develop a comprehensive academic foundation for effective conflict prevention policies, the academic community remains divided on the causes of civil war. The Feasibility Theory has uncovered nine risk factors that make countries prone to civil war. However, it remains unclear whether the relationships proposed by the authors of this theory can be considered causal. A theory testing process tracing case study was carried out to address this problem. The question addressed in this study is: To what extent can the analysis of the First Liberian civil war (1989-1997) update our confidence in the causal mechanisms drawn from Feasibility Theory? Due to feasibility constrains, the study was restricted to testing opportunity cost and natural resource predation causal mechanisms. The empirical analysis revealed evidence that poor economic conditions enabled the leaders of the rebellion to recruit new fighters with limited funding. Moreover, it uncovered evidence that the leaders of the rebellion funded their armed insurgency by organized systematic exploitation of Liberia's natural resources. In light of the inferential weight of evidence supporting each causal mechanism, it was determined that our confidence in the opportunity cost causal mechanism was increased slightly. The weighting of the evidence also increased our confidence in the natural resource predation causal mechanism. The results of the analysis suggest that 'lootability' of natural resources exported by a given country do not have a direct effect on its risk of civil war. These inferences are restricted to the case of the First Liberian civil war, but could become applicable to the wider population of civil wars if nested in a larger theory testing project.

Key words: Feasibility Theory, causal mechanisms, opportunity costs, natural resource predation, First Liberian civil war.

FOREWORD

This thesis is written as a part of the final assignment of the Master program Crisis and Security Management, at Leiden University. It examines opportunity cost and natural resource predation causal mechanisms in the context of the First Liberian civil war.

The idea to study the causes of civil wars has been with me since the last year of my bachelor studies. I have realized that I would like to test the Feasibility Theory during the Research Design class. Although, I have considered changing this topic several times, the news reports from countries like Syria, Libya or Yemen have compelled me to stick with this topic.

Herewith, I would like to extend my sincere gratitude to my thesis supervisor Dr. Jelle van Buuren for his guidance, support, and patience in answering my endless questions.

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1. INTRODUCTION

Civil wars not only produce human tragedies and destruction on a colossal scale for the society that is directly participating in them, but often also create humanitarian crises that affect neighboring countries. Within this context civil wars can be understood as a 'glocal' security threat. In the 21st century approximately 30 countries have experienced civil war (Sandler, 2016, p. 161). In addition their neighboring nations have been indirectly affected by the externalities of these conflicts. The Libyan and Syrian civil wars are two recent examples of this phenomenon. These conflicts caused immense suffering in the affected areas, destabilized neighboring countries, and created a ripple effect, which shook the foundations of the European Union. Again these struggles are not unique. These civil wars illustrate that in today's interdependent world the international community has a stake in conflict prevention. Thus, within academia there is a pressing need to develop a better framework to guide policy makers in preventing or resolving similar crises.

Despite the clear need to understand the reasons behind prevalence of civil wars, the academic community remains divided on the causes of intrastate conflicts. Although, there are many competing explanations for civil wars, there are two main schools of thought who hold opposing views on this question (Bara, 2014, p. 696). The first group of scientists sees these conflicts as a result of political and economic grievances that motivate the people to rebel. While the second group perceives them as a product of a favorable opportunity structure that makes rebelling a viable option (Murshed & Tadjoeddin, 2009, p. 108).

Civil War Feasibility Theory/Hypothesis (Feasibility Theory) is arguably the most influential theory among the second group of academics (Blattman & Miguel, 2010, p. 22; Nathan, 2005, p. 1). It postulates that "where a rebellion is financially and militarily feasible it will occur" (Collier, Hoeffler , & Rohner , 2009, p. p. 1). This theory is based on large-n quantitative studies carried out by Collier and his colleagues. Although these studies identified that certain structural

factors[1] correlated with country's risk of civil war, their authors did not develop clear causal mechanisms that could explain these relationships.

Consequently, many scholars have argued that the statistical relationships identified by Collier and his colleagues are not necessarily causal. Thus, qualitative case studies could refine Feasibility Theory, by uncovering how the causal links proposed by Collier and his supporters have influenced the onset of actual civil wars. This thesis addresses this academic niche by testing the causal mechanisms drawn from Feasibility Theory[2] in the context of the First Liberian civil war.

The societal relevance of this research stems from the fact that Feasibility Theory is highly influential not only among academics interested in civil wars but also among policy makers and political leaders (Ginty & Williams, 2009, p. 3; Keen, 2012, p. 758; Nathan, 2005, p. 1). For example, Berdal (2005) links UN's efforts to tackle the trade in 'conflict goods'[3] to widespread acceptance of the proposals made by Collier and his colleagues (p. 687-688). While, on a recent BBC interview, Paul Collier has been introduced as an influential advisor to many prominent policy makers, such as the prime minister of Great Britain David Cameron or the chancellor of Germany Angela Merkel (Collier, 2017). Thus, flaws or inconsistencies of this theory could affect political decisions that govern the lives of people in conflict prone countries. Although the aim of this research is rather narrow it could make a small, but significant contribution to the development of Feasibility Theory. Thus, adding to our understanding of civil wars.

[1] Nine independent variables in the latest version of the theory. These variables are discussed in detail in "2.2. The causal links proposed by Feasibility Theory" p. 13-15.

[2] Since authors of Feasibility Theory did not conceptualize their causal relations as causal mechanisms, the term 'causal mechanisms of Feasibility Theory' cannot be used. Therefore, 'causal mechanisms inferred/drawn from Feasibility Theory' is used to refer to causal mechanism that are based on the interpretation of causal links provided by the authors of Feasibility Theory.

[3] For instance, the Kimberley Process to stop the trade in 'blood diamonds'.

Central research question: To what extent can the analysis of the First Liberian civil war (1989-1997) update our confidence[4] in the causal mechanisms drawn from Feasibility Theory?

Sub-questions:

- What is the place of Feasibility Theory in the wider civil war literature?
- How can the causal links proposed by Feasibility Theory be converted into testable causal mechanisms?
- Was the opportunity cost causal mechanism inferred from Feasibility Theory present and functioning as expected in the case of the First Liberian civil war?
- Was the natural resource predation causal mechanism inferred from Feasibility Theory present and functioning as expected in the case of the First Liberian civil war?

This research project takes the form of a qualitative case study. Theory testing process tracing method is used to analyze the causal mechanisms proposed by the authors of Feasibility Theory, in the context of the First Liberian civil war.

The first chapter of this thesis outlines the problem that will be studied in the subsequent chapters and explains why and how it will be analyzed. The second chapter introduces an overview of Feasibility Theory in the wider context of civil war literature. Then, the third chapter explains the methodology of this thesis and conceptualizes the opportunity cost and natural resource predation causal mechanisms. The fourth chapter provides a short historical overview of the First Liberian civil war. In the fifth chapter, the proposed causal mechanisms are subjected to empirical testing. The sixth chapter presents the conclusions of this thesis. Finally, the seventh chapter contains a discussion about the significance of this research project, the challenges encountered by the author and the prospects for expanding this theory testing project in the future.

[4] 'Our': the academic community. 'Confidence' or 'belief': expectation that these causal mechanisms exist and function as expected

2. THEORETICAL FRAMEWORK

This chapter starts by examining the development of Feasibility Theory in the wider context of civil war literature. Then it narrows down the scope of the thesis by identifying the causal links that will be tested in the analysis chapter.

2.1. Defining Feasibility Theory in the context of civil war literature

In the last two decades many scholars have turned their attention from wars between nation states to wars between governments and non-state groups (Dixon, 2009, p. 707). Most of these academics belong to competing schools of thought that offer distinct explanations for this complicated phenomenon (Cederman, Gleditsch, & Buhaug, 2013, pp. 11-26). As a result, there is little agreement on what causes internal conflicts, what factors prolong them and what influences determine their severity or outcome.

However, a number of researchers, interested in civil wars, have coalesced into two broad schools of thought that represent the opposing sides in the "Greed versus Grievance debate" (Bara, 2014, p. 696). This debate started when a group of political economists (Collier & Hoeffler, 1998; Fearon & Laitin, 2003) proposed that civil wars are started by individuals who seek personal gain. This view challenged the political scientists who perceived political grievances as the main causes of civil wars. Over the next 10-15 years both sides of the divide had to recognize flaws in their initial positions and make concessions (Collier et al., 2009; Fearon & Laitin, 2010, p. 209; Murshed & Tadjoeddin, 2009, p. 107-108). Consequently there were attempts to bridge the divide (Zartman, 2011, p. 303-304; Hoeffler, 2011, pp. 281-282; Bara, 2014, p. 707). However, in the last few years, numerous authors have made conscious attempts to prove the ascendency of either 'Greed'[5] or 'Grievance' thesis (Call, 2011; Alidu, 2013; Cederman, Gleditsch, & Buhaug, 2013; Dixon, 2014). Thus, 'Greed versus Grievance debate' is still a relevant cleavage fragmenting the academic community, interested in civil wars. Notwithstanding, the discussion has shifted from 'what motivates the rebels' to 'whether

[5] Over time 'Greed' thesis has morphed into 'Feasibility' thesis, which partially replaced the old 'Greed' thesis in the newer versions of the 'Greed versus Grievance' debate.

structural opportunities or motives are more important for explaining the prevalence of civil wars' (Cederman et al., 2013, p. 25).

Currently, the Horizontal Inequalities (HI) Theory is widely recognized as the most prominent theory among the proponents of the 'Grievance' school of thought (Cederman et al., 2013; Keen, 2012). While, the earlier theories of political grievances have been based almost exclusively on case studies, HI Theory is also supported by robust quantitative research (Langer & Steward, 2013, p. 9). HI are defined as "inequalities in economic, social or political dimensions or cultural status between culturally defined groups" (Steward, 2008, p. 3) Steward (2010) proposed that whilst political inequality motivates the leaders of a disadvantaged group to start a rebellion, social and economic inequalities motivate mass mobilization and cultural inequalities bind the group together (Steward, 2010, p. 7). While Cederman et al. (2013) identified a causal mechanism, which translates real or perceived HIs into grievances, which are necessary to spark a civil war (p. 36-37).

On the other side of the 'Greed versus Grievance' divide, the most influential theory is Feasibility Theory developed by Collier et al. (Blattman & Miguel, 2010, pp. 22-23). The earliest version of Feasibility Theory – formulated in 1998 - was based on a premise that civil wars will occur only if the potential rebels believe that economic benefits of starting a conflict will outweigh the costs (Collier & Hoeffler, 1998). Authors of Feasibility Theory (at first known as the 'Greed' thesis) consciously positioned themselves against the discourse based on grievances, which dominated the civil war studies at that time. Collier & Hoeffler started the 'Greed versus grievance debate' by arguing that political grievances are universal and civil wars only occur when rare favorable condition create economic incentives to start a rebellion (Blattman & Miguel, 2010, p. 22). However, after facing fierce criticism Collier & Hoeffler (2001) agreed that rebels can be motivated both by economic opportunities and by real or perceived grievances (p. 2). They proposed that rebel motivation is irrelevant and civil wars can only occur in countries where building a militant organization is economically and militarily 'viable' (Collier

& Hoeffler, 2001, pp. 1-2). Collier & Hoeffler stuck to this revised position and, as a result, the 'Greed thesis' has been transformed into the 'Feasibility Theory'.[6]

Feasibility Theory rests on quantitative methodological foundation. Based on factors that had been theorized to make a country prone to civil war, Collier & Hoeffler (2001) constructed two econometric models for predicting the outbreak of civil war. One based on factors related to grievances and the other related to opportunities. Then they used regression analyses (logit regressions) to estimate which factors correlate with their dependent variable: the risk of civil war during a five-year period[7] (p. 4-8). Finally, the set of independent variables that remained statistically significant, after passing numerous statistical tests, were interpreted as having causal links with the risk of civil war (Collier & Hoeffler, 2001, p. 16-17). This analysis relied on data drawn from the Correlates of War data set, which defined civil war as organized military action resulting in at least 1,000 battle deaths in a given year, with at least 5% of the casualties being inflicted by the weaker party and national government being one of the combatants. The later versions of the theory, which are more relevant to this thesis, used almost the same research design. Although Collier and his colleagues made some adjustments to the proxies, [8] the robustness checks, the data set and even the hypothesis in the following studies (Collier & Hoeffler, 2004; Collier, Hoeffler & Rohner, 2006; Collier et al., 2009).

From its conception in 1998 this theory has been regularly updated to address the constructive criticism it encountered throughout the years (Collier & Hoeffler, 1998; Collier, 2000; Collier & Hoeffler, 2004; Collier & Sambanis, 2005; Collier, et al., 2006; Collier et al., 2009). For instance, Sambanis (2004) criticized the proxies and the methodology of Feasibility Theory and emphasized the need to combine comparative case study design with the formal-quantitative approached used by Collier & Hoeffler (Sambanis, 2004, p. 259). One year later Collier & Sambanis (2005) co-edited a book ("Understanding civil war"), which used a mixed methods approach. Collier & Sambanis recruited a number of academics who were responsible for applying Feasibility Theory to a set of case studies of civil wars. However, although all of these

[6] Although some authors (for instance, Bensted, 2011) still choose to reference or criticize older, unrevised versions of the theory.

[7] Risk – how likely it is that a civil war would break out during the five year period.

[8] In statistics a 'proxy' is a variable that is used as a substitute for an unobservable or immeasurable variable.

authors were supposed to use the same theoretical framework and conduct process tracing the actual methodology differed greatly among the case studies. Moreover, the goal of these studies was theory-building rather than theory-testing as their authors were tasked with providing 'thick descriptions' of the civil wars that could be later used to identify potential causal mechanisms (Collier & Sambanis, 2005, pp. 1-21). In addition, the authors of the case studies worked with an old set of risk factors (Collier & Hoeffler, 2001) which has been significantly altered since then (Collier & Hoeffler, 2004; Collier, et al., 2006; Collier, et al., 2009). Consequently this limited attempt at nesting Feasibility Theory with qualitative studies was a positive step however, it failed to persuade a significant portion of the academic community that the correlations identified by Collier and his colleagues could be interpreted as causal links.

The review of the wider civil war literature revealed that this might be a systematic problem in this field. In recent years, relatively few scholars sought to systematically analyze the causal mechanisms connecting the various risk factors identified by numerous quantitative studies. For instance, out of 448 articles on civil war, published from 1995 to 2012 in the fifteen prominent political science journals, only 12 had explicitly claimed to be employing process tracing methodology (Lyall, 2014, p. 188). Since large-n quantitative studies reveal correlations, rather than causation, qualitative studies, employing process tracing methodology, are crucial for determining whether a given correlation can be understood as a causal link. Although, "Understanding civil war" (Collier & Sambanis, 2005) represented an attempt at using mixed methods approach to supplement Feasibility Theory, the later updates of the theory were again based on strictly quantitative methodology (Collier et al., 2006; Collier et al., 2009).

The latest version of Feasibility Theory was released[9] in 2009. Since then numerous scholars have raised new questions about the validity of this theory (Keen, 2012; Cederman, Weidmann & Gleditsch, 2011; Holmqvist, 2012). A significant part of this criticism was directed towards the interpretations of the correlations identified by the authors of Feasibility Theory. For instance, Nathan (2005) claimed that "conclusions they [Collier *et al.*] draw from their statistical analysis are speculative" (p. 6). Then, Holmqvist (2012) argued that "the results [of Collier et al.] may, lend themselves to various alternative interpretations" (p.11). More specifically, Blattman

[9] Up until 2017-05-02

& Miguel (2010) proposed that Collier's et al. explanation of the correlations between their GDP per capita variables and a country's risk of civil war was not justified (p. 23). Finally, Keen (2012) asserted that "his [Collier's] interpretation of rebel behavior is certainly an oversimplification" (p. 770). This list of critiques is by no means exhaustive; there are other critics who have voiced similar concerns related to interpretations (Bensted, 2011; Cederman et al., 2013).

Consequently, in order to make inferences[10] about the existence of causal links rather than mere correlations, Feasibility Theory needs to be updated with evidence from qualitative case studies, dedicated to theory-testing. However, before these interpretations can be tested they need to be re-conceptualized as causal mechanisms. For this to happen, the causal links proposed by Collier et al. (2009) need to be presented in more detail. The next sub-chapter presents the statistical associations, which have been uncovered by the latest version of Feasibility Theory.

2.2. The causal links proposed by Feasibility Theory

In their latest study of civil war, Collier et al. (2009) presented nine independent variables, which were found to correlate with a country's risk of civil war. Thus, when the value of any one independent variable increases or decreases the value of the dependent variable (risk of civil war) changes accordingly, based on its regression coefficient.[11] These statistical associations were interpreted as causal links. Although, not every causal link could be tested in this thesis, it was important to describe all nine variables. Otherwise, it would be hard to explain why certain variables were chosen for analysis while others were not.

1. *GDP per capita*. According to the feasibility-based interpretation, rebel recruitment will be easier in a poorer country, because an impoverished population will have lower opportunity costs. Alternatively, according to the state effectiveness or state capacity argument, a poorer

[10] Inferring- using data to draw broader conclusions about concepts and hypotheses (Beach and Pedersen, 2013, p. 179)

[11] When the regression coefficient is positive higher value of this independent variable will increase the risk of civil war, when the coefficient is negative the effect is reversed. For the coefficients of all Feasibility Theory variables refer to Appendix C.

country will have less control over its territory and thus will be less capable of suppressing the rebellion militarily.

2. *Growth of GDP per capita*. The authors explain that slower economic growth increases the risk, because it means that there are fewer employment opportunities. Opportunity costs of becoming a rebel decreases for unemployed and rebel leaders find it easier to recruit new members.

3. *Primary commodity exports* (what percentage of country's exports are primary commodities). Collier et al. (2009) suggest that natural resources (for instance, oil or diamonds) can be used to fund the rebellion. Therefore, if a country is rich in natural resources the insurgents can exploit these resources to fund their struggle. Alternatively, according to the grievance thesis, resource rents will detach the government from its citizens. Since the government will be less reliant on tax collection it will be less accountable, producing grounds for grievances.

4. *Previous war* (how many years have passed since the last civil war). This variable is explained through legacy effects. Either psychological legacy, such as hatred among two communities that opposed each other in the previous armed conflict. Or material legacy, for instance caches of weapons, organizational structures of former militant groups. Since both types of legacy expire over time, each year that passes after the last civil war decreases the chance of renewed hostilities.

5. *Former French African colony*. Security guarantees to the regime from outside power could strengthen it and thus reduce the incentives for an insurrection. Former French colonies are unique in this case, because they (unlike for example English colonies) were provided such guarantees by their metropole in the period between 1965 and 1999.

6. *Social fractionalization* (ethnical and religious diversity of the country). Countries that are more diverse ethnically and religiously are more likely to have an outbreak of civil war. Collier et al. (2009) admit that they do not have an explanation for this causal relationship.

7. *Proportion of young men*. Countries with higher proportions of young men, in relation to the rest of the population, face greater risk of civil war, because young men are the primary recruits of most rebel movements. Thus, a greater pool of potential recruits decreases the cost of an insurrection.

8. *Population* (how many people live in the country). A country with the same land mass, but significantly bigger population should face significantly larger risk of civil war than a more sparsely populated country. However, the model showed that the actual effect is rather small[12]. According to Collier et al. (2009), this correlation can be interpreted as evidence that there are economies of scale in deterrence of organized violence.

9. *Geography* (proxied by an indicator, which measures the percentage of country's landmass that is mountainous). Mountains[13] are interpreted as a risk factor, because they provide safe havens for the rebels and thus increase the military viability of the insurgency (Collier et al., 2009, pp. 7-11).

TTPT method, which has been selected for answering this thesis' RQ, requires analyzing vast amount of data. Therefore, taking into account feasibility considerations, analysis of all nine correlations would go beyond the scope of a single MA thesis. However, most independent variables have distinct causal mechanisms connecting them to the dependent variable, thus they can be analyzed one at a time. The selection of the variables was based on three criteria. Firstly, the interpretation of the proposed causal relationship, provided by Collier et al, had to be sufficient detailed to conceptualize it as a testable causal mechanism. Secondly, the validity of this interpretation had to be challenged by the critics of the theory. Thirdly, testing of this relationship in the context of the First Liberian civil war had to be feasible.[14]

The *Former French African colony*, *Geography* and *Proportion of young men* variables were excluded, because they had been introduced into the theoretical model precisely because their interpretation was unambiguous (Collier et al., 2009, p. 24). *Population* variable could not be tested, because Liberia's population was relatively small and thus the causal mechanism was unlikely to be active in this case. Liberia had not experienced a civil war before the outbreak of this First Liberian civil war, therefore the *Previous war* variable could not be tested in the

[12] Doubling the country's population, keeping all other variables at an average, only increases the risk by 1/5 (from 4,6% to 5.5%).

[13] In earlier studies Collier et al. also tested forest cover as another terrain feature that provides military advantage to the rebels. However, the regression analysis showed that there were no significant correlation between this variable and country's risk of civil war (Collier & Hoeffler, 2004).

[14] For reasons why Liberia has been selected refer to "3.4. Case selection" p. 21.

context of this conflict. Initially, we considered analyzing both the First and the Second Liberian civil wars, thus enabling the testing of the *Previous war* variable. However, feasibility concerns forced us to limit our attention to the First Liberian civil war. Unlike in the case of other variables, Collier et al. did not provide an interpretation for the correlation between *Social fractionalization* and country's risk of civil war. Therefore, there was no causal mechanism that could be inferred and tested using TTPT. It was determined that only correlations between *GDP per capita*, *growth of GDP per capita*, *Primary commodity exports* and the risk of civil war fitted all three criteria. The causal relationships purportedly linking these variables to the risk of civil war could be conceptualized as causal mechanism. Moreover, critics of the theory have argued that Collier et al. (2009) have misinterpreted these independent variables. Finally, based on Feasibility model, these independent variables had a significant effect on Liberia's risk of civil war and thus could be studied in the context of this conflict. Consequently, this thesis aimed to test causal mechanisms, draw from the *GDP per capita*, *growth of GDP per capita* and *Primary commodity exports* variables of Feasibility Theory.

3. METHODOLOGY

This chapter presents the set of procedures that will be used in subsequent chapters to answer the research questions that have been raised in the introduction. First segment explains why a qualitative in-depth single case study research design was adopted in this thesis. In the following segment theory testing process tracing (TTPT) method and its underpinning Bayesian logic are explained in more detail Thirdly, the three causal relationships, identified in the theoretical framework, are re-conceptualized as two causal mechanisms drawn from Feasibility Theory. The next segment describes the operationalization and testing procedures that will be applied in the subsequent analysis chapter. Finally, the last segment addresses the limitations inherent in this methodology.

3.1. Research Design

The theoretical chapter revealed that an inherent problem of Feasibility Theory arises from its methodology. While the qualitative studies carried out by Collier and his allies revealed that certain structural factors correlate with civil war risk, they could not sufficiently prove that these statistical associations should be interpreted as causal links. Therefore, this thesis adopted a qualitative approach, which can be used for refining our understanding of the associations uncovered by large-n quantitative studies.

The aim of this thesis was to examine whether and how the causal links proposed by Collier et al. have contributed to the onset of an actual civil. Thus, the ambition of this thesis was confined to within-case inferences,[15] rather than cross-case inferences. Within-case inferences can be defined as "causal inferences made, based on observed empirical material, about the presence or absence of the parts and whole of a causal mechanism in a particular case" (Beach & Pedersen, 2013, p. 182). In contrast, cross-case inferences are deductions about the causal effect that are applicable across the whole population of the studied phenomenon. Since the objective of this thesis was to learn more about particular causal mechanisms, we chose in-depth single-case study research design, which enabled strong within-case inferences.

[15] Inferring- using data to draw broader conclusions about concepts and hypotheses (Beach and Pedersen, 2013, p. 179)

3.2.Method – theory testing process tracing

According to Lyall (2014) “Process tracing is an invaluable tool in the civil war scholar’s toolkit…for it provides the ability to move beyond statistical association [correlation] towards causal inference about why (and how) outcomes are produced in civil war settings” (p. 186). TTPT method was chosen to answer the central research question, because it has been designed specifically for testing existing causal mechanisms (Beach & Pedersen, 2013, p. 11). Moreover, it also helps to uncover the context (scope conditions) under which the mechanism enables the transmission of causal forces from X to Y (Lyall, 2014, p. 2006). The methodology of this thesis was based on the guidelines presented in “Process-Tracing Methods Foundations and Guidelines” (Beach & Pedersen, 2013), which has been recognized as “the first book-length study of process-tracing methodology” (Ylikoski, 2015, p. 634). According to the authors of this manual, a causal mechanism links a cause (X) and an outcome (Y) through an interlocking system of necessary but insufficient parts. Each part is comprised of an entity (n) engaged in an activity transmitting causal energy (→). Thus the whole mechanism can be portrayed as: X [(n1 →) * (n2 →)] Y (Beach & Pedersen, 2013, p. 29-30). However, often causal mechanisms are dependent on context within which they occur. According to Falleti & Lynch (2009), context can be understood as the setting in which a set of initial conditions produce an outcome through operation of a causal mechanism. Beach & Pedersen (2013) used this definition to define the concept of scope conditions as “the context under which a particular mechanism is theorized as able to be activated” (p. 181).

A researcher employing TTPT starts from a premise that a causal mechanism linking X and Y is present in a population of cases covered by a particular theory. The objective of a TTPT study is to assess whether the empirical evidence, of a particular case, support the hypothesis that the presumed causal mechanism has been present and is functioning as expected. This method allows us to go beyond the study of statistical association by “opening up the black box of causality to study more directly the causal mechanisms whereby X contributes to producing X" (Beach & Pedersen, 2013, p. 11). Therefore, this method was ideal for testing the causal mechanisms drawn from Feasibility Theory.

3.3. Bayesian logic

The adoption of the Bayesian logic of subjective probability underpins TTPT user's ability to make strong within-case inferences about the existence of a particular causal mechanism. Bayesian logic enables the researcher to determine in a transparent manner to what extent new evidence can update his confidence in the hypothesis that he is testing (Beach & Pedersen, 2013, pp. 82-83).

From the perspective of TTPT, every part of a causal mechanism can be conceptualized as a separate hypothesis, which has to be tested in order to update our confidence in the mechanism as a whole. According to the Bayesian theorem, [16] three characteristics determine to what extent new evidence can update our confidence in the validity of a hypothesis. Our belief in the validity of a hypothesis after evidence has been collected is defined as the *posterior* (Beach & Pedersen, 2013, p. 180)

The first element, which effect the *posterior*, is the probability of finding the predicted evidence in the studied case regardless of whether the mechanism is present or not (*probability of finding evidence*). When *the probability of finding evidence* is low, the evidence will have a greater effect on the *posterior* if found. Secondly, the probability of finding the predicted evidence if the alternative hypothesis is true in comparison to the probability of finding the evidence if the hypothesis is true (*likelihood ratio*). When the empirical test can successfully discriminate between the hypothesis and the alternative hypothesis the *likelihood ration* is high and the test has a greater effect on the *posterior*. Thirdly, the probability that the tested causal mechanism exists based on our initial confidence in the underpinning theory before the evidence is collected (*prior*). When the *prior* is low the effect of new evidence on the *posterior* will be high (Beach & Pedersen, 2013, p. 83-85). The *probability of finding evidence* and the *likelihood ratio* are determined based on case-specific knowledge, while the *prior* is based on previous academic scholarship.

Although selecting the values for the three probabilities might be regarded as subjective (Bennett, 2014, p. 280), the Bayesian scholars argue that these choices are made explicitly and

[16] Bayesian theorem - Appendix A

transparently based on the existing body of knowledge (Beach & Pedersen, 2013, p. 85). Consequently, a matrix (displayed on the next page) was constructed to explain the range of probabilities, used in this thesis (low, moderate, high) and the procedure for assigning them. In addition, during the conceptualization and operationalization of each causal mechanism, every choice for assigning a probability was described and justified. Moreover, the proponents of Bayesian logic argue that that after repeated meetings with discriminating empirical evidence the subjective *priors* would 'wash out' and the *posteriors* of different researchers should converge to similar values despite the difference in *priors* (Bennett, 2014, p. 289).

During the early phase of the analysis, it was determined that it would not be feasible to assign a probability for each individual piece of evidence. Therefore, this thesis did not explicitly use the Bayesian theorem to express the *posterior* for each part of the causal mechanism in a mathematical form. Instead we relied on a less rigorous form of Bayesian logic to update our confidence in each individual causal mechanism.

The probability matrix

	Probability		
	Low	Moderate	High
Probability of finding evidence	The value is significantly lower/higher[17] than the value of the sample mean of the countries that have experienced civil war.	The value of the measure proxying the independent variable is similar to the value taken by the sample mean of the countries that have experienced civil war.	The value is significantly higher/lower[18] than the value of the sample mean of the countries that have experienced civil war[19]

[17] Lower if the relationship between the independent variable and the risk of civil war is positive, higher if the relationship is negative.

[18] Higher if the relationship between the independent variable and the risk of civil war is positive, lower if the relationship is negative.

[19] However, the probability can be updated based on studies that have already studied this causal mechanisms in the context of the Liberian civil war.

Prior	This mechanism is supported by weak empirical evidence. And there are rival mechanisms that are supported by recent studies.	This mechanism is supported by credible empirical evidence. But there are rival mechanisms explaining the same relationship that are supported by recent studies.	This mechanism is supported by credible empirical evidence. And there are no rival mechanisms supported by recent studies.

3.4. Case selection

The First Liberian civil war was selected for analysis, because it fitted the criteria of a TTPT case study. According to Beach & Pedersen (2013), in order to conduct a TTPT case study "The researcher selects a single case where both X [independent variable] and Y [dependent variable] are present, and the context allows the mechanisms to operate (p. 11)". Preliminary calculations,[20] based on Feasibility Theory core model, showed that between 1989 and 1994, the risk of civil war outbreak in Liberia was around 19,3%. The risk of 19,3% means that, according to Feasibility Theory, there was a 19,3% chance that Liberia would have an outbreak of a civil war in the studied period. To compare, a hypothetical country with all independent variables set at sample mean had a 4,6% risk of a civil war. While a hypothetical country with all independent variables set at 'warstart' (countries that experienced a civil war) sample mean faced a 27% risk. Thus, the theoretical model is fairly successful in predicting the First Liberian civil war. The authors of Feasibility Theory did not define any scope conditions for their proposed causal relationships. Therefore, it was assumed that the context did not impede the activation of these causal mechanisms. Thus, Liberia has been selected, because it can be considered to be a typical case "where a given causal mechanism hypothetically exists (X and Y are present) but it is neither most nor least likely" (Beach & Pedersen, 2013, p. 182). Moreover, the process tracing method requires vast amounts of data to be effective (Beach & Pedersen, 2013, p. 61) Consequently, the fact that the First Liberian civil war has been rather well documented provided additional justification for selecting this case.

[20] Risk calculations - Appendix C

3.5.Conceptualization of the causal mechanisms

In this sub-chapter, the causal links proposed by the authors of Feasibility Theory are re-conceptualized as causal mechanisms composed of sets of parts, each of which should be thought of as a hypothesis to be tested.

3.5.1. Opportunity cost causal mechanism

GDP per capita and *GDP per capita growth* variables both proxy the opportunity costs of potential rebel recruits. Based on the feasibility interpretation, these variables affect civil war risk through their effect on rebel recruitment costs. The relationship is simple - lowering the GDP per capita lowers the opportunity costs and consequently the recruitment costs (Collier et al., 2009, p. 12). Thus these variables could be re-conceptualized as a single *opportunity cost* causal mechanism. State effectiveness or state capacity mechanism is the most likely rival explanation for the relationship between country's wealth and the risk of civil war.

Concepts:

Civil war – internal armed conflict that involves: active participation of the national government, effective resistance by both fighting sides and a total of at least 1,000 battle-deaths during each year of the war (Sarkes & Wayman, 2010).[21]

Opportunity cost – a value of something that must be given up to acquire or achieve something else (Opportunity cost, 2017). This causal mechanism is based on an assumption that each individual performs a cost-benefit analysis determining whether the expected utility of joining a rebel organization is higher than the expected utility of alternative employment (Jakobsen, De Soysa, & Jakobsen, 2013, p. 142). The higher the utility of alternative employment the higher the opportunity cost of becoming a rebel soldier.

Country with low opportunity cost – In Feasibility Theory both GDP per capita and GDP per capita growth proxy the opportunity cost in a given country. In the sample of countries[22]

[21] Definition used by the authors of the Correlates of War data set

included in Collier's et al. (2009) model the mean of GDP per capita of countries that did not experience a civil war was 5452 USD per capita, while in countries that did experience a civil war it was 1101 USD per capita. Similarly, the GDP per capita growth in countries that did not experience a civil war was around 1.84%, while in countries that did suffer from a civil war it was around -0.49[23] (Collier et al., 2009, p. 8). Therefore, a country that has a GDP per capita and GDP per capita growth similar to or lower than the mean of countries that have suffered from a civil war (1101 USD and -0.49% respectively), it can be considered to have low opportunity costs.

Selective incentives – inducements to participate in a rebel organization that are private and can be made available on a selective basis (Humphreys & Weinstein , 2008, p. 6)**.**

Feasibility of a rebellion - Feasibility Theory is built on a premise that civil war can only occur in countries where a rebellion is economically and militarily viable. Military and financial feasibility are interdependent. A rebellion will be militarily viable if the opponents of the government will have sufficient military capabilities to resist the official armed forces. For it to be economically viable the rebel organization has to have the resources to keep its army in the field. Thus factors that affect the threshold for resisting the government militarily determine the military feasibility, while conditions that affect the financial burden of sustaining a rebel army determine the economic feasibility of a rebellion (Collier et al., 2009, p. 4).

Military feasibility – the armed strength of the rebel movement required to resist the government militarily. Lower requirements mean higher military feasibility.

Economic feasibility – the funding needed to keep the rebellion feasible militarily. Lower upkeep of militarily viable rebel force means higher economic feasibility.

[22] This data set includes all the countries that have experienced civil wars between 1965 and 2004 (Collier et al., 2009, p. 5)

[23] An average growth rate over the five-year period prior to the period for which the civil war risk is calculated is used to reduce endogeneity of this variable (Collier et al., 2009, p. 12)

Limited funding - based on available estimates of rebel funding, an armed-group with access to less than 50$ million (USD) a year will be considered as having limited funding.[24]

The mechanism: ***Opportunity costs of potential rebel recruits are low*** **(X)** [(The leaders of the rebel group offer selective incentives to overcome the collective action dilemma) > (Individuals with low opportunity costs comprise majority of rebel recruits) > (Low recruitment costs allow the leaders to sustain the rebellion with limited funding)] ***The country faces increased risk of civil war, due to higher economic feasibility of the rebellion*** **(Y)**

It has been observed that leaders who are trying to start a rebellion face a collective action dilemma (Weinstein, 2005, p. 602). If the rebels are successful at toppling the regime all citizens' benefit. Thus, the regime change is a public good. However, the costs of participating in an armed insurgency are individual. Taking up arms not only requires the individual to put himself/herself in danger but also forces him/her to sacrifice time that he could use for gainful employment. In addition, the individual has to accept the costs of participation immediately, while the collective reward would only be realized sometime in the future. Consequently, collective action problem is significantly constraining recruitment to a rebel organization.

In order to solve this problem, leaders of a rebellion offer potential recruits selective incentives to join the ranks of their organizations. Leaders provide some immediate benefits to individuals who join them as private rewards in addition to the non-excludable public goods that would be realized once rebellion succeeds (Weinstein, 2005, p. 602-603). Although, selective incentives are often monetary in nature, they can also come in the form of food, accommodation, clothes or opportunities to loot. Moreover, the leaders have ensure the loyalty of their battlefield commanders either by providing them with selective incentives or by promising them credible

[24] According to Collier et al. (2009) a rebel organization, which could spend around $200-$350 million a year, had a "fairly normal" scale of funding for a rebel group (p. 4). While an analysis carried out by Zehorai (2014), revealed that the annual income of ten wealthiest terror organizations, nine of which could also be defined as rebel groups, ranged from $25 million to $2 billion per year. Although, these findings were published in a business magazine (Forbes), rather than a scientific journal, they were consistent, although not figures could be checked, with estimates released by the Council on Foreign Relations and case studies presented in (Clarke, 2015). Thus, the $50 million threshold is arbitrary, but conservative in relation to currently available estimates.

future rewards (Lidow, 2016, pp. 32-36). Alternatively, the leaders can use negative incentives (forced recruitment) to ensure a supply of new recruits (Humpreys & Weinstein, 2008, p. 7). While, according to the security perspective, people will volunteer to join the rebels if they think that participation would grant them protection from violence (Eck, 2010, p. 17).

When rebel leaders decide to overcome the collective action problem by offering selective incentives, the costs of recruitment depend on the income that their potential recruits will have to forego by enlisting (Collier & Hoeffler, 2004, p. 569). Collier & Hoeffler (2004) proposed that this meant that the level of forgone income influences the risk of civil war, because if the opportunity costs are low, people are more willing to join the rebels. Authors of Feasibility Theory presented an example of the Russian civil war that supported this argument. In summer time, when the forgone income of soldiers (mostly peasants) on both sides was much higher, the desertion rate was ten times higher than in winter (Collier & Hoeffler, 2004, p. 569). Moreover, interviews with ex-militants who had fought in the Sierra Leonean civil war showed that selective material incentives were more effective when the recruits were from a poor background. Humphreys & Weinstein who conducted these surveys argued that decreasing marginal returns to income explained these results (Humphreys & Weinstein , 2008, p. 16). Rebel movements usually form in poor rural areas where the private goods offered by the leaders have a higher potential to attract new recruits (Weinstein, 2005, p. 7). According to Justino (2009) there is enough empirical evidence to support the hypothesis that "the poorer the household is at the start of the conflict, the higher is the probability of that household participating and supporting an armed group" (p. 324).

The authors of the HI Theory have offered an alternative explanation for explaining the connection between the economic status of an individual and his/her decision to join a rebellion. From this perspective, economic marginalization of a culturally distinct group can create group grievances that motivate its members to seek regime change. Therefore, grievances created by horizontal inequalities can also explain high numbers of poor individuals among the ranks of the rebels (Cederman, Weidmann, & Gleditsch, 2011).

For a rebel movement to survive it needs weapons, recruits and other resources (Weinstein, 2005, p. 599). This is because the rebels must have a sufficiently strong military force to resist

the government's attempts to suppress it militarily. Thus, before a group of 'social entrepreneurs' can launch a rebellion [25] they need to have enough funds to create an effective military organization. Consequently, low recruitment costs allow the leaders to find enough volunteers even if the organization does not have vast financial assets. When a reporter asked an infamous Congolese rebel leader Laurent Desire Kabila "what does it takes to launch a guerrilla war?", he replied: "Ten thousand dollars and a satellite phone. The cash will buy you a small army. You use the phone to promote yourself to the world." (as cited in Birch, 2009, p. 16). Therefore, low recruitment costs make a rebellion more economically feasible and consequently more likely to lead to an outbreak of civil war. Alternatively, a rebellion could be economically viable due to assistance provided by foreign governments (Salehyan, Gleditsch, & Cunningham, 2011, p. 716) or due to opportunities for exploitation of natural resources (Collier & Hoeffler, 2012, p. 302).

Prior

Following the quantitative case studies that established a link between country's economic situation and its risk of civil war, there have been a number of studies that tried to find the causal mechanism that provides the best explanation for this relationship. Holtermann (2012) argued that the majority of case studies supported the state reach or state capacity, rather than opportunity cost, causal mechanism (p. 58). His quantitative analysis of a set of new independent variables that proxied the two rival mechanisms also supported the state capacity explanation (Holtermann, 2012, p. 74). On the other hand, a quantitative study conducted by Jakobsen, Soysa & Jakobsen (2013), yielded the opposite result. These authors had the same goal of testing three rival causal mechanisms, but applied a slightly different methodology. They found that opportunity-cost causal mechanism provided the best explanation for the association between GDP per capita and civil war (Jakobsen et al., 2013, p. 141). Furthermore, Fjelde's (2014) study on the effect of income fluctuations, in the labor-intensive agricultural sector, on the risk of civil war supported these results. Her research suggested that the opportunity cost rather than the state capacity mechanism holds more explanatory power (Fjelde, 2014, pp. 531-532). These findings are also compatible with a later Berman's & Couttenier's (2015) study on the causal relationship between economic shocks and civil war onset (p. 758).

[25] Which is powerful enough not to be put-down before it reaches the threshold of civil war

Therefore, although there were conflicting academic narratives on this subject, most contemporary authors recognized the opportunity cost causal mechanism as one of the two most likely vehicles for transmitting the causal forces from country's economic situation to its risk of civil war. Nevertheless, Beach & Pedersen (2013) cautioned that: "when the literature exhibits significant disagreement about a *prior*, the best bet is to use conservative estimates of p(h) relative to p(~h)" (p. 98). Therefore, it was determined that the *prior* of the opportunity cost causal mechanism was moderate.

Probability of finding evidence

Before the start of civil war Liberia's GDP per capita was $568 [26] (The World Bank, 2016a) and in the five year period prior to the outbreak of hostilities the average GDP per capita growth was around -6,28% (The World Bank, 2016b). Thus, the Liberian' values of these characteristics before the outbreak of civil war were significantly lower than the mean values of these characteristics in countries that have experienced civil war in Collier's et al. (2009) sample. Consequently, from the perspective of Feasibility Theory, the opportunity costs in Liberia were very low and should have significantly influenced the prospect of this country entering a civil war. Consequently, high *probability of finding evidence* has been assigned for this causal mechanism.

Scope conditions

No scope conditions could be drawn from Collier et al. (2009) interpretation of the relationship between *GDP per capita* and/or *GDP per capita growth* and the risk of civil war. Nevertheless, this interpretation implies that individuals, implicitly or explicitly, make a cost-benefit analysis whether to join the rebels or to keep their normal job. Thus, potential rebel recruits need to act rationally for this mechanism to function. Consequently, the ration actor presumption could be understood as a scope condition of the opportunity cost causal mechanism. However, due to

[26] Collier et al. (2009) used statistics measured in constant 1995 US$ (p. 26). Consequently, CPI Inflation Calculator (U.S. Bureau of Labor Statistics) was used to convert the data recovered from World Bank, which was measured in constant 2010 US$.

inability to conduct interviews with former rebels and difficulties with confirming their narrative, even if such interviews would be feasible, this hypothesis could not be tested in this thesis.

3.5.2. Natural resource predation causal mechanism

Primary commodity exports is a proxy for country's dependence on natural resource rents. Based on the feasibility interpretation, this variable affects the risk of civil war, because natural resources provide looting opportunities that can be used to fund a rebellion. Unlike with other variables the relationship between natural resources and conflict is quadratic rather than log-linear.[27] It means that as country's dependence on natural resource rents grows so does the financing opportunities for potential rebels, however only to a certain point. The risk of civil war reaches the peak,[28] when primary commodity exports constitute 25% of the country's GDP. After this saturation point is reached, additional revenues have a reverse effect - decreasing the risk of civil war. This is because, after a certain point, increased government's ability to buy-off or suppress opposition offsets the potential of additional looting opportunities for the rebels (Collier, et al., 2009, pp. 8-13). State capacity mechanism is arguably the most likely rival explanation for the relationship between country's reliance on natural resources and its risk of civil war.

Concepts: [29]

Natural resources[30] **–** are defined by the United Nations Development Program as "all foods...; all metals and minerals…; and all fuel…" (UNDP, 2011, p. 75).

Country's dependency on natural resources – the authors of Feasibility Theory do not specifically define from what level of primary commodities to GDP ration the country is considered to be 'dependent' on natural resources. However, they observe that the risk of civil

[27] A generic quadratic function – appendix B.

[28] If all other independent variables retain the same values.

[29] Some concepts that are relevant to this causal mechanism have been already defined in the prior sub-chapter "Opportunity cost causal mechanism", p. 22-24.

[30] in this context 'natural resources' and 'primary commodities' are used interchangeably (Collier & Hoeffler, 2012, p. 298).

war is affected the most severely when the primary commodity exports constitute 25% of country's GDP, while the mean ratio in their full sample is 16% (Collier et al., 2009, p. 8-12). According to the Economist, countries that have 10-20% commodity exports to GDP ratio are deemed 'dependent, while countries with 20%+ ratio are considered to be 'highly dependent' (The Economist, 2015). Consequently, in this thesis, countries whose primary commodities exports to GDP ratio is between 0-15% will be considered 'independent' (from natural resources), countries with 15-35% ratio will be considered 'dependent' and country with 35%+ ratio will be considered 'highly dependent'.

The mechanism: ***The country is dependent/highly dependent on natural resources*** **(X)** (The rebels target natural resource extraction sites and/or transportation routes) > (The leaders organize systematic exploitation of natural resources under the rebel control) > (The leaders use the income, derived from exploitation of natural resources, to fund the rebellion)] ***The country faces increased risk of civil war, due to higher economic feasibility of the rebellion*** **(Y)**

According to Collier (2000) the same properties that make primary commodity exports so easy to tax also makes them "the most lootable of all economic activities" (p. 9). This is due to the fact that natural resource extraction business is usually bound to certain geographic locations and because this activity can be taxed without a functioning bureaucratic structure (Billon, 2001, p. 569). Moreover, the extraction process of most natural resources relies on long-lasting and immobile assets (Collier, 2000, p. 9). For instance, once a copper mine becomes operational it is worth exploiting even if a great proportion of the profits have to be paid to the rebels. Therefore, while a manufacturing industry might relocate to another part of the country or simply shut-down, resource extraction companies tend to continue operating despite having to pay-off the rebels (Collier, 2000, p. 9). Consequently, as observed by Keen (1998) the rebellions "have often been concentrated in resource-rich areas" (p. 41), because these areas had the capacity to sustain rebel organizations. Thus, the rebels seek to control the regions that are rich in natural resources or where the transport routes are located (Billon, 2001, p. 569). Consequently, the fighting is often more fierce in the areas that contain rich deposits of natural resources (Keen, 1998, pp. 41-42) as the Government and the rebel forces battle over the control of the natural resources (Bellows & Miguel, 2009, p. 1154).

Different scholars have proposed several ways in which the rebels can monetize the captured natural resources or their extraction sites. Firstly, the rebel organization can raise funds through looting the extraction sites or convoys that transport the resources and selling off the captured goods (Lujala, 2010, p. 26). Secondly, the militants can extort money from the companies that extract the resources by levying a 'tax' (Collier & Hoeffler, 2012, p. 302). In cases where the extraction process is simple enough to be done by small individual producers they can be easily coerced by the rebels to pay 'protection money'. Even when the extraction is complex and done by large companies the rebels can threaten them with sabotage or kidnaping to ensure compliance (Collier & Hoeffler, 2012, p. 302). Moreover, Ross (2004) has proposed that rebel leaders can fund the insurgency by selling 'booty futures' – informal exploitation rights to resource deposits that the rebels intend to capture in the future (p. 58). Thus, seizure or even potential seizure of natural resources or resource extraction sites provides the rebel leaders with several methods of raising funds. However, the leaders might not be able to put into place a systematic form of natural resource exploitation. In this case, individual rebels or rebel commanders can attempt to exploit the natural resources for their own benefit (Lidow, 2016, p. 39-40). Thus, depriving the rebel leadership of an income derived from natural resources.

However, in situations, where the leaders are able to exercise control over the exploitation of the natural resources, they can use the proceeds to fund the needs of the rebel organization. In order to build a rebel army the leaders of an insurgency have to feed, shelter and equip their followers. Furthermore, the leaders need to fully support the fighters and their families to prevent them from getting involved in the resource business themselves (Billon, 2001, p. 571). Collier & Hoeffler (2012) argued that rebel leaders use finances gained from exploitation of natural resources to cover the costs of keeping expensive standing armies in the field (p. 302). Thus, leaders of the rebellion can use the funds, derived from exploitation of natural resources, to fund an armed insurgency. Consequently, as a potential source of financing, the presence of natural resources make a rebellion more feasible economically and thus more likely to develop into a civil war. However alternatively, in earliest versions of Feasibility Theory, rebellion has been defined as a 'quasi-criminal activity', which is motivated by predation of natural resources (Collier, 2000, p. 839). If rebellion was to be interpreted as criminal business venture, it is reasonable to expect that natural resource rents collected by the rebels would be appropriated by

the leadership. In this case, the presence of natural resources creates opportunities for personal enrichment, rather than funding of the rebel organization.

Prior

Numerous academics presented arguments for and against the link between natural resources and civil war (e.g., Fearon & Laitin, 2003; Ross, 2004; Fearon, 2005; Lujala, 2005; Bellows & Miguel, 2009). A recently published meta-study overviewed this vast body of knowledge and concluded that there was enough empirical evidence to associate resource wealth with civil war (Koubi, Spilker, Bohmelt, & Bernauer, 2014, p. 233). However, the authors of this study cautioned that there was no agreement[31] on the channels of causality that connect the country's reliance on natural resource exports and the likelihood of civil war (Koubi et al., 2014, p. 233-234). Moreover, the authors of Feasibility Theory recognized that their interpretation of the causal relationship between country's dependence on natural resources and civil war might not be the only one that is credible (Collier & Hoeffler, 2012, pp. 305-306).

Arguably the most powerful alternative explanation is the state capacity mechanism (Lujala, 2010, p. 15). It is based on an assumption that countries that rely heavily on primary commodity exports tend to develop weak state institutions. Consequently, their governments do not have the capacity to exercise effective control over the territory of the country (Fearon, 2005, p. 487). In a study of the two competing mechanisms Soysa & Neumayer (2007) stated that their results favored the state capacity hypothesis over the rebel predation hypothesis (p. 201-202). Nevertheless, Lujala (2010) presented contradicting evidence that championed the rebel predation mechanism over the state capacity mechanism. Her study revealed that onshore oil production had influenced the onset of civil wars, while offshore production had not (Lujala, 2010, p. 26). Still, considering that oil do not represent a significant portion of Liberia's primary commodity exports, these results might not be applicable to the Liberian case. Thus, although, recent academic findings support the causal mechanism proposed by Feasibility Theory there are also other viable causal mechanism that could explain the relationship. Therefore, it was determined that the *prior* of the resource dependence causal mechanism was moderate.

[31] With the exception of oil, which has been linked to increased risk of civil war by the majority of authors, who studied the phenomenon (Koubi et al., 2014, 233).

Probability of finding evidence

In 1989 primary commodity exports comprised around 39.3% of Liberia's GDP (Ross, 2004, p. 47).[32] Thus, Liberia could be considered 'highly dependent' on primary commodity exports, but relatively far off the 25% 'sweet spot' of dependency.[33] Thus, the scope of natural resource extraction industry was supposed to create opportunities for financing the rebellion through resource predation, but also - to present the government with means to negate an insurgency. Therefore, from the perspective of Feasibility Theory, Liberia's dependence on primary commodity exports constituted a significant, but not a major, source of civil war risk. However, a study of causal mechanisms connecting natural resources and civil war, which was carried out by Ross (2004), contradicts this assumption. In a case study of the First Liberian civil war, Ross (2004) found insufficient evidence that the looting or any other causal mechanism, related to natural resources, affected the outbreak of this conflict (p. 50). Consequently, based on these results, the *probability of finding evidence* assigned to this causal mechanism was downgraded to low.

Scope conditions

Collier et al. (2009) did not specify any preconditions for the functioning of the resource predation mechanism. However, based on the findings of other scholars, there might be at least one scope condition that affects this causal mechanism. The use of *primary commodity exports to GDP* as a proxy for the opportunity to finance a rebellion through exploitation of natural resources was criticized for lumping different types of natural resources together (Ross, 2004, p.36; Lujala, 2005, p. 542). For example, Billon (2001) observed that the way in which certain types of natural resources are concentrated has an effect on civil war. Whereas diffuse resources that are spread over wide areas are difficult to secure, point resources clustered in relatively small areas can be more easily defended (Billon, 2001, p. 570, Snyder & Bhavnani, 2005, p. 563-564). Thus, the concentration of natural resources has an influence on their 'lootability'.

[32] The primary commodity exports/GDP ratio used by Collier et al. is not available or no longer available on the World Bank data website. Since, Ross (2004) provides statistics that are used, but not included in the publications of Collier et al., this secondary source is quoted instead. This figure is also quoted in Atkinson (1997).

[33] With primary commodity exports set at 25% of GDP, rather than 39%, the risk increases from 19% to 24%.

'Lootability' determines how easy it is for an armed group to appropriate natural resources and to monetize their new acquisitions. According to Lujala (2005), only commodities that are easy to extract and conceal, for instance alluvial diamonds[34], should be considered 'lootable', because only such resources can be exploited by the rebels (p. 542). While Lidow (2016) observed that complexity associated with exporting a particular resource also has an effect on the 'lootability' of a commodity (Lidow, 2016, p. 33). Lujala (2010) found evidence that 'lootable' commodities had a disproportionally high effect on the risk of civil war (p. 24). [35] Authors of Feasibility Theory did not recognize a distinction between 'lootable' and 'non-lootable' natural resources. According to them, the rebels can use different tactics to exploit both the resources that are easy to extract and those that require sophisticated technology and expertise. Although, they acknowledged that diffuse resources are easier to exploit during a conflict (Collier & Hoeffler, 2012, p. 302).

Consequently, this thesis aimed to determine whether the type ('lootable/non-lootable') of natural resources exported by Liberia had an effect on the existence and functioning of the proposed causal mechanism. Natural resources that are easy to extract and transport by small groups of unskilled workers were considered 'lootable', while resources that cannot be easily cultivated and moved were considered 'non-lootable' (Ross, 2004, p. 52).

Hypothesis 1 – the resource predation mechanism will function as expected only if 'lootable' resources dominate the commodity basket.

Hypothesis 2 – 'lootable' commodities will have a different effect on the functioning of the resource predation mechanism than 'non-lootable' commodities.

3.6. Operationalization

[34] Diamonds found in exposed locations, rather than imbedded underground in kimberlite.

[35] In her model a country with secondary diamond production faces almost 1.5 times higher risk than an identical country without diamond production (Lujala, 2010, p. 24).

Before a mechanism is tested it has to be operationalized into series of case-specific predictions about what evidence should be found in the case if the mechanism is present and functioning as expected. This sub-chapter explains why and how this is achieved.[36]

3.6.1. Empirical tests

The purpose of empirical tests is to increase/decrease our degree of confidence in a hypothesis, that a part of the causal mechanism exists and functions as expected, in light of the collected evidence. The logic of empirical testing in TTPT is based on an assumption that each part of the theorized causal mechanism leaves predictable manifestations that can be observed in the empirical reality. Thus, empirical tests are designed to "capture traces of the transmission of causal forces through the theorized causal mechanism" (Beach & Pedersen, 2013, p. 101). Therefore, operationalization of the causal mechanisms involved making case-specific predictions about the expected observable manifestations of each individual part of the causal mechanism. According to the guidelines provided by Beach & Pedersen (2013) these observable manifestations were defined as evidence "that we should expect to find in the case if each part of a causal mechanism is present" (p. 95). For example, if a part of a causal mechanism states that: "The leaders of the rebellion overcome the collective action dilemma by offering selective incentives", the researcher can make a prediction that: ". Rebels claim that they have been offered selective incentives to join the armed-group".

Following the Bayesian logic, the empirical tests have to be unique and certain in order to maximize the inferential power of evidence (Beach & Pedersen, 2013, pp. 99-102). Certainty is the test's ability to disconfirm the hypothesis if the predicted evidence is not found. For instance, if the hypothesis - "The leaders organize systematic exploitation of natural resources under the rebel control" - does not pass a highly certain empirical test - "Natural resources are extracted in the area under rebel control" – our confidence in the hypothesis is reduced considerably. While uniqueness, corresponds to the *likelihood ratio,* since it represents the test's ability to exclude the alternative explanations and increase our confidence in the hypothesis if the predicted evidence is found. For example, if the aforementioned hypothesis passes a highly unique empirical test -

[36] The operationalization tables are presented in the beginning of each analysis sub-chapter: "5.1. Opportunity cost causal mechanism" p. 43-45; and "5.2. Natural resource predation causal mechanism" p. 64-66.

"The rebel leadership controls trade in captured/extracted natural resources" – our confidence in the alternative hypothesis - "The resources are exploited on an *ad hoc* basis by individual rebels or local rebel commanders" – is reduced considerably. Consequently, this study's ability to upgrade the *posterior* of the mechanisms drawn from Feasibility Theory depends on the strength of the empirical tests that are employed to test the separate parts of each mechanism (Beach & Pedersen, 2013, p. 96).

Instead of relying on the standard classification of empirical tests proposed by van Evera (straw in the wind, hoop, smoking gun, doubly decisive), [37] this thesis introduced a slightly different classification.

	Low	**Medium**	**High**
Uniqueness (relevant if e[38] is found)	e is likely to be found if -h is correct. Slightly increases confidence in the hypothesis	e is unlikely to be found if -h is correct. Moderately increases confidence in the hypothesis	e is highly unlikely to be found if -h is correct. Significantly increases confidence in the hypothesis
Certainty (relevant if –e is found)	-e is likely to be found if h is correct. Slightly reduces confidence in the hypothesis	-e is unlikely to be found even if h is correct. Moderately reduces confidence in the hypothesis	-e is highly unlikely to be found if h is correct. Considerably reduces confidence in the hypothesis

Since the mechanisms analyzed in this thesis have been tested through a combination of highly unique and highly certain empirical tests the internal validity of this research is high.

3.6.2. Turning empirical observations into evidence

In process tracing the empirical material has to be processed before it can be accepted as evidence for one of the empirical tests. After an empirical observation (raw data) is assessed for

[37] Van Evera makes an assumption that the uniqueness/certainty is either high or low

[38] Predicted evidence is found = e; Predicted evidence is not found = -e

its content and accuracy it can be admitted as a piece of evidence supporting a certain hypothesis. (Beach & Pedersen, 2013, p. 120). The 'weightier' the evidence, the more inferential power it holds. In light of the background and case-specific knowledge the 'weight' of evidence was determined to be weak, moderate or strong. The analysis also distinguished between five types of evidence:

- **Account evidence:** evidence in the form of a statement or narrative that gives a description of an event or thing.
- **Sequence evidence:** The temporal and spatial chronology of events that is predicted by a hypothesized causal mechanism.
- **Pattern evidence:** Predictions about the statistical patterns in the evidence.
- **Trace evidence:** a piece of evidence whose mere existence strongly suggests that a part of a hypothesized mechanism exists (Beach & Pedersen, 2013, p. 175-182).
- **Spatial evidence:** evidence relating to the geographical location of events or geographical distribution of things.

3.7. Data collection

In process tracing source selection is theory-driven: "we select sources based on the type of evidence that is best suited to enable us to engage in a critical theory test" (Beach & Pedersen, 2013, p. 132). Triangulation was employed to counter the problems of internal validity and confirmation bias that are inherent to this method of data collection. Observations were gathered from different types of sources (for example, academic articles, historical scholarship, court records, etc.) and different sources of the same type (for instance, historical account by different historians).

3.8. Limitations of this thesis

Notably, research design applied in this paper has limitations. First of all, the external validity of this thesis is relatively low due to inherent limitations of the method applied in this research project. Beach & Pedersen (2013) recognize that in a single case study applying TTPT: "No claims can be made, about whether the mechanism was the only cause of the outcome (p. 3)". A single TTPT case study cannot determine whether the causal mechanism under considerations is

necessary for the transmission of causal forces between the X and Y (Beach & Pedersen, 2013, p. 16). In light of these limitations, the ambition of this research project was limited to making inferences about the causal mechanisms that affected the First Liberian civil war (within-case inferences). However, results of single TTPT case studies can be used to make cross-case inferences when they are nested in a broader research design (Beach & Pedersen, 2013, pp. 153-156). Therefore, although the results of this thesis cannot be instantly used to make generalizations about the other civil wars, they would become generalizable in a wider research project.

Another potential challenge for this study had been data collection. Data gathering in post-conflict environments is inherently difficult (Lyall, 2014, p. 204). For this reason it was not feasible to arrange interviews with the ex-combatants and other relevant stakeholders. However, this problem was overcome by using surveys that had already been conducted by other academics (Pugel, 2007; Boas & Bjorkhaug, 2010; Vinck, Pham & Kreutzer, 2010). Moreover, due to accessibility of international court records, documents of Liberian Truth and Reconciliation Commission (TRC), as well as availability of historical books and academic articles on the subject observations were collected from a wide and rich spectrum of sources.

Finally, the internal validity of this paper might be affected by our subjective biases. In a process tracing study potential biases might have an effect on: the assignment of probabilities, the determination of uniqueness and certainty of empirical tests, the evaluation of empirical observations, and the drawing of conclusions. Nevertheless, some level of subjectivity is inherent to qualitative methods in general and process tracing in particular (Bennett, 2014, p. 281). To mitigate this recognized threat we rationalized each of our choices, attempted to structure the decision making process and refrained from cherry picking convenient observations. Consequently, despite these intrinsic limitations, the internal validity of this thesis is high.

4. BRIEF HISTORY OF THE FIRST LIBERIAN CIVIL WAR

This chapter presents an outline of the First Liberian civil war, which should provide the necessary context for the subsequent analysis of the causal mechanisms.

4.1. Doe's Liberia – a prelude to the civil war

The First Liberian civil war started in December of 1989, when the National Patriotic Front of Liberia (NPFL) confronted the government led by Samuel Doe. Doe had come into power after participating in a plot that overthrew the government of the True Whig Party (Waugh, 2011, p. 13-14). This coup of 1980 ended the oligarchical rule of the Americo-Liberian[39] elite, which had dominated Liberia's one-party system for 133 years (Dennis, 2006, p. 3). The new administration was dominated by the People's Redemption Council (PRC) with Doe as its chairman. Although the initial cabinet was rather inclusive, in subsequent years, Doe systematically promoted his Krahn clansmen at the expense of all other ethnic groups (Ellis, 1999, p. 54-55; Waugh, 2011, p. 59-65). Consequently, a number of politicians and army commanders abandoned the government and fled abroad. One of the high ranking officials who left the country was Charles Ghankay Taylor, the leader of the rebellion, which would start the civil war (Waugh, 2011, p. 68-69).

Following the rigged election of 1985, the former commander of the Armed Forces of Liberia (AFL), Thomas Quiwonkpa, launched an unsuccessful coup attempt against Doe's government (Ellis, 1999, p. 59-60). In retaliation, Krahn dominated units of the AFL carrier out massacres of Gio and Mano civilians living in the Quiwonkpa's native Nimba County (Meredith, 2011, p. 367). The estimates of casualties ranged from a few hundred to 3000 (Ellis, 1999, p. 60; Meredith, 2011, p. 367; Waugh, 2011, p. 76). Following the repressions and purges in the AFL, hundreds of former soldiers and thousands of civilians fled to refugee camps located in neighboring countries (Lidow, 2016, p. 97).

4.2. First phase of the war – the race to Monrovia

From 1985 to 1989 Taylor travelled throughout West Africa recruiting followers and looking for foreign powers that would back a plan to overthrow Doe's regime. NPFL was established when

[39] Descendants of the freed American slaves that founded Liberia in 1822 (Dennis, 2006, p. 1).

Taylor secured training for his cadre of Liberian dissidents[40] in Libya as well as logistical and military support from the governments of Burkina Faso and Côte d`Ivoire (Ellis, 1999, p. 70-72; Meredith, 2011, p. 369).

In December of 1989, NPFL's 'special forces', numbering around 160 fighters entered Liberia from Côte d`Ivoire and launched successful attacks against AFL positions in Nimba County. Doe's government reacted by starting a scorched earth campaign in Nimba County and cracking down on the suspected sympathizers in Monrovia (Waugh, 2011, p. 84-86). Despite occasional setbacks, the rebels advanced rapidly towards the capital, seizing control of important towns along the way. In June of 1990 Monrovia was put under siege (Meredith, 2011, p. 370-371). In July 1990 Taylor's most senior commander Prince Johnson formally split from the NPFL with a core group of experienced officers and founded the Independent National Patriotic Front of Liberia (INPFL). Between July and August 1990, a string of assassinations removed around 80 other commanders, politicians and activists who were posing or supporting challenges to Taylor's authority (Ellis, 1999, p. 85). Following this purge, Taylor consolidated his role as the ultimate leader of the rebel organization, which he retained throughout the conflict (Gerdes, 2013, p. 60).

Despite the expectation of all combatants that the Americans would eventually get involved and end the conflict, Washington decided not to intervene in the hostilities directly (Alao, Mackinlay, & Olonisakin, 1999, p. 25-26). In response, the Anglophone members of the Economic Community of West African States (Ecowas), led by Nigeria, formed a regional peacekeeping force known as the Ecowas Cease-fire Monitoring Group (ECOMOG[41]) (Ellis, 1999, p. 2). Although the ECOMOG was supposed to be a neutral peacekeeping force, the expeditionary force, immediately became a party to the conflict. In August 1990 the 3000 strong international force landed in the area of Monrovia controlled by the INPFL. As they were disembarking from the ships the peacekeepers were shelled and shot at by the NPFL (Waugh, 2011, p. 100).

[40] Estimates range from 97 to 167 fighters (Ellis, 1999, p. 75, Waugh, 2011, p. 84, Meredith, 2011, p. 369).

[41] An abbreviation translated by many Liberians as „Every Car or Moving Object Gone", due to widespread looting committed by the undisciplined peacekeepers (Waugh, 2011, p. 14; Meredith, 2011, p. 371).

Although all previous attempts to bring a mediated end of hostilities failed, the arrival of the ECOMOG precipitated a cease-fire between Doe's and Johnson's forces. On 9th of September a group of INPFL fighters led by Johnson broke the agreement and ambushed Doe's entourage who were visiting the headquarters of the ECOMOG. After a brief firefight, in which the peacekeepers remained neutral, Doe was captured, tortured and executed (Waugh, 2011, p. 100-101). Following the death of Doe, Taylor attempted to take over the capital, but was pushed back by the ECOMOG's forces. Under the protection of peacekeepers, Interim Government of National Unity (IGNU) headed by a renowned academic, Amos Sawyer, was installed in the capital (Meredith, 2011, 371).

4.3. Second phase of the war – 'Greater and Lesser Liberias'

Taylor refused to accept the IGNU, wowed to fight the ECOMOG as an invading force and set up a rival government in the territory controlled by the NPFL. Taylor's 'Greater Liberia' encompassed around 80% to 95% of the country's landmass and contained Liberia's only international airport, two major ports, and majority of the country's resource wealth (Alao et al., 1999, p. 35; Waugh, 2011, p. 103). 'Greater Liberia' had a capital at Gbarnga and a de-facto government called the National Patriotic Reconstruction Assembly Government (NPRAG). Through Taylor NPRAG established ties with representatives of several foreign governments as well as various business enterprises (Ellis, 1999, p. 90-97; Waugh, 2011, p. 120-121).

In March 1991 the Revolutionary United Front (RUF) a Sierra Leonean rebel group launched an attack on the Sierra Leonean government from Liberia. The RUF offensive relied on Liberian support with many NPFL fighters and commanders crossing the border to take part in the hostilities (Waugh, 2011, p. 137). Although in his trial Taylor denied giving the order to attack Sierra Leone, it was established that he had actively backed the invasion (Harris, 2012, p. 81).

Despite the ECOMOG success in disarming the INPFL and effectively taking control of the AFL, various attempts to end the conflict peacefully failed (Ellis, 1999, p. 87). In 1991 the United Liberation Movement for Democracy in Liberia (ULIMO) was formed by former AFL soldiers and refugees sheltering in Guinea and Sierra Leon. This new militia fought against the NPFL with the backing of the ECOMOG and the IGNU (Lidow, 2016, p. 132-133). In 1992 this

group split into ULIMO-K, dominated by Mandingo and led by Alhaji Kromah, and ULIMO-J, dominated by Krahn under Roosevelt Johnson (Waugh, 2011, p. 105-106). In October 1992 NPFL launched a well prepared and coordinated attack on Monrovia, codenamed 'Operation Octopus', but the ECOMOG managed to push the attackers back (Alao et al., 1999, p. 33). In 1993 another armed faction hostile to the NPFL entered the conflict, when George Boley, a former minister in Doe's government, formed the Liberia Peace Council (LPC) (Ellis, 1999, p. 100). With NPFL suffering numerous defeats, between 1992 and 1993, Taylor recognized that he could not secure final victory by military means (Waugh, 2011, p. 108). In late 1993 Taylor supported the creation of the Lofa Defence Force (LDF) that resisted ULIMO-K's advance into the Lofa County (Ellis, 1999, p. 102).

4.4. Third phase of the war – warlord politics

In July 1993 the three main factions (AFL, NPFL and ULIMO) signed the Cotonou accords, agreeing to disarm and form a new transitional government. Although, the agreement failed to bring a lasting peace it resulted in the fall of the IGNU and the creation of a new governmental system that represented the various militias fighting for control of the country (Ellis, 1999, p. 101-102). Abuja agreement, signed in August 1995, started a more successful peace-process supervised by ECOMOG. The agreement created a new Government (Liberian Council of State) dominated by the leaders of NPFL, ULIMO-K and LPC, but representing the interests of all eight armed-groups (Waugh, 2011, p. 111-112).

In December 1995 the ULIMO-J, allegedly with covert support and encouragement from the NPFL, broke the cease-fire and attacked the ECOMOG forces (Waugh, 2011, p. 114). In response Taylor summoned his forces to Monrovia and, initially supported by ULIMO-K and ECOMOG, attempted to seize Johnson by force in the name of the new Government. In an ensuing battle, ULIMO-J, supported by LPC and later by ECOMOG[42], managed to resist the NPFL and the hostilities ended inconclusively after a few days. Following this last major battle, the leaders of all factions gathered in Abuja to sign another peace accord in August 1996 (Ellis, 1999, 108-109). This time the peace held and in July 1997, in elections endorsed by foreign

[42] During the battle the leadership of the ECOMOG realized that, if Taylor was allowed to crush the ULIMO-J and their allies, nobody could prevent him from overrunning the capital (Waugh, 2011, p. 115).

observers, the NPFL (converted into the National Patriotic Party) gained a decisive victory. Taylor's stressed that only his victory would end the civil war and he emphasized his warlord credentials with a notorious slogan: "He killed my ma, he killed my pa, but I will vote for him" (Meredith, 2011, p. 384). This strategy worked and Taylor was elected president by nearly 75% of the voters (Meredith, 2011, p. 384).

Majority of combatants in the First Liberian civil war were undisciplined irregulars with little or no military training. These fighters were usually led by field commanders who had weak links to the leadership of their militia and, thus undesirable orders were often flaunted and ignored. While the leaders of the factions constantly struggled for influence and power within the hierarchy, hence the armed-groups were unstable and prone to splintering. Consequently, the war was characterized by widespread human rights abuses, looting, raping and arbitrary killings (TRC, 2009, p. 312). According to the nation-wide survey carried out by Vinck, Pham & Kreutzer (2010) 78% of all adult Liberians considered themselves to be victims of the civil war (p. 35).

This overview of the First Liberian civil war showed that rebellion led by Taylor started the armed conflict that developed in a civil war. Throughout the war, only the NPFL and the INPFL had the objective to overthrow the Government, other armed-factions either fought to prevent the NPFL from gaining power or had other local objectives. For a civil war to start some armed-group has to challenge the Government militarily. Since Feasibility Theory is concerned with the onset, rather than the duration of civil wars, its focus is on the armed-groups that fight to topple the Government. Consequently, from this perspective, only NPFL and INPFL can be considered as 'rebel groups' and their members - as 'rebels'. Members of the AFL were considered as 'soldiers' and members of the ECOMOG – as 'peacekeepers'. Other armed groups (ULIMO-J/K, LPC and LDF) were considered as 'militias' and their members - as 'militants'. All armed groups that participated in the civil war were considered as 'armed-factions' or 'armed-groups' and members of either of these groups were considered as 'fighters' or 'combatants'. In the subsequent analysis of the causal mechanisms the emphasis was put on the behavior of the rebels, rather than that of all the combatants.

5. EMPIRICAL ANALYSIS

This chapter presents the empirical analysis of the opportunity cost and resource predation mechanisms, drawn from Feasibility Theory. Since these two mechanisms are independent from each other, they will be analyzed in two individual segments. Nevertheless, the analysis of both mechanisms follows the same logic outlined in the methodological chapter. The analysis consists of testing all the individual parts that collectively comprise a causal mechanism. The testing of each part involves: collecting observations, evaluating observations, weighting alternative hypotheses and formulating results. Finally, our confidence in the existence of each mechanism is updated, based on the results of examining each individual part and taking into account the *priors* and the *probability of finding evidence.*[43]

5.1. Opportunity cost causal mechanism:

Part of the causal mechanism	Predicted evidence	Data type	Alternative hypothesis
The leaders of the rebellion overcome the collective action dilemma by offering selective incentives	1. Rebels claim that they have been offered selective incentives to join the armed-group (high uniqueness, moderate certainty) 2. Former recruiters admit using selective incentives to recruit new fighters (high uniqueness, moderate certainty)	1. Interviews with former members of the NPFL 2. NGO reports 3. Historical scholarship 4. Academic publications 5. Findings of the TRC 6. Transcripts of the SCSL	A1. Leaders of the rebellion overcome the collective action dilemma by relying on coercion A2. The collection action dilemma is overcome, because recruits volunteer to join the rebels expecting protection (security perspective)

[43] Reference to: "3.6. Conceptualization of the causal mechanisms" p. 24-26; 29-31.

Individuals with low opportunity costs comprise majority of rebel recruits	1. The rebels specify money, access to other goods or employment as the reason for joining the armed-group (moderate uniqueness, moderate certainty) 2. Statistical record shows that majority of the rebels were poor/unemployed prior to joining (moderate uniqueness, high certainty) 3. Majority of the rebel recruits come from relatively poor regions of the country (low uniqueness, moderate certainty)	1. Interviews with former members of the NPFL 2. NGO reports 3. Historical scholarship 4. Academic publications 5. World Bank dataset	A1. Individuals from an economically marginalized culturally distinct group comprise majority of rebel recruits (HI Theory)
Low recruitment costs allow the leaders to sustain[44] the rebellion with limited funding	1. The rebel group start military operations with relatively low income/budget[45] (low uniqueness, high	1. Interviews with former members of the NPFL 2. Historical scholarship	A.1 Foreign assistance allows the leaders to sustain a rebellion with limited funding A.2 Opportunities to

[44] If the rebellion collapses before the death toll reaches the 1000 threshold, it will not qualify as a civil war

[45] Compared to other similar rebel organizations.

	certainty) 2. The rebel group allocates relatively small proportion of their budget to pay their members (low uniqueness, high certainty) 3. Rapid recruitment rate allows the rebels to resist the Government forces (high uniqueness, low certainty)	3. Academic publications 4. Findings of the TRC 5. Transcripts of the SCSL	exploit natural resources allow the leaders to sustain a rebellion with limited funding

5.1.1. The selective incentive hypothesis

Observations

The recruitment strategy employed by the NPFL was multifaceted and, seemingly, susceptible to change. According to Ellis (1999) the core of NPFL's fighters, who were training in the Libyans camps did receive a monthly salary. Moreover, the commanders of the initial group were promised $75,000 and a house each after the war was won (Lidow, 2016, p. 115). However, once the NPFL established itself in Liberia and swelled with new recruits the nature of incentives changed. According to Taylor's testimony in the SCSL "soldiers in the NPFL were not paid…. But what was provided for the fighting med in Liberia, we provided food, we provided medical care and we provided clothing for our soldiers" (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24699). The narrative of Yaidoo, who wrote a book about living in the territory controlled by the NPFL, corroborated this account: "a rebel of Charles Taylor was entitled to free accommodation, food, medical treatment and other incentives" (as cited in Reno, 2015, p. 273). This account is supported by interviews carried out by Alao et al. (1999) who confirmed that a

number of people joined the rebels to secure food for themselves and their families (p. 21). While according to Ellis (1999), the commanders of the NPFL were paid salaries, while most of the common fighters were surviving on bribes and plunder (p. 91). The commanders provided 'looting opportunities' as a form of payment that would allow their fighters to sustain themselves (Gerdes, 2013, p. 68). The TRC (2009) reported that it was official NPFL policy, sanctioned by Taylor himself, to allow the rebel fighters to "pay themselves" (p. 155). The observations collected by Alao et al., (1999) confirm the narrative that most rebels did not receive regular salaries and were living "off the land" (p. 46).

Nevertheless, according to a former NPFL commander, Joseph Kpagbor, who testified before the TRC, the commanders did received irregular payments from the leaders of the NPFL to support the fighters under their command (TRC, 2008). Lidow (2016) also observed that Taylor began rewarding his commanders with irregular 'spot payments', after he started generating revenues from natural resources extracted in 'Greater Liberia' (p. 119). This version of events was partially challenged by Edward Zaymay, a NPFL commander, who testified against the SCSL. Unlike other commanders, Zaymay claimed that, between 1990 and 1995, the members of the NPFL received regular food supplies and monthly salaries from the 'government' in Gbarnga. However, his testimony also supports the earlier claim that the salaries were paid to the commander of a unit who was responsible for distributing the money to his fighters (The Prosecutor vs. Charles Ghankay Taylor, 2010a, pp. 40874-40875).

These selective incentives are also addressed in a Human Rights Watch's report on "Regional Warriors", young fighters who participated in civil wars across the West African region. The report provides accounts of rebel recruiters who explain how volunteers were attracted through promises of payments and loot. Moreover, it stressed that majority of the ex-combatants, whom they interviewed, were enticed to join the armed groups, because of these promises (Dufka, 2005, p. 19-24).

There is also statistical data on the recruitment patterns employed by the NPFL. Pugel (2007) carried out a large-scale nationwide survey of ex-combatants of the Liberian civil war[46] in order to evaluate the impact of Liberia's Disarmament, Demobilization, Rehabilitation and

[46] Pugel does not distinguish between the First and the Second Liberian civil wars, treating them as a single conflict.

Reintegration program (DDRR). In this survey, 53% of the ex-rebels said that they were offered pecuniary (money, food, job) incentives by the leadership of the NPFL. While promises to protect the family accounted for 23% of the responses (Pugel, 2007, p. 35-36). The study's sampling strategy targeted ex-combatant population of 105,669 and the field collection and validation resulted in 590 usable interviews (Pugel, 2007, p. 18).

Evaluation

While working on his book Ellis travelled to Liberia several times and conducted interviews with key stakeholders, worked in national archives and analyzed the account of local newspapers (Ellis, 1999, p. 321-333). Thus, his story about the payment structure employed by the NPFL leadership is based on triangulation of primary sources. In addition, Ellis was invited to testified as an expert witness on the Liberian civil war during the Taylors trail in the Special Court of Sierra Leone (The Prosecutor vs. Charles Ghankay Taylor, 2007). Moreover, his account of the selective incentives offered to the recruits of the NPFL is supported by a later study conducted by Lidow, Alao et al. and the personal account of Yaidoo. Yaidoo's book could not be treated as a reliable source of evidence (source), because it relies on personal experience and hearsay evidence. On the other hand, Lidow's (2016) study is based on in depth interviews with numerous high and low ranking ex-members of the NPFL and consequently can be deemed to be a much more reliable source (p. 248-254). Moreover, Alao et al. (1999) book, on peace process that ended the conflict, presents a detailed description of the civil war based on in-depth interviews with a wide range[47] of primary stakeholders (p. xv-xvii). Thus, due to Ellis', Alao's et al. and Lidow's work, there strong account evidence that selective incentives have been used as part of the NPFL's recruitment strategy.

However, it is more difficult to establish the nature of incentives offered by the NPFL. The first observation - Taylor's testimony in the SCSL cannot be accepted at face value. Since the former rebel leader has been lying or refraining from telling the whole truth, while giving testimony. This mostly happened when he was asked about actions of the NPFL, which might implicate him in human rights abuses. For instance, he claimed that he only knew of "a couple of cases" of serious human rights abuses committed by the NPFL and that all the perpetrators had been

[47] Former fighters, peacekeepers, UN personnel, government officials, NGO activists.

trialed and punished (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24698). Moreover, he denied a proposition that the NPFL had used conscription, child soldiers or 'bush wives' (The Prosecutor vs. Charles Ghankay Taylor, 2009a, pp. 24619-24620). Both the TRC and the SLSC established that this was a gross underestimation of NPFL's practices and Taylor's personal role in the atrocities of the civil war. On the other hand, when it did not have a direct effect on his own culpability, Taylor's outline of the civil war did correspond to the accounts of other witnesses and the narrative of historians or academics. Moreover, in certain subjects, such as the strategy of the NPFL, his testimony is almost only source of primary evidence available to us. Therefore, Taylor's observations about the civil war can be admitted as evidence, but only in cases where his testimony does not have a direct effect on his own culpability. In the case of Taylor's claim that all NPFL fighters were unpaid 'freedom fighters', this statement serves his court strategy of characterizing himself as a 'revolutionary' rather than a 'warlord'. Consequently, it cannot be accepted as evidence.

It is important that Zaymay appeared as a witness of the Defense in Taylor's trial and gave a testimony contradicting the account of his former leader. However, there is no more evidence supporting his story about the centralized payment structure operated by the NPFL. Thus, his testimony cannot be admitted as evidence that the NPFL had a regular payment structure. However, taken together with the account of ex-commander who testified in the TRC and the interviews conducted by Lidow there is enough account evidence that the NPFL commanders received some form of payment, allocated for supporting their troops.

Finally, the findings of the final TRC report (2009) were based on 22,000 written statements, 500 live public testimonies, dozens of personal interviews and examination of numerous secondary sources (p.XXIV). According to Long (2008) the TRC has been successful in establishing "objective or factual truth" (p. 5-6). Thus, this report is treated as a reliable source of evidence. Thus the TRC report (2009) supported by the account of Ellis (1999) can be treated as strong account evidence that at least some commanders of the NPFL provided "looting opportunities" as incentives to their fighters.

Although the "Regional Warriors" report also addressed the nature of incentives offered by rebel movements, its focus extended beyond Liberia and the NPFL . The authors of the report were

interested in the phenomenon of child-soldiers who participated in various civil war that took place in West Africa. This study was based on in-depth interviews with 60 ex-combatants who were under the age of 18, when they joined an armed-group for the first time. Most of the interviewees were first recruited by the NPFL or the RUF, but collectively they had belonged to 15 different armed-groups (Dufka, 2005, p. 1-2). Thus the report is based on an unrepresentative sample. Moreover, it is unclear how the respondents were selected or how many of them had actually been members of the NPFL. Consequently, the results of this report can only be accepted as moderate account rather than pattern evidence supporting the assertion that former rebels reported being offered selective incentives to join the armed-group.

While Pugel (2007) was specifically interested in the participants of the Liberian civil war, his sampling strategy targeted individuals from all the major armed-groups that participated in the First and Second Liberians civil wars (p. 18). In his final report the results are disaggregated by faction and thus it is possible to separate the answers of the NPFL fighters. After the relevant data is isolated, the sample shrinks from 590 to 148 interviewees (25%). Nevertheless, it is still a relatively representative sample, considering that, according to the estimates by the UN, the NPFL numbered around 12,500 fighters (Alao et al., 1999, p. 99). Therefore, the results of Pugel's survey can be admitted as a strong piece of pattern evidence that former rebels reported being offered selective incentives to join the armed-group.

Alternative explanations

However, there is also strong evidence that the NPFL did not have to provide selective incentives to overcome the collective actions dilemma. In Pugel's (2007) sample 23% of the ex-combatants reported that the rebel leadership offered "protection for the family" as a benefit of joining the rebel movement. Similarly, in the "Monrovia" data set almost 50% of ex- members of the NPFL said that they enlisted to "feel more secure" or to "keep family safe". These results strongly support the alternative hypothesis based on the 'security perspective'.

Moreover, the TRC (2009) established that all factions, but especially those under Taylor's command, used forced recruitment (p. 225). When the participants of Pugel's (2007) survey were also asked to name their "reasons for joining", 20% of the respondents who belonged to the

NPFL reported being "abducted" and 18% being "scared" (pp. 35-36). These results are consistent with the nation-wide survey carrier out by Vinck et al. (2010), in which 58% of the respondents reported being forced to join an armed-faction (p. 37). While, in Boas & Bjorkhaug's (2010) "Monrovia" data set only 11-12% of the ex-fighters of the NPFL cited being "kidnapped or forced" as their reason for joining the armed-group (p. 11). Therefore, despite fluctuations between different sources, these surveys show that the rebels used coercion as a recruitment tool in the First Liberian civil war.

Findings

The analysis has revealed that there is strong pattern and moderate account evidence that the rebels have admitted being offered selective incentives to join the armed-group. Furthermore, there is strong account evidence that NPFL's leaders have agreed that both pecuniary and non-pecuniary selective incentives have been used to attract new fighters. However, neither of the alternative hypotheses could be eliminated, since it has been revealed that selective incentives have been used as a part of a diversified recruitment strategy employed by the NPFL.

5.1.2. The impoverished rebel recruit hypothesis

Observations

The Liberians perceive poverty as one of the main causes of the Liberian civil war. In the national survey carried out by Vinck et al. (2010) 30% of the respondents mentioned "poverty" as one of the main causes of the conflict,[48] while "greed/corruption" was mentioned by 63% and "Identity (tribal/ethnicity)" by 40% of the interviewees (p. 33).

In a testimony to the SCSL Moses Blah, one of the senior commanders of the NPFL, told the Court that majority of the NPFL's recruits were illiterate and "drawn from the poor" (The Prosecutor vs. Charles Ghankay Taylor, 2008a, p. 10161). This narrative is supported by certain academics and NGOs. According to the "Regional warriors" report, almost all young fighters come from similar poor backgrounds (Dufka, 2005, p. 16). This account is supported by an anthropological study conducted described in the "Sweet Battlefields Youth and the Liberian

[48] The respondents were asked to name up to three root causes of the civil war.

Civil War". According to its author, the rebels tended to recruit poor marginalized urban youths (Uthas, 2003, p. 249).

However, there are conflicting accounts regarding the motives of most rebel recruits. For instance, majority of the ex-combatants interviewed by the authors of the "Regional warriors" report were impoverished and cited unemployed or underemployed and poverty as the principal reason for joining an armed group (Dufka, 2005, p. 16). According to Ellis (1999), the profit motive became more pronounced during the later years of the civil war. He observed that fighters who managed enrich themselves would attempt to retire from the war (p. 123-124). However, this account of recruits enlisting to improve their financial status is not fully supported by data gathered in studies based on large scale surveys. In Pugel's (2007) survey only around 11% of the ex- combatants cited 'money' or the fact that 'people in the group lived better' as their principal reason for joining the NPFL (p. 36). A later study, conducted by Boas & Bjorkhaug (2010), is consistent with these findings. The Authors of this study also sought to evaluate the impact of the DDRR program by employing respondent driven sampling and in-depth qualitative interviews to collect data about ex-combatants of the Liberian civil war. In their survey around 17% of the ex-rebels listed "money and goods" and 11% of the ex-rebels listed "Nothing else to do" as one of their principal reason for joining[49](Boas & Bjorkhaug, 2010, p. 11).

There is no available statistics on Liberia's GDP per capita or GDP per capita growth disaggregated by county. However, there are enough data on the level of absolute and relative poverty, which can be used as a proxy for evaluating the alternative opportunity costs in different regions of the country. According to a nation-wide survey carried out by Vinck, et al. (2010), the highest percentage of Liberians who actively participated in the civil war were living in the Nimba (8%), Bong (6%) and Grand Gedeh (6%) counties (p. 36).[50] Similarly, a survey carried out by Boas & Bjorkhaug (2010) revealed that the highest number of ex-combatants interviewed in Monrovia, who were not born in the Capital, originated from Lofa, Nimba and Bong counties (p. 5). Although, Grand Gedesh (33%) is among the four counties with the highest levels of relative poverty in the country, Nimba has the second lowest poverty rate (15%) and the poverty

[49] The respondents were asked to name up to three main reasons for joining an armed-group.

[50] A map of direct participation in the conflict (Vinck et al., 2010) - Appendix D.

rate in Bong county (24%) is very close to the nationwide average (21%) (Vinck et al., 2010, p. 20). [51] The data available on Liberia Institute of Statistics & Geo – Information Services website supports the estimates provided by Vinck et al. (LISGIS, 2013).

The Grand Gedeh county, which is the poorest region, with a disproportionately high level of Liberians who have actively participated in the civil war, is a predominantly Krahn dominated county[52]. While, the Nimba county, which is the richest region, with a disproportionately high level of participation, is a predominantly Gio and Mano dominated county. And the moderately rich Bong county is dominated by the Kpelle ethnic group (Vinck et al., 2010, p. 20). According to the Pugel's (2007) survey almost all NPFL recruits came from Gio, Mano, Bassa and Kpelle ethnic groups (p. 28). According to majority of the other sources, the NPFL was dominated by Mano and Gio recruits from the Nimba county (Ellis, 1999, p. 76-77; Reno, 1997, p. 498; Utas, 2003, p. 241; Call, 2011, 349). While, the majority of the AFL soldiers and militants from other pro-government factions were composed of Khrans and Mandingos (Ellis, 1999, p. 94-95; Lidow, 2016, p. 100). These results are consistent with a disaggregated study of the Liberian civil war conducted by Hegre, Ostby & Raleigh (2009). Authors of this study carried out a spatial analysis of the Liberian civil war in order to examine the link between subnational poverty and the location of civil war events. They uncovered that the rebels tended to recruit in the relatively wealthy regions of the county (p. 619).

However, as noted by Boas & Bjorkhaug (2010) prior to the conflict "most people were generally poor, disenfranchised, and without any access to or hope for upward social mobility" (p.14). In 1989 Liberia's GDP per capita was around $568[53], in comparison the world average at that time stood at $4,903 (The World Bank , 2017a) and the average of a country in Collier's 'warstart' sample was $1101. While Liberia's average GDP per capita growth in the five year period prior to the outbreak of hostilities was -6,28%, while the World's average stood at 1,98% and even countries in Collier's 'warstart' sample -0,48 (The World Bank, 2017b). Thus, in comparison to the rest of the world and even to other countries that had experienced civil war,

[51] A map of relative poverty (Vinck et al., 2010) - Appendix E.

[52] Maps illustrating the dispersion of the ethnic groups who actively participated in the First Liberian civil war (Vinck et al., 2010) - Appendix G.

[53] Here and in other evaluations converted into constant 1995 US$.

Liberia's economic situation, prior to the outbreak of hostilities, was very dire. Moreover, in terms of absolute poverty the difference between the various Liberian counties is very small. While 95% of the respondents from the Grand Gedeh were living under $1.25 per day, 94% of Bong's residents and 89% of those living in the Nimba county reported living under $1.25 per day (Vinck et al., 2010, p. 30)**.**[54] Thus, although the residents of Nimba county were relatively rich or those living in Grand Gedeh relatively poor, in absolute terms the vast majority of Liberians living in any state could be considered poor.

Evaluation

Both the "Regional warriors" report and the anthropological study conducted by Uthas (2003) propose that the vast majority of the rebel recruits came from poor backgrounds. However, it has already been discussed that due to an insufficient sample and unclear respondent selection procedure the "Regional warriors" report cannot be treated as a strong piece of evidence. Similarly, Uthas (2003) was interested in-depth stories of individual combatants and did not employ any rigorous sampling strategy (p. 20-22). Although, Uthas's findings are useful as in-depth contextual knowledge about the life of an under-aged combatant or ex-combatant, these results are not generalizable. While Ellis's (1999) observations favor the profit seeking rationale, he does not argue that this was the leading motive for the majority of rebel fighters. Consequently, there is only weak account evidence that the majority of the NPFL fighters came from poor backgrounds and were motivated by financial incentives.

However, there are two other surveys of ex-combatants that are based on larger samples and more rigorous sampling strategies that partially contest this narrative. As already discussed in the evaluation of the first part of this mechanism, Pugel's study is representative and consequently, observations about the rebel motivations, drawn from this source, will be accepted as evidence. Similarly Boas & Bjorkhaug (2010) study also targets the whole population of ex-combatants from both civil wars. After carrying out fieldwork in two locations Boas & Bjorkhaug (2010) came up with "Monrovia" and "Voinjama" data sets. The "Voinjama" data set is irrelevant to this thesis, because it only contains interviews with ex-combatants who fought in the Second Liberian civil war. While in "Monrovia" data set 40% of their 489 interviewees were members of

[54] A map of absolute poverty (Vinck et al., 2010) - Appendix H.

the NPFL. (Boas & Bjorkhaug, 2010, pp. 8-9). Despite the larger sample, the results of Boas & Bjorkhaug (2010) study are less representative since all respondents in the 'Monrovia' data set have been interviewed in two Monrovian districts, while Pugel's data set contains interviews from a nationwide sample of ex-members of the NPFL. Taken together the observations drawn from these two sources can be treated as strong pattern evidence that a significant number, but not the majority of the rebels, were motivated to join the NPFL due to their low opportunity costs.

A study of the post-conflict Liberian society carried out by the researchers from the Human Rights Center University of California Berkley (Vince et al., 2010) is instrumental for determining whether the NPFL recruits came from any specific economic backgrounds. This study relies on key informant interviews and a nationwide population-based survey. The survey encompasses 4500 interviews with respondents who have been selected through a rigorous standard random multi-stage cluster sampling procedure (Vince et al., 2010, p. 15). There are two major issues regarding this source. Firstly, this study does not make distinctions between ex-combatants. Therefore, it is impossible to isolate the rebels from the pro-government fighters or even the ex-combatants who participated in the First rather than Second Liberian civil war. This might challenge the value of the statistics on direct participation in the conflict. However, there is enough reliable account (Ellis, 1999; Reno, 1997) and pattern (Pugel, 2007) evidence that the NPFL recruited from distinct ethnic groups that are concentrated in specific regions of the country. With this in mind, the data about the direct participation in the conflict can be used as spatial evidence that the rebels were more successful in attracting recruits from specific regions of the country.

Secondly, Vince et al. (2010) collect interviews 6 years after the end of the Second Liberian civil war. Thus their estimations of poverty levels in individual states do not necessarily reflect the pre-conflict situation. However, a comparison between the post-conflict relative wealth map produced by Vince et al.[55] with the pre-conflict wealth map produced by Hegre et al.[56] reveals that there is significant overlap in the Nimba and Bong counties, which are relevant to this thesis.

[55] A map of relative poverty (Vinck et al., 2010) - Appendix E.

[56] A map of relative poverty (Hegre et al., 2009) - Appendix F.

The local wealth map produced by Hegre et al. (2009) is based on the Liberian Demographic and health Survey from 1986 conducted by the Ministry of Planning and Economic Affairs. Together these two observations can be treated as strong spatial evidence that the rebels tended to recruit in relatively wealthy areas of the country.

Finally, the data source for Liberia's GDP per capita and GDP per capita figures is the World Bank, which is widely recognized as a reliable source of development statistics. This piece of evidence is supported by the absolute poverty distribution map,[57] derived from the Vince et al. (2010) survey, which, despite its time lag, has been determined as a reliable source. Thus, it is determined that there are moderate pattern evidence that majority of rebel recruits were poor prior to joining.

Alternative explanations

Alternatively, the high number of individuals with low opportunity costs among the rebel recruits could also be explained by Horizontal Inequality Theory. As already discussed, there is strong account and pattern evidence that Gio and Mano ethnic groups were overrepresented in the ranks of the NPFL. In many reliable accounts of the civil war the 1989 rebellion is described as a backlash against the ethnic discrimination and repressions carried out by Doe's government (Boas, 2005, p. 80; Ellis, 1999; Harris, 2012). Indeed there are numerous accounts of systemic persecution against the Gio and Mano civilians carried out by the AFL soldiers following the failed coup of 1985 (Ellis, 1999, p. 60; Meredith, 2011, p. 367; Waugh, 2011, p. 76). In addition, the Gios and Manos were systematically purged from the security apparatus (TRC, 2009, p. 147-148). Thus, there is strong account evidence that the Gio and Mano ethnic groups were marginalized by the government.

However, there is relatively little evidence that these ethnic group were motivated to act by these grievances. In the survey carried out by Vinck et al. (2010) only 32% of respondents in the Nimba county (compared to 27% in the general sample) identified "Inequalities" and 47% (compared to 40% in the general sample) viewed "identity" as the principal causes of the war. Similarly to a general sample (63%) the largest proportion of the interviewees listed

[57] A map of absolute poverty (Vinck et al., 2010) - Appendix G.

"Greed/corruption" (60%) the main determinant of the conflict (Vinck et al, 2010, p. 32). However, this survey targeted the whole Liberian population, thus it does not, necessarily, reflect the views of the individual who enlisted to fight for the rebels. Pugel's (2007) survey, which was designed to capture the motivations of the former fighters, showed that only around 10% of the rebels joined the armed-group because they supported its political goals (p. 36). The survey conducted by Boas & Bjorkhaug (2010) did not include an answer that would indicate political motivation for joining the armed-group. However, only 25%[58] of the respondents chose "Other reasons" that were unrelated to security, money, coercion or personal motives (p. 11). Therefore, there is strong pattern evidence that the majority of the rebels were not motivated by inequalities or other political goals.

Findings

Contrary to the predictions, spatial evidence has not supported the assertion that the rebels rely on recruits from the poorest regions of the country. However, it has been determined that the regions where the NPFL recruited most actively were only relatively wealthy in comparison to other parts of Liberia. Thus, although the rebel leaders have not recruited more actively in the poorest regions of the country, the rebel recruits still have had low opportunity costs in absolute terms.

Moreover the analysis uncovered pattern evidence that a significant portion, but not the majority of former rebels, have been motivated to join the NPFL due to pecuniary incentives. However, pattern evidence has not supported the alternative hypothesis that most rebels have been motivated by horizontal grievances. Moreover, it was revealed that the rebel group was not ethnically homogenous. Consequently, the alternative hypothesis could be partially excluded.

5.1.3. The limited funding hypothesis

Observations

Although, the First Liberian civil war was started by a group of around 160 insurgents, the NPFL soon swelled to a much larger rebel army. In the first half of the 1990, a year when rebel

[58] The respondents were asked to name up to three main reasons for joining an armed-group.

recruitment was the most rapid (Pugel, 2007, p. 35), around 10000 new members joined the ranks of the NPFL (Boas, 2005, p. 80). According to an estimate given by Taylor himself, in the beginning of 1990 he had around 7,000-10,000 new volunteers (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24597). Although, the AFL had superior weaponry and training, this supply of new recruits allowed the NPFL to confront the soldiers in the field and to make rapid advances towards the capital (Alao et al., 1999, p. 22; TRC, 2009, p. 153).

Despite having plenty of new recruits, at the outset of the rebellion, the NPFL constantly lacked funds. For example, due to lack of hard currency, the NPFL regularly lacked weapons and ammunition (Lidow, 2016, p. 117). According to a testimony of Blah, a high ranking NPFL commander from the initial band of 'special forces', the rebellion began with relatively few resources. Although, Taylor had secured some weapons from the Ivorian military, the NPFL did not have enough money to pay for transportation of these munitions (The Prosecutor vs. Charles Ghankay Taylor, 2008b, p. 10276). In a testimony to the SCSL Edward Mineh, a NPFL commander and fighter in the 'special forces', confirmed that the initial groups of rebels were poorly armed and had to rely on capturing weapons from the AFL (The Prosecutor vs. Charles Ghankay Taylor, 2010b, p. 40322). According to the TRC (2009), the NPFL's lack of supplies resulted in systematic exploitation of the civilian population (p. 154). However, as the NPFL took control of most of the country and established 'Greater Liberia', its income rose dramatically. There is huge differences between the estimates of NPFL's income with prediction ranging from $14 million to $450 million per year (Gerdes, 2013, p. 103; Harris, 2012, p. 135).

It was impossible to find reliable documents that would allow for an educated estimation of how much the NPFL was spending on recruiting and retaining its fighters. Nevertheless, there are anecdotal observations about the financial incentives given to the members of the NPFL. The most complete estimation was given by Zaymay, a member of the 'special forces' and a high-ranking commander within the NPFL. According to his testimony in the SCSL: "within my command, a commander received 1,000; executive officer received 700; the elements within the unit received 500 each Liberian dollars" (The Prosecutor vs. Charles Ghankay Taylor, 2010a, p.

40845). This, monthly salary translates to around $10-15, $7-10.5 or $5-7.5[59]. According to Alfred Naleh, a mid-level commander within the NPFL, who testified in the TRC, the commanders would be given money to support the combatants under their command, but the structure was less formal. The commanders received irregular payments, ranging from $2,000 to $3,000, given as incentives for capturing territory (TRC, 2008). While based on interviews conducted by Lidow (2016), high-ranking commanders would receive cash payments ranging from $10,000 to $30,000, which they were supposed to share with their followers (p. 119). Moreover, there are numerous accounts of financial incentives being substituted with opportunities to 'pay themselves' (Ellis, 1999, p. 91, Alao, 1999, p. 46; TRC, 2009, p. 155), with the vast majority of looting incidents, recorded by the TRC, occurring in 1990 (Cibelli, Hoover, & Kruger, 2009, p. 30). In addition, the NPFL fighters also received other receive non-monetary incentives such as food, clothes and medicine (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24699; Alao et al., 1999, p. 21; Reno, 2015, p. 273).

Evaluation

Pugel's (2007) study presents strong pattern evidence that the rebel army grew very rapidly after crossing the border into Liberia. These results are supported by the accounts of experts (Boas, 2005; Ellis, 1999) and the former NPFL commanders (The Prosecutor vs. Charles Ghankay Taylor, 2008a/b). However, the claim that the NFPL was able to resist the AFL, because of this influx of new recruits is subject to interpretation. While both the accounts of Aloe et al. (1999) and the TRC are based on interviews and testimony of military commanders and other relevant stakeholders, the relationship between NPFL's ability to recruit new fighters and its success in the field remains open for discussion. Other authors have named different reasons that explain the government's inability to crush the insurgency. For example, Ellis (1999) argued that "AFL countermeasures were ineffective since the army was receiving no support from any part of the population in Nimba County" (p. 78). However, although the abundant rebel recruitment pool might not have been the only factor that enabled their success against Doe's forces, it did play a significant role. Consequently, there is moderately strong account evidence that at least one of

[59] Using the XE Currency Converter, which can be found at http://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=LRD.

the reasons why the AFL failed to put down the insurgency was the NPFL's ability to recruit new fighters.

There are several independent sources claiming that at the beginning of the insurgency the NPFL has been constantly lacking funds and supplies. Both Lidow and the authors of the TRC report, based their observations on interviews collected from key stakeholders. Moreover, Blah and Mineh, who testified before the SCSL, were senior commanders in the NPFL hierarchy as well as members of the initial group of rebels. Thus, both of them could be expected to know enough about the organization to be able to judge the initial capabilities of the NPFL. Furthermore, whereas Blah testified in the court at the behest of the Prosecution, Mineh was a Defense witness. In addition, Taylor did not contest Blah's account, even though he was testifying against his former leader (Sesay, 2009, para. 3). Thus, there is strong account evidence that the NPFL started the rebellion with a relatively small budget. However, there is also reliable account evidence (Ellis, 1999, TRC, 2009) that, when the rebels captured more territory and established 'Greater Liberia', NPFL's income soared exponentially.

There is reliable TRC account evidence about the 'pay yourself' policy enacted by the NPFL leadership in the early stage of the conflict. Moreover, Lidow (2016) provided reliable observations about promises of post-conflict rewards, provided to the initial 'special forces'. Consequently, it is reasonable to expect that before the NPFL leadership secured reliable source of revenue, recruitment relied on non-monetary selective incentives. However, there are numerous observations that, later in the conflict, commanders of the NPFL started receiving monetary incentives. These observations are based on independent accounts of several former NPFL commanders who testified before the SCSL or TRC and corroborated by interviews conducted by Lidow (2016). Regrettably, there are no NPFL documents or official estimations that could serve as strong pattern evidence for determining how much of this budget has been spent on recruiting and retaining the fighters. The only available primary sources for making a rough estimation are the narratives of rebel commanders. All of these accounts referred to a period of the conflict, when the NPFL was already in control of 'Greater Liberia' and had a very substantial income.

Although the size of the NPFL forces fluctuated throughout the conflict, according to an estimate of the UN office in Monrovia, the NPFL had around 12,500-25,000 fighters under arms (as cited in Alao et al., 1999, p. 99). While in his trial, Taylor estimated that he had around 15,000 to 18,000 fighters by August 1990 (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24681). With each 'commander' having several 'officers' and around 200 fighters loyal to him (…), the NPFL has been spending approximately $65,000 to $200,000 a month. This would amount to $0,78 to $2,4 million a year, when the most conservative estimate for revenues generated by the NPFL average around $14 million a year. However, considering the testimony, which specified that cash payments were irregular and the accounts that often low-ranking rebels were not paid at all, it is very likely that this educated guess is a gross overestimation. Moreover, it is possible that this conservative estimate of NPFL's yearly income is an underestimation. Nevertheless, this rough estimation suggests that introduction of monetary incentives has not created a big financial burden for the NPFL.

In the initial phase of the conflict, the rebel recruiters were offering only non-monetary selective incentives. However, when the rebel leadership acquired reliable sources of income, these informal incentives were supplemented by a semi-formal payment structure. Based on the available estimates, these payments were relatively insignificant in comparison to NPFL's revenues gained from governing 'Greater Liberia'. Thus, there is moderately reliable account evidence that the NPFL was spending relatively small proportion of its budget on recruiting and retaining rebel fighters.

Alternative explanations

Foreign finance or resource predation theses could also provide an explanation for the economic viability of Taylor's rebellion. Firstly, according to the TRC (2009) exploitation of Liberia's natural resources was "crucial to sustaining Taylor's war efforts" (p. 156). The scholars of the Liberian civil war overwhelmingly agreed that the majority of NPFL's income derived from export of primary commodities and deals with companies extracting natural resources (US Department of State, 1996, par. 9; Gerdes, 2013, p. 103; Reno, 1997, p. 24.). However, NPFL did not start systematically exploiting the natural resources prior to the establishment of 'Greater Liberia' in the autumn of 1990 (Reno, 1997, p. 6). Consequently, opportunities for resource

exploitation cannot explain how Taylor managed to launch and sustain an armed insurgency in the starting phase of the conflict.[60]

Secondly, according to Harris (2012), it was the backing of the Libya, Burkina Faso and Côte d`Ivoire that enabled the NPFL invasion of 1989 (p. 145). There is plentiful account evidence that the foreign backing allowed Taylor to form, train and partially equip his initial 'special forces' (Ellis, 1999, p. 70-72; Meredith, 2011, p. 369; Waugh, 2011, p. 119). Moreover, the NPFL receive arms shipments from Libya and Burkina Faso and even had regular Burkina Faso soldiers fighting within their ranks (Waugh, 2011, p. 120; Meredith, 2011, p. 370, Ellis, p.163). In addition, Taylor's connections with the Ivorian businessmen were crucial for organizing the trade in natural resources that sustained the NPFL after the establishment of 'Greater Liberia' (Reno, 1997, p. 499-500).

However, despite these strong links to foreign governments the NPFL was not supported financially by foreign leaders. According to Taylor's testimony in the SCSL, the only financial assistance the NPFL received from the president of Burkina Faso came in a form of single subsidy of $3,000-5,000 (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24597). Considering that other sources do not contest Taylor's account it can be assumed that the NPFL has not been receiving financial assistance from sympathetic governments.

Consequently, in the initial phase of the insurgency, the NPFL possessed meager financial resources. The fact that the NPFL have managed to resist the government, while searching for domestic sources of funding, shows that the economic feasibility of Taylor's rebellion cannot be explained by availability of foreign assistance. Although, Libyan training received by NPFL 'special forces' and the continuous support provided by Burkina Faso, Libya and Côte d`Ivoire might have been crucial for the military feasibility of the rebellion.

Findings

[60] The next sub-chapter: "5.2.2 Natural resource predation causal mechanism" p.64-88 will analyze how Liberia's natural resources affected the economic feasibility of this civil war in more detail.

As expected, moderately strong account evidence has showed that NPFL's ability to rapidly recruit new fighters has made the rebellion militarily viable in the earliest stage of the conflict. Moreover, strong account evidence has supported the assertion that Taylor has started the insurgency with a very low initial budget. Furthermore, strong account evidence has indicated that the NPFL has not paid their fighters at the early stage of the conflict and consequently, has not had to allocate any funds towards recruitment. However, it has been difficult to determine what proportion of the NPFL's budget has been allocated to the commanders and fighters, once a more formal payment structure has been introduced. Nevertheless, estimation, based on moderately reliable and relatively consistent account evidence, has revealed that the introduction of monetary incentives has not put a serious strain on NPFL's finances. Finally, the nature of foreign support received by the NPFL has shown that the foreign assistance hypothesis cannot explain why Taylor's rebellion was viable economically. While chronological sequence of events has revealed that opportunities to exploit natural resources has not play a part in the earliest stage of the insurgency. Thus, both alternative hypotheses have been excluded or partially excluded.

5.1.4. Results

To conclude, the NPFL employed a range of incentives to attract new recruits. In the earliest stage of the insurgency the recruits were offered non-monetary selective incentives such access to food, clothes, medicine or informal 'looting opportunities'. Later in the conflict these benefits were supplemented by a semi-formal payment structure. Under this system commanders received money, some of which they were expected to distribute amongst the fighters. Moreover, NPFL also had volunteers who joined up to benefit from the protection in the group and conscripts who were coerced into joining. It has been determined that majority of rebel recruits had low opportunity costs in absolute, but not in relative terms. That is, although the rebels tended to recruit more actively from relatively wealthy regions of the country, the vast majority of Liberians in all regions were poor in absolute terms. Although a significant number of rebel recruits joined NPFL to benefit from the selective incentives, a much larger portion were motivated by security considerations. Despite having a very low initial budget NPFL managed to recruit thousands of new fighters in the first few months of the rebellion. Arguably, the initial military viability of Taylor's rebellion relied on NPFL's rapid recruitment rate. Although, in later stages of the rebellion, members of the NPFL received money from the leaders, the leadership

never had to allocate a big proportion of their revenues to payroll. Therefore, low recruitment costs increased economic feasibility of the rebellion.

The first part of this causal mechanism has passed two highly and one moderately unique empirical tests. However, neither one of the alternative hypothesis could be eliminated. Thus, our confidence in this part has been moderately increased. The second part of this causal mechanism has passed two moderately unique empirical tests, however the passing of one of the tests has relied on weak evidence. Moreover it has also failed one moderately certain empirical test. However, based on strong pattern evidence, the alternative hypothesis could be partially excluded. Thus our confidence in this part of the causal mechanism has been increased, but only slightly. The third part of the causal mechanism has passed one highly unique test and two tests with low uniqueness. Moreover, based on moderate account and sequence evidence, both alternative hypotheses could be excluded or partially excluded. As a result, our confidence in this part of the causal mechanism has been considerably increased.

Thus, the analysis has revealed that all parts of the causal mechanism have been present and functioning as expected. Finally, prior to the analysis it has been established that the *probability of finding evidence*, in the Liberian case, is high and the *prior* of this causal mechanism is moderate. Consequently our confidence in the existence of the opportunity cost causal mechanism has been increased, but only slightly.[61]

[61] For a more detailed discussion of the process that guided this decision refer to Appendix J.

5.2.Natural resource predation causal mechanism:

Part of the causal mechanism	Predicted evidence	Data type	Alternative hypothesis
The rebels target natural resource extraction sites and/or transportation routes	1. 'Greater Liberia' encompass numerous resource extraction sites and/or transportation routes (low uniqueness, high certainty) 2. The rebel leaders perceive resource extraction sites and/or transportation routes as strategically important (high uniqueness, low certainty) 3. The fighting between the rebels and the government's forces is more intense in regions that produce natural resources (high uniqueness, high certainty)	1. Interviews with former members of the NPFL 2. Historical scholarship 3. Academic publications 4. Findings of the TRC 5. Transcripts of the SCSL 6. Findings of the SCSL	A.1 The rebels take over natural resource extraction sites and/or transportation routes as part of a wide untargeted offensive
The leaders organize systematic exploitation	1. Natural resources are extracted[62] in the area	1. Interviews with former members of the	A1. The resources are exploited on an *ad hoc*

[62] Cutting of timber, mining of metals deposits or gemstones, harvesting rubber etc.

of natural resources under the rebel control	under rebel control (low uniqueness, high certainty) 2. The rebel leadership controls trade in captured/extracted natural resources (high uniqueness, high certainty) 3. The rebel leadership makes deals with the companies that extract natural resources (high uniqueness, moderate certainty) 4. The leaders control the looting of resource extraction sites (high uniqueness, moderate certainty) 5. Rebel leaders raise funds by selling "booty futures" (high uniqueness, low certainty)	NPFL 2. Historical scholarship 3. Academic publications 4. Findings of the TRC 5. Transcripts of the SCSL 6. Other secondary sources	basis by individual rebels or local rebel commanders
The leaders use the income, derived from exploitation of natural	1. Funds derived from natural resources are exchanged for war	1. Interviews with former members of the	A.1 The leaders divert the funds derived from exploitation of natural

resources, to fund the rebellion	materials[63] (high uniqueness, high certainty) 2. Funds derived from natural resources are used to pay members of the rebel organization (high uniqueness, moderate certainty)	NPFL 2. Historical scholarship 3. Academic publications 4. Findings of the TRC 5. Transcripts of the SCSL	resources to accumulate personal wealth

5.2.1. The rebel takeover hypothesis

Observations

According to Reno (1995) "The war has been as much a battle over commerce inside and beyond Liberia's borders as it has been a war for territory or control of the government." (p. 110). In a later study Reno (2015) observed that “the initial rebel strategy in 1990 focused on immediate gains, looting cut timber and seizing the country’s gold and diamond trades for foreign currency” (p. 275).

In May the NPFL captured the city of Buchanan, which had Liberia’s main deep-water port (Ellis, 1999, p. 89). During his trial Taylor acknowledged that capturing Buchanan was important, because it was iron ore staging post and had a seaport, which was an important commercial asset (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24663). In June 1990 rebels took control of the Firestone plantation at Harbel, which was the biggest rubber plantation in the world and among the largest employers in Liberia, with around 8,000 – 10,000 employees at that time. The AFL launched an offensive to drive the NPFL off the plantation, however after several days of intensive fighting the rebels prevailed (Gaviria, 2014). When, during his trial, Taylor was asked about the significance of capturing the Firestone plantation, he replied: “Oh,

[63] Anything that is needed to keep a rebel army running such as weapons, ammunition, food, clothes, etc.

you had immediately a means that would provide the needed financial assistance that we needed for the revolution.… it became at that particular time our most significant principle source of foreign exchange" (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24664).

By the end of June 1990 the NPFL had taken control of all major natural resource extraction sites (Prkic, 2005, p. 116) and by July the NPFL controlled virtually all major towns in the country (Alao et al., 1999, p. 22). When Taylor established 'Greater Liberia' in the autumn of 1990, it encompassed around 80% to 95% of the country's landmass and contained Liberia's only international airport, three main ports, main land export routes and majority of the country's resource wealth (Alao et al., 1999, p. 35; Waugh, 2011, p. 103).

In the period between 1991 and 1995 new armed-faction entered the civil war and challenged the rebel hold over the territory of 'Greater Liberia'. With the exception of Monrovia, the fighting was most intense in resource rich areas of Western Liberia and near the port cities in the Southeastern part of the country (Ellis, 1999, p. 98-104). For instance, in 1994 the NPFL were battling three different factions for the control of the Firestone plantation and rubber factory at Harbel (Alao et al., 1999, p. 50). Ross (2004), observed intense fighting over other resource extraction sites, such as mines and valuable forests. This tendency of intense fighting for resource rich areas of the country is also detected in a spatial analysis of the Liberian civil war carried out by Hegre et al. (2009). This study revealed that armed clashes were more frequent in the vicinity of diamond deposits (Hegre et al., 2009, p. 614).

From the early stage of the conflict, Taylor actively challenged the Mandingo dominancy over cross-border trading networks. By late 1990, the NPFL 'special forces' commandos directly controlled the main trading hubs in Lofa County (Reno, 1999, p. 97). According to Reno (1999), Taylor's support for the RUF rebels in Sierra Leone was motivated by desire to expand his hold on the cross-border trade and to take direct control of the diamond fields on the other side of the border (p. 98). Ellis (1999) agreed that this decision was partially motivated by Taylor's "drive to dominate trade", but argued that his primary goal was to punish the Sierra Leonean leadership, who supported enemies of the NPFL (p. 93) This question of Taylor's motivation for supporting RUF was also raised in the SCSL. The Prosecution alleged that Taylor sought to "terrorize the civilian population in order to forcibly control the population and territory of Sierra Leone and to

pillage its resources, in particular diamonds" (Prosecutor vs. Charles Ghankay Taylor, 2012, p. 817). The Defense argued that Taylor's only motive for aiding RUF was to fight their common enemy – ULIMO and the Sierra Leonean government, which supported this armed group (Prosecutor vs. Charles Ghankay Taylor, 2012, p. 823). The Trial Chamber found that the Prosecution proved beyond reasonable doubt that Taylor supported the invasion of Sierra Leone, but failed to prove that he organized the invasion with the goal of exploiting Sierra Leonean resources (Prosecutor vs. Charles Ghankay Taylor, 2012, p. 825) Moreover, it found that the Prosecution proved beyond reasonable doubt that Taylor provided weapons and ammunition to RUF for an attack on diamond-rich Kono region and that he received diamonds following the attack. However, there was insufficient evidence for proving that Taylor actually planned or order RUF to capture Kono (Prosecutor vs. Charles Ghankay Taylor, 2012, p. 846).

Evaluation

The observations about the expansion of the NPFL and establishment of 'Greater Liberia' are based on accounts of Ellis (1999), Alao (1999), Prkic (2005) and Waugh (2011). It has already been established that Ellis (1999) and Alao et al. (1999) can be treated as reliable sources of account evidence[64]. Taylor's biography written by Waugh (2011) has received a number of favorable reviews (O'Leary, 2012; Walle, 2012) on account of detailed research carried out by the author. Thus, it can be recognized as another trustworthy source of observations about the actions taken by the NPFL leadership. Finally Prkic's (2005) paper on Liberian war economy, has been often quoted and even called a "meticulously researched paper" in the most comprehensive study of the economic aspect of the Liberian civil war (Gerdes, 2013, p. 81). Therefore, it is accepted as a reliable source of account evidence on NPFL's commercial affairs. Consequently, strong account evidence support the prediction that numerous resource extraction sites and/or transportation routes have been, at least temporarily, located in the territory controlled by the NPFL.

The only primary source for observations about the NPFL strategy regarding Liberia's natural resources is Taylor's testimony in the SCSL. Taylor recognized the Firestone plantation at Harbel and the port of Buchanan as strategic assets important for their commercial value.

[64] Reference to: "5.1.1. The selective incentive hypothesis" p. 39.

Although, there are no other accounts of senior NPFL commanders who would comment on this aspect of NPFL strategy, certain observations about the events on the ground can partially support these assertions. According to Taylor's testimony, in the initial stage of the insurgency, his strategy for the NPFL, was to capture areas where the AFL presence was weak (The Prosecutor vs. Charles Ghankay Taylor, 2009, p. 24614). Nevertheless, in June 1990 the NPFL engaged in a protracted fight with the AFL for the Firestone plantation at Harbel. Although, there is no evidence that the order to capture and hold the plantation has come from Taylor himself, this episode suggests that this major resource extraction sites have been recognized as important strategic objectives. The principal source of information about the NPFL's takeover of the Firestone plantation is a documentary directed by Gaviria (2014). Although it is not a strictly academic source, the account presented in this film is based on interviews with and diaries of key Firestone personel who have been on the plantation when the NPFL moved in. Thus it is admitted as a source of strong account evidence about the events that unfolded on the plantation. Taylor's observations about the NPFL's strategy in the early stages of the Liberian civil war have not been directly related to the charges faced by the former rebel leader. Thus, his account corroborated by the events at Harbel can be recognized as an indication that the NPFL's leadership perceived resource extraction sites and/or transportation routes as important strategic assets. Moreover, Reno's observations about the rebel strategy corroborate this assertion. Reno (1993; 1995; 1997; 2015) is the first scholar who carried out several successive studies on the economic activities of Taylor and the NPFL. His works relied on analysis of original NPFL's and NPRAG's documents, interviews with former rebels and other relevant stakeholders as well as document analysis of secondary sources. Thus, Reno's studies can serve as a unique source of reliable observations about the economic aspect of Taylor's rebellion. Thus, although the evidence drawn from Taylor's account and the events at Harbel can be considered circumstantial, it is supported by independent observations provided by Reno. Consequently, there is, at least, weak account evidence that the leadership of the NPFL perceived resource extraction sites as strategically important.

Reno's (1999) observation about the NPFL taking over the cross-border trade from the Madingos can be accepted as evidence that the leadership of the NPFL perceived transportation routes as strategically important. However, the assertion that Taylor's support for RUF has also been

motivated by considerations related to natural resources is contested. Although Ellis (1999) and Reno (1999) have been recognized as reliable experts of the Liberian civil war, the judges of the SCSL have had far greater access to information and resources to determine Taylor's relationship to RUF. Therefore, their ruling that there was not enough evidence to establish that Taylor planned the invasion of Sierra Leone or directed RUF to seize control of the diamond-rich area of the country, invalidate the connection suggested by Ellis (1999) and Reno (1999). Consequently, Reno's (1999) observation is not corroborated by any other piece of independent evidence and, thus can only be consider as weak account evidence that the NPFL's leadership recognized the strategic importance of natural resource trade routes. The assertion that, in later stages of the conflict, the fighting tended to be more intense in areas related to extraction or export of primary commodities, relies on the account of Ellis (1999), which has been determine to be a reliable source. Alao et al. (1999) observation about the 1994 battle for the rubber plantation at Harbel, provides additional anecdotal evidence of the intensity with which the rebels fought for key resource extraction sites.

Another source of observations about the intensity of Liberian civil is Ross' (2004) study on the relationship between natural resources and civil war. The results presented in this study were based on an analysis of 13 case studies of civil wars that were 'most likely' to have a relationship with natural resources. To test one of his hypotheses, Ross (2004) was looking for evidence of "resource-related battles, over sites that had little or no intrinsic strategic value" (p. 46). In the Liberian case he observed 'resource battles' for areas rich in alluvial gemstones, mines and commercially valuable forests (Ross, 2004, p. 55-56). However, the fact that Ross only presented the results of his case studies means that the sources for his observations cannot be verified. Consequently, the validity of Ross' study can be questioned and, in a vacuum, Ross' findings could only be accepted as a moderate piece of evidence.

Finally, the study conducted by Hegre et al. (2009) provides another source of observations about the geographical aspect of the Liberian civil war. This study sought to examine the relationship between relative poverty and the location of civil war events (p. 598). Moreover, it also examined the link between natural resources and conflict events since the model controlled for presence of diamond deposits. Both the ACLED data set used for gathering disaggregated conflict data and the Liberian Demographic and health Survey used to collect local-level

socioeconomic data were produced by reputable research institutions. Thus, this study was based on reliable data. However, the authors of this study did not distinguish between the First and Second Liberian civil wars. Therefore, their results have been influenced by battles that are irrelevant to this thesis. Moreover, the fact that Hegre et al. use 'alluvial diamond deposits' as their only proxy for natural resources is problematic, because diamonds, excavated domestically, comprised a very small proportion of Liberia's wartime economy (Gerdes, 2013, 91-92). Majority of diamonds exported from Liberia, during the civil war, were mined in Sierra Leone, Russia or Angola rather than in local deposits (TRC, 2009, p. 288-289). Consequently, the observation that fighting tended to be more intense near alluvial diamond deposits cannot be admitted as reliable evidence. Nevertheless, since the account of Ellis (1999) is corroborated by anecdotal evidence provided by Aloe et al. (1999) and the results of Ross' (2003) study, there is strong account evidence supporting the assertion that the fighting was more intense in resource-rich regions of the country.

Alternative explanations

The alternative hypothesis for this part of the causal mechanism is not based on any particular theory. However, capturing resource extraction sites and/or transportation routes might have been an unintended consequence, rather than a goal of the rebel movement. At the onset of the insurgency the NPFL issued a public statement defining the goals of the 'revolution'. In this document Taylor, explained that the main purpose of this 'nationalist movement' was to depose the 'tyrannical' Doe's regime and to restore democracy (Taylor, 1990). However, the chronological sequence of the events does not support the presumption that the rebels have only sought to overthrow Doe. While the 'special forces' launched their initial raids in December of 1989, their first attacks on the capital, the seat of Doe's power, started only in July of 1990. Moreover, by the time the rebels besieged Monrovia, the rest of the country, with the exception of Krahn dominated Grand Gedeh county, was already under the NPFL control. After Doe was captured and killed by the INPFL, Taylor refused to participate in any peace process that would not guarantee him the post of president or interim-president (Cohen, 2000, p. 154). In the SCSL, he explained that this rigid negotiating position was justifiable, because his forces occupied practically all Liberia (The Prosecutor vs. Charles Ghankay Taylor, 2009, p. 24687).

Thus, it is possible that Taylor perceived territory as a bargaining chip that would be useful in post-Doe peace settlement. From this perspective, one of the primary goals of the NPFL leadership was to capture as much territory as possible to strengthen their negotiating position in any future settlement. Unfortunately, the only source for empirical observations about the overall strategy of the NPFL is Taylor's testimony in the SCSL. During a hearing, the former rebel leader explained to the Court that the initial strategy of the NPFL was to capture areas, where the resistance was weak, and to avoid the areas, where the presence of AFL was strong (The Prosecutor vs. Charles Ghankay Taylor, 2009, pp. 24660-24662). However, during 1990 rebel offensive, the bulk of loyal AFL's forces were stationed in Monrovia and Krahn dominated Grand Gedeh county. Thus, it is hard to determine, whether the capturing of resource extraction sites and transportation routes, in other areas of the country, was strategic or occurred as a part of a general territorial grab. NPFL's determination to establish control over the Firestone plantation, which has been defended, suggests that major resource extraction sites have been perceived as important. Nevertheless, there are simply not enough empirical observations to either significantly increase or decrease our confidence in this alternative hypothesis.

Findings

As expected, the analysis has uncovered strong account evidence that Taylor's 'Greater Liberia' has encompassed numerous resource extraction sites and/or transportation routes. Moreover, it has been determined that strong account evidence supported the prediction that fighting between the rebels and the government's forces has been more intense in resource-rich regions of the country. However, it has been revealed that only weak account evidence supported the assertion that the rebel leaders have perceived resource extraction sites and/or transportation routes as strategically important. In addition, the alternative hypothesis could not be eliminated due to lack of empirical observations about the strategic objectives or decision making process of the NPFL leadership.

5.2.2. The systematic exploitation hypothesis

Observations

According to Ellis (1999), prior to launching his insurgency, Taylor had met with Ivorian businessmen, who were interested in extracting Liberia's natural resources, and received their "sympathetic attention" (p. 72). Waugh (2011) argued that the links established with Ivorian businessmen, prior to the invasion, allowed Taylor "to reach clients for Liberian commodities, the critical source of the foreign exchange he would need to finance his military campaign" (p. 83).

After Taylor had established 'Greater Liberia', NPFL started systematically exploiting Liberia's natural resources. According to the Economist Intelligence Unit, in 1988 Liberia exported primary commodities worth around $379 million. The main products were iron ore (58% of export value), rubber (29%) and timber (9%) (as cited in Atkinson, 1997, p. 9). Rubber can be considered as a 'lootable' commodity, because it can be extracted and transported by groups of unskilled laborers. However, mining of iron ore is capital intensive since it requires sophisticated machinery and expertise. Thus iron ore is a 'non-lootable' commodity. While logging is labor, rather than capital, intensive, transportation of timber requires vast fleets of trucks and access to major export hubs. Thus it cannot be considered as 'lootable'. Consequently, it can be observed that Liberia's natural resource industry was not dominated by 'lootable' commodities.

Nevertheless, the first and least sophisticated method of exploiting resource extraction sites employed by the rebels was looting. The earliest major source of finance for the NPFL was the Firestone plantation at Harbel captured in July of 1990. During this raid NPFL fighters captured vehicles, cash, communications equipment and rubber (Gaviria, 2014). After the rebels captured a mine of the Bong Mining Company (BMC) in June 1990, Taylor's brother Gbatu made sure that the abandoned machinery was looted and sold in an organized fashion (Reno, 1999, p. 95). Moreover, there was widespread looting of equipment in the timber sector. According to claims submitted to the TRC by around 15% of the timber companies operating in Liberia, throughout the civil war the fighters from various armed-groups had looted equipment worth more than $133 million (TRC, 2009, p. 291). However, for NPFL's leadership looting was not the prefer mode of resource exploitation. Until 1994, when unsanctioned plundering became more widespread, Taylor was relatively successful in protecting the infrastructure used in the extraction of natural resources (Gerdes, 2013, p. 98). For example, the rebels refrained from looting the industrial

equipment from the port of Buchanan, which was later dismantled and sold by the ECOMOG peacekeepers for around $50 million (Ellis, 1999, p. 173).

After the rebels captured the port of Buchanan in May of 1990, Taylor encouraged the companies, which had suspended their activities during the fighting, to resume production under the protection of the NPFL (Ellis, 1999, p. 89-90). The first major deal was struck in October 1990, when the Liberian Mining Corporation (LIMINCO) signed an agreement to reopen their iron ore mine located in rebel controlled territory (Prkic, 2005, 117-118). In exchanged for protection and the right to restart exploitation of the Yekepa mine, LIMINCO agreed to became a 'public corporation' of 'Greater Liberia', which meant being controlled and staffed by Taylor. Taylor was paid for each shipment of iron ore and LIMINCO paid a monthly royalty to the NPRAG government (Gerdes, 2013, p. 82-83). After the mining operation were suspended in 1995, the entire Yekepa mine site was looted (TRC, 2009, p. 293)

After the NPFL captured the Firestone plantation at Harbel, fighters and civilians were looting company's property and harvesting rubber themselves (Lidow, 2016, p. 118). In the SCSL, Taylor explained that the rubber captured in the Firestone plantation was transported and sold in Côte d`Ivoire (The Prosecutor vs. Charles Ghankay Taylor, 2009, p. 24664). This stopped in early 1992, when Taylor signed a memorandum of understanding with the Firestone tire & rubber company (Firestone), which owned the plantation. In exchange for protection and permission to resume business, Firestone agreed to recognize NPRAG as de-facto government, pay taxes and provide food and other supplies to the NPFL (Gaviria, 2014). Moreover, the plantation was also used as a launchpad for NPFL's bid to capture Monrovia in late 1992 (Waugh, 2011, p. 124). After this, Firestone suspended its operations and uncoordinated looting resumed (Lidow, 2016, p. 119). Moreover, the NPFL had a similar agreement with the Liberian Agricultural Company (LAC), which was the second major producer of rubber (Gerdes, 2013, p. 87). Although, in 1993, organized rubber production stopped, illegal tapping persisted throughout the war. The rubber trade was mostly dominated by private actors (Ellis, 1999, p. 167). Both the official producers and the illegal tappers sold rubber to brokers who organized exports and paid export 'taxes' to the NPFL (Gerdes, 2013, p. 88-89). Although some rebels and civilians sold their looted rubber independently to soldiers of the ECOMOG or brokers who were

exporting through ports controlled by the peacekeepers (Lidow, 2016, p. 119; Ellis, 1999, p. 168).

Logging was another industry that was systematically exploited by the NPFL. In early 1991 Taylor revived and took control of the Forestry Development Authority (FDA), which managed logging agreements with foreign companies prior to the conflict (Reno, 2015, p. 276). The resumption of business was so successful that by late 1991 'Greater Liberia' became France's third-largest source of tropical hardwood (Reno, 1993, p. 180). The timber production and trade remained in the hands of private business, with small firms organizing logging and exporting. These firms had to purchase a 'license' from the NPRAG and pay taxes on their exports (Gerdes, 2013, p. 86). Unlike in the case of rubber industry, the leaders of the NPFL and other factions retained control of this commercial activity through the conflict (Atkinson, 1997, p. 11).

The NPFL was also involved in mining precious stones. After the rebels occupied diamond-rich area around Lofa River, Taylor brokered deals with the expatriate prospectors and large-scale mining continued until the area was occupied by the ULIMO. After 1993 manual small-scale mining was organized by individual fighters (Atkinson, 1997, p. 10). According to Ellis (1991) the diamond and gold trade was controlled by a small number of Taylor's close aids (p. 92). However, Gerdes (2013) observed that the total value of diamonds prospected in these areas was relatively small (p. 91). Thus, the NPFL mostly benefited from controlling the cross-border diamond trade route coming from Sierra Leone.

Various business dealings brokered by the leaders had an effect on the structure of the NPFL. In 1990, Taylor decided to divide NPFL's forces into four divisions: Army, Marines, Navy and Executive Mansion Guard (EMG). The primary function of the Navy and the EMG divisions was to secure the extraction of natural resource sites under the NPFL control and to ensure that the port of Buchanan remained open for business (Lidow, 2016, p. 117). Moreover, detachments of NPFL's military intelligence unit G-2 were used to guard key business partners of the regime (Gerdes, 2013, p. 140) and, in some instances, to organize the resource extraction process (Reno, 1993, p. 180). According to Ellis (1999), the G-2 was the only well-organized military unit under Taylor's command in the initial stage of the conflict (p. 113).

There is great variation in the estimates of NPFL's income given by various authors who attempted to calculate Liberia's wartime economy (US Department of State, 1996; Reno, 1998; Harris, 2012; Gerdes, 2013). However, two particular estimates stand out as more complete and reliable. The first number - $75 million average per year was given by William Twaddell, a senior diplomat who was in charge of the US embassy in Monrovia as *chargés d'affaires ad interim* between 1992 and 1995 (US Department of State, 1996, par. 10). While a more conservative estimate of $14 million on average a year is provided by Gerdes (2013), in a book on political economy of Liberia during the First and Second civil wars. Despite these vastly different estimates, there is a consensus among the scholars of the civil war that the majority of NPFL's finances originated from Liberia's natural resources (US Department of State, 1996, par. 9; Reno, 1997, p. 24; Gerdes, 2013, p. 103)

Evaluation

Most observations about the looting of companies operating in Liberia's natural resource sector comes from Gaviria (2014), Reno (1999), TRC (2009) and Gerdes (2013). It has already been established that TRC is a highly reliable source on all aspect of the Liberian civil war[65] and Reno can be trusted, when it comes to Liberia's wartime economy[66], while Gaviria has produced an in-depth account of the events that took place on the Firestone plantation[67]. Although the TRC (2009) reported wide-spread looting in the timber industry, it also specified that the rebels were using looting to advance the interest of logging companies that were close to the NPFL (p. 291). This account of selective looting was corroborated by the analysis conducted by Gerdes. Gerde's (2013) book on political economy of Liberian state presents a very detailed account of the economic activities that sustained Taylor's rebellion. It is based on interviews collected in four field trips to Liberian counties that have been at the epicenter of the civil war[68], and on extensive document analysis of primary and secondary sources (Gerdes, 2013, p. 6-7). Moreover, the fact that the rebels refrained from looting the expensive machinery of Buchanan, illustrates Taylor's ability to restrain his fighters. Thus, there is strong account evidence that the leadership

[65] Reference to: "5.1.1. The selective incentive hypothesis" p. 45.

[66] Reference to: "5.2.2. The rebels take over hypothesis" p. 66.

[67] Reference to: "5.2.2. The rebels take over hypothesis" p. 66.

[68] Nimba, Grand Gedeh, Bong, Lofa, Bomi and Sinoe.

of NPFL sanctioned looting in some cases, but managed to prevent widespread pillage of infrastructure that could produce income through resource extraction.

Both Ellis (1999) and Waugh (2011) observed that Taylor had established ties with foreign businessmen who were interested in exploiting Liberian natural resources. However, there is no indication that these business interests provided Taylor with funding before the rebels seized control of resource extraction sites. Thus, there is no evidence that leaders of the NPFL raised funds by selling 'booty futures'.

The observation of Ellis (1999), Gerdes (2013) and Atkinson (1997) revealed that, for the most part, trade in rubber and timber was organized by private businessmen, but controlled and taxed by the leaders of the NPFL. It has already been established that Ellis (1999) is a reliable source on most aspect of the Liberian civil war [69] and Gerdes (2013) is an expert of Liberian war economy[70]. Similarly, Atkinson (1997) has also conducted an earlier analysis of war economy in Liberia. However, Atkinson's study was based on interviews conducted during one short field trip and a limited literature review. As recognized by the author herself this study could not establish "exact figures and flows in detail" (Atkinson, 1997, p. 28). However, it did present relatively reliable observations about the commercial activities that were taking place during the conflict. Finally, Taylor's observation, about the trade in looted rubber, is completely unrelated to the charges he has been facing in the SCSL. Thus, it will be accepted as a piece of evidence that some dealings in looted goods were organized by the leaders themselves. Ellis' (1999) observation about Taylor's personal control exercised over the trade in precious metals and diamonds supports the assertion that trade in certain commodities was organized by the leaders themselves. Thus, there is strong account evidence that the leaders of the rebellion involved themselves directly in the trade in captured/extracted natural resources, although their level of control differed from industry to industry.

The principal source for Taylor's dealings with the Firestone is based on the documentary, directed by Gaviria (2014). It is a valuable source of observations, because it shows interviews with Firestone's executives who negotiated with Taylor and were directly involved in the

[69] Reference to: "5.1.1. The selective incentive hypothesis" p. 45.

[70] Reference to: "5.2.2.The systemic exploitation hypothesis" p. 72.

reopening of the plantation after an agreement was reached. Moreover, the accounts of these primary witnesses are supported by court documents and declassified State Department cables. However, Roseneau et al. (2009) observed that some media accounts contradicted the assertion that Firestone plantation had been operational during the time of rebel occupation (p. 21). Nevertheless, the version of events presented in Gaviria's documentary is corroborated by the accounts of Ellis (1999), Gerdes (2013) and Waugh (2011). All of these authors have been determined to be reliable sources on Liberia's war economy or leadership of the NPFL. Thus, the aforementioned media account can be discounted. While, only Gerdes (2013) reported that NPFL had a deal with LAC, Atkinson (1997) did note that LAC had formed "arrangements" with factional leadership (p. 10). Consequently, there is strong account evidence that major companies in the rubber industry had, at least temporary, business dealings with the rebel leadership.

Moreover, observations about Taylor's agreement with LIMINCO mining company, is based on account of Prkic (2005), corroborated by Gerdes (2013). Similarly the observations about Taylor's dealings with the logging companies conducted through the FDA are based on studies conducted by Atkinson (1997), Gerdes (2013) and Reno (2015). Since all of these authors have been deemed to be reliable and there are no disagreements between different independent sources there is strong account evidence that the leadership of the NPFL also dealt directly with the companies in the timber and mining sectors.

Finally, the assertion that the primary responsibility of two out of the four NPFL's divisions has been ensuring continuous exploitation of natural resources, rather than fighting, strongly suggest that commercial activities have been a high priority for the rebel leadership. Admittedly, this observation relies solely on the analysis carried out by Lidow (2016) and is only partially corroborated by other independent sources. In the SCSL, Taylor acknowledged that his forces were subdivided: "we had the navy division, we had the marine division, we had the army division, we had the strike force division" (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24692). Blah, a former commander of the NPFL, also referred to an "Executive Mansion Guard" division in his testimony (The Prosecutor vs. Charles Ghankay Taylor, 2008b, p. 10164). However, neither of them described the functions of these units. Moreover, Gerdes' (2013) and Reno's (1993) observations, about NPFL's military intelligence unit carrying out functions related to exploitation of natural resources provides some indirect support for this assertion.

Consequently, there is only weak account evidence that the structure of the NPFL has been influenced by the commercial interests of its leadership.

Determining which estimate of NPFL's wartime economy is more reliable is a rather complicated task. Twaddle was highest ranking US diplomat in the embassy, during three years of the conflict, and consequently was in a position to gather intelligence on the NPFL. However, during Twaddle's years, US embassy in Monrovia was running with 75% reduced civilian staff (Cohen, 2000, p. 136) and its intelligence gathering activities had to be restricted to ECOMOG's area of control. Moreover, Twaddle was giving his testimony in 1996, while the war was still ongoing. Thus, he had a limited number of sources that he could use to make an accurate estimate of NPFL's finances. Gerdes (2013), on the other hand, had expressly set out to revise the different estimates of NPFL's war economy by comparing numerous publicly available sources on this subject. He came up with yearly estimates of different segment of NPFL's commercial activities by cross-checking all currently available data on NPFL's businesses. Gerdes (2013) uncovered serious flaws in the predictions of other authors, such as mistaking NPFL's profits with the volume of trade passing through their territory or taking Belgian diamond import statistics at face value. Thus his estimation of around $14 million a year will be considered to be the most accurate estimation of NPFL's income. However, this number includes NPFL leadership's 'share' of the looted goods, only part of which was related to the natural resource sector. Looting accounted for almost 30% of all income and a significant part of these proceeds came from the humanitarian community or the civilian population (Gerdes, 2013, p. 99-100). Nevertheless, Gerdes' (2013) observations can be interpreted as strong pattern evidence that various resource related businesses controlled by the leadership of the NPFL produced the bulk of revenues raised by the rebels.

Alternative explanations

However, it has also been established that leaders always face a threat of subordinates attempting to exploiting natural resources independently[71]. Thus, it is possible that many NPFL fighters and local commanders have been involved in the natural resources trade for their own gain. There is some evidence to support this assertion. For instance, both civilians and fighters were involved in

[71] Reference to: "3.5.2. Natural resource predation causal mechanism" p. 28.

illegal rubber tapping, and there were some small-scale mining organized by local commanders. In addition, some individual fighters attempted to circumvent the controls imposed by the leaders and sell their looted resources independently. Nevertheless, these instances are reported as relatively rare (Ellis, 1999, p. 168; Lidow, 2016, p. 119). It seems that in most cases extraction and export of natural resources 'Greater Liberia' has been done by private companies sanctioned by the rebel leadership. Ellis observed (1999) that in most cases Taylor negotiated with foreign businessmen himself and payments for operating licenses were directed to international bank accounts, controlled by the rebel leader. He also had a close group of business managers living in Abidjan, who helped to facilitate the trade (p. 90). Moreover, NPRAG's commercial institutions such as LIMINCO or FDA or Bong bank were also indirectly controlled by Taylor (Gerdes, 2013, p. 82).

Nevertheless, although the leaders exercised a level of formal control over all trade in natural resources through agreements with private businessmen and NPRAG's institutions, lower-ranking NPFL members also had a level of informal control. For example, throughout the conflict rebel fighters created numerous check points in the area under their control, which were often used to exert bribes for passage (Ellis, 1999, p. 89). Often these roadblocks were erected by individual fighters, without the consent of rebel leadership (Alao et al., 1999, p. 47). According to Ellis (1999) businessmen, who had paid taxes to Taylor, could travel across 'Greater Liberia' in relative safety (p. 91). However, numerous protests registered by the NPRAG authorities show that the guarantees given to businessmen were often violated by local commanders (Reno, 2015, p. 276). Although, Taylor and his NPRAG government sought to create safe environment for their commercial partners, the rebel leadership failed to exercise enough control over their subordinates to guarantee complete protection of foreign businessmen (Reno, 2015, p. 277). Nevertheless, even the most conservative estimations of NPFL's revenues show that the rebel leadership has had access to millions of US dollars every year. Thus, the activities of entrepreneurial rebels and local commanders did not prevent the leaders from raising significant capital from natural resources under their control. Consequently, the alternative hypothesis can be partially excluded.

Findings

Contrary to the prediction, the analysis has found no evidence that the rebel leaders have been raising funds from foreign interests by selling 'booty futures'. Nevertheless, it has revealed strong account evidence that the leaders of the NPFL managed to control the looting of natural resource extractions sites, when they were occupied by their fighters. There is also strong account evidence that, after the rebels took over the deposits of natural resources, the extraction process continued or, in some cases, was restarted. Consequently, the rebel leadership has raised significant funds from the natural resources that have been extracted, mostly by private companies, in NPFL-held territory. Furthermore, there is strong account evidence that Taylor has negotiated lucrative agreements with resource extraction companies that have been interested in operating in 'Greater Liberia'. Moreover, there is strong account evidence that the leadership has organized or controlled almost all trade in natural resources passing though rebel-held territory. Finally, lower-ranking NPFL members have exercised a level of informal control over the trade in natural resources and, in some instances, have managed to avoid the controls imposed by the rebel authorities. However, these minor 'illegal' activities have not compromised the systematic exploitation of resources organized by the leaders. Thus, the alternative hypothesis could be partially eliminated.

5.2.3. The rebel funding hypothesis

Observations

In the SCSL, Taylor recognized that he was using money raised from the exploitation of natural resources to fund the needs of the NPFL. In his words: "We had a whole system set up that we could buy food and medicine and different things. There was a whole structure put into place that would be a financial structure to deal with the collection and distribution of the money" (The Prosecutor vs. Charles Ghankay Taylor, 2009, p. 24664). However, according to other independent sources these funds allowed Taylor to purchase weapons from arms-dealers and to rely on his commercial partners to deliver supplies into his territory. For instance, the TRC (2009) reported that NPFL's control of primary commodities trade was "crucial to sustaining Taylor's war efforts (p. 156) and "rubber, timber, gold and shipping industries served as the sources and means for Taylor to obtain resources and weapons" (p.287) Or according to Twaddell's testimony before the US House Committee on International Relations: "The steady

supply of [NPFL's] arms ….depends on a steady supply of money. The primary source of funds appears to be from the sale of commodities from Liberia's trove of natural resources" (US Department of State, 1996, par. 9).

According to the testimonies of former NPFL commanders the rebels faced chronic shortages of weapons and ammunition. Taylor himself admitted that, during the early days of the insurgency, the NPFL were armed with "a few shotguns" procured in Côte d`Ivoire (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24604). However, by August 1990 the NPFL were so well-armed that the American officials in Liberia, doubted that the ECOMOG could confront the rebels (Cohen, 2000, p. 150). There is some disagreement as to how this lack of weaponry has been overcome. According to Taylor, the NPFL armed themselves by capturing guns and ammunition from the other armed-factions (The Prosecutor vs. Charles Ghankay Taylor, 2009a, p. 24680). He expressively denied that the NPFL were purchasing arms or munitions from abroad (The Prosecutor vs. Charles Ghankay Taylor, 2009b, p. 31840). However, according to Lidow (2016), NPFL overcame the initial shortage of weaponry by obtaining sources of hard currency and purchasing guns from arms dealers (p.117).

Reno (1999) observed that Taylor started buying weapons from international arms traffickers after the NPFL acquired a source of hard currency by looting and selling equipment of Bong Mining Company in the spring of 1990 (p. 95). According to Gerdes (2013) "The sales of BMC equipment was most likely a major element in transforming the NPFL from a poorly organized force into the most important armed faction" (p. 98). Twaddell testified that: "A steady flow of arms and munitions to Liberia's warring factions kept the Liberian conflict going for over six years". He specified that most of these weapons were purchased on grey market through private, mostly European, dealers and then transported to Liberia through neighboring countries (US Department of State, 1996, par. 5-7). Most arms supplies came from former Warsaw Pact countries through the Robertsfield airport via Libya and Burkina Faso (Waugh, 2011, p. 120) and through the porous land border with Côte d`Ivoire (Reno, 1993, p. 181). It is reported that Taylor's brother Gbatu, who headed one of the two 'official' banks operating in Greater Liberia, acted as an intermediary between foreign arms dealers and the NPFL (Reno, 1999, p. 95).

According to Reno (1997) Taylor managed to persuade his foreign partners that providing arms to his fighters was part of doing business in the country (p. 499). The timber industry was especially implicated in Taylor's war effort. According to the TRC (2009) "Logging companies shipped, or facilitated the shipment of, weapons and other military material to warring factions" (p. 289). For instance, the FDA, formed by Taylor to oversee the logging contracts, was also used to move weapons from overseas suppliers (TRC, 2009, p. 499-500). While ITI logging company operated an airstrip that the NPFL used for importing military equipment (Lidow, 2016, p. 119). Moreover, the NPFL were exchanging timber for arms with the Ivorian officials (Reno, 1997, p. 500). However, other Liberian commodities were also bartered for arms shipments. For instance, D'Onfrio Ruggiero, an Italian arms smuggler, supplied the NFPL with weapons in exchange for diamonds (TRC, 2009, p. 294).

Furthermore, money derived from natural resources and agreements with resource extraction companies were used to acquire other supplies needed by the NPFL. For instance, Taylor signed a contract with K&K corporation to supply his fighters with rice (Lidow, 2016, p. 118). Other companies, such as Firestone, agreed to supply NPFL with communications equipment, housing and transportation in exchange for protection (Lidow, 2016, p. 119). Similarly logging and mining firms supplied fuel, oil, spare parts and vehicles to the fighters and produced electricity for rebel-controlled Eastern Liberia (Reno, 1999, p. 96). However, even companies that did not sign any formal agreement could be commandeered to provide transport, equipment or fuel to NPFL's military units (Waugh, 2011, p. 126).

Moreover, it has already been established[72] that commanders of the NPFL started receiving money to support their fighters, after Taylor acquired a secure source of revenue. Gerdes (2013) has shown that most of NPFL's stable income derived from natural resources (p. 103). Thus, it can be inferred that money derived from exploitation of natural resources allowed the rebel leadership to start paying their fighters.

Evaluation

[72] Reference to: "5.1.3. The limited funding hypothesis " p. 56

Observations about funds, derived from natural resources, being used to purchase war materials come from a wide range of independent sources. Taylor's claim that this income has been used to procured supplies such as food and medicines is corroborated by Lidow's (2016) account of rice shipments arranged through a contract with K&K. Moreover, the fact that NPFL's 'incentive package' involved commodities that were not readily available in Liberia during the conflict, suggest that leaders managed to acquire supplies abroad. However, Taylor's assertion that NPFL has not bought weaponry from arms smugglers is not supported by any other independent source and contradicts the accounts of Twaddle (1996), Reno (1997; 1999), TRC (2009), Waugh (2011), Gerdes (2013) and Lidow (2016). All of these authors argued that rebel leaders used money derived from natural resources to purchase guns and ammunition for the NPFL. Since all of these sources have been deemed to be reliable and differ only in details about the extent and nature of arms shipments, there is overwhelming evidence that rebels have purchased weaponry from international arms dealers. Moreover, Reno (1997), TRC (2009) and Lidow (2016) observed that several resource extraction companies, operating in 'Greater Liberia', facilitated this trade. Consequently, there is strong account evidence that exploitation of natural resources enabled the rebel leaders to procure arms and other supplies needed to sustain the rebellion.

The observations about NPFL's payment structure are based on accounts of several former rebel commanders who have testified before the SCSL, the TRC or have given interviews to Lidow (2016). Despite some disagreements about the regularity and structure of payments, all of their accounts supported the assertion that rebel commanders received money from the leadership. Although, neither of the former commanders has specified the origins of these funds, Gerdes' (2013) analysis of NPFL's revenue streams suggest that this money derived from exploitation of natural resources. This assertion is corroborated by Lidow's (2016) and Ellis' (1999) accounts both of whom argued that revenues generated from natural resources allowed Taylor to distribute cash payments to his commanders. Therefore, the prediction that money derived from exploitation of natural resources has been used to pay the members of the NPFL is supported by moderate account evidence.

Alternative explanations

However, NPFL's rebellion can also be interpreted as a criminal business venture. From this perspective, it is reasonable to expect that rebel leaders would attempt to appropriate money, raised from exploitation of natural resources, for personal gain. It has already been established that Taylor deal in person with many foreign businessmen operating in 'Greater Liberia' and maintained personal control over most aspects of the trade in natural resources[73]. Waugh (2011) remarked that "in its heyday in 1991 to early 1993 the economy of Greater Liberia was to a large degree the personal economy of Charles Taylor" (p. 126). While Gerdes (2013) observed that Taylor exercised a high degree of personal control over the flow of all NPFL's resources (p. 66). According to him: "The NPFL was dominated by Charles Taylor to the extent that it could be considered his personal endeavor" (Gerdes, 2013, p. 60).Thus, it seems unlikely that other leaders were in a position to divert a significant portion of NPFL's revenues. However, for the same reason, it is reasonable to expect that Taylor had numerous opportunities to appropriate the funds raised from exploitation of natural resources.

Ellis (1999) observed that in the first year of the conflict Taylor had become a multi-millionaire, with several international banks account in Abidjan and Ouagadougou (p. 168). The estimates of NPFL's early income provided by Gerdes (2013) show that Taylor retained access to millions of dollars throughout the conflict. Consequently, it has been argued that Taylor refused to sign or violated numerous peace settlements, because the conflict provided him with opportunities for personal enrichment (Prkic, 2005, p. 133). However, Reno (2015) challenged this narrative by arguing that control over resource revenues was "only one element in support of Taylor's broader aim to seize Liberia's capital and become the internationally recognized president of Liberia" (p. 267). From his perspective, centralized control of natural resources was a tool that Taylor used to exercise authority over his subordinates through a patronage network (Reno, 2015, p. 268). Similarly, Atkinson (1997) argued that, operating in the climate of warlord politics, Taylor used his control over economic means to achieve the ultimate goal of state control (p. 14).

Regrettably, it proved impossible to find empirical records indicating how much money Taylor was actually spending on sustaining the NPFL. However, events on the ground provide some

[73] Reference to: "5.2.2. The systemic exploitation hypothesis" p. 72.

support to Reno's and Atkinson's arguments. For instance, although almost all of Liberia's resource extraction sites, at that time, were under rebel control, in late 1992 Taylor broke a ceasefire and launched an all-out attack on Monrovia.[74] This offensive was launched from the Firestone rubber plantation, which was one of NPFL's most lucrative business partners. Thus, Taylor invested money and risked losing control over valuable resource extraction sites, which the NPFL already occupied, to seize the capital, which had no significant commercial importance. This fact supports the argument that Taylor's main objective has been seizure of ultimate power, rather than mere financial gain. From this perspective, it is reasonable to believe that most of NPFL's natural resource rents were dedicated to funding the rebellion. Nevertheless, it is impossible to determine how much of the resource rents were actually spent on sustaining NPFL and how much were diverted. Still, even if part of the funds were embezzled, there is strong evidence that a significant portion of resource revenues went to funding Taylor's bid for power. Consequently, there is enough account evidence to partially exclude this alternative hypothesis.

Findings

The analysis uncovered strong account evidence that rebel leaders have used funds, derived funds exploitation of natural resources, to procure war materials. Moreover, it has been uncovered that moderate account evidence supports the prediction that the same funds have been also used to pay rebel fighters and commanders. Furthermore, it has been determined that Taylor has been the only leader, who has been in a position to divert the natural resource rents for his benefit. Even though he had virtually unrestricted access to NPFL's finances, there is circumstantial evidence that he has been motivated by winning the civil war rather than maximizing personal wealth as a rebel leader. Consequently, the alternative hypothesis was partially eliminated.

5.2.4. Results

[74] Reference to 'Operation Octopus', which has been described as "a massive attack….well-planned NPFL pincer movement" (Alao et al., 1999, p. 33).

To conclude, it has proved impossible to determine what role natural resources played in the overall strategy of NPFL's rebellion. However, the events on the ground suggest that rebel leaders perceived resource extraction sites as a potential source of income. In their initial offensive the rebels captured virtually every facility important for exploitation of Liberia's natural resources. While, in later periods of the conflict, the rebels fought hard to retain control of these lucrative commercial sites. Although, Taylor did not fund his initial insurgency through sale of 'booty futures', he established links with foreign businessmen prior to his invasion. Consequently, soon after the NPFL overran Liberia's major resource extraction sites, leadership of the NPFL ensured that resource extraction process resumed under rebel protection. Although, there were some instances of looting and Taylor's business partners did face harassment from the fighters, the leaders managed to prevent widespread pillaging of infrastructure related to primary commodity exports. Although the rebels were rarely involved in extracting resources themselves, NPFL generated significant income from systematic taxations of private resource extraction ventures located in 'Greater Liberia'. Taylor had a high level of personal control over revenues, derived from exploitation of natural resources. He used these funds to procure weapons and ammunition as well as other supplies necessary for a rebel army. Moreover, natural resource rents allowed the NPFL to establish a payment system, which created additional monetary incentives for rebel fighters and commanders. Nevertheless, it remains unclear how much of the natural resource rents has been spent towards the upkeep of the rebel army and how much has been appropriated for Taylor's personal use.

The first part of this causal mechanism has passed two highly unique empirical tests, although the passing of one of these tests has been based on weak evidence, it also passed one test with low uniqueness. However, the alternative hypothesis could not be eliminated. Thus, our confidence in this part has been moderately increased. The second part of this causal mechanism has passed three highly unique empirical tests and one test with low uniqueness. In addition, the alternative hypothesis has been partially excluded. Consequently, our confidence in this part has been increased considerably. The third part of this causal mechanism has passed two highly unique empirical tests. In addition, the alternative hypothesis could be partially excluded, although this decision relied on fairly weak evidence. Nevertheless, in light of the strong

evidence, which allowed for the passing of the highly unique empirical tests, our confidence in this part has been increased considerably.

Thus, the analysis has revealed that all parts of the causal mechanism have been present and functioning as expected. Finally, prior to the analysis it has been established that the *probability of finding evidence*, in the Liberian case, is weak and the *prior* of this causal mechanism is moderate. Consequently our confidence in the existence of the natural resource predation causal mechanism has been increased considerably.

Moreover, it has been found that Liberia's commodity basket was not dominated by 'lootable' resources prior to the outbreak of the civil war. Thus, the fact that resource predation mechanism has been found to be present suggests that the weight of 'lootable' resources in the commodity basket should not be treated as a scope condition for this causal mechanism. In addition, it has been revealed that NPFL exploited both 'lootable' and 'non-lootable' natural resources. Both in the case of 'lootable' and non-lootable' natural resources rebel leaders preferred to deal with private companies that could be taxed rather than to organize extraction and export themselves. Thus, the 'lootability' of natural resource under rebel control did not have a major impact on the functioning of the natural resource predation causal mechanism. Consequently, this thesis has found no evidence that this causal mechanism should be restricted by any scope conditions related to the 'lootability' of natural resources.

6. CONCLUSIONS

This chapter begins by restating the considerations and objectives that guided this thesis. Then it determines the extent to which the results of the empirical analysis enabled us to answer the research question raised in the introduction.

The broad aim of this research project has been to make a small contribution to the refinement of Feasibility Theory. We have identified that there is no consensus on whether the correlations presented by Collier et al. (2009) can be considered to be causal links. Thus, we have recognized a need to the test the causal mechanism inferred from Feasibility Theory. Therefore, the following central research question has been formulated to direct this research project: To what extent can the analysis of the First Liberian civil war (1989-1997) update our confidence in the causal mechanisms drawn from Feasibility Theory? Taking into account the feasibility constants, inherent in a master thesis, the objective has been limited to testing the opportunity cost and the natural resource predation causal mechanisms. To achieve this objective we have selected the TTPT method, which has been crafted as a specific tool for opening the 'black box' of causality and studying the causal mechanisms residing inside.

The first section of the analysis has uncovered evidence that the poor economic situation of most Liberians allowed the NPFL to recruit and retain new fighters with limited funding. Contrary to the predictions the rebels recruited more actively in relatively wealthy regions of the country and more recruits sought protection rather than selective incentives from the rebel leadership.[75] Nevertheless, each part of the mechanism has passed a combination of unique and certain empirical tests. Consequently, in light of the high *probability of finding evidence* in the Liberian case, our confidence in the existence of the opportunity cost causal mechanism has been increased, but only slightly.

The second section of the analysis has found strong evidence that exploitation of Liberia natural resources allowed the rebel leaders to fund their armed insurgency. However, it has remained unclear whether the seizure of resource extraction sites was strategic and to what extent resource rents were appropriated by Taylor's own personal gain. Notwithstanding, all parts of this

[75] Refer to "5.1.4. Results" p. 62-63 for more detailed discussion of the findings.

mechanism have passed through a combination of highly unique and certain empirical tests, in most cases based on strong evidence.[76] Thus, taking into account the low *probability of finding evidence* in the Liberian case, our confidence in the existence of the natural resource predation causal mechanism has been increased considerably. Moreover, the analysis has indicated that the considerations related to the 'lootability' of natural resources should not be formulated as scope conditions for this causal mechanism.

7. DISCUSSION

In this final chapter we discuss the limitations, implications, and future prospects of this research project. We start by addressing the impact of the self-imposed boundaries drawn by the author, followed by a focus on this thesis' modest contribution to the improvement of Feasibility theory as well as the wider 'Greed versus Grievance' debate. Thereafter we explore the potential for improving and expanding this theory testing project.

Limitations

The objective of this thesis has been limited in scope. By applying the TTPT method to the single case of the Liberian civil war, we have restricted ourselves to making within-case rather than cross-case inferences. Consequently, the external validity of this research project is relatively low and the findings outlined in the previous chapter cannot be automatically applied to the whole population of civil wars covered by Feasibility Theory. The scope of this thesis is further narrowed by selecting only a third of the statistically significant risk factors identified by Collier et al. (2009). These sacrifices were necessary to derive a reliable answer to the research question.

Although these limitation significantly decreased the external validity of this thesis, they also enabled high internal validity. This is because we have systematically studied each part of both causal mechanisms taking into account the content and accuracy of each individual observation. The use of Bayesian logic allowed us to evaluate the inferential weight of evidence in a coherent

[76] Refer to "5.1.4. Results" p. 86-88 for more detailed discussion of the findings.

and transparent fashion. Thus, the decision to adopt the TTPT methodology restricted the scope of our inferences but enabled the drawing of reliable conclusions about the studied phenomenon.

Nevertheless, we recognize that the conclusions of this thesis may be influenced by our subjective biases to some degree. The TTPT method entrusts its user with a high level of discretion requiring the researcher to make decisions with incomplete information. Assigning various probabilities, determining the uniqueness or certainty of empirical tests, evaluating evidence and finally updating the confidence in parts of the causal mechanisms; all of these steps require subjectivity on the part of the researcher. It is therefore reasonable to suspect that our biases might have influenced the final results by affecting these considerations.

However, this problem is endemic to process tracing method. As a precaution against the threat of subjectivity, we have explicitly rationalized each of our choices and introduced procedures structuring our decision making process.[77] It has already been established that all social scientific methods and especially qualitative methods can be criticized for a certain level of subjectivity.[78] The application of Bayesian logic only forces the researcher to explicitly state the decisions that he would otherwise be making implicitly. Although this creates the optics of subjectivity, in our view, this actually makes the research process more transparent and potential biases more open for criticism.

Second, the analysis had to be restricted to three causal relationships out of the nine proposed by the authors of Feasibility Theory. Testing all nine independent variables of the Feasibility theory went beyond the scope of a master thesis study. Testing more causal mechanism would not have been feasible due to the complex evaluation and justification process of internal validation in TTPT.

Therefore, the key to magnifying the value of this research project lay in selecting the right independent variables. Since we have chosen to test the most contentious causal relationships proposed by Collier et al. (2009), we have maximized our contribution to the development of Feasibility Theory.

[77] For example, the 'Probability matrix' p. 20-21 or the 'Matrix of inference' p. 109-110.

[78] Reference to: "3.8. Limitations of this thesis" p. 36-37.

Implications

Due to the limitations outlined in the previous segment, we cannot claim that opportunity cost or natural resource predation causal mechanisms have had an effect on the risk of civil war in every country covered by Feasibility Theory. However, we can be fairly certain that these mechanisms have been present and functioning within the First Liberian civil war. Based on the Liberian case we can assume that these mechanisms can have an effect on the risk of civil war in some cases.

Consequently, we can infer that the correlations identified by Collier et al. (2009) can be interpreted as causal links in specific contexts. Still, this conclusion does not preclude other rival mechanisms from affecting the risk of civil war in other contexts. Thus, in the wider 'Greed versus Grievance' debate, our results provide some support to the Greed argument, but do not weaken the Grievance thesis.

Our findings about the nature of resource exploitation in the Liberian civil war can be generalized to some extent. The 'lootability' of natural resources should not be seen as a scope condition for the Natural resource predation mechanism, because this thesis showed that it is not applicable in every conflict. Thus, we argue that countries dependent on exporting 'non-lootable' primary commodities do not necessarily face lower risk of civil war than countries exporting alluvial diamonds or other 'lootable' resources. Nevertheless, to make more precise and generalizable conclusions there is a need to conduct a larger study, which would apply mixed methods approach.

Future prospects

Most of this thesis' limitations outlined in the previous segment could be overcome in a larger research project. True understanding of a phenomenon as complex as the causes of civil wars can only be achieved by applying all the tools at the disposal of the research community. Therefore we argue that the causal mechanisms drawn from the Feasibility Theory could and should be tested using mixed methods approach.

Nesting of TTPT studies into a broader mixed methods research approach requires specific two-step case selection strategy. Firstly, the researchers would have to use Collier et al.'s (2009) core

model to find the cases with the smallest residuals lying on or near the regression line. Second, they would have to select only those typical cases in which both the dependent and independent variables were present and the scope conditions allowed the proposed mechanism to function. The researchers would then conduct TTPT studies on multiple typical cases. Although the author of each individual case would be restricted to within-case inferences, a small-n comparative analysis of the results would enable the researchers to make cross-case inferences. In this way a mixed methods approach would allow us to increase or decrease our confidence in the functioning of the causal mechanisms across the entire population of cases covered by Feasibility Theory. Within these parameters and guidelines we believe that such a research project would be feasible.

Firstly, replicating Collier et al.'s (2009) study is possible, because all the necessary data is available publicly. This thesis has shown that conducting numerous TTPT case studies would take a lot of time and effort. However, once a unified methodological/theoretical framework has been established a lot of the steps of conducting a TTPT case study could be skipped or hastened. Each case study would use the same conceptualization of the causal mechanism, similar operationalization and uniform procedures for assigning probabilities, evaluation of evidence, and confidence updating processes. Therefore, I see this master thesis as a stepping stone towards a larger research project aimed at refining Feasibility Theory.

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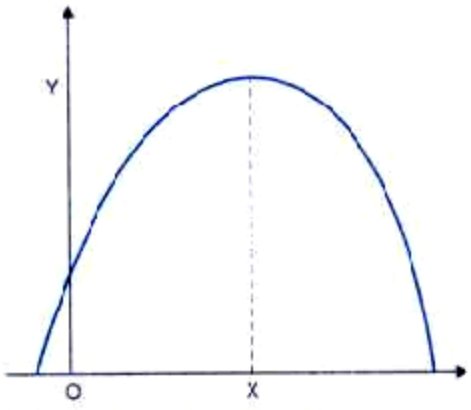
APPENDIXES

A. Bayesian theorem

$$p(h|e) = \frac{p(h)}{p(h) + \frac{p(e|\sim h)}{p(e|h)} p(\sim h)}$$

p	Probability
h	Hypothesis
~h	Alternative hypothesis
e	Evidence

B. Generic quadratic function



This is not an illustration of the actual relationship between *primary commodity exports* and civil war, but rather an illustration of a generic quadratic relationship.

C. Calculation of Liberia's risk of civil war

This part of the thesis presents the calculations of Liberia's risk of civil war for the five year period that precedent the outbreak of hostilities in 1989. These calculations are based on the core model of Feasibility Theory presented in Collier et al (2009, p. 9) and on the logistic regression equation (e.g. with two independent variables): $\ln\frac{Y}{(1-Y)} = C + b_1x_1 + b_2x_2$ Or in case of Feasibility Theory model: $\ln\frac{Y}{(1-Y)} = C + (-0{,}216) * x_1 + (-0{,}144) * x_2 + 6{,}988 * x_3 + (-14{,}438) * x_4 + (-0{,}056) * x_5 + (-1{,}221) * x_6 + 2{,}186 * x_7 + 12{,}639 * x_8 + 0{,}266 * x_9 + 0{,}011 * x_{10}$

Since Collier et al (2009) do not present the intercept/constant (C) for their model it has to be calculated first. It is possible, because they benchmark the risk of conflict in a hypothetical country (Y) with independent variables (x) set at sample mean and the core model provides us with partial regression coefficients of each variable (b). In such a country the civil war risk is 4.6%. While the sample means for the nine independent variables of the core model are:

1. *GDP per capita*: ln (5452) = 8,603
2. *Growth of GDP per capita*: 1,844
3. *Primary commodity exports*: 0,164
4. *Previous war (years of peace since the last civil war)*: 32
5. *Former French African colony*: 0,101
6. *Social fractionalization*: 0,18
7. *Proportion of young men*: 0,129
8. *Population:* ln (30.2[79]) = 3,408
9. *Geography:* 15,779

[79] Measured in millions.

Therefore the intercept can be calculated by inserting the all known variables into the logistic equation:

- $\ln \frac{0,046}{(1-0,046)} = C - 1,857 - 0,266 + 1,146 - 0,388 - 1,792 - 0,123 + 0,393 + 1,630 + 0,906 + 0,173$
- $\ln 0,048 = C - 0,179$
- $-3,037 = C - 0,179$
- $C = -2,858$

Now, with the intercept known, it is possible to calculate the probability of civil war outbreak in Liberia. Here are the values[80] of independent variables selected for the period of 1989-1994:

1. *GDP per capita*: ln (568) = 6,34 (The World Bank , 2017a)
2. *Growth of GDP per capita*: -6,28% (The World Bank, 2017b)
3. *Primary commodity exports*: 0,39 (Atkinson, 1997)[81]
4. *Previous war*: 44[82]
5. *Former French African colony*: 0
6. *Social fractionalization:* (0,90 + 0,49)/2 = 0,70 (Alesina et al., 2002)[83]
7. *Proportion of young men*: 0,14 (UN Department of Economic and Social Affairs, 2011)[84]
8. *Population:* ln (2,17) = 0,77 (The World Bank, 2017c)
9. *Geography:* 15,779[85]

[80] In cases, when the data sources used by Collier et al, were unavailable, they were substituted with other reliable sources.

[81] The primary commodity exports/GDP ratio used by Collier et al. is not available/no longer available on the World Bank data website. Thus, a figure quoted in Atkinson's (1997) study on Liberia's political economy is used instead. The same of value is used in Ross' (2004) case study of the First Liberian civil war.

[82] If a country has not experienced a previous civil war Collier et al (2009) use the Second World War as the benchmark.

[83] The fractionalization index used by Collier et al. (Fearon & Latin, 2003) is not publically available. Thus, Alesina's et al. (2002) study on fractionalization is used instead.

[84] The 2005 UN yearbook used by Collier et al (2009) does not provide data on Liberia. Therefore, the closest yearbook (2009-2010), which has an estimate of Liberia's population disaggregated by sex and age, is used instead.

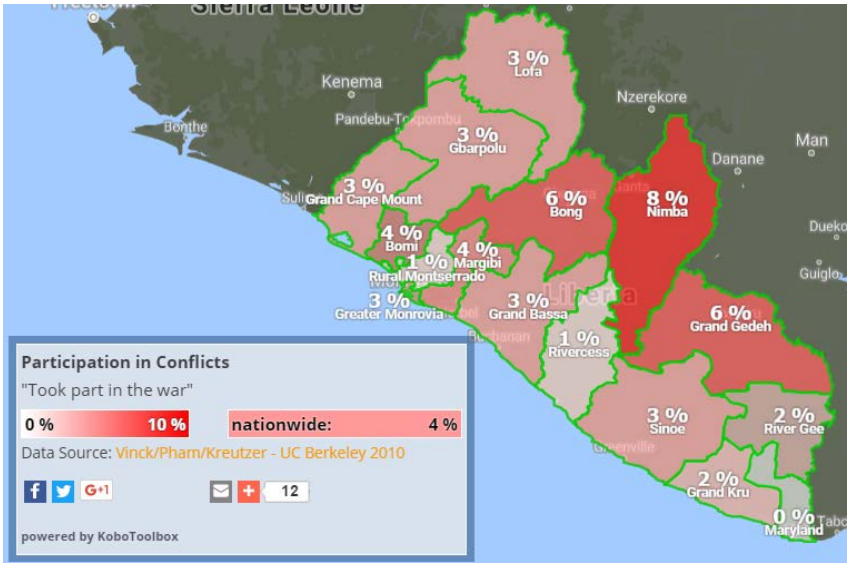
Inserting these values into the logistic equation, allows us to learn the probability of civil war outbreak in Liberia for the period of 1989-1994:

- $\ln \frac{Y}{(1-Y)} = -2{,}858 + (-0{,}216) * \ 6{,}34 \ + (-0{,}144) * \ -6{,}28 + 6{,}988 * 0{,}39 + (-14{,}438) * 0{,}152 + (-0{,}056) * \ 44 + (-1{,}221) * \ 0 + 2{,}186 * 0{,}7 + 12{,}639 * 0{,}15 + 0{,}266 * 0{,}78 + 0{,}011 * 15{,}78$
- $\ln \frac{Y}{(1-Y)} = -1{,}42$
- $\frac{Y}{(1-Y)} = 0{,}24$
- $1{,}24y = 0{,}24$
- $y = 0{,}193$

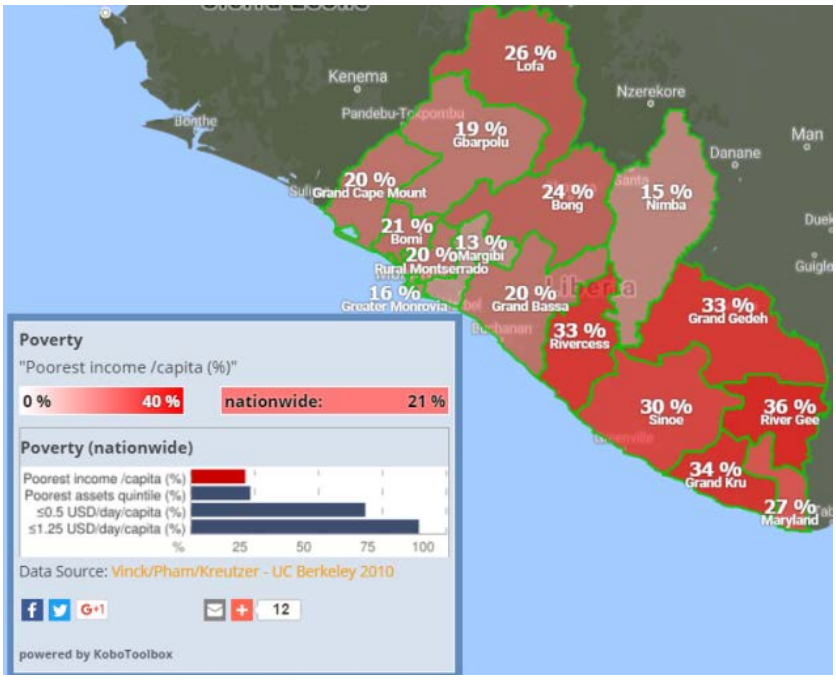
Thus, the probability of civil war outbreak in Liberia, during the period of 1989-1994, was 0,193 or 19,3%.

[85] This variable measures how mountainous a country is and Collier et al (2009) have commissioned a specialist to code the terrain for them (p. 16). The results of this undertaking are not public. Thus, the data on this variable is unavailable and there are no good proxies for it. Therefore, sample mean is used instead.

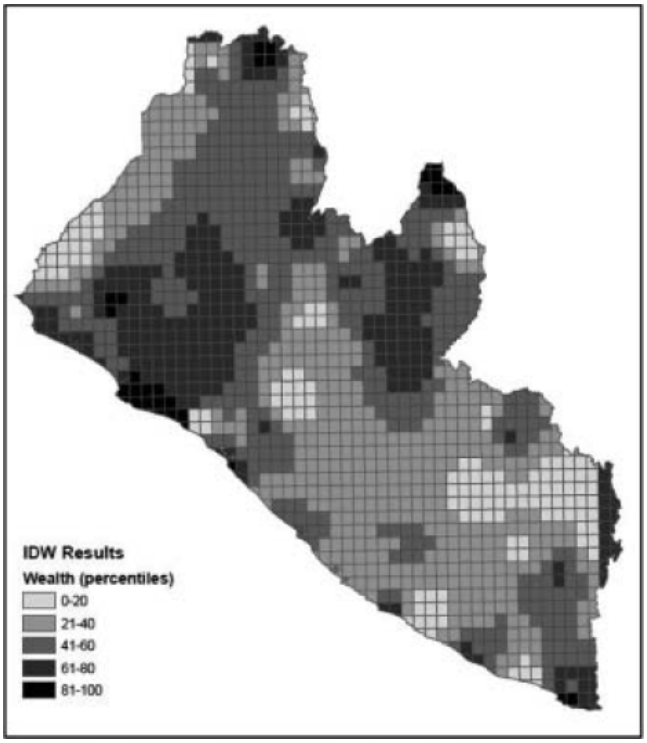
D. The number of people who took active part in the conflict by state - based on data collected by Vinck et al. (2010)



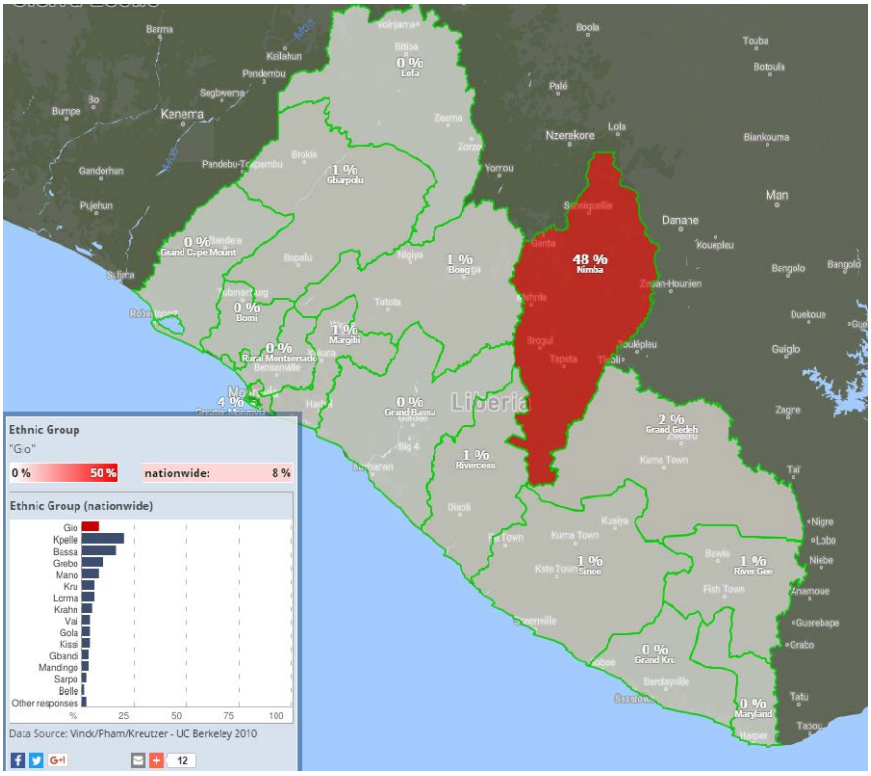
E. Relative poverty rate in Liberia, post-conflict map - based on data collected by Vinck et al. (2010)

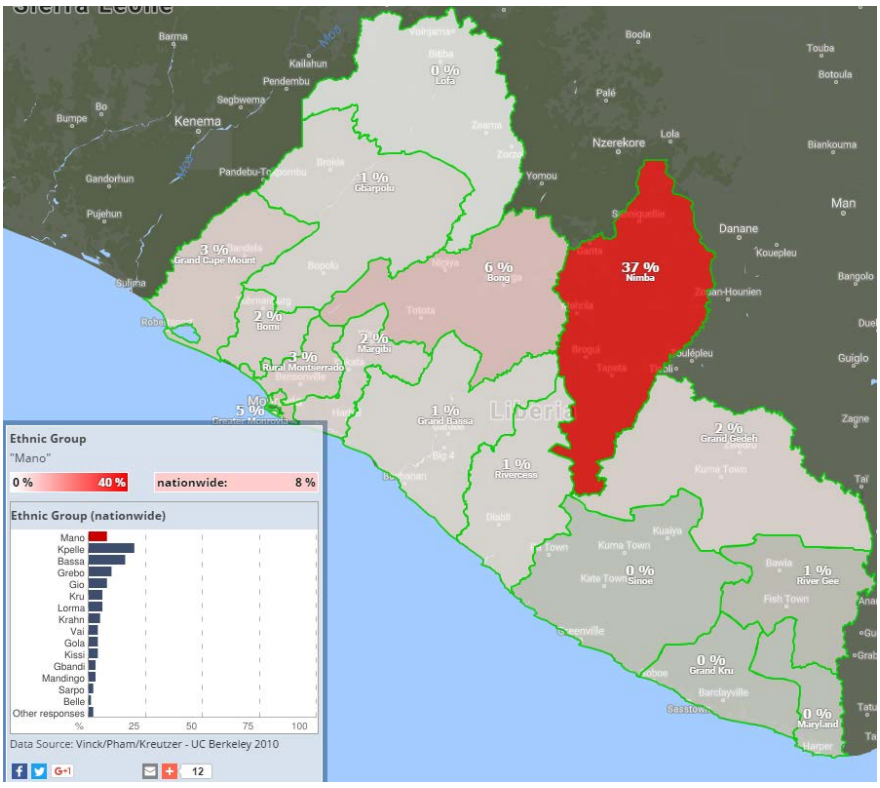


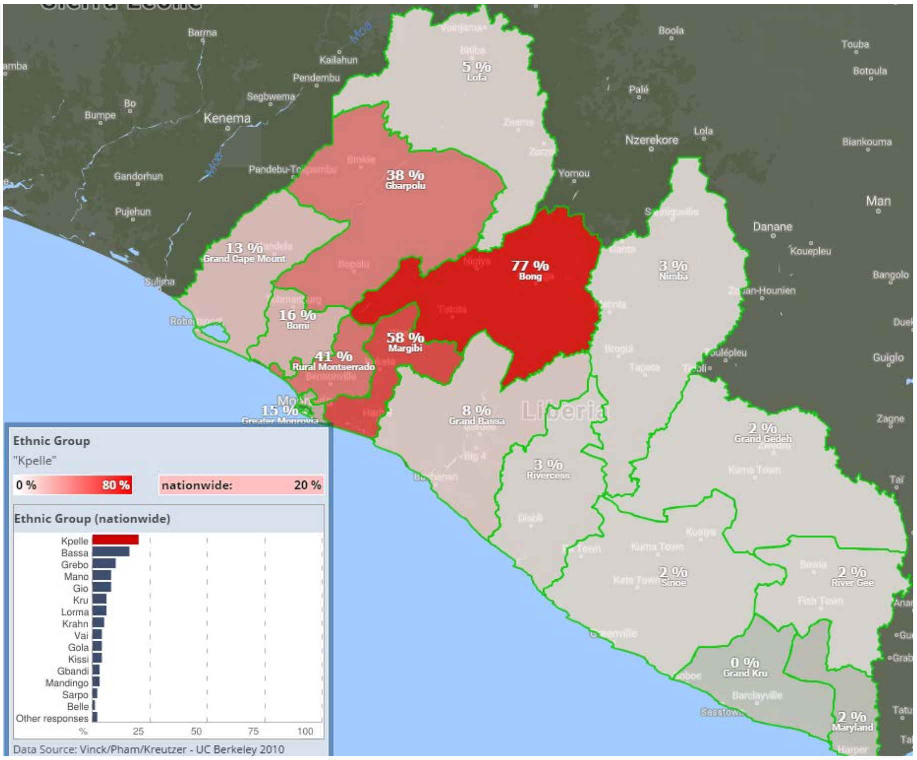
F. Relative poverty rate in Liberia, pre-conflict map - based on data collected by Hegre et al (2009).

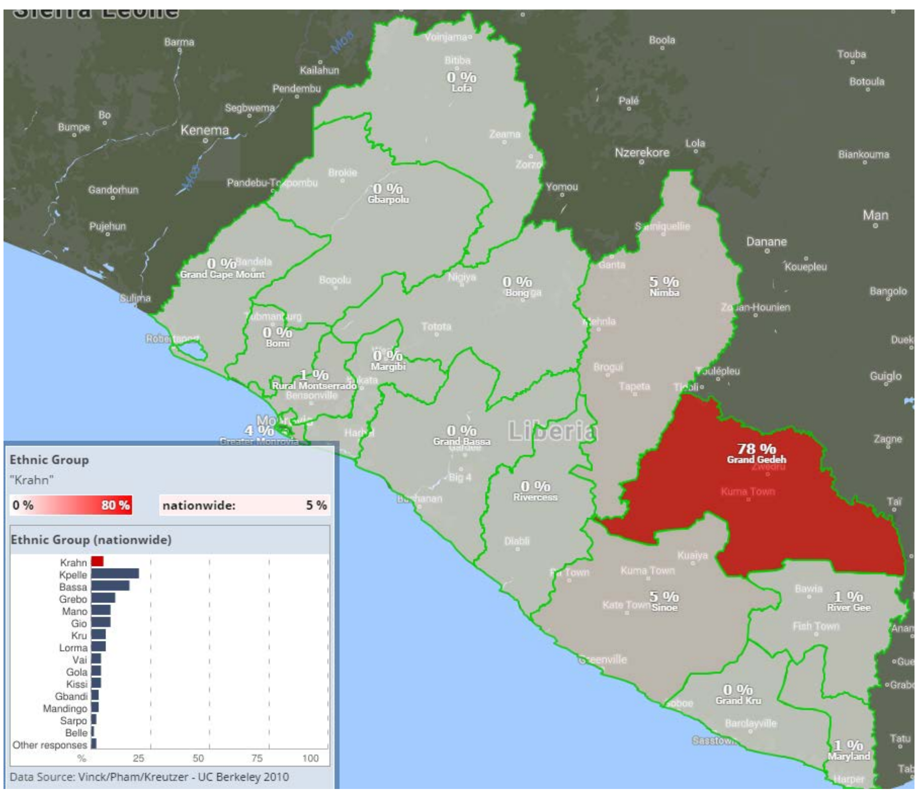


G. Ethnic distribution of tribes that were overrepresented in the war - based on data collected by Vinck et al. (2010)






5 %
Lofa
38 %
Gbarpolu
13 %
Grand Cape Mount
77 %
Bong
3 %
Nimba
16 %
Bomi
58 %
Margibi
41 %
Rural Montserrado
15 %
Greater Monrovia
8 %
Grand Bassa
3 %
Rivercess
2 %
Grand Gedeh
2 %
Sinoe
2 %
River Gee
0 %
Grand Kru
2 %
Maryland
Liberia
Ethnic Group
"Kpelle"
0 %
80 %
nationwide:
20 %
Ethnic Group (nationwide)
Kpelle
Bassa
Grebo
Mano
Gio
Kru
Lorma
Krahn
Vai
Gola
Kissi
Gbandi
Mandingo
Sarpo
Belle
Other responses
%
25
50
75
100
Data Source: Vinck/Pham/Kreutzer - UC Berkeley 2010


0 %
Lofa
0 %
Gbarpolu
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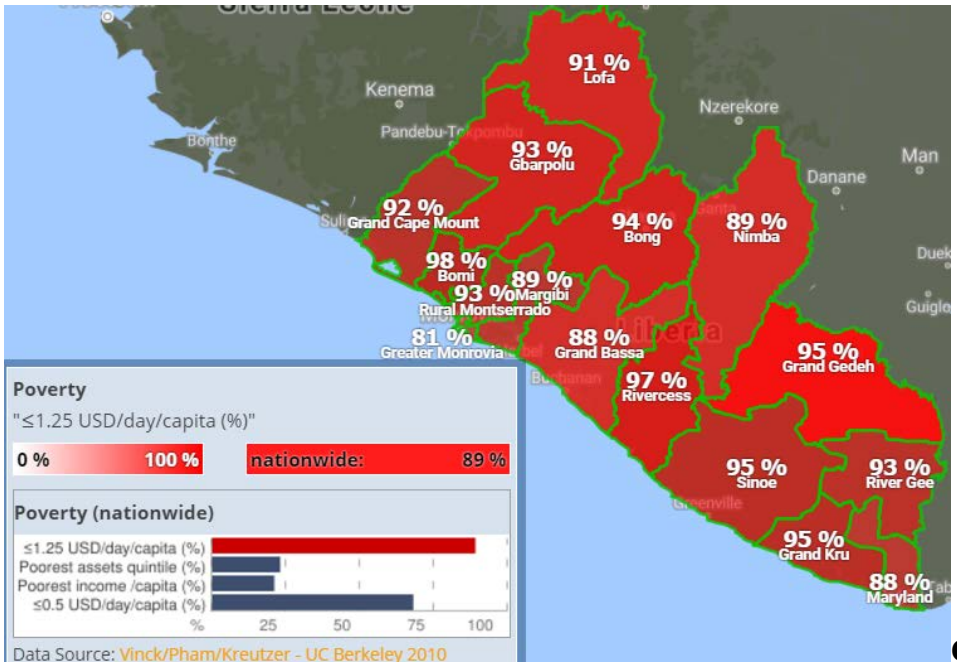
Grand Cape Mount
0 %
Bong
5 %
Nimba
0 %
Bomi
0 %
Margibi
1 %
Rural Montserrado
4 %
0 %
Grand Bassa
0 %
Rivercess
78 %
Grand Gedeh
5 %
Sinoe
1 %
River Gee
0 %
Grand Kru
1 %
Maryland
Liberia
Ethnic Group
"Krahn"
0 %
80 %
nationwide:
5 %
Ethnic Group (nationwide)
Krahn
Kpelle
Bassa
Grebo
Mano
Gio
Kru
Lorma
Vai
Gola
Kissi
Gbandi
Mandingo
Sarpo
Belle
Other responses
%
25
50
75
100
Data Source: Vinck/Pham/Kreutzer - UC Berkeley 2010

H. Absolute poverty rate in Liberia - based on data collected by Vinck et al. (2010)



G.

I. The interactive map which is used here can be found on the Peacebuilding Data website and it is based on the data collected by Vinck et al. (2010) (http://www.peacebuildingdata.org/interactivemaps/liberia#/?indicator=3_1_1)

J. The matrix of inference:

	Opportunity cost	**Natural resource predation**
First part (1/2/3)	2	2
Second part (1/2/3)	1	3
Third part (1/2/3)	3	3
Probability of finding evidence (*0,75/1/1,25)	1	1
Prior (*0,75/1/1,25)	1	1,25
Total	6	10
If 1-5: confidence updated slightly	X	-
If 6-9: confidence updated	-	-

moderately		
If 10-14: confidence updated considerably	-	X

This matrix was created to structure the inference making process. Although it does not employ the Bayesian theorem directly, it is still grounded in the Bayesian logic. The calculation is based on evaluating the strength of evidence supporting the existence of each part of the causal mechanism. It also reflects the importance of *prior* and *probability of finding evidence*. When the evidence supported a slight increase in our confidence in a specific part of a causal mechanism, this part was assigned a 1, if the increase was moderate it was assigned a 2, if it was considerable a 3 was assigned. Then the values assigned for each part of the mechanism were added. This sum was then multiplied by a factor based on the *probability of finding evidence* and then - on the *prior*. Low probability was assigned a coefficient of 0,75 medium was assigned a 1 and high probability resulted in a coefficient of 1,25. If the product of the multiplication was in a range of 0-4 the confidence in the mechanism was increased slightly. If it came in the range of 5-9 the confidence was increased moderately. If it was in a range of 10-14 the confidence was increased considerably. The bar for each interval was set relatively high, taking into account the warning that “our inferences about the presence of the whole mechanism are therefore only as strong as the weakest link in our empirical tests” (Beach & Pedersen, 2013, p. 91). If our confidence in any individual part of a mechanism was decreased, it would have been concluded that the whole mechanism was not present in the case of the Liberian civil war.