

Money. Money. Money? Economic incentives in
civil conflict

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Abstract:

Previous research has often focussed too narrowly on the influence of wealth to explain the relationship between economic factors and civil peace. Many scholars have suggested that this may not be enough, but it does not appear that we have been listening. This thesis assesses the strength of economic incentives to influence the actions of individuals and groups leading up to and during civil conflict by asking two overarching and inter-related research questions: (i) is wealth enough? Can a direct focus on wealth allow us to fully explain the influence of economic factors in civil conflict? And, (ii) what type of development is best for peace? Assuming that wealth is not the answer to everything and cannot solve all problems by its existence or multiplication, which other material factors deserve our attention? This thesis examines new evidence, advances new theories and argues that we must broaden our understanding of some well-known concepts to better understand real world events. In three chapters it presents a new theory to explain the relationship between development and peace observed across states; it argues that the real opportunity cost of rebellion may be different from that which dominates in the literature; and, during civil conflict, anti-insurgent militias follow a dual imperative to both combat insurgent groups and secure funding for continued operations. Advanced quantitative methods are utilised to test the hypotheses that arise. Conclusions drawn suggest that sometimes wealth is enough, but most often, it is not. The thesis finishes with policy recommendations that speak directly to the best type of development for peace.

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Introduction

A great deal of research has been conducted into the relationship between economic development and civil peace. We can be sure that economic factors influence the decisions of actors before, during and after civil conflict. However, the precise mechanisms and their strength is still hotly debated. If international policy makers are to decide where to spend their aid money, and governments are to decide on future investments for stability, they need to know which mechanisms work. They need to know: what type of development is best for peace? To know this, we must first ask: is wealth enough? That is, can civil peace be explained entirely by the pursuit of wealth, how much is spent or how much war will cost?

Much of the previous literature has focused on the broad indicator of GDP (wealth) to measure the relationship between economic development and peace (Collier and Hoeffler, 1998; Fearon and Laitin, 2003; Hegre and Sambanis, 2006), or uses various other instruments, all of which relate directly to changes in the absolute or relative level of wealth that leads to peace (Besley and Persson, 2008a; Dube and Vargas, 2013; McGuirk and Burke, 2017; Miguel et al., 2004). Previous research also uses arguments of the relative value of wealth between individuals and groups that causes conflict (Esteban and Ray, 2017; Marx, 2004 [1887]; Stewart, 2002) and the pursuit of wealth during conflict (Collier and Hoeffler, 2004), all endorsing the importance of this key factor. Nevertheless, some research has shown not all increases in wealth equally damage or raise the prospects of peace (Besley and Persson, 2008a; Dube and Vargas, 2013; Hegre et al., 2003; Ross, 2004a). Perhaps, then, wealth is not the be all and end all. I argue in this thesis that it is most likely highly correlated with other non-pecuniary material incentives that qualify or augment the influence of wealth on the decisions of actors in civil conflict. I will assert that we must expand our

conceptions of economic incentives to include other material benefits that affect decisions in conflict, but which cannot be easily measured in dollars or cents. The previous focus on wealth has prevented scholars from understanding the full breadth of the multi-faceted and intricate relationship between economic development and civil peace.

The chapters that follow will outline three explanations of action in civil conflict as a result of economic incentives. Chapter 1 will introduce the concept of consumption opportunities, which states that conflict is more likely in less economically developed countries (LEDCs) because of a lack of opportunities to consume goods and services that people desire and lack any expectation of being able to fulfil those wants in the future. Chapter 2 proposes that the real opportunity cost of conflict could be restricted to agricultural employment in many countries most at risk of civil conflict. And, Chapter 3 introduces the dual imperative of anti-insurgent militias to both combat rebel groups and secure funding for continued operations simultaneously.

Overall, the thesis concludes that we must consider many more non-pecuniary factors when assessing the impact of material incentives in conflict; nevertheless, the influence of wealth, by itself, cannot be written off. Sometimes wealth is enough. The key is to know when that is. This thesis will help to lay this out and by doing so, answer the first question: what type of economic development is best for peace?

This introductory chapter proceeds as follows: it will first cover a brief table of definitions, followed by a review of the literature that seeks to explain the economic motivations of actors in civil conflict and highlight the prominence of the role of wealth in previous theory. It will then briefly introduce the new theories advanced in Chapters

1-3 of this thesis, followed by a discussion of the methodology, methods and case study used. It will finish with a table overview of the three substantive chapters.

Definitions

Key concepts and mechanisms	Definition
Rebel/insurgent group	A group that seeks cessation, state control or government policy change and uses or threatens the use of violence to achieve those ends
Militia	An irregular armed force, generally drawn from the civilian population, that is raised to achieve a specified goal and then disbanded
Anti-insurgent militia	A militia with the primary aim to combat or frustrate the goals of an insurgent group through the use of violence
Civil conflict	A period of contestation between a rebel group and the state in which at least one person has been killed by direct offensive action by either side
Consumption opportunities	The ability to fulfil one's consumption wants or desires, or to have a good expectation of being able to fulfil those wants/desires in the future
Opportunity cost	The value of the next best available option
The dual imperative	The need to both combat an insurgent group and secure funding for continued operations simultaneously

Literature Review: Economic incentives in civil conflict

Before looking at the direct influence of economic incentives on the actions of individuals and groups in civil conflict it must first be recognised that such influences are only a few of many that drive action in these episodes. Grievances that lead to conflict are wide and varied; containing both economic and non-economic motivations.

Ethnicity, religion and ideology are key among explanations of non-economic grievances that lead to conflict. These factors may influence opportunities for conflict, such as during transition periods from autocracy to democracy and vice-versa (Gleditsch and Ruggeri, 2010; McAdam, 1982); or, based around structural factors that facilitate conflict such as gender relations, environmental factors and discrimination of large social groups (Cederman et al., 2013; Urdal, 2005; Wood and Thomas, 2017).

Even beyond these overarching theories lies a world of unique individual incentives for action in civil conflict. In his interviews of 42 ex-guerrilla fighters in Colombia Florez-Morris (2007: 620–623) noted that people signed up for various reasons, from ‘concern regarding socioeconomic injustice and inequality’ to ‘the revolutionary climate of the era’ and a ‘personal journey of self-improvement’. Arjona and Kalyvas (2012: 155) surveyed 826 ex-combatants from Colombia and noted the following self-reported unique incentives for joining either the guerrilla or paramilitary movements: revenge; escape from domestic violence; power; to be someone in the community; for an adventure or fun; to be with friends; running away from a threat; and, the allure of weapons. Whilst we may theorise on a group level, often motivations such as material incentives, ideology, the fight for democracy and other structural factors take second place to the intimately personal and unique motivations of individual fighters. Nevertheless, this is not to say that group level theory cannot help

to explain the actions of some individuals, it certainly does. Yet, scholars of civil conflict will never be able to generate perfect models of human action in conflict because unique and unpredictable factors will always weigh on the decisions of individuals alongside structural factors.

Furthermore, we cannot assume free will in all decision making. Not all those who act in conflict do so of their own volition and with clear mind. Proponents of group-think suggest that individuals acting together with others in a group may make irrational or incongruous decisions because of a desire for harmony and conformity (Janis, 1972). And, recruits into the state military, rebel forces or militias may be forced to do so through conscription or coercion (Beber and Blattman, 2013; Eck, 2014; Humphreys and Weinstein, 2008).

Nevertheless, the majority of actions in civil conflict are made with free will and the focus of this thesis is the influence of economic incentives on those decisions. To this end, I now turn to review the field of research in this area.

The development-civil peace nexus

The relationship between development and civil peace, as measured between GDP and the absence of internal war, is one of the most robust in the peace and conflict literature (Hegre and Sambanis, 2006). Yet, the mechanism that underlies the relationship is keenly debated. There are three core theories that seek to explain a direct relationship between economic development and civil peace. These are opportunity cost (Collier and Hoeffler, 1998), state capacity (Fearon and Laitin, 2003), and the capitalist peace (De Soysa and Fjelde, 2010; Mousseau, 2012; Ricardo, 2000 [1821]; Smith, 1998 [1776]). This thesis will add a fourth: consumption opportunities.

The opportunity cost of rebellion

The efforts of men are utilized in two different ways: they are directed to the production or transformation of economic goods, or else to the appropriation of goods produced by others. (Vilfredo Pareto, quoted in Hirshleifer (1988).)

In his 1988 paper, Hirshleifer presents an economic model of conflict as a choice between production and appropriation. Following this influential paper, many refinements have been made to Hirshleifer's original model (Azam, 1995; Grossman, 1991, 1995; Hirshleifer, 1991; Skaperdas, 1992).

Building on this work, Collier and Hoeffler (1998) introduced the idea of opportunity cost into the mainstream discussion of civil conflict by arguing that an increase in average income levels (as proxied by GDP) leads to a reduced propensity toward civil conflict as the increase in income reflects an increase in the opportunity cost of rebellion for all potential rebel agents. This theory has two elements, the second of which is often ignored in subsequent literature.

The first element is that income levels or wages can be directly compared between the professions of rebellion and any other legitimate occupation. If wages in the economy are high, the opportunity cost of becoming a professional rebel will be equally high. One of the key problems with this thesis, is that rebel employers are assumed to be unable to keep up with this rise in wages and so, cannot afford to raise a rebellion by offering wages above the opportunity cost in more developed states. Yet, all legitimate businesses appear to be able to attract a workforce; it would be illogical to assume illegitimate enterprises could not do the same. It also assumes that rebel

recruits demand a wage for their services, a case we know not to always hold true (see case of Colombia in chapter 2), and, finally, it assumes that all opportunity costs are observable and all professional opportunities are equally available to all members of a state. Notwithstanding the fact that many of these assumptions are unlikely to hold, it is one of the most often cited mechanisms when scholars find a relationship between income levels (wealth) and civil peace (Besley and Persson, 2008a; Dube and Vargas, 2013; McGuirk and Burke, 2017; Miguel et al., 2004).

In chapter 2 of this thesis I make the argument that we need to refine our understanding of the opportunity cost of rebellion. One element of this is to broaden our conception of these opportunity costs as pure wages. Kustra (2017) also engages with this argument directly in his research on the impact of HIV on the opportunity cost of rebellion. Kustra argues that life-expectancy is taken into account in the calculation of opportunity cost. This is because increasing life expectancies raises the potential value of the future as individuals can earn more. Those with lower life expectancies will have less to lose in conflict as they have a higher probability of dying soon in any case. He uses the case of HIV prevalence in Sub-Saharan Africa to model life expectancy and shows that in countries with lower life expectancies, conflict is more likely to occur.

The second element of Collier and Hoeffler's (1998) concept of the opportunity cost of rebellion refers to a reflection on economic output lost and physical and human capital destroyed or delayed in development because of conflict. As states develop their economies, they will have more to lose from conflict. When rational individuals conduct a cost-benefit analysis of the choice for war, Collier and Hoeffler argue that the cost of conflict should increasingly outweigh the benefits as states become richer. Whilst Collier and Hoeffler do not directly distinguish between the relative impact of

these two elements, I believe that the former is far more likely to influence the activity of rank-and-file soldiers; whereas, the latter is more likely to influence the demanders of their labour, the ‘elites’, whose aim it is to capture the state and thus have an interest in its total wealth.

Nevertheless, both elements are measured in Collier and Hoeffler’s paper with changes in the level of wealth (GDP). Kustra makes an excellent addition to the literature, suggesting that our conception of opportunity cost in terms of material wealth alone must be updated. This thesis will argue the same.

State capacity

Though the mechanism of state capacity as a cause of peace has a longer history in the literature (Benson and Kugler, 1998; Collier, 2000b; Collier and Hoeffler, 1998), the proposition that state capacity can explain the relationship between development and civil peace was made popular by Fearon and Laitin (2003). For these scholars, state capacity is understood as “state military and police strength”. Fearon and Laitin suggest that as a country develops economically, it will have more resources to invest in its security forces. Therefore, as the economy grows the opportunities for conflict diminish because the probability of mounting a successful insurrection is also decreasing. As such, civil conflict is a direct result of the state’s inability to maintain its monopoly of the use of violence. The authors use GDP again to proxy for this relationship, which prevents their argument from being distinguished from that of opportunity cost.

This theory has gained traction in the literature with many scholars expanding on this work (Acemoglu, 2005; Acemoglu et al., 2015; Besley and Persson, 2008b,

2009, 2010, 2011; Buhaug, 2006; Fjelde and De Soysa, 2009; McBride et al., 2011). Perhaps because the mechanisms between weak states and conflict may be more than just that through coercive power (Bueno de Mesquita et al., 2003; Deininger, 2003; Fearon, 2005; Humphreys, 2005; Taydas and Peksen, 2012), later works have broadened the definition of state capacity beyond simple measures of wealth – how much the country earns or how much the state spends. Besley and Persson (2008b) define state capacity as the ability to draw taxes; they extend this to include legal capacity in Besley & Persson (2009). McBride et al. (2011) use state capacity to refer to its ability to credibly commit when engaging in negotiations with insurgents for peace. So many varying definitions of state capacity has led to ambiguity over its precise meaning when the phrase is invoked. Perhaps the mechanism of state capacity is not purely based on wealth, but what it is based on is yet to be determined.

Taydas and Peksen (2012) would argue that state capacity it is based on wealth but not that which Fearon and Laitin (2003) may focus on. They explain how government spending reduces the probability of conflict in two ways, by redistributing wealth and increasing economic growth. Using a measure of ‘welfare spending’ which comprises education, health and social security expenditure only out of the government budget, they find statistically significant results to back their proposition. When assessing the impact of military spending and total public spending in the same model as welfare spending, their key indicator remains significant, whilst military expenditure and total public expenditure are not found to explain civil war onset.

To complicate matters, Deininger (2003) suggests that increases in state capacity may reduce the likelihood of conflict by raising the opportunity cost of rebellion as these funds represent an investment in economic infrastructure and direct employment for some. Using subnational data from Uganda, Deininger shows that

municipalities situated further from infrastructural investments have a greater propensity for conflict. Thyne (2006: 737) suggests that government expenditure on education may have a similar effect through an increase in the opportunity cost of conflict. These arguments show that the complicated relationship between development and peace may not be so easily disentangled as the two key mechanisms of opportunity cost and state capacity are not mutually exclusive.

In an attempt to overcome this ambiguity, Fjelde and De Soysa (2009) examined three different mechanisms of state capacity to see which conceptions best fit observed data. These mechanisms were coercion, co-optation and cooperation. They equate coercion (similar to Collier & Hoeffler (1998) and Fearon and Laitin's (2003) conception) to the state's ability to levy large taxes and thus spend heavily on its coercive institutions; co-optation is equated to the state's level of spending and public goods provision that pacifies its citizens (Bueno de Mesquita et al., 2003; Taydas and Peksen, 2012); and cooperation equates to the degree of trust of economic agents in the state's ability to make credible commitments as the impartial enforcer of economic regulation (McBride et al., 2011; Weingast, 1993). Fjelde and De Soysa use statistical models to show that indicators of co-optation and cooperation are better at explaining civil war onset than coercion.

In a similar effort, Hendrix (2010) uses factor analysis to examine the relationships between fifteen indicators previously used to explain the state capacity-civil peace mechanism. He finds three significant factors arise with the first accounting for more than 50% of variation in conflict alone. This factor is labelled "rational legality" and includes elements of bureaucratic capacity and economic development (GDP). Of the fifteen indicators analysed, fourteen loaded heavily into the three factors. The only indicator that did not was the number of military personnel per capita.

In conclusion of this section, it appears that the initial conception of the state capacity mechanism was entirely based on wealth – how much a government had to spend on its security forces. This has since been expanded to include institutions of government that are not directly measurable in dollars and cents. However, it is still unclear which, if any, of these mechanisms is correct, or even whether increasing state capacity is distinguishable from opportunity cost.

The capitalist peace

Potentially because it is hard to measure, the mechanism is hard to define, it often largely overlaps with opportunity cost, or its influences are subtle, or long-term, the final explanation of the development-civil peace nexus pre-existing in the literature is often overlooked (Esteban and Ray, 2017; Hegre and Sambanis, 2006). The capitalist peace thesis advances four clearly distinguishable mechanisms that lead to peace: a reduction in clientelism, an increase in individual interactions among citizens, economic freedom and international trade liberalisation.

In his influential work, *Wealth of Nations*, Adam Smith (Smith, 1998 [1776]) explains how the free-hand can bring prosperity and the greatest welfare to mankind. Whilst reflecting on the benefits of increasing commerce in towns, Smith makes three observations, the last of which is important here:

Commerce and manufactures gradually introduced order and good government, and with them, the liberty and security of individuals, among the inhabitants of the country, who had before lived in a continual state of war with their neighbours, and of servile dependency upon their superiors.

This, though it has been the least observed, is by far the most important of all their effects. (Smith, 1998 [1776]: 260).

Smith draws the mechanism from development to civil peace through a reduction in feudal clientelism that is directly relatable to wealth. He argues that a lack of commerce required proprietors of land to spend all of their surplus on their tenants, which produced a sense of loyalty among clients. The local lord, thus, had a large group of subjects willing to fight on his behalf. Later, a rise in commerce allowed local barons to exchange surpluses for other goods and generate wealth which could be spent on vanities (non-essential, superfluous items, such as jewellery and rich fabrics). Whilst now maintaining his population through economic exchange, the baron had lost the support of his subjects that came with clientelism, and thus, could no longer wage war so readily. States that develop, therefore, become more internally peaceful. (Smith, 1998 [1776]: Book III, Chapter IV).

Mousseau (2012) makes a similar argument, explaining that market-capitalism is based upon the use of contracts that secure expectations in dealings with strangers. In such economies, everyone has an incentive for contracts to be enforced equally. They also have an interest in the prosperity of strangers as this increases their own wealth-generating potential. Non-market-capitalist, or clientelist societies on the other hand, have no such incentives. Indeed, motivations exist that favour in-group wealth generation and power that leads to conflict. Using data from the World Bank on contracting in the life insurance industry, Mousseau shows that contract-intensive economies are less likely to experience civil conflict. He also shows that the indicator of income per capita becomes insignificant when these variables enter the model together, while the indicator of contract-intensive economies remains significant. Thus,

Mousseau believes, as Smith, that wealth is enough. For Mousseau, it is the pursuit of wealth that motivates individuals to promote contract enforcement; for Smith, it is the pursuit of vanities.

The second mechanism of the capitalist peace thesis is that which has primarily been picked up by peacebuilding practitioners rather than scholars: the impact of economic interactions. This theory expects that the increasing interactions between members of different groups brought about through economic exchange will dispel stereotypes and misconceptions that are so often the basis of inter-group conflict (Nelson et al., 2000: 116–7). In their report, *The Business of Peace*, Nelson et al. (2000: 117) discuss several examples of enterprises that help to fulfil this exact mechanism. A great example is Wafa – a chocolate bar produced in Israel by a cooperative of Arabs and Israelis that is bringing people together. The interactions of these workers is an example of the mechanism of economic interactions that links development in all nations with increasing levels of civil peace. This mechanism has no direct relationship with wealth; however, some have directly linked increasing economic interactions with wealth.

De Tocqueville makes this argument by invoking the notion, once again, of opportunity cost. On writing about the state of affairs in the USA, de Tocqueville (1956, quoted in De Soysa, 2017: 5) remarked the following:

You have some difficulty in understanding how men so independent do not constantly fall into the abuse of freedom. If on the other hand, you survey the infinite number of trading companies in operation in the United States... you will comprehend why people so well employed are by no

means tempted to perturb the state, nor to destroy the public tranquillity by which they all profit.

Again, it is clear that opportunity cost may prevent countries from observing civil conflict. This time, however, it is the opportunity cost of legitimate business owners and ordinary workers who push for peace, resist calls for conflict and may even attempt to prevent it at their own expense. This is distinct from the opportunity cost of rebellion discussed above, which referred to the impact of economic incentives on potential fighters and entrepreneurs of violence; however, it is similar in that it relies on a direct relationship between wealth and conflict.

De Soysa and Fjelde (2010) propose that the previously observed relationship between development and civil peace, as measured through GDP, may in fact reflect the economic freedom of a state rather than its level of poverty, state capacity, lack of clientelism or level of economic interaction. The authors argue that states with high levels of regulation and government intervention in the economy are likely to be breeding grounds for rebel organisations as the ability to amass rebellion specific capital is maximised through the shadow economy. In laissez-faire economies, these extra-legal rents are not so easy to come by as legitimate markets are able to fulfil most consumer wants. They test their hypothesis with a variable called the ‘Economic Freedom of the World Index’, finding statistically significant results. When the index is added to their base model, the GDP indicator becomes insignificant. Multicollinearity tests suggest that this is not causing the loss of statistical significance and so, De Soysa and Fjelde conclude that support has been found for their argument.

De Soysa (2017) adds to his previous argument by adding that conflict occurs in states with low economic freedom when states respond aggressively to the activities

of groups with rebellion-specific capital. This aggressive response forces the nefarious organisation to defend itself. If this group then politicises its objectives, civil conflict will ensue, as opposed to criminal violence, an argument that echoes Collier (2000c).

Whilst the evidence is convincing, my concern with this finding is that it suggests the entire correlation between development and peace works through opportunity factors for elites and rejects the impact of poverty on the individual incentive to engage in conflict. Perhaps variation at the subnational level, as pointed out by Buhaug et al. (2011) may help to explain this discrepancy – local income levels impact the decisions of the rank-and-file, while national income and opportunities influences the elites.

Buhaug et al. (2011) find that subnational variation is much better at explaining conflict onset than national level data. They use global data at the grid-cell level to model the effects of absolute income and income inequality on conflict. They find that there is a statistically significant relationship between local poverty levels (as measured by income - wealth) and conflict onset. When an indicator of state-level income average is added to the model, this new variable is insignificant, suggesting that it is the local economy that matters in conflict onset.

The final mechanism of the capitalist peace works through international trade. Work remains with regard to a clear mapping of this mechanism (Schneider, 2014); however, Schneider (2014) scrutinises two potential routes from trade to peace: trade liberalisation and capital account liberalisation. Trade liberalisation should allow for more firms to enter markets and compete around the globe. This should increase growth and thus the opportunity cost for both civil and rebel agents (Hegre et al., 2003). However, this growth may not be shared equally between states (Galtung, 1971) or within states (Bussmann and Schneider, 2007; Dal Bó and Dal Bó, 2011). Capital

account liberalisation will also attract new investment and the resultant increase in general welfare should increase the opportunity cost of conflict (Alesina et al., 2005). This mechanism clearly relies on wealth. In contrast, Chapter 1 explains how trade and capital account liberalisation may reduce the propensity for internal conflict due to an increase in consumption opportunities. Thus, the capitalist peace outlines four distinct mechanisms, and has an ambiguous relationship with wealth.

Nevertheless, one thing that all of these mechanisms have in common is a belief that a relationship exists between economic development and civil peace. As the next section will outline, some scholars have denied that such a relationship exists, is not linear or is trumped by politics whenever circumstances demand.

Disputing the development-civil peace nexus

Djankov and Reynal-Querol (2010) argue that the relationship between development and civil peace may have more to do with historical factors that jointly determined the development and political paths of modern states. They show that the statistical significance of per capita income is lost if you take parameters into account, such as European settler mortality in 1500. However, the sample only contains 76 observations, so the robustness of these results must be questioned. Indeed, settler mortality is likely to be lower in areas with greater development or access to international markets that would correlate with areas of higher development in the present day. Therefore, it is unlikely that the development-peace relationship is determined by the factors they suggest.

Arbath et al. (2015), on the other hand, produce more convincing evidence that a direct relationship between economic development and civil peace may be spurious.

They begin by explaining that the relationship between ethnicity and civil conflict can be modelled more accurately using an indicator of genetic diversity than current measures of fractionalisation or polarisation. They then argue that genetic diversity predicts conflict and that current levels of present-day economic development may also reflect this diversity as found in a previous paper (Ashraf and Galor, 2013). Such a hypothesis has been backed up by Depetris-Chauvin and Zak (2016: 1), who also argue that genetic diversity determined “the emergence and prevalence of economic specialization and trade in pre-modern societies”. This is an intriguing area of research but remains isolated at this time. I find it unlikely, however, that the entire observed relationship between economic development and civil peace is a result of ethnic diversity that determines both a state’s level of development and propensity toward civil conflict in the modern day. It seems to me that there are too many examples of conflicts that have no purported origin in ethnic relations for this to explain the entire development-civil peace nexus.

Another relationship that is extremely robust is that between economic development and democracy (Barro, 1996; Fidrmuc, 2003; Lipset, 1959). Which causes which, if at all, is debated (Acemoglu et al., 2008, 2009). In his review of the current state of research, Hegre (2014a) outlines two key mechanisms through which democracy is expected to cause peace. The first is via the inherent conflict resolution mechanisms that exists within democracies – debate, protest, voting and judicial institutions; the second is via a trust mechanism, in which democracies are better able to credibly commit to public policies and thus, conflict to secure policy commitments is not necessary. McAdam (1982) argues that the relationship between democracy and peace is U-shaped. This is because fully autocratic states are able to suppress dissent and pure democracy allows for the peaceful resolution of disputes. It is in those states,

which are often called anocracies, that conflict is most likely. In these states the presence of nascent democratic institutions gives rise to expectations of certain freedoms and opportunities for collective action that is in marked contrast to the expectations and wishes of incumbent leaders. Evidence for the linear and non-linear impact of democracy on internal conflict is mixed (Hegre, 2014a: 160; Vreeland, 2008). In any case, research comparing the likely influence of development and democracy on peace seem to have firmly come down on the side of development (Gartzke, 2007; Mousseau, 2012, 2018; Schneider, 2014).

Harms and Zink (2005) argue in favour of a link between economic development and civil peace but they propose that the relationship may be U-shaped. The authors explain this through the use of a theoretical model, in which the costs of wealth redistribution via conflict is known to be high. The model assumes that all states are characterised by economically unequal societies and that conflict is instigated by the have-nots in order to redistribute wealth. Harms and Zink use the model to show that states with very poor populations (measured in total wealth) are unlikely to experience internal conflict because the cost of redistribution is such that any post conflict redistribution will leave the poor worse off than they were before. At the other end of the scale, in very rich countries, the poor, though still relatively deprived, receive enough in terms of wages to be able to save, eventually start their own businesses and enter the bourgeoisie: conflict for the purposes of redistribution is no longer necessary. The trouble is with the area in-between – when states are not so poor that redistributive conflict does not pay off for the poorest and are also not rich enough for the poor to earn and save. Unfortunately, Harms and Zink do not test this theory empirically. To my knowledge, no such relationship has been found to exist robustly in observational data.

The issue of endogeneity must also be noted in this discussion. This is to say that it is possible the direction of causality also runs in the opposite direction – from peace to development or conflict to recession and depression. Evidence of this opposite effect has been found at the sub-national level (Besley and Reynal-Querol, 2014; Serneels and Verpoorten, 2015); however, it has also been shown that this effect does not aggregate to the state level, with evidence found that countrywide development rates are unaffected by historic civil conflict in Africa (Besley and Reynal-Querol, 2014). If we add this to the many examples of research that use instrumental variables and other approaches to show that economic factors do have a causal impact on the likelihood of civil conflict (Besley and Persson, 2008a; Braithwaite et al., 2016; Brunnschweiler and Lujala, 2017; Dube and Vargas, 2013; Hegre, 2014b; Miguel et al., 2004), the likelihood that endogeneity is responsible for all findings related to the development-peace relationship is severely diminished.

Further to this, some have produced evidence for the great impact of endogeneity based on a misunderstanding of the development-peace relationship, using fixed-effects models to show that small increases in GDP over a short period of time do not reduce the likelihood of conflict (Djankov and Reynal-Querol, 2010). The mechanisms outlined above are primarily concerned with between effects – expectations of different outcomes for different countries based on their level of development. Development can take hundreds of years and it is unlikely that small changes in development over a short period will lead to a substantial increase in the probability of peace. Yet, fixed-effects models only test this within-effect relationship. By definition, they cannot test the between effect. I believe this confusion has made the problem of endogeneity appear more severe than it is. I will help to resolve this confusion by presenting a clear theory of the development-peace relationship that is

based on a between effect only. Evidence for a within effect of consumption opportunities is not found, nor is it expected to be found.

To make one final point on this matter before moving on: there are many manifestations of conflict that are ‘ideologically’ based in socialist ideals or calls for redistribution. To deny that poverty causes conflict would be to deny that there is any grain of truth in motivations declared by many rebel movements of the last half-century and beyond into ancient history.

Finally, even if we agree that there is a causal path from economic development to peace and that it is in that direction, Waltz (1999) would argue that the matter is irrelevant. In the end, what really matters is politics, and politics always trumps economics (Waltz, 1999: 700). In his 1999 article, Waltz makes the argument that economic interdependence is not preventing conflict. The reason that there is inter-state peace is because of nuclear weapons and a unipolar system in which the US manipulates economic forces that benefit itself and its continued position as the hegemon. The international order has not been brought about by international government but by the US overseeing international order. States are still the predominant actors, not firms. States enter into international trade agreements and economic blocks that suit their personal interests. Economic forces cannot overcome political interests.

On the whole, however, I believe that Waltz is trying to suggest a probabilistic relationship does not exist because there will be times when some other factor is more important. This is to miss the point of a probabilistic argument. There will always be times when politics trumps economics but that does not mean that on average, the causal relationship from development to peace has no impact.

Horizontal and vertical inequality

Relative deprivation is defined as a perceived discrepancy between men's value expectations and their value capabilities. Value expectations are the goods and conditions of life to which people believe they are rightfully entitled. Value capabilities are the goals and conditions they think they are capable of attaining or maintaining, given the social means available to them. (Gurr, 1970: 13).

Inequality is a relational issue – it is relative. One cannot suffer from inequality without reference to another individual or group. Gurr (1970) conceptualises relative deprivation in his seminal work, *Why Men Rebel*. He links this concept with conflict by arguing that it causes frustration which leads to aggression, including the desire to commit acts of violence. If individuals believe that violence is normatively justifiable, they will engage in a cost-benefit analysis to judge whether violence is profitable.

Inequality can be conceptualised along two axes – vertical and horizontal. Vertical is individualistic – references are made between oneself and others as single units. Groups may be artificially applied in terms of classes, i.e. upper, middle and lower but individuals may not consider themselves a part of any of these groups and membership may be transitory. Horizontal inequality refers to economic differences between culturally defined societal groups, based on ethnicity or religion, for example.

In modern political thought, the notion that vertical inequality will lead the aggrieved masses to volunteer in a revolution of the proletariat against the bourgeoisie can be traced back to Marx (2004 [1887]). However, to-date, results from empirical testing of observational data on vertical inequality have been mixed. Some authors

find positive results, others negative, and yet more find no relationship at all (Nygård et al., 2017). Nygård et al. (2017: 5) attribute this to the poor quality of data we currently have on vertical inequality, the varying definitions of the concept, varying indicators chosen and varying research designs. Nonetheless, the contention remains noteworthy.

Horizontal inequality, on the other hand, was theorised to be a much stronger cause of conflict (Stewart, 2002). This is the case because culture is more readily manipulated as a mobilising agent than loose connections of class based on profession or income. Nevertheless, evidence for the existence of this factor in rebel recruitment and conflict onset has been almost as frustratingly unforthcoming as that for vertical inequality (Nygård et al., 2017; Østby, 2008). Still, this thesis has received a great deal of attention from the policy world, with a recent co-production of the UN and World Bank explaining the root of all conflicts in “inequality, exclusion and injustice”, which effectively equates to horizontal inequalities in their subsequent discussion (United Nations and World Bank, 2018: xxii).

Esteban and Ray (2008) Argue that within group inequality may matter more as it enhances opportunities for conflict. When groups exist with internal variation in wealth, the perfect structure is in place for conflict – rich members to pay for the endeavour and poor members to do the fighting. Huber and Mayoral (2014) use quantitative methods, analysing individual-level surveys from 89 countries to show that within-group inequality is a good indicator of conflict, whilst between-group inequality is not.

Finally, Esteban and Ray (2017) suggest that economic similarity between groups may also explain some conflicts.

The argument runs in two steps. First, economic similarity, not difference, can breed tensions; indeed, such tensions, involving as they do the direct contestation of resources, can be extremely acute. Second, the resolution of such tensions involves the use of existing ethnic divisions or categories to create a sense of us versus them, thereby accentuating the salience in those divisions. (Esteban and Ray, 2017: 277)

So, it may also be that when two groups are almost equal in terms of their economic power and opportunity that conflict ensues as small changes in the relative wealth of one group can alter perceptions of relative power.

Whilst Gurr's original concept of relative deprivation appeared to encompass a wider array of elements than wealth, inequality is often thought of along such lines in modern academia and policy worlds.

Primary commodities and civil conflict

Research on the relationship between primary commodities and conflict has often been highly influenced by the concepts of greed and grievance. Greed and grievance can be equated with discussions of opportunities and motivations. The former seeks to explain the opportunities presented by elements such as lootable resources, the accumulation of rebellion specific capital, military advantage, or the low opportunity costs of potential soldiers that represent structural factors which facilitate the onset, extended duration or heightened intensity of civil conflict. The latter looks to the motivations of individuals and groups, such as inequality, ethnic or religious hatred or ideological disagreement. The dichotomy was first introduced by Collier and

Hoeffler (2004), in which they tested indicators of both greed and grievance against one another. They found that indicators of greed (including a measure of primary commodity exports) appeared to fare much better than indicators of grievance.

Greed is often misinterpreted by academics and students as pure greed – individuals and groups become involved in conflict in the pursuit of wealth alone. This, however, is not the original essence of the argument, nor should it be. I will argue in chapter 2 that the real opportunity cost of conflict may involve a full assessment of living standards – both monetary and non-monetary. I do not believe that an individual who joins a rebel group for food security should be described as having greedy motivations, although the argument of opportunity cost does represent an opportunity for conflict and so falls into the ‘greed’ category.

Following the findings of Collier and Hoeffler, a great deal more research was completed to confirm their results and to suggest nuances to their theory (Ross, 2004b). Mixed results were found for the existence of this relationship; though, as Ross (2004a) points out, this is likely because of the multiple different independent and dependent variables tested, and mechanisms suggested. Ross (2004a) attempts to cut through the confusion by clearly laying out the causal pathways suggested in works to date and testing them by examining the influence of natural resources on conflict in thirteen separate cases. Among many findings, Ross reports little support for the opportunity mechanism of Collier & Hoeffler (2004) or grievance arguments for the onset of civil conflict. However, groups did appear to fund themselves with resource rents after conflict had started, and the pursuit of wealth did appear to prevent the end of some conflicts.

Humphreys (2005) undertakes a very similar procedure to Ross (2004a) but uses statistical methods to test the mechanisms under scrutiny. In contrast to Ross,

Humphreys finds more evidence to suggest that weak states and grievance factors are better explainers of conflict than booty futures or state capture. The relationship between natural resources and state weakness was first set out by Fearon (2005). He points out that states which receive large incomes from the taxation of primary commodity extraction have reduced incentives to build fiscal capacity and well-functioning state apparatus. This, in turn, reduces the accountability of governments and their ability to control their territories.

Whilst it is still uncertain which of the many mechanisms is the most influential and responsible for the primary correlations found by Collier and Hoeffler (2004), it is certain that natural commodities shape the course of many conflicts. Current research is taking advantage of new data disaggregated, sometimes to the geographic point, in order to test new and old mechanisms (Berman et al., 2017). Hopefully, this new testing will clarify whether it is the pursuit of wealth or other institutional factors that link primary commodities with conflict. Chapter 3 will touch on this area of research by contending that natural resources may also influence the actions of anti-insurgent militias – an aspect of resource conflict that has not yet been considered in previous literature. In this chapter, I will argue that sometimes *wealth is enough*, though not for any of the reasons outlined above.

The collective action problem

Introduced by Olson (1965), this concept holds that individuals without a personal incentive to engage in collective action toward the attainment of a public good regularly have a rational incentive not to participate, or to ‘free-ride’. Olson believed that individuals engage in a cost-benefit analysis when they consider whether or not to

take part in collective action. In this analysis, we weigh up the benefits of participation – enjoyment of the public good – with the costs – usually our own time or money. The logic is dependent on our expectation of others' actions. If we expect others to participate, then we can free-ride on their efforts and still obtain the benefit when the collective goal is attained; if we expect nobody to participate, then we know our sole participation is extremely unlikely to secure the good, in which case we still believe we are better off not participating.

The question then becomes: why does anybody participate in collective action, given that we all so often have an individual incentive not to participate? Olson argues that it is because personal, private incentives for participation and/or negative incentives for non-participation are commonly used as encouragement. The incentives to participate in civil conflict have often been directly related to pecuniary benefits (Arjona and Kalyvas, 2012; Azam, 2006; Collier and Hoeffler, 1998; Dube and Vargas, 2013; Grossman, 1991; Ross, 2004a; Sanín, 2004). Chapter 2 of this thesis will propose that we must broaden our understanding of selective incentives to include non-pecuniary rewards.

Theory

Overarching theory

This thesis has two primary research questions: Is wealth enough? And, what type of development is best for peace?

Sen (1999) argues strongly in his book, *Development as Freedom*, that we must move beyond our focus on wealth to explain the many positive benefits of progress.

Specifically, Sen proposes that positive freedoms do not result from development, they are an intricate part of it and must be included in its definition. Measures of wealth such as GDP are only indicators of these freedoms that truly improve people's lives. In this thesis, I argue in line with Sen, that we must look beyond aspects of wealth when we conceive of development and its characteristics that lead to multiple beneficial outcomes. Too often do we try to count something that is easy rather than counting our true object or concept of interest because it is difficult. I hope that this thesis is a reminder that we must not fall prey to the incentive to write theory that matches only that which we can measure at the present moment and not that which we honestly believe to be true.

There is a clear relationship between wealth and peace; yet, it does not appear that all wealth is necessarily equivalent when it comes to inducing peace. Growth in some areas may be more beneficial than others. I argue here that this variation is a result of non-pecuniary factors of material incentives that present strong influences on the decisions of individuals and groups in conflict. Sometimes wealth is enough, yet other times it is not. If we expand our conception of material benefits to include non-pecuniary incentives, we will be better able to explain variation that a focus on wealth alone cannot.

Chapter theories

The three chapters that follow will contend with three distinct sub-puzzles of the primary research questions of this thesis. In chapters 1-2, I look at the impact of economic incentives on the decisions of individuals to participate in conflict. In Chapter 3, I examine the impact of economic incentives on the decisions of groups – in this

case, anti-insurgent militias. Chapters 1 and 2 make clear cases to argue that wealth is not enough. Chapter 3 argues that, in some instances, wealth can be enough to rationalise certain decisions and activities. Although the former focuses on individuals and the latter groups, this is not to suggest that wealth is enough for groups and not for individuals. This correlation is pure coincidence on this occasion. Indeed, sometimes wealth is enough for individuals. However, we cannot focus all of our scholarly efforts on the impact of wealth, as this cannot explain the multi-faceted and intricate relationship between economic development and civil peace.

To fully answer the first research question (what type of economic development is best for peace), the chapters that follow will outline three types of economic growth and institutional development that are more likely to lead to peaceful societies. Chapter 1 emphasises the development of internal markets and positive liberty that increases individual consumption potential. Chapter 2 emphasises formalisation of the agricultural sector and further aspects of positive liberty that increases the scope of opportunity costs. Finally, Chapter 3 emphasises regulation and security of the natural resource sector as it grows to prevent conflict actors making money during war.

I now turn to present the theory from the following chapters in turn. These are Consumption Opportunities, the real opportunity cost of conflict and the dual imperative of anti-insurgent militias.

Consumption opportunities

Chapter 1 will help to answer the research question by engaging directly with theories that attempt to explain the development-civil peace nexus, also touching on theories of inequality that drives conflict. As laid out above, there are several different explanations of the development-civil peace nexus, from opportunity cost (Collier and

Hoeffler, 1998), to state capacity (Fearon and Laitin, 2003), to the capitalist peace (De Soysa and Fjelde, 2010; Mousseau, 2012; Ricardo, 2000 [1821]; Smith, 1998 [1776]); yet, none of these seem to fit well with the overall observed pattern of conflict, perhaps only explaining a within effect and not the between effect, or describing only a portion of the total variance of either. The theory of consumption opportunities attempts to clarify the situation by offering a clear explanation of the development-peace relationship as a between effect only.

The theory of consumption opportunities states that what matters for human happiness is what we consume and have an expectation to consume in the future. In less economically developed countries these opportunities are often lacking. A perpetual state of poverty will lead to disenchantment as individuals lack a stake in society. With no belief that the current economic and social order will ever benefit you, it is understandable that you will have no issue with its re-ordering. All it takes, at this point, is an entrepreneur of violence to convince you that the blame for your sorry situation lies with some other group and you will happily help.

Sen (1999) argues that individuals derive happiness from participation in markets. I limit myself here to suggest that individuals gain pacific happiness through what they can receive from interaction with a well-functioning market economy. Sen argues that we must see ‘development as freedom’, and I agree with him, and certainly access to healthcare and education, for example, is at the heart of consumption opportunity theory; nevertheless, I would argue that it is the utility in consumption and the freedom to achieve, which is brought about by these other freedoms, that is most important for peace.

To be clear, this is not an argument of inequality – it is not a war of the haves against the have-nots. It is a war against a system that has disregarded your needs,

wants and aspirations. The target of your aggression can be anyone you see as culpable. On first sight, this may seem similar to explanations of modern day populism in domestic politics and the feelings of those left behind in globalization. In more economically developed states this may lead to voting for populist parties as basic consumption needs are fulfilled by some jobs, the state or charities. In less economically developed countries, these safety nets are often not in place. Future prosperity requires more direct action.

The solution to this problem is the development of internal markets and trade that provide opportunities for employment but, more importantly, increases in opportunities to consume goods and services that we would all like to have access to. Export-led growth is not recommended, as this only heightens consumption expectations, whilst providing little domestic produce for consumers to enjoy. Positive liberties must also be emphasised to ensure that individuals have the ability to realise their dreams and work their way out of poverty.

The real opportunity cost of rebellion

Evidence and support for opportunity cost and selective incentives as motivators of civil conflict has been mixed (Arjona and Kalyvas, 2012; Besley and Persson, 2010; Collier and Hoeffler, 1998; Dal Bó and Dal Bó, 2011; Dube and Vargas, 2013; Esteban and Ray, 2017; Florez-Morris, 2007; Gurr, 1970; Kustra, 2017; Miguel et al., 2004; Mousseau, 2012, 2018; Popkin, 1979; Ribetti, 2007; Sanín, 2004; Schneider, 2014). Perhaps the reason for this is that the current conception of the opportunity cost of rebellion is too wide and our understanding of the scope of remuneration in conflict, too narrow. Chapter 2 will consider the real opportunity cost

of conflict and present conditions that bring us closer to completing our understanding of this concept.

Whilst it may be easy to think of the opportunity cost of rebellion as any other employment and simple wages, we all know personally that many more factors than this enter into our judgements when considering a new job. We think of push factors, such as the commute, the hours, and the perceived effort involved as well as the pull factors, such as relationships with colleagues and non-financial benefits offered. For many, these other factors may be more important than any projected marginal rise in wages. Chapter 2 will suggest that the choice to switch from productive employment to rebellion follows exactly the same logic. In a country with high levels of unsatisfied basic needs, assurances of food security or the opportunity to learn a new skill may be more important than pure monetary rewards. We must, therefore, consider the opportunity cost in terms of a comparison of fundamental living standards.

Chapter 2 also argues that the true opportunity cost of conflict may be restricted to agricultural employment in many countries at the highest risk of conflict. This is because opportunities for migration, personal advancement and education may be limited due to a lack of infrastructure or institutions and the exigencies of poverty, which may see the procurement of the next meal as immediately more important than one's education. In peripheral regions of the state in which rebellions begin and grow, individuals are often likely to work with what they know and what has been passed down from generation to generation through the family – farming.

The solution to this problem is to encourage development in the agricultural sector and aid for these regions, so that individuals do not feel the need to resort to conflict to fulfil their basic needs. Also, we must encourage positive freedoms through

investment in education and infrastructure that will broaden the set of opportunity costs for these citizens.

The dual imperative

There is evidence that natural resources and commodities impact civil conflict onset and dynamics through their influence on both states and rebel groups (Humphreys, 2005; Ross, 2004b, 2004a). However, there is no understanding of how such elements influence conflict onset and dynamics through a third actor, that is near ubiquitous with rebel groups – anti-insurgent militias. Chapter 3 will help to fill this gap by arguing that anti-insurgent militias, without state or external funding, will offer services in the productive economy based around the protection of resource extraction facilities and corporate interests.

This is the result of the dual imperative: to both combat the insurgent group and to secure funding for continued operations. In order to fulfil this imperative, militia groups are likely to offer their services as mercenaries for local elites and business owners. The most lucrative contracts are to be found in areas containing high-value economic assets and, thus, militias are likely to prioritise territory that contains both high-value assets and insurgent groups. Areas containing these assets but without rebel group presence are not likely to attract militia groups. That is, anti-insurgent militias are not simply looking to get rich from war, setting up a private security business. They are following the dual imperative.

The dual imperative will lead to more intense fighting in regions with both insurgent groups and high-value economic assets. It will also increase the longevity of conflict as militia organisations are sustained. The solution to this is to encourage growth in the extractive industry only if it is coupled with increasing state capacity that

will maintain security and remove the need for corporations to enter into contracts with militia groups. Tighter domestic regulation is also required, and international treaties should be put in place to ensure that extractives are not exacerbating conflict through their collaboration with either rebel or militia organisations.

This introduction now moves on to consider how these theories and the hypotheses derived in the following chapters will be tested.

Methodology and Methods

This thesis approaches research from a critical realist perspective. I believe that there is truth out there to be discovered but recognise that “all observation is fallible and has error and that all theory is revisable” (Trochim, 2006). I am a subject of the United Kingdom and have grown up here; I have lived in England, Scotland, Russia, Austria, Sweden and a short time in Colombia. This experience will have given me a unique perspective on phenomena and concepts; however, I believe that we can come close to observing truth through triangulation of different perspectives.

Rationality

This thesis focuses on rational choice and instrumental rationality as opposed to moral reasoning that influences the decision of individuals. That is, to study the research questions at hand, instrumental rationality has been assumed. This does not mean to say that all human decisions follow this pattern, but that instrumental rationality is assumed to be applied by some individuals in their decision-making processes during conflict.

A fundamental tension exists between instrumental rationality and moral reason. The former depends on definite purposes and clear criteria of cost and achievement, with a natural preference for specialization and for the autonomy of professional or craft decisions. This way of thinking tends to narrow perspectives and limit responsibilities. Moral reason, by contrast, makes goals problematic and broadens responsibility. It asks: Are the postulated ends worth pursuing, in the light of the means they seem to require? Are the institution's values, as presently formulated, worthy of realization? What costs are imposed on other ends and other values? (Selznick, 1992: 321)

Many theories of economics assume instrumental rationality and the implementation of cost-benefit analyses in all decisions. Theories presented in this thesis assume the same on the understanding that they are not intended to explain all individual or group action during civil conflict. This thesis intends to explain decisions made by those that do implement instrumental rationality.

Data and methods

All three chapters use observational panel data. Chapter 1 uses country-years as the unit of analysis, comprising a panel of 150 countries across the globe from 1957-2007. Chapters 2 and 3 both use municipality-year as the unit of analysis, comprising panels of Colombian municipalities from 2002-2008 and 1997-2006 respectively.

Chapter 2 uses fixed-effects models to analyse within-unit effects. Chapters 1 and 3 utilise random-effects models recommended by Bell and Jones (2015) to parse out distinct between and within effects. Both Chapters 1 and 3 examine theory that explains a between-unit relationship. Bell and Jones argue that this method produces within effects that are consistent with those obtained from a pure fixed-effects model and also produces consistent estimates of between-effect coefficients. These are attained by unit-mean centring each time-variant covariate and entering both the mean-centred variable and an indicator of the unit-means into the model. The mean-centred covariate will account for variation in that unit only and thus removes any impact of omitted-variable bias from the within effect.

This method cannot, however, solve all endogeneity issues. Those caused by reverse causality could still pose a problem. As previously discussed, bias introduced by reverse causality in the relationship between development and peace cannot be ruled out categorically. It would be particularly useful to find an instrumental variable to account for Consumption Opportunities described in Chapter 1; however, to the knowledge of this author, no instrument exists that can distinguish between arguments of opportunity cost or state capacity and Consumption Opportunities. Instruments that have been used previously, such as roads, savings rates, international structure (instrument of poverty), commodity price shocks and more could all quite easily produce results that are reflective of Consumption Opportunities; yet, the authors have attributed the effects of these variables to opportunity cost or state capacity because they were unaware of any alternative. I believe that the method and data used in Chapter 1 are the best available for the study of Consumption Opportunities at the state level. Though, I acknowledge that they are far from ideal.

Case study - Colombia

Chapters 2 and 3 both use the case of the Colombian internal conflict. This case was chosen because of the availability of fine-grained data at the municipal level on a variety of economic and social indicators.

Colombia is situated at the North-West corner of South America, where the continent meets Central America and Panama. It is also bordered by Venezuela, Brazil, Peru and Ecuador. It has both Atlantic and Pacific coasts. As can be seen from Figure 1, it has a large mountain range – the Andes – running through it. Its 49M population predominates in these higher-altitude regions and on the coasts. To the South and East, Colombia is covered by the Amazon rainforest, making these areas sparsely populated. The capital city – Bogotá – is located near the centre of the country in the Andes mountain range. The country is divided into 32 departments (states) and 1,122 municipalities (counties). There is a presidential system of government and a bicameral legislature. It has a score of seven on the democracy scale of the Polity IV Project as at 2017 (Center for Systemic Peace, 2018). Its politics is predominated by three political parties, two of which have existed since 1849 – the Conservative Party, the Liberal Party and the more recent Social Party of National Unity. Despite its name, the Liberal Party is, in fact, the primary social-democratic party of Colombia.

Colombia has a long history of internal conflict, going back to the first civil conflict between the two major parties – the Conservatives and the Liberals – from 1899 to 1902. “The War of the Thousand Days” saw approximately 120,000 people lose their lives (BBC News, 2018). Conflict was repeated between these two groups almost 50 years later in “La Violencia” from 1948-1957 in which 250,000-300,000

Figure 1. Map of Colombia. (Central Intelligence Agency, 2008).



were killed (BBC News, 2018). At the end of this episode, the Conservative and Liberal Parties made a power-sharing agreement.

Since the start of the 20th Century and over a long time, areas that were distant from the apparatus of state control came under the sway of communist ideals and organisations. During the 1930's increased rights were given to peasants to cultivate land; however, these were later retracted in 1944. During La Violencia, agents of the

Conservative government sought to reduce the power of the peasants gained since the 1930's, which led to the reinvention of Liberal Party militant wings as protectors of the poor. In the early 1950's Colombia was ruled by the brief dictatorship of Rojas Penilla. In 1955, Penilla made the communist party illegal and sought to crack down on the outlying regions that had styled themselves as autonomous republics within Colombia. These regions ultimately survived Penilla but would come under renewed attack in 1963 when many citizens refused to enter a Colombian State 'rehabilitation' programme. Combined with pressure from the US to deal with the communist threat, the Colombian state began again to crack down on these communities once more. The regions responded by founding the Revolutionary Armed Forces of Colombia (FARC), and in 1964 the current conflict began. (Ribetti, 2007: 702–705)

The FARC was joined by the National Liberation Army (ELN) which was established in 1963 by individuals of middle-class background that supported the communist struggle. These groups were further joined by M-19 and the Popular Liberation Army (EPL) and many smaller insurgent groups. To this, almost as many anti-insurgent militias must be added. The largest of which was the United Self Defence Forces of Colombia (AUC). The Colombian internal conflict has raged for over 50 years and has claimed approximately 260,000 lives, mostly civilian (France 24, 2018). The FARC signed a peace agreement with the state in 2016; yet, at the time of writing, the ELN continues the fight for communist revolution in Colombia.

Chapter Overview

Chapter	Theory	Actor	Actor level	Aspect of conflict	Unit of analysis	Spatial Coverage	Time-period	Dependent variable	Method	Effect under scrutiny	Publication status
One	Consumption Opportunities	Rebel Recruit	Individual	Onset	Country-year	Global, 150 countries	1957-2007	Civil war onset	Random-effects logit	Between effect	Under review
Two	The real opportunity cost of rebellion	Rebel Recruit	Individual	Longevity, intensity, onset	Municipality-year	Colombia, 1,097 municipalities	2002-2008	Rebel offensive actions	Fixed-effects linear	Within effect	Under review
Three	The Dual Imperative	Anti-insurgent militia	group	Longevity, intensity	Municipality-year	Colombia, 1,108 municipalities	1997-2006	Militia Activity	Random-effects linear	Between effect	Pre-review draft

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Chapter 1. The Indivisible Hand of Peace? Consumption opportunities and civil war

Abstract:

As debate continues over the mechanisms underlying the relationship between economic development and civil war, this chapter assesses a critical structural factor that drives the supply of civil war labour, namely the lack of consumption opportunities. This factor increases the likelihood of civil war in less economically developed countries as individuals with low consumption opportunities have little to lose from reordering the economic and political system. The argument is tested using logistic regression and starts with a disaggregation of GDP. The analysis allows for a distinction between competing mechanisms and results here provide support for the theory of consumption opportunities. The analysis further highlights a new indicator which is arguably preferable to GDP as a measure of the development-peace relationship.

Economic development or lack thereof is one of the most robust indicators of civil war onset (Hegre and Sambanis 2006). However, there exist some interesting counter-examples. From 1970 to 1977 the GDP of Nicaragua rose by 47%. Given our current understanding of the causes of civil war, this country should have been becoming more peaceful. In fact, the opposite occurred, and by the end of the decade the Sandinista Revolution saw the removal of the Somoza dictatorship. How could this have occurred? Highlighting a weakness in current discourse, this chapter will present a theory that can be used as an explanation: because of an underlying economic reality, in which the incentives to join a rebellion were growing at the same time as the economy, the likelihood of conflict was steadily increasing.

This is in stark contrast to the preeminent explanation of the development-conflict relationship which argues that as an economy grows, the incentives to join a rebellion are diminished (Azam, 1995; Collier and Hoeffler, 1998; Grossman, 1995). Commonly known as the opportunity cost argument, this theory states that as countries develop and wages rise, the cost of hiring recruits becomes too restrictive to start a rebellion (Azam, 1995; Collier and Hoeffler, 1998; Grossman, 1995). However, this theory implies both that supernormal profits do not exist in these countries, so individuals and firms cannot amass wealth which could be diverted to conflict, and promises for payment upon completion of the goal are unsaleable – implications we know to be untrue. One only has to look at the Forbes Rich List to know that supernormal profits *are* normal in more economically developed countries (MEDCs) and it can be widely observed that rebel leaders sometimes promise payment of wages once the state is captured.

Furthermore, most studies that find support for this theory focus on the effects of negative wage shocks caused by a lack of rainfall or commodity price shocks, for

example (Besley and Persson, 2008a; Dube and Vargas, 2013; Miguel et al., 2004). Yet during the recent financial crash, wages fell in the UK by 7.4%¹ and this clearly had little impact on its likelihood of civil war. Opportunity cost fails to explain why the most economically developed states are most peaceful, and why Nicaragua was on a path to war. This is because the theory focuses too narrowly on solving the secondary issue of the collective action problem and ignores the original economic incentive to engage in collective dissent. The current chapter will help to fill this gap in theory by advancing the concept of consumption opportunities, which has a primary role in incentivizing labor supply in civil war.

The core premise of consumption opportunity theory is that people want to consume and need a realizable economic dream in order to buy into the existing political and economic order. If opportunities to consume are low and individuals have not bought into an economic dream, reordering or destroying the system represents zero loss to the dissident. Subsequently, economies which are oriented to encourage domestic consumption are inherently more peaceful. The theory will be tested using the disaggregated components of GDP, being measured in private production, private investment, government expenditure, exports and imports. The results will show that the consumption opportunity maximizing elements of private production, government expenditure and imports are the most strongly peace inducing. Whilst investment and exports add value to an economy and weigh positively on GDP, growth in these areas creates fewer direct consumption opportunities and thus is less likely to induce peaceful societies. Furthermore, whilst imports weigh negatively into GDP, their impact on civil war onset is in line with private production and government expenditure, which weigh positively on GDP. These findings suggest that a new indexed variable – Consumption Opportunities – should be used in preference to GDP, as the indexation of the five

factors as outlined above will only lead to an averaging out of the effect of an increase in consumption opportunities (Signorino and Xiang, 2009).

This disaggregation is a significant step, as many previous studies of civil war onset use the composite indicator of GDP as a key independent variable (Buhaug, 2006; Collier and Hoeffler, 1998; Fearon and Laitin, 2003); or use it as a base upon which to make comparisons with other key independent variables (Buhaug, 2006; Fjelde and De Soysa, 2009). What is critical is that all of these models will give two countries that observe the same GDP the same probability of conflict, *ceteris paribus*, because they do not take into account the weight of the disaggregated components mentioned above. This chapter will show that country A could have a markedly different likelihood of civil war onset from country B, if the constitution of GDP in each country differs and thus answer the research question ‘to what extent can consumption opportunities explain variation in the relationship between economic development and internal peace?’

This research speaks to a key policy concern – how best to engage in development, and more specifically development for peace. At this time no conflict-affected or fragile country has achieved much more than a one or two millennium development goals (World Bank 2013, Background). The research outlined here contemplates how development and peace can be achieved concurrently.

Previous Research

Private investment and production

In their model based on the work of Azam (1995) and Grossman (1995), Collier and Hoeffler (1998) argue that an increase in income leads to a reduced propensity

toward conflict as the increase in wealth reflects an increase in the opportunity cost of rebellion for all potential rebel fighters. Therefore, conflict is less likely in high-income countries as the average wage rate is so high as to make rebellion restrictively expensive to entrepreneurs of violence. Using per capita income as a proxy for potential opportunity costs in the economy Collier and Hoeffler find that the variable is statistically significantly negatively associated with the likelihood of civil war onset. Nevertheless, whilst it is true that per capita income is a good proxy of potential opportunity costs, it is also a reasonable proxy for consumption opportunities.

Some authors have used commodity price shocks to proxy for short-term variation in wages from productive employment that represent the opportunity cost of conflict (Besley and Persson, 2008a; Dube and Vargas, 2013). Miguel, Satyanath, and Sergenti (2004) use rainfall as an instrumental variable to predict civil war onset through economic growth. They argue that increases in rainfall can lead to enlarged crops, which automatically increases economic output and wages. The authors find rainfall to be an effective instrumental variable and show that growth and civil war onset are highly significantly negatively correlated, both substantively and statistically.

However, their second-stage model seems somewhat restricted in its time-frame. Regressing conflict on growth at both the current period and previous suggests that the time horizon of potential rebels is very short: they only consider very recent shocks and set a low value to expectations of long-term trends. This suggests that the turn to rebellion is not necessarily a vocational decision but a plan to redress immediate needs, such as procuring enough to eat or drink. In contrast to the authors' conclusions, this short-term perspective in-fact supports the theory presented here that consumption matters more than income. If potential rebels truly considered rebellion as a solution to their long-run prosperity, one would assume that short-term shocks in wages should

not affect their ultimate decision to rebel. However, a short-term shock on the availability of food might just motivate someone to seek alternative sources and temporarily offer their labor in civil war. This alleviation of scarcity that extra rainfall brings has been overlooked by the authors.

Trade

Another expectation of the opportunity cost argument is that as exports and imports rise individually, incomes will rise; although, incomes will rise faster with exports than imports. This is because exported goods form a direct part of domestic production and thus, income, while imports, on the other hand, add to domestic production and income only indirectly as imported intermediate goods are converted to consumer goods. Opportunity cost theory accordingly expects that there should be a negative correlation between both exports and imports and civil war onset, but that exports should be more strongly negatively correlated with onset than imports. In contrast, consumption opportunity theory considers imports to represent an increase in available opportunities to consume, while exports represent a leakage of consumption opportunities from the economy and therefore might expect negative relationship between imports and civil war onset and a positive relationship between exports and onset.

David Ricardo might disagree, arguing that rises in both exports and imports should equally lead to pacific outcomes. In his 1821 book, *On the Principles of Political Economy and Taxation*, Ricardo outlined the advantages of open economies and international trade (Ricardo 2001 [1821]). It was his belief that under almost all circumstances states will benefit from trade through the concept of comparative

advantage. The resulting increase in consumption opportunities will make people happier.

On the other hand, Bussman and Schneider (2007) propose that trade and liberalization may not be eternally positive (Sachs et al. 1995; Ricardo 2001 [1821]), arguing that higher levels of economic interconnectedness may indeed be associated with civil peace for reasons outlined by Ricardo but that the transition to such a state is often painful for the country. ‘Foreign economic liberalization decreases the opportunity cost of civil unrest for losers of foreign economic liberalization’ (Bussmann and Schneider 2007, 83). Under this situation disaffected agents will agitate for policy change, possibly violently. In divergence from Bussmann and Schneider, consumption opportunity theory would expect that conflict occurs in transition due to an emphasis on increasing the size of the export sector in economies that are seeking to liberalize. This emphasis increases export production at the expense of the domestic sector, which diminishes the supply of goods and services available to local communities. Then, as the open economy grows and becomes more established in the international society of states, imports will increase to fill this gap, which results in the long-term pacific effect found by Bussmann and Schneider.

Government expenditure

Although some governments may choose to restrict public spending, all governments have a rational motivation to provide public goods. As Olson (2000) explains, public goods raise the productivity of a population; their provision, therefore, drives up the taxable base and, thus, tax revenues. Diamond (1997: 287) goes further to claim that ‘large societies can function economically only if they have a redistributive economy in addition to a reciprocal economy’.

Building on competition model literature (Grossman, 1991, 1995; Hirshleifer, 1988; Tullock, 1967), Azam (2001: 432) presents a model of civil war as a lottery in which ‘the probability of getting the prize... depends on the relative resources invested in the game by the two parties [rebels and state]’. In his model the state can raise taxes, the control of which is also seen as the prize for winning any rebellion; it can spend on public goods that will pacify the population; spend on defense; or spend on repression. Azam’s model predicts that the probability of civil war onset is increasing with the size of the prize but decreasing with government expenditure on defense and public goods.

Taydas and Peksen (2012: 276) further argue that government spending alleviates conflict in two ways, by redistributing wealth and increasing economic growth. Levi (2006: 10) echoes Azam, building on her previous work (Cook et al., 2005; Levi, 1997), by asserting that:

What constitutes fairness and what are deemed desired public goods vary across society and time. Nonetheless, any government that does not meet widely-held expectations on these matters is likely to suffer resistance and dissent, passive and active.

Indeed, it is difficult to envision a state that does not provide public goods, if only in the basic Hobbesian form that seeks to protect us from each other. As a result, we should expect that an increase in government expenditure and a resultant increase in consumption potential should lead to a reduction in the probability of civil war onset. Yet, in contrast to the arguments outlined above, this chapter will assert that it is the provision of consumption opportunities and the alleviation of perceived scarcities that reduces the probability of conflict and not the redistributive effect. Nor is it increasing

military capabilities, or increasing employment opportunities. To this end, the chapter will now outline consumption opportunity theory.

Consumption Opportunities

Consuming makes us happy; whether it is a roof over our heads, food in our mouths, or a visit to the doctor when we are sick. In economics it is generally accepted that our wants are infinite. And so, development and growth of free-market economies are often seen as the best way in which to fulfil as many of these wants as possible.

In more economically developed countries (MEDCs) opportunities to consume are many and varied. Economic, political and physical infrastructures are all in place to maximize the ability to consume. Though public policies may vary from state to state, the primary aim is still to achieve the greatest total social happiness through consumption. However, in less economically developed countries (LEDCs) opportunities to consume are less abundant because of a lack of this same economic, political and physical infrastructure.

Indeed, in MEDCs most are able to find a job, save some funds if necessary or take out credit to purchase what they would like. And when this is not possible, systems are often in place to ensure abilities to consume, such as minimum welfare safety nets and charities that will help to fulfil the most important needs. Yet, further to this, are economic dreams. The most famous of which is the American dream, which is the belief that anyone who works hard can get rich on their own merit.

In LEDCs these are regularly just that – dreams. For the poorest in these societies with little schooling and no safety net, there are very few prospects for fulfilling their wants. Thus far, globalization has not helped to bring economic dreams to all parts of the world. Stuck in poverty with seemingly no hope for future prosperity,

people may do things that many in MEDCs would see as desperate. Yet, if the system is not providing opportunities to fulfil wants and dreams, then the reordering of that system may not seem so abhorrent. Someone who has received nothing from the existing political and economic order has nothing to lose from its destruction. Individuals are, therefore, motivated to offer their labor in civil conflict when consumption opportunities, including economic dreams, are low because a change in the system may bring about new consumption opportunities.

Taking this to its logical extreme, we find the slave economy. In this economy slaves are forced to work without reward. They are often given only basic food, shelter and clothing, if at all. They also have only a very minute possibility of experiencing change in the future as a result of their hard work. In such a situation, it is quite understandable that desperate individuals can be easily enticed into violence by a political entrepreneur who is able to convince them that everything can change if they only overthrow the system. The political front and aims of such a movement may vary, yet it is the situation of absolute deprivation and work without reward that has set within many a contempt for the current political and economic system.

A much less extreme example, yet with similar economic undertones, is Nicaragua. Although, many have explained this conflict as being between the haves and the have-nots, when viewed through the lens of consumption opportunity theory, an underlying contempt for the political and economic system of the Somoza regime appears to have initially motivated many toward violence. During the 1970's the Nicaraguan economy grew significantly. This growth fueled 'conspicuous consumption' by the bourgeoisie and 'undoubtedly raised the aspirations of most urban Nicaraguans' (Booth, 1985: 85) – a key recruitment group for the Sandinista National Liberation Front. However, economic mismanagement by the Somoza dictatorship

meant that 'Nicaragua's internal market remained small, and most manufactures were exported' (Booth, 1985: 78). At the same time, the apparent 'food last' approach in which 'the demands of export agriculture for land, credit, and human resources had priority' (Ryan, 1995: 56) meant that many ordinary Nicaraguans were going without basic necessities. Furthermore, with very little government investment in healthcare or education and expenditure predominantly 'confined to building infrastructure for the agro-export sector' (FitzGerald and Grigsby, 2001: 122), alternative opportunities to consume were also restricted. Given the availability of jobs in the export sector, individuals would have expected increased opportunities to consume; however, these opportunities were restricted by poor economic policies of the Somoza regime. Continued absolute deprivation with no expectation of future change, will have given large portions of the Nicaraguan population a contempt for the political and economic system of Somoza. With a distaste for the current system, it is easy to understand how individuals could be easily manipulated by political entrepreneurs who taught them to blame it on the haves.

Whilst the collective benefit from group action is clear in these circumstances, the collective action problem must still be overcome for war to break out. Olson (1965) believed that individuals would not engage in collective efforts unless the personal benefit outweighed the sacrifice. In civil conflict the personal sacrifice, both real and potential, is seen as very high compared to the personal benefit. Therefore, it is often important for rebel groups to overcome this issue by offering selective incentives, such as the opportunity for looting or cash rewards, during or upon completion of the task.

The theory of consumption opportunities does not affect this process. That is, issues of collective action are believed to be secondary to the structural factor (consumption opportunities) that facilitates personal justification for engagement in

conflict, before individual cost and benefit is considered. Consumption opportunity theory is thus, not a story of opportunism, which would state that individuals with low opportunities to consume engage in civil conflict simply to gain what new opportunities they can. Instead, it is argued here that a lack of consumption opportunities facilitates conflict by providing personal justification for the act of engagement in conflict – first, one considers whether the act is justifiable, and then one considers what one can get out of it. If an individual is asked in the street “would you join in a rebellion against the government?”, their first thought is unlikely to be “how much are they offering?”. First, they would consider whether they think rebellion is justifiable, if not, the value of the personal reward is likely to be irrelevant. Selective incentives may, therefore, still be necessary to encourage individuals to physically pick up a weapon but first, the act must be personally justified.

Hence, according to this theory, the individual is not motivated by greed because they are not trying to get rich out of war. Yet they are also not motivated by grievance held against some other group. They are frustrated because they cannot fulfil their wants and see no chance for fulfilling them in the future. It is a political entrepreneur, who channels this discontent into grievance against the state. As such, consumption opportunity theory does not fall neatly into the greed or grievance dichotomy. It is a structural foundation for conflict. With the presence of this element, all it takes is a political entrepreneur to convince the potential recruit that the current regime is responsible for their state of affairs, perhaps provide some incentive for personal engagement, and violent conflict will ensue.

It is now clear why states would be more peaceful if they maximized domestic consumption opportunities. However, consumption opportunity theory should not be seen as a deterministic argument. Rather, it presents the case of a structural foundation

that facilitates rebel recruitment. It is a latent factor within a society that increases the likelihood of conflict through increased incentives to join a rebellion. The flash-factor that precipitates the onset of war could be traced to inequality, religion, ethnicity or any other grievance that is manipulated by the demand side of civil war labor. This brings the chapter to its hypothesis:

H1: Higher levels of consumption opportunities imply a reduced likelihood of civil war onset.

Research Design

Method

As previously discussed, it is impossible to distinguish between the mechanism of consumption opportunities and others previously presented using GDP as an indicator. Unfortunately, an adequate indicator for the number of goods and services available for consumption in a country does not exist either. In such a situation Humphreys (2005) recommends disaggregating the explanatory variable. ‘If multiple mechanisms are simultaneously in operation, and each has an independent effect on the outcome, then multiple measures may be able to capture the effects of these rival mechanisms’ (Humphreys, 2005: 519). Following Humphreys’ reasoning, GDP can be disaggregated into its five key constituent elements: private consumption, private investment, government spending, exports and imports, which will allow for an analysis of their individual relationships with civil war onset. Given that these relationships are each expected to vary along the lines of consumption opportunity theory distinctly from other theories in previous research, this individual analysis

should shed light on the true mechanism behind the robust relationship between GDP and civil war onset.

GDP is calculated by summing private consumption, investment, government expenditure and exports, then subtracting the value of imports. Private consumption can be defined as ‘expenditure by individuals on domestic and foreign goods and services, produced and sold to their final users’. Investment is defined as ‘expenditure on the production of goods not for present consumption but rather for future use’. Government expenditure can be defined as ‘all government purchases of goods and services’. This will include the provision of public services such as the bureaucracy; though, it does not include transfer payments such as welfare payments as they do not add output to an economy, they only reflect the exchange of money from one source to another. Finally, exports can be defined as all goods and services that are produced in a country and sold to foreigners, and imports can be defined as all goods and services that are produced by foreigners but purchased by the domestic population (Lipsey and Chrystal 1999, 342–44).

The indicator of private consumption includes expenditure on both domestic and foreign goods and services. The distinct imports component specifies the value of these consumables that were brought in from abroad. Thus, for the purposes of calculating domestic production, imports are subtracted from the total figure. Otherwise, the foreign goods and services would be counted as part of domestic production – GDP – which, clearly, they are not.

Consumption opportunities are maximized in the components of private consumption and government expenditure. As exports are sold to foreigners, they cannot be consumed at home. Investment also does not increase current consumption as its focus is on expanding future production. While the imports component is also

expected to correlate highly with consumption opportunities, the impact of these opportunities is already measured in private consumption as discussed above. This notwithstanding, the imports component will be analysed along with the others in the econometric models to identify its individual relationship with civil war onset and confirm whether its loading into GDP is averaging away the pacific effect of this component.

We should, therefore, expect indicators of private consumption, government spending and imports to be most strongly negatively correlated with civil war onset as they each relate directly to consumption opportunities. Exports could be expected to be positively correlated with onset as these represent a reduction in consumption opportunities. However, increasing exports also allows for increasing imports through the process of international exchange. This factor may cause this component to be ambiguously related to onset; however, it should definitely not be as strongly negatively correlated with onset as private consumption, government expenditure or imports. Investment is likely to be weakly correlated with onset as it does aid in the expansion of opportunities to consume; although, it is not expected to be as strongly correlated with onset as private consumption, government expenditure and imports because a large proportion of this expenditure is on items that increase productive capacity of consumable items and are not directly consumable by general members of the public, for example, expenditure on new machinery that allows a factory to produce more goods.

In conclusion, private consumption, government expenditure and imports are expected to be the most strongly negatively correlated with civil war onset. Investment is expected to be weakly negatively correlated with onset and exports are expected to be positively correlated or not correlated with onset at all. If found, these relationships

should allow for a distinction from other arguments such as opportunity cost, which would predict that the investment, government spending and exports components will be equally correlated with onset – a rise in wages in one sector should be the same as that in another; imports should be very weakly negatively correlated with onset because this component only indirectly adds to income as imported intermediary goods are converted into final consumables. And, finally, private consumption will be less strongly negatively correlated with civil war onset than investment, government expenditure and exports because it is overinflated by the value of imports consumed.

Entering all the components into one model simultaneously could generate nonsensical results. This is because the absolute values of GDP components will be highly correlated with each other.² That is, as economies grow as a whole, the components tend to grow in the same direction. This does not mean, however, that there is no variation in the relative size of components.³ Therefore, each component will enter a separate model and its effects compared with that of GDP. This will allow for an analysis of the true driving force behind the relationship between GDP and civil war onset.

As previously outlined, it is expected that those components most associated with raising domestic consumption – private consumption, government expenditure and imports – will be the most effective indicators of a reduced propensity toward civil war onset. Therefore, an indexed measure of private consumption (containing expenditure on both domestic and foreign goods and services) and government spending, termed ‘Consumption Opportunities’, will also be evaluated against GDP to test the theory outlined above more directly.

This chapter will answer the research question using time-series cross-sectional data of 150 countries from 1957-2007, which is the largest sample possible given the

data availability of the covariates. The unit of analysis is country-year with a population of countries at risk of civil war. With a dichotomous dependent variable of civil war onset, this chapter will use logistic regression to test the hypotheses presented above.

This study will use a random effects model with estimators of both within and between unit relationships. Following Bell & Jones (2015) and Rabe-Hesketh and Skrondal (2008: 114–122), within-unit variation is measured by the difference between the yearly observation and the unit mean whilst between-unit variation is measured using the unit means. Estimates of the within effects are identical in this model to fixed effects (Bell and Jones, 2015: 142–143); however, this method also allows for a consistent estimation of between effects, as the mean of each within-effect covariate is equal to zero.

Bell and Jones (2015) have shown that this model is superior to standard random effects and pooled models in the estimation of between effects. As the theory presented above is specifically interested in testing between effect across countries of the world, it is believed that this model allows for the most accurate estimation of the parameters.

The issue of endogeneity caused by reverse causality is almost entirely removed in this model as between effects are time-invariant and any reverse causality would need to be so severe as to suggest that LEDCs are only poor compared to MEDCs because they experience more conflict.

Independent and dependent variables

The key independent variables are private consumption, private investment, government expenditure, exports and imports measured at purchasing power parity in real per capita income at constant 2005 prices. These variables are generated using data

taken from Penn World Table (PWT), which provides information on GDP share for each of the components per country-year, combined with the expanded GDP data of Gleditsch (2002).³ Where GDP is used in its own right as a covariate, this vector is that of Gleditsch (2002).

As pointed out by Jerven in his book *Poor Numbers*, much of the developing world's statistical data may be incomplete, based on models of growth rather than measurement or simply the reporting of an individual's best guess (Jerven 2013). Therefore, there is expected to be at least some measurement error in the data. This is most obviously seen in the 'residual' indicator provided by PWT, which measures deviation from the 100% maximum total GDP figure when the five components are linearly combined. This indicator varies from -74% to +80%, has a standard deviation of 10% but a mean close to zero. Whilst it is troubling that some countries can report detailed component information that does not add up to 100%, there is little that can be done at this stage, except to recognize the poor quality of some of this data and use it *faute de mieux*.

The indexed indicator of Consumption Opportunities will linearly add private consumption and government expenditure as these are expected to capture opportunities to consume most directly. It will be tested against GDP in its original form, and a new index which will be called here the Gross Domestic Peace Product (GDPP). GDPP linearly adds private consumption, investment, government expenditure, and exports but does not subtract imports as with GDP. GDPP is produced because it is expected that the current indexation of GDP is averaging away the effects of its individual components on the likelihood of civil war onset and is, thus, a deficient indicator of peace.

The key dependent variable is civil war onset and is obtained from the UCDP Monadic Conflict Onset and Incidence Dataset (Gleditsch, Wallensteen, and Eriksson et al., 2002; Pettersson and Wallensteen 2015). Conflict is defined as ‘a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths’ (Themnér, 2015: 1). The original prevalence variable is coded 1 for years in which conflict is observed and zero for all other years. A new conflict is coded if prevalence returns to zero for at least two consecutive years. The onset variable used in this study drops observations for all years of ongoing conflict as countries cannot enter a new civil war in this data whilst one is continuing.

Control variables

The brevity of peace is included in the model to allow the most accurate estimation of the within effects given the time-dependence of many of these estimators (Beck et al., 1998). The variable is measured in years since the last incidence of civil war and is taken from Hegre, Karlsen, and Nygård et al. (2013), being extended backward and forward to cover the entire length of the sample period described above and converted through a decay function to give it a half-life of four years (Raknerud and Hegre, 1997: 393).

A dummy variable indicating a neighboring country in conflict will enter the model as such close proximity to another war is likely to have an effect on all components of GDP. Given evidence to suggest that bad neighborhoods increase the likelihood of civil war onset (Gleditsch, 2007), this dummy will enter the model to minimize omitted variable bias. The variable is taken from Gleditsch (2007) and expanded with observations contained in Hegre et al. (2013).

Trade openness will enter the model to ensure that observed relationships between imports and exports with civil war onset are not merely a reflection of the expected relationship between trade openness and civil war onset through a liberal peace mechanism. The indicator represents exports plus imports over GDP; original data being obtained from Penn World Tables.

Democratic institutions may potentially confound the relationship between consumption opportunities and civil war as increasing political rights will increase demand for economic rights and thus growth. Given previous research and the established connections between civil war onset, democracy and polyarchy (Hegre et al., 2001) it is, therefore, pertinent to enter the model as both a linear and quadratic control. The measure of democracy used will be the Scalar Index of Politics (Gates et al., 2006), formed using data from the Polity IV project and Vanhanen and Lundell's 'Measures of Democracy 1800-2012' dataset.

Region dummies will enter the model to help control for omitted variable bias that correlates with different regions of the globe. The regions included are North America, South America, Europe, Asia, North Africa, South-East Asia and Australasia with Sub-Saharan Africa as the reference category.

Two final control variables are drawn from the V-Dem data set. Firstly, a measure of social group discrimination will enter the model as it is possible under certain circumstances that the benefits of any government spending, for example, will not be distributed equally amongst the population (Bueno de Mesquita et al., 2003). Given previous research into the link between horizontal inequalities and civil war onset (Stewart, 2002), this variable is considered relevant to add as a control. Secondly, petroleum production per capita will enter the model to control for the influence of primary commodity dependence (Collier, 2000a; Collier and Hoeffler, 2005;

Humphreys, 2005; Le Billon, 2001; Ross, 2004a; Weinstein, 2005) that may also affect the levels of domestic production and government spending beyond the obvious trade implications.

Results

Results of the logistic regressions can be viewed in Table 1, which shows between and within effects, calculated in the same model, side-by-side. Anticipated between relationships are found in the data and are robust to the inclusion of control variables (Levine and Renelt, 1992). Model one contains only the indexed variable of GDP. Models 2 to 6 reveal the relationships between the individual components of GDP and civil war onset, controlling for the same factors, using the same sample. The results clearly support private domestic consumption (model 2) as the power behind the strong relationship between the indexed variable of GDP and civil war onset. They also show that imports have the opposite impact on civil war onset from that expected given the current method of indexation. A negative coefficient indicates that as the number of imports rises, the probability of civil war onset is reduced. Furthermore, this finding is robust to the inclusion of trade openness.

It is interesting to note that there are seemingly no within effects of GDP, or any of its components, on the likelihood of civil war onset. The measure of social group discrimination has a positive and statistically significant between effect in all models. However, it has a negative within effect, although this is not statistically significant at the 5% level in any model.

Table 1. GDP and the onset of civil war

	Between Effects						Within Effects					
	1 Civil war onset	2 Civil war onset	3 Civil war onset	4 Civil war onset	5 Civil war onset	6 Civil war onset	1 Civil war onset	2 Civil war onset	3 Civil war onset	4 Civil war onset	5 Civil war onset	6 Civil war onset
GDP per capita _(log)	-0.57** (0.26)						-0.04 (0.26)					
Total Private Production/pc _(log)		-0.76** (0.30)						0.05 (0.27)				
Total Private Investment/pc _(log)			-0.38** (0.18)						0.08 (0.14)			
Total Government Spending/pc _(log)				-0.50** (0.22)						0.02 (0.17)		
Total Exports/pc _(log)					-0.20 (0.17)						-0.17 (0.13)	
Total Imports/pc _(log)						-0.64*** (0.21)						-0.01 (0.15)
Discrimination	0.63*** (0.19)	0.65*** (0.18)	0.62*** (0.19)	0.60*** (0.19)	0.62*** (0.19)	0.63*** (0.18)	-0.30* (0.18)	-0.30* (0.18)	-0.30 (0.18)	-0.30* (0.18)	-0.31* (0.18)	-0.30* (0.18)
Oil Production	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Neighbor at War	0.24 (0.72)	0.10 (0.71)	0.43 (0.72)	0.39 (0.72)	0.31 (0.72)	0.15 (0.70)	0.14 (0.25)	0.14 (0.25)	0.13 (0.25)	0.14 (0.25)	0.17 (0.25)	0.14 (0.25)
Trade openness	-1.19* (0.68)	-1.16* (0.67)	-1.07 (0.70)	-1.11 (0.69)	-0.84 (0.84)	0.39 (0.84)	-0.79 (0.60)	-0.80 (0.59)	-0.86 (0.61)	-0.80 (0.60)	-0.32 (0.69)	-0.75 (0.69)
Democracy	1.88 (3.10)	1.61 (3.08)	1.61 (3.10)	2.61 (3.10)	2.34 (3.13)	2.09 (3.03)	3.42** (1.52)	3.44** (1.52)	3.47** (1.52)	3.43** (1.52)	3.40** (1.52)	3.44** (1.52)
Democracy ²	-0.09 (2.82)	0.45 (2.83)	0.04 (2.83)	-1.01 (2.76)	-1.00 (2.81)	0.01 (2.73)	-2.76* (1.58)	-2.80* (1.57)	-2.84* (1.58)	-2.79* (1.58)	-2.69* (1.57)	-2.77* (1.57)
Peace Decay							-0.62* (0.37)	-0.61 (0.37)	-0.60 (0.37)	-0.62* (0.37)	-0.70* (0.38)	-0.61 (0.37)
Constant	0.17 (2.04)	1.28 (2.20)	-2.14* (1.22)	-1.43 (1.39)	-3.15*** (1.09)	-1.23 (1.22)						
AIC	1,411	1,409	1,411	1,411	1,413	1,407						
No. of Observations	5,007	5,007	5,007	5,007	5,007	5,007						
No. of Countries	150	150	150	150	150	150						

*** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses. Region fixed effects omitted from table.

Democracy is not found to have a significant between effect. Somewhat surprisingly, on the other hand, its within effect is positive and statistically significant at the 5% level, suggesting that the transition from autocracy to democracy is fraught with conflict. There is also evidence in these models for an inverted-U shaped relationship as previously theorized.⁵

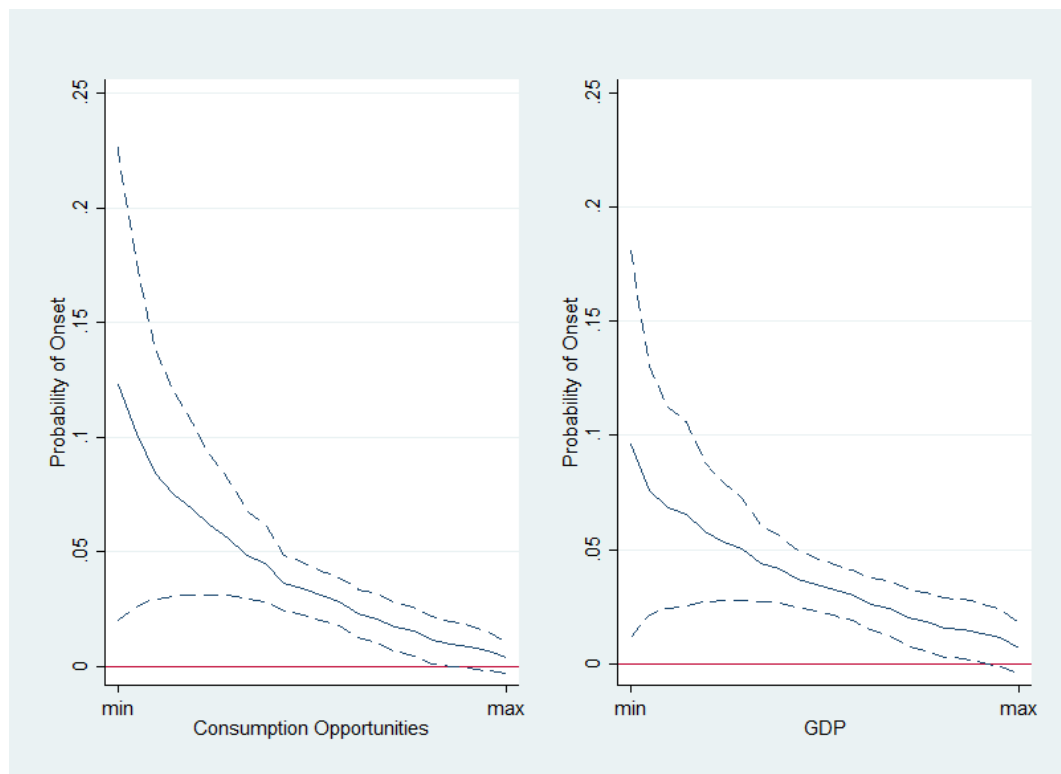
Table 2 presents the results of the same analysis conducted with two new indexed measures – GDPP and Consumption Opportunities. As can be seen GDPP and Consumption Opportunities are substantively and statistically more significant than GDP. Movement one standard deviation either side of the mean of GDP changes the probability of civil war onset in Model 1 from 1.9% to 5.9% (all other variables at their means). This change of 211% is not statistically significant. In contrast, movement one standard deviation either side of the mean of Consumption Opportunities in Model 8 changes the probability of civil war onset from 1.7% to 6.4% (all other variables at their means). The change of 288% is much larger than that of GDP and is statistically significant at the 5% level.

Table 2. GDP comparison with GDPP and Consumption Opportunities

	Between Effects			Within Effects		
	1 Civil war onset	7 Civil war onset	8 Civil war onset	1 Civil war onset	7 Civil war onset	8 Civil war onset
GDP per capita (log)	-0.57** (0.26)			-0.04 (0.26)		
GDPP per capita (log)		-0.61** (0.27)			-0.08 (0.25)	
Consumption Opportunities per capita (log)			-0.75*** (0.29)			0.01 (0.27)
Discrimination	0.63*** (0.19)	0.63*** (0.19)	0.63*** (0.18)	-0.30* (0.18)	-0.30* (0.18)	-0.30* (0.18)
Oil Production	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Neighbor at War	0.24 (0.72)	0.26 (0.71)	0.20 (0.71)	0.15 (0.25)	0.14 (0.25)	0.15 (0.25)
Trade Openness	-1.19* (0.68)	-0.92 (0.70)	-1.11* (0.67)	-0.74 (0.61)	-0.79 (0.59)	-0.74 (0.61)
Democracy	1.88 (3.10)	1.90 (3.09)	1.88 (3.07)	3.41** (1.52)	3.43** (1.52)	3.41** (1.52)
Democracy ²	-0.09 (2.82)	-0.06 (2.81)	0.11 (2.80)	-2.74* (1.57)	-2.78* (1.57)	-2.74* (1.57)
Peace Decay				-0.63* (0.37)	-0.61* (0.37)	-0.63* (0.37)
Constant	0.17 (2.04)	0.39 (2.07)	1.34 (2.19)			
AIC	1,411	1,411	1,409			
No. of Observations	5,007	5,007	5,007			
No. of Countries	150	150	150			

*** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses. Region fixed effects omitted from table.

Figure 1. Between effects of Consumption Opportunities on civil war onset



The difference between the power of the two variables can be seen clearly in Figure 1. This shows the probability of civil war onset running from 0.6% to 11.1% across the range of Consumption Opportunities whilst only running from 0.7% to 9.6% across the range of GDP. One of the most telling examples of this difference is the case of Iraq. From 1973 to 1995 Iraq experienced the onset of five civil wars. By GDP and model 1, the probability of conflict onset was 14.7% on average across the 5 observations; by Consumption Opportunities and model 8, the probability of conflict across the 5 observations was 18.3%. This is an increase of 3.6 percentage points solely because Consumption Opportunities has been used to predict conflict instead of the blunt indicator of GDP.

Discussion

Base models

Results presented in Table 1 show that previous relationships found between GDP and civil war onset are the result of the influence of between effects – the within effects are all close to zero with none being statistically significant (Besley and Persson, 2008a; Collier and Hoeffler, 1998; Dube and Vargas, 2013; Miguel et al., 2004). It is also clear that the primary substantive significance of GDP as an indicator of civil war onset is driven by private domestic consumption. Being measured in a logged function of 2005 international dollars per capita, the coefficients of GDP, its components, GDPP and Consumption Opportunities are all directly comparable. Domestic production has a coefficient of -0.76, which is much stronger even than GDP itself, with a coefficient of -0.57. This suggests that the impact of domestic production and consumption is being averaged out in the indexed measure (Signorino and Xiang, 2009). The next strongest components of GDP are imports and government spending with coefficients of -0.64 and -0.50 respectively. The coefficients of exports and private investment are much lower at -0.20 and -0.38 respectively.

The results presented in models 2 to 6 show strong support for the consumption opportunity theory and hypothesis H1. Domestic consumption, government spending and imports are most strongly correlated with civil war onset, suggesting that the increased consumption opportunities brought about through growth in these areas would lead to a reduced propensity toward civil conflict. Investment is less substantively correlated with civil war onset. This is likely because investment does not relate to an immediate increase in consumable goods and may take some time

Table 3. Expected relationships between components of GDP and the probability of civil war onset

GDP Component	Theory				
	Consumption Opportunities	Opportunity Cost	Government Ability to Defend	Size of the Prize	Liberal Peace
Consumption	Strong (-)'ve	Moderate (-)'ve	-	-	-
Investment	Weak (-)'ve	Strong (-)'ve	-	-	-
Government	Strong (-)'ve	Strong (-)'ve	Strong (-)'ve	Strong (+)'ve	-
Exports	Ambiguous	Strong (-)'ve	-	-	Strong (-)'ve
Imports	Strong (-)'ve	Weak (-)'ve	-	-	Strong (-)'ve

before new production relieves perceived scarcities – a shift that will then be reflected in domestic consumption figures.

Imports are found to be negatively correlated with civil war onset as expected. This suggests that as increasing amounts of goods are brought into an economy, the relief of scarcity is reducing the propensity toward conflict. Interestingly, exports are not found to be significantly statistically correlated with civil war onset in model 5. This suggests that the reduction in consumption opportunities which results from the goods being sent abroad has a powerful impact on societies; one that is not easily overcome by latter increases in consumption through related rises in imports.

Table 3 above gives a summary of the alternative expected relationships between the components of GDP and civil war onset from competing theories outlined in the previous research section of this paper. The findings presented above are in clear contrast to the opportunity cost theory which would suppose that investment, government expenditure and exports are the most strongly negatively associated with civil war onset. Investment, government spending and exports will all equally raise the income of a country and thus increase opportunity cost equally, whilst imports will only reflect a minor increase in income through the conversion of intermediary goods. Because private consumption includes expenditure on imports, it should thus be less strongly associated with civil war onset than investment government spending or exports. Finding the strongest relationship between domestic consumption and civil war onset, combined with a strong negative relationship with imports and weaker associations between investment, government spending and exports shows little support for the opportunity cost theory as the mechanism that is responsible for the robust relationship between GDP and civil war onset. Therefore, there is even stronger evidence for the claim that it is increasing consumption opportunities and not wages

that are causing relationships found in previous research (Besley and Persson, 2008a; Collier and Hoeffler, 1998; Dube and Vargas, 2013; Miguel et al., 2004). To add further weight to these findings, more fine-grained analyses that can distinguish between wage shifts and consumption opportunity shifts as a cause of conflict should be undertaken. This will allow for scrutiny of previous research that assumes a link between increased production or variation in prices and civil war onset that works through wages (Besley and Persson, 2008a; Dube and Vargas, 2013; Miguel et al., 2004).

When government budgets rise, the amount available to spend on defense and potential ‘state capacity’ will also rise (Azam, 2001; Fearon and Laitin, 2003). It is, therefore, logical to expect that a rise in total government expenditure will be negatively correlated with civil war onset as rebels are discouraged from initiating a rebellion. On the other hand, this theory expects no specific relationship between the remaining components of GDP and civil war onset. Weak support is found for this argument as government spending does indeed have a statistically significant negative relationship with the likelihood of civil war onset; however, the fact that private production is more strongly substantively and statistically related to civil war onset than government spending suggests that the government ability to defend is not the key driving force behind the relationship between GDP and civil war onset.

Control of the state or state funds is the goal of many rebel leaders, whether the cause is secession or a change of government. Following the logic of Azam (2001), it can be argued that the size of state funds also represents the size of the prize. Thus, we should expect the opposite relationship between government expenditure and civil war onset as set out in the previous paragraph. This is clearly not found to be the case in the current sample and so no support is detected for the use of GDP as an indicator of the size of the prize mechanism.

Finally, Hegre, Gissinger and Gleditsch (2003) argue that the effect of trade on civil war onset appears to work through its effect on growth and thus the opportunity cost of conflict. However, in contrast to the opportunity cost argument, they expect that total trade will have this impact and not exports or imports individually. As a result, they would expect that growth in imports and exports together should reduce the likelihood of civil war onset. This is not seen in any of the models with the indicator of the within effect of total trade being statistically insignificant in all regressions, suggesting no validation for the liberal peace argument. There is also no support for Bussmann and Schneider's (2007) proposition that transition to an open economy and the increase in exports is potentially conflict causing with no within effect of the value of exports found. Further research is required to determine exactly why no between effect is found here between exports and civil war onset. It does seem, however, that trade openness is not a critical factor in determining the internal peacefulness of societies.

Further to these findings is the confirmation that imports are positively related to civil war onset when they are indexed into GDP through the net exports function. Consequently, they are averaging out the effect of other components and dulling the overall impact of GDP as an indicator of civil war onset (Signorino and Xiang, 2009). If this component is instead added to the other components in an indexed variable, creating GDPP, the substantive effect of the variable increases from -0.57 to -0.64 in this sample as seen in Table 2.

The new indicator of Consumption Opportunities fares even better with a beta coefficient of -0.81, which is substantively and statistically more significant than either GDP or GDPP. Figure 1 shows the difference in substantive impact and the example of Iraq, which had a much higher probability of onset across five observations,

highlights the point that the indexed indicator of GDP may obscure the true likelihood of conflict in a country as the weight of its components is not taken into account.

In this light, perhaps the indicator of Consumption Opportunities should be incorporated into models of civil war onset rather than GDP. If nothing else, GDPP should be used as results presented here clearly show that the method of GDP indexation is inconsistent with the individual statistical relationships between components of GDP and civil war onset.

Alternative specifications and checks of robustness

To check the robustness of the results additional controls of foreign aid, population, and the previously mentioned reporting error indicator were also individually added to the base model.⁶ Interpretations presented above were found to be robust to the inclusion of these variables and to the exclusion of influential cases.⁷

When using an indicator of civil war onset that attributes a positive observation only when battle-related deaths reach 1,000 in one year, all of the relationships between GDP and its components lose statistical significance, except for imports. This is most likely because the total number of positive observations drops from 198 to 64, or from 4.0% of observations to only 1.2%. Unfortunately, data on the components of GDP is not available from known sources back beyond 1950. It is hoped that this data will become available in the near future to allow for a full test of this theory with regard to the onset of intense civil wars.

It could be argued that inequality is driving the relationship between low consumption opportunities in LEDCs and conflict. If there is little to go around but some have more than others, then this is what is driving grievances. However, this cannot be the case in the observed relationships above as inequality is increasing in

consumption opportunities. That is, the states with the lowest consumption opportunities and most conflict also have the lowest income inequality. It is, therefore, unlikely that this factor is driving the observed relationship.

Of course, the analysis between components of GDP and civil war onset could be taken further to consider the distinct impact of sub-components of consumer spending, investment, government expenditure, exports and imports and their weighting in these composite variables. Indeed, some have argued that certain government expenditures are more peace inducing than others, for example, education as opposed to military spending (Berthélemy et al., 1996). Whilst this may undeniably be the case, such an extension is beyond the scope of this research and, furthermore, beyond the scope of the theories that this chapter was intended to scrutinize.

Conclusion

The purpose of this study was to examine once more the relationship between economic development and civil war onset, given the failure of current theories to adequately explain why some growth and some negative growth does not necessarily change the probability of conflict in the way that we expect. It accomplished this by reviewing previous research on the topic before presenting a new theory – consumption opportunities – that can better explain this variation at all levels of economic development. It tested this theory using logistic regression on the components of GDP, finding statistical relationships that support the core argument.

Indeed, evidence presented here shows far greater support for consumption opportunities as the mechanism through which GDP has previously been found to be so robustly correlated with civil war onset and not opportunity cost, the government ability to defend, size of the prize or liberal peace. Though, additional research is

required to extend the scope of this evidence, it is found to be robust to model specification in the current sample. It is also recommended that the measures of GDPP or Consumption Opportunities, rather than GDP, enter future models of civil war onset to more accurately capture the relationship between economic development and civil war onset.

It thus seems that peace and development can be achieved at the same time if growth is geared toward the maximization of domestic consumption opportunities. Export-led growth, for example, should not be aggressively pursued at the expense of domestic markets and growth in local consumption opportunities. If individuals can see the economic system working for them and have expectations of a better future, we are much less likely to see disastrous civil conflicts rage around the globe.

Notes

1. 2008-2014 period, Annual Survey of Hours and Earnings (Emmerson et al., 2015: 40).
2. See Table A2 of the appendix for correlation matrix of the key independent variables.
3. See figures A1-3, which show how the proportion of each component can change year on year within one country. On the other hand, it is still likely that countries with low levels of income will have low levels of each component, whilst high income countries will have high levels of each.
4. Updated version 6.0 beta of this database is available at <http://privatewww.essex.ac.uk/~ksg/exptradegdp.html>.
5. See Vreeland (2008) for discussion of origins of this theory.
6. See appendix for tables reporting all results discussed in this section.
7. See Table A8 in the appendix. Results presented further support the hypothesis presented.

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Chapter 2. Down but Not Out: Selective incentives and rebel recruitment

Abstract:

It is widely held that selective incentives and opportunity costs impact the decision of some individuals to participate in guerrilla warfare. However, research to date has often defined these incentives too narrowly as either wages or looting. This chapter argues that what counts in the recruit's cost-benefit analysis is a more fundamental assessment of living standards, including an assessment of both push and pull factors from each occupation. Whilst previous literature has considered the push factors from employment in insurgency (risk of death, etc.), it has ignored the push factors from the productive economy. Further, the chapter argues that the true opportunity cost of rebellion may not be as broad as any alternative occupation in the productive economy; it is far more likely to be restricted to agricultural employment. The chapter assesses the hypothesis using sub-national data from Colombia for the period between 2002-2008. Evidence from the model supports the theory presented.

The collective action problem is considered among scholars to be one of the key dilemmas to be overcome in the instigation and maintenance of a rebel insurgency. This problem requires that rebel elites incentivise individuals to join their group by offering private rewards and extending these further when disincentives of participation exist. This has led many to consider the pull factors toward insurgency and its perceived opportunity cost – productive employment. Indeed, some pull factors toward insurgency – war-wages and bounty from looting – can be directly compared to pull factors from the legal economy, such as wages (Grossman, 1991). Other pull factors, such as the attainment of a public good (government overthrow), cannot be so easily compared. Furthermore, previous literature has highlighted push factors from insurgency that must be overcome in order to recruit (Roemer, 1985; Tullock, 1971). These are often discussed as the risk of injury, death, capture, torture or the hardship of a life on the move. Many conclude that the pull factors from insurgency must be much higher than those from productive employment in order to overcome these push factors.

Yet, push and pull factors draw and repel applicants from every form of employment that exists – not just insurgency. Currently, the push factors from productive employment are overlooked in models of civil conflict. This chapter will address this gap by drawing attention to the push factors from legal employment, including the effort and living standards associated with productive occupations. It will posit that these factors may be significant enough to push individuals into insurgency, even when pull factors from insurgency are low and push factors potentially high. After all, there are many cases in which guerrilla groups continue to recruit, even though their members do not seem to be doing so well out of war.

In answering the research question: what is the real opportunity cost of each employment, the chapter will assert that the true alternative to rebellion for many is restricted to an agrarian life, and is not, as commonly conceived, any alternative type of employment, such as professional work. The study will utilise the case of Colombia, analysing municipality level data from the period 2002-2008. Fixed effects models will be used to show the dynamic relationship between the independent and dependent variables. Results of the model show clear support for the hypothesis presented and highlight an important policy implication: the need for closer attention to the level of living standards within agrarian communities in order to prevent a situation in which the alternative life of a rebel may be seen as an increase in living standards.

Previous Research

The collective action problem

The key pull factors toward insurgency are believed to be wages and looting because of the core underlying exigencies of group mobilisation. Central to the current understanding of civil conflict, whether violent or nonviolent, is the notion of the collective action problem. Introduced by Olson (1965), this concept holds that individuals without a personal incentive to engage in collective action toward the attainment of a public good regularly have a rational incentive not to participate, or to ‘free-ride’. Olson believed that individuals engage in a cost-benefit analysis when they consider whether or not to take part in collective action. In this analysis, we weigh up the benefits of participation – enjoyment of the public good – with the costs – usually our own time or money. The logic is dependent on our expectation of others’ actions. If we expect others to participate, then we can free-ride on their efforts and still obtain

the benefit when the collective goal is attained¹; if we expect nobody to participate, then we know our sole participation is extremely unlikely to secure the good, in which case we still believe we are better off not participating.

The question then becomes: why does anybody participate in collective action, given that we all so often have an individual incentive not to participate? Olson argues that it is because personal, private incentives for participation and/or negative incentives for non-participation are commonly used as encouragement. Of course, this assertion did not immediately hold the sway that it does today. This is because many argued alternatively for the role of collective incentives as prominent pull factors. In his book *From Mobilization to Revolution*, Tilly (1978) refers to Olsons arguments as a derivative of John Stuart Mill and only one among four selected explanations of collective action – the others based on collective interests rather than individual interests.

Gurr (1970) gives little credence to the collective action problem and individual incentives as pull factors, preferring instead to focus on relative deprivation and personal grievances which lead individuals to action.

Relative deprivation is defined as a perceived discrepancy between men's value expectations and their value capabilities. Value expectations are the goods and conditions of life to which people believe they are rightfully entitled. Value capabilities are the goals and conditions they think they are capable of attaining or maintaining, given the social means available to them. (Gurr, 1970: 13)

Relative deprivation causes frustration that leads to aggression, including the desire to commit acts of violence. If individuals believe that violence is normatively justifiable, they will engage in a cost-benefit analysis to judge whether violence is profitable. However, in contrast to Olson, Gurr does not imagine an inverse relationship between the numbers involved in dissent and the personal incentive to take part. Indeed, Gurr would argue relative deprivations that are more strongly and widely felt are likely to engage larger groups of people in collective dissent. The greater the force, the greater the likelihood of success and, therefore, the greater the likelihood of individual participation after cost-benefit analysis. Furthermore, Gurr clearly believes in the collective incentive, or public good – reduced relative deprivation in this case – as the most important pull factor; without it, there would be no cause for conflict.

Interestingly, however, Merkl (1986), finds little evidence that participants in conflict actually represent their supposed constituency. Many groups that claim to represent certain downtrodden segments of society, are not likely to include many from those specific groups among their ranks. He concludes ‘whether it is the reaction of the Northern Irish terrorists on both sides to peace demonstrations or the assassination of Palestinian moderates by the PLO, it is impossible to escape the impression that the interests of the terrorists and that of their community are not quite the same, to say the least’ (Merkl, 1986: 354). This may suggest that most participants in collective dissent are opportunists, or in it for reasons other than a response to personal grievance.

Nevertheless, Tullock (1971) argues, in the first formalised model of the incentives to participate in collective dissent, that the individual contribution to the attainment of the public good is so minute that any utility derived from the public good obtained plays almost no part in an individual’s decision to rebel. In addition, Tullock introduces push factors from this type of employment into the equation, asserting that

‘the important variables [in his model] are the rewards and punishments offered by the two sides and the risk of injury during the fighting’ (Tullock, 1971: 92).

In modelling the likelihood of civil conflict Grossman (1991) assesses selective incentives but ignores collective incentives as pull factors and does not consider any push factors from either insurgency or productive employment. Roemer (1985) does introduce push factors from insurgency into his model of rebel recruitment but this seems to have been lost in more recent models of rebellion, perhaps for reasons of parsimony.

Thus, there are two key pull factors toward insurgency – selective incentives and group incentives – and, seemingly, only one toward productive employment – selective incentives. Push factors from insurgency have been considered but are often ignored in economic models, whilst push factors from productive employment remain entirely overlooked. Furthermore, current debate seems focussed on the role of just one of these factors – selective incentives.

A new focus on selective incentives

Perhaps because this factor is the easiest to observe – group feelings and expected risks being hard to quantify – current empirical research focusses on the implications of selective incentives for conflict dynamics. Weinstein (2005) argues that rebel leaders are concerned with attracting committed recruits; however, an information problem exists in recruitment such that the recruiters find it difficult to know whether or not a potential recruit is truly committed. A further complication is the use of selective incentives as a recruitment tool. Although this tool may help recruiters overcome the collective action problem, it also attracts opportunists, who are not truly committed to the fight. As a result, Weinstein posits that rebellions without

easy access to large financial resources attract more committed recruits. In a cross-case analysis of four African rebellions from the latter half of the 20th Century, Weinstein shows how recruitment strategies and the content of rebel armies does indeed appear to vary with the availability of resources.

On the other hand, Gates (2002: 113) adopts selective incentives to posit that ‘how a group positions itself geographically and how it is spread about an ideological or ethnic space determine and shape the organizational structure of a rebel group’. Again, focussing on selective incentives and disincentives, Gates postulates that a rebel leader – the ‘principal’ – is better able to detect and punish defection the closer a soldier – or ‘agent’ – is placed geographically to her. As the geographic distance extends the principal must increase the pecuniary benefits offered to potential recruits in order to secure their allegiance. The same is true of the ideological and ethnic space which rely on the use of functional and solidary rewards. Functional rewards are ‘the value associated with performing the task as assigned’ and are thus more likely to characterise the ideological movement, the members of which derive pleasure from fighting the good fight (Gates, 2002: 114). Distance in this instance is judged in terms of ideological difference between the group and the local community from which the potential recruits are drawn. Solidary rewards ‘stem from the camaraderie among members of an armed rebel group’ (Gates, 2002: 115). Members of insurgent organisations with an ethnic constituency are thus motivated by feelings of working together in solidarity with one’s brothers and sisters. Equally, members can punish co-ethnics for defection. This paper is particularly interesting because it introduces functional and solidary rewards as selective incentives; as opposed to predominant research, which relates ideology and ethnicity with conflict via grievance motivations (Fearon and Laitin, 2003; Gurr, 1970).

Collier and Hoeffler (2004) first dichotomised greed and grievance as motivations in rebellion; grievance being related to group motivations and greed covering the desire to gain from conflict through selective incentives. Using the likelihood of civil war onset as the dependent variable to model these relationships, they find support for economic incentives but little support for grievance factors. Further to this, Humphreys and Weinstein (2008) run a series of statistical analyses to test the competing theories using survey data from ex-combatants and noncombatants. Specifically, they pit indicators of grievance against selective incentives and disincentives. Contrary to the results of Collier and Hoeffler (2004), they find evidence to support each mechanism and suggest that, rather than being contradictory explanations of rebel recruitment, group and individual incentives are, in fact, complimentary.

Nevertheless, with the weight of evidence at the cross-national level behind individual incentives, this mechanism has achieved almost hegemonic status in current discourse. Rarely is rebel recruitment discussed without reference to selective incentives. Although alternative mechanisms continue to be theorised and tested, including altruism (Ginges and Atran, 2009), sacred values (Gómez et al., 2017), pleasure in agency (Wood, 2003), and coercion (Eck, 2014), selective incentives remain our go-to explanation of individual involvement in civil conflict. However, selective incentives are rarely considered beyond wages or looting. The following section will explain why it is believed we must expand our thinking.

Theory

On a fundamental level, the offer of selective incentives by insurgent organisations to its recruits is an attempt to tip the scales on a balance of living

standards in favour of insurgent action. The aim is to make the potential fighter believe that their general standard of living will be higher during or after insurgency than in productive employment. We must, therefore, not assume that cash and looting are the sole economic incentives that can influence an individual's decision to join a rebellion (Arjona and Kalyvas, 2012; Azam, 2006; Collier and Hoeffler, 1998; Dube and Vargas, 2013; Grossman, 1991; Ross, 2004a; Sanín, 2004). We must take into account all types of benefits, including items as simple as food and water. If a rebel group can secure the subsistence of its fighters in a situation of low food security, they are likely to find a queue of individuals willing to sign up. Indeed, many guerrilla groups do not pay wages, promising instead rewards upon victory. It is also true that not every rebel group engages in looting. If these soldiers are not paid, nor are they accumulating material wealth, then it is argued here that the material benefits, which incentivise individuals, must include a wider array of elements.

Moreover, we must not forget the push factors of any occupation. The current literature is limited to comparisons between pull factors from insurgency and productive employment. Whilst some push factors from insurgency are considered, push factors from productive employment are overlooked. In their most basic form these push factors may be considered to be the physical, mental and emotional effort involved in each occupation. A farm labourer, who ploughs the land and collects the harvest engages in more physical effort than an accountant sitting in an office. Though, simultaneously, the accountant expends more mental effort in the calculation of profit and loss than a farm labourer tilling the earth. Emotional effort is characterised here as stress, which includes stress induced by dangerous occupations. For purposes of simplicity it is assumed here that the push factors from any occupation are perceived

to be increasing as physical, mental and emotional effort rise; that is, they are inversely related to utility.

When individuals make their choice to rebel based on material incentives, they consider both the present and future costs and benefits associated with each occupational option that will influence their standard of living – they assess the relative returns. But what are the options open to the average individual contemplating employment in insurrection? Most studies that have modelled the opportunity cost have done so with gross domestic product (GDP) per capita (Collier and Hoeffler, 1998, 2004; De Soysa, 2002), suggesting that the opportunity cost of rebellion is any other occupation in the productive economy. However, this is incredibly unlikely to be the case. Most rebellions begin and thus recruit in the rural areas of the state; areas where education is often not universal nor compulsory up to adulthood. Indeed, there is a great deal of evidence that rebellion and recruitment occurs in communities characterised by poor education (Barakat and Urdal, 2009; Collier and Hoeffler, 2004; Thyne, 2006). An individual in such a community is unlikely to have a wide set of career choices at any one time. The most likely alternative option to rebellion is employment in agriculture.

With this in mind, it can be said that an individual, incentivised by material benefit, will join a rebellion if they perceive the relative returns from joining it are higher than the relative returns from agricultural employment. We should, therefore, expect that decreasing returns from agriculture may tip the balance of living standards in favour of rebellion. This leads the chapter to its hypothesis:

H1: As the relative returns from agricultural employment appear to fall, individuals are more likely to join a rebellion.

Research Design

Case selection

In order to test the hypothesis presented, this chapter will use the case of the Colombian internal conflict. The case is chosen because of the availability and relative reliability of data sources. This case is an excellent example to analyse because it appears to be an extremely hard test for such an explanation of rebel recruitment.

Contrary to the large body of literature that finds support for the selective incentives mechanism as an explanation of rebel recruitment at the cross-national level, primary research analysing the Colombian internal conflict appears to show little evidence for the strength of such a mechanism. Indeed, Sanín (2004: 258) makes the bold suggestion in his paper examining the case of recruitment into the Armed Revolutionary Forces of Colombia (FARC) and the National Liberation Army (ELN) that ‘contemporary civil wars simply don’t fit into the greed and grievance dichotomy’. In this article, Sanín reviews evidence against the case for selective incentives as an explanation of recruitment, citing evidence such as salaries not being paid to members, soldiers being forbidden from looting, control over personal lives of recruits being pervasive and strict, and membership being for life. ‘People enlist in guerrillas following a mélange of motivations – vengeance, prestige, fear, hate, even excitement, where strictly materialist ones do not always appear... This is common knowledge for both recruiters and recruited’ (Sanín, 2004: 272).

Primary evidence from others appears to back up Sanín’s position. In his interviews of 42 ex-guerrilla fighters Florez-Morris (2007: 620–623) noted the following reasons for joining the fight: ‘concern regarding socioeconomic injustice and inequality, and a desire to improve these situations’; ‘Communist, Theology of

Liberation, and nationalist ideals'; 'previous experiences in grass-roots organizations'; 'the revolutionary climate of the era'; 'the individual's contact with political propaganda espousing socialist ideals'; 'excessive use of police force in response to legal demonstrations' and 'threat of 'disappearance,'; 'influence of peers'; 'family attitudes'; 'personal journey of self-improvement'; 'being able to learn about others who were involved in illegal activities and were not caught by the police'; and 'religious motivation'. This list is long and varied. It is also typical of the range of motivations reported in other studies (Arjona and Kalyvas, 2012; de Posada, 2009; Ribetti, 2007).

Indeed, Arjona and Kalyvas (2012) use such surveys of ex-combatants from both guerrilla groups and paramilitaries to directly argue against selective incentives as a motivator in participation. They noted that one-third of respondents in all groups did not give much thought to the decision to join up, suggesting in the authors' view that a cost-benefit analysis was unlikely to have taken place. They also note that material incentives were much more likely to have been mentioned by ex-paramilitaries – up to 57% - compared to ex-guerrillas. The authors again suggest that this shows little support for the opportunity cost argument as the impact is not uniform across the groups. Finally, they also report that only 3% of respondents were without employment at the time they enlisted and so must have been receiving an alternative wage and thus material incentive not to participate. On the other hand, the authors offer no explanation for 'material incentives' reported in interviews. Especially given that they seem so ready to dismiss selective incentives as a driver in rebel recruitment, this appears to be an oversight.

Finally, in her study of former combatants, Ribetti (2007: 709) finds that most members' decision to participate in the Colombian internal conflict was a choice

‘lightly made’. There was, therefore, little place for an extensive cost-benefit analysis. Ribetti concludes, quoting Cribb (1991: 27), that insurgency in Colombia appears to be ‘a profession chosen fairly early in life as an alternative to the mundane existence of a peasant rather than a desperate measure into which an impoverished peasant might be forced’.

Judging by the findings of this research, there should be little evidence to be found from the Colombian case in support of the above mentioned hypothesis. Yet it is precisely because these authors focus too narrowly on selective incentives as cash or looting that they overlook the impact of the variety of push and pull factors. Whilst it is true that actors such as FARC and the ELN did/do not pay salaries nor allow the accumulation of other material wealth, during interviews with former insurgent soldiers, several researches have noted reasons for joining these groups that include material benefit (Arjona and Kalyvas, 2012: 154; Florez-Morris, 2007: 631; Ribetti, 2007: 709). If this does not include wages and looting, then it must include other benefits. This suggests that a more fundamental assessment of living standards within each occupation, and consideration of a wide array of push and pull factors may be in play.

Indeed, Ribetti (2007) notes:

Though the primary motivations are different, *all informants* mentioned that joining the guerrillas seemed to be the best option available to them, given their personal circumstances, their wants, and the lack (true or perceived) of viable legal alternatives. Indeed, they thought and were lured into believing that joining would provide for all they needed in exchange for seemingly easy tasks. Other, legal, choices that might have

been available were perceived to involve harder work, and to be less profitable and predictable, or plainly boring. [*Italics added for my emphasis*] (Ribetti, 2007: 709)

Given the a priori uncertainty around the likelihood of success when testing the hypothesis presented above, Colombia is therefore considered to be an excellent case for this chapter to analyse.

Case study

Colombia has struggled with state weakness for over a century (Acemoglu et al., 2015). The current *ongoing* conflict in Colombia can be traced back to the 1960s when three insurgent organisations were founded. These were FARC, ELN, and the Popular Liberation Army (EPL), all of which were left-leaning movements. These movements were joined by M-19, another leftist group, in 1970. The most important of these organisations, in terms of size and number of attacks, were FARC and the ELN. On 24 November 2016, the largest group by far, FARC, signed a peace agreement with the government. At the time of writing, the ELN is currently still in open conflict with state forces; the EPL remains but only as a ghost of its former self after a large demobilisation process in 1991; and M-19 is no longer an active group having signed a peace treaty with the state in 1990.

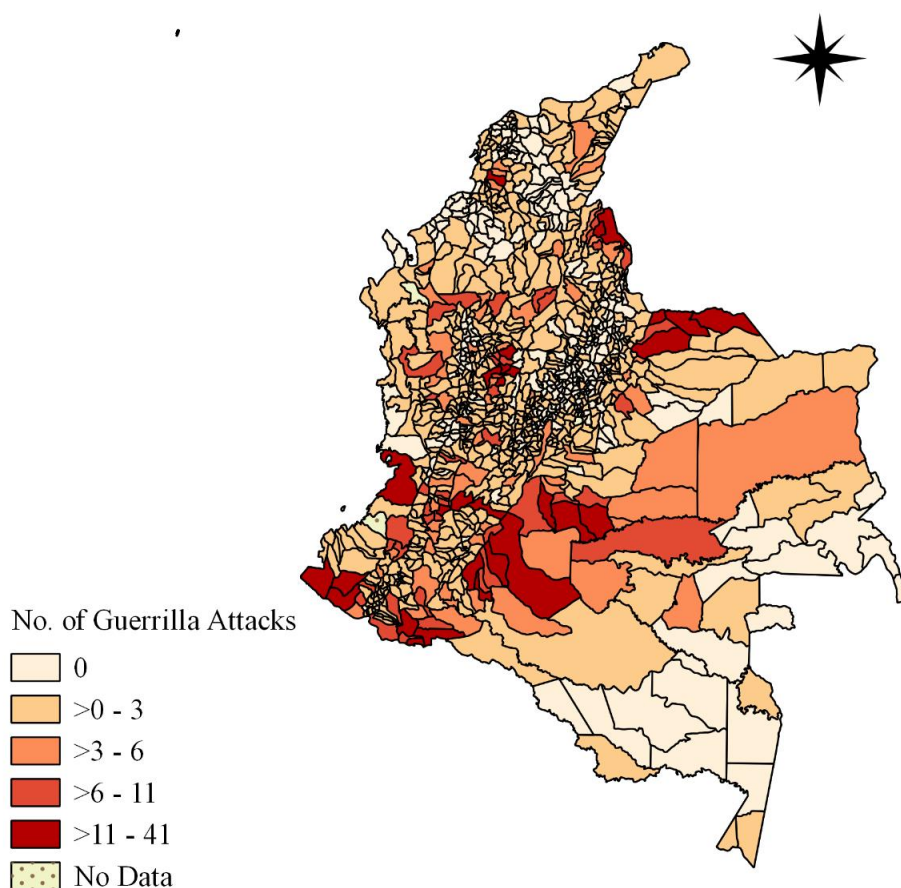
FARC and the ELN have a great deal in common (Sanín, 2004): neither organisation pays salaries or allows the accumulation of personal wealth (Arjona and Kalyvas, 2012: 156; de Posada, 2009). It is therefore, considered possible to aggregate the activities of these two groups into one ‘insurgency’. This will allow for maximum variation in the dependent variable described below. Furthermore, as we know that

neither group provides the traditional selective incentives outlined in previous literature, material incentives to join these groups must be the result of a more general comparison of the standard of living both within and without the organisation. This comparison is likely based on recruits' previous experience and knowledge of the rebel group. There is evidence to show that FARC has provided both private and public goods to individuals and communities in Colombia (Arjona, 2016). From road and accommodation building for communities to bundles of groceries and even paying for taxis so that expectant mothers can get to medical facilities when they are in labour, FARC has sought to encourage support and enlistment by winning over individuals and groups with selective incentives. It is exactly these non-monetary incentives that this chapter theorises entices people to join guerrilla organisations.

The conflict has been further complicated by the generation of several paramilitary organisations. Established initially with objectives to defend civilians and businesses against the guerrilla groups, the paramilitaries have quickly become as troublesome as the guerrillas themselves in terms of violence against civilians and narco-trafficking. The largest of these groups was the United Self-Defence Forces of Colombia (AUC), which operated from 1997 to 2006. Although this group ostensibly demobilised in 2006, several of its former fighters established new paramilitary groups or have re-joined others. At present the government's focus is on agreeing peace terms with the guerrilla groups. Though, it is likely that the focus will shift to outlawed paramilitary groups if an agreement is reached with the ELN.

Figure 1 below is a map of Colombia showing the average number of guerrilla attacks by municipality from 2002 to 2008 (the sample period). It shows that the internal conflict within Colombia is spread widely across the country and is not

Figure 1. Average number of guerrilla attacks by municipality, 2002-2008



concentrated in isolated pockets; guerrilla groups operate and recruit from every corner of the country.

Dependent variable

Unfortunately, as with all cases of civil conflict, fine-grained and reliable data on rebel numbers and recruitment is not possible to obtain. These groups have obvious incentives to hide their true power from the enemy and thus do not make this information public. Although some figures do exist, these are not regarded as highly accurate and are numbered in thousands only as estimates of country-wide guerrilla

size. Therefore, the dependent variable must instead be measured by a proxy: the number of guerrilla attacks with the aim of expanding territory in each municipality. The principal is that as rebel groups grow they are increasingly able to engage in offensive actions to expand and control wider areas. Indeed, most guerrilla groups lack the technology, such as aircraft or advanced weapons systems, to expand when troop numbers are low. Therefore, guerrilla group territorial expansion, as opposed to state expansion, is considered to correlate highly with troop numbers. Thus, the chapter will measure increasing recruitment at the individual level through an increasing number of attacks at the group level, in line with previous studies that model recruitment (Berman et al., 2011; Dube and Vargas, 2013; Regan and Norton, 2005; Vadlamannati, 2011).

In the primary model that follows, recruitment is proxied by the number of guerrilla offensive actions taken in order to ‘promote or generate an advance in their fronts of struggle’ (CEDE, 2017a: 33). The indicator is sourced from the Panel Conflict y Violencia of the Panel Municipal del CEDE, a dataset compiled by El Centro de Estudios sobre Desarrollo Económico (CEDE) from various sources (CEDE, 2017b). The specific variable used in this study was originally obtained from the Colombian Ministry of Defence.

Independent variables

Individuals are extremely unlikely to answer truthfully when asked about their economic reasoning for joining a revolution. Social norms and present incentives mean that they are far more likely to cite socially ‘acceptable’ reasons, such as ideology, public good, or prior wartime experience, and to omit socially unacceptable reasons. Thus, the dependent variable, insurgent recruitment, cannot be modelled accurately using individual survey responses. The relative returns from agricultural employment

will be proxied by agricultural gross domestic product (agricultural GDP) measured at the municipal level. As agricultural GDP rises, it is expected that the relative returns from agricultural employment are also rising within that municipality. As agricultural GDP falls the relative returns from this employment also fall, pushing individuals out of productive employment as the relative returns from insurgency no longer appear so unfavourable in comparison. GDP minus agricultural GDP will also enter the model to proxy for opportunity cost as other alternative forms of employment. Both indicators are sourced or calculated using data from the Panel Características Generales of the Panel Municipal del CEDE. GDP indicators were collected by CEDE from Torres, Eljaiek and González (2012) and cover the period 2000-2009.

Unfortunately, GDP is not calculated at the municipal level by the state; Torres, Eljaiek and González have, therefore, calculated it given GDP figures from the department level using relevant data that is available at the municipal level to calculate each municipality's share of this departmental figure. Agricultural GDP is calculated using data on the annual cultivated area of each municipality measured in hectares. This does assume that the income from any agricultural product is equal; however, the effect should be averaged across municipalities. GDP is calculated including data from the 2005 population census, which also counted the number of private non-agricultural companies in each municipality. Using this information, Torres, Eljaiek and González approximate non-agricultural GDP by municipality, which can then be added to agricultural GDP to give total GDP per municipality. Again, this assumes that the income from each firm is of equal value. This does introduce some bias in the figures; however, it is expected to be equal for all municipalities and, with such a large number of them to average across, the impact on the final model is expected to be limited.

Figure 2. Average agricultural GDP by municipality, 2001-2007

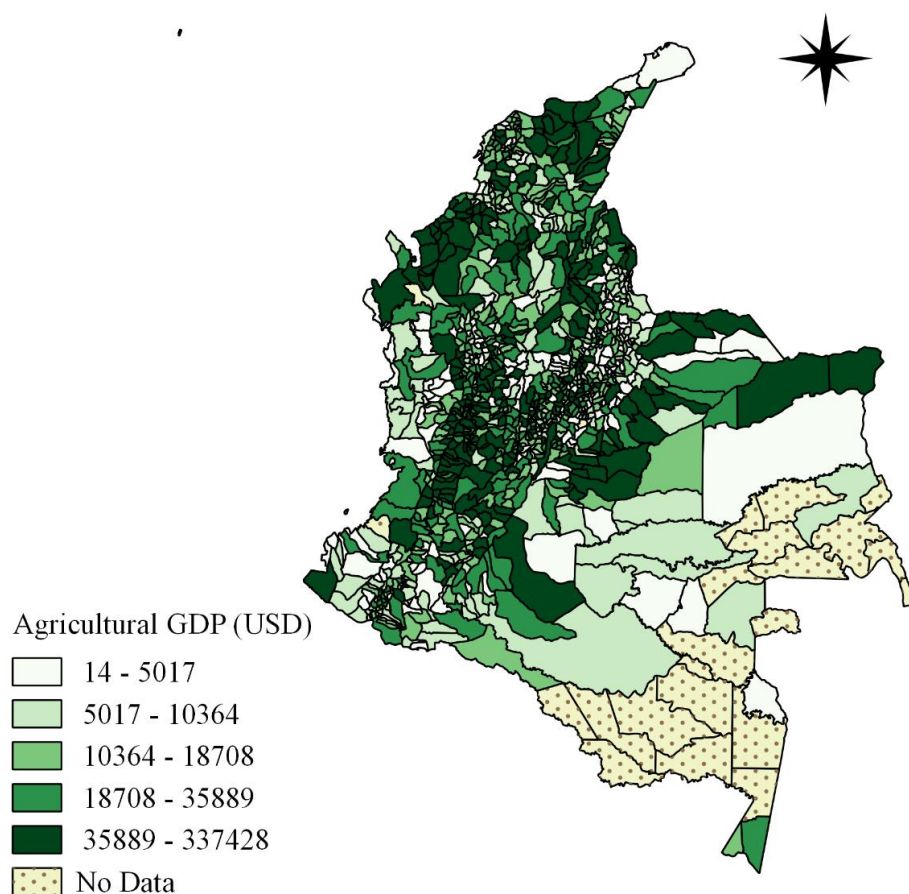


Figure 2 above shows the average agricultural income by municipality from 2001 to 2007. When compared with Figure 1 above, agricultural income does not immediately appear to correlate with regions most or least affected by conflict. This suggests that any relationship found between the two variables is likely to represent a true dynamic relationship between variation in relative returns from agricultural employment and rebel recruitment. That is, it does not appear to be a spatial phenomenon.

Control variables

Control variables will include coca production, the number of kidnappings conducted by the guerrillas, the population of the municipality and time. Since the early 1980s coca production has become a key element in the revenue generation of both guerrilla and paramilitary groups in Colombia. This lucrative agricultural product has been noted as a motivator for FARC expansion into new territory (Cook, 2011: 22). Converting land use from legitimate agricultural production to coca cultivation and vice-versa will affect the licit agricultural income as measured by agricultural GDP. Therefore, it must enter into the model as it is a potential confounder. Data on the area covered by coca cultivations is obtained from the Empirical Studies of Conflict Project (ESOC, 2017), which compiled the data from the SIMCI census (supported by the United Nations Office on Drugs and Crime).

Insurgent movements, as opposed to military coups, are costly endeavours. They thus have an incentive at the group level to expand in order to increase the taxable territory under their control. In order to account for this incentive, an indicator of the number of kidnappings conducted by the guerrillas will enter the model. It is assumed here that an imperative to increase rebel financing will include both kidnappings and expansion without prejudice. Therefore, controlling for kidnapping should remove some of the influence of the rebel imperative to gain additional financing opportunities. The variable is obtained from the Panel Conflict y Violencia of the Panel Municipal del CEDE (CEDE, 2017b), and is a count variable which ranges from zero to eight.

The log of municipality population will enter the model to account for the scale effect as the dependent variable of guerrilla attacks is likely to become larger as the population increases. Larger populations also allow for greater GDP and so, population

should enter the model as a control. Population data is also taken from the Panel Características Generales of the Panel Municipal del CEDE.

Finally, given the temporal nature of the data, all models will include year fixed effects to ensure they are robust to linear and unit specific time trends caused by year-specific shocks and temporal dependence.

Method

The hypothesis presented above is a dynamic argument concerning variation across time rather than space. For this reason, fixed effects models are used. As with many studies that analyse the interaction of social and economic variables, it is difficult to entirely rule out reverse causality. Barring the use of an external instrumental variable, the only possible course of action is to make the results more robust by finding alternative specifications that make the test harder. In this case relevant independent variables will be lagged by one year to further strengthen the likelihood that events in the past are having effects on the future and not the other way around.

The dependent variable of guerrilla offensive actions is a count variable. It is also characterised by a large number of zero observations. Unfortunately, a random effects zero-inflated negative binomial model does not exist. This leaves Poisson regression, negative binomial regression and linear regression with a logged dependent variable (plus one). Given that linear models have been shown to produce the most consistent parameter estimates, the linear model is thus chosen (Angrist and Pischke, 2009).

Data on guerrilla attacks from the Panel Municipal del CEDE is available from 1993 to 2008. Reliable data on the level of coca production, however, is only available

from 2001. As this variable is lagged, the time period covered in the final model is restricted to 2002-2008. The unit of analysis is municipality-year.

Results

Table I below shows the results of the primary analysis. Model 1 excludes GDP per capita as the alternative opportunity cost of rebellion to test the individual relationship between agricultural GDP and the number of attacks. In this model, agricultural GDP has a coefficient of -0.14 and is statistically significant at the 1% level. The negative relationship between agricultural GDP and the number of attacks is as expected given the hypothesis.

Model 2 includes Other GDP per capita. In this model, the substantive and statistical significance of agricultural GDP has not changed, remaining statistically significant at the 1% level. Other GDP per capita, as the alternate opportunity cost of rebellion, has a positive coefficient, though it is far from statistically significant. Model 3 reports the results of the primary analysis after the exclusion of an influential case – the capital city of Bogotá. Removing this influential case has strengthened the relationship between agricultural GDP and the number of attacks.

Table 1. The opportunity cost of rebellion

	Model 1 Number of Guerrilla Attacks _b	Model 2 Number of Guerrilla Attacks _b	Model 3 Number of Guerrilla Attacks _b
Agricultural GDP _{a, b}	-0.14*** (0.03)	-0.14*** (0.03)	-0.23*** (0.06)
Other GDP _{a, b}		0.02 (0.11)	0.03 (0.11)
Coca Production _a	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Population _{a, b}	-0.27* (0.16)	-0.27* (0.16)	-0.30* (0.16)
Number of Kidnappings	0.14*** (0.01)	0.14*** (0.01)	0.14*** (0.01)
Constant	-0.78 (1.54)	-0.99 (1.88)	-0.51 (1.90)
Observations	7,678	7,678	7,671
AIC	8501	8503	8482
Number of municipalities	1,097	1,097	1,096

Standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.1. a denotes the variable is lagged by one year; b denotes that the variable is logged. Year fixed effects omitted from table.

It is interesting to note that the number of kidnappings is highly statistically significantly correlated with the number of guerrilla attacks as suspected. This relationship does not vary between any of the models, suggesting that this variable is accurately capturing the rebel incentive to expand in order to increase financial viability. Coca production is statistically significant at the 1% level in all models and negatively correlated with the number of guerrilla attacks.

Figure 3. The effect of agricultural GDP on the number of guerrilla attacks

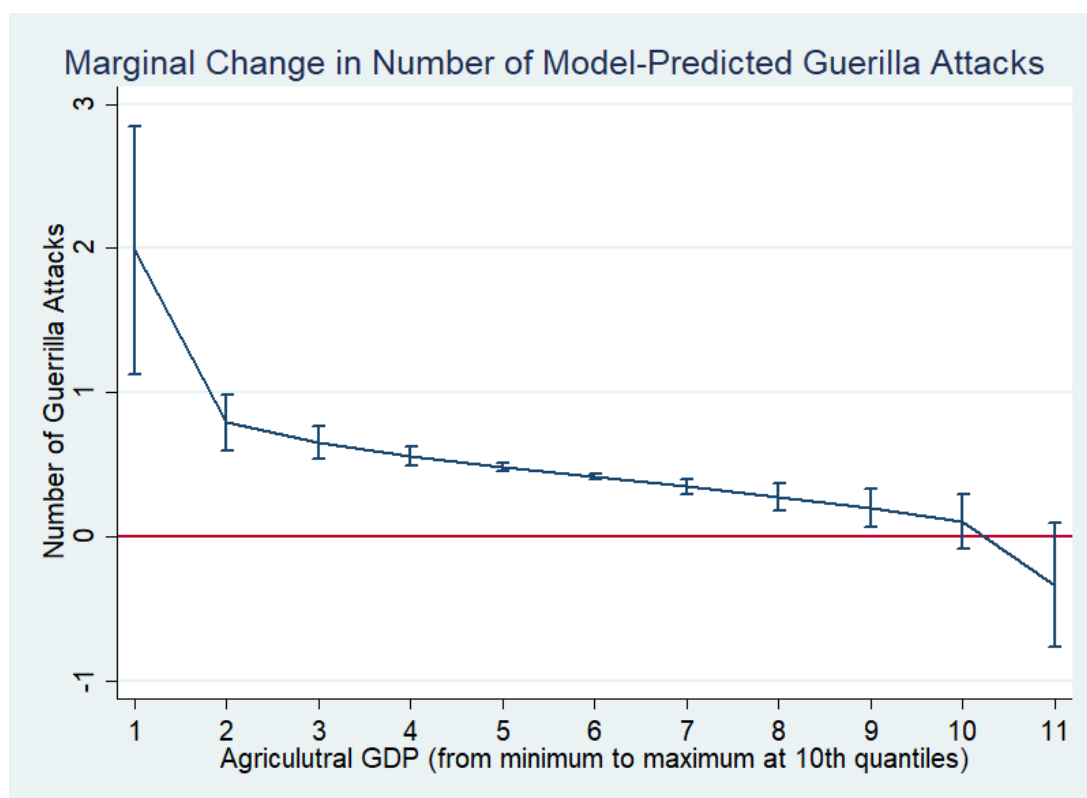


Figure 3 presents the marginal effects of agricultural GDP on the number of guerrilla attacks. The graph shows that as agricultural GDP moves from its minimum to its maximum in this sample there are fewer and fewer predicted guerrilla attacks as expected.

Discussion

Primary results

The results presented above show clear support for the hypothesis, even though the Colombian internal conflict is a very difficult test for this theory. As the relative returns from agricultural employment appear to fall, individuals are pushed from productive employment into insurgency. This can be concluded as we know that pull

factors from insurgency that encourage individuals into guerrilla groups do not exist in Colombia. This finding provides further evidence that selective incentives (both positive and negative) have a role to play in rebel recruitment (Lichbach, 1998; Popkin, 1979; Tullock, 1971). However, the evidence does not support the predominant interpretation of the opportunity cost of conflict as *any* alternative occupation in the productive economy (Collier and Hoeffler, 1998; Grossman, 1991). Indeed, the strength of relative returns from agricultural employment (agricultural GDP) compared to relative returns from any other employment (Other GDP) suggests that the true opportunity cost of rebellion is agricultural employment.

Moreover, these findings provide support for the mechanism of selective incentives as a driver of rebel recruitment in Colombia in contrast to previous findings (Arjona and Kalyvas, 2012; Florez-Morris, 2007; Ribetti, 2007). Evidence presented here suggests that we must re-envisage cost-benefit analyses as between levels of living standards in each occupation. Furthermore, it is simply not enough to consider incomes in the form of wages or looting. We must consider a wider range of push and pull factors associated with each employment, such as physical, mental, or emotional effort. On the other hand, and in line with the argument of Sanín (2004) this evidence does not support the vision of opportunistic, greedy rebels, out for what they can get (Collier and Hoeffler, 2004). The fact that guerrilla groups in Colombia do not pay wages or allow the accumulation of personal wealth suggests that the incentive here is to find an alternate means of living that simply maximises utility given other available options.

The relationship between relative returns from agriculture and rebel recruitment could explain why unemployment has previously been found to be such a poor indicator of civil conflict (Arjona and Kalyvas, 2012; Berman et al., 2011) – those who work in agriculture are unlikely to form the unemployment statistics when times get tough.

Official statistics are much more likely to cover urban areas, or count only those without any hours of work in the week. As many agricultural jobs are characterised by variable demands from employers, it is possible that many agricultural workers will not present in the unemployment statistics.

Nevertheless, it should not be concluded that the findings presented here preclude other individual motivations to engage in conflict (Arjona and Kalyvas, 2012; Florez-Morris, 2007; Ginges and Atran, 2009; Gómez et al., 2017; Ribetti, 2007; Sanín, 2004; Sanín and Wood, 2014; Wood, 2003). Nor do they imply that solving the collective action problem is the only way to enable recruitment. It is perfectly possible that other mechanisms are simultaneously present (Gurr, 1970). The models presented above are not intended to consider every potential motive and pit them against each other; they are designed to test the hypothesis only. The variety of microfoundations of recruitment in conflict is acknowledged; however, the above evidence suggests that some macro-theories can help us to understand civil war dynamics – selective incentives should not be discounted from our understanding of conflict.

Furthermore, the choice to rebel may be a quick decision on occasion (Arjona and Kalyvas, 2012; Cribb, 1991; Ribetti, 2007); yet this does not mean that it is not a rational one. If information or misinformation is freely available long before the time has come to make a decision, it can still weigh on that decision. For example, most people in prison do not enjoy the experience and, when offered parole, do not usually take long to make up their minds; this does not mean that their experiences in jail thus far have not weighed heavily in that snap decision. Assessments of living standards are made on a day-to-day basis and are regularly compared to others. This means that at any time the decision to change a life direction does not have to be arduous or irrational if made quickly.

Although H1 has been tested on the case of Colombia, push and pull factors from employment exist in every country; they are not specific to Colombia. It is also true that many guerrilla groups recruit in regions far from major cities. It is likely that many potential insurgent recruits face a similar situation as in Colombia, with their true opportunity cost likely to be restricted on some level to agricultural employment. To test this, an indicator of conflict incidence from 1961-2014 (Gleditsch, Wallensteen, and Eriksson et al., 2002; Pettersson and Wallensteen 2015) was regressed on an indicator of agriculture, forestry and fishing income as a percentage of GDP obtained from the World Bank (World Bank 2019). Results of this regression show that an increased dependence on this type of income is statistically significantly positively correlated with conflict incidence. The mean of the residuals of the linear prediction is 0.37; the mean for Colombia is 0.29, suggesting that the case of Colombia is not an outlier.

This theory is therefore considered generalisable across a wide array of states. Whilst it has been tested here on conflict dynamics, the theory is believed to be equally applicable to conflict onset situations; the true opportunity cost of conflict is present both before and during fighting. The only difference being, perhaps, that information as to the living standards within insurgency is more readily available after conflict has started. Before onset, the judgement of living standards within the rebel group would have to be based on expectations alone. Nonetheless, further research is required to replicate this study in other country settings.

Alternative interpretations and additional observations

In order to take a closer look at the mechanism involved, agricultural GDP is used to predict an indicator of unsatisfied basic needs (UBN). The variable ‘seeks to

locate the lack of goods and services in households, that are considered basic or essentials for living in a determined place and time' (Villamizar, n.d.: 2). This variable is collected from various sub-indicators during the Population and Household censuses. As these are only carried out infrequently, the closest observations are 2000, 2005 and 2011. For the purposes of this analysis the missing observations were interpolated. Because of the restricted nature of this data, which does not allow for detailed over-time analysis, it is not included in the primary analysis of this chapter.

However, evidence found here suggests further support for the mechanism presented above. When UBN is regressed on agricultural GDP controlling for Other GDP, population and conflict presence, agricultural GDP is a highly statistically and strongly substantively negatively correlated with UBN.² Therefore, as the incomes from agricultural employment fall, life is equally getting harder with more and more unsatisfied basic needs. In a situation of reducing returns from agricultural employment and falling living standards, it is not surprising that people turn to a job they may see as providing an increase in living standards, no matter how moderate. It is also interesting to note that in this analysis Other GDP is not significantly correlated with UBN. This suggests further that all incomes are not generally associated with the true drivers of potential discontent.

The relationship between relative returns from agricultural employment and the incentive to join an insurgency may, at first sight, appear similar to the argument of Scott (1976). One could argue that subsistence crises are causing increases in rebel recruitment (De Soysa et al., 1999; Messer et al., 2001; Scott, 1976). However, the evidence does not support the analysis that hunger drives aggrieved individuals to spontaneously act together. Indeed, there is no evidence to support this mechanism in surveys of ex-combatants, i.e. to the knowledge of this author, no-one has reported the

threat of starvation as their motivation to join the insurgency (Arjona and Kalyvas, 2012; Florez-Morris, 2007; Ribetti, 2007). Evidence presented here, thus, supports the theory of selective incentives and assessments of living standards as a solution to the collective action problem that allow for rebel armies to recruit and not acute subsistence crises.

A strong relationship between GDP and civil conflict has previously been associated with state capacity as a mechanism through which conflict dynamics can vary (Collier and Hoeffler, 1998; Fearon and Laitin, 2003; Grossman, 1991). Whilst, the conventional measure of GDP is not statistically significant in any of the models, this does not imply no support for this argument. Indeed, it is unlikely that GDP disaggregated at the municipal level is linked with a state's ability to defend. This public good is paid for by each municipality but its use is not contingent upon their individual contribution. Therefore, whilst an influence of state capacity on conflict dynamics cannot be ruled out, it is not expected to bias the municipal level analysis beyond random variation.

The fact that guerrilla groups in Colombia do not pay salaries nor allow the accumulation of personal wealth appears to make recruitment about an assessment of alternate living standards. This allows recruiters in Colombia to use selective incentives, whilst at the same time discouraging opportunists. If this scenario were found to be present in most rebel organisations – that is, if most are found not to pay regular salaries – this could evidence the rebel's solution to the problem of opportunism raised by Weinstein (2005).

Finally, it is interesting to note that the indicator of coca production levels is negatively correlated with the number of attacks. This is likely because farms are sometimes converted to coca after occupation by rebel forces. As territory is

consolidated, the number of attacks in order to expand borders in that vicinity is likely to fall. Therefore, the amount of coca farmed is likely to have an inverse relationship with the dependant variable. The other possibility is that this observed relationship reflects cooperative plunder (Ross, 2004a), which has been reported on occasion in Colombia (Otis, 2014: 6).

Checks of robustness

The results presented from Model 3 are robust to the inclusion of alternate control variables, including an alternatively sourced indicator of coca cultivation, year splines in place of year fixed effects, the removal of large urban areas, and the inclusion of municipality size.³

To ensure that the results are not being driven by a previously discovered relationship between coffee production and the opportunity cost to rebel (Dube and Vargas, 2013), model 3 was re-examined excluding all coffee producing municipalities. Even though this reduces the sample by half, agricultural GDP becomes substantively and statistically stronger in this model. This shows that the relationship between the relative returns from agriculture and rebel recruitment in Colombia are not contingent on its main cash crop. This also suggest that the relationship found in Dube and Vargas (2013) may reflect the mechanism presented here, rather than the more general opportunity cost argument to which they point.

FARC and the ELN have been seen to have differing tactics when it comes to selecting targets. The ELN is more commonly associated with targeting economic and state infrastructure, whilst FARC is more commonly associated with military and public targets. The difference is primarily a result of their income streams. To ensure that this is not affecting the results presented in Table I, the combined variables were

separated out into FARC and ELN specific, where appropriate. Results presented in the appendix show that this has not affected the interpretation of results presented above.

It is possible that paramilitary presence may encourage guerrillas to engage in attacks in order to remove these elements from the area. At the same time, paramilitary presence may affect agricultural GDP by enforcing conversion of land to coca or otherwise attacking farmers believed to be collaborating with the guerrillas. To ensure that this is not affecting the results presented in Table I, an indicator of paramilitary presence was added to Model 3 as an additional control. The inclusion of this variable did not alter the substantive interpretation of results presented above.

Finally, it could be argued that reverse causality is driving the results, even after the key independent variables have been lagged by one year. This is because actual and potential attacks in a municipality could suppress GDP. To further strengthen the case made for the direction of causality, agricultural GDP as a share of total GDP was used as an alternate key independent variable. Such a measure should be much less susceptible to the issue of reverse causality as a downturn in total GDP, with limited impact on relative shares, is not expected to vary significantly with rebel attacks across all observations. Results from this model show no substantive difference from those presented in Table I above.

Conclusion

This chapter set out to assess the true opportunity cost of fighting as a rebel in civil conflict. It presented the concept of push and pull factors as driving forces in the decision to take up a certain type of employment and explained how push factors from productive employment have previously been overlooked in models of rebel recruitment and civil war. It presented a case in which it is conceivable that relative

returns from employment in the legal economy may be worse than employment in rebellion, especially if that employment is restricted to agriculture. Using the case of Colombia, the research presented evidence to show that as the relative returns from agricultural employment appear to fall, individuals are more likely to join a rebellion. This suggests that the true opportunity cost for rebellion is agricultural employment and not any other type of employment, as previously modelled.

The results supported previous theories that link selective incentives and rebel recruitment (Dube and Vargas, 2013; Lichbach, 1998; Popkin, 1979; Tullock, 1971) and diminished reports that claim such macro-incentives do not apply (Arjona and Kalyvas, 2012; Florez-Morris, 2007; Ribetti, 2007; Sanín, 2004). Nevertheless, we must adjust our conception of selective incentives to include a fundamental assessment of living standards including push and pull factors from each type of employment.

The finding that agricultural employment most specifically relates to rebel recruitment implies that rises in income from other sectors may make little difference in the choice to rebel. Countries that rely on agriculture are, therefore, most likely to suffer from conflict. In such countries, more needs to be done to increase mobility and education, which will allow members of the agricultural workforce to exit the rural economy when times get tough, without necessity for seemingly desperate acts, such as joining an insurgent group.

Notes

1. This is because public goods are non-rivalrous and non-excludable; once it is attained, all in the group can benefit from its provision, whether they participated in the attainment of it or not.
2. See Table B1 of the appendix for full results.

3. For results of the models discussed in this section see tables B2-B4 of the appendix.

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Chapter 3. Watching the Bottom Line: Mercenary tendencies in anti-insurgent militias

Abstract:

Recent work has highlighted that militia groups are near ubiquitous in civil war. Yet, to date, we know precious little about their deployment strategies. When and why do militias focus their efforts in specific regions? Previous research suggests that militias are found where they originate, protecting their community. Alternatively, they operate in rebel strongholds as they pursue an offensive strategy. Yet, if they cannot do everything, what determines which territory they prioritise? This chapter helps to answer this question by suggesting that militias have a dual imperative to watch the bottom line and pursue anti-insurgent activities. The drive to secure funding for continued operation is a constant for any organisation, and militias are no different. This chapter posits that militias will thus offer their services as mercenary forces to the highest bidder in order to raise income. The hypothesis generated from this theory is tested using the case of the United Self-Defence Forces of Colombia, analysing data at the municipal level from 1997-2006. Evidence from the analysis suggests that militias do indeed prioritise activity in territory that fulfils both imperatives simultaneously.

Pro-government militias were present in 81% of country-years affected by civil conflict from 1981 to 2007 (Carey et al., 2013). Yet, research on militias has lagged far behind that on guerrilla groups. Recent works have attempted to redress this oversight by shedding light on militia group characteristics (Barter, 2013; Carey and Mitchell, 2017) and the causes of their inception (Degregori, 1999; Mazzei, 2009; Schubiger, 2017). However, we still know precious little about the strategies militias pursue during conflict. Where are they most likely to focus their efforts and why?

Common sense would suggest that militias will be found operating in the region of their origin. Yet beyond these communities, which external territories take priority? One suggestion might be that militias will prioritise territory where the rebels are most active, foiling their plans, routing them out or diminishing their capabilities (Barter, 2013). Nevertheless, militias are concurrently required to ensure that they have access to resources in order to launch and sustain their activities. Therefore, this chapter proposes that anti-insurgent militias follow a dual imperative: to both frustrate the enemy and secure resources for their continued operation. Militias that are not gifted with sufficient funding must seek alternative methods of raising money. The most obvious service that militias can sell on the side is security. Mercenary contracts may be obtained for protecting land, property or infrastructure. Hence, anti-insurgent militias looking to raise income are expected to prioritise their efforts in territory that is both claimed by the insurgents and contains valuable economic assets that require protection. That is, they prioritise territory that fulfils the dual imperative simultaneously.

The hypothesis generated from this theory will be tested using the case of the United Self-Defence Forces of Colombia (AUC). Statistical data at the municipal level from 1997-2006 will be used to allow for the assessment of characteristics that

influenced militia activity. As the research question is concerned with between-cluster variation, an appropriate random effects model is used to take unit heterogeneity into account (Bell and Jones, 2015; Rabe-Hesketh and Skrondal, 2008: 114–122). Results support the claim that the AUC prioritised territory in which they could fulfil both imperatives concurrently.

Previous Research

Defining militias

Just as rebel groups, militias come in multiple forms. Militias have previously been delimited along several dimensions regarding their relationship to the state, the local community and their strategies. With respect to the state, militia groups can sit along a spectrum from those directly supported with funding, resources and training, to those that are entirely independent (Barter, 2013; Carey and Mitchell, 2017). Militias can also vary with regard to their connection to local communities (Carey and Mitchell, 2017). Some may be community-based organisations that originate, operate and recruit from within, or they may have little community affiliation, recruiting and operating widely. Finally, regarding their strategies, militias can vary from defensive to offensive (Barter, 2013). Defensive militias are based in known areas and will protect it from infractions by insurgents. Offensive militias will travel to different areas, seeking out the rebels.

This chapter uses a broad definition of militia, as those discussed above could be described as sub-categories of the general phenomenon. When stripped back to their core, militias are essentially irregular armed forces. Militias can be raised by governments, local communities and even rebel groups. The groups that are the focus

of this study are, anti-insurgent militias. That is, their primary stated aim is to combat or defend against an insurgent group during a period of civil conflict. They can be raised by either the state or the local community. An insurgent group is here understood as an armed group that seeks cessation or makes maximalist claims on government. Militias are often referred to as ‘pro-government’; however, this chapter takes the wider ‘anti-insurgent’ definition in line with Jentzsch et al. (2015). This is because it is not believed that all militias necessarily support the view of the state or act in accordance with its wishes.

Locating focal points of militia activity in civil conflict

Where they start

Militias may be most active near their place of origin. The founding place of a militia can vary from the centre of a burgeoning urban sprawl to the depths of the jungle. Previous research has identified three key factors that may help to explain why militias are established in a certain locality and at a certain point in time. These are violence against civilians – perpetrated by either the state or rebel groups – the presence of localised ethnic communities, and localised state military weakness.

Works in rebel recruitment have suggested that indiscriminate violence against civilians perpetrated by the state in efforts to root out insurgents, dismantle supply lines and information channels, or to demoralise supporters drives civilians into rebel hands and increases recruitment as they try to take revenge or seek shelter (see: e.g., Goodwin, 2001; Kalyvas, 2006; Wood, 2003). However, this is not the only recruitment outcome of violence against civilians perpetrated by the state. Schubiger (2017) has shown that indiscriminate violence against civilians perpetrated by the government can also

increase militia recruitment. This may occur for two primary reasons. Firstly, communities facing this type of threat may establish militia groups to signal to the state that they do not support the insurgents and thus should not be the target of future indiscriminate violence by the government. Secondly, communities facing a lack of physical protection from authorities may seek to establish a militia that can provide order and security in a volatile and unpredictable environment. Using the case of Peru during the 1980's Schubiger finds statistical evidence to support her claims.

However, using the same case, other authors appear to have drawn different conclusions. Degregori (1999) and Kruijt (1999) primarily relate militia establishment during this period in Peru to the policies of Shining Path, including 'rough justice', an excessive use of violence, and a lack of respect for Andean Culture and traditional authorities. Whilst Degregori does note the violence against civilians perpetrated by state forces (initially indiscriminate and later discriminate), he does not seem to relate this directly to militia establishment. Rather, it seems, that communities chose the lesser of two evils – the state against the insurgents. Blocq (2014) supports Degregori's stance with an examination of militia group establishment during the second civil war in Southern Sudan. Here, Blocq again highlights a lack of physical protection afforded by authorities. Under these conditions, local leaders feel forced to defend themselves against insurgents.

Nevertheless, abandonment by the state alone may not be enough to overcome the collective action problem in group formation. To this end, ethnicity is also believed to play a role when communities in outlying areas have been abandoned by state forces. Ethnic groups may use their bonds of community to encourage militia establishment and participation (Barter, 2013). Examining the case of East Timor, Barter (2013: 86) argues that popular self-defence forces formed as a response to attempts of ethnic

cleansing by insurgent groups and a lack of state protection. It, therefore, seems that militias are more likely to be established in areas containing pockets of ethnic minority groups that are the direct target of insurgent violence.

Finally, militias may be directly established by the state in regions where it is militarily weak. In such areas, militias can be used as proxy forces to pacify a region in place of the state military (Eck, 2015). This would suggest that militias should also be found in regions that are lacking state military presence even when downtrodden minority populations are not present.

In contrast to these authors, this chapter also expects militias to be established within and found prioritising territory containing valuable economic assets. Anti-insurgent militias with a need to raise funds will know their best chances of success are based on their ability to accumulate the resources required to pursue an effective strategy. Basing a militia close to economic assets and supply networks is the simplest and quickest way to achieve this goal.

How they grow

Militias may attempt to promote themselves and recruit new members across a wide territory and this will occur with differing degrees of success, leading to higher recruitment in certain regions over others. Areas of high recruitment are likely to become power bases with a hive of militia activity. As the geographic distance from these hives gets larger the militia is less able to exert its influence on external forces. Hence, the methods by which militias recruit may also help to explain why they are most active in certain regions. Previously theorised factors affecting militia recruitment range from ethnicity, ideology, pre-existing social networks, to the presence of skilled labour.

Mueller (2004: 94) observes that ethnicity is not only a bottom-up motivator for militia establishment and recruitment, but can also be used by elites to recruit top-down. Indeed, he suggests that strongmen may use ethnicity as a simple delimiting factor to legitimise persecution of a random group of people for personal gain. Using ethnicity allows for the easy identification of in- and out-groups, which can then be used to target attacks and looting. This suggests that militias are likely to operate more heavily in areas populated with ethnic groups that match their own ‘brand’.

Perhaps equally strong an incentive to join a militia is shared ideology. Comparing the motivations of ex-guerrillas and ex-paramilitaries for joining respective groups in Colombia, Ugarriza and Craig (2013) find that ideology appears to play a role as those with a left-leaning background were more likely to have joined the guerrillas than the paramilitaries. Oppenheim et al. (2015) use the same case to study instances when individuals switch sides from guerrillas to militia groups or demobilise. They find that ideologically motivated guerrilla members were less likely to become militia recruits; yet, economically motivated members were more likely to be incentivised by a better offer from either the government or the paramilitaries. Sanín (2008) argues definitively that ideology and politics are not only the realm of guerrillas. He notes that paramilitary groups in Colombia have been known to instigate popular mass protests against certain state policies and that “officers and fighters more or less easily grasp the basics of some right wing principles” (Sanín, 2008: 24). Militias should, therefore, be found operating more heavily in areas populated with ideological supporters.

Amongst these personal motivations Mazzei (2009) notes that structural factors, such as previous social networks, can have a strong influence in militia recruitment. In her book, Mazzei explains that paramilitary groups tend to arise in states with a

tradition of authoritarian government and a regular use of repressive civilian groups that help governing elites to maintain control. It is when moderate elites outlaw such civilian groups in order to appease growing opposition movements and the international community that hardline elements are likely to turn to paramilitary organizations that will help them maintain the status quo of power and wealth for as long as possible. Mazzei (2009: 20) draws on McAdam (1988) and Snow, Zurcher, and Ekland-Olson (1980) to explain how it is the members and their close associates of the original civilian groups engaged in repressive activities for the state that are likely to make up the core membership of any new group.

Forney (2015) expands beyond the example of states that have a previous history with repressive civilian groups to suggest that all militias can use social networks to help overcome the information problem in recruitment. In his study of Sierra Leone Forney notes that some of the militia groups he studied used available resources to encourage recruitment and others did not. Yet, this did not lead to a high uptake of opportunistic recruits as hypothesised by Weinstein (2005). This is because both groups studied used systems of existing social networks to gather private information about potential recruits and so, were able to screen out the opportunists. A social network theory of militia recruitment would thus suggest that militias are likely to be most active in regions where social networks of skilled labour are pre-existing.

Finally, it has been observed that militias often recruit from police and military personnel, active and retired (Campbell and Brenner, 2002; Huggins, 1991). The training that these individuals have already received and the skills which they have picked up through years of service make them well placed to quickly add value to a militia organisation. This final theory suggests that militias may be found operating

more extensively in regions close to army training or billeting grounds as well as areas with a strong police presence.

All this being said, we also know that many individuals are attracted into conflict groups by the offer of selective incentives (Collier and Hoeffler, 1998; Olson, 1965; Popkin, 1979). The most obvious of which – wages – is likely to be highest in organisations that are well financed. It stands to reason, therefore, that militias able to secure well-paid mercenary contracts will attract more recruits. We should thus expect groups following their dual imperative to be more active in regions containing valuable economic assets, as this will allow them to pay the highest wages.

Watching the Bottom Line

Areas with vigorous economic activity, such as cattle ranching, emerald mining or oil production are magnets for both guerrillas and paramilitaries. As guerrillas target areas of high economic activity for extortion of “war taxes,” so do business people in these areas hire paramilitaries to protect their interests against the guerrillas. (Central Intelligence Agency, 1997: 4).

The above extract from a report of the Central Intelligence Agency regarding observations of conflict dynamics in Colombia neatly captures the reality of conflict proposed in this chapter. Indeed, it has long been established that insurgent groups will prioritise the conquest of territory containing lootable assets in order to pay higher wages to their troops or maximise their own personal wealth (see Ross, 2004 for review). Such a link has never been made with respect to militias. However, just as insurgents may be attracted to resource rich regions by the prospect of high revenue

streams, so may militia organisations. The only difference being that the militias take advantage of these areas to extract rents from ‘protection’ rather than direct control of the means of production.

Whether offensive or defensive, militia groups are likely to be found operating in regions containing something worth fighting for. However, militias that seek to expand their operation will require an income. This may be for the purchase of equipment and supplies, or to pay higher wages that will attract a larger pool of potential recruits. If funding is provided by a state actor, the problem is solved. If a state sponsor is lacking, militias will need to look for alternative options. In essence, anti-insurgent militias have a dual imperative: to both wage war on the insurgents and to raise revenues for continued or expanded combat activities.

The primary activity of an anti-insurgent militia is to defend a way of life. That is, anti-insurgent militias are reactionary to a threat. This primary activity includes the skills that are directly transferable into the defence or guarding of a range of civilian assets. Hence, cash-strapped militias can very easily sell their services as mercenaries to protect private property. And, the more valuable the asset to be protected the higher the rents will be.

Furthermore, it is likely that the highest rents are to be obtained from civilian parties that perceive an immediate threat to their property. The most likely cause of this would be insurgent attacks or operations in the vicinity of that property. This suggests that the highest rents are to be found in territory that contains both insurgents and valuable economic assets. Focussing efforts in such territory will help militias to simultaneously achieve their dual imperatives. Therefore, they should be likely to prioritise such territory in their combat strategies, leading to the hypothesis:

H1: Anti-insurgent militias are likely to be more active in areas containing both high-value economic assets and active insurgent groups.

Research Design

Case selection

This study will utilise the case of the Colombian internal conflict. This case is selected because of the availability of statistical data at a fine-grained level on a variety of economic and social indicators. All variables in this analysis are measured at the municipal level. With over 1,200 municipalities, this provides for maximal variation in the regression variables.

The United Self-Defence Forces of Colombia (AUC) will be the focus of this study. It is an anti-insurgent militia organisation that operated between 1997 and 2006. As the largest anti-insurgent militia group of the Colombian internal conflict, much data has been collected relating to its activities. Unfortunately, much less data has been collected relating to smaller and isolated anti-insurgent militia organisations in Colombia. Therefore, the many other militia organisations that have been active in Colombia must be excluded from this current analysis.

Case study

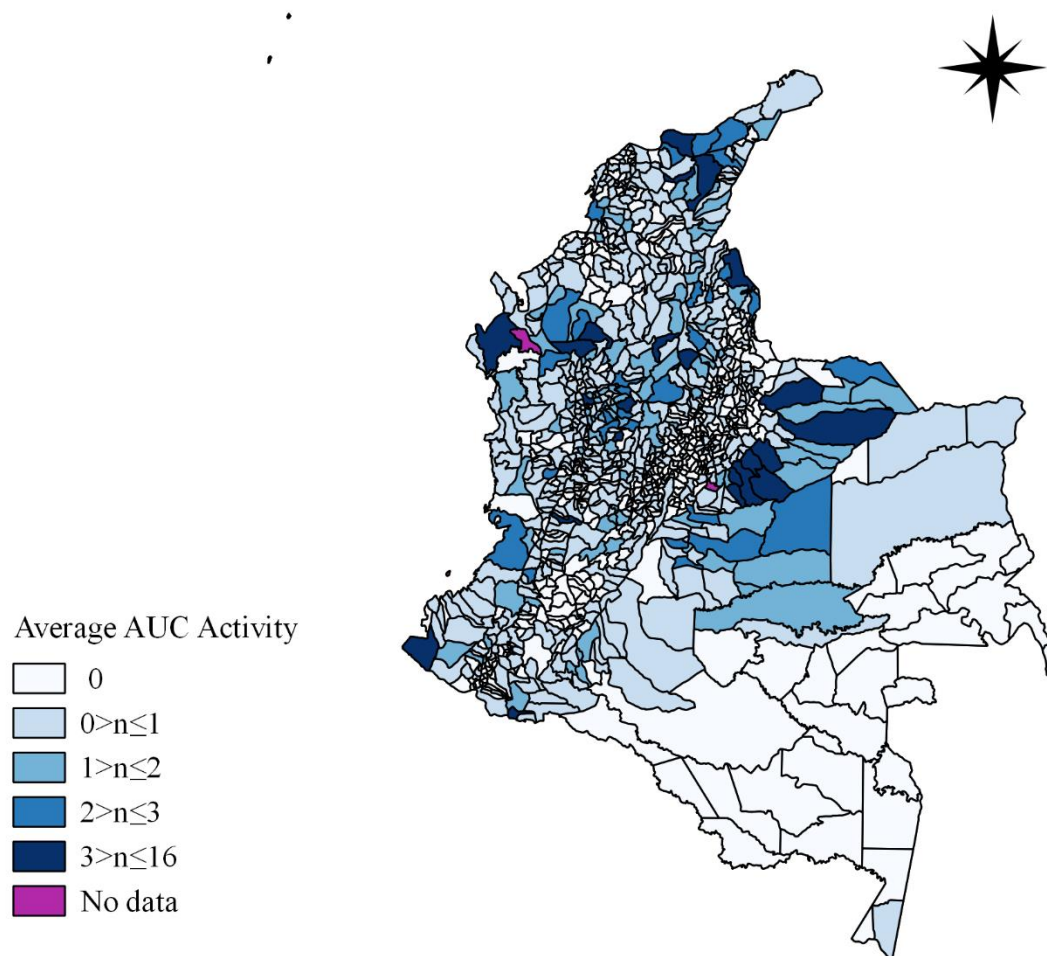
Colombia has experienced internal political violence for over 100 years; however, the current ongoing civil conflict dates back to the 1960's. Admitting the current conflict clearly has its roots in an earlier period of violence – la Violencia of 1948-1958 – it was not until 1964 that the primary leftist insurgent group of the current

conflict was formed: The Revolutionary Armed Forces of Colombia (FARC). Although FARC signed a peace agreement with the state in 2016 and is currently undergoing a process of demobilisation, other insurgent and anti-insurgent groups remain active to this day.

In Colombia “landowners, businessmen, and other wealthy patrons have long relied on private security forces to protect their lives and interests” (Central Intelligence Agency, 1997: 3). A case in point of militia mercenary tendencies in Colombia is the November Massacre of fourteen civilians in Cundinamarca. In 1997 a local businessman, “imported” fighters of a self-defence group based in the north of the country to retaliate against the FARC for past hurts (U.S. Embassy Bogotá, 1998). The massacre was to send a message to the FARC that the businessman would no-longer pay their extortion monies or accept their interference.

The AUC, which is the specific focus of this study, was formed in 1997 as an umbrella organisation, bringing together most anti-insurgent militia groups in Colombia. It was an extremely widespread organisation and can be characterised as an offensive militia group. At the height of its power it was active in over two thirds of the country with its strongest presence in the Caribbean coastal region (Ávila, 2015). The organisation had the primary goal of combating the leftist guerrillas in Colombia; however, as with its predecessors, it was also extremely active in the narcotics industry. As such, the AUC was never formally supported by the state, who officially recognised such militia groups as outlaws.

Figure 1. Average AUC activity by municipality



Whilst some have argued that the AUC may have a general right-wing ideological background (Sanín, 2008), the group is known to have been “supported by economic elites, drug traffickers and local communities lacking effective government security and claims its primary objective [was] to protect its sponsors from insurgents” (United Nations Regional Information Centre for Western Europe, n.d.). Indeed, several international corporations, including Chiquita, Coca-Cola and British Petroleum have been accused of using the AUC for protection or to deal with individuals they considered ‘troublesome’ (Carson et al., 2015; Forero, 2001; Lynch, n.d.; teleSUR, 2016; U.S. Department of Justice, 2007). Therefore, whether the AUC’s

true motivations are political or commercial remains unclear. Nevertheless, we can be certain that the AUC both fought insurgent groups and undertook mercenary contracts.

Many countries added the AUC to their list of terrorist organisations from 2001 as a result of human rights abuses. Further to this, the USA started to increase its investment in Plan Colombia with the aim of reducing narco-trafficking. As such “the AUC’s interests began to increasingly clash with Colombian business and political interests” (Trent, 2012). The AUC ceased its activities in 2006, after a period of negotiation with the government which concluded in a mass demobilisation process. During the subsequent years, some violence and criminality has been attributed to the AUC; however, these events were likely the work of rogue agents or agents attempting to hide their true identity.

Dependent variable

The dependent variable to be measured is the level of militia activity. A direct measure of ‘activity’ does not exist in current databases; however, it can be approximated from other data that does already exist. For the purposes of this chapter, a measure of activity will be created from four pre-existing variables. These are the number of AUC offensive actions, the number of clashes between the AUC and state forces that were not the result of targeted state offensive actions, the number of armed contacts between state forces and the AUC as a result of state offensive actions, and the number of attacks against the civilian population perpetrated by the AUC. The combined variable has a minimum of zero and a maximum of 51. It runs from 1997 to 2008. The later time periods including activity that was attributed to the AUC after demobilisation was complete; however, due to the uncertainty around the true

perpetrators of these incidents, the sample is restricted to 2006 when the AUC was officially disbanded.

The four original indicators are obtained from the Panel Conflicto y Violencia of the Panel Municipal del CEDE, compiled by el Centro de Estudios sobre Desarrollo Económico (CEDE) based at the Universidad de los Andes (CEDE, 2017b). The Panel Municipal del CEDE is an extensive dataset with many subsets of social and economic indicators disaggregated to the municipal level in Colombia.

Independent variables

The key independent variable is the coexistence of both high-value economic assets and the presence of active guerrilla groups. Guerrilla presence is measured with a dummy variable indicating presence in the municipality within the year. This indicator is an amalgamation of two separate dummy variables indicating the presence of FARC and the National Liberation Army (ELN), another leftist guerrilla group that continues its activities to this day. The data are again obtained from the Panel Conflicto y Violencia of the Panel Municipal del CEDE (CEDE, 2017b).

High-value economic assets will be measured in this case using four indicators – the value of coal extraction, oil, emeralds and gold. These commodities are selected because coal, oil and gold are three of the top four export commodities of Colombia. The fourth is coffee which is not included as it is primarily grown on smallholdings which are unlikely to be able to offer lucrative contracts to the AUC (Dube and Vargas, 2013: 1392). Emeralds are included as a final indicator because these lootable resources are a likely target for rebel groups and as such will require protection at a high price.

The value of coal extraction is measured in royalties paid to municipalities that produce coal. The measure is proportional, meaning that those municipalities that

produce more will receive higher royalties. Emerald and oil extraction are measured in exactly the same fashion – using royalties paid back to producing municipalities relative to their output. All of these variables are obtained from the Panel Buen Gobierno of the Panel Municipal del CEDE (CEDE, 2017b). Each indicator is converted to constant 2001 US Dollars for ease of interpretation.

A direct measure of gold extraction by municipality does not exist to the knowledge of this author. Gold production is therefore measured using data from the PRIO GRID (Tollefsen et al., 2012). It is an amalgamation of 3 dummy indicators of placer gold, vein gold and surface gold having been found in a particular grid cell. These data have been drawn down into the municipality level resulting in a dummy variable that shows whether gold has been found in that municipality. In order to reduce noise, only municipalities that contain higher than 10% grid area with a positive gold finding will be coded as containing gold. It is thus assumed in the models tested that gold is being extracted in all regions in which it has been found. Although this may not be the case, it is likely to lead to conservative estimates of the coefficients – if the AUC is active in gold producing municipalities and not in those without active extraction, the inclusion of these municipalities in the variable is likely to suppress any positive correlation rather than inflate it. Therefore, if statistically significant results are found, we can be even surer that a relationship exists in reality.

The eight key independent variables that will enter the model are the value of coal, oil, emeralds and the presence of gold in areas of rebel activity, and the value of coal, oil, emeralds and the presence of gold in areas without rebel activity. These variables will capture the effect of high-value economic assets separately between areas of guerrilla activity and areas of no guerrilla activity. The first four variables take the value of coal, oil, emeralds and the presence of gold if there are rebels present in the

municipality in that year; it takes a zero otherwise. The latter four variables take the value of coal, oil, emeralds and the presence of gold if the rebels are not present; it takes zero if they are. The first four variables thus capture the effect of coal, oil, emeralds and gold on militia activity levels if guerrillas are present; the latter four capture the effect of coal, oil, emeralds and gold on militia activity if they are not.

For these variables to effectively represent the relationships under scrutiny, it is essential that there is variation in the dependent variable when these key independent variables take values in both the presence and absence of rebel groups.¹ The sample under study is fairly evenly split between these two sub-groups with 5,535 observations in the presence of rebel groups and 5,432 in their absence. In the presence of rebel groups, the dependent variable varies from 0 to 51 with a mean of 0.83 and a standard deviation of 2.33; in the absence of rebel groups, this variable varies from 0 to 27 with a mean of 0.12 and a standard deviation of 0.67.

Controls

The two key controls highlighted by previous discussions are the point of origin and recruitment sites of the militia. The AUC is an aggregation of pre-existing militia organisations, which were themselves conglomerations of innumerable smaller ‘neighbourhood watch’ groups set up by a government initiative in 1994 (Trent, 2012). As such, it is not feasible to locate the exact origins of each unit; however, it is possible to identify municipalities in which the AUC were active in their first year of operation – 1997. This equates to 32 of the 1,122 municipalities of Colombia. The AUC was active at some point during their existence in 654 municipalities, so this 32 is expected to represent their origins quite effectively. Militia organisations in Colombia primarily recruited from the cities and urban areas (Arjona and Kalyvas, 2012: 152). To control

for how the AUC grew and any potential overlap with the key independent variables, an indicator of urban area will be used as a control.

Other control variables include a measure of the population (logged), the size of the municipality in hectares, forest cover in percentage of the municipality's land area, mountainous terrain as a proportion of the land area, the share of the population that belongs to the indigenous community, and the intensity of guerrilla activity. The model also includes department-fixed effects and controls for temporal autocorrelation with year and year squared.²

The population of the municipality and its size are included as controls to account for the scale effect as the dependent variable is measured in the number of AUC attacks. Forest cover and mountainous terrain variables are included to account for the likelihood of finding extractable resources and being able to access such resources in different terrains.

The ethnic constitution of the municipality is coded from the 2005 national census. The proportion of the population that belongs to the indigenous population is included as a control because of the potential for land access rights to influence the location of resource extraction sites and the targeting of these groups by conflict actors.

Finally, the intensity of guerrilla activity is included as a control to take account of the response factor of the AUC to their primary enemy. It is likely that the AUC will fight harder in regions under heavy contestation. As the guerrillas are also likely to attempt to secure resource extraction sites for their rents, it is considered pertinent to add a variable that may control for this effect.

Method

This study will use a random effects model with estimators of both within and between unit relationships. Following Bell & Jones (2015) and Rabe-Hesketh and Skrondal (2008: 114–122), within-unit variation is measured by the difference between the yearly observation and the unit mean whilst between-unit variation is measured using the unit means. Estimates of the within effects are identical in this model to fixed effects (Bell and Jones, 2015: 142–143); however, this method also allows for a consistent estimation of between effects, as the mean of each within-effect covariate is equal to zero.

Bell and Jones (2015) have shown that this model is superior to standard random effects and pooled models in the estimation of these between effects. As the theory presented above is specifically interested in testing between effect across municipalities in Colombia, it is believed that this model allows for the most accurate estimation of the parameters.

A linear model is used with a logged dependent variable (plus one). Although the dependent variable is a count variable, strong argumentation has been made that linear models are to be preferred above non-linear (Angrist and Pischke, 2009). The unit of observation is municipality year.

Results

Table 1a/b and 2a/b below present the results of the primary models. Between effects are shown in tables 1a and 2a; within effects are shown in tables 1b and 2b – note consistent model numbers at the top of tables 1a and b and 2a and b.³ Model 1 examines the effects of coal extraction on militia activity; Model 2 further includes oil

extraction; Model 3, gold; and Model 4, emeralds. The concurrent presence of coal and guerrillas is associated with an increase in the level of militia activity. In all four models the indicator of coal extraction is positive and statistically significant at the 10% level in the presence of rebel groups, just missing significance at the 5% level with a p-value of 0.053 in

Table 1a. The prioritization of militia activity (between effects)

	(1) Militia Activity _b	(2) Militia Activity _b	(3) Militia Activity _b	(4) Militia Activity _b
Coal and rebels _a	0.08* (0.04)	0.08* (0.04)	0.08* (0.04)	0.08* (0.04)
Coal, no rebels _a	-0.29*** (0.10)	-0.28*** (0.10)	-0.29*** (0.10)	-0.28*** (0.10)
Oil and rebels _a		0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Oil, no rebels _a		0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
Gold and rebels			0.06** (0.02)	0.05** (0.02)
Gold, no rebels			-0.02 (0.02)	-0.02 (0.02)
Emeralds and rebels _a				0.44*** (0.17)
Emeralds, no rebels _a				-0.04 (0.28)
Where they start	0.29*** (0.04)	0.30*** (0.04)	0.29*** (0.04)	0.28*** (0.04)
Population _{a, b}	0.07*** (0.01)	0.07*** (0.01)	0.06*** (0.01)	0.06*** (0.01)
Size (ha)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Forest Cover _a	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Mountainous share of land	-0.14*** (0.03)	-0.13*** (0.03)	-0.14*** (0.03)	-0.14*** (0.03)
Indigenous share of population	-0.10** (0.05)	-0.10** (0.05)	-0.10** (0.05)	-0.10** (0.05)
Guerrilla activity _a	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)
Constant	-0.38*** (0.08)	-0.37*** (0.08)	-0.37*** (0.08)	-0.37*** (0.08)
AIC	11,490	11,454	11,437	11,431
# of Observations	10,967	10,967	10,967	10,967
# of Municipalities	1,108	1,108	1,108	1,108

Standard errors in parentheses. Department-fixed effects omitted from table. a denotes variable has been lagged; b denotes variable has been logged. *** p<0.01, ** p<0.05, * p<0.1

Table 1b. The prioritization of militia activity (within effects)

	(1) Militia Activity _b	(2) Militia Activity _b	(3) Militia Activity _b	(4) Militia Activity _b
Coal and rebels _a	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Coal, no rebels _a	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
Oil and rebels _a		0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)
Oil, no rebels _a		0.07*** (0.02)	0.07*** (0.02)	0.07*** (0.02)
Emeralds and rebels _a				0.14** (0.06)
Emeralds, no rebels _a				-0.13 (0.11)
Population _{a, b}	0.21*** (0.06)	0.16*** (0.06)	0.18*** (0.06)	0.18*** (0.06)
Forest Cover _a	0.02*** (0.01)	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)
Guerrilla activity _a	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Year	50.03*** (2.04)	50.11*** (2.04)	49.79*** (2.04)	49.80*** (2.04)
Year ²	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)

Standard errors in parentheses. Department-fixed effects omitted from table. a denotes variable has been lagged; b denotes variable has been logged. *** p<0.01, ** p<0.05, * p<0.1

model 4. As the dependent variable is measured in logged events, coefficients from the table must be exponentiated in order to become meaningful. Taking the exponential of the value of coal royalties returned to a municipality (0.08) and subtracting one, an increase of one million US dollars is associated with a rise in the level of militia activity by 0.08 events per year. The measured value of coal royalties ranges from 0 to 5.01 in the sample. Moving from a non-coal-producing municipality to the most extensive coal producing municipality equates to an increase in militia activity of 0.39 events per year, and with a mean of 0.48 this is not inconsequential movement in militia activity. An increase in the value of coal royalties returned to a municipality that does not coincide with rebel presence appears to have a negative impact on the level of militia activity, with a coefficient of -0.28, suggesting, potentially, that the AUC would avoid these mining areas if rebel groups are not present.

The concurrent presence of oil and guerrillas is likewise associated with an increase in the level of militia activity with a coefficient of 0.03 in models 2-4. Taking the exponential of the value of oil royalties returned to a municipality and subtracting one, an increase of one million dollars is associated with a rise in the level of militia activity by 0.03 events per year. The measured value of oil royalties ranges from 0 to 14.14 in the sample. Moving from a non-oil-producing municipality to the most extensive oil producing municipality equates to an increase in militia activity of 0.41 events per year, a very similar figure to that of coal extraction. An increase in the value of oil royalties returned to a municipality that does not coincide with rebel presence appears to have a positive impact on the level of militia activity also, with a coefficient of 0.03; however, this parameter is far from statistically significant.

Equally, the concurrent presence of gold deposits and guerrillas is associated with an increase in the level of militia activity, as shown in Model 3. A change in the

dichotomous variable indicating the presence of gold deposits from 0 to 1 equates to an increase in militia activity of 0.06 events per year. This is the weakest of the four relationships substantively. Again, the presence of gold in municipalities without rebel forces appears to have no impact on the level of militia activity in this sample with a coefficient of -0.02 and an equal standard error.

Finally, Model 4 shows that the concurrent presence of emerald extraction and rebel groups is associated with a rise in militia activity. An increase of one million dollars in emerald royalties returned to a municipality is associated with a rise in the level of militia activity by 0.55 events per year. The measured value of emerald royalties ranges from 0 to 0.73 in the sample. Moving from a non-emerald-producing municipality to the most extensive emerald producing municipality equates to an increase in militia activity of 0.40 events per year – a very similar figure to that of coal and oil extraction. A similar change in a municipality that does not contain rebel forces appears to have no impact on the level of militia activity with a coefficient close to 0 and a large standard error.

The indicator of guerrilla activity has a coefficient of 0.04 in all models. An increase of one guerrilla activity event equates to a 0.04 increase in the number of militia activity events per year. The guerrilla activity variable varies from 0 to 31.9 in the sample with a mean of 1.14. A movement from a municipality with no guerrilla activity to the most guerrilla activity equates to an increase in 1.37 militia activity events per year. Considering that the primary purpose of an anti-insurgent militia is to combat rebel groups, increases of 0.39, 0.41 and 0.40 caused by the presence of high-value economic assets does not seem so small in comparison. Figure 1 below illustrates the substantive impact of each of the key variables once they have been standardized

Figure 1. Standardized coefficient plot comparing the substantive impact of independent variables in Model 4

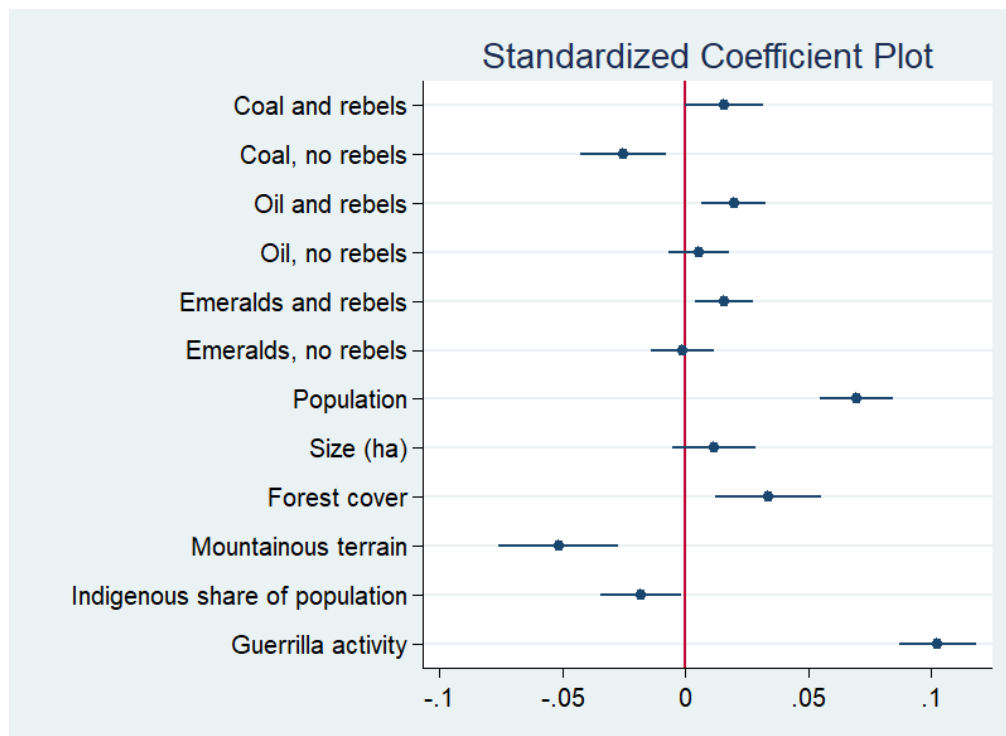


Figure 2. Coefficient plot comparing the substantive impact of dichotomous independent variables in Model 4

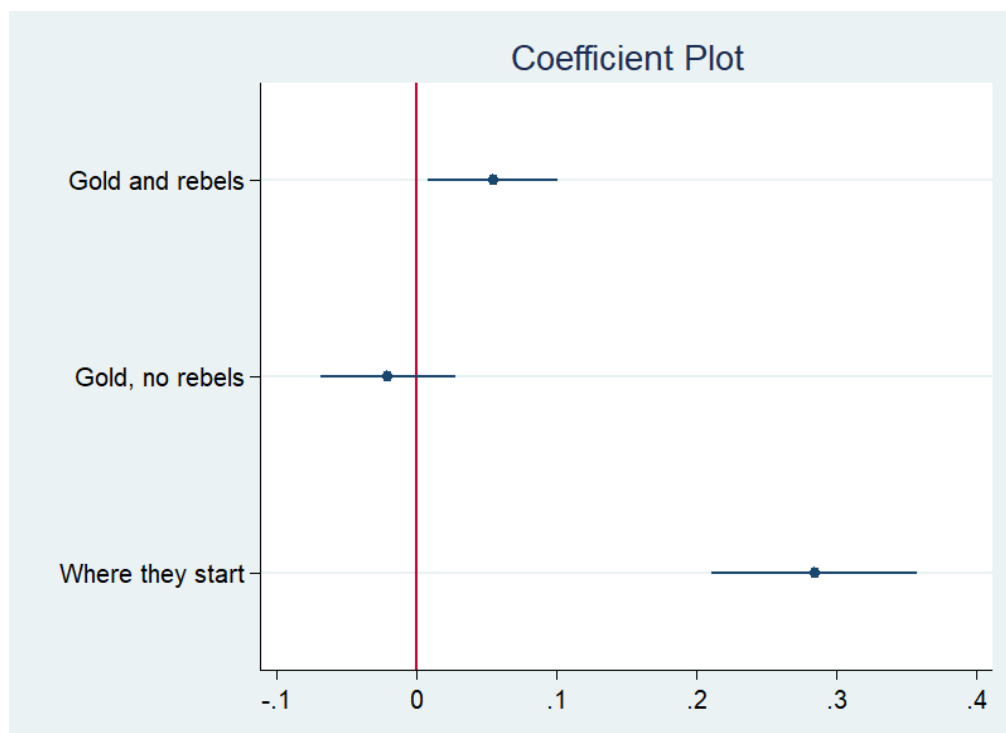


Table 2a. How they grow (between effects)

	(5)	(6)	(7)	(8)
	Militia Activity _b	Militia Activity _b	Militia Activity _b	Militia Activity _b
Coal and rebels _a	0.08* (0.04)	0.08* (0.04)	0.08* (0.04)	0.07* (0.04)
Coal, no rebels _a	-0.28*** (0.10)	-0.28*** (0.10)	-0.28*** (0.10)	-0.26*** (0.10)
Oil and rebels _a	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Oil, no rebels _a	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
Gold and rebels	0.05** (0.02)	0.05** (0.02)	0.06** (0.02)	0.06** (0.02)
Gold, no rebels	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Emeralds and rebels _a	0.44*** (0.17)	0.44*** (0.17)	0.43** (0.17)	0.44*** (0.17)
Emeralds, no rebels _a	-0.04 (0.28)	-0.04 (0.28)	-0.04 (0.27)	-0.07 (0.28)
Where they start	0.28*** (0.04)	0.28*** (0.04)	0.28*** (0.04)	0.28*** (0.04)
Population _{a, b}	0.06*** (0.01)	0.06*** (0.01)	0.07*** (0.01)	0.06*** (0.01)
Size (ha)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Forest Cover _a	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Mountainous share of land	-0.14*** (0.03)	-0.14*** (0.03)	-0.13*** (0.03)	-0.14*** (0.03)
Indigenous share of population	-0.10** (0.05)	-0.10** (0.05)	-0.10** (0.05)	-0.09* (0.05)
Guerrilla activity _a	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)
Urban (>50%)	0.00 (0.02)			
Urban (>75%)		0.01 (0.02)		
Urban (>90%)			-0.11*** (0.04)	
Urban (60%>n<90%)				0.04** (0.02)
Constant	-0.37*** (0.09)	-0.35*** (0.09)	-0.47*** (0.09)	-0.35*** (0.08)
AIC	11,433	11,433	11,424	11,429
# of Observations	10,967	10,967	10,967	10,967
# of Municipalities	1,108	1,108	1,108	1,108

Standard errors in parentheses. Department-fixed effects omitted from table. a denotes variable has been lagged; b denotes variable has been logged. *** p<0.01, ** p<0.05, * p<0.1

Table 2b. How they grow (within effects)

	(5) Militia Activity _b	(6) Militia Activity _b	(7) Militia Activity _b	(8) Militia Activity _b
Coal and rebels _a	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Coal, no rebels _a	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
Oil and rebels _a	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)
Oil, no rebels _a	0.07*** (0.02)	0.07*** (0.02)	0.07*** (0.02)	0.07*** (0.02)
Emeralds and rebels _a	0.14** (0.06)	0.14** (0.06)	0.14** (0.06)	0.14** (0.06)
Emeralds, no rebels _a	-0.13 (0.11)	-0.13 (0.11)	-0.13 (0.11)	-0.13 (0.11)
Population _{a, b}	0.18*** (0.06)	0.18*** (0.06)	0.18*** (0.06)	0.18*** (0.06)
Forest Cover _a	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)
Guerrilla activity _a	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Year	49.80*** (2.04)	49.80*** (2.04)	49.81*** (2.04)	49.79*** (2.04)
Year ²	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)

Standard errors in parentheses. Department-fixed effects omitted from table. a denotes variable has been lagged; b denotes variable has been logged. *** p<0.01, ** p<0.05, * p<0.1

for comparison. Figure 2 illustrates the substantive impact of dichotomous independent variables

Further to the results from Table 1, Table 2 presents reanalyses of Model 4 with the final control variable – *how they grow* – an indicator of urban areas. These results are extremely interesting as they highlight a great deal of variation. If the indicator of urban area is restricted to >50% urban population within the municipality, there appears to be no relationship between urban areas and AUC activity (Model 5). A similar result is found in Model 6 when the definition of urban area is restricted to >75% urban population. When this indicator is restricted to >90% urban population the coefficient is negative and statistically significant at the 1% level. This is the opposite from the expectation that militias will be most active in areas where they recruit and thus have established bases of power.

However, this variable primarily covers large towns and cities – areas that are likely to be strong positions for the state. As such, even though the AUC may recruit here, it may avoid activity in these areas as it is either unwarranted or strategically disadvantageous. When the indicator is restricted to an urban population of between 60 and 90%, the coefficient is positive and statistically significant at the 5% level – the expected relationship. Most importantly, the inclusion of any one of these indicators of *how they grow* does not alter the substantive interpretation of Model 4 with regard to the key independent variables.

Discussion

Evidence presented above shows clear support for the hypothesis that anti-insurgent militias are likely to be more active in areas containing both high-value economic assets and active insurgent groups. The coefficients of all four indicators of

high-value economic assets – coal, oil, emeralds and gold – in the presence of a rebel group are positive and statistically significant. The coefficients of the same four indicators of high-value economic assets in municipalities without active rebel groups were not found to be statistically significant or found to be negative. Militia organisations are, therefore, more likely to be found operating in areas containing high value economic assets only if rebel groups are also present; if insurgents are not present, militias are equally or less likely to be active in territory containing high-value economic assets as not. This evidence suggests that militia organisations prioritise territory that fulfils the dual imperative of combating insurgent groups and raising revenues for continued engagement simultaneously.

This also suggests that militia organisations are not simply greedy actors seeking rents outside the law (Collier and Hoeffler, 2004). If this were the case, we would expect the relationship between the presence of high-value economic assets and militia activity to hold when rebel groups were not present. Militias, then, would appear to be astute actors, choosing targets and territory to control that best suits their core interests.

One surprising result is the negative relationship found between mountainous terrain and AUC activity. This is in stark contrast to findings in civil war literature that finds rebel groups often prefer to operate in rugged terrain as state forces lose their technological advantage (Buhaug et al., 2011; Fearon and Laitin, 2003; Hegre and Sambanis, 2006; Ross, 2004b). It is possible that anti-insurgent militias also have limits over which tactical risk outweighs the potential benefits of routing out the enemy in rugged terrain. Such a finding would bring into question their usefulness as proxies for state forces in areas where the state is militarily weak (Eck, 2015). This finding requires further theorising and empirical investigation.

It can be conjectured from these findings that anti-insurgent militias which are independent of the state are more likely to be established in territory containing high-value economic assets as they can raise funds by acting as mercenaries. In the case of the AUC 17 of the 32 starting municipalities contained high-value economic assets. Such conjecture requires further research; nevertheless, this theory should be added to those of violence against civilians (Degregori, 1999; Kruijt, 1999; Schubiger, 2017), the presence of localised ethnic communities (Barter, 2013), and localised state military weakness (Eck, 2015) as explanations of militia group establishment and tested in future research.

It is widely accepted that access to high-value economic resources allows higher wages to be used as an enticement in rebel recruitment (Collier and Hoeffler, 1998; Weinstein, 2005). There is nothing to say that the same could not be true of militia organisations. The clear prioritisation of territory containing high-value economic assets by the AUC suggests that militias may have the same opportunities to attract recruits, even though group income may be extracted slightly differently from these resources. Therefore, we must add this possibility to our current expectations of militia recruitment which already include ethnicity (Mueller, 2004), ideology (Sanín, 2008; Ugarriza and Craig, 2013), pre-existing social networks (Mazzei, 2009), and the presence of skilled labour (Campbell and Brenner, 2002; Huggins, 1991) as it may further add to our understanding and does not necessarily conflict with any of these other explanations.

To consider the generalisability of these findings, an indicator of petroleum, coal, natural gas, and metals production per capita was obtained from the V-Dem dataset.⁴ This data was used to compare countries that experienced civil conflict at some point between 1946 and 2014. The analysis showed that Colombia is in the 66th

percentile of income per capita from natural resources among this set of 100 states. Whilst Colombia may be more reliant than most on natural resource income, it is, by no means, exceptional. It is, therefore, considered that opportunities for militia organisations to fulfil the dual imperative – in the same manner as found in the case of Colombia – are common around the globe.

Alternative explanations and checks of robustness

It could be argued that the dependent variable does not capture a militia's mercenary activity when a municipality is entirely peaceful and as such the lack of a relationship found between territory containing high-value economic assets without rebel presence and militia activity is due to this.⁵ Nevertheless, it is unlikely that lucrative mercenary contracts are to be found in regions that are peaceful because assets do not require 'protection'. Further to this, a simpler model, using a dichotomous indicator of militia presence as the dependent variable, found no additional evidence that the AUC prioritised such territory when guerrilla groups were not present.

It could also be contended that the findings are the result of simple extortion activity performed by the AUC; however, extortion is unlikely to constitute the bulk of transactions to which the AUC are a party. For a start, there is clearly an external threat and thus organisations have an exogenous incentive to engage the services of the AUC. Secondly, violent actions by the AUC aimed at legitimate organisations for extractive purposes may simply reflect the indivisible nature of their protection (Gambetta, 1993: 30–31) – if they protect a region, they and their paying customers have an incentive to ensure the rest also pay for their services. It does not necessarily follow that the majority are not willing customers of the AUC. Unfortunately, legitimate organisations and individuals are unlikely to disclose their true incentives for engagement with the

AUC when questioned; however, it seems unlikely given previous argumentation that any more than a minority of contracts are made purely on the basis of extortion. It is thus believed that the most likely explanation of these findings is a result of the theory and hypothesis presented above, not that of any purely extortionate activity.

It is widely known that a large portion of the AUC's income was gained through coca production and export. Some have suggested that total income from this source was between 70-80% of total revenues (The Mapping Militants Project, 2015). It could thus be argued that coca represents a high-value economic asset, perhaps even more important than oil, emeralds or gold. However, the placement of coca plantations is not exogenous to AUC presence or activity. Indeed, it is likely that plantations are established after the militia group has arrived in a new territory. Whilst the AUC may seek to take over plantations from the guerrillas, they are also likely to place their own plantations far from the front lines in order to avoid the opposite from occurring – being captured by rebel groups. This would necessarily make the correlation between coca production and militia activity very unclear. This is supported by data from Colombia, which shows no statistical relationship between coca and AUC activity when guerrillas are present and a negative relationship between the two, when they are not, suggesting that coca plantations are situated far from the front lines where the AUC may be engaged in combat activities.

The primary objective of an anti-insurgent militia is to combat or repel rebel forces. We also know that rebel groups often try to capture high-value economic assets in order to pay higher wages to their recruits or amass personal wealth (Buhaug et al., 2011; Collier and Hoeffler, 1998; Fearon and Laitin, 2003; Hegre and Sambanis, 2006). As such, it could be argued that militias are more active in regions containing high-value economic assets simply because they wish to deprive their opponent of this

revenue stream. Such a hypothesis cannot be directly ruled out given current data; however, if this were a key motivator in militia strategy we should also expect the AUC to attempt to deprive the guerrillas of income from coca. Just as the AUC, guerrilla groups in Colombia received a vast amount of income from coca production and export (Cook, 2011). If the militia was aiming to deprive insurgent groups of their main income source, we should expect a positive relationship between coca production and AUC activity. Yet, as previously discussed, no such relationship is found in the data.

The dependent variable contains data on the number of AUC offensive actions, the number of clashes between the AUC and state forces that were not the result of targeted state offensive actions, the number of armed contacts between state forces and the AUC as a result of state offensive actions, and the number of attacks against the civilian population perpetrated by the AUC. It could be argued that the number of armed contacts between state forces and the AUC as a result of state offensive actions is not a direct indicator of AUC activity as these episodes were not instigated by militia organisation, but, in a sense, imposed upon them. To ensure that this factor is not overly influencing the results presented above, models 1-4 were re-analysed with an activity variable that excluded this element. Results from these new models showed little substantive difference from those presented above, with the only notable change – a loss of substantive significance for the indicator of coal revenue. Perhaps this is the result of state attempts to secure unimpeded exports for the country's most valuable export and, hence, any AUC activity in these regions was cracked down upon.

Conclusion

The purpose of this study was to explain variation across space in militia activity during civil conflict. The chapter presented the theory that anti-insurgent

militias follow a dual imperative – to both combat insurgent forces and secure funding for continued operation. In fulfilment of this directive, anti-insurgent militias would sell services on the side as mercenaries to protect private property. The most lucrative of such contracts were to be found in regions containing high-value economic assets that were under threat from actors who may seek to take advantage of the lack of state security. It was thus hypothesised that anti-insurgent militias were likely to be more active in areas containing both high-value economic assets and active insurgent groups. Following such a strategy would allow the militia to fulfil both elements of the dual imperative simultaneously.

The hypothesis was tested using the case of the AUC in Colombia and data at the municipal level from 1997-2006 was examined. Results from the main models showed clear support for the hypothesis. This evidence also suggested that this mechanism may help to explain militia group establishment and recruitment. Further research is required to validate these findings outside of the Colombian case and to investigate the reach of this theory with regard to group establishment and recruitment.

This is a novel theory of anti-insurgent militia strategy during civil war and is the first study to model variation in their activity across space. Support for the hypothesis as well as other interesting findings, including the negative relationship between rugged terrain and militia group activity that is in stark contrast to expectations of rebel groups, opens up an entirely new area of potential enquiry. Models presented in this study could only account for a small proportion of total variation in militia strategy during civil conflict. There is thus a great deal more work to be done.

Finally, these findings suggest that states who wish to curtail outlawed militia activities should redouble their efforts to maintain or regain control of territory containing high-value economic assets. This land is often used by rebel groups to fund

their insurgency; yet it appears equally important to militias. Cutting off this revenue stream from both groups could help to reduce the length and intensity of civil conflict.

Notes

1. See Figures C1-10 of the appendix for visual representation of variation in the four key independent variables and in AUC activity itself.
2. See Figure C11 for display of AUC activity by year.
3. These tables have been split due to the need for large printing margins in this thesis. Please see appendix for original tables.
4. The original data was obtained by V-Dem from Haber and Menaldo (2011).
5. All models discussed in this section appear in the appendix.

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Conclusion

This thesis set out to answer two broad research questions: is wealth enough? And, what type of development is best for peace? The introduction set out the state of the field with regard to these questions. It covered the development-civil peace nexus and introduced the theories of opportunity cost, state capacity and the capitalist peace. It went through the influence of vertical and horizontal inequalities, primary commodities and the collective action problem. From this review it was clear that evidence was mixed. Sometimes wealth was enough, other times, apparently not. Some authors found a direct relationship between development and peace explained by the pursuit of wealth, how much of it was spent by the state or external actors, or how much war might cost (Besley and Persson, 2008a; Collier and Hoeffler, 1998, 2004; Dube and Vargas, 2013; Fearon and Laitin, 2003; Hegre and Sambanis, 2006; McGuirk and Burke, 2017; Miguel et al., 2004; Mousseau, 2012; Taydas and Peksen, 2012). On the other hand, many found that a focus on wealth obscured the influence of other material incentives and opportunities (Besley and Persson, 2008b, 2009; De Soysa and Fjelde, 2010; Gurr, 1970; Kustra, 2017; Olson, 1965; Ross, 2004a; Smith, 1998). Chapters 1-3 engaged with these research questions by asking: to what extent consumption opportunities explain variation in the relationship between economic development and internal peace? What is the real opportunity cost of conflict? And, where are anti-insurgent militias most likely to focus their efforts and why? The following section examines how the answers to these questions have helped to answer the broader questions of the thesis.

Is Wealth Enough?

Chapter 1 suggests that wealth is not enough. The previous focus on GDP and wage measures of development that lead to conflict cannot explain the between-state effect observed. Chapter 1 advances the theory of consumption opportunities to explain this between effect: humans care most about what they consume and have an expectation to consume in the future – the acquisition of wealth is a means to an end. Conditions of poverty and poor economic management in less economically developed countries leave the poor with no stake in society and a disengagement from state apparatus. Under such conditions, volunteering to reorder that state is not such an extreme act, and, if successful, could lead to improvements in one's consumption opportunities.

This theory was tested using state-level data across 150 countries from 1957-2007. Results suggested that a new indicator – Consumption Opportunities – should be used in preference to GDP as a measure of the development-civil peace relationship at the state level. Although this indicator is a measure of wealth, the thrust of the chapter was to argue that this measure more accurately reflects the non-pecuniary factor that drives civil peace in more economically developed countries than does the broad indicator of GDP.

It is my hope that further research into consumption opportunities will verify the findings presented in Chapter 1 and allow this theory to sit alongside opportunity cost (Collier and Hoeffler, 1998), state capacity (Fearon and Laitin, 2003), and the capitalist peace (De Soysa and Fjelde, 2010; Mousseau, 2012; Ricardo, 2000 [1821]; Smith, 1998 [1776]). The theory also suggests that vertical (Marx, 2004) and horizontal (Stewart, 2002) inequality may be concepts manipulated by entrepreneurs of violence to motivate their particular struggle and not the true cause of rank-and-file mobilisation.

Underneath these fighting causes is a base of individuals discontented with their lives; not with any other individual or group in particular. Knowing that many groups do not represent their supposed constituencies (Merkel, 1986), we must be careful in future to be clear who's story we are telling when we describe conflicts – the rank-and-file or the elite's. If, for example, only a small minority within an insurgent group fight for the cause of democracy, can we really call this a democratic insurgency because that is what certain elements would like us to believe?

Evidence from Chapter 2 equally proposes that wealth is not enough. This chapter considers the real opportunity cost of conflict, making three clear points: (i) individuals consider more than simple wages when comparing soldiering to productive employment; (ii) these additional considerations include both push and pull factors from each type of employment; and (iii) the real opportunity cost of rebellion may often be restricted to agricultural employment in states most at risk of civil conflict. The theory was tested on data from the municipalities of Colombia over the period 2002-2008. Results showed that variation in agricultural GDP was a significant indicator of rebel recruitment, whilst other GDP was not.

Again, this chapter used a measure of wealth as its primary indicator; however, this was believed to be a good proxy for the living conditions of rural Colombians and appeared to explain variation in unsatisfied basic needs within municipalities. Given this evidence and the fact that rebel recruits were neither paid nor allowed to accumulate wealth, the chapter adds to the conclusion that a focus on wealth alone is not enough.

As a result of this research, I believe that our conception of the opportunity cost of rebellion (Collier and Hoeffler, 1998) – at least from the rank-and-file perspective – must be revised to take into account the three factors above. It also provides strong

evidence for material incentives that help to overcome the collective action problem (Olson, 1965), even in the case of Colombia where others had suggested it was not an important factor (Arjona and Kalyvas, 2012; Sanín, 2004). Finally, it suggests that the concept of the opportunity cost of rebellion can be useful in explaining within-unit variation of the development-civil peace relationship. If consumption opportunities can explain the between variation, and opportunity cost, the within variation, perhaps theories of state capacity (Fearon and Laitin, 2003) and the capitalist peace (De Soysa and Fjelde, 2010; Mousseau, 2012; Ricardo, 2000 [1821]; Smith, 1998 [1776]) are less likely to hold true or, perhaps, explain other phenomena entirely.

Finally, Chapter 3 introduced the dual imperative that dictated action in anti-insurgent militia organisations during civil conflict. This imperative stipulated that anti-insurgent militias without state or external funding must both secure funding for future operations and frustrate insurgent activities at the same time. In order to do this, they take advantage of their most saleable asset: security expertise. And thus, anti-insurgent militias sell their services to the highest bidder. In the case of Colombia, this was the extractive industry. The theory was tested using data at the municipal level in Colombia from 1997-2006. Results presented provided support for the theory, suggesting that sometimes wealth is enough to drive action in civil conflict. The imperative to secure money for future operations clearly influenced the activities of the United Self Defence Forces of Colombia.

Given this evidence, it appears that primary commodities do have an influence on militia organisations, as they do on states and rebel groups (Collier and Hoeffler, 2004; Ross, 2004b). It also suggests that a lack of state capacity could help to increase the length and severity of conflict as previously suggested (Fearon and Laitin, 2003). Further research is required to fully map out the influences of primary commodities on

anti-insurgent militia groups. Something similar to the study of Ross (2004a) would be very useful.

In conclusion to this first discussion and in answer to the research question, “is wealth enough?”, my answer would be a most emphatic no, in the first instance. I do not believe that any of the primary mechanisms of the development-civil peace nexus can be explained fully by a simple focus on the pursuit of wealth, how much is spent or how much war costs. Nevertheless, I do believe that wealth can explain some of the actions of actors during conflict. As Chapter 3 shows, sometimes wealth is enough, as has been evidenced in other research (Ross, 2004a).

Wealth may be a useful indicator of other material incentives and socio-economic factors that we are interested in, but I find it highly improbable that wealth can tell the full story. There is, most certainly, variation that we are missing. We should be wary as scholars not to put too much stock into the indicator rather than our theory. Yes, we may find a statistically significant relationship between some instrument of wages and conflict onset, severity or longevity, but we must not explain this away with simple opportunity cost. We need to truly consider what this indicator is a proxy for. Is it increased consumption opportunities? Or increased access to healthcare and education? Increased economic freedom? Or eco-social interactions? In my opinion, there is still more that we do not know about the development-civil peace nexus than we do know. It is time to re-examine the broad theories outlined in the introduction and to challenge our assumptions.

Development for Peace

What type of development is best for peace? Previous literature would seem to offer little advice on this question. Perhaps, it is all types of development (Collier and

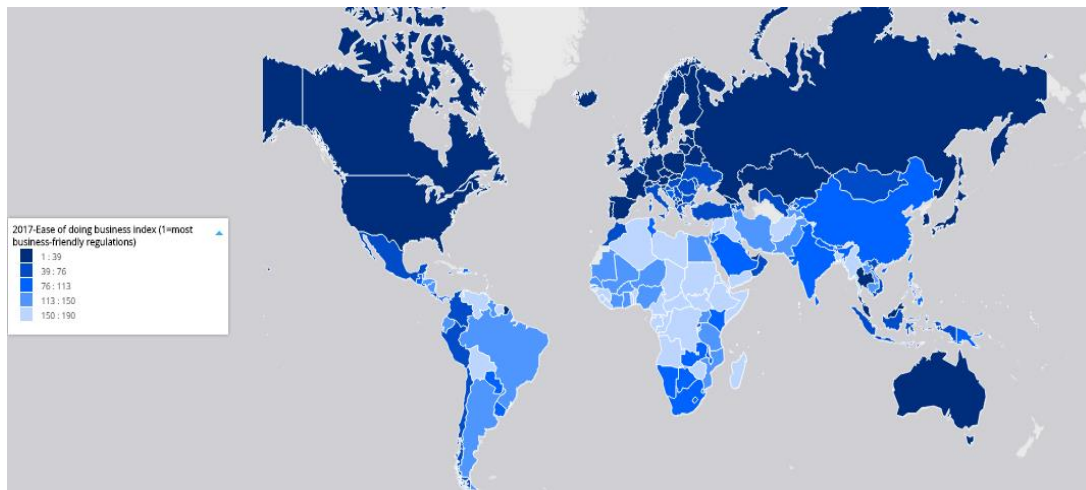
Hoeffler, 1998; de Tocqueville, 1956; Mousseau, 2012; Smith, 1998 [1776]), or the development of specific state infrastructures (Besley and Persson, 2008b, 2009; Fearon, 2005; Fearon and Laitin, 2003). Perhaps, investment in schooling and healthcare would increase chances for peace, though precise mechanisms are unclear (Collier and Hoeffler, 1998; Deininger, 2003; Fjelde and De Soysa, 2009; Kustra, 2017; Taydas and Peksen, 2012; Thyne, 2006). This thesis has argued that not all types of development are equal. Economies should be managed to mitigate the negative externalities of growth that vary by industry.

Consumption opportunities

Chapter 1 proposes that individuals are more concerned with what they can consume than with the amount of money they can earn. It thus suggests that GDP as a measure of total income is a poor indicator of the development-civil peace nexus. Instead, elements of GDP that most closely measure the amount we consume in a country should be used instead. Evidence from the econometric analysis suggested support for the argument and showed that investment in export industries especially, may have little impact on the propensity for future peace.

The answer, then, to the second research question of this thesis is the development of internal markets and trade that provide opportunities for employment but, more importantly, increases in opportunities to consume goods and services that we would all like access to. Export-led growth is not recommended, as this only heightens consumption expectations, whilst providing little domestic produce for consumers to enjoy. Previous attempts at direct interference with internal markets, such as import substitution, have been unsuccessful, partially because internal demand for

Figure 1. The ease of doing business



Source: World Bank, Doing Business project (<http://www.doingbusiness.org/>).

these goods was lacking. It is my opinion that more should be done to promote entrepreneurial spirit and make it easier for new start-ups to enter the domestic market and make a profit. Figure 1 above shows variation in the ease of doing business across the globe as measured by the World Bank's Ease of Doing Business Index, 2017. In this index, lower numbers indicate better conditions for entrepreneurship. It is not surprising to me that this index appears to correlate with countries most at risk of civil conflict.

Positive liberties must also be emphasised to ensure that individuals have the ability to realise their dreams and work their way out of poverty. Investments in education and healthcare will form the foundation of such a policy; however, it must also permeate into culture. Some countries have been good at this, others less so, with Scandinavian countries leading the way (Inman, 2018). According to a recent World Bank report, mobility in developing countries has not improved over the last 30 years, though there has been some variation between countries: "only twelve percent of the individuals born in the 1980s in the Central African Republic, Guinea, and South Sudan have achieved higher education levels than their parents have, compared with more

than 80 percent of residents of Malaysia and Thailand” (Narayan et al., 2018: 9). This report suggests many ways in which social mobility may be improved. Perhaps the UN Office of the High Commissioner for Human Rights, already working on issues of poverty, could lead the way internationally to bring experts together and share best practice between states to achieve this improvement.

The real opportunity cost of rebellion

Chapter 2 proposes that the real opportunity cost of rebellion is restricted to agriculture in many countries most at risk of conflict; and, individuals take into account non-pecuniary factors when considering whether to join an insurgent group. States must, therefore, look to improve the lives of their citizens, not just in terms of creating growth, jobs and higher incomes, but better standards of living. There must be investment in public and private goods, such as transport infrastructure, sanitation, and housing. These goods will raise living standards and increase pull factors/decrease push factors from a life in productive employment. Investment and aid to enhance agricultural innovation and mechanisation will also help to further reduce push factors from this type of employment.

The evidence presented in Chapter 2, again, suggests that we must encourage positive freedoms through investment in education and infrastructure that will broaden the set of opportunity costs for these citizens. Social mobility is key. Individuals should not feel trapped in their communities and should be able to migrate freely, at least within the country, with expectations of being able to find good work in new regions. This will provide new and better incentives to stay out of conflict.

The dual imperative

Chapter 3 introduced the dual imperative which stipulated that anti-insurgent militias without external funding must act both to secure funding for continued operations and to combat insurgent groups. The imperative saw the United Self Defence Forces of Colombia prioritise activity in resource-rich regions, as this is where they found the most lucrative security contracts. Such a finding suggests that other states with large primary commodity extraction sectors should concern themselves more keenly with the security of these regions during conflict. Even if the extraction and supply chain is not interfered with by the insurgent group, it may be used to secure funding by anti-insurgent militias that often commit terrible human rights abuses. If states wish to reduce the intensity of civil conflict, maintaining the security of these regions and sites should remove the need for corporations to enter into contracts with militia groups.

Tighter domestic regulation is also required to ensure that only legitimate or state-registered security services can be employed by these companies. A focus on human rights would discourage large corporations from using militias as strongarms in dealings with local state and union officials. Finally on extractives, international treaties should be put in place to ensure that extractives are not exacerbating conflict through their collaboration with either rebel or militia organisations.

In countries without large extractive industries or with other large industries that may require security, the state should ensure its capacity is maximised in these regions to provide the safety required by these groups. This will ensure that the potential for militias to raise funds in this manner is minimised and unnecessary casualties are avoided during war.

Ethics

Such policy recommendations are not without ethical issues. The recommendation of the improvement of conditions for free-markets has often gone hand-in-hand with arguments of deregulation and reduced government oversight. I believe that total market freedom is not good for a society and markets should be monitored and managed when necessary to ensure that negative externalities are minimised and positive externalities maximised. It is also my opinion that capitalism is the best solution to the problem of scarce resources that we currently have. However, I am in no doubt that it has its problems. Just as democracy, it should be promoted because it is the best available option. If better options present themselves, these should be pursued for additional benefits they may bring to societies. Policy makers should interpret these recommendations within their own cultural and social setting. I present no hard and fast rules.

Encouraging positive freedoms and social mobility in countries with low levels of democracy could cause tensions between the people and state leadership as previously described (McAdam, 1982). Syria is the perfect example of what we must work to avoid. Policy makers and aid workers should be careful to ensure that the pursuit of positive freedoms does not needlessly put people into harm's way.

The distribution of aid and internal state budgets are zero-sum games: some budgets can be increased to the detriment of others. The recommendations that programmes of support should be given to those who work in the agricultural sector or increased security capacity for lucrative economic assets will reduce funding for other industries, regions and groups. International development workers and states must ensure that the redirection of funding is not likely to cause more harm than potential good. If the removal of a fuel subsidy, for example, was likely to cause immediate

protest, potential fatalities and destruction, it could not be recommended that the policy should be pursued immediately in order to fund support for agricultural communities. The best course of action should be tailored to the exigencies of politics and economics in each state. There should be no, 'one-size-fits-all' approach to the implementation of any of these recommendations.

Reflections on the Process

As noted in the introduction and Chapter 1, a direct measure of consumption opportunities does not exist. There may be several proxies for this phenomenon, but few are distinguishable from arguments of opportunity cost. Chapter 1 presents an excellent step forward in this regard. Nevertheless, if data were available, it might have been advantageous to use a measure of the Herfindahl-Hirschman Index (HHI) combined in some way with data on the level of equality of opportunity within states.

The HHI represents the amount of competition in economic markets. It ranges from 0 to 10,000 and is calculated by taking the sum of squares of the market share of each company in a given market. Figures can be calculated for particular markets with some ease, but calculations for entire economies are extremely difficult and would require some level of weighting. If such an index existed, it would show the level of competition within an economy. The more markets that exist in that economy and the higher the level of competition, the more products are expected to be on sale to satisfy consumer wants at the lowest possible prices. Thus, higher figures would represent higher consumption opportunities.

An equality of opportunity index does not exist either at present due to the difficult nature of counting this phenomenon. Measures of the equality of outcome are easier to find but not all outcomes reflect opportunity, nor is all inequality of outcomes

necessarily negative in the same fashion as inequality of opportunity. Some people may work harder than others or possess innate abilities which help them to take advantage of opportunities, generating differential outcomes, even though the opportunity was equal.

If an economy-level HHI index could be produced and state-wide equality of opportunity measured, it might be possible to combine these to create a proxy for consumption opportunities.

Nonetheless, this indicator would still be susceptible to issues of endogeneity. As such, an instrumental variable that measures variation in the between effect would still need to be found. To this end, I might suggest an indicator of the number of international airports per capita within a country. This indicator is unlikely to vary significantly across time or as a result of conflict – the airport does not need to be open or operational to be counted. Such a measure could conceivably capture variation in imports that are likely to be highly correlated with increasing internal consumption opportunities – as we consume more at home, we also wish to consume more from abroad.

Future Research

Confirmation of the mechanism of consumption opportunities is required at this stage. Even though anecdotal evidence from the case of the ‘left-behinds’ in MEDCs may evidence a very similar mechanism, surveys could be used to associate a lack of consumption opportunities with disregard for the system. This would provide stronger support for the theory and evidence presented in Chapter 1.

Further work is also required to validate the findings in both chapters 2 and 3. The analyses undertaken in these chapters have good internal validity – using sub-

national variation in the case of the Colombian internal conflict; however, they lack any persuasive external validity. Do the findings replicate in other settings or are they different? What explains that variation?

More generally, work is required to map the influences of economic incentives on militia organisations. The database of Pro-Government Militias has fourteen categories of material support, including foreign government, home government, crime, drugs, the military, and plunder and loot (Carey et al., 2013). We may know where certain militias get their funding, but we know very little about how this influences their activities in and outside times of conflict.

Finally, it is clear from this thesis, how little we truly know about the relationship between economic development and civil peace. At this stage mixed methods research is required to map out the mechanisms that underlie the relationships found in statistical analyses. We must move beyond the numbers that focus on simple wealth, to consider how non-pecuniary material incentives nuance the development-peace relationship. While it is clear there is a general association between development and peace, we know that the pacific effect is not equal in all circumstances. We need to know why this is the case and the sooner the better.

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