GIGA Working Papers

German Institute of Global and Area Studies
Leibniz-Institut für Globale und Regionale Studien

GIGA Research Programme:
Violence and Security

Too Many Resources or Too Few? What Drives International Conflicts?

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No 147 **October 2010**

GIGA Working Papers

Edited by the
GIGA German Institute of Global and Area Studies
Leibniz-Institut für Globale und Regionale Studien

GIGA research programme responsible for this issue:
"Violence and Security"
Editor of the GIGA Working Papers series: Bert Hoffmann
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English copy editor: Melissa Nelson
Editorial assistant and production: Silvia Bücke

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GIGA WP 147/2010

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Abstract

International conflicts over natural resources are frequently cited as the most prominent threat to global peace in the decades ahead. However, this subject has not yet been adequately tackled in the academic literature. This paper contributes to filling the gap by, first, proposing a four-class typology of resource conflicts and by, second, testing these conflict types against data on fossil fuels and interstate conflicts derived from two major conflict datasets: the Militarized Interstate Dispute Dataset (1960–2001) and the UCDP/PRIO Armed Conflicts Dataset (1960–2008). The findings, although preliminary, suggest that resource scarcity may play a less prominent role in the aggression of belligerent countries than is often assumed and that the existence of large oil deposits and high resource-rent incomes are better predictors of conflict involvement.

Keywords: resource scarcity, resource abundance, interstate conflicts, military intervention

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Zusammenfassung

Rohstoffarmut oder -reichtum: Was steckt hinter internationalen Ressourcenkonflikten?

Internationale Konflikte um natürliche Ressourcen werden als eine wesentliche Bedrohung für den internationalen Frieden in den kommenden Jahrzehnten angesehen. Das Thema wurde in der akademischen Literatur bisher jedoch nur unzulänglich behandelt. Das vorliegende Arbeitspapier trägt zum Schließen dieser Forschungslücke bei, indem erstens die Unterscheidung von vier Ressourcenkonflikttypen vorgeschlagen und zweitens die Existenz der verschiedenen Konflikttypen anhand von Ressourcendaten und zwei Konfliktdatenbanken, den „Militarized Interstate Disputes"-Daten (1960-2001) und dem „UCDP/PRIO Armed Conflicts Dataset" (1960-2008), empirisch geprüft werden. Erste Ergebnisse zeigen, dass sich die Teilnahme an internationalen Konflikten besser durch umfangreiche Rohstoffvorkommen und die Verfügbarkeit beträchtlicher Einnahmen aus dem Ressourcensektor in den kriegführenden Staaten vorhersagen lässt. Die Bedeutung von Ressourcenarmut ist geringer zu bewerten, als weitläufig angenommen wird.

Too Many Resources or Too Few?
What Drives International Conflicts?

Georg Strüver

Article Outline

1 Introduction

International conflicts over natural resources are frequently cited as the most prominent threat to global peace in the decades ahead.[1] Apocalyptic forecasts state not only that it is a "foregone" conclusion that "conflict over oil will erupt in the years ahead" and that "the incidence of conflict over vital materials is sure to grow" (Klare 2001: 25, 29), but also that humanity is on the brink of a "new Cold War" and that an "era of dramatic distribution wars" (Follath/Jung 2008) and "hot oil wars" (Roithner 2008) is looming. Kindling fears that the uneven distribution of resources between consuming and producing countries will lead to deadly conflicts, thereby reviving previous predictions that "natural resources have the potential for playing an even more important role as a cause of war in the future than they have in the past" (Westing 1986a: 183).

[1] This paper was written as part of the DFG-financed project "Is Resource Wealth a Risk Factor?" under the direction of Matthias Basedau. The author thanks all those who commented on earlier drafts, and especially Matthias Basedau for his valuable comments regarding the proposed typology. The responsibility for any errors lies solely with the author.

Despite public and academic awareness of these developments and their utter importance with respect to future geopolitical challenges, this subject has not yet been adequately tackled in the literature and remains, in contrast to the nexus between primary commodities and civil wars, largely underrepresented in the academic discussion. The 1970s oil crisis stimulated a first wave of research on the geopolitical implications of the unequal distribution and perceived scarcity of renewable and nonrenewable natural resources (fossil fuels, metals, fresh water, fisheries, and food crops), but against the background of slumping oil prices in the decades that followed, this discussion died out. Only in recent years has the topic experienced a comeback in academic and political debates in light of the Gulf War and the US-led occupation of Iraq, as well as the outbreak of nonmilitary distributional conflicts, the anticipated oil-supply crisis, and the perceived shortage of nonfuel resources (e.g. Klare 2001; Peters 2004; Sharp 2007).

In general, studies on international conflict and resources often rely on anecdotal evidence and predictions for the future and, with some recent exceptions, lack systematic empirical testing. With regard to theoretical approaches, existent works either emphasize a link between resource scarcity and conflict or between resource abundance and conflict. The present study draws on both perspectives and assesses their validity on the basis of a four-class typology of interstate resource conflicts. In investigating the role of natural resources, the paper employs the Militarized Interstate Dispute Dataset, 1960–2001 (Jones/Bremer/Singer 1996; Ghosn/Palmer/Bremer 2004), compiled by the Correlates of War Project, and the UCDP/PRIO Armed Conflicts Dataset, 1960–2008 (Gleditsch et al. 2002), compiled by the Uppsala Conflict Data Program and the Peace Research Institute Oslo.

The paper proceeds as follows: Section 2 analyzes the literature on the resource–interstate conflict link. The third section introduces a four-class typology of resource conflicts. An outline of the empirical strategy and the key variables is provided in the fourth section, and these variables are tested, drawing upon descriptive analysis, in the fifth section. The empirical evidence suggests that the role of resource scarcity in belligerent countries may be more limited than is often assumed and that measurements of resource abundance on both sides of an interstate conflict may be more useful in describing the reality of international resource conflicts. The paper concludes with a discussion of the results and identifies directions for future research.

2 Paths to Interstate Resource Conflicts: A Literature Review

In general, academic works on natural resources and international conflicts consider either resource scarcity or the abundance of natural resources to be the main drivers of interstate warfare. With regard to the first strand of literature, works within the field of "environmental security/conflict" refer to Malthusian and neo-Malthusian conceptions (Dalby 2000, 2004; Rønnfeldt 1997). They argue that resource scarcity caused by population pressure and

excessive consumption, as well as by environmental degradation, leads to environmental depletion and, subsequently, to greater competition for resources, which holds the risk of escalating into intra- and interstate violence (Gleditsch 1998: 383). However, a common feature of these analyses is their lack of coherent theoretical models and of systematic empirical testing. This is not to say that conceptually and theoretically rich works do not exist (e.g. Giordano/Giordano/Wolf 2005; De Soysa/Gartzke/Lie 2009). However, the majority of studies on environmental conflict provide only anecdotal evidence on past and present developments and rely mainly on predictions regarding the future to prove their hypotheses.[2]

With the exception of influential studies such as those in the volume edited by Westing (1986b) and monographs by Klare (2001, 2004, 2008)—which explain the onset of resource conflicts as the consequence of a scarcity of renewable and nonrenewable resources (oil, natural gas, fresh water, minerals, fisheries, timber) due to increasing global demand, the misuse or overuse of raw materials, resource degradation, and the uneven distribution of deposits (Klare 2001: 14-15; Westing 1986c: 4)—the academic discussion on resource scarcity and international conflict concentrates on fossil fuels and the anticipated oil-supply crisis. Many scholarly works regard the energy-supply crisis as the most relevant condition "precipitating future resource wars"—that is, interstate conflicts over the access to and control over commodities (Peters 2004: 201; Sharp 2007).

However, few studies have empirically proven that resource scarcity is associated with conflict initiation. Applying cross-national multivariate time series analyses, Stalley (2003) finds that higher levels of both soil degradation and population density and a high composite "environmental scarcity" score,[3] but not water scarcity, are significantly and positively related to the onset of militarized interstate disputes between 1980 and 1992 (Stalley 2003: 48). With regard to nonrenewable resources, an unpublished conference paper by Wasson (2007) finds that insufficiencies in iron and steel supply correlate with higher participation in interstate conflicts (Wasson 2007: 15-16, 19). The mechanisms through which resource scarcity leads to conflict are various: On the one hand, a resource-poor nation might act as a conflict initiator in order to prevent another country from using resources (Stalley 2003: 38) or to gain access to raw materials by military means (Wasson 2007: 9-10). On the other hand, resource scarcity may indirectly provoke military aggression on the part of neighboring countries as a result of the cross-border immigration or ethnic tension it triggers (Stalley 2003: 38). Also, governments of countries with limited resource endowments may resort to aggressive foreign policy strate-

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[2] This argument is not new. Gleditsch (1998: 393) elaborates a list of nine common problems in the field of environmental security studies, including the lack of empirical studies and the challenge of "using the future as evidence" without explaining "why resource scarcities should have a higher violence-generating potential in the future than in the past."

[3] The "environmental scarcity" variable combines measurements of freshwater availability, the degradation of fish stocks, soil degradation, and population density (Stalley 2003: 45-46).

gies to distract from the negative internal consequences of undersupply or to justify the reservation of scarce resources for the defense sector and societal elites (Wasson 2007: 9-10).

This pessimistic perspective on resource scarcity as a cause of conflict is challenged mainly by scholars who argue that potential resource scarcity is resolved through technological progress. Scarcity therefore hardly plays a role as a cause of conflict, because it does not exist. The Copernican-criticism and the resource-optimistic perspective, among others, stick to the idea that problems originating from resource scarcity, overconsumption, and competition will be sorted out by technological innovation, lower resource inputs in production processes, and recycling. Resource competition, they argue, will further stimulate cooperation through international trade rather than provoke deadly and costly conflicts (e.g. Connelly/Perlman 1975; Deudney 1999; Gleditsch 2003).[4] Pointing in this direction, Giordano, Giordano, and Wolf (2005: 54-58, 61) argue that interstate conflicts are most likely in cases where resource scarcity is combined with adverse institutional contextual conditions.[5]

The second, also resource-pessimistic, research strand shifts the perspective from scarcity-related violence to abundance-related violence. Proponents of this approach argue that, firstly, resource wealth provides an opportunity for militarily assertive foreign policies and, secondly, that large-scale deposits of strategically and economically valuable resources present attractive spoils of war regardless of the resource endowments of the conflict-initiating party.

The first notion implies that countries rich in natural resources exploit their control over asymmetrically distributed global reserves as a tool of power in foreign relations. In the 1970s Arad and Arad (1979: 59) and Maull (1975: 1) emphasized that control over petroleum prices and supply served as an economic and political instrument of power in its own right. Research on the "oil weapon" or "petropolitics" as a factor enabling resource-rich countries (for example, Iran, Russia, and Venezuela) to intervene in the internal affairs of mainly resource-dependent states has been revived in the context of high energy and commodity prices, which peaked in mid-2008 (Bodemer 2007; Burrows/Treverton 2007).

De Soysa, Gartzke, and Lie (2009) support these findings statistically. The authors find that resource-rich countries, whose oil exports amount to at least one-third of their total export revenues, demonstrate a higher propensity to initiate low-intensity militarized interstate disputes, especially against non-oil-exporting nations (de Soysa/Gartzke/Lie 2009: 17-18).[6] As their main theoretical explanation, the authors cite the former countries' greater material ca-

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4 It can be assumed that process-substitution mechanisms are more likely in highly developed states which have the material and technological means and highly diversified value-added chains. Thus, the pacifying impact of resource substitution seems less probable in developing regions (Meierding 2007: 10, 31; Meierding 2008).

5 Among the contextual conditions which can lead to conflict are inadequate resource management capacities, deficiently defined territorial sovereignty in the presence of cross-border resource deposits or "international pool resources," and the collapse or poor functioning of existing institutions and structures in consequence of political changes or abrupt alterations in resource demand and supply (Giordano/Giordano/Wolf 2005: 54 ff).

6 The authors also show that a country's status as oil exporter does not increase its probability of being attacked in low-intensity militarized interstate, not deadly, disputes. In fatal disputes and interstate wars, no special influence of oil on conflict participation can be detected (de Soysa/Gartzke/Lie 2009: 18).

pacity to initiate conflict and the protection from foreign aggression provided to them by major oil importers (de Soysa/Gartzke/Lie 2009: 18, 8-11).[7] In addition, McDonald (2007) demonstrates statistically that a large amount of public property, including rents from the resource sector, increases the likelihood that a country will participate in militarized interstate disputes. For one, high nontax revenues exempt governments of their accountability, enabling them to implement and carry out internally unpopular foreign policies. Such revenues also provide governments with the means to co-opt or repress potential opposition groups and movements, which might form in response to the implementation of aggressive foreign policy strategies (McDonald 2007: 571-572).

The second notion further shifts attention to the target country's natural-resource endowments. The literature on militarized interstate disputes demonstrates that the presence of natural resources such as oil, diamonds, and illicit drugs in a conflict-hosting country increases the remaining conflict parties' aspirations to gain territory, thereby contributing to the geographic spread of conflict (Braithwaite 2006: 510, 515-516). Drawing on the literature on resources and civil war, this argument can be corroborated by what Ross (2004: 56-57) has detected in his study of civil wars in Africa, Asia, and Latin America and what Humphreys (2005: 511) has coined the "greedy outsider" mechanism: that natural resources provide a vital incentive for third parties to become involved in or support intrastate conflict.[8]

3 A Typology of Interstate Resource Conflicts

Two main theoretical rationales for interstate resource conflicts emerge from the literature review and are scrutinized in this paper: the scarcity perspective and the abundance perspective. Thus, the conception that resource wars "revolve, to a significant degree, over the pursuit or possession of critical materials" (Klare 2001: 25) and that the term resource war "implies that the concern for access to and control of resources is the most important motivation" for conflict initiation (Peters 2004: 201) is supplemented by the assumption that resources provide resource-rich nations with opportunities and capacities to engage in conflict. Borrowing from the literature on the resource–civil war link, the following discussion treats resources as both motives and opportunities (Basedau/Lay 2009) and four basic types of interstate resource conflicts, summarized in Table 1, are proposed for use in the empirical analysis.

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[7] Barbieri (2008) and Barbieri/Reuveny (2007) quantitatively assess the link between resources and interstate conflicts. In their unpublished conference papers the authors not only suggest that resource-poor countries are more prone to engage in militarily conflicts but also support the resource abundance perspective, stating that resource-rich countries use rents from the commodity sector to pursue more than just peaceful foreign policies.

[8] The effect of resource abundance on military interventions has remained largely unexplored outside the field of resource–civil war studies. Natural resources as an underlying motivation for interventions by external powers are analyzed only sporadically and are based on anecdotal evidence (cf. Le Billon 2004; Macfarlane 1985; Hauser 2008; Henken 2008). One of the rare systematic studies compares the intervention behavior of France, Great Britain und the USA from 1951 to 1977 and shows that only in the case of France does a positive relationship between military interventions and resources in the target country exist (Hammarström 1997: 131).

Table 1: Types of Interstate Resource Conflicts

	Interstate armed conflicts	*Military interventions by third parties in civil war*
Motive (access to and control of resources)	Countries initiate military conflicts with resource-rich nations (e.g., E, P) to seize needed or valuable resources. (Type 1)	Countries intervene militarily in civil wars within resource-rich nations' territory (e.g., E, P) to seize needed or valuable resources. (Type 2)
Opportunity (use of resource rents)	Resource-rich countries (e.g., R) utilize rents from the resource sector to finance the military pursuit of foreign policy goals against T. (Type 3)	Resource-rich countries (e.g., R) utilize rents from the resource sector to finance military interventions in civil wars in T. (Type 4)

Notes: E = (potential) net exporter, P = resource-possessing and/or resource-producing countries, R = high available resource rents and/or large resource deposits, T = third party (not necessarily E, P).

Source: Author's compilation.

A "resource conflict *does not occur* where resources *are absent*" (Giordano et al. 2005: 50; italics in original). It is the abundant availability of resources that "therefore represent[s] the 'prize' of state or territorial control thereby increasing the risk of greed-driven conflicts" (Le Billon 2001: 564). A paucity of vital raw materials is also considered to be a key driving force behind conflicts over the access to and control of mineral resources, even though some authors argue that scarcity conflicts mainly relate to renewable resources.[9] But scarcity, at least at the global level, fulfills another function: if scarcity and abundance are understood in relational terms, scarcity is a precondition for resource abundance. Without (inter)national scarcity, no abundance would exist and the outbreak of conflicts over resources would be hard to imagine.

With respect to resources as the motive for international conflict, it is assumed that countries initiate conflicts with resource-rich nations with the aim of securing access to or control of the reserves of the targeted country following a military victory. In theory, the strategies for realizing this objective range from the conquest of foreign territory to the displacement of opposing regimes, and then to the exercise of military pressure in order to either extort major concessions in the distribution of the resource or secure an unobstructed supply. The underlying rationale can be "greed driven," but it can also be the result of a nation's lack of vital resources. While Iraq's occupation of Kuwait in 1990 or the prior war on Iran cannot be explained on the basis of oil scarcity alone, in both conflicts oil deposits in border-zone areas were targeted. Hence, scarcity at the national or systemic level induces conflict, but it is not a sufficient condition for the detection of resource conflicts.

[9] Le Billon (2001: 564) states that "abundant resource wars" are closely connected with nonrenewable resources whereas scarcity conflicts are mainly a problem of renewable resources. For a narrower definition of environmental conflicts, which are caused by environmental degradation and thus only applicable to renewable resources, see Libiszewski (1992).

Other circumstances are expected to increase the willingness of states to enter into military conflicts over resources: On the one hand, it is supposed that countries are eager to fight militarily for resources that are vital, of strategic nature, or have a high economic value. On the other hand, it is assumed that resource-related international conflicts are more likely during or shortly after periods of high international commodity prices. The perceived scarcity of vital resources, global competition, and elevated prices force countries to spend a greater share of their available foreign currency to import essential resources; thus these countries may become more likely to opt for an alternative procurement strategy. That is to say, other nonmilitary means (foreign trade, technological substitution, diplomatic pressure) of securing access to the desired resources are exhausted before a country fights militarily for them.

These considerations lead to the definition of the first two types of international resource conflicts. These may take the shape of armed aggression between at least two countries over the access to and control of strategic resources (Type 1). Alternatively, because of the massive economic, political, and reputational costs of interstate conflicts and the presumption that international wars are generally seen as a last resort, countries may opt for a less extreme strategy for obtaining preferential access to foreign resources, for example, by intervening militarily in a civil war in a resource-rich country (Type 2). The main criteria for an interstate dispute to qualify as a resource conflict lies in the attacking or intervening country's objective of obtaining access to and control over resources in the targeted country by military means. This categorization can be refined by introducing further conditions. First, various levels of conflict escalation need to be differentiated in order to distinguish major wars from minor conflicts. Second, the aggressor's resource availability needs to be considered in order to assess whether the motive is greed or need. Third, a successful resource-based conflict ends with the military victory of the aggressor or, in the case of military interventions, the party supported by the attacker and the establishment of a post-conflict order that allows the attacking party to control the resources of the target country.

With regard to the notion of resources as an opportunity for conflict, large endowments of natural resources not only increase the likelihood that a country will become the target of a "plundering war," but also inject cash, as a result of resource extraction, into a resource-rich state's budget. The latter allows, among other things, for the modernization and build-up of the defense sector and for the pursuit of military endeavors abroad. In addition to the possibility that a resource-rich country will use military force in external relations, such armament bears the risk of causing regional security dilemmas.

Besides possessing the material capacity for military endeavors abroad, highly resource-rich countries exhibit specific economic and sociopolitical characteristics that may facilitate conflict initiation. High per capita revenues allow the governments of resource-rich countries to secure internal stability not only through a combination of reward and punishment tactics and through the funding of patronage networks, but also by exempting these same governments of accountability. The assets also allow for the repression of opposition

movements, which might form to contest the implementation of aggressive foreign political strategies and the general consolidation of domestic political power by the government (Basedau/Lay 2009; McDonald 2007: 571-572). Such a weak state–society relationship in combination with high fiscal autonomy on the part of the government further decouples the survival of a regime from its foreign policy performance. Those resource-rich countries that are not only asymmetrically integrated into world trade but also have sparse international networks appear more likely to implement aggressive foreign policy strategies than highly integrated countries (Oneal et al. 1996; Oneal/Russett 1999). Furthermore, after implementing aggressive foreign military strategies, resource-rich countries may be less vulnerable to retaliatory attacks or international sanctions because of the possible protection provided by major oil importers, especially in times of high commodity prices (cf. de Soysa/Gartzke/Lie 2009: 18, 8-11).[10]

The preceding discussion on resources as an opportunity for conflict leads to the second pair of conflict types: interstate conflicts (Type 3) and the intervention in the internal affairs of other countries (Type 4) facilitated by the use of resource rents. Exemplary forms of intervention are economic sanctions, the financing of (armed) opposition to a nation's government, or direct military intervention in civil wars. Resource-financed conflicts may be particularly likely in times of high international commodity prices and the existence of windfall gains. Supportive evidence for the existence of a resource-financed conflict would be the fact that the military pursuit of policy goals abroad is not possible without resource rents. The foreign policy aims pursued by the resource-rich country during conflict do not necessarily have to be related to natural resources.

4 A Note on Conflicts, Strategic Resources, and Empirical Research Design

In the investigation of the causes of conflict and of the participants' interests, social sciences is confronted with a general methodological problem: political leaders seldom release a statement revealing their resource needs or greed as their motivation for starting an interstate war, a minor dispute, or even a military intervention against a resource-rich country. It is beyond the scope of this paper to solve this methodological dilemma. However, by relying on the typology presented above, it is possible to contribute to the detection of potential resource conflicts by testing some of the preconditions for the different types of resource conflicts. In the present analysis resource availability in the target country and resource scarcity in the conflict-initiating nation serve as proxies for motive. The existence of high resource rents in conflict-initiating countries serve as a proxy for opportunity.

[10] De Soysa, Gartzke and Lie (2009: 9) point to the fact that the high vulnerability of distributional networks in the oil sector serves as a "security umbrella" for oil exporters because neither petroleum-dependent countries (for example, the USA) nor major oil exporters wish to see instability in major producer countries and regions or disruptions of the oil trade.

Further, the present analysis assumes that the onset of resource conflicts is more likely when the stakes are high, that is, when strategic resources are in the game.[11] These resources are more likely to induce conflict because they generate attractive rewards as well as high rents and are a source of foreign power in resource-rich countries. This is particularly the case with petroleum. According to Lowi (2008: 3), oil not only has greater conflict-causing potential than water but is also more likely to stimulate military conflict between consumer and producer regions (Arad/Arad 1979: 59). Hardly any other commodity exhibits the combined features of scarcity, economic importance, uneven distribution, and a low degree of substitutability.[12] Liquid fuels alone accounted for roughly one-third of world energy consumption in recent years (EIA 2009). Furthermore, the strategic importance of petroleum is continuous over time and thus allows for macro-comparative time series analysis (Morse 1999).

4.1 Quantifying the Reasons for Conflict: Resource Scarcity and Abundance

In order to analyze the impact of natural resources on the onset of interstate conflict, the independent resource variable employed in this paper embraces three concepts. This allows for the inclusion of different theoretical approaches in the analysis and permits the consideration of distinct resource variables on both sides of a conflict dyad.

First, resource scarcity refers not only to the absence of resource deposits and production in a country, but also to a country's dependence on external supplies to meet its resource needs. Different binary variables, which capture whether a country lacks oil and gas reserves or production and whether a nation is a net importer of fossil fuels, are coded. In addition, commodity imports in relation to other national indicators (total merchandise imports, GDP) serve as indicators of the relative resource dependence of a country.[13]

Second, the presence of resources as the spoils of conflict is perceived as denoting a high degree of resource availability in a territory. At this point, the external dimension of abundant resources is of interest. Different binary variables, which capture whether a country owns fuel deposits, produces them, or is a net exporter of fossil fuels, are coded. In addition, the quantity of national oil reserves and the volume of fuel production are included in the analysis, as well as a nation's share of global petroleum reserves and fuel production.

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[11] Natural resources qualify as strategic (vital or critical) if they are indispensable to the economic functioning, well-being, and humanitarian and military security of modern nation-states. Furthermore, strategic resources fulfill different dimensions of scarcity: global reserves are limited, unevenly regionally distributed, and externally sensitive (Libiszewski 1992: 5-6). Energy resources such as petroleum and natural gas or nonfuel minerals used in industrial production fall into this category (cf. Anderson/Anderson 1998: 4-5; Basedau/Mehler 2003: 39-40).

[12] In addition, oil is universally exploitable – in the transport sector, for heating, and in industrial production and electricity generation – and necessitates less complex transport infrastructure than other energy fuels, for example, natural gas (Morse 1999: 2).

[13] Unless otherwise indicated, fossil fuels and fuels denote oil and gas. Data sources for the resource variables and descriptions are outlined in Annex A.

Third, resource wealth encompasses a domestic dimension, which is considered using three different measurements: First, the possibility that governments use resource revenues for the modernization of the defense sector and arms build-up is captured by measuring the absolute amount of nationally available income from the resource sector. Second, the percentage of the GDP made up by resource rents is calculated. Third, available resource rents per capita are used as proxy for the feasibility of large-scale distributional policies and the co-optation and repression of the political opposition by the government in question.

4.2 Capturing International Conflicts and the Role of Belligerent Parties

The study's dependent variable consists of different measurements of war and conflict participation and draws on two datasets: the Militarized Interstate Dispute Dataset (Jones/Bremer/Singer 1996; Ghosn/Palmer/Bremer 2004) and the UCDP/PRIO Armed Conflicts Dataset (Gleditsch et al. 2002). Militarized interstate disputes (MID) are "united historical cases in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state" and can be nonfatal (Jones/Bremer/Singer 1996: 168). In the event that the threshold of 1,000 battle-related deaths is exceeded, an MID is coded as war.

In contrast, the UCDP defines an armed conflict 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" (Gleditsch et al. 2002: 618-619). An interstate armed conflict exists when two or more states are the primary conflict parties.[14] When the threshold of 1,000 battle-related deaths is reached, an interstate armed conflict is classified as war (Gleditsch et al. 2002: 619). Besides interstate conflicts and wars, the present study discusses the role of fuel resources in external military interventions in civil wars within resource-rich countries. The analysis draws on UCDP/PRIO data on internationalized intrastate conflicts, which are defined as conflicts "between the government of a state and internal opposition groups with intervention from other states" (Gleditsch et al. 2002: 619).[15]

Just as it is difficult to identify the motives in international conflict, it is tricky to assess which country is to blame for the outbreak of an armed encounter and who can be considered the victim. With regard to MIDs, the present paper relies on the MID Dataset's records

[14] In the following analysis only the primary parties involved in an interstate armed conflict are coded as conflict participants. Furthermore, it is assumed that with each conflict episode the direction of a conflict, that is, the role of the aggressor and the conflict target in a specific dyad, may change or that after years of latent conflict the discovery of valuable resources can trigger warfare. Hence, each episode of conflict activity after 1960 is coded as a separate onset.

[15] All intervening states in internationalized internal conflicts are coded according to the year of onset of each episode of conflict activity. The internationalized internal conflict in the USA between the US and Al-Quaida (2001–2008) is excluded from the data.

of which conflict party first conducted a militarized action. The relevant data from the UCDP/PRIO's Dataset on interstate armed conflicts, which remains silent on the specific role a country plays in a conflict, has been coded by the author on the basis of conflict encyclopedias (Brogan 1992; Ciment 1999; Gantzel/Schwinghammer 1997) and electronic resources.[16]

4.3 Procedure and Sample Description

The different types of resource conflicts will be tested against the conflict data and measurements of resource scarcity and abundance. As is common in conflict studies, the independent variables are lagged by one year. The assessment relies on both contingency tables and descriptive analysis at the monadic and dyadic levels, with the latter allowing for the controlling of the conflict direction.

The paper's dataset includes all states that were members of the international system between 1960 and 2008 and consists of a total of 1,282,564 dyads.[17] From 1960 to 2001, 1,368 MIDs occurred, of which 49 qualified as wars. According to the UCDP/PRIO data, 55 conflict episodes took place during the observation period, of which 17 qualified as interstate wars.[18] With regard to internationalized internal armed conflicts, external powers intervened in civil wars in foreign territories in 127 cases. The regions most affected by interstate conflict were the Middle East and Asia. Civil wars were concentrated in Africa and to a lower degree in the Middle East and Asia.

The sample under investigation is a function of data availability for the independent variables. The key data gap regarding the fuel trade and the variables measuring a nation's dependence on fuel imports relates to Africa and Asia: approximately 50 percent of this data is missing for these two continents. Data on fuel production and resource rents is particularly scarce for Africa, North and South America, and Asia. Fuel discoveries, the size of petroleum reserves, and producer status, however, are very well covered—in the form of binary data—for all world regions.

5. Empirical Findings on Four Types of Interstate Resource Conflict

5.1 Fuel Resources as a Motive for Interstate Conflict

If it is correct that the existence of strategic resources is a key catalyst for the outbreak of international conflicts, then it is to be expected that fuel-rich countries are attacked more often than resource-poor nations. As a matter of fact, of the 54 interstate war dyads over the past

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16 Electronic resources consulted were the UCDP Database (http://www.ucdp.uu.se/database) and the MIT Cascon System for Analyzing International Conflict (http://web.mit.edu/cascon/casechrt.html, both 13.10.2008).

17 The population of the dataset was generated using the EUGene software (Version 3.204) (Bennett/Stam 2000).

18 The 54 different war episodes of both datasets are listed in Annex B.

half-century, in 46 cases countries with fuel deposits were assaulted—that is, 85 percent of the cases. For comparison, only 55 percent of countries worldwide possess oil or gas reserves. The observation that fuel-rich countries are attacked more often in international conflict than resource-poor nations is supported by the fact that fuel-producing countries—globally, half of the countries produce petroleum or gas—have been attacked in 70 percent of the wars. Only net fuel exporters have been attacked less often in international wars than their global average distribution. If we assess who attacks whom in interstate wars from a dyadic perspective, the group of fuel-possessing and fuel-producing countries has an above-average representation on both sides of war, and not the countries without such assets (cf. Annex B).

The fact that hostilities between fuel-possessing and fuel-producing countries on either side of a conflict might be the most prominent case in interstate wars leaves only limited room for the existence of "classical" resource wars: cases in which a nation in need of fossil fuels attacks a country which possesses the desired good. In 11 of 54 cases, net fuel importers have attacked oil and gas exporters. Some of these conflicts are frequently cited as anecdotal evidence in the literature on international resource conflicts. Post-Cold War era examples of such "classical" resource wars between net fuel importers and exporters comprise the US-led occupation of Iraq (2003), the war between Armenia and Azerbaijan (1992–1995), and the Gulf War (1990–1991). However, the full list not only includes doubtful cases (for example, the Falklands Islands/Malvinas War of 1982) but also narrows the list of potential resource wars to cases in which the target country already produced oil and gas and was a net exporter of the contested commodity. If we revert to a broader conception of resource wars by focusing on the availability of petroleum in the targeted country, it appears that wars between fuel importers and fuel-possessing countries and fuel producers have occurred more often. This is the case for 33 of the interstate wars between 1960 and 2008. Particularly in the 1990s, five of eight war dyads show fuel importers on Side A (the attacking party) and fuel-possessing and -producing countries on Side B (the target country) (cf. Annex B).[19] Nevertheless, it was only in the Gulf War that oil played a significant role in the belligerence of the primary conflict parties. In the Nagorno-Karabakh War oil was only relevant to the outside actors involved (Kaldor 2007; Kaldor/Karl/Said 2007).

The above observations are reinforced when MIDs which have not escalated into full-scale wars are taken into consideration. The following table shows the distribution of nations attacked in nonwar MIDs according to their affiliation to six equally sized country groups ranging from low to high levels of resource endowments (Table 2).

[19] These are the Persian Gulf War (1990–1991), the two episodes of the Nagorno-Karabakh conflict between Armenia and Azerbaijan (1992–1995) and the Pakistani and Indian Kashmir and Kargil conflicts (1993, 1999) (cf. Annex B).

Table 2: Onset of Nonwar MIDs according to Fuel Availability in the Countries Attacked, 1960–2001 (in %)

	Country groups by level of resource abundance						
	1=low	2	3	4	5	6=high	Total
Oil reserves[a]	9.3	14.3	16.0	11.0	13.2	36.1	100 (n=537)
Oil production	14.2	16.8	14.7	12.0	14.4	28.0	100 (n=619)
Oil exports	12.2	15.0	13.9	16.0	23.3	19.6	100 (n=755)
Fuel production	~13.0	~13.0	16.6	18.1	14.2	25.2	100 (n=852)
Fuel exports	12.3	14.9	14.9	14.9	21.9	21.1	100 (n=758)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average MID participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies.
[a] Includes only countries with known oil reserves.

Source: Author's compilation based on data cited in Section 4.

It becomes evident that fuel-rich countries, especially oil-rich nations with reserves of over 20 billion barrels or 1.3 percent of global oil reserves, are targeted more often in interstate armed encounters than oil-poor nations. For countries dependent on fuel imports, no strong relationship between the amount of oil imported and conflict initiation is detectable. The decision to use force in external relations was taken predominantly by countries demonstrating low levels of resource dependence relative to various national indicators. This contradicts the idea that international resource conflicts are due to resource scarcity on the part of aggressor states (Table 3).

Table 3: Onset of Nonwar MIDs according to Oil Dependence of the Conflict-initiating Country, 1960–2001 (in %)

	Country groups by level of resource scarcity						
	1=low	2	3	4	5	6=high	Total
Fuel imports	6.8	14.8	19.9	9.9	18.9	29.8	100 (n=678)
Oil imports	7.4	15.4	18.0	10.9	17.3	31.0	100 (n=677)
Oil imports/total imports	21.1	15.5	17.7	14.6	13.6	17.4	100 (n=677)
Oil imports/GDP	24.9	23.0	20.0	10.6	13.1	8.4	100 (n=634)
Oil imports per capita	21.5	20.9	17.4	13.0	14.1	13.2	100 (n=661)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average MID participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies.
Source: Author's compilation based on data cited in Section 4.

As Table 3 illustrates, only large fuel-import volumes indicate a higher level of conflict participation. Countries which import considerable quantities of petroleum relative to the size of the economy or population tend to initiate fewer MIDs.[20]

If we assess the frequency of resource-related international conflicts from a dyadic perspective, no substantial deviations from the above observations appear. Of 917 nonwar MIDs against fuel-possessing countries, 742 were initiated by countries with oil and gas reserves (699 by countries which not only possessed fuel deposits but also produced fossil fuels). In other words, in most of the cases where a country with extensive petroleum reserves was attacked, the aggressor demonstrated a low level of import dependence (oil imports <2.1 percent of GDP). Only in 5 percent of the nonwar MID onsets between 1960 and 2001 did a country with a considerably high level of oil imports (>5.3 percent of GDP) assault an oil-rich nation (deposits >1.3 percent of global oil reserves). The majority of these resource conflicts occurred in the Middle East and Asia in the 1980s (cf. Table 4).[21,22] The bulk of nonwar MIDs against oil-rich nations and major oil producers were initiated by countries with resource-dependence levels in the lower half of the spectrum (oil imports <2.1 percent of GDP).

Table 4: Nonwar MIDs between Oil-poor (Initiator) and Oil-rich (Target) Countries, 1980-2000

Year	*Initiator of conflict*	*Target country*	*Year*	*Initiator of conflict*	*Target country*
1980	Tunisia	Libya	1986	Israel	Libya
1980, 1984	France	Libya	1986	Spain	UK
1981	Israel	Saudi Arabia	1987	Netherlands	Iran
1981	Israel	Iraq	1988	France	Iran
1982, 1983	USA	Libya	1991	Israel	Iraq
1982	Guatemala	Mexico	1991	USA	Canada
1982	Philippines	China	1992	USA	Iraq
1982	Syria	Iraq	1994	Nicaragua	Colombia
1983	Syria	USA	1997	USA	Russia
1983	Malaysia	China	1997	Canada	USA
1983, 1984	USA	Iran	1997	USA	Iran
1984	Morocco	Algeria	1997	USA	Iraq
1985, 1986	USA	Russia	2000	USA	Russia
1985, 1986	South Korea	China	2000	USA	Venezuela

Notes: The list includes all dyads with nonwar MID onsets and available data for 1980 to 2000 if the country on Side A qualifies as resource-poor (oil imports >5.3% of GDP or oil imports per capita > US$211) and that on Side B as resource-rich (oil deposits >1.3% of global reserves or oil production >14.3 million tons). *Source*: Author's compilation based on data cited in Section 4.

[20] The means of the resource abundance variables are the highest for countries initiating nonwar MIDs, followed by the means of abundance variables for countries targeted in nonwar MIDs. Nonconflict cases are characterized, on average, by even lower levels of resource abundance. Further, the means of the resource-scarcity indicators do not support the claim that resource-poor countries initiate nonwar MIDs more frequently.

[21] The fact that in the 1970s nonwar MIDs between very resource-poor and oil-rich nations only occurred in three cases may be traced back to missing data and makes comparisons invalid.

[22] The observations made above are supported by correlation tests. In the case of nonwar MID onsets, the quantity of oil reserves as well as the volume of oil or fuel exports of both parties show moderate correlations. The measurement of the correlation between resource scarcity on Side A and resource-abundance indicators on Side B results in negative coefficients, which fluctuate around zero. Only the fuel imports of the aggressors and the fuel exports of the target countries are moderately correlated and show an exponential distribution.

5.2 Fuel Resources as a Motive for Military Interventions

This paper assumes that third-party military interventions in civil wars are more likely if fossil fuels are present within the conflict-ridden nation, or if the country is a globally important fuel producer. In addition, it is expected that resource-poor countries are more likely to engage in civil wars in fuel-rich territories; the former may strive to secure privileged access to the host country's assets during or after the conflict.

With regard to the first claim, the data employed in this paper provide mixed empirical evidence. Between 1960 and 2008, 65 percent of military interventions occurred in countries with known oil and gas reserves and 58 percent of interventions took place in fuel-producing nations. Although these percentages lie a good deal above the global proportion of fuel-possessing and fuel-producing countries, given that 72 percent of all intrastate armed conflicts occurred in fuel-possessing nations and nearly 59 percent in fuel-producing nations, no strong significance can be derived. When we divide the resource data into different abundance levels, it appears that interventions have been concentrated in countries with large oil reserves and considerable levels of fuel production, but not in those with high levels of oil and fuel exports (Table 5).

Table 5: Third-party Interventions according to Resource Availability in the Target Country, 1960–2008 (in %)

	Country groups by level of resource abundance						
	1=low	2	3	4	5	6=high	Total
Oil reserves[a]	2.3	2.3	4.6	6.8	13.6	**70.5**	100 (n=44)
Oil production	5.5	0.0	3.6	**23.6**	5.5	**61.8**	100 (n=55)
Oil exports	31.8	13.6	13.6	0.0	**22.7**	18.2	100 (n=22)
Fuel production	13.6	1.5	6.1	3.0	**21.2**	**54.6**	100 (n=66)
Fuel exports	36.4	13.6	9.1	13.6	9.1	18.2	100 (n=22)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies. [a] Includes only countries with known oil reserves. *Source:* Author's compilation based on data cited in Section 4.

Regarding the second claim, the data shows that countries with neither fossil fuel reserves nor fossil fuel production participate less frequently in civil wars in resource-rich territories than fuel-possessing or fuel-producing countries. However, if the former do intervene, it is mostly in civil wars in countries where oil and gas deposits are present. When we take a closer look at who participates in civil wars, it becomes evident that the interveners generally tend to depend more on fuel imports and experience comparably higher degrees of resource dependence than the initiators of nonwar MIDs (Table 6).

Table 6: Third-party Interventions according to Fuel Dependence of Intervening Countries, 1960–2008 (in %)

	Country groups by level of resource scarcity						
	1=low	2	3	4	5	6=high	Total
Fuel imports	2.2	6.5	12.9	14.0	**23.7**	**40.9**	100 (n=93)
Oil imports	2.2	9.7	11.8	14.0	**21.5**	**40.9**	100 (n=93)
Oil imports/total imports	17.2	**26.9**	**20.4**	16.1	8.6	10.8	100 (n=93)
Oil imports/GDP	13.5	**29.2**	**21.4**	15.7	10.1	10.1	100 (n=89)
Oil imports per capita	4.4	13.0	9.8	**20.7**	**26.1**	**26.1**	100 (n=92)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies. [a] Includes only countries with known oil reserves. *Source:* Author's compilation based on data cited in Section 4.

However, the explanatory power of the results for "resource interventions" is strongly limited due to the small number of cases with data coverage. Furthermore, the US-led occupation of Iraq distorts the results because of the considerable size of the country's resource sector in combination with the fact that over 30 countries have at some time participated in the intervention there. Despite these issues, some tentative results regarding the dyadic perspective of military interventions can be deduced. In this instance only binary coded variables on Side B are taken into consideration.[23] The data confirm that in the majority of territories targeted in interventions by resource-poor countries oil or gas deposits exist and fossil fuels are produced. As a case in point, countries with higher levels of import dependence (oil imports >3.8 percent of GDP) intervened in 34 cases in civil wars within the territories of fuel-possessing countries and in 33 cases within the territories of fuel-producing countries. These cases represented more than half of all interventions on the territories of countries which possess oil and gas deposits and produce fossil fuels.[24]

5.3 Resource Wealth as an Opportunity for International Conflict Initiation

In considering the third type of international resource conflict, the question that arises is whether those countries whose governments earn significant revenues from the natural resource sector more frequently use military force in foreign relations than nations without

[23] Cases of potential "resource interventions" by fuel-dependent countries (fuel imports >4.2 percent of GDP or oil imports per capita >US$103) in territories with fuel reserves or fuel-producer status include France's participation in Chad's civil war (1986); the Kyrgyz Republic's intervention in Uzbekistan (2000); the NATO-led International Security Assistance Force in Afghanistan (2003); and the interventions of Mali in Algeria (2004), Armenia in Azerbaijan (2004), and Ethiopia in Somalia (2006).

[24] Alternative measurements of resource dependence and descriptive statistics corroborate these results. For example, militarily intervening countries tend to depend to a higher degree on fuel imports (measured by the mean of the ratio of fuel imports to GDP) when the intervention target possesses oil and gas reserves or is a fuel producer or a net fuel exporter than in cases where the intervention target is resource poor.

these assets. As mentioned above, the responsibility for the outbreak of interstate wars between 1960 and 2008 lay predominantly with countries that had oil and gas deposits within their territories and that qualified as fuel producers (cf. Annex B). These countries also initiated the bulk of the nonwar MIDs: in 74 percent of the cases, a nation with known fossil fuel reserves stood on Side A of the dispute, and in 69 percent of the cases a fuel-producing country was the attacker. Generally, countries that initiate nonwar MIDs possess not only larger amounts of resource and oil rents than the nations targeted but also considerably greater rent income than peaceful countries. The distribution of nonwar MID initiators according to different resource-rent levels is shown in Table 7.

Table 7: Onsets of Nonwar MIDs according to Resource Abundance of the Initiating Country, 1960–2001 (in %)

	Country groups by level of resource wealth						
	1=low	2	3	4	5	6=high	Total
Resource rents	9.3	10.7	10.5	15.5	12.5	**41.4**	100 (n=869)
Oil rents	9.3	9.3	12.8	9.9	13.4	**45.4**	100 (n=680)
Resource rents/GDP	9.6	15.5	13.6	**22.3**	**24.0**	15.0	100 (n=772)
Oil rents/GDP	10.6	13.5	15.5	**23.8**	**22.9**	13.7	100 (n=621)
Resource rents per capita	11.1	16.1	17.7	9.1	**20.5**	**25.6**	100 (n=859)
Oil rents per capita	10.7	15.7	13.9	12.8	**31.3**	15.7	100 (n=671)
Share of global oil reserves [a]	6.8	12.5	14.2	5.4	11.8	**49.3**	100 (n=558)
Share of global oil production	8.7	9.1	14.4	9.3	13.6	**44.9**	100 (n=679)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies. [a] Includes only countries with known oil reserves. *Source:* Author's compilation based on data cited in Section 4.

The data indicate that high absolute resource rents (>US$5 billion from resource production and >US$ 6.5 billion from oil production) are coupled with a higher propensity to resort to violence in external relations. Countries tend to be slightly more peaceful when relative indicators are taken into consideration (Table 7). For example, nations whose resource production accounts for at least 2.1 but not over 20.9 percent of GDP, and countries with per capita rents over US$90 more frequently stand on Side A of a nonwar MID.[25] Finally, nearly half of all nonwar MIDs have been started by relatively petroleum-rich nations (global oil-reserve share >1.1 percent, production share >2 percent). In comparison, only approximately one-third of all nonwar MIDs have been fought against countries with a share of global petroleum reserves and global oil production equal to that of the attacking country.

[25] The nonwar MIDs of the 1990s that were started by countries with high relative resource-rent incomes include those initiated by Cameroon, Colombia, DR Congo, Ecuador, Egypt, Indonesia, Iran, Kazakhstan, Malaysia, Norway, Peru, Russia, Venezuela (resource rents >6.4 percent and <20.9 percent of GDP).

5.4 Resource Wealth as an Opportunity to Initiate Military Interventions

High revenues from the resource sector may enable governments not only to start interstate conflicts but also to intervene militarily in the internal affairs of other countries. As a matter of fact, countries with oil and gas reserves within their territories carried out 101 out of 127 military interventions in internal armed conflicts between 1960 and 2008 and were thus responsible for 80 percent of all interventions under consideration in this paper. Fuel producers were responsible for 73 percent of the military interventions scrutinized in this paper. The frequency of their participation in civil wars was thus well above the global distribution of fuel-possessing and -producing countries. Data on resource rents and armed intervention indicate that only those countries with higher absolute rents from the resource sector demonstrate above-average participation in other countries' civil wars (Table 8).

Table 8: Third-party Interventions according to Resource Wealth of the Intervening Country, 1960–2008 (in %)

	Country groups by level of resource wealth						
	1=low	2	3	4	5	6=high	Total
Resource rents	7.0	16.0	16.0	16.0	**24.0**	**21.0**	100 (n=100)
Oil rents	12.2	19.5	**20.7**	12.2	15.9	19.5	100 (n=82)
Resource rents/GDP	15.2	**31.5**	19.6	9.8	16.3	7.6	100 (n=92)
Oil rents/GDP	**27.3**	**26.0**	18.2	7.8	14.3	6.5	100 (n=77)
Resource rents per capita	8.0	19.0	**24.0**	14.0	19.0	16.0	100 (n=100)
Oil rents per capita	12.2	**26.8**	17.1	13.4	**22.0**	8.5	100 (m=82)
Share of global oil reserves [a]	14.3	**27.1**	12.9	12.9	**21.4**	11.4	100 (n=70)
Share of global oil production	8.6	**22.2**	**23.5**	13.6	13.6	18.5	100 (n=81)
Total	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~16.7*	*~100*

Notes: Bold letters indicate the significant above-average participation of the specific group (>20%). Due to missing data the number of total cases in each subgroup varies. [a] Includes only countries with known oil reserves. *Source:* Author's compilation based on data cited in Section 4.

In contrast to initiators of nonwar MIDs, countries responsible for armed interventions are generally characterized by lower relative resource-rent income. Furthermore, the latter's share of global oil reserves and oil production is significantly smaller (Table 7 and Table 8).[26] Only if a country's annual rents from resource production reach certain levels (resource rents >US$ 1.4 billion) does it then also tend to intervene more often.[27]

[26] To give an example, countries with lower resource-rent income (>0.1 percent and <0.7 percent of GDP; >US$9.7 and <US$31.6 per capita) initiate military interventions more often than more resource-rich countries. Such interventions include those of France in Mauritania, Chad, and Lebanon (1970s); of Botswana in Lesotho (1990s); and of Germany and Italy in Afghanistan (2000s).

[27] Such cases include—besides several US and British military interventions—the Libyan interventions in intrastate conflicts in Uganda, Chad, and the Central African Republic.

6 Conclusion: Resource Abundance as a Motive and an Opportunity for International Conflict

The paper began with an overview of the literature on resources and interstate violence and identified two main perspectives on the causes of international resource conflicts: one views resource scarcity as the main cause of international resource conflicts; the other argues that resource abundance provides a motive and opportunities for initiating resource conflicts. The empirical evidence presented in this paper suggests that international resource conflicts are primarily a function of resource abundance, not only in the target country but also on the side of the conflict initiator. The role of resource scarcity as a driver of conflict appears to be less prominent than is often assumed (Table 9).

Table 8: Summary of Results

	Interstate armed conflicts	*Military interventions by third parties in civil wars*
Motive (access to and control of resources)	• Interstate conflicts are more frequently fought against fuel-rich countries. • Interstate resource conflicts predominantly involve fuel-rich countries on both sides of the armed encounter.	• Third-party military interventions seem to be concentrated on civil wars in countries with relatively large oil reserves and high fuel-production levels but not fuel exports. • Resource-dependent countries tend to intervene mainly in nations with considerably significant fuel-production levels and large oil deposits.
Opportunity (use of resource rents)	• Countries with large absolute and relational resource-rent incomes tend to resort to military violence in foreign relations more frequently than nations without these assets.	• Nations with relatively low resource-rent income per capita and relative to GDP are more likely to initiate military interventions than countries with high incomes from the resource sector.

Source: Author's compilation.

With regard to interstate conflicts, the paper's data support the idea of resource wars as conflicts over the control of and access to resources. Nevertheless, the question of why fuel-poor countries are not more frequently among the conflict initiators but fuel-rich nations are, in international conflicts in general and in military encounters against resource-rich opponents in particular, is puzzling. This could be a mere consequence of the geographical distribution of conflicts: a large number of the militarized interstate disputes have occurred in the Middle East. An alternative explanation is that the major military powers, which have frequently initiated international conflicts (for example, the USA, Great Britain and Russia), are also important fuel producers and possess large fuel deposits themselves.[28] Furthermore, resource-poor countries that depend on trade to meet their raw-materials needs could shy away from interstate conflict with resource-rich adversaries because they fear the costs of supply disruptions. The fact that those countries that have initiated nonwar MIDs are concentrated within the group of nations with considerable global oil-production shares and petroleum reserves hints in this direction.

[28] MIDs initiated by the USA, for example, have concentrated on countries with large fuel deposits and considerable fuel production, but not on net fuel exporters.

Given the dominance of resource-rich countries on the side of the conflict initiators, explaining why resource-rich countries are inclined to participate in international conflict is an important task. The present paper should be considered a first step in the study of international resource conflicts, but more sophisticated statistical tests are necessary to elaborate on this paper's empirical insights and the basic concepts it proposes. A promising direction for further research is the opportunity dimension of natural resources. Resource wealth not only provides the material capacity for military endeavors and a "security umbrella" for resource-rich nations (De Soysa/Gartzke/Lie 2009: 2, 9) but may also influence the state–society relationship. As shown here, conflict initiators tend to be those countries with relatively high per capita income from the resource sector. Research on how the interplay between institutional political factors and the availability of large-scale rents from the extractive sector—and the impact of oil price trends—influences a country's decision to militarize its foreign relations and engage in armed interstate disputes could be a next step.

With regard to military interventions, it has been demonstrated that resource-dependent countries with small-scale resource sectors tend to engage more often in military interventions in resource-rich countries, thereby securing access to resources in periods of internal strife. Nevertheless, the results are mixed and their significance is affected by a lack of data. The relationship between natural resources and military interventions in civil wars should be further scrutinized through the utilization of alternative data for the dependent variable and the inclusion of nonmilitary interventions (for example, economic and diplomatic sanctions).

Given the resurgence of (non)military distributional conflicts in recent years, the strategic importance of fossil fuels, and the uneven global distribution of oil deposits against the background of the anticipated supply crisis, efforts to improve our understanding of the mechanisms that lead to international resource conflicts seem to be a necessary step in mitigating conflict. This paper has provided initial evidence regarding the role of resource abundance in international resource conflicts and calls on scholars studying resource conflicts to concentrate on the nexus between this abundance and interstate armed conflict. This is not to say that the role of scarcity at the systemic and national levels should be neglected. However, when the results of this study are taken into consideration, a case can be made for studying international resource conflicts from a wealth perspective; this would entail an emphasis on the role of resource abundance as both a motive and an opportunity for conflict.

Bibliography

Anderson, Ewan W., and Liam D. Anderson (1998), *Strategic minerals. Resource geopolitics and global geo-economics*, Chichester: Wiley and Sons.

Arad, Ruth W., and Uzi B. Arad (1979), Scarce natural resources and potential conflict, in: Arad, Ruth W. (ed.), *Sharing global resources*, New York: McGraw-Hill Book Company, 23-104.

Barbieri, Katherine (2008), Natural Resources and Dyadic Conflict, at: <http://www.allacademic.com/meta/p_mla_apa_research_citation/2/5/1/4/3/p251430_index.html> (23.4.2008).

Barbieri, Katherine, and Rafael Reuveny (2007), Natural Resources and Monadic Military Conflict, at: <http://www.allacademic.com/meta/p_mla_apa_research_citation/1/7/9/9/1/p179913_index.html> (21.4.2008).

Basedau, Matthias, and Andreas Mehler (2003), Strategische Ressourcen in Subsahara-Afrika. Konfliktpotenziale oder Friedensgrundlagen?, in: *Internationale Politik*, 58, 3, 39-46.

Basedau, Matthias, and Jann Lay (2009), Resource curse or rentier peace? The ambiguous effects of oil wealth and oil dependence on violent conflict, in: *Journal of Peace Research*, 46, 6, 757-776.

Bennett, Scott, and Allan Stam (2000), EUGene: A Conceptual Manual, in: *International Interactions*, 26, 2, 179-204.

Bodemer, Klaus (2007), '"Petropolitics'" – politischer Diskurs, Geopolitik und ökonomisches Kalkül in den Beziehungen zwischen Venezuela und den Vereinigten Staaten, in: *Lateinamerika Analysen*, 16, 169-201.

Braithwaite, Alex (2006), The geographic spread of militarized disputes, in: *Journal of Peace Research*, 43, 5, 507-522.

Brogan, Patrick (1992), *World conflicts. Why and where they are happening*, London: Bloomsbury.

Burrows, Mathew, and Gregory F. Treverton (2007), A strategic view of energy futures, in: *Survival*, 49, 3, 79-90.

Ciment, James (ed.) (1999), *Encyclopedia of conflicts since World War II*, Chicago/London: Fitzroy Dearborn.

Connelly, Philip, and Robert Perlman (1975), *The politics of scarcity. Resource conflicts in international relations*, London: Oxford Univ. Press.

Dalby, Simon (2000), Jousting with Malthus' ghost: Environment and conflict after the cold war, in: *Geopolitics*, 5, 1, 165-175.

Dalby, Simon (2004), Exorcising Malthus's ghost: resources and security in global politics, in: *Geopolitics*, 9, 1, 242-254.

De Soysa, Indra/Gartzke, Erik, and Tove Grete Lie (2009), Blood, Oil, and Strategy: On the Relationship Between Petroleum and Interstate Disputes [Manuscript invited to revise and submit in International Studies Quarterly].

Deudney, Daniel H. (1999), Environmental Security: A critique, in: Deudney, Daniel H., and Richard A. Matthew (eds.), *Contested Grounds: Security and Conflict in the New Environmental Politics*, Albany: State University of New York Press, 187-219.

Follath, Erich, and Alexander Jung (eds.) (2008), *Der neue Kalte Krieg. Kampf um die Rohstoffe*, München: Goldmann Verlag.

Gantzel, Klaus Jürgen, and Torsten Schwinghammer (eds.) (1997), *Die Kriege nach dem Zweiten Weltkrieg 1945-1992. Daten und Tendenzen*, Münster: LIT-Verlag.

Ghosn, Faten/Palmer, Glenn, and Stuart Bremer (2004), The MID3 Data Set, 1993-2001: Procedures, Coding Rules, and Description, in: *Conflict Management and Peace Science,* 21, 2, 133-154.

Giordano, Mark F./Giordano, Meredith A., and Aaron T. Wolf (2005), International Resource Conflict and Mitigation, in: *Journal of Peace Research,* 42, 1, 47-65.

Gleditsch, Nils Petter (1998), Armed Conflict and The Environment: A Critique of the Literature, in: *Journal of Peace Research,* 35, 3, 381-400.

Gleditsch, Nils Petter (2003), Environmental Conflict: Neomalthusians vs. Cornucopians, in: Brauch, Hans Günter et al. (eds.), *Security and the Environment in the Mediterranean: Conceptualising Security and Environmental Conflicts*, Berlin: Springer, 477-485.

Gleditsch, Nils Petter et al. (2002), Armed Conflict 1946-2001: A New Dataset, *in: Journal of Peace Research,* 39, 5, 615-637.

Hammarström, Mats (1997), Military Conflict and Mineral Supplies: Results Relevant to Wider Resource Issues, in: Gleditsch, Nils Petter (ed.), *Conflict and the environment*, Dordrecht: Kluwer Academic Publishers, 127-136.

Hauser, Gunther (2008), Battle Groups – Interventionsgruppen für die Rohstoffsicherung? in: Roithner, Thomas (ed.), *Von kalten Energiestrategien zu heißen Rohstoffkriegen?*, Wien: LIT-Verlag, pp. 220-235.

Henken, Lühr (2008), Knapper werdende Rohstoffe – eine Quelle für Aufrüstung und Kriegsplanungen? in: Roithner, Thomas (ed.), *Von kalten Energiestrategien zu heißen Rohstoffkriegen?*, Wien: LIT-Verlag, pp. 203-219.

Humphreys, Macartan (2005), Natural resources, conflict, and conflict resolution. Uncovering the mechanisms, in: *Journal of Conflict Resolution,* 49, 4, 508-537.

Jones, Daniel M./Bremer, Stuart A., and David J. Singer (1996), Militarized Interstate Disputes, 1816-1992: rationale, coding rules, and empirical patterns, in: *Conflict Management and Peace Science,* 15, 2, 163-215.

Kaldor, Mary (2007), Oil and conflict: the case of Nagorno Karabakh, in: Kaldor, Mary/Karl, Terry Lynn, and Yahia Said (eds.), *Oil and conflict: the case of Nagorno Karabakh*, London, Ann Arbor: Pluto Press, 157-182.

Kaldor, Mary/Karl, Terry Lynn, and Yahia Said (eds.) (2007), *Oil wars,* London, Ann Arbor: Pluto Press.

Klare, Michael T. (2001), *Resource wars. The new landscape of global conflict*, New York: Metropolitan Books.

Klare, Michael T. (2004), *Blood and oil. The dangers and consequences of America's growing petroleum dependency*, New York: Holt.

Klare, Michael T. (2008), *Rising powers, shrinking planet. The new geoplitics of energy*, New York: Metropolitan books.

Le Billon, Philippe (2001), The political ecology of war: natural resources and armed conflicts, in: *Political Geography,* 20, 561-584.

Le Billon, Philippe (2004), The Geopolitical economy of 'resource wars', in: *Geopolitics,* 9, 1, 1-28.

Libiszewski, Stephan (1992), *What is an Environmental Conflict?,* Bern/Zürich: Swiss Peace Foundation, Center for Security Studies.

Lujala, Päivi/Rød, Jan Ketil, and Nadia Thieme (2007), Fighting over Oil: Introducing A New Dataset, in: *Conflict Management and Peace Science,* 24, 3, 239-256.

Macfarlane, Neil (1985), Intervention and Regional Security, in: *Adelphi Papers,* 25, 196.

Maull, Hanns (1975), Oil and influence: The oil weapon examined, in: *Adelphi Papers,* 15, 117.

McDonald, Patrick J. (2007), The purse strings of peace, in: *American Journal of Political Science,* 51, 3, 569-582.

Morse, Edward L. (1999), A New Political Economy of Oil?, in: *Journal of International Affairs,* 53, 1, 1-29.

Oneal, John R. et al. (1996), The Liberal Peace: Interdependence, Democracy, and International Conflict, 1950-1985, in: *Journal of Peace Research,* 33, 1, 11-28.

Oneal, John R., and Bruce Russett (1999), Assessing the Liberal Peace with Alternative Specifcations: Trade Still Reduces Conflict, in: *Journal of Peace Research,* 36, 4, 423-442.

Peters, Susanne (2004), Coercive western energy security strategies: "resource wars" as a new threat to global security, in: *Geopolitics,* 9, 1, 187-212.

Roithner, Thomas (2008), Von kalten Energiestrategien zu heißen Rohstoffkriegen? – Vorwort, in: Roithner, Thomas (ed.), *Von kalten Energiestrategien zu heißen Rohstoffkriegen?*, Wien: LIT-Verlag, 9-14.

Ross, Michael L. (2004), How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases, in: *International Organization,* 58, 1, 35-67.

Rønnfeldt, Carsten F. (1997), Three Generations of Environment and Security Research, in: *Journal of Peace Research,* 34, 4, 473-482.

Sharp, Travis (2007), Resource Conflict in the Twenty-First Century, in: *Peace Review,* 19, 3, 323-330.

Stalley, Philipp (2003), Environmental Scarcities and International Conflict, in: *Conflict Management and Peace Science*, 20, 1, 33-58.

Thieme, Nadja/Lujala, Päivi, and Jan Ketil Rød (2007), The petroleum dataset: country profiles, <http://www.prio.no/sptrans/-1578584112/PETRODATA%20Country%20Profiles%202007.pdf> (29.4.2008).

Wasson, Jesse (2007), Natural Resources and Interstate Conflict: Beg, Borrow, or Steal?, at: <http://www.allacademic.com//meta/p_mla_apa_research_citation/1/8/0/3/5/p180356_index.html?type=info&PHPSESSID=2dade0362d2de3e99c2bc1f82a712c7b> (3.4.2009).

Westing, Arthur H. (1986a), An expanded concept of security, in: Westing, Arthur H. (ed.), *An expanded concept of security*, Oxford, New York: Oxford University Press, 183-200.

Westing, Arthur H. (ed.) (1986b), *Global resources and international conflict: environmental factors in strategic policy and action*, Oxford, New York: Oxford University Press.

Westing, Arthur H. (1986c), Environmental factors in strategic policy and action: an overview, in: Westing, Arthur H. (ed.), *Environmental factors in strategic policy and action: an overview*, Oxford, New York: Oxford University Press, 3-20.

Annex A: Sources of Independent Variables

	Description	*Data sources*
Militarized interstate dispute (MID)	– MID data (Version 3.0) as provided by the EUGene project including joiners on the initiating and target sides – If more than one dyadic MID breaks out in a given year, only the most serious incidence (i.e., the one with the highest hostility level) is included in the analysis.	EUGene software (version 3.204), http://eugenesoftware.org
Interstate and (internationalized) intrastate armed conflicts	UCDP/PRIO Armed Conflict Dataset v.4-2009, 1946–2008	Uppsala Conflict Data Program, http://www.pcr.uu.se/research/UCDP/data_and_publications/datasets.htm
Fuel discoveries	Discovery of oil and/or gas reserves	Lujala/Rød et al. 2007; Thieme/Lujala et al. 2007
Reserve data	Data on oil reserves and the global reserve share for the post-1980 period is based on the Country Energy Profiles from EIA, which expand on the data from Humphreys (2005). In disputable cases, such as where Humphreys (2005) reports that no reserves exist while the Country Energy Profiles report oil deposits, the binary coding is based on the latter source. Global oil reserves and the corresponding national share are only calculated for the 1970s due to the lack of data for the 1960s.	U.S. Department of Energy, Country Energy Profiles, http://tonto.eia.doe.gov/country/index.cfm, 18.8.2009; Humphreys 2005
Fuel producer	First production of oil or gas	Lujala et al. 2007; Thieme et al. 2007
Production data	– Oil and natural gas, bauxite, copper, gold, iron, lead, nickel, phosphate, and silver production (1970–2006) – Rents are the value of production less estimates of production costs.	World Bank Adjusted Net Savings project, http://go.worldbank.org/3AWKN2ZOY0 (1.9.2008)
Trade data	Imports and exports of fuel (SITC Rev. 1 class 3), oil (33), gas (34), minerals and metals (27, 28, 68) and total merchandise trade in USD	United Nations Commodity Trade Statistics Database, http://comtrade.un.org/db/, 23.7.2009
Population	Total population of a country	World Bank Development Indicators, http://go.worldbank.org/6HAYAHG8H, 19.08.2009
GDP	Gross domestic product in current USD	World Bank Development Indicators, http://go.worldbank.org/6HAYAHG8H, 19.08.2009

Source: Author's compilation.

Annex B: The Role of Oil and Gas in Interstate Wars, 1960-2008

Name, Year of onset	*Conflict initiator*				*Target country*			
	Country	*Imp.*[a]	*Disc.*[b]	*Prod.*[c]	*Country*	*Exp.*[d]	*Disc.*[b]	*Prod.*[c]
Bizerte Crisis, 1961	Tunisia	(Yes)	Yes	No	France	(No)	Yes	Yes
Sino-Indian War, 1961	India	(Yes)	Yes	Yes	China	(No)	Yes	Yes
Sino-Indian War, 1962	China	(Yes)	Yes	Yes	India	(No)	Yes	Yes
Vietnam War, 1964	USA	Yes	Yes	Yes	USSR	(Yes)	Yes	Yes
	USA	Yes	Yes	Yes	Vietnam, DR	(No)	No	No
Vietnam War, 1965	USA	Yes	Yes	Yes	China	(No)	Yes	Yes
	USA	Yes	Yes	Yes	USSR	(Yes)	Yes	Yes
	Vietnam, DR	(Yes)	No	No	Vietnam, Rep.	No	No	No
Second Kashmir War, 1965	Pakistan	(Yes)	Yes	Yes	India	No	Yes	Yes
Six Day War, 1966	Syria	(No)	Yes	No	Israel	No	Yes	Yes
War of Attrition, 1967	Israel	Yes	Yes	Yes	Egypt	No	Yes	Yes
Six Day War, 1967	Syria	(No)	Yes	No	Israel	No	Yes	Yes
	Israel	Yes	Yes	Yes	Jordan	No	No	No
	Israel	Yes	Yes	Yes	Syria	(Yes)	Yes	No
	Saudi Arabia	(No)	Yes	Yes	Israel	No	Yes	Yes
War of Attrition, 1969	Egypt	Yes	Yes	Yes	Israel	No	Yes	Yes
Football War, 1969	El Salvador	Yes	No	No	Honduras	No	No	No
Vietnam War, 1969	USA	Yes	Yes	Yes	China	(Yes)	Yes	Yes
War of Attrition, 1970	Egypt	Yes	Yes	Yes	Israel	No	Yes	Yes
Cambodian Entry into the Vietnam War, 1970	Vietnam, DR	(Yes)	No	No	Cambodia	No	Yes	No
Bangladesh War, 1971	Pakistan	(Yes)	Yes	Yes	India	No	Yes	Yes
Vietnam War, 1971	USA	Yes	Yes	Yes	China	(Yes)	Yes	Yes
Yom Kippur War, 1971	Syria	(No)	Yes	Yes	Israel	No	Yes	Yes
Yom Kippur War, 1973	Egypt	Yes	Yes	Yes	Israel	No	Yes	Yes
	Syria	(No)	Yes	Yes	Israel	No	Yes	Yes
Cyprus War, 1974	Turkey	Yes	Yes	Yes	Cyprus	(No)	No	No
	Turkey	Yes	Yes	Yes	Greece	No	Yes	No
Vietnamese-Cambodian War, 1975	Vietnam, DR	(Yes)	No	No	Cambodia	(No)	Yes	(No)
Ogaden War, 1977	Somalia	Yes	No	No	Ethiopia	(No)	Yes	No
Ogaden War, 1978	Ethiopia	(Yes)	Yes	No	Somalia	No	No	No
Sino-Vietnam War, 1978	China	(Yes)	Yes	Yes	Vietnam, DR	(No)	No	No
Ugandan Tanzanian War, 1978	Uganda	(Yes)	No	No	Tanzania	No	Yes	No
Iran-Iraq War, 1980	Iraq	(No)	Yes	Yes	Iran	(Yes)	Yes	Yes
Lebanon War, 1982	Israel	Yes	Yes	Yes	Lebanon	(No)	No	No
	Israel	Yes	Yes	Yes	Syria	No	Yes	Yes
	Syria	Yes	Yes	Yes	Israel	No	Yes	Yes
Falklands Islands War, 1982	Argentina	Yes	Yes	Yes	United Kingdom	Yes	Yes	Yes
Chadian-Libyan War, 1987	Libya	No	Yes	Yes	Chad	(No)	Yes	Yes
Second Sino-Vietnamese War, 1986	China	No	Yes	Yes	Vietnam, DR	(No)	Yes	Yes
Persian Gulf War, 1990	Iraq	(No)	Yes	Yes	Kuwait	No	Yes	Yes
Persian Gulf War, 1991	USA	Yes	Yes	Yes	Iraq	(Yes)	Yes	Yes
Nagorno-Karabakh War, 1992	Armenia	(Yes)	No	No	Azerbaijan	(Yes)	Yes	Yes
Kashmir conflict, 1993	Pakistan	Yes	Yes	Yes	India	No	Yes	Yes
Nagorno-Karabakh War, 1995	Armenia	(Yes)	No	No	Azerbaijan	(Yes)	Yes	Yes
Eritrea-Ethiopian War, 1998	Eritrea	(Yes)	No	No	Ethiopia	No	Yes	No
Second Congo War, 1998	Congo, DR	(Yes)	Yes	Yes	Rwanda	No	No	No
Kargil Conflict, 1999	India	Yes	Yes	Yes	Pakistan	No	Yes	Yes
Afghanistan War, 2001	France	Yes	Yes	Yes	Afghanistan	(No)	Yes	Yes
	Russia	No	Yes	Yes	Afghanistan	(No)	Yes	Yes
	United Kingdom	No	Yes	Yes	Afghanistan	(No)	Yes	Yes
	USA	Yes	Yes	Yes	Afghanistan	(No)	Yes	Yes
Invasion of Iraq, 2003	USA	Yes	Yes	Yes	Iraq	Yes	Yes	Yes
	UK	No	Yes	Yes	Iraq	Yes	Yes	Yes
	Australia	No	Yes	Yes	Iraq	Yes	Yes	Yes

Notes: The table contains all MIDs and international armed conflict episode onsets listed in the COW (1960–2001) and UCDP/PRIO (1960–2008) datasets which qualify in at least one of the two datasets as a war (>1,000 battle-related deaths). / [a] Net fuel importer. / [b] Fuel discoveries. / [c] Fuel producer. / [d] Net fuel exporter. / Values in brackets are the author's own estimates on the basis of, among others, the World Bank World Development Indicators and UNCTAD. *Sources:* Author's compilation based on data cited in Section 4.

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