Interstate Resource Conflicts:

International Networks and the Realpolitik of Natural Resource Acquisition

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DOCTOR OF PHILOSOPHY

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Declaration

I certify that the thesis I have presented for examination for the PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

I declare that my thesis consists of **less than** 65,000 words.

Acknowledgements

I dedicate this thesis to my late grandparents Karlo & Baka, and Oma & Dida.

Thanks go to my examiners Covadonga Mesegeur and Indra De Soysa whose valuable comments will influence the direction of my work beyond this thesis. Thank you to my panelists Emily Meierding, Katherine Barbieri, Erik Gartzke and Rafael Reuveny, and other participants of past years APSA conference for the stimulating discussions and comments (I remain responsible for the work's shortcomings). I'm also grateful to Gabrielle To and Tarak Barkawi who made San Francisco and Essex possible. A special thank you to my great supervisor Mathias Koenig-Archibugi for his excellent advice and unwavering support throughout the years. Without him this dissertation would not have been possible. The same is absolutely true for my parents, my brother Jascha Bareis, and all of my family who supported me in so many ways through all ups and downs that writing a thesis involves. Finally, special thanks need to go to my dear friends Sander van der Linden and Richard Bluhm who advised me so well in many things. Also thank you to Thomas Schroeder & Johannes Busse for accommodating me so often at their homes without hesitation. Last but not least a shout-out needs to go to my folks in Duesseldorf and Zagreb!

Without a doubt, all of you have had an impact on this work in one way or another.

Thank you for being there.

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0. Abstract

This work sets out to investigate the effects of natural resource conditions on interstate conflict. It is specifically concerned with understanding when states pursue a violent natural resource acquisition strategy and what the main factors explaining the choice between violent and non-violent resource acquisitions by states are.

It has been hypothesized that conditions of natural resource scarcity and foreign resource concentrations have an impact on the conflict propensity of states; and furthermore, that the network level plays a fundamental role in conceptualising and assessing those conditions.

In light of a large number of mechanisms posited in the literature, partly working in opposing directions, this study offers a conceptualization of resource conditions arising from threat and opportunity settings, a distinct multilevel resource access framework, and a structured approach to their empirical investigation. The main analysis is conducted in form of a fixed effects logistic model with standard errors clustered on the dyad-level and covering country-dyads of the period 1962-2010 with Military Interstate Dispute (MID) initiation as dependent variable.

Overall, the findings of this research suggest that insights with regard to the resource-conflict link could be enhanced by taking into account resource frameworks introduced in this work and the network level of analysis. In fact, significant support has been found for the conflict enhancing effect of resource scarcity conditions, especially so if conceptualized in form of perceived resource access security that is nested in the network dimension. With regard to foreign resource conditions this study identifies the costs of conquest as a key factor, even though empirical support is somewhat lower. The reason for this may be the opposing effect of the strategic oil hypothesis for which this analysis also finds considerable support, especially when captured through the network level. Overall, it appears that the conflict-related dynamics arising from a resource threat setting are stronger than those arising from an opportunity setting.

The concepts and empirical findings of this study also have significant implications for the direction of future research as they shift the focus from resource ownership to resource access, and ultimately add to the understanding of the causes of war in general.

In summary, the empirical findings of this study support that:

1. A conceptual distinction needs to be made between the set of mechanisms associated with resource scarcity (desperate predator mechanisms) and those associated with foreign resource concentrations (greedy predator mechanisms). This distinction is important because each set of mechanisms is nested in a different setting, threat vs. opportunity, respectively. As a result the underlying dynamics with regard to the nexus between resource conditions to interstate conflicts over resources are distinct. This has implications for the key aspects to consider under each set.

2. Resource scarcity should be framed in form of *perceived resource access security* when investigating scarcity-induced conflicts over resources. This implies a shift of focus from 'how much' to 'who has control or access'[1]. Importantly, this means that even in face of general resource abundance, situations of individual resource scarcity are very possible and even likely[2].
3. The main dimension for assessing resource access security is the trade dimension, more specifically the degree of security with regard to imports of resources.
4. Access security through imports should be conceptualized in terms of embeddedness within global resource trade networks.
5. Unlike resource scarcity, conflicts associated with conditions of foreign resource concentrations should be assessed in terms of the degree to which such concentrations are perceived as an opportunity for conquest.
6. In addition to risks, the main dimension for assessing a resource acquisition opportunity is the degree of costs relative to benefits.
7. The network level appears to be helpful for assessing the degree to which a foreign resource concentration is perceived as opportunity, because it is able to (1) address the major risk factor associated predominantly with this resource-conflict mechanism, namely that of resource importer intervention; and (2) extend the assessment of potential benefits and costs beyond those only associated with the target state directly.

[1] While this shifts the focus away from considerations such as peak oil, of course, the amount of available resources in a system is, on average, somewhat correlated to the degree of general access across states. Yet, this is also limited by the fact that natural resources are usually highly fixed and unevenly distributed across states

[2] This may also be derived from and have important implications for the interaction between the factors resources, power and survival.

1. Introduction

In the great debate about war amongst states scholars are struggling to this date to find a general theory of causal factors, explaining the occurrence of the deadly large scale fighting amongst large groups of people (wars) in the history of humankind. The one general consensus about war is that it is a highly complex phenomenon resulting from a multi-causal process spanning across various levels of analysis (Cashman, 2014). This study is also concerned with the causes of war and specifically aims to shed light into the dynamics between natural resources and interstate conflicts.

The general public consensus about the role of natural resources in interstate conflicts is clear: Natural resources are an obvious and significant conflict increasing factor and states' (violent) foreign policies are guided by resource access security concerns. In very short – states fight over natural resources. While it is true that outright interstate wars appear to be a less common phenomenon in the post-WW II era, conflicts over resources could possibly continue to play an important role. In fact, the Carter Doctrine, which has elevated energy supply security to a national security concern, indicates a shift in focus towards resource securitization (possibly through violent means) in the post-Cold War era. Suggested direct examples are the Georgia-Russia crisis or Iraq's invasion of Kuwait and the subsequent first Gulf war (Klare, 2001). Also, the most recent occupation of Iraq can act as a reminder that even in the 21st century large scale conflicts over resources don't appear to be an irregularity in the international system. In line, Kaldor, Karl and Said (2007) observe that advanced industrialised countries, and rising countries like China, become more dependent on outside oil sources and increasingly regard resource access as national security issue, especially in light of more frequent supply shortages. Many other disputes over water, oil, minerals, or simply land might not have resulted in militarized incidents classified as war, yet they could contribute to the militarization of countries.

However, considering the scientific literature, the consensus and proof with regard to the resource-conflict link is much less clear. In the past the international conflict literature has mostly regarded the conflict-increasing role of natural resources as implicit and has therefore not been the primary focus of investigation[3] (Diehl, 1992; O'Lear, 2005; Koubi et al., 2014). Also stemming from a lack of a systematic investigation of the resource conflict question, scholarly opinions have been divided into resource conflict opponents and proponents. A number of scholars has mostly dismissed the existence of a significant direct or indirect link between natural resources and interstate conflict, if anything, only acknowledging the possibility of conflict enhancing effects of natural resources on intrastate conflicts (e.g. see Levy, 1995; Homer-Dixon, 1999; Collier & Hoeffler, 2004; Ross, 2004; Humphreyss, 2005). On the other hand, some scholars are convinced that natural resources have

[3] Some exceptions of less recent research are: Bakeless (1921), Wright (1942), Westing (1986), Liberman (1996)

always played a major role in international conflicts and that their importance will even increase in the future (e.g. see Westing, 1986; Klare, 2001; Peters, 2004; Follath & Jung, 2008; Roithner, 2008; Lebow, 2010; Scheffran et al., 2012). Bakerless (1921) studied the causes of modern wars between 1878 and 1918 and argued that fourteen of the twenty wars were resource driven. Similarly, in the twentieth century many of the wars were at least partly fought over resources: during the Algerian war of independence France was also reluctant to lose Algeria's oil deposits (Westing, 1986); during the Six Day War between Israel and Arab states one part of the conflict arose around the Jordan River (Shemesh, 2004).

Despite the (sometimes directly) opposing views on the role of natural resources in interstate conflicts one point appears to be uncontested: Every state has the need for natural resources for a number of reasons, eventually to ensure survival (e.g. see Kaldor et al, 2007; Baccini, Lenzi and Thurner, 2013).

Recently a number of focused studies have taken on the task of systematically investigating the multitude of posited resource conflict links[4], in some cases yielding conflicting results. For instance, Reuveny and Barbieri (2014) establish the significance and directionality of effects for a range of natural resources on interstate conflict. Colgan (2011) and De Soysa, Gartzke and Lee (2011) find support for increased aggressive foreign policy behaviour of (revolutionary) petro-states, but reject the resource war hypothesis in which states fight over resources (oil). In contrast, Struever & Wegenast (2011; 2016) and Caselli, Morelli and Rohner (2015) find general and robust support for the resource war hypothesis: The existence of resource endowments (oil) within a given state increases the likelihood of this state to be targeted in an interstate conflict. This is especially the case if resources are located close to state borders, which is assumed to decrease the cost of conquest. Finally, Schultz (2015) finds significant and opposing effects to Caselli et al. by considering a finer spatial resolution for the conflict variable; and Meierding (2010; 2016) questions the prevalence of interstate conflicts over resources in general and posits that most suggested resource conflicts are, in fact, not primarily driven by resource concerns, but can often be explained through conditions of desperation.

Furthermore, research has predominantly been focused on the effect of large foreign resource concentrations, rather than on conditions of resource scarcity (a distinction that will be introduced in the subsequent chapter). The small number of studies that focuses specifically on the conflict-enhancing effect of resource scarcity is limited to environmental variables of interest (e.g. Stalley, 2003), or remains at an initial test of evidence (e.g. Reuveny & Barbieri, 2014). In addition, the conception of resource scarcity conditions has often been inadequate, as the possibility for states to acquire resources through trade has mostly been neglected.

[4] For a good comprehensive overview of mechanisms with regard to oil see Colgan (2013); for a comprehensive overview of mechanisms with regard to conflict over resources see Chapter 1.

While there is not much agreement on the effects of natural resource on interstate conflicts, the importance of gaining a deeper understanding of this matter remains pivotal in the light of future environmental and geopolitical challenges. Through the analysis of historical data, insights may be gained into how certain attributes of natural resources impact international security concerns and interstate conflict.

This research sets out to investigate

When states pursue a violent natural resource acquisition strategy and what the main factors explaining the choice between violent and non-violent resource acquisitions by states are.

In doing so,

Chapter 1 introduces the topic by (1) providing a framework categorizing interstate resource conflict mechanisms, most notably introducing the distinction between resource scarcity and foreign resource concentration mechanisms. Based on this framework, it (2) provides a brief introduction with regard to mechanisms linking natural resources to interstate conflict that is not fought over resources but arises from a resource setting; (3) engages into a detailed discussion of mechanisms directly linking natural resources to interstate conflict over resources and their empirical evidence to date; and finally (4) briefly elaborates on additional open questions as identified by existing literature.

Chapter 2 discusses an additional issue that is at the core of the resource-conflict debate: The conception of resource scarcity and resource concentration conditions, and the associated measures for the resource variables of interest. In that, the chapter (1) scrutinizes the concept and measurement of resource conditions from recent empirical studies in order to identify limits; (2) introduces a concept of multilevel resource access[5] based upon which resource conditions should be conceptualized and considered for empirical testing; (3) identifies key aspects arising from the resource access framework for an empirical investigation with regard to conditions of resource scarcity or foreign resource concentrations (4) re-categorizes the mechanisms identified in Chapter 1 and (5) develops corresponding hypotheses for testing.

Chapter 3 introduces the network perspective on resource conditions. The first part of this chapter sets out to (1) redefine the resource scarcity perspective with regard to international conflicts over natural resources by developing a network centric resource security perspective. In doing so, it takes the multilevel resources access framework as a point of departure and uses the network level to re-conceptualize conditions of resource scarcity in a manner that reaches beyond actual resources

[5] A formal framework encompassing the different ways a state gains access to natural resources.

endowments within a state. It is argued that resource concerns arise from the degree of resource access security, which in turn is dependent on the size of domestic resource endowments and on the position[6] of the respective state in resource supply networks.
The second part of this chapter applies the network perspective to conditions of foreign resource concentrations with the aim to (2) relevantly extend considerations about risks, costs and benefits associated with violent resource acquisitions. This should yield a better assessment with regard to the degree a foreign resource concentration is perceived as opportunity for a violent acquisition. In doing so it utilizes the concept of n-degree egonets[7] to identify the boundaries for extending the respective measures. Special attention is laid upon risks arising from a protective shield predicted by the strategic oil hypothesis as this is deemed to be one of the major risk drivers with regard to violent resource acquisitions arising from an opportunity setting.
Finally, this chapter (3) concludes the development of propositions and provides testable hypotheses after each section.

Chapter 4 (1) addresses the overall research design that is employed to test the previously advanced hypotheses. In addition to this it (2) discusses alternative approaches to testing and their implications. Finally, the chapter (3) provides sets of model specifications for each hypothesis divided into seven stages. *Stage 1* comprises the initial tests without any adaptations with regard to a specific resource condition; *Stages 2* and *3* refer to the adapted tests specifically designed to capture conditions of resource scarcity or foreign resource concentrations, respectively and individually; *Stage 4* bridges stages 2 and 3 by jointly considering resource conditions in initiating and target states (resource scarcity and foreign resource concentration, respectively); *Stage 5* applies the set of tests from stages 1 through 4 to natural resources other than oil (the focus of the previous stages is exclusively on oil); and finally, *Stages 6* and *7* address the hypotheses referring to the network level with regard to resource scarcity and resource concentration, respectively.

Chapter 5 provides (1) a brief summary of results and (2) an in-depth discussion with regard to each stage of testing. In doing so, each section discusses the set of results arising from the standard model, from the additional set of models complementary to the standard model, and in some instances from additional robustness tests; and evaluates those results in order to arrive at an assessment with regard to the degree of support each hypothesis enjoys. In some instances, implications that reach beyond the testable hypotheses but arise from the tests thereof are also discussed. Finally, it (3) provides an overview of all results in order to provide a holistic picture of

[6] The most importantly level is a states centrality in the network, which translates to the size of a states direct resource trade network

[7] An egonet is one part of a wider network. The members of this smaller network are identified by the n-degree ties of a single node of interest (the ego).

implications. Please consult section 8.7 in the appendix for the reading manual regarding the summary tables.

Finally, the *sixth chapter* (1) offers the conclusion(s) of this study with regard to the advanced hypotheses, (2) discusses some additional implications that go beyond the tested hypotheses but arise from the tests thereof (3) addresses potential shortcomings of this study and, finally, (4) suggests future avenues for research that are deemed promising.

Overall, this work provides a number of contributions that are new to the field of interstate conflicts, some of which may also have implications in a wider context. The contributions include but are not limited to the evaluation and formalization of posited mechanisms in the existing literature, the introduction of a categorization framework for these mechanisms, the formalization of the important distinction between two main resource conditions, the development of a resource access framework, the postulation of a resource access security concept, the identification of shortcomings of previous conceptualizations and measurements of scarcity conditions vis-à-vis conflict, the introduction of the network level to reconceptualise the identified resource conditions, the development of a scarcity concept incorporating the security dimension, the extensive and structured empirical investigation with regard to the effect of resource conditions on interstate conflict incorporating important implications for the research design arising from previous points (e.g. the distinction between two main resource conditions), and finally the identification of a number of research avenues (also in terms of a broader context) directly arising from implications of the aforementioned contributions.

In summary, the empirical findings of this study support that:

1. A conceptual distinction needs to be made between the set of mechanisms associated with resource scarcity (desperate predator mechanisms) and those associated with foreign resource concentrations (greedy predator mechanisms). This distinction is important because each set of mechanisms is nested in a different setting, threat vs. opportunity, respectively. As a result the underlying dynamics with regard to the nexus between resource conditions to interstate conflicts over resources are distinct. This has implications for the key aspects to consider under each set.
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Importantly, this means that even in face of general resource abundance, situations of individual resource scarcity are very possible and even likely[9].

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[9] This may also be derived from and have important implications for the interaction between the factors resources, power and survival.

1. Natural Resources and Interstate Conflict

1.1 Theories and the general literature

With his essay on the principle of population Malthus (1798) opened the debate on the nexus between natural resources and conflict. The logic underlying Malthus' argument is clear: a physically limited bearing capacity of the planet earth and an ever-growing resource consuming earth population are irreconcilable if population growth remains positive. According to the neo-Malthusian theory, exponential population growth, excessive consumption (demand-induced scarcity) and environmental degradation (supply-induced scarcity) will lead to increased competition that can eventually escalate into militarized disputes amongst states. This had practical implications, as for instance pre-1945 Germany, thought that the pursuit of Lebensraum[10] (living space) would be vital for survival (Cashman, 2014). Beyond population pressure as the central theme, Lenin (1969) argues that scarcity in raw materials led capitalist nations to acquire colonies for their resources and markets and that contestation over these colonies was inevitable. In a similar regard, Choucri and North (1975) developed the lateral pressure theory in order to account for the offensive behaviour of states induced by population and economic growth. The interplay between so-called "master variables" (i.e., population, technology and resources) raise the amount of needed natural resources above supply for major developed states, which causes an increase in "lateral pressure". This pressure is then released through the violent acquisition of the needed resources through predatory trade, attainment of colonies and spheres of influence or conquest of territory. Van Evera (2001) identifies cumulative resources as particularly contested, since they enable the protection or acquisition of other resources (for instance, access to oil enables the violent acquisition of additional resources because it strengthens military power). These theories are largely consistent with the realist paradigm, especially with Mearsheimer's (2001) offensive realism, but also in the broader context of Waltz' balance of power and struggle for survival, and Carr's, and Morgenthau's considerations on the drive for power and the aggressiveness of human nature.

Yet, those views do not remain unchallenged: in response to Malthus, Godwin argued that the marginal increase in population pressure, even though growing due to an increase in the standard of living, will eventually flatten out due to an increased focus on intellectual pleasures, rather than sexual (Godwin, 1793; 1820). Furthermore, Deudney (1999) claims that technological development and the increasing intensity of trade relationships will significantly mitigate the potential for future conflicts over resources. Simon (1996) adds that the one most important resource in overcoming this tension is human ingenuity. Giordano, Giordano, & Wolf (2005) argue that resources

[10] The theory of war 'Lebensraum' is primarily advanced by General Karl Haushofer, who introduces Darwinian aspects by arguing that states have to fight each other for living space in order to survive.

exist as part of larger resource systems in which institutions can mitigate the potential for conflicts. Institutions provide a forum for repeated interactions, facilitate information exchange, reduce transaction costs, shape a state's perceptions of its interests, create issue-linkages, enhance reputational consequences of non-compliance, and improve possibilities for sanctioning non-compliance (Keohane, 1984; Lipson, 1984; Mearsheimer, 1994; von Stein, 2008). With regard to managing resources, regimes range from customary practices to institutionalised multilateral resource conventions and treaties. These arguments are in line with the resource-optimistic and cornucopian perspectives which suggest that innovation, more efficient production processes and recycling together with increased cooperation with regard to the management of scarce resources will reduce the potential for conflict in the future (Struever, 2010). Most of these notions can be situated within the institutional paradigm.

In fact, the Kantian tripod of peace suggests that the proliferation of the republican form of government (democracies), an increase in the amount of foreign commerce (interdependences especially arising through trade between states), and a rise in congenial polities (international organizations) should lead to a significant and constant decrease of militarized interstate conflicts (Russett & Oneal, 2001). Through these factors the Kantian perspective also touches upon the resource conflict debate, especially so with regard to resource access as a security concern (and the associated conflict potential). For example, interdependencies that run both ways could facilitate resource flows since dependencies can be exploited to gain access and serve as a barrier to the restriction of existing access (this effect could be inversed in case of one sided dependencies). As noted above, international organizations should further mitigate the conflict potential, especially so through facilitating the allocation of limited resources, increasing assurances with regard to continued resource flows, and providing conflict resolution mechanisms. Finally, the factor regime type (democracy) should also have an effect on the likelihood that a state violently acquires resources. This may arise from responsibilities to the public (stronger state-society linkage and less autonomous political elite), which could have an impact on how security concerns are dealt with – and may relate to the cost issue of conquest raised later on[11]. Furthermore, democracies appear to be more likely to join IGOs with one another (Russett al., 1998) and conduct more bilateral trade (e.g. Morrow et al., 1998). All factors should have a decreasing effect on the likelihood of resource conflicts, especially those arising from resource concerns as a security issue. Above all others, the factor with regard to trade flows and interdependencies should have a significant impact. This point (and the empirically supported propositions of this study) could also have insightful implications for the trade-conflict debate. Both points will also become more evident in subsequent chapters.

Furthermore, the capitalist peace proposition (Gartzke, 2007) suggests a shift towards more service and finance based economies and away from resource intensive

[11] Democracies are possibly more susceptible to a wider range of cost factors when engaging in conquest like activities (also see sections 2.2 and 2.3).

manufacturing, possibly reducing resource dependencies and the overall resource pressure in the system[12]. This is further supported by the notion that development increases the ability of states to project power while decreasing the willingness of states to engage in conflict over certain issues such as the conquest of tangible assets (Gartzke & Rohner, 2010).

Nevertheless, some scholars have begun to speak of a new great game of control over resources in Asia (Blank 1995; Rasizade, 2002; Jafar 2004), a renewed run for resources in Africa (Morris, 2006; Taylor, 2006; Frynas and Paulo, 2007) and a future of contestation about resources in general (Klare, 2001; Follath & Jung, 2008; Leder & Shapiro, 2008; Roithner, 2008). The rising economies of developing countries together with a certain (and highly fixed) distribution of natural resources start to shift the bargaining power away from the developed world. These developments will likely be exacerbated by future climate change. In fact, the expected effects should intensify experienced scarcities, which adds pressure to the changing relationships under this shift.

Considering the existence of the opposing theories and the geopolitical and environmental developments described above, it is surprising that scholars have made little effort to further investigate the resource-conflict link. Even though the basic mechanisms through which resources can lead to violent conflict are outlined in the literature, much controversy remains, since only few systematic studies have been conducted, most of which with a focus on civil wars (Gleditsch, 1998). In fact, studies of interstate conflict in general focus rather on the attributes of the belligerents than the actual issues leading to the conflict (Diehl, 1992). The few studies focussing on the effects of natural resources on interstate conflict mostly limit themselves to anecdotal evidence, and are lacking a coherent framework and empirical testing (e.g. see Levy, 1995; Gleditsch, 1998; Stalley, 2003; Giordano, Giordano & Wolf, 2005; O’Lear, 2005; Wasson, 2007; Struever, 2010; Colgan, 2013; Koubi et al., 2014; Caselli et al, 2015). Especially the overall lack of variation in the dependent and independent variables under investigation and the lack of important variables (e.g. regime type) is criticised for most studies (Gleditsch, 1998). Since the employed case studies arguably suffer from selection bias, the evidence for the asserted relationships remains elusive. One remedy would be the application of large-N analyses (Gleditsch, 1998; O’Lear, 2005; Koubi et al., 2014).
While quantitative research in this field is still in its infancy and just beginning to explore, test and understand the dynamics underlying natural resources and interstate conflict (O’Lear, 2005; Koubi et al. 2014), the number of studies has significantly increased in recent years (e.g. see Caselli et al., 2014; Macaulay & Hensel, 2014;

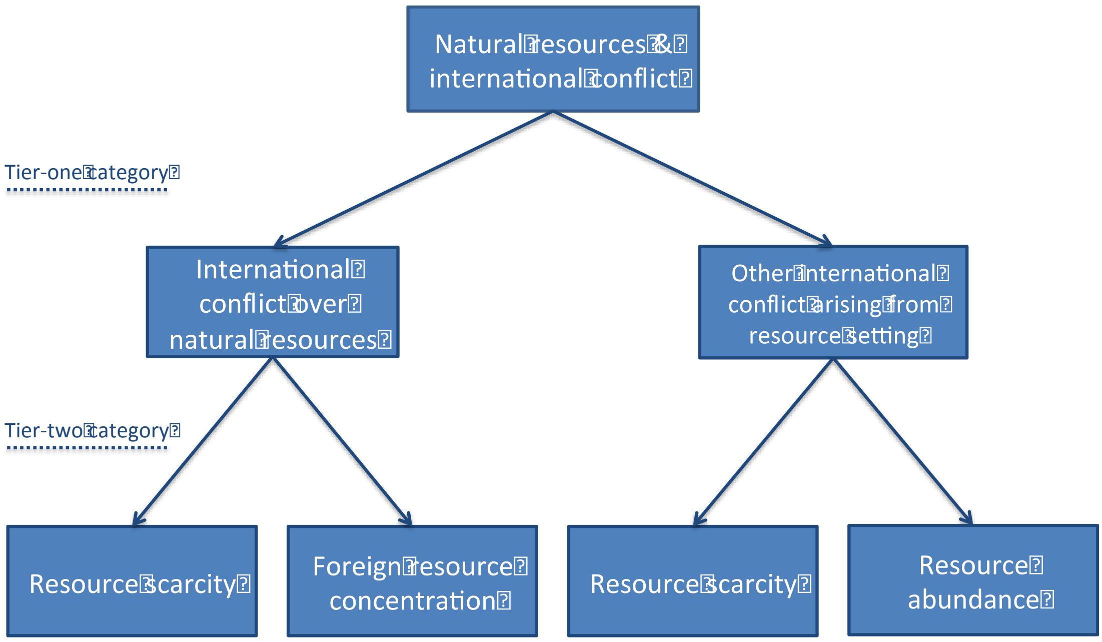
[12] However, this may not necessarily be the case since the overall production and direct dependencies only shift and shocks should eventually affect the entire system through indirect dependencies. In fact, given global growth rates, consumption and production appear to expand over time, rather increasing the overall resource pressure in the system. Yet, again, this point needs to be weighted against others, for instance the cornucopian perspective.

Reuveny & Barbieri, 2014; Meierding, 2016; Struever & Wegenast, 2016). This is partly due to the rekindled interest in the nexus between resources and conflict in general and also due to an increasing number of available data sets, making this mode of analysis possible. However, the existing large-N research often limits itself to testing general plausibility rather than specific mechanisms, produces results that are somewhat inconsistent across studies and occasionally employs research designs suffering from poorly constructed variables that only indirectly and incompletely measure natural resource related factors.

Recalling that this analysis is interested in empirically investigating when states pursue a violent natural resource acquisition strategy, the conflicts that are fought over resources are of prime interest. The occurrence of a violent resource acquisition between states directly translates into one of the mechanisms within this category. However, in order to provide a comprehensive understanding of the diversity and complexity of mechanisms linking natural resources and interstate conflict, the following section will also briefly describe how natural resources are 'indirectly' linked to other interstate conflicts (second tier-one category). Yet, before indulging into this discussion, it is important to develop a framework according to which individual mechanisms can be characterized.

1.2 The framework

Figure 1.1: Categorization of resource conflict mechanisms



Source: Author's compilation

This study employs a framework that distinguishes between different resource conflict mechanisms on two levels (tiers). On the first level, a distinction is made between mechanisms associated with interstate conflict over natural resources (first tier-one category) and mechanisms in which interstate conflict is not fought over resources, but is arising from a resource setting (second tier-one category). This is an important categorical distinction, because the driving force behind the resulting conflict is fundamentally different: The former category encompasses conflicts that are fought over resources, which means that the acquisition thereof is the primary motive for the conflict. Conflicts within this category are referred to as *resource wars* and the associated mechanisms as *blood resource mechanisms*. The latter category includes conflicts in general (conflicts other than resource wars) that result from a certain set of conditions associated with natural resources, yet are not linked to them in terms of an intended acquisition. This means that the conflict is not motivated by a resource acquisition, but rather arising from a certain resource setting (an abundant presence or severe absence of natural resources). For instance, Struever (2010) develops a typology distinguishing between mechanisms in which resources are considered a motive for conflict initiation because of the desire to acquire them, and mechanisms in which resources offer the opportunity for conflict initiation because they enable the conduct of a violent conflict (Figure 2). However, Struevers framework only incorporates mechanisms associated with resource abundance and therefore is incomplete for the study at hand, which also intends to investigate the effects of resource scarcity on interstate conflicts. As a result, the framework in Figure 1.1 adds another level in order to distinguish between mechanisms associated with 'resource scarcity' (first tier-two category) and 'foreign resource concentration' and 'resource abundance' respectively (second tier-two category). Dividing the mechanisms according to resource scarcity and resource abundance has been an implicit practice, in fact a different set of effects can expected depending on the size (lack/abundance) of natural resource deposits (e.g. see Colgan, 2013; Reuveny & Barbieri, 2014). Also, it has to be noted that the mechanisms associated with resource abundance are inherently different across the two tier-one categories and are therefore not comparable: Resource abundance in the first tier-one category refers to the natural resource endowments of a potentially targeted state, as opposed to resource abundance in the second tier-one category, where it refers to the domestic natural resource endowments within the conflict initiating state. In order to account for this difference, the term 'foreign resource concentration' is used for the first tier-one category. As a result, for this chapter, the main variables characterising the tier-two categories can be defined as follows: *resource scarcity*[13] is a setting in which the availability of resources relative to the required resources is limited and therefore perceived as scarce (a states resource needs exceed its net resource access); *resource abundance* is a setting in which a states' net resource access exceeds its resource needs (supply is higher than demand); and *foreign resource concentration* refers to a significant accumulation of resource deposits located within a potential target state.

[13] For instance, Fisher (1979) suggests that an ideal measure of scarcity should summarize the direct and indirect sacrifices that have been made in order to acquire a unit of the desired resource.

Figure 1.2: Types of Interstate Resource Conflicts

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: Struever (2010)

It is important to note a number of points:

(1) Despite the fact that some previous studies acknowledge that conflict over resources can arise from different resource settings, this study provides a formal framework that makes a distinction between resource conditions in the initiating state and resource conditions in the target state that may increase the likelihood of a conflict over resources. For the initiating state those are conditions of resource scarcity and for the target state conditions of foreign resource concentrations.

(2) The framework recognizes the two fundamentally different settings within which the motivation to acquire resources is nested. In that, it aims to facilitate insights with regard to the driving forces behind and aspects of individual mechanisms and does not merely classify as a goal for itself.

(3) The variety and complexity of existing mechanisms make this framework an important prerequisite in order to be able to discern between types of mechanisms and enable a more precise empirical investigation. This is reflected in the empirical findings (Chapter 5).

1.2.1 Other interstate conflict arising from a resource setting

Even more than conflicts over resources, general conflicts (conflicts other than resource wars) arising from a certain natural resource setting are characterized by a multitude of mechanisms, linking natural resources to interstate conflict in different ways, many with intervening effects. For instance, within the resource scarcity context, Stalley (2003) suggests that a conflict might result from cross-border migration induced by resource scarcity. A lack of vital resources, e.g. food, within a state may create a perilous situation for the population, creating refugee streams across borders. The resulting humanitarian crises create spillover effects and may result in an interstate conflict (Salehyan and Gleditsch, 2006). Alternatively, the weakened state might become the target of rival states that realize an opportunity for conquest or intervention (e.g. Daxecker, 2011). Conversely, scarcity induced dissatisfaction among the domestic population could induce political elites to engage in an interstate conflict for diversionary purposes (in order to distract from the domestic situation) (e.g. Cashman, 2014).

As an alternative to resource scarcity, it has been argued that resource abundance can also lead to conflicts between states. For instance, the strategic oil hypothesis[14] of De Soysa, Gartzke and Lie (2009) suggests that petro states are able to pursue an increasingly aggressive foreign policy, because they are protected by resource importing states due to their strategic importance. Adding to this, an abundance of resources can enable a state to build strong military capabilities, possibly creating a security dilemma. Overall, this results in a higher propensity to initiate a militarized conflict (e.g. see Soltanov, 2009). In this respect, McDonald (2007) indirectly links resource abundance to a higher propensity to initiate an interstate conflict by finding a positive relationship between publicly held property (including rents earned from natural resources) and militarized interstate disputes (MIDs). These states, characterized by a high reliance on sales from natural resources, are labelled rentier states and may suffer from rentier effects. Reuveny & Barbieri (2014) suggest that an abundance in resources may increase the conflict propensity of a state, because leaders are more autonomous, risk taking, or the population is discontent with the allocation to resource rents: In the weak state mechanism (Humphreys, 2005) the strength of the state-society linkage is weakened through small incentives to create strong bureaucratic institutions and through the weakened power of citizens over government because of especially low taxes[15]. In addition, the grievance mechanism suggests that international conflict may arise from domestic grievance, in turn arising from the presence of resources. This may happen through a number of sub-mechanisms: States may experience transitory inequalities; economies could be more vulnerable to terms of trade shocks; the process of extraction may lead to forced migration; or proceeds from the natural resource wealth may be perceived as more unjustly distributed than other wealth (Humphreys). Specifically for oil, Colgan (2013) identifies a number of additional mechanisms: The oil industry grievance mechanism, in which the presence of foreign workers create grievances for state or non-state actors; the petro-insurgency, in which oil income provides finances for foreign nonstate actors to conduct war; and the externalization of civil wars in petrostates mechanism, in which oil creates conditions for civil war that may lead to externalization, spillover or foreign intervention. In general, many of these

[14] Besides the strategic oil hypothesis, De Soysa, Gartzke and Lie (2009) also advance the blood oil hypothesis, according to which petro states should be involved in larger disputes, and the liberal oil hypothesis, which suggests that petro states will avoid larger disputes. However, the results of their analysis support neither of the two hypotheses.

[15] Similar to Colgans (2013) petro-aggression mechanism for oil.

mechanisms work through intermediary effects affecting the domestic situation, which is then externalized leading to an interstate conflict[16].

1.2.2 Interstate conflict over natural resources - The mechanisms & evidence to date

Having provided a general framework and brief overview of indirect ways natural resources are associated with interstate conflicts, the discussion now turns in greater detail towards a specific subset of mechanisms, namely those associated with conflicts over resources (first tier-one category, Figure 1). The outcome of these mechanisms is either the direct acquisition or the establishment of direct and secured access to a natural resource. The aim is to specify the main mechanisms within this category in form of testable hypotheses, establish which of these hypotheses enjoy empirical support, evaluate and discuss the implications of the empirical studies, and identify gaps and promising avenues for future research. For reasons described above, the focus with regard to evidence for the posited mechanisms (albeit not exclusively) will lie on large-N studies.

Similar to the mechanisms in the second tier-one category, interstate conflicts over resources are divided into mechanisms associated with resource scarcity and those associated with foreign resource concentrations. The fundamental difference between those two subcategories is the conflict initiating set of conditions: While the direct motivation behind the offensive behaviour of the attacking state is the same for both (the acquisition of natural resources), the setting within which this motivation is nested varies. On the one hand, resource scarcity creates an environment of threat, and on the other hand, an abundant concentration of natural resources in a foreign state creates an environment of opportunity (which is different from the opportunity category mentioned in Struevers framework). For instance, for petrol, Colgan (2013, p. 151) distinguishes between resource wars, in which the aggressor is motivated by large petrol endowments in the target state, and scarcity wars, in which the aggressor is motivated by severe domestic petrol shortages: “Unlike resource wars[17], which can be motivated by greed, scarcity wars are necessarily driven by intense, immediate oil shortages”.

The following section first discusses the set of posited mechanisms that are associated with conditions of resource scarcity and subsequently those associated with foreign resource concentrations. An overview of all mechanisms can be found in Figure 2.1. However, it needs to be noted that this figure contains the list of mechanisms as advanced by the academic literature and as allocated by the author between the two

[16] For a detailed discussion on the relationship between domestic conflict and interstate disputes see e.g. Gleditsch, Salehyan and Schultz, 2008; Daxecker, 2011.

[17] With the term ‘resource wars’ Colgan refers to conflicts over resources induced by an abundant concentration of resources in a foreign state. This study employs the term to include all conflicts that are fought over natural resources.

categories of the introduced framework. However, as will become evident in the subsequent chapter, many of these mechanisms are special cases of two main ones. Hence, these should play a subordinate role for initial testing (see section 2.4).

1.2.2.1 Resource scarcity

Resource acquisitions arising from a threat setting induced by resource scarcity can be summarized under the following key proposition:

P1: States experiencing resource scarcity are more likely to initiate an interstate conflict (in order to acquire the needed resources through violent means).

States are highly dependent on natural resources for economic and military development (Wasson, 2007), possibly even to the extent that access to certain natural resources is conditional to ensuring survival. In that, resources can be directly important for survival or indirectly through the power – resource link, as access to and control of natural resources are a key constituent of national power (Dannreuther, 2010). For instance, for energy resources, Baccini, Lenzi and Thurner (2012, p.11) state that "energy security is a fundamental part of consumer states' national security. Fuel is vital for national defence, for the preservation of states' economic infrastructure, and it has to be obtained at affordable prices". Similarly, Kaldor et al. (2007, p. 16) observe: "Sectors that make up the heart of the economies of the West and the core of US military strength rest on access to petroleum and simply cannot survive without it. Thus, it is of vital interest to the West that no single country be permitted to dominate oil supplies, and the ultimate guarantor of the security of supply is force". Even if ultimate survival is not at stake, being dependent on natural resources, states will perceive a lack thereof as a threatening situation that requires change (adopting an offensive realism perspective, resources are considered scarce even beyond the point where current needs are met, since states constantly aspire to gain more power). Notably, resource scarcity has to be interacted with dependence for the respective resource in order to create a threat environment for a state. The situation of scarcity can arise through many different ways, some are man made (e.g. through the imposition of an embargo), others arise from environmental factors (e.g. drought). Environmental scholars distinguish between three types of environmental scarcity: supply induced scarcity caused by degradation and depletion; demand-induced scarcity caused by population growth and increased consumption; and finally structural scarcity caused by an unequal distribution of resources (Diehl & Gleditsch, 2001). The end result is the same in one respect: The demand for a natural resource exceeds supply. Under the assumption that other more cost effective means of acquiring resources (such as trade, aid, diplomatic exchange, etc.) have been exhausted to close this gap, the only option remaining is the acquisition through violent means. Historic examples for this are Japan's military invasion of Southeast Asia, which is (also) motivated by the US oil embargo in 1941 (Morley, 1980), and Germany's drive toward the oil-rich Caucasus region, also during the Second World

War (Hayward, 1995). The actual cross-border acquisition can take different forms and is therefore divided into individual mechanisms, as is captured by the following sub-hypotheses.

The most direct way for a state to violently acquire the needed natural resources is to conquer resource rich territory. Under the assumption that other means to gain access to the needed resource are not possible, the state is left with the option of violent acquisition. Even though territorial conquests are considered costly as such, the threat of non-action arising from the lack of resources becomes even more costly. As a result, the state experiencing resource scarcity initiates an interstate conflict with another state presumed to be endowed with the needed resources. For petrol, Colgan (2013) labels this mechanism scarcity war, however, for the study at hand it will be referred to as *desperate predator mechanism*, and is captured by following proposition:

Proposition 1.1: State A experiences scarcity in resource X -->[18] State A initiates a conflict against State B where resource X is present (in order to alleviate the shortage in resource X).

Most recent empirical studies focus on mechanisms associated with foreign resource concentrations, however, a limited number has set out to investigate the effects of resource scarcity and found first empirical support for the suggested hypothesis. Stalley (2003) finds a significant positive effect for soil scarcity (soil degradation) and general environmental scarcity (measured in form of a composite variable including soil, fish, water and population) on conflict incidence. Reuveny & Barbieri (2014) extend the list or resources by finding a positive significant effect for freshwater, precipitation, minerals and fuel. Specifically for oil, Meierding (2010) finds evidence for her desperate state hypothesis, which argues that states only attempt to violently acquire additional resources under conditions of desperation and the exhaustion of alternative acquisition strategies. Finally, Wasson (2007) establishes that iron & steal deficiency as well as very low and high values for energy deficiency increase the propensity for a state to initiate an interstate conflict, while medium values reduce it. The results for the variable energy deficiency demonstrate that the relationship in general is non-linear and the same resource can have conflict enhancing and simultaneously conflict reducing effects, depending on the size of the endowments of that resource, ceteris paribus.
Even though the studies establish first support for the hypothesis, the employed research design (monadic level of analysis, conflict incidence as dependent variable) is consistent with a number of mechanisms, which is why it only provides general plausibility for the hypothesized mechanism. For instance, since the dependent variable is conflict incidence or onset, the results are also consistent with the mechanism in which the resource scarce state is rendered a target, because it is

[18] Denotes causal link.

perceived weak. Even Wasson (2007), who employs dyads and directional effects, fails to establish final evidence, because the resource endowments in the targeted state are not considered. In case no resources are present in the targeted state, the conflict has probably been initiated for reasons other than the acquisition of needed natural resources (e.g. for diversionary purposes). Furthermore, some variables are imperfectly constructed, for example the water scarcity variable in Stalley (2003) had to be dropped due to significant correlation to other independent variables. Moreover, some of the results are contradicting, for instance, Stalley (2003) and Reuveny and Barbieri (2014) find opposite effects for the variable soil. Finally, the type and intensity of the conflict has not been investigated properly, since most studies include all conflicts (low and high intensity) in the dependent variable.

In addition to the grieving predator mechanism, Stalley (2003) suggests that a state might initiate a conflict when its access to a resource is threatened by another state. This can take various forms depending on the type of resource and its geographic allocation. For instance, in a situation where two states are located along a river, the state situated upstream may divert water for its own use, limiting the access to water for the state located further downstream (A historic example is the conflict over the Jordan river between Israel and Arab states in which Israel tried to divert the river for its own purposes). Furthermore, negative environmental spillover effects across borders could pollute existing resource endowments and therefore inhibit access to them. Colgan (2013) suggests that access might also be threatened by interrupting transit routes and mentions the militarization of the Strait of Malacca between the United States and China as contemporary example. Regardless of the specific way the access to a resource is threatened, the affected state will try to re-establish its access, if necessary through violent means. Under the label *disputed access mechanism* this dynamic are captured by the following proposition:

Proposition 1.2: State A experiences scarcity in resource X, because State B limits its access to resource *X --> State A initiates a conflict against State B (in order to re-establish access to resource X).*

All studies discussed under the grieving predator mechanism are also applicable to this hypothesis. Yet, even though the results are conclusive with the disputed access mechanism, a direct investigation is still missing. Only for the resource water, direct empirical evidence has been well established. For instance, Gleditsch, Furlon, Hegre, Lacina and Owen’s (2006) results suggest that shared basins increase the propensity for conflict. Consistently, Toset, Gleditsch and Hegre (2010) find that a joint river increases the probability of militarized disputes, with the effect being highest for the upstream-downstream relationship. Nonetheless, it is generally accepted that international water management institutions and economic, political and other ties between states significantly lower the risk of conflict, and that if a conflict arises, it is mostly limited to non-violent disputes and political tensions (Koubi, Spilker, Böhmelt and Bernauer, 2014).

Besides the overly broad research design for the tested resources other than water, none of the studies distinguishes between the reasons for the resource shortage. This might be important, since the disputed access mechanism is likely more about a wider concept of scarcity (caused by access limits imposed by another state) rather than the actual resource shortage within the state. For example, (similar to cumulative resources) if the kind of blockage implies potential additional future threats (to access and in general), the experienced scarcity or threat is much higher.

Somewhat related to the disputed access mechanism, even though on a different level (systemic rather than individual or dyadic), is the strategic oil hypothesis advanced by De Soysa, Gartzke and Lie (2009) and the risk of market domination mechanism suggested by Colgan (2013). Both are exclusively developed with a focus on petrol, but could possibly be applied and tested for other natural resources as well. In both mechanisms, states seemingly don't fight in a conflict over resources directly, but in a conflict that is about market domination: "[...] actors dispute the type of economic power that various [...] [states] will hold in the post conflict [...] [resource] market" (Colgan, p. 157). The threat of conquest of important resource endowments by a resource exporting state creates an access risk for importing states, which will intervene by means necessary to uphold status quo. For example, in 1991 a US-led coalition felt the need to intervene in Kuwait in order to prevent Saddam's Iraq becoming a dominant player in the global petrol market.
The strategic oil hypothesis consists of two parts[19], one of which has already been addressed before. As a result, it can be situated within both tier-one categories, depending on the aspect that is considered. Recalling from the previous section, the first part suggests that petro states disproportionately initiate minor disputes given their strategic position with regard to an important resource, resulting in a protective umbrella of powerful states. This leaves them somewhat less restricted in their behaviour on the international stage: As long as the status quo of supply stability is secured and the leverage remains with the importing states, the petro state is protected by a powerful patronage. However, (in the second part) as soon as too excessive aggressions or the targeting of other oil suppliers is threatening the balance of power in the market, the former patronage together with other powerful oil importers will be quick to re-establish status quo by means of sanctions, regime change or even military intervention. The example from above can be extended here: Prior to the invasion of Kuwait, Saddam was able to engage into conflicts as long as the global balance of power between importing and exporting states would remain unchallenged, and the access to petrol secured. Only when this balance was threatened by the invasion of Kuwait, with a possible extension to Saudi Arabia, did the importing states intervene.
The above-described mechanisms are seemingly not directly related to the acquisition of natural resources. However, since the end of empires and the rise of a global economy, most states acquire their needed natural resources through international

[19] Strictly speaking the hypothesis can be divided into four parts, see De Soysa et al. (2011), pp. 6ff.

markets. For resource importing countries, being a dominant player in the market directly translates into resource access security. Therefore, the resulting state (secured access to resources through market power) can be considered a de-facto acquisition of resources. Under the label *balance of power mechanism* the following proposition arises:

Proposition 1.3: Resource-importing states experience a shift in bargaining power over the international price of resource X in favour of resource-exporting states --> Resource-importing state(s) initiate(s) conflict against resource-exporting state(s) (in order to restore the balance of power and therefore secure future resource access).

Empirical evidence for this hypothesized mechanism is very scarce. Only De Soysa, Gartzke and Lie (2009) conduct an empirical investigation and arrive to results that are consistent with a part of the strategic oil hypothesis (as opposed to blood oil and liberal oil): Petro states are more likely to initiate small scale conflicts, yet refrain from becoming entangled into larger conflicts or from attacking other petro states. While these results provide first evidence that petro states enjoy some freedom derived from their strategic value due to their oil assets, the second part of the hypothesis remains untested. Directly investigating whether a shift in the balance of power between resource importing and exporting states in favour of producers results in a conflict, ideally requires a research design that employs a level of analysis beyond the monadic or dyadic structure. Furthermore, both, De Soysa et al. and Colgan (2013) limit themselves to the resource petrol. Whether these dynamics also apply to resources other than petrol (e.g. natural gas) remains open.

1.2.2.2 Foreign resource concentration

Besides resource scarcity, foreign resource concentrations are also posited to have an effect on state behaviour with regard to the engagement in interstate conflicts. Resource acquisitions arising from an opportunity setting in form of the presence of foreign resource concentrations are captured by the following key proposition:

P2: States are more likely to initiate an interstate conflict in order to acquire resources if presented with the opportunity.

Mechanisms associated with an abundant concentration of resources are fundamentally different from those associated with scarcity in an important respect: The driving force behind the violent acquisition. While resource scarcity mechanisms ‘push’ a state towards violent behaviour, because other options are exhausted and the resource shortage poses a significant threat to the state, actors within the abundance mechanisms are ‘pulled’ into interstate conflicts by the promise of large spoils from territorial conquests. The presence of significant aggregates of valuable resources may serve as a motivation in itself for other states to gain control over the respective territory. Aggressors being driven by greed rather than need, the size of the resource endowments within the initiating state should largely be irrelevant, while a significant accumulation of resources in the target country becomes a necessary condition: “[...] Resource wealth provides an opportunity for militarily assertive foreign policies and, [...] large- scale deposits of strategically and economically valuable resources present attractive spoils of war regardless of the resource endowments of the conflict-initiating party” (Struever, 2010, p.8). For instance, regardless of Iraq’s oil reserves, Saddam aspiring to gain control over significant oil sources was one of the main drivers behind the invasion of Kuwait (e.g. Klare, 2001). Eventually, there is a threshold when the total value of large resource endowments outweighs the costs associated with their appropriation, irrespective of the size of own endowments. Similar to the resource acquisitions induced by resource scarcity, the acquisitions motivated by the presence of foreign resource concentrations take multiple forms, which are presented in the hypotheses below.

Comparable to acquisitions in the desperate predator mechanism, the acquisition of significant resource endowments can occur through territorial conquest. The geographic distribution of natural resource across state territories is highly fixed and some states enjoy an especially significant concentration of resource endowments within their territory. This likely renders them a valuable target in interstate conflicts, because the presence of natural resources makes conquest of their territory significantly more appealing. However, since the costs of such conquest are usually considered high, states will only initiate an interstate conflict with the resource endowed state under certain circumstances. More specifically, the potential gains of conquest have to outweigh the economic, political and reputational costs associated with the initiation of an interstate conflict. In this regard, Liberman (1996) has analysed historical occupations and concludes that conquest in fact pays. Even more, modernization inflates the potential payoff by decreasing extraction costs and increasing state surplus. Focusing solely on the extraction of natural resources, costs are decreased even further, because the need to control the industrial societies of the conquered state doesn’t necessarily arise. Also the location and extractability of the resource endowments have a direct impact on the costs associated with their appropriation. However, the actual occupation of foreign territory is not absolutely necessary in order to gain access to the desired resources, two additional strategies are the replacement of an opposing regime through violent means and the extortion of concessions through military pressure (Struever, 2010). Under the label *greedy predator mechanism*, the strategies for appropriation of natural resources through interstate conflict are summarized in the first sub-hypothesis:

Proposition 2.1: State B experiences a significant concentration in resource X --> State A initiates an interstate conflict against State B (in order to acquire resource X, motivated by the presence of a significant concentration in resource X and (relatively) low acquisition costs).

Most of the recent empirical research in the field has focused on the effects of foreign resource concentrations on interstate conflict, and thus the greedy predator mechanism has enjoyed relatively large scrutiny. However, results of the empirical research undertakings are somewhat contradicting with each other and a definitive answer with regard to this mechanism remains undetermined, especially for resources other than oil.

Investigating the effect of natural resources on the probability that a territorial claim will escalate into a military dispute, Hensel & Macaulay (2014) find a positive effect for the resources agriculture, food, freshwater and energy. It appears that these resources create sufficient value to the extent that states are willing to use military means in order to secure the contested territory. Reuveny & Barbieri (2014) confirm these findings for the resource agriculture by showing that its presence in abundance increases a states conflict propensity. However, in contrast to Hensel & Macaulay, a negative effect is found for the resources freshwater, precipitation, minerals and fuel. Both studies lack a test for directional effects and it remains unclear whether the endowed state is more likely to initiate a conflict or to be rendered a target. Thus, the evidence for the hypothesis stated above remains inconclusive.

Besides the somewhat broader research design of Reuveny & Barbieri and Hensel & Macaulay discussed above, De Soysa, Gartzke and Lee (2009), Soltanov (2009), Colgan (2010), Struever & Wegenast (2011) and Caselli, Morelli and Rohner (2014) have also included tests for directional effects, albeit with an exclusive focus on oil (with the exception of Soltanov). The results of the studies conducted by Soltanov and Struever & Wegenast directly support the suggested hypothesis: Soltanov finds evidence that states with high energy rents are being targeted more often, and, correspondingly, Struever & Wegenast establish a positive connection between absolute and per capita oil reserves and the likelihood to be the target in a militarized interstate dispute. Caselli et al. confirm their findings and show that the effect becomes larger the closer oil reserves are located to the contiguous border. Assumingly, the costs of conquest are considered much lower when they refer to acquiring resources located in territories close to borders, possibly avoiding the necessity of large-scale conquests in which an entire state has to be vanquished. Interestingly though, De Soysa et al. and Colgan arrive at the opposite conclusion with regard to the stated hypothesis. De Soysa et al.'s results suggest that oil exporters are more likely to initiate small-scale disputes, but not more likely to be rendered a target. This is in slight contradiction with Colgan (2010), who finds that petro states are more likely to initiate a conflict only if they are led by a revolutionary government, and no effect is found for petro states without revolutionary government. Equally to De Soysa et al., petro states are not more likely to be targeted. These results are in stark contrast to Soltanov, Struever & Wegenast and Caselli et al. who find that the presence of oil endowments are in fact increasing the probability to be targeted in an interstate conflict. Likely, the opposing findings can be ascribed to the fact that oil has an effect in both directions: On the one hand it enables a state to initiate interstate conflicts, but, on the other hand, also renders it a valuable target for conquest by a foreign power. The conditions under which a particular effect is stronger remain unclear. However, first results with regard to endowment size relative to state size provide a promising avenue for further investigation. Finally, first direct evidence (even though conflicting) with regard to the hypothesized mechanism has only been established for a single resource and an investigation of directional effects has yet to be conducted for resources other than oil.

With the exception of specific circumstances decreasing the costs of conquest, more often than not the acquisition of foreign territory is considered too costly. International repercussions are expected to be significant and resource rich states are often able to afford upholding a well-equipped military force. A more discrete and less costly way to acquire natural resources is to intervene in a civil conflict of a resource rich state. In what Humphreyss (2005) has named the *greedy outsider mechanism*, a third party intervenes in or supports a civil conflict in order to capitalize on the opportunity to acquire valuable resources. This can occur through gaining direct control over the desired resources or through attempting to re-stabilize the conflict prone state in order to ensure stable resource exports. As long as resources in abundance are present, the reason for the civil conflict should be irrelevant. The greedy outsider mechanism can then be stated in form of the following hypothesis:

Proposition 2.2: State B experiences a significant concentration in resource X and a civil conflict --> State A intervenes in the civil conflict (in order to acquire resource X).

To date, this hypothesis has enjoyed only scarce empirical testing. One of the few studies is conducted by Hammarström (1997), who has systematically studied the intervention behaviour of France, The United Kingdom, and the United States. Only for France could a connection between military interventions and abundant resource endowments in the targeted state be established. Furthermore, Koga (2008) has conducted an empirical investigation on the conditions under which third party interventions in civil conflicts are more likely. The results show that autocratic third parties are more likely to intervene in a civil conflict if lootable resources are present.
Overall, the effects of foreign resource concentrations on military interventions have remained underexplored (Struever, 2010). Empirically, only primary and secondary diamonds as well as oil reserves have been tested against third party interventions in civil conflicts.

Finally, an additional mechanism linking foreign resource concentrations and interstate conflict specifically refers to the location of resource endowments relative to state borders. As a result, it is somewhat related to the disputed access mechanism in that a resource is located across a border (for the disputed access mechanism this is for instance a river flowing through two states). However, rather than addressing access concerns, states in this mechanism fight over the distribution of resources that are present in abundance. The location of these resources relative to state borders is such that their definite ownership remains undetermined. This can occur if the resources are located directly on a state border; in international territory with contested borders, such as the Antarctic circle; or if state borders are contested or inaccurate in the first place. Under the label *border resource mechanism*, the following hypothesis captures this dynamic:

Proposition 2.3: Resource X is situated in a location so that its ownership between State A and State B is undetermined --> State A and State B fight over the distribution of resource X.

Similar to the preceding mechanism, the border resource mechanism has received only scant attention and a direct empirical investigation is almost non-existent. First evidence for its plausibility has been established by Caselli, Morelli and Rohner (2015), who show that conflict propensity increases with an decreasing distance between state borders and resource locations. However, in the case of Caselli et al. the resource is located completely within a state and borders are not necessarily contested. Specifically for contested borders, Meierding (2010) finds evidence that petroleum-related aggression is more likely to occur when borders are unsettled.
First results show that this hypothesis is a promising avenue for linking foreign resource concentration to interstate conflict. Nevertheless, additional empirical tests need to be conducted in order to find definite proof and to better understand the dynamics captured by this mechanism.

Figure 1.3: Resource conflict mechanisms linking natural resources and interstate conflict as suggested by the current academic literature

Tier I Category	Tier II Category	Label	Mechanism	Underlying condition
Conflict over resources (resource wars)	Resource scarcity	Desparate predator mechanism	(1.1) State A experiences scarcity in resource X -> State A initiates a conflict against State B where resource X is present (in order to alleviate the shortage in resource X)	threat
		Disputed access mechanism	(1.2) State A experiences scarcity in resource X, because State B limits its access to resource X -> State A initiates a conflict against State B (in order to re-establish access to resource X)	threat
		Balance of power mechanism	(1.3) Resource-importing states experience a shift in bargaining power over the international price of resource X in favour of resource exporting states -> Resource-importing state(s) initiate(s) conflict against resource-exporting state(s) (in order to restore the balance of power and therefore secure future resource access)	threat
	Foreign resource concentration	Greedy predator mechanism	(2.1) State A experiences a significant concentration in resource X -> State A initiates an interstate conflict against State B (in order to acquire resource X, motivated by the presence of a significant concentration in resource X and (relatively) low acquisition costs)	opportunity
		Greedy outsider mechanism	(2.2) State B experiences a significant concentration in resource X and a civil conflict -> State A intervenes in the civil conflict (in order to acquire resource X)	opportunity
		Border-resource mechanism	(2.3) Resource X is situated in a location so that its ownership between State A and State B is undetermined -> State A and State B fight over the distribution of resource X	opportunity

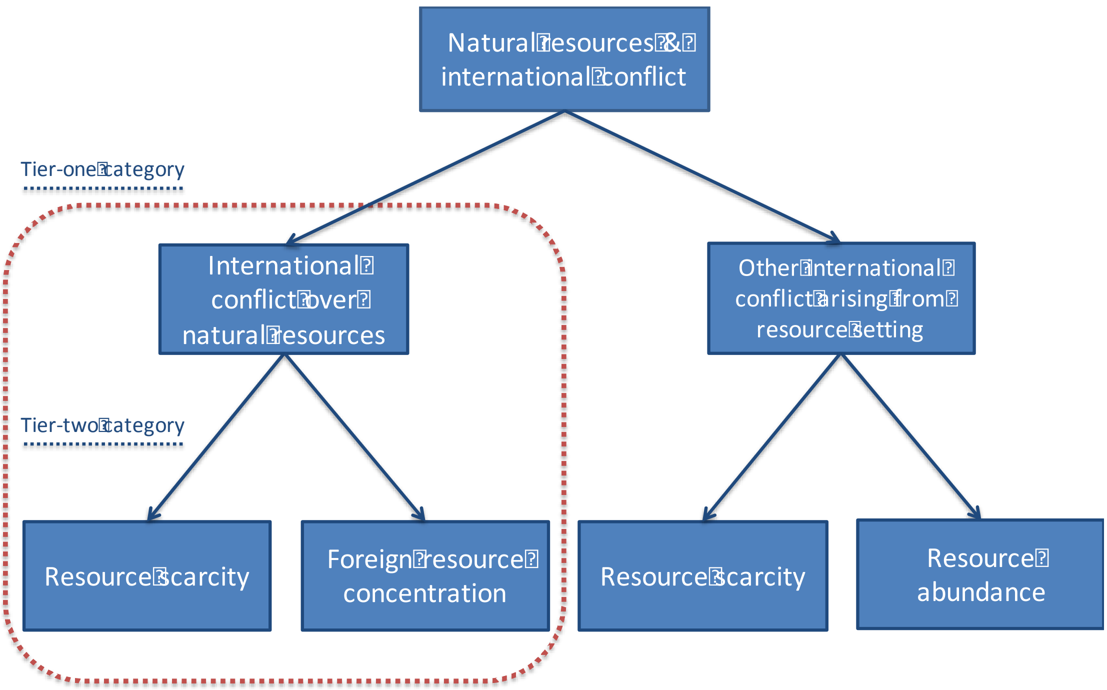
Source: Author's compilation

Note: This is a list of mechanisms as posited by the academic literature and allocated by the author between the two proposed categories. However, as will become evident through the resource access framework introduced in the subsequent chapter (section 2.4), many of these mechanisms are special cases of the mechanisms 1.1 and 2.1 respectively. As a result the presented figure is preliminary and should not be understood as final - mechanisms 1.1 and 2.1 are the main subject of this research.

2. Realpolitik, Resource Access Concerns, and International Trade

Recalling that this study is concerned with investigating the mechanisms relating to international conflict over resources (Figure 2.1), the discussion in the preceding chapter, paints a somewhat blurry and interwoven picture of the mechanisms linking resources and conflict in many ways. Overall, one main shortcoming of the empirical international resource conflict literature is very similar to the problem found in the intrastate resource conflict literature: An inadequately broad research design for direct testing of individual mechanisms[20]. Even though some studies do employ a research design aimed towards direct testing of mechanisms, also by employing a dyadic research design (e.g. De Soysa, Gartzke and Lie, 2009; Colgan, 2010; Caselli, Morelli and Rohner, 2014), their focus is exclusively limited to the resource oil, their results are contradictory between (and occasionally within) studies, and the tested mechanisms are mostly situated in the foreign resource concentration category and the resource abundance category of the second tier-one category.

Figure 2.1: Categorization of resource conflict mechanisms



Source: Author's compilation

This chapter discusses an additional issue that is at the core of the resource-conflict debate: The conception of resource scarcity and resource concentration, and the associated measures for the resource variables of interest. In that, the chapter aims to (1) scrutinize the existing concept and measurements of resource conditions in order

[20] e.g. see the influential paper of Humphreyss (2005) on intrastate resource conflict literature.

to identify limits; and (2) introduce a concept of resource access through which resource conditions should be considered.

2.1 The limitations of the present conception of resource conditions vis-à-vis conflict and the resulting implications for corresponding resource metrics

One of the main limitations of the international resource conflict literature concerns the conception of resource conditions, arising from an inadequate concept of resource access. This is especially true for evaluating resource conditions vis-à-vis interstate conflict. For instance, studies do not consider the existence of the required resources in the target state or miss to include net imports in considering resource deficiency. This directly affects the consideration of the potential conflict enhancing effects of resource scarcity, and to a lesser degree that of resource concentration. Under the current concept, the assessment of resource conditions is limited to the consideration of actual resource endowments within a state, or indirectly through its degree of outside dependence. As a result, alternative means to acquire resources are not considered and the point of focus for investigating the resource-conflict link becomes inadequate, in that it lies on direct resource ownership rather than on control over and access to resources. This limits the existing concept in accurately assessing resource conditions and therefore in identifying instances where these can lead to international conflict over natural resources. As a result, the current research offers only limited insights into the nexus between natural resources and interstate conflict (also see beginning of section 3.1).

The limitations are also reflected in the employed measurements from previous empirical studies. While the chosen measurements for resource concentration are mostly appropriate (with some caveats), the measures for resource scarcity are largely misleading.

In the foreign resource concentration category, the variables of interest aim to capture relatively large concentrations of resource deposits, in other words, they should capture the level of natural resource stocks. This can appropriately be measured by a number of different metrics. For instance, the level of resource endowments could indirectly be measured as the share of resource exports relative to total exports (e.g. Reuveny & Barbieri, 2014), the production of resources expressed as percentage of GDP (e.g. Colgan, 2011), the resource rent as percentage of GDP (e.g. Soltanov, 2009), the value of primary commodity exports relative to total exports (e.g. Collier & Hoeffler, 2000); or directly be measured as the yearly amount extracted in barrels (Struever & Wegenast, 2011), the amount of reserves in barrels (e.g. Koga, 2008), or the location of reserves in a binary form (e.g. Caselli, Morelli and Rohner, 2014). Each metric captures slightly different dimensions and many measure resource endowments indirectly. Nevertheless, most should be appropriate for a research design directed towards testing foreign resource concentration mechanisms as they all measure the existing stocks of natural resources to some extent. However, there are also some exceptions to the adequacy of these measures. For instance, the natural resource data from Fearon & Laitin (2003), which has been employed by De Soysa, Gartzke and Lie (2009) and many studies in the intrastate resource conflict literature includes re-exports, which distorts the measurement of actual resource stocks. As Humphreyss (2005, p. 522) notes "The Collier and Hoeffler measure and Fearon and Laitin's (2003) oil measure also include re-exports - primary commodities that are shipped through the country but not necessarily produced within the country. Hence, in Collier and Hoeffler's data, Singapore appears as one of the most natural-resource-dependent economies, while Sudan and Burma feature as countries with among the lowest levels of dependence on natural resources. Such re-exports bear no relation to the stories provided by Collier-Hoeffler and Fearon and Laitin".

However, the main shortcoming when investigating the effects of foreign resource concentrations is the failure to appropriately consider the degree of expected costs of conquest relative to the level (economic value) of the resource concentration in order to measure conquest opportunities. This implication also arises from the resource access concept presented in the subsequent section and will become more evident there.

In contrast to the foreign resource concentration category, the variables of interest in the resource scarcity category need to measure the lack (or lack thereof) of natural resources for a given state. Recalling from the previous chapter, the underlying condition in this category is threat, which is induced from a lack of natural resources that are needed for survival.

However, as will become evident from the subsequent section and chapter, this is not as simple as to directly measure (low) stocks of resources, or to consider both ends of the range of the same measurement for testing multiple mechanisms. For instance, Reuveny & Barbieri test the effect of a variety of natural resource variables on international conflict for both directions, without altering the measure: Their measure for fuel is expressed as the share of the exports of all types of fuel out of the total exports of a state. Looking at this measure from a resource concentration perspective, it could be considered adequate, because a state that derives a large portion of exports from natural resources is assumed to be well endowed with it. Yet, the measure is not ideal, because the significance of the resource concentration is only assumed and not directly assessed (the total GDP could be very low). However, considering this measure from the perspective of resource scarcity, a low level of this variable might merely imply that the respective state does not export natural resources. This could be for a number of reasons, the state may not be endowed with the resources or it could keep present resource endowments for its own requirements. The state suffering from resource scarcity is still one possibility, yet only one of many. In fact, the coefficient for fuel is negative in Reuveny & Barbieri's study, which is interpreted as an increase in fuel resources leads to a decrease of the likelihood for war onset and vice versa.

This not only contradicts the results of Colgan and De Soysa et al. (Colgan uses a binary variable for petrostate based on min. 10% annual GDP from petrol, the implications are largely the same), but is also misleading for testing the resource scarcity hypothesis. Similar problems can be found for all measures described above: The lack of production of resources, resource rents, resource extractions or resource reserves can, but does not necessarily imply a situation of resource scarcity. Even studies that are specifically designed to test the resource scarcity hypothesis fail to construct appropriate variables. For instance, Wasson (2007) develops a concept of energy deficiency, which is captured by the difference between energy production and energy consumption. Strictly speaking, it can capture an actual shortage[21] – or (rather) the degree of outside dependence for the acquisition of needed natural resources (dependence on imports). Nevertheless, this approach is superior to the previously discussed for testing resource scarcity mechanisms and, given the limits of data availability, is almost definitive. In addition, it could be argued that it captures at least a weak degree of resource scarcity (the former of the two cases, outside dependence) because of the (at most complete) dependence on outside imports: Faced with an actual resource shortage if imports cease to exist, the importing state could regard this situation as security threat that needs to be addressed, possibly through violent means (if alternative means fail). Nevertheless, the general sentiment is that, “conventional resource scarcity metrics, by themselves, are unlikely to serve as useful predictors of future international resource conflict” (Giordianio, Giordano and Wolf, 2005, p. 61), and a wider measure for resource security has yet to be employed.

Ultimately, with regard to resource scarcity, almost all of the above measures neglect one fundamental means to acquire natural resources nowadays: *International trade*. In fact, this is very much the reason for which the lateral pressure theory by Choucri and North[22] has been criticized: Rosecrance (1986) observes that the availability of markets reduces the propensity of states to fight over resources; Harris and Samaraweera (1984) argue that the lateral pressure theory fails to recognize trade as an important way for states to access resources and that “the first line of defence against resource conflicts is an informal institution: The market.” (Sources as cited in Meierding 2010).

However, before going into further detail with regard to this key insight (section 2.3.1) it is important to first introduce a concept for natural resource access for states based on which resource conditions should be considered.

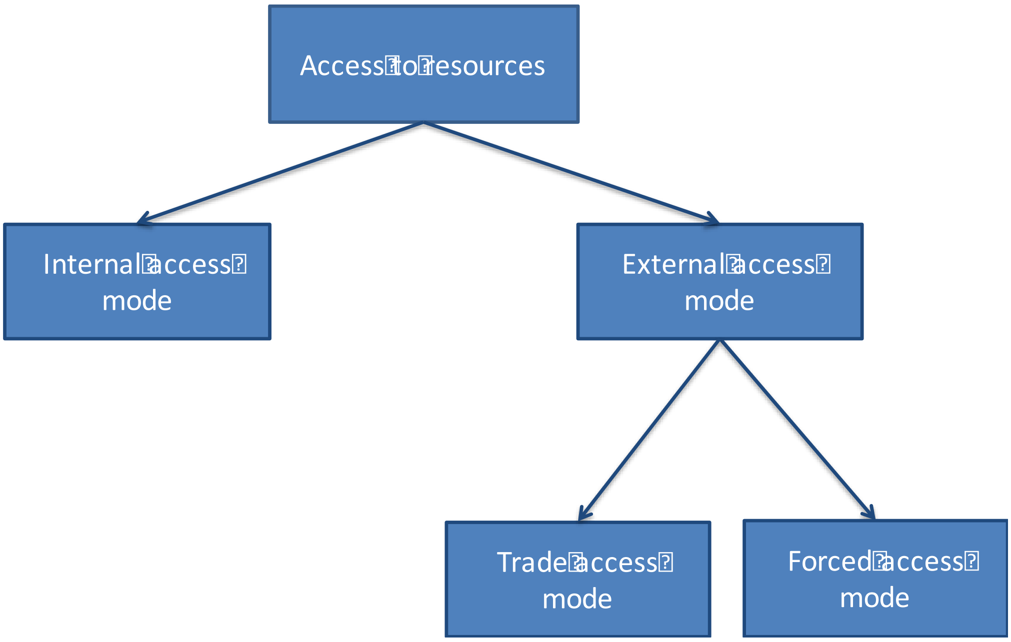
2.2 A multilevel resource access concept

[21] For instance, an indicator could be a precisely constant value over a longer period of time.
[22] Please consult Choucri & North (1989) for a detailed account of the lateral pressure theory

The antecedent discussion demonstrates that the existing concept of resource scarcity and resource concentration can be improved on a theoretical level, also making it more adequate for empirical testing. The subsequent discussion offers a concept of resource access and illustrates the different ways in which states can acquire natural resources to satisfy their resource requirements. A concept and assessment of resource scarcity should be build on these premises as it aims to depict a situation in which a given state cannot access the required resources, i.e. the availability of resources relative to the required resources is limited and therefore perceived as scarce (demand for resources outstrips supply). In addition, it has implications for assessing foreign resource concentrations vis-à-vis conflict as it identifies the costs of conquest as most important factor in an opportunity setting.

Access to resources can be divided into two main categories, internal resource access and external resource access.

Figure 2.2: Resource Access Modes



Source: Author's compilation

2.2.1 Internal access mode

Internal resource access refers to the resource endowments within state borders. Important factors for access in this category are the size of the endowments, the existence of appropriate extraction technology, the associated extraction costs (access costs), and the potential costs of environmental degradation. The main advantage of the internal access mode is the high degree of control and security. For instance, Meierding (p.31) states that "[…] while resources can be obtained in numerous ways, this study assumes that, *ceteris paribus*, all states prefer direct control over petroleum reserves. For Consumers, direct resource control represents the highest level of supply security. It eliminates the dangers of dependence on unreliable foreign producers. For producers, direct control dramatically increases the profits that can be accrued from petroleum sales. Without direct authority, producing states are reduced to middlemen, either managing petroleum transfers or refining and marketing another state's crude". While this should be true vis-a-vis the forced access mode, it is not necessarily so for the trade access mode (Figure 2.2). As will be shown later, especially a highly secured (hedged) trade access position may almost be as secure as internal access, but with possibly lower costs. If this is the case, the slight increase in risk may be traded off against significant reductions in costs (in a globalized economy the international market is usually the most efficient means to acquire resources, therefore the assumption of the possibility of decreased costs in the trade access mode compared to the internal access mode is reasonable). Finally, there are special circumstances where strategic considerations demand avoiding the internal access mode in order to avoid domestic depletion[23].

2.2.2 Forced access mode

The second access category consists of two sub-categories: Trade access and forced access. The external access category refers to all access modes in which the desired resource is located outside of the states borders.
Forced access refers to all access modes in which a state gains access to resources that it did not have access to before through either the threat to use force (access through intimidation) or the use of force. Even though the resource becomes situated within state borders if the access is enforced through conquest, it should not be considered as internal access mode, because the resource was outside of state borders before the violent acquisition. Compared to the internal access mode, the forced access mode is characterized by a significantly higher degree of costs and risks in modern times: Cost of conquest, occupation costs, international reputation costs, risk of recapture, and risk of retribution.

2.2.2.1 Costs

For instance, assuming the forced access mode through conquest (which is characterized by the highest degree of costs and risk)[24], the state is initially faced with the cost of conquest. Acquiring territory by military means almost always involves material costs and loss of life. An additional important factor is location (e.g. Caselli

[23] For instance, towards the end of the Second World War, "[…] President Franklin D. Roosevelt and his senior advisors worried that the heavy wartime exploitation of domestic oil was rapidly depleting US reserves, eroding America's capacity to sustain another full-scale war on the magnitude of World War II […] [and therefore] ordered […] to seek a reliable foreign source of oil […]" (Klare, 2016, p. 422).
[24] Costs in terms of efficiency of resource acquisition (resource unit per cost unit);
Risks in terms of state survival (1 – probability of survival).

et al.), since a location close to the border decreases acquisition costs significantly. In this case acquiring territory is framed in terms of costs rather than risks, because it is assumed that if a state initiates territorial conquest, it perceives itself as more powerful (in material terms) than the opponent. Otherwise a conflict initiation would not occur, with the potential exception for a desperate state or under conditions of high irrationality. Therefore, at least the initial military conquest should be successful so that the associated risk (in terms of state survival) is minimal. The actual (indirect) risks of conquest are captured by risk of retribution and risk of recapture and possibly internal unrest. An additional component of the costs of conquest is the opportunity costs: "The Challenger also bears the opportunity costs of conquest. Rather than focusing on domestic development and internal security, national administrative, economic, military, and population resources are devoted to international aggression. Economic output may suffer, governance can be compromised, and the population's quality of life declines. Any of these changes can inspire domestic resistance, adding to the costs of invasion" (Meierding, 2010, p. 32). However, taking the domestic level into consideration, to a certain extent economic costs are offset (or even more than that) by new revenue streams created for the domestic military industrial complex and associated spillover effects. Also, with regard to domestic resistance the effect is not entirely clear: For instance, the recent annexation of Crimea has diverted internal political pressure on leaders – external enemies can divert from internal problems and unite a nation. Nevertheless, it may also lead to a higher degree of instability within a state.

After successful conquest the state is faced with occupation costs. In order to extract resources from occupied territory, the local populace needs to be controlled, which becomes costlier with the rise of modern nation states. Ultimately, the occupying states' administration and military could be faced with uprisings, terrorist attacks and rebellion. Also, the foreign resource concentration may be destroyed by the targeted state in wake of or after an invasion, as for instance has happened during the first Gulf war when the retreating Iraqi forces set fire to the Kuwaiti oil fields so that extraction efforts by American forces were inhibited for a period of time. The feasibility of this also depends on the type of resource: For instance, the destruction of oil fields that have already been tapped is easier than the destruction of an underground gold vein. The possible destruction of natural resources (or the prevention thereof) can play a significant role in conflicts, and additional acts of sabotage that disturb the extraction process can exacerbate the effect. Nevertheless, Liberman (1996) has shown that modernization can also have a decreasing effect on occupation costs as it inflates the potential payoff by decreasing extraction costs and increasing state surplus. Given an appropriate amount of time to control and assimilate the conquered territory, the occupation costs and other risks may fall. Also, focusing solely on the extraction of natural resources, costs are decreased even further, because the need to control the industrial societies of the conquered state doesn't necessarily arise. Furthermore, if the location of the resources is close to the border it should be easier to defend and costly control of an entire state is not necessary. Eventually, the extractability of the resource itself has an impact on the overall occupation costs.

Finally, the attacking state is faced with international reputation costs. Prior to the Second World War these costs were insignificant as territorial conquest was an accepted practice in the international community. However, with the rise of international organizations (most prominently the United Nations) and the rise of norms with regard to territorial integrity the sentiment on the international stage has changed. A state committing a serious violation of international law may be denied international organization membership, suffer from bilateral diplomatic repercussions, be refused loans and faced with a decline in foreign direct investment (fdi) (one recent example is the sanctioning of Russia and the resultant fall in fdi due to the annexation of Crimea[25]). Most importantly for the discussion at hand, it may be faced with withheld trade agreements or sanctions, which directly affect the ability of the state to acquire resources through the trade access mode. However, this also largely depends on the characteristics of the initiating state (mostly power) and cannot be evaluated in isolation – e.g. past WWII the United States did not face serious repercussions due to its major power base and international standing (also as hegemon). Furthermore, the costs of international reputation can be mitigated with certain "PR strategies" that propagate alternative reasons for conquest or intervention, the list of examples is long: The Vietnam War (supposedly an American military cruiser was attacked by North Vietnamese forces, which was proven as false); the First Gulf war (The Nayirah testimony before the Congressional Human Rights Caucus on the killing of babies and children in a hospital by Saddam forces, which was proven false as the reporting individual turned out to be the daughter of the Kuwaiti ambassador and the testimony could not be verified); the Second Gulf war (the United States attacked Iraq under the premise of securing weapons of mass destruction, which turned out to be fabricated by top levels of the US government); etc.

2.2.2.2 Risks

In addition to the various costs, the state is also faced with two types of risk, most prominently the risk of recapture[26]. A fundamental factor for this risk is the mobility of the resource. Is the desired resource lootable, this risk is very low, because captured territory can be left behind after the resource has been extracted. However, most natural resources are fixed to a location and their extraction necessitates a long time commitment. This means that the captured territory needs to be held so that the goal of resource extraction can be achieved. This provides the opposing side with the chance to remobilize forces and mount a counteroffensive to recapture its own territory. For this category the direction of the effect of location is not clear: On the one hand the defence of an oil field[27] that is close to the border is easier than defending an entire state, on the other hand the opposing state has not been

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[25] E.g. see EPRS (2016)

[26] Strictly speaking the risk of recapture could be considered a cost under the resource concentration category, as the captured territory is not vital to the aggressor's survival.

[27] Oil is an enclave resource that is easy to defend (Le Billion, 2001). (Transit routes for oil less so).

vanquished and is therefore in a stronger position to recapture and retaliate to the extent that it is capable to do so after the loss of resources and military forces (prior loss of resources has possibly a negative effect on [military] capability).
Finally, the attacking state might be confronted with retribution risk. In principle this type of risk is very similar to the risk of recapture, only that the likelihood of this risk materializing is lower, while the impact is higher (if both states are considered in isolation). In case the attacked state is capable to retaliate it will attack the territory of the aggressor, as this has the potential to impose the highest risks and costs. In addition, considering third party interventions, the likelihood of retribution may increase considerately, as other powerful states may have the capability and interest to retaliate. The definite differentiating factor to the risk of recapture is the type of territory that is under attack, namely foreign or domestic (with some possible exceptions).

2.2.3 Trade access mode

The last method for a state to access natural resources is through the trade access mode. This mode refers to the acquisition of resources through any kind of trade, mostly through international globalized markets. At the heart of globalization lies the highly efficient provision of goods and services. Theoretically, based on simple comparative trade theory, the efficiency (and therefore the cost aspect of the access mode) should be maximized in the trade access mode, as the globally most efficient producers should be the ones to provide the resource through trade (with the caveat that the allocation of natural resources across states is highly fixed). As a result, the trade access mode offers a very desirable cost-utility trade-off, even when compared to the internal access mode. However, the question of risk remains, which, for the concept of perceived resource access security, should be more important than considerations of cost. Compared to the internal access mode, the risk of trade access is always higher. However, there are certain strategies that a state can employ in order to reduce the risk, possibly even up to a level similar to that of internal access. For instance, the state could increase the number of trading partners, focus on reliable partners, consider the interconnectedness amongst trading partners, create multiplex dependencies, etc. Especially a highly secured (diversified) trade access position may almost be as secure as internal access, but possibly associated with lower costs. If this is the case, the slight increase in risk may be traded off against significant reductions in costs. Costs and risks are further reduced by the existence of international trade organisations, which act to facilitate free and reliable trade flows by providing an institutionalized framework for facilitating the allocation of limited resources, through increasing assurances with regard to continued resource flows and through conflict resolution mechanisms such as the dispute settlement process of the World Trade Organization. As a result, the possibility that even a resource producing state is also attaining the same resources through trade becomes reasonable. Requirements for this access mode are access to markets (for instance trade sanctions could prevent this) and ownership of a tradable resource (money can be a proxy for the set of available tradable resources, which comprise but are not limited to natural resources).

2.2.4 Changes in the preferred mode of access

Every state is bound to choosing at least one access mode at a point in time, as not doing so would result in state failure. When choosing an access mode, the state balances the factors utility, costs and risks, which constantly shift given changing circumstances[28]. Historically, access to resources was ensured through empires. For instance, during the colonial period western states were faced with favourable terms for choosing the forced resource access mode: The discovery of the new world presented new and resource rich territory, for which the cost of conquest and occupation appeared low as the indigenous defenders were highly inferior in terms of military capability. (1) The absence of reliable international markets and (2) the highly favourable trade-off between low risks and costs relative to (3) high potential gains in form of great and lootable resource concentrations; (4) the competition vis-a-vis other empires; (5) and the diminishing low international reputation costs (possibly even negative) resulted in the forced access mode being the modus operandi with regard to securing access to needed and desired natural resources.
However, the military costs of upholding an empire are significant, especially when the size of the territory that needs to be controlled increases. With the rise of globalization in the 20th century and reliable international free market conditions the trade access mode has gained in importance, as its costs and risks have decreased significantly. Furthermore, the establishment of political international institutions and new international norms, e.g. with regard to human rights, increases the cost aspect of the forced access mode. As a result, direct control over resources is traded off against a more cost effective type of acquisition. For instance, De Soysa et. al. (2011, p.6) states specifically for the strategic oil hypothesis: “This ‘strategic’ view offers several implications, some of which are readily observable and others which are not. First, as long as oil is not too expensive, powerful consumers in the West and Asia prefer to allow local control. If instead demand for petroleum outstrips supply and oil prices rise too high, then the calculus of pay or take can shift and importing states may find that they prefer conquest to commerce”. It is important to acknowledge the second part of the quote, as it stresses that there remain certain conditions under which direct control (forced access mode) is favoured by states. This is especially so for resource access that is considered a security issue. For example, an indication for how important states perceive access security for vital resources is the significant time difference between the decolonization between petrol colonies and all other types of colonies: “[…] imperialism gave metropoles ownership or privileged control of many valuable primary commodities from their colonies, ranging from copper and gold to

[28] Encompassing a very broad spectrum, including changing international state systems, human development and changing human perceptions about the world, contemporary norms and ethics, perception of technology, etc.

coffee and cotton. What made oil special was not merely the profits from exploiting the resource, but also the metropoles' intense desire to have security of supply. Interruptions in the gold or coffee markets might be inconvenient, but in a motorized economy, an interruption of a motorized state's oil supply could be economically or militarily catastrophic" (Colgan, 2015, p. 11). Also, Kaldor, Karl and Said (2007, p. 16) note that "as the advanced industrialised countries (and increasingly emerging economies like China's) become more heavily dependent on imported fuel and shortages of supply appear more frequently, oil has come to be viewed not only as a foreign policy issue but a national security matter – and one of growing importance".

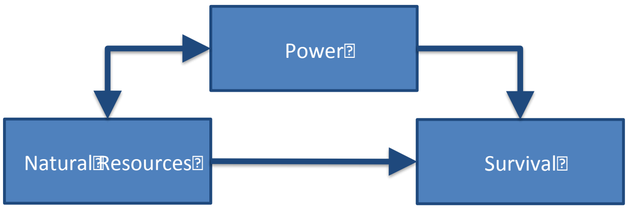
Overall, it becomes likely that states use the internal and trade access mode before the forced access mode, since the new cost, risk and utility trade-off is in favour of these. For states with domestic resource endowments the dominant access strategy may be a balance between the internal and trade access, while for other states the trade access mode forms the basis for their access to natural resources. Nevertheless, there appear to be instances in which the forced access mode is still preferred.

2.2.5 Choosing a modus: A systematization of the cost, risk and utility components and the access requirements of the resource access modes

Under the assumptions that (1) states are unitary actors; (2) the aim of states is survival; (3) and the means for survival is access to resources[29]; a given state is bound to choose (at least) one resource access mode as not doing so results in state failure (non-survival). In doing so, states are risk averse (in terms of survival), cost averse (in terms of resource acquisition) and utility maximizing (in terms of resource access) and they balance these factors against each other with an on average diminishing[30] preference for low risk over low cost when choosing a resource access mode.
As mostly described above, the three access modes are characterized by varying risk – cost – utility factors which shape if and to what extent other conditional factors (such

[29] Access to resources also increases power, which increases survival and access to resources. The highly important interplay between power, natural resources and survival should be considered.

Figure 2.3: Connection between Power, Survival, and Natural Resources



Source: Author's compilation

[30] Given a high level of security, preference shifts to costs

as the world market price for a respective resource) determine the net utility of each access mode and therefore the way a state accesses required resources.

The important cost factor for the *internal access mode* is extraction costs and potential environmental degradation costs, while the main utility is direct control and also often cost efficiency as the resource is situated within the states own territory and is therefore not dependent on others for access (with the exception when specialized extraction technology needs to be provided by another state). The risk factor is the attraction of potential aggressors with regard to the territory where the respective resource is located.

For the *trade access mode* the main risk factor is market isolation (e.g. in form of trade sanctions), while costs are incurred in the form of a reduction in other tradable resources. Considering basic trade theory, the utility of this mode is high cost efficiency and a reasonable degree of control, which are further improved by the presence of international trade organizations.

Finally, the *forced access mode* can be characterized by a number of cost and risk factors. Before a target territory is occupied there is the risk of failure of conquest (e.g. in face of unexpected military capability of the opponent) and after a territory has been occupied there is the risk of recapture and risk of retribution. In addition to the risk, the factors cost of conquest, costs of occupation, and international reputation costs pose a negative burden on this access mode. The main utility factors of this mode are the direct control and the potential strategic impact. Furthermore, this mode may be available when the two others are not (as elaborated in the following paragraph).

When considering the type of risk – cost – utility factors of the different access modes – and assuming no access requirements - it could be concluded that *on average* a given state will first choose the internal access mode, then the trade access mode and finally the forced access mode[31].

However, there are certain conditions when not all access modes are available to a given state. In fact, each access mode has certain requirements that need to be satisfied, otherwise the state cannot acquire resources through that mode. Specifically, the access requirements for the *internal access mode* are the prevalence of domestic resource endowments, the extractability of resources and the availability of extraction technology. For the *trade access mode* the requirements are market access,

[31] This point raises additional questions as it is also tied to considerations about the effect of structural factors that have an impact on the cost-risk-utility a given state experiences when conducting a violent resource acquisition. In that regard it reaches beyond the scope of conflict over natural resources and addresses cost, risk, and utility of conflict more generally. Yet, the case of resource acquisitions in the past compared to the present should pose an interesting and insightful case in this regard as resources always have to be acquired (need for resources as a constant). Regarding this need for acquisition/access as a constant the effect of changing structural factors (such as the rise of a globalised marked) could be investigated. However, one main drawback is the availability of data for the period prior to the Second World War. As a result, this could be a testable hypothesis for future research (contingent on data availability).

availability of tradable resources, and the availability of resources in the market. Finally, the *forced access mode* requires access to high military capability (possibly through allies) relative to the military capability of the target (and possibly its allies)[32].
As a result, for instance, under conditions of isolation and the absence of domestic resource endowments, it is possible that a state is left with choosing the forced access mode.
However, even when assuming the absence of entry requirements the ranking of the access modes is not static and is contingent on a set of additional factors. For instance, under low world prices it is possible that the net utility of the trade access mode is higher than that of the internal access mode, leading to a shift in the pay-off structure of the modes – and vice versa for high oil prices. Numerous other conditions where the utility, risk, and cost perception of states may change exist: For instance, the domestic resources should be saved or the extraction of domestic resources is costly; the aim is to increase power, or to decrease the power of another state; etc.

While disagreement exists with regard to the extent countries are willing to engage in interstate conflict to secure resources (e.g. see Gartzke & Rohner, 2011), there is more agreement on the fact that states perceive resource access as a paramount security concern: "Energy security is a fundamental part of consumer states' national security. Fuel is vital for national defence, for the preservation of states' economic infrastructure, and it has to be obtained at affordable prices" (Baccini, Lenzi and Thurner, 2013, p.10); "Sectors that make up the heart of the economies of the West and the core of US military strength rest on access to petroleum and simply cannot survive without it. Thus, it is of vital interest to the West that no single country be permitted to dominate oil supplies, and the ultimate guarantor of the security of supply is force" (Kaldor et al., 2007, p. 16).

The fact that states may choose the forced access mode has been predicted by a number of models. For example, Acemoglu et al. (2011) develop a dynamic theory of resource wars with the focus on the interaction between scarcity of resources and incentives for war. Their result shows that in the case of inelastic demand for a resource, war incentives increase over time and conflict becomes inevitable. In some cases this spiral can be broken by regulation of prices and quantities by the resource rich state. Similar, Maxwell & Reuveny (2001) develop a dynamic model of conflict based on Hirshleifer's (1989) framework and find that conflict propensity is increased by changes enhancing the resource stock of renewable resources or the population. Employing a simpler model, Maxwell & Reuveny (2000) also establish that per capita resource scarcity in fact raises conflict, and, if resources are destroyed through

[32] It is possible that the forced access mode is employed to acquire other (tradable) resources (e.g. gold, gems, etc.) in order to satisfy the trade access mode requirement of exchangeable resources. In this case the requirements for the trade access mode have to be met as well. However, it is possible that this may also have a (negative) effect on market access (another requirement for the trade access mode), e.g. through sanctions.

conflict, the system may become destabilized and break down. Increases in death rates and damages to the resource reduce conflict propensity. As a result, a key insight of the model is the bidirectional effect of natural resource scarcity on conflict.

2.3 Understanding Interstate Resource Conflicts: The importance of trade and the importance of costs

The following two sections identify the most important factor for investigating the set of desperate and greedy state mechanisms, respectively. Recalling that one is nested in a threat setting and the other in an opportunity setting, these should differ, yet, not necessarily be exclusive.

The most important consideration for evaluating the desperate predator mechanism is establishing the degree of threat that a state experiences arising from insufficient access to resources. Arising from the resource access concept introduced above the trade access mode has been identified as the 'weak link' in a states overall resource access (with regard to conflict) that should be evaluated in order to arrive at the degree of resource access security and therefore the conflict propensity of a state within this set of mechanisms.

Conversely, the most important consideration for the set of greedy predator mechanisms is the determination to which degree a significant resource concentration poses an opportunity for conquest for mostly economic gains. As section 2.3.2 will illustrate risks are also an important factor, yet should be treated as implicit for investigating the initiation (not success) of a violent acquisition within this mechanism, because considerable risks should prevent the identification of an opportunity ex ante. Nevertheless, considering risk factors in addition to cost factors could yield some value (e.g. see section 5.2.7).

It should be noted that the identified factors for each set of mechanisms are *not exclusive*. For instance, the level of costs and risks also matters for the desperate predator, only in a somewhat different constellation as compared to the greedy state. In fact, the differing focus with regard to costs and risks should inverse for the desperate predator[33]. In other words, it could be assumed that the desperate actor is more willing to take on risks in the threat setting (pushing force) than the more risk-averse greedy predator in the opportunity setting (pulling force). (also see sections 5.2.3 and 5.2.4).

[33] This point refers to evaluating the action of the violent acquisition itself and independent from the assessment of the domestic condition through the degree of trade security raised in section 2.3.1.

2.3.1 The importance of trade for evaluating desperate predator mechanisms

Provided that natural resources are necessary for state survival and that their absence pose a threat, the resource access security of a state becomes the paramount factor in explaining interstate conflict over resources. Excluding the acquisition of natural resources for economic gains, it is reasonable to assume that trade is, once in existence, the most important aspect in assessing a state's degree of resource access security and therefore the existence of resource scarcity, especially so in relation to the initiation of an interstate conflict[34]. Compared to the internal access mode, which is almost static in terms of the degree of security, the security level of the trade access mode may be more volatile. In other words, assuming a state which derives natural resources through the internal access mode and the trade access mode, the latter one is the weak link in terms of security and needs to be assessed in order to evaluate the overall security level. As a result, it becomes important to evaluate the quality of the trade access in terms of (default) risks. In fact, it can be argued that under certain conditions the degree of trade access security becomes the single most important predictor for interstate resource conflicts over resources. Assuming that the state cannot access sufficient resources through the internal access mode, the absence of trade would give the state only two options: violent action to acquire the needed resources or state failure (non-survival).

Examples where a country was isolated in terms of resource trade (or a combination of high outside dependence, negative trade balance and unreliable trade partners or enemies as trade partners) and therefore chose to take violent action to acquire the needed resources can be found in history. For instance, one example is Japan during the beginning of the Second World War. A highly populated state with almost no natural resource endowments on its own, it had to rely on outside sources to satisfy its resource needs. In the period leading to the world war international trade was disrupted through the Great Depression in the 1930s, which resulted in increased aggressions against China in order to gain control over natural resources. In face of Japan's aggressive and expansionist stance towards China, the United States needed to respond. However, faced with a public opinion opposed to Americans fighting in Asia, the US merely responded with economic sanctions, limited military assistance for China and the refusal to recognize conquered territory. As a result, Japan found itself isolated from international markets unable to satisfy its resource requirements, leading it to further conquests of territories controlled by France, the Netherlands, and Great Britain in the Southeast Asia and the South Pacific region[35] (Yergin, 1991; Klare, 2016).
Parallel to Japan, World War II Germany was also a state highly dependent on external sources for access to natural resources and increasingly isolated from

[34] For instance, Kelanic (2016) identifies the coercive vulnerability to outside powers as the key determinant for the type of pursued anticipatory resource access strategy.
[35] For a detailed discussion on Japan's resource situation before the Second World War please consult Choucri (2013).

international trade towards the beginning of its aggressions. Inspired by the theory of Lebensraum and having failed to become self-sufficient through resource substitutes, part of Hitler's violent conquest throughout Europe was a direct resource focus on the oil fields of Romania and a further drive towards the oil-rich Caucasus region and the vast territories of Russia (Meierding, 2010; Cashman, 2014; Klare, 2016)[36].

In fact, the perceived threat of possible isolation pertains to this day and states assign high importance to the mitigation of this threat through a diversified position in terms of resource imports. For instance, the United States, historically dependent on the conflict prone Persian Gulf area as its one major oil supplier, has taken steps to diversify its position: Under Clinton, the Baku-Tbisli-Ceyhan pipeline was constructed in order to get access to the energy resources of the Caspian region independently from Russia, and the George W. Bush administration has increased its focus on energy resource rich regions of Africa, even providing training aid and US arms. Similarly, Henderson (2016) shows that the European Union has been able to diversify its access to gas vis-à-vis Russia through increasing competition amongst suppliers; and also China seeks new sources of resource access as its outside dependence is increasing, because domestic resource endowments appear to be insufficient given future resource requirements (Klare, 2016). It appears that a central position in the global resource supply network for a resource importer mitigates the power of large resource suppliers that may use their large energy endowments as a tool of coercion vis-à-vis the importer (e.g. see Gholz and Hughes, 2016). Even more than the major powers, which can compete over the direct control of energy assets, the majority of resource importers are intent on creating redundant and continuous networks of supply (Nicolas 2009, as quoted in Baccini et al., 2013).

This drive can even remain in face of large domestic resource endowments and significantly increased production: "Even as US reliance on foreign oil has declined [due to the shale revolution], the country has also achieved greater diversity in its imported supplies, with fewer supplies coming from the ever-turbulent Middle East and more from Canada, a stale and friendly neighbour" (Klare, 2016, p.426). In fact, Klare concludes that even in face the latest wave of hydrocarbon abundance, access to resources is still regarded as a matter of national security and states constantly tend to pursue an increase in the degree of access security.

2.3.2 The importance of costs for evaluating greedy predator mechanisms

When exclusively considering the acquisition of natural resources for economic gains the set of important factors fundamentally changes, because in this case the violent action of a state is driven by the perception of an opportunity rather than a threat. The greedy predator mechanism predicts that the initiating state acts aggressively for

[36] For a detailed account see Meierding (2010, pp. 132-142).

reasons other than that of mitigating a threatening domestic resource shortage. It rather seeks to capitalize on an opportunity, in most cases in the hope to attain significant economic gains. For this reason, it is posited that costs associated with a violent action become the paramount concern as high costs diminish the degree to which a state perceives a situation as an opportunity upon which action should be taken. In line with resource access concept, this is under the assumption that a state would not consider such violent action in the first place when perceived risks are reasonably high. This means that the assessment of the effect of large resource concentration with regard to interstate resource conflicts within the greedy predator mechanism needs to be directed towards identifying opportunities for conquest. The most important factor in assessing the extent to which foreign resource concentrations present an opportunity for conquest (within the framework of the greedy predator mechanism) becomes the level of costs associated with such conquest. This theoretically includes all factors that have a negative impact on the cost-utility assessment of a state, but have no (or only marginal) impact on the likelihood of survival for the same state. That is, the factors negatively impacting the efficiency of a violent resource acquisition (resource unit per cost unit).

One example of the greedy predator mechanism that is often cited and well described in the literature (e.g. Klare, 2001; De Soysa et al., 2011; Colgan, 2013; Caselli et al., 2014)[37] is the invasion of Kuwait by Iraqi forces in 1990, i.e. the initial stage of the First Gulf War. This example is also illustrative for the importance of costs. Recalling from Chapter 1 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" (Struever, 2010, p.8), if the potential gains of conquest outweigh the various costs associated with the initiation of an interstate conflict.

In the case of Iraq, the country itself owned significant oil reserves, far surpassing the amounts needed for its own consumption. Furthermore, it was faced with large amounts of debt from money that was necessary to finance the Iran-Iraq war that ended in 1988. This and the fact that oil producing states were keeping down the price of oil through overproduction (and hence reducing Iraqi oil rents) lead Iraq to be sensitive to opportunities that could significantly increase economic revenues. As a result there was a clear interest in economic gains in general rather than in a specific resource arising from the need thereof.

Furthermore, Kuwait has very large oil endowments so that it posed a target with a significantly high economic pay-off. In addition, the amount of oil under the control of Iraq if the invasion was successful would have been so vast that its influence over

[37] However, it needs to be noted that Meierding (2016) offers a different reasoning for the invasion of Kuwait, namely that of a desperate state (which is somewhat surprising given that the regime was left in power – this is in line with De Soysa et al. [e.g. section 2.2.4]). Nevertheless, regardless of Iraq being characterized in this regard as desperate state or not, it was interested in the economic gains that came with the control of additional oil fields.

world oil prices would be strong, even further increasing the perceived benefit of conquest in this case.
However, the degree to which a situation is perceived as opportunity also depends on the expected risks, associated with the action needed to capitalize on this opportunity. With regard to case at hand, Iraq judged the risk of recapture and the risk of retaliation as reasonably low, identifying the US as main potential threat. However, signals from the US through diplomatic channels were not clear, it appears that the US was expecting that Iraq intended to pressure Kuwait into decreasing oil production and reducing financial liabilities, not expecting an escalation of the situation to the degree of a full-scale invasion. This led the Iraqi leaders to believe that an US intervention would be unlikely and as a result the risks associated with the invasion of Kuwait appear to have had a diminishing impact on the degree to which the capture of Kuwaiti oil fields was perceived as an opportunity.
Finally, as the decisive factor, the expected level of overall costs associated with the invasion was especially low. In terms of capability the Iraqi army vastly outperformed the Kuwaiti army and the territory of Kuwait is comparatively small and directly bordering that of Iraq. These facts lead to the reasonable assumption that the cost of conquest was expected to be very low. In fact, the Iraqi forces managed to capture Kuwait in only two days at minimal losses relative to those of the Kuwaiti forces. For the same reason, the occupation costs were expected to be low as well. In addition, access to the oil fields was already present because of previous Kuwaiti extractions; and where rendered inaccessible the Iraq had the technological knowledge and capabilities to re-establish and maintain access the oil fields. Finally, it is reasonable to assume that also the international reputation costs (including the political and economic costs) were expected to be less significant. Given the conflict-torn past of the region and the very recent war with Iran it is likely that additional reputational costs were considered to be relatively small. Also the degree of resulting economic and political costs can be assumed to be reasonably low. Given the high outside dependence on oil for many states it is reasonable to assume that Iraq would be able to generate income from selling oil despite any embargoes that may be imposed.

All factors together weighted against each other appear to have reached the threshold where the expected economic value of the significant oil resources in the ground of Kuwaiti territory have surpassed the expected costs associated with their violent acquisition. At least from the perspective of Iraq in 1990 this endeavour was then assessed as profitable opportunity. However, history has shown that the assessment of both types of risks (recapture and retaliation) associated with the invasion of Kuwait by Iraqi leaders was significantly mistaken, almost resulting in the extinction of the Iraqi regime.

2.4 Testable Hypotheses

Recalling the list of posited mechanisms in Figure 1.3 of the previous chapter, this study focuses specifically focuses on the *desperate predator mechanism* and the *greedy predator mechanism.* In light of the resource access framework introduced in this chapter, the *disputed access mechanism*, the *balance of power mechanism*; and the *greedy outsider mechanism* and *border-resource mechanism* should be understood as special cases of the former and latter, respectively. In the disputed access mechanism, resource scarcity is induced for State A because State B limits the access to the resource that State A requires. In light of the resource access framework this should be limiting the access through trade (e.g. through trade embargoes) for most cases[38]. Correspondingly, in the balance of power mechanism resource scarcity is induced by an overly powerful group of resource exporting states that have influence over the international price for a resource. Both mechanisms address different causes for resource scarcity, yet, the resulting condition remains the same, i.e. insufficiently secure access to required natural resources. In a similar manner, the greedy outsider and border-resource mechanisms address two specific conditions under which the costs of a violent resource acquisition are especially low. In the former, the presence of a civil conflict decreases the risks and costs as a violent intervention is not considered the same as violent conquest (this is especially relevant for the point of international reputation costs, including economic and political costs). In the latter, the location of a resource significantly reduces all types of costs as well as risks, e.g. Caselli et al (2014) show that the distance of oil fields relative to the border has a significant and large impact on the likelihood of their appropriation and also Meierding (2016) notes that resources located on disputed borders are especially susceptible to violent acquisitions. As a result, these mechanisms should conceptually be allocated to a lower level and consequently play a subordinate role for initial testing. Before exploring the causes of the resource conditions, the conditions themselves and their effects should be understood and therefore be the subject of an initial investigation, as conducted by this study. However, by attempting to measure those conditions it is impossible not to also touch upon their causes to some extent. Nevertheless, the focus of this study is primarily on the effects of resource conditions with regard to international conflict rather than their causes.

As a result, the two initial mechanisms (desperate and greedy predator mechanisms) then comprise the subordinate mechanisms that respectively address specific causes for resource scarcity (often related to trade), and address specific conditions that create an opportunity setting (characterized by low acquisition costs) with regard to resource acquisitions (Figure 2.4). Nevertheless, it is adequate to consider those cases separately from each other since the type of reaction to resource scarcity could be tied to the type of cause for it. Also, it is important to understand what conditions create

[38] This mechanism primarily arises from research on conflicts over fresh water. In this case, due to the special nature of the resource water, conflicts can arise from up/down stream tensions when water is accessed from a river. It is easily possible for an upstream country to block access to water for the downstream country. However, this is a special case for the resource water and mostly cannot be applied to other natural resources. Hence, in those cases the restriction should mostly happen through limiting the access through trade.

an opportunity setting for resource acquisitions. It should be the subject of future research to provide a meaningful framework providing categories with similar effects for testing.

Following testable key hypotheses arise for this study:

Hypothesis 1: State A experiences scarcity in resource X -->[39] *State A initiates a conflict against State B where resource X is present (in order to alleviate the condition of scarcity for resource X).*

Hypothesis 2: State B experiences a significant concentration in resource X and State A experiences low acquisition costs --> State A initiates an interstate conflict against State B (in order to acquire resource X).

Figure 2.4: Resource conflict mechanisms linking natural resources and interstate conflict

Tier I Category	Tier II Category	Main Mechanism	Special Cases	Underlying condition
Conflict over resources (resource wars)	Resource scarcity	Desparate predator mechanism	Disputed access mechanism	threat
			Balance of power mechanism	
	Foreign resource concentration	Greedy predator mechanism	Greedy outsider mechanism	opportunity
			Border-resource mechanism	

Source: Author's compilation

[39] Denotes causal link.

3. The role of networks in understanding and modelling resource conditions

3.1 The network perspective on resource scarcity

Previous chapters introduce a multilevel resource access framework, which not only facilitates the development of metrics for measuring natural resource scarcity, but also for the conceptualization of resource scarcity itself, especially vis-à-vis interstate conflict. In the economic literature there are many approaches to measuring and conceptualizing resource conditions, especially so during the 80s in the wake of rising environmental concerns, the publication of limits to growth from the Club of Rome and not lastly due to the OPEC induced oil crisis during the 70s. For instance Hall and Hall[40] (1984) distinguish between Malthusian and Ricardian stock and flow scarcity; Cleveland and Stern (1997) suggest a concept including use scarcity and exchange scarcity, where the former is derived from the consumption of a good and the latter from the money that can be received for the exchange of a good. Most approaches have in common that they arise from the (environmental) economic dimension, in most cases include some sort of price or rent metric for their measurement, and are forward looking (a point that will also be important in subsequent sections)[41]. However, this may be problematic as in situ prices are often not available (Hall and Hall) and general price levels only capture a general level of scarcity. Examples for additional influential factors that render a price/rent metric less useful are government intervention, imperfect information and non-existence of markets (Cleveland and Stern). Hall and Hall, too, observe that prices may not fully reflect scarcity, and that different measures address different types of scarcity. Even more, specifically with regard to conflict, Le Billion & Cervantes (2009) cast doubt on the role of resource prices, also because resource-related conflicts appear to occur under conditions of low and high prices.

The approach advanced in this study shifts the focus from evaluating the resources under ownership to the evaluation of access in general in order to determine scarcity. In that, cost, productivity and prices still play a role, however the assessment at hand incorporates the strategic security dimension in addition to the (environmental) economic dimension that has dominated considerations about resource scarcity in most cases[42]. For instance, Fisher (1979) suggests that an ideal measure of scarcity should summarize the direct and indirect sacrifices that have been made in order to acquire a unit of the desired resource. The idea that is introduced in this work, and which has to be developed further in future discussions and research, is that this statement is extended by "[…] *and risks taken* in order to […]". The inclusion of the security dimension in the metric as employed by this work then arises from the

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[40] These are only some examples and this list is not exhaustive. For instance, additional works regarding resource scarcity are Brown & Field (1979), Fisher (1979), etc.

[42] It does so without using in situ prices for which data is unavailable that could also imperfectly capture aspects of access security.

introduced concept of resource access (e.g. the access to resources from outside the states borders increases certain risks). In other words, the concept at hand introduces aspects of vulnerability.

In doing so the foregoing discussion (Chapter 2) uses the resource access framework to develop a resource access security concept with the aim to assess resource scarcity conditions in relation to interstate conflict. It identifies the trade access mode at the centre of this concept that becomes the most important factor in understanding and measuring resource scarcity when explaining interstate resource conflicts.

The following section argues that the network perspective can enhance the analytical approach with regard to the degree of (perceived) resource access security (and therefore resource scarcity) by capturing an additional level for the assessment of conditions of resource scarcity. This also has conceptual implications as it specifically addresses the security dimension in addition to the other factors, which is distinct from previous approaches in the literature.

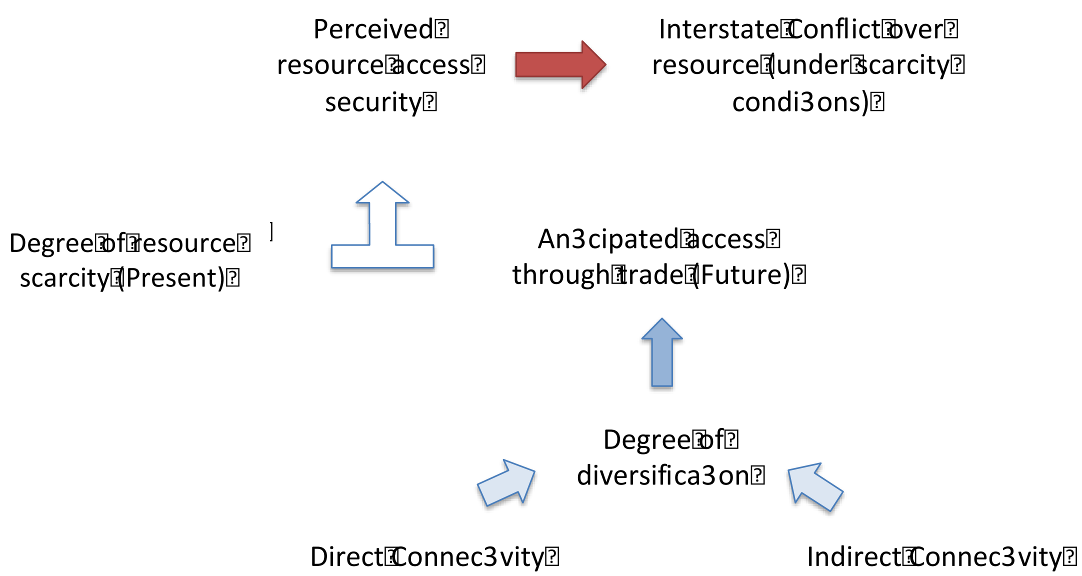
Following main hypothesis arises:

Hypothesis 3: The degree of diversification and the degree of resource scarcity for State A have an impact on the likelihood of conflict initiation for state A.

The subsequent section discusses aspects of this hypothesis and offers testable sub-hypotheses, and Figure 3.1 provides simplified overview of the introduced concept of *perceived resource access security*. For detailed overview please consults Figure 3.5 (the cells in the table refer to sections in the text as indicated).

The degree of perceived resource access security is broadly defined as a function of (1) the level of existing (current) resource scarcity, referring to a situation in which the availability of resources relative to the required resources is limited and therefore perceived as scarce; and (2) the level of anticipated future resource access, referring to the expectation of the future level of access to resources. In other words, it could be said that the (unobserved) concept of resource access security captures the overall degree of vulnerability of a state with regard to conditions of resource scarcity vis-a-vis interstate conflict. Furthermore, it should be noted that the resource access security perception is a theoretically necessary but empirically unobserved link in the causal chain (and realistically unobservable in a large N study). Since the variable concerns policy-makers' assessment of future developments, it can also be seen as an indicator of how vulnerable access is perceived to be in relation to changes in the international context.

Figure 3.1: Concept overview



Source: Author's compilation

3.1.1 Determining the anticipated resource access through trade

Aside from structural considerations there are two main factors that have a direct influence on the anticipated resource access through trade (which can be understood as trade security): (1) The reliability (quality) of individual trade partners and (2) the number of trade partners (more precisely the direct and indirect connectivity and therefore reachability) – due to the great scope of this subject matter this study focuses almost exclusively on the latter, while only touching upon the assessment of the individual reliability.

Networks[43] consist of nodes and edges, the former one represents the individual units of observation and the latter one the relational information between those units. For the case at hand, the nodes are the states that need to be assessed in terms of resource access security and the edges are, at first, the trade flows with regard to natural resources (when considering multiplexity the type of edges will change). With this information a global resource trade network is constructed. As a result, the anticipated resource trade access of a state can be determined by assessing not only the quality and number of the respective state's trading partners but also the state's entire supply network, incorporating effects on the individual and network level, as well as direct and indirect relationships (also see following section). The resultant factor is the overall degree of diversification. It is posited to be positively related to the reliability

[43] Some of the prominent examples of the application of network analysis in IR are Hafner-Burton & Montgomery (2006), Ward (2006), von Stein (2008), Maoz et al. (2007a; 2007b; 2011).

of the trade access mode, and therefore to a states resource access security, which should decrease its propensity to fight over resources.

The reliability itself could be evaluated through a number of factors. For instance, one of the most direct (imperfect) indicators is the size, time period and consistency of past trade flows in general and with regard to the specific natural resource. Beyond this many other factors are important in assessing the reliability of individual trading partners[44]. In addition, it should be noted that factors of more structural nature that go beyond characteristics of individual trading partners, but can be helpful to evaluate them, should also have an effect on the reliability of trade access. One such factor is the existence of international trade organisations and international government organisations in general. These act to reduce transaction costs and uncertainties with regard to international trade, which should have a significant positive effect on the reliability of the trade access mode[45]. In other words, if a trading partner is a member in the same international trade organization it should be regarded as more reliable, because institutionalized structures are in place to uphold the bilateral trade flows. However, this study limits itself to testing reliability through the size of trade flows of individual partners.

In addition to the reliability of the individual states, the overall number of trade partners is also a paramount direct factor in evaluating the degree of the anticipated resource trade access, as additional trade partners can compensate the default of individual ones (to a certain extend). Possibly, this is the more important factor, since a reliable individual partner is less secure in terms of resource access than a highly diversified position with regard to a large number of independent and less reliable set of partners. One reason for this is the higher exposure to outside influences for an individual state than it is for a set of partly independent states.

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[44] The past and present relationship between the two states may be an additional indicator: What is the degree of past diplomatic exchange?; What is the degree of shared membership in international organisations?; What is the amount of FDI between states?; To what extent is the UNGA voting behaviour similar?; To what extent are arms exported from the resource importer to the resource exporter?; Are these specialized arms or are they substitutable?
Finally, the similarity of characteristics between the importing and exporting state may provide additional information about the individual trade partner reliability. This includes, but is not limited to, regime type, cultural affinity, openness, similarity of foreign policy, rule of law, etc. Additional factors to consider can be the endowment size in the exporting state, dependency, and the level of power asymmetry.

[45] In fact, a number of potential research questions arises: 'What is the effect of institutionalization with regard to reliability of the trade access mode?' ; 'Is the effect the same across trade related and trade unrelated international government organisations?' ; 'How substantive is this effect with regard to the level of vulnerability / scarcity and therefore on the resource access security and conflict propensity of states?' ; etc.

The combination of both overall factors has further implications that stem from the network perspective and should be considered: For instance evaluating indirect relations through a triad census and the degree of independence (interconnected vs. independent supply networks); yet, this also goes beyond the scope of this study and would be the next step on this research agenda.

3.1.1.1 Forward orientation

An important consideration that is also inherent in the network approach is that of scarcity and the forward orientation[46] with regard to the concept of resource access security in general. It is argued that the concept of perceived resource access security incorporates aspects of forward orientation by considering an additional level of analysis, namely the network level. While it is normal practice to employ objective measures to explain state behaviour, states don't necessarily act upon the information used to describe a current condition, but rather based on the expectation of a condition in the future, which should be reflected in the employed metric. This also implies that it is difficult to capture the actual 'moment of realization' that is based upon the condition and that triggers an action. For instance, Meierding (2010, pp. 132ff.) describes the difficulty of pinpointing the moment of Hitler's realization of Germany's looming resource shortage, as this occurred before the actual measurable shortage.

In the presence of negative trade balances, declining foreign exchange reserves (Angell, 1936) and outside dependence (also on enemies (Ericson, 1999)), rather than actual (present) resource shortages, Hitler was very aware of Germany's vulnerability with regard to resource access (Rosecrance, 1986). These factors served as indicators for a *future* resource shortage, as Germany would soon be unable to maintain its access to the required natural resources (Liddell Hart, 1971)[47]. Also Kelanic (2016) notes the anticipatory strategy of Hitler in order to secure access to oil, resulting in a four-year plan to increase self-sufficiency and additional direct and indirect control strategies in the course of the war. On the one hand, it is possible that a state currently experiences actual resource scarcity, yet, does not perceive it so due to its future orientation. This is because a central position of the state in the resource trade network also implies *future* securities, and therefore overrides the current and actual scarcity in terms of being a conflict trigger. Even assuming a default of the trade network, multiplex effects from other networks may create additional reassurances. The level of future access security (for states that use the trade access mode) is then a function of the degree of diversification in the trade access mode. In other words, ceteris paribus, the future level of resource access through the trade access mode is

[46] E.g. Brown and Field (1979, p. 230 – as cited in Cleveland and Stern, 1997): "Whether a resource is becoming scarce or not […] ought to depend in part on expectations about future supplies".

[47] Preceding sources cited as in Meierding (2010).

robust to shocks, if the level of diversification is high. On the other hand, an undiversified position within trade networks may increase the volatility of the degree of future resource access, resulting in a perceived resource scarcity threat for the state. In other words, the current degree of diversification (captured through the current network centrality measures, as described below) can be regarded as a proxy of the anticipated degree of resource access (i.e. a proxy of anticipated risk of increased resource scarcity).

The scope of future orientation can vary across states depending on their attributes. For instance, with regard to differences in conquest behaviour between developing and developed states, Gartzke & Rohner (2010) observe that development increases the ability of states to project power while decreasing the willingness of states to engage in conflict over certain issues. High income states fight less often to conquer tangible assets or territory, but fight more often to compel adherence to preferred policies and to police the global commons. This can also be considered in terms of resource-related policies. Policies are forward-looking in a sense that they aim to change or ensure a future condition. Wealthy states are generally concerned with future resource access and therefore with the adherence to the respective policies. Even in face of current resource security, they continue to pursue additional future resource access by implementing respective policies and ensuring their adherence. As a result, they can be considered as highly future-oriented. On the other side, the resource concerns of desperate and greedy states are more impending. For the desperate state the lateral pressure is high and imminent and needs to be released in the near future due to the looming threat of non-survival. In a similar manner, a greedy state is also oriented towards the nearer future, as it is concerned with quick, cheap and immediate economic gains.

3.1.1.2 Evaluation of direct relationships

Considering the state level, the most important measure becomes the number of direct trade partners a state has, which is captured by the level of *degree centrality* for the respective state.

Higher levels of degree centrality imply a higher level of resource access security, because the state has a wider spectrum of trading partners (it has a high degree of diversification in terms of trading partners). Losing one out of ten trading partners does not have the same negative impact as losing one out of two, on average. However, considering states with one connection, a default of one trading partner would not induce conditions of resource scarcity, assuming that the state has resource endowments on its own (and has been trading for economic reasons). A state being entirely isolated could mean that either it owns resource endowments and is self-sufficient - or that it suffers from resource scarcity. In line with the *desperate predator mechanism* (Figure 1.3 and Figure 2.4) this would result in a higher probability of interstate conflict between this and another state that is endowed with the needed resources (assuming this is possible in terms of capability). In fact, when assessing the probability of an interstate conflict, this metric de facto becomes the measure for degree of isolation, with the highest degree of isolation (no ties) being a critical instance with respect to the overarching construct. Assuming that a given state is insufficiently endowed with natural resources and characterized by a low number of actual trade ties, the state may perceive that it is isolated and that it cannot easily establish new trade relationships. Due to the low degree of diversification, ceteris paribus[48], it may anticipate a future threat of resource scarcity and ultimately perceive that it is left with two options: State failure (non-survival) or the forceful acquisition of the needed resources. As a result the possibility of an interstate conflict could become more likely. For example, for the interaction between resources, sanctions and interstate conflict, Hasan & Lahiri, 2015, p. 91) find that "[…] an anticipated future sanction on both countries will reduce war intensity; whether an anticipated future sanction on one country will reduce war intensity depends on the level of resource stock; and finally the effect of a permanent sanction on both countries is uncertain and war intensity will fall only if the resource stocks of the countries are sufficiently high." This illustrates that under conditions of (imminent) resource scarcity induced by sanctions (isolation) low domestic resource stocks (and also no domestic production) can have a positive impact on the likelihood of interstate conflict [49]. Consequently, it can be argued, that under conditions of outside dependence for resource access, interstate conflict is almost inevitable when a state is isolated[50].

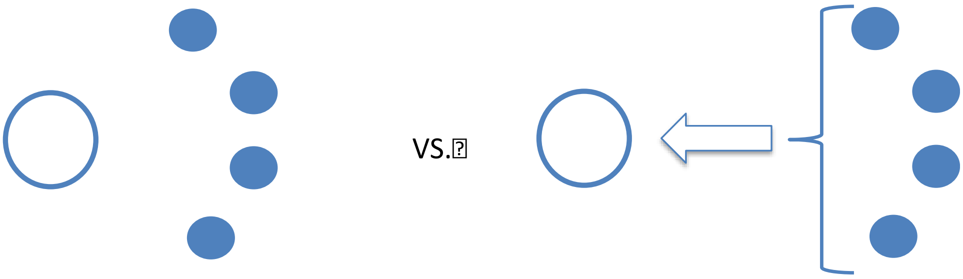
In addition to testing the effect of the number of trading partners versus the total amount of trade flows (Figure 3.2), a measure that here will be called balance-sensitive degree centrality also allows to evaluate the effect of a supply network where trade flows are equally distributed across trading partners versus networks with an unequal distribution (Figure 3.3). Assuming a random default of one of the trading partners, the effect is always the same in a balanced network, but can vary significantly in an unbalanced one. Consequently, also based on the predictability, a balanced network should have a larger positive effect on the access security of a state.

Figure 3.2: Number of trading partners vs. (total) value of trade flows

[48] This is an argument within the overall framework under the assumption that the state perceives that the condition of isolation is fixed. Often a state could form new trade relationships, attempt to receive aid transfers, etc.

[49] Normally, an isolated state in terms of resource imports means that this state is a resource exporter – however, in the special case of induced import *sanctions* this is likely not to be the case and is therefore an interesting subject of research within this framework.

[50] However, it has to be noted that intervening factors such as limited relative capability or the existence of aid inflows, can mitigate the effect of resource trade isolation.



Source: Author’s compilation

Figure 3.3: Balanced vs. unbalanced distribution of trade flows across trading partners

Source: Author’s compilation

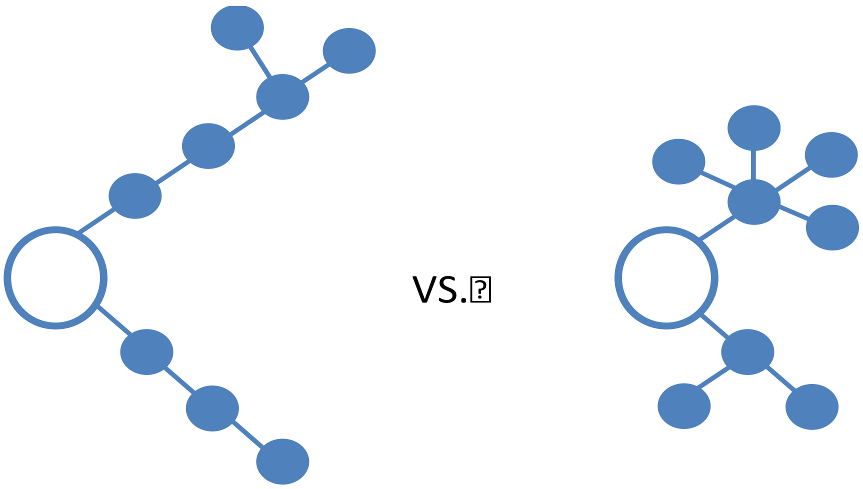
Following hypothesis arises:

Hypothesis 3.1: The combination of number of trade partners of State A and the size and balance of past trade-flows between and across these is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.

3.1.1.3 Evaluation of indirect relationships

Recalling the example from the preceding section, the evaluation of the degree of diversification should not be limited to the number of direct trading partners a state has. For instance, if 9 out of 10 trading partners are insignificant and the defaulted one is responsible for the majority of trade flows, then the loss of only one out of ten trading partners can have a significant effect on the resource access security. However, even if all trading partners are responsible for the same amount of trade flows, the defaulted partner could be in a highly central position of trading networks of its own and therefore be more valuable than the other nine trading partners. In other words, the direct trading partners can also be regarded as means to connect to the overall resource trade network. If the trading partners are well connected with regard to the overall network the state in question will be able to reach other network members through less degrees of separation. Notably, in Figure 3.4 all nodes are connected and both states have the same degree centrality (number of direct trading partners), yet differ significantly in terms of the overall reachability. Considering this dynamic adds an additional layer to the evaluation of the overall resource access security of a state as it also incorporates the ability to reach the overall network and therefore additional trading partners. As a result, the assessment of the degree of access security can be extended.

Figure 3.4: Example of differences in overall reachability



Source: Author's compilation

A major contribution of the network perspective is that, in addition to the direct dyadic relationships, also indirect relationships can be assessed. For instance, the measure *closeness centrality* captures the sum of shortest paths to reach any node in the network. For the context at hand this can be a measure for overall access to international resource markets, as a high score implies the shortest access to resources relative to the entire market (on average lower order relations have to be used to reach any resource exporter in the market).

Following hypothesis arises:

Hypothesis 3.2: The average degree of reachability of each note in a resource supply network by State A is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.

3.1.2 Concluding remarks

Overall, this section suggests that the network perspective is particularly helpful in understanding state behaviour with regard to the securitization of resource access.

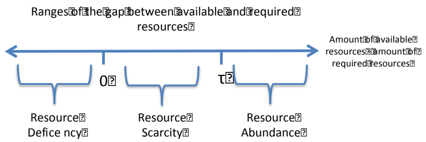
Especially with regard to the measurement and future orientation with regard to resource scarcity the network approach should be beneficial and yield insights. Alongside the actual resource endowments in a given state, the position in specific networks can have a significant impact on whether the state experiences a security risk due to a lack of access to resources. The network position should have an impact on the degree to which the current scarcity impacts the conflict propensity of states. In other words, even in face of actual (momentary) scarcity (insufficient resources arrive in the state) a central (and diversified) position in a supply network for a given resource will overrule the actual resource scarcity, because the state is aware that future resource supplies are secured through a reliable network, based on the position therein. In this respect it can be argued that the network centric concept of resource access security is also forward (future) oriented[51].

Overall, different network variables have been introduced and discussed; It is assumed that these variables have a direct influence on the degree of perceived resource access security, and therefore on the propensity of a state to engage into conflict over resources.

Figure 3.5 provides a detailed overview of the introduced concept of *perceived resource access security* (the cells in the table refer to sections in the text as indicated).

[51] Even under the assumption that a state experiences an actual resource shortage *and* is not engaged into trading relationships with other states, it is still possible that the state can alleviate its precarious situation by utilizing its central position in other networks. As such, a central position in certain supplier networks, such as aid or arms, could have a resource securing effect, as it should be an important element in shaping resource networks.

Figure 3.5: Overview - The Resource Access Security Concept

Overall Concept	Key Elements	Summary	Proxies for Key Elements	Operationalization	Variable Names
PERCEIVED RESOURCE ACCESS SECURITY CONCEPT The combination of (levels of) *resource scarcity* and *anticipated future resource access* determine the overall level of resource access security	(Degree of) Resource Scarcity	*Resource scarcity* refers to a condition in which the availability of resources relative to the required resources is limited and therefore perceived as scarce. While resource scarcity is the key concept, it could be regarded as a range of a broader continuous scale:  	Resource scarcity is captured by the proxy *resource-import dependence* (in the text refered to as *resource dependence*). The degree of outside dependence for the acquisition of needed natural resources (dependence on imports) can serve as a proxy for resource scarcity, especially when measured relative to the GDP of the state: Given that resources are imported a) implies that resources are needed; b) implies that they are not sufficiently available domestically; c) decreases the level of security due to less direct control. d) given that the outside dependence is measured relative to GDP the degree of reliance on resources is captured (all points on average) (Section 2.1).	$R\_Scarcity = \frac{resource\_net\_imports}{GDP}$ (See Section 2.1 for more information)	outside_oil_dep_c1
	(Degree of) Anticipated Resource Access through trade	The *anticipated resource access* refers to the expectation of a *future* condition in which the access to the available resources is maintained or even increased (possibly also leading to a higher degree of available resources). Having identified the trade access mode as having the largest impact in terms of variation on the anticipated resource access (see Sections 2.3.1 and 2.2), the most important factor in determining the expectation of future access becomes the degree of diversification with regard to the trade network (Section 3.1.1.1).	The degree of diversification with regard to the trade network is approximated through the level of direct and indirect connections, serving as a proxy for direct and indirect access to the resource trade network. For instance, a greater number of direct trade ties increases the likelihood of future access since redundancies in case of individual defaults exist. The employed measures then serve as a proxy to capture the anticipation of (maintained) future access based on considerations with regard to trade ties (Sections 3.1.1.2 & 3.1.1.3). The employed metrics are the (1) Degree Centrality (2) Balance-Sensitive Degree Centrality (3) Closeness Centrality.	Degree Centrality: $k^{\alpha} = k(i) \times \left(\frac{s(i)}{k(i)}\right)^{\alpha}$ Where k(i) is the basic node centrality by Freeman (1978), s(i) is the centrality measure by Barrat et al. (2004) and α is a tuning parameter controlling the relative importance between the number of ties and the node strength (sum of tie weights). Balance-Sensitive Degree Centrality: $k^{\alpha 2}(i) = \sum_j^N w_{ij}^{\alpha}$ Where w is a weighted adjacency matrix in which values larger than 0 connect node i to node j. An alpha parameter between 0 and 1 favours equally distributed tie weights, and an alpha above 1 increases the measure when the tie weights are different. Closeness Centrality: $C_c^i = \frac{n-1}{\sum_{j=1}^{n} d(n_i, n_j)}$ Where d(ni,nj) is the distance between state i and state j. An important drawback of this measure is that it is defined only for members of the system that have some connection with other members. (See Section 4.1.3.3 for more information)	(1.1) in_degree_c1, for alpha = 0 (1.2) Alpha_X, with repective alpha value for X (2) Alpha_2_X, with respective alpha value for X (3) closeness_c1 and closeness_nosym_c1

3.2 The network perspective on resource concentration

The preceding section predominantly employs the network level for concepts related to resource scarcity mechanisms and the concept of resource access security in particular. In a more limited manner the network dimension has implications for the mechanisms associated with foreign resource concentrations. Specifically, the concept of egonets may be useful in this regard.

Following main hypothesis arises:

Hypothesis 4: The extent to which states perceive the presence of abundant resource concentrations in foreign states as acquisition opportunity is dependent upon attributes of the egonets of the target state across a specific set of networks.

The subsequent section discusses aspects of this hypothesis and offers testable sub-hypotheses.

3.2.1 Evaluation of trade egonets

Considering the network level, an important focus of analysis with regard to access to resources becomes the states *egonet*. A first order ego network is a subset of a network that consists of a focal node, ‘ego’ (in this case the state), and its directly connected nodes, ‘alters’ (in this case the directly connected states through resource imports). The second order ego network would also consider the alters of the alters, that is the additional indirect ties of the ego, which it can reach through the direct ties. The size of the egonet demonstrates how many direct and indirect trading partners a state has. In addition, egonets can be described through aggregate measures for the entire network. For instance, Maoz (2011) uses aggregate national capabilities and proportion of democratic states to describe alliance egonets vis a vis strategic reference groups. This implies that resource access could be measured not only from the perspective of individual states and their position in a network, but also from the perspective of entire closely related resource clusters that are formed around the state through various ties (e.g. resource trade, alliance, compound measure comprising various dimensions), characterized by total resource trade net inflows and aggregate resource endowments. When extending the egonets to a higher order, each degree of additional distance could be used to weigh the characteristic to simulate weaker access to the resource when it is indirect. This way, when considering entire resource network clusters for individual states, the size of resource endowments is corrected downward.

3.2.2 Extended costs and risks

First, it may be adequate to extend the concept of costs and risks of violent trans-border resource acquisitions. This is an important consideration in this mechanism category in the sense that opportunistic resource acquisitions only have a positive net utility as long as costs and risks are reasonably low, since the acquirer is not 'forced' to engage due to domestic scarcity and trade isolation. To illustrate, given a significantly weak opponent, the forced access mode may be characterized by less costs and risks than the trade access mode, especially when the target capability dimensions are considered in isolation. For instance, this could occur when a state does not have access through the trade mode (e.g. no exchangeable resources), but significant resources in from of military personnel (which is not necessarily related to military expenditure; this could be seen in accordance with the paradox of power, where "[…] a country with larger labour force exerts more war efforts; and a country with larger land endowment or higher productivity exerts lower war efforts" (Hasan et al., 2015, pp. 78-79)). However, it is entirely possible that additional risks and costs may be induced from sources external to the target state. Considering the egonet of the target state through multiple dimensions may promote the 'significantly weak' opponent. For instance, considering a target state being centrally embedded in a strong alliance network may significantly increase the risk of retribution, as the allies of the targeted state are likely inclined to maintain the alliance network, which would crumble in face of no action (e.g. considering the causa foederis[52] of the NATO alliance. Article 5 of the NATO charter states that an attack on any member is considered an attack on all.).

These sort of indirect implications also impact the associated costs. For instance, they influence the cost category[53] 'interdependence costs', advanced by Meierding (2010, p. 36), who defines these as "damages wreaked by territorial aggression on other challenger-target ties. The most important of these relationships are economic". While it is questionable whether the direct economic benefit from conquest (considered in isolation) is likely low, if the entire purpose of the conquest may be based on economic grounds and recent research established that resources can in fact be adequately extracted from modern industrial societies (e.g. Liberman, 1996)[54], this may not be so if indirect economic costs are considered. For instance, taking into account the diplomatic exchange or trade egonet of the target state, the first order nodes (directly connected states) may decide to cease prior diplomatic or economic ties with the initiator state. As a result, it appears to be possible that the total economic benefit considered in isolation may in fact be negative for an initiating state in a conflict based on economic grounds.

Finally, it is possible that the indirect ties have implications for the accomplishment of the actual target (increase in access to resources). To illustrate, an extreme example

[52] "case for the alliance"

[53] It is also somewhat related to reputational costs in a sense that reputational perceptions can disseminate through the international network.

[54] Based on Angell (1913), Meierding (2010, p.36) argues that "even if the challenger attempts to limit her losses by maintaining the markets, agriculture and industrial production of occupied target territories, local economic productivity and purchases will decline".

can be considered: If State A attacks a state from which the resource trading partner of State A in turn receives resources, then it is possible that in terms of quantity nothing is gained by State A (only the access mode to the same resource is changed). This has the problem structure of 'is the target connected to an ally or trading partner'?

This study initially aims to test the effect of what can be described as an implicit defensive alliance network (i.e. the protective shield provided by major importers to major exporters). The reach of this network should encompass most states with major resource endowments[55] and it is therefore expected to be the largest force nested outside the target state to prevent the occurrence of violent resource acquisitions in line with the greedy predator mechanism because it significantly increases the risk of such action. Recalling the strategic oil hypothesis discussed in chapter one, the defensive network arises from the interdependence between major importers and exporters resulting in a protective shield for exporters: "[…] if powerful oil importers are not inclined to appropriate oil reserves at present, this does not mean that they are indifferent to predation by other countries. Poor or middle-income countries with lower labour costs might be willing to act aggressively to capture oil wealth. It is in the interest of neither importers nor exporters to allow this type of predation" (De Soysa et al., 2011, p. 6). In addition to the size other attributes of the direct export network should also have an effect with regard to the protective shield. For instance, the number of major powers contained in such network should be positively related to the strength of the protective shield due to the increased ability of major powers to militarily intervene on a global scale (in addition to other factors).

Recalling the example of the Iraqi invasion of Kuwait, if the Iraqi regime had adequately considered the strength of Kuwait in light of its egonet across different dimensions rather than in isolation, it may have not perceived the acquisition of the oil reserves as opportunity (e.g. Kuwaits first degree export network was comparatively large and included a number of major powers).

Following hypothesis for an initial test arises:

Hypothesis 4.1: The size of and the number of major powers in the resource export egonet of State B are related to the cost(s) and risk(s) (perception) associated with an attack on State B.

3.2.3 Extended utility

[55] This is based on the assumption that most states with major and economically valuable natural resource endowments engage into interstate trade with regard to this resource in order to receive resource rents.

However, considering factors that reach beyond the target state itself does not only have implications for the potential costs of violent resource acquisitions, but also for their potential gains. The application of egonets or network clusters may extend the concept of significance of foreign resource concentrations in terms of size, control and therefore also value considerations. This is especially so for cumulative resources, which Van Evera (2001) identifies as highly contested as they enable the protection or acquisition of other additional resources. Instead of regarding the resource endowments of individual potential target states, it is possible to consider the potential endowments and distribution of control in entire network clusters. This shifts the focus from individual states to the regional level, defined by highly interconnected resource clusters and other dependencies. This means that the assessment of the extent to which a target is perceived as conquest opportunity is not limited to considerations about the target state itself, but also includes considerations about states that have a dependency with regard to the target state (a point that is also valid for the preceding section). In other words, additional gains beyond those directly attributed to the target state could be acquired. The applied logic is: 'control the key player, control the network', which potentially compounds the potential gains of the resource acquisition. In reference to Evera, these target states could then be understood as ' cumulative targets' , because they enable the control over additional resources and other benefits beyond those directly tied to the target state. For instance, gaining control over a major resource exporter extends the influence of the conqueror over other states that are dependent on the target for access to the same resource (and for other reasons). The conqueror can then exploit this dependence in order to attain additional gains from the dependent states. It should be noted that this is in direct contrast to the hypothesis in the preceding section, as other importing states that are dependent on the target state could intervene against the conqueror in order to re-establish status quo (e.g. consider Saddams conquest of Kuwait and the powerful position he gained because of the dependencies of other states on Kuwaiti oil – and the subsequent intervention by allied forces (dependent importer states) in order to mitigate their weak position arising from their dependency).

In order to capture this dynamic, network ties should be based on a measure that relates to a dependency and/or a variable of interest could be the power concentration within the respective n-degree egonet. However, this reaches beyond the scope of this study. Instead, an initial test is based on the aggregate amount of resources present in the undirected first-degree resource trade egonet of a state. This approximates the overall importance of the target network in terms of available resources. Furthermore, the undirected network is changed into a directed network in order to better investigate the effect of dependencies, however in this case the metric will capture the total amount of resource flows in order to approximate the magnitude of dependencies. Both approaches should serve as initial opposing test to that of hypothesis 4.1 (which argues that a large export egonet increases the risks of conquest due to risk of importer intervention). As a result, the network that is under investigation is the same as in hypothesis 4.1. Only, in this case the focus is on potential benefits (for the hypothesis at hand approximated by the aggregate amount of resources present in the undirected resource trade network), while in the case above the focus is on potential risks (for the hypothesis at hand the risk of potential importer intervention approximated by the number of direct import partners and the number of major powers amongst these).

Following hypothesis for an initial test arises:

Hypothesis 4.2 The aggregate amount of resource endowments of the undirected resource trade egonet of Sate B is related to the (perception of) potential resource gains from an attack on State B.

4. Research design

Recalling that the subject of this work is the investigation of the conflict enhancing effects of natural resource conditions with regard to interstate conflict over resources, this chapter provides the research design for testing the corresponding hypotheses advanced in chapters 2 and 3.

Hypothesis 1 and Hypothesis 2 refer to the main questions of this research, namely investigating the conflict enhancing effects of the resource conditions. They are tested with common explanatory variables (in their original and adapted form) and with the extension of the network metrics. Hypothesis 3 and Hypothesis 4 (together with the corresponding sub-hypotheses) refer to the testing of the specific network metrics.

The set of testable hypotheses is as follows:

Hypothesis 1: State A experiences scarcity in resource X -->[56] *State A initiates a conflict against State B where resource X is present (in order to alleviate the condition of scarcity for resource X).*

Hypothesis 2: State B experiences a significant concentration in resource X and State A experiences low acquisition costs --> State A initiates an interstate conflict against State B (in order to acquire resource X).

Hypothesis 3: The degree of diversification and the degree of resource scarcity for State A have an impact on the likelihood of conflict initiation for state A.

> *Hypothesis 3.1: The combination of number of trade partners of State A and the past trade-flows between these is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*
>
> *Hypothesis 3.2: The average degree of reachability of each note in a resource supply network by State A is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*

Hypothesis 4: The extent to which states perceive the presence of abundant resource concentrations in foreign states as acquisition opportunity is dependent upon attributes of the egonets of the target state across a specific set of networks.

> *Hypothesis 4.1: The size of and the number of major powers in the resource export egonet of State B are related to the cost(s) and risk(s) (perception) associated with an attack on State B..*

[56] Denotes causal link

Hypothesis 4.2 The aggregate amount resource endowments of the resource trade (direct dependence) egonet of Sate B is related to the (perception of) potential resource gains from an attack on State B.

4.1. Sample

One of the shortcomings of some existing research is that their empirical tests do not employ research designs that exclude other mechanisms from testing (a positive result confirms more than one mechanism without being able to differentiate between them). The broader approach is a very good first test of plausibility and can serve as a useful indicator. However, after an initial positive confirmation of plausibility the research design needs to be adapted to target individual mechanisms as close as possible in order to rule out competing mechanisms. In order to capture effects arising from differences in conflict party attributes and in line with most of the recent studies in this field, this study primarily employs a dyad year unit of analysis. This allows for a high degree of comparability with previous studies and, importantly, to include information about the presence of resources in the target country, thus enabling a more targeted test for the mechanisms relevant to this study. As a result, the study considers country pairs on a yearly basis for the maximum period 1960 - 2010[57] (e.g. 1982: France – Lebanon). In addition to the reason of data availability, this period is also chosen in light of the existence of globalized markets. In situations where data availability of primary or control variables is limited, the period under investigation is decreased accordingly. Consistent with a large part of the empirical literature on international conflict and by following the pairing rules from Maoz and Russett (1993), the country pairs are restricted to politically relevant[58] dyads[59] (also see Colgan, 2010; Struever & Wegenast, 2011)[60]. However, given the criticism of the politically relevant approach[61], the models are also estimated without dropping any country pairs (except for conflict reasons).

Due to criticism from an econometric perspective with regard to underestimated standard errors (e.g. see Erikson, Pinto and Rader, 2014) results for a monadic research design are also included in one instance (see Section 4.4 and 4.5 for information on variations in terms of investigative intensity across hypotheses/stages).

[57] Broader coverage of Comtrade trade data is only available from 1962 onwards.

[58] Politically relevant dyads are pairs of states that are either geographically contiguous by land, or river or within 400 miles over water, or include a major power.

[59] The country pairing was created with the EUGene Software (Bennett & Stam, 2000) and extended by the author to include the latest version of MIDs and other covariates, additional years, and some corrections (e.g. the country pairing function of EUGene fails to perform correctly for years after 2001; the inclusion/exclusion of MID years diverges from the latest COW version; initiator information is not entirely consistent with latest COW version, etc.). Country pairs are kept constant for the time period 2002-2010.

[60] The direct contiguity criteria from Stinnett et al. (2002) will be used to check for robustness (no major power dyads).

[61] For instance, see Bennett (2005); Braumoeller and Carson (2011).

4.2 Dependent variable

The main dependent variable of this study is "militarized interstate disputes" (MIDs)[62] (including all conflict intensities); it is coded 1 if the first state in the dyad has initiated a conflict against the other state in the dyad for the respective year, and coded 0 if there is no conflict (the opposing dyad is dropped in case of conflict and the conflict with the highest intensity is considered if there is more than one conflict initiation for the same dyad-year). With regard to the model at hand, this means that the non-violent acquisition occurs per default when the variable is equal to 0. Under the previously stated assumption (see section 2.2) that a state has to have access to resources (acquire resources) in order to survive (which should be a reasonable [indispensable] assumption given the physical constraints of survival) a resource acquisition occurs in every data point. Then, in the absence of a conflict, the resource acquisition, per default, occurs in a non-violent manner (either through the internal or trade access mode (Figure 2.2)). In line with the presented theory[63], joiners on the attacking side are also marked as initiator for the respective dyad-year[64].

Considering a point made by Palmer et al. (2015) it is important to note that in the case of the main model years in which a MID is on-going, as opposed to the year it was initiated, are not dropped (suggested option two out of the three suggested by

[62] One of the main advantages in using the correlates of war measure is that not only wars, but also smaller scale militarized conflicts, with and without the actual use of force, are included: "[…] conflict refers to a sharp disagreement or collision in interests between two or more actors, while a crisis and ultimately war are more serious and intense episodes of militarized interstate disputes that have escalated. […] The term "militarized interstate dispute" refers to 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" (Jones et al., 1996, pp. 168-169). Each MID is comprised by a set of incidence, which in turn define the hostility level of the MID. For instance, the incidence constituting the hostility level *war*[62] is defined as "military combat [which] is sufficiently sustained that it will result in a minimum of 1,000 total battle deaths" (Jones et al., p. 171). The other categories are comprised from the set of following incidences. *Use of force*: Blockade, Occupation of territory, Seizure, Clash, Raid, Declaration of war, Use of CBR weapons (short of killing 1,000 participants per dispute); *Display of force*: Alert, mobilization, show of troops, show of ships, show of planes, fortify border, nuclear alert, border violation; *Threat of force*: Threat to use force, threat to blockade, threat to occupy territory, threat to declare war, threat to use nuclear weapons. The hostility levels are coded as follows: 1 No militarized action; 2 Threat to use force; 3 Display use of force; 4 Use of force; 5 war.

[63] Joiners should, on average, be faced with a lower level of costs and risks, increasing the likelihood that the presence of foreign resource endowments is perceived as opportunity.

[64] As noted above, the analysis at hand includes all conflict intensities. Interesting future research questions could relate to the duration and level of conflict intensity of resource related conflicts, and to conditions under which these vary for a given resource (e.g. resource scarcity vs. resource concentration setting). Furthermore, there is the possibility to take into account the type of action that is conducted in the MID. Examples for relevant actions could include category 14 occupation of territory and category 15 seizure.

Palmer et al.). This decision is made specifically with regard to testing scarcity conditions (one of the main focuses of this study with most promising results). While it is true that with this decision on-going years are declared the same as peace-years, this seems to be a relative argument that should be understood in light of the exact research question at hand. This means that, while in most cases this statement holds true, there are certain research questions where, in fact, it could be a better test to declare (for the empirical test) on-going years the same as peace-years. Also for this study the distinction should not be conflict-year vs. peace-year, but much rather initiation-year vs. non-initiation year. This contrasting juxtaposition implies that the condition under investigation should be sufficiently distinct between these categories in order to find an effect (the difference between initiation-year and the remaining year-types has to be larger than the distinction between on-going conflict-year vs. peace-year). This distinction may also be true if all on-going years are dropped; however, the hurdle appears to be lower, because the difference between initiation-year and peace-year may be more distinct than the difference between the initiation-year to on-going *and* peace-years together, therefore creating a more robust test for specific mechanisms under investigation in this study. This allows to also take into account potential changes[65] in resource conditions within the first conflict year, which is especially relevant with regard to conditions of resource scarcity. Considering the desperate predator mechanism the perception of the domestic resource condition should change instantly (or after a very short period) after the initial phase of the conflict. This means that the resource condition in an on-going conflict-year and peace-year should be distinctly different from the condition in the year of the initiation. If this is not so it may be likely that a different mechanism is active. Due to the possibly longer time horizon for conquest with regard to the greedy predator mechanism this seems to be less important for testing the effect of conditions of foreign resource concentration. Finally, this approach is also chosen for reasons of comparison as the initial models also serve as 'test of model appropriateness' as they produce the same results as Struever and Wegenast (2016) who also keep on-going conflict-years (also see Stage 1 in Chapter 5). Nevertheless, additional tests are conducted for important variables of interest to ensure robustness of results; these include the limitation to originators of the conflict without dropping on-going conflict years, and the exclusion of all on-going conflict years including dropping the joiners. The lowest 'hurdle', where originators and joiners on the attacker side are included but on-going conflict years are dropped is not included. However, given the results for

[65] Ideally, the analysis could be divided into two parts, one focusing on the distinction between conflict-year (initiation) and peace-years, and the other only considering conflict-years and contrast the initiation-year to on-going conflict-years. However, for this a framework of expected 'resource behavior' in the course of a conflict needs to be considered (that likely also depends on the type of resource and other factors). This goes beyond the scope of this study and the employed approach should serve as general first set of tests that could be further disaggregated in future research. This type of analysis could also be beneficial to test considerations about conflict intensity.

the other approaches (that are considered to have a higher 'hurdle' for the investigation at hand) it is assumed that findings would be confirmed.

Furthermore, due to the difficulties associated with defining the initiator of a conflict (the party firing the first shot is not necessarily the party to start the conflict, as for instance in a pre-emptive strike[66]), three measures are used for robustness reasons and are coded with 1 if true for the respective state: ***init*** (the COW identification for whether State A [the first state listed in the dyad] is the initiator of the MID) and ***rev_b*** (the COW identification for whether State A is dissatisfied with status quo). Since in some cases both or neither side of the conflict is coded with 1, this study also employs a strategy in line with Caselli et al. (2014) and takes the difference between the variable for State A and the variable for State B in order to arrive at the relative aggressiveness of State A (this variable then ranges from -1 to 1 in integer steps). Applied to the COW classification for a revisionist state this yields the variable ***rev_r***[67].

In complex research designs such as this problems of endogeneity are generally existent and concerns arise.
In order to ensure that MIDs do not affect the independent variables, it is common to lag the independent variables by one year. As Gleditsch et al. (2008) point out, lagging the independent variables avoids an inflation of the coefficients due to a reversed effect between dependent and independent variables, in this case the effect of conflict on natural resources. In fact, a number of findings suggest simultaneity between conflict and natural resources, for instance resources could be destroyed as a result of the conflict, which again has an effect on conflict (e.g. Maxwell and Reuveny, 2000).
However, this comes at a cost and for the investigation at hand, it implies that the resource metric, e.g. resource scarcity, does not capture MIDs that occurred because of scarcity in the first year. Due to the termination of all MID years other than the first conflict year (conflict onset) this might be problematic, as some instances of resource scarcity could materialize abruptly (e.g. through a natural disaster or sanctions), or the time lag between resource scarcity and conflict might be smaller than a year (i.e. scarcities beginning in the same year of the beginning of conflict will not be captured). However, this problem should be mitigated due to the fact that a time lag between experiencing the resource shortage (perception of low resource access security) and the beginning of a conflict can be expected (e.g. time necessary to mobilize military forces). Furthermore, conditions of resource scarcity that end in the year before the occurrence of a conflict may be wrongly associated with the MID, which, in case of frequent occurrence, could inflate the presented effect.

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[66] For more information consult e.g. Caselli et al. 2014

[67] While this approach could serve as robustness test its findings should be considered with care given that an OLS regression is applied to a non-continuous dependent variable.

Both issues should not be that significant for the resource concentration mechanisms. Since conditions of high levels of natural resource concentration are not expected to materialize abruptly, the former issue should not be problematic for the investigation of the mechanisms associated therewith. The same should hold for the latter issue, as the average resource extractability and mobility is considered low (i.e. abrupt decrease in resource concentration shortly before the conflict are not to be expected frequently).
Despite the presented concerns and in line with the general literature on interstate conflicts, this study performs tests with the employment of first lags for all explanatory variables, with some exceptions where specified.
Furthermore, it is possible to employ an instrumental variable approach in order to control for the potential endogeneity of conflict as explanation for resource and trade related factors. With regard to the resource variables instrumental variables have not yet been employed in the field of interstate resource conflicts. This is likely due to the fact that the reverse causality issue in this regard could be neglected as the effect of conflict on natural resource is expected to be comparatively small and more relevant for renewable resources. This is different for the literature on trade and conflict; it is reasonable to assume that conflict also has a significant effect on trade. For an in-depth discussion on, and example of, the application of instrumental variables to a dyadic level of analysis with regard to trade and conflict can be found in the well-cited work of Martin et al. (2008).
Overall, in light of the points (including the research design and employed measures) discussed above, issues arising from endogeneity are somewhat addressed. Nevertheless, additional steps such as the instrumental variable approach could be conducted in the future.

Finally, one problem with binary outcome variables is insufficient variation with regard to the dependent variable and the resultant drop in observations. This could bias the results since it appears that more conflict prone observations remain in the panel (this may be more relevant for first stages of the analysis). However, the empirical tests of this study employ a comparatively larger time period (compared to other studies in the field) resulting in a large number of (remaining) observations, sufficient degree of within case variation, and good comparability to other studies conducted in the field. The problem should be further mitigated by including unit fixed effects, by employing the generally accepted standard set of control variables (i.e. Oneal & Russett, 2005; Gleditsch et al., 2008), and by extending this set of control variables by two robustness sets (i.e. De Soysa et al, 2011; Struever and Wegenast, 2016). Finally, as will become evident in the subsequent chapter, all important results are consistent across models with and without the inclusion of unit fixed effects.

4.3 Covariates

4.3.1 Explanatory variables of interest

The following section presents the relevant resource variables used in their original form as well as basis to construct more appropriate metrics where necessary. Section 4.5 contains the exact operationalization for each set of tests. Section 8.1 provides the summary descriptive statistics for these variables; Section 8.2 provides the data sources upon which variables of interest are based.

4.3.1.1 Continuous explanatory of variables of interest

The main continuous resource variables of interest are as follows:

H_oil_prod, measured in millions of barrels, reflects the amount of oil extracted in a given year. Based on data from Humphreys (2005).
H_oil_reserves, measured in billions of barrels, reflects the volume of oil remaining in the ground that geological and engineering information indicate with reasonable certainty to be recoverable from known reservoirs under existing economic and operating conditions. Based on data from Humphreys (2005)[68].
R_oil_prod, measured in metric tonnes, reflects the amount of oil produced in a given year. Based on data from Ross & Mahdavi (2014).
R_oil_val_prod, measured in current US dollars, reflects the amount of oil produced in a given year. Based on data from Ross & Mahdavi (2014).
R_net_oil_imp, measured in metric tonnes, reflects the amount of oil exported in a given year. Based on data from Ross & Mahdavi (2014).
L_oil_fields, is an integer indicating the number of oil fields within a country. This variable can be disaggregated to only include (1) onshore fields with a known discovery date (*disc_onshore*) (2) onshore fields with a known start of production date (*prod_onshore*) (3) offshore fields with a known discovery date (*disc_offshore*) (4) offshore fields with a known start of production date (*prod_offshore*) (5) onshore and offshore fields where the discovery date is known combined (*disc_all*) (6) onshore fields where the discovery date is known and unknown combined (*disc_full_on*) (7) offshore fields where the discovery date is known and unknown combined (*disc_full_off*) (8) onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined (*disc_full_all*) (9) onshore and offshore fields where the start of production date is known combined (*prod_all*) (10) onshore fields where the start of production date is known and unknown combined (*prod_full_on*) (11) offshore fields where the

[68] A word of caution needs to be said with regard to the dataset from Humphreys (2005). It appears that information with regard to oil reserves is not entirely consistent, because instances where data sources don't report oil reserves the variable is coded as 0 rather than missing. This creates some questionable instances, as for instance Humphreys observes: "[…] if no source reports known reserves, then it assumed that that known reserves are 0. Problematic cases with known production but no reported reserves include Indonesia (1973-1980), Nigeria (1971-1980), Russia (1993-1997)." (p. 523).

start of production date is known and unknown combined (*prod_full_off*) (12) onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined (*prod_full_all*) [69].
W_oil_rents, measured in current USD, the difference between the value of crude oil production at world prices and total costs of production. Based on data from Lujala et al. (2007).
W_gas_rents, measured in current USD, are the difference between the value of natural gas production at world prices and total costs of production.
W_coal_rents, measured in current USD, are the difference between the value of both hard and soft coal production at world prices and their total costs of production.
W_mineral_rents, measured in current USD, are the difference between the value of production for a stock of minerals at world prices and their total costs of production. Minerals included in the calculation are tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.
W_wood_rents, measured in current USD, are round wood harvest times the product of average prices and a region-specific rental rate.
O_net_oil_imp, measured in current USD capturing the value of individual trade flows from State 2 to State 1 in the respective dyad for the resource oil, as captured by the SITC categories 3300 – 3399. The complete batch of dyadic trade data is retrieved from the Observatorium of Economic Complexity (OEC), which comprises revised trade data from the Center for International Data from Robert Feenstra for the years 1962 – 2000 and from the UN COMTRADE database for the period 2001 – 2014.

4.3.1.2 Geo-coded explanatory variables of interest

In addition to the presented natural resource variables, resource measures containing geo-coded information have also been acquired. The variables contain information with regard to individual cells of a global spatial grid, with a 0.5x0.5 decimal degree resolution for the cells. This corresponds to a 55x55km cell located at the equator (Tollefsen et al., 2015). The geo coded dataset by PRIO[70] includes a variable that allocates every cell to a state based on the Gleditsch & Ward system membership list and the CShapes dataset. In case a grid cell covers territory of more than one state, it is allocated to the state with the largest share (Tollefsen et al., 2015). As a result, country level aggregation of the geo coded resource variables is possible.
The variable for oil deposits is measured in form of a dummy variable without containing information on the size of the endowments, which means that the amount of the resource stocks cannot be assessed directly. Nevertheless, the existing information can be used to approximate the geographic spread of the respective

[69] 'full' in the variable name refers to the combination of fields where discovery date is known and where it is unknown – 'all' in the variable name refers to the combination of on- and offshore oil fields.
[70] Variables like disaster (extreme weather events), soil degradation, and additional (geo coded) environmental variables from UNEP/DEWA/GRID and GLASOD can be included at a later point.

resource[71]. In other words, the number of cells located in a given state and containing the resource of interest can be counted and aggregated.

The individual geo-coded variables of interest are as follows:

P_oil_deposits, measures the number of grid cells containing oil deposits within a state. Based on dummy taking the value 1 when oil is present in the respective cell and otherwise 0; indicates whether oil deposits where the discovery date is known have been found within the given grid cell.
P_oil_deposits_total, measures the number of grid cells containing oil deposits within a state. Based on dummy taking the value 1 when oil is present in the respective cell and otherwise 0; indicates whether oil deposits have been found within the given grid cell, regardless of whether the discovery date is known.

4.3.2 Control variables

For reasons of comparability between results across studies, this investigation employs the sets of control variables from the baseline models of Oneal and Russett (2005) and Gleditsch et al. (2008). In some cases, the results for the variables of interest may be especially susceptive to changes in control variables due to their nature of components (e.g. GDP). In those cases (where indicated) additional robustness tests are conducted based on the sets of control variables employed by De Soysa et al., 2011 and Struever and Wegenast (2016)[72], as specified at the end of this section.

In line with common practice in the empirical conflict literature, this study controls for *regime type*. While the democratic peace argument is not necessarily clear on a monadic level, robust support has been established for the conflict decreasing effect of democratic dyads (e.g. Maoz and Russett, 1993). Therefore, in line with Gleditsch et al., a democracy-democracy dummy variable is included which takes the value 1 if both states of a given dyad are democratic. In line with the definition of coherent

[71] Findings based on this variable could serve as a point of departure for investigating the implications of geographical aspects of natural resources with regard to interstate conflict (also see Casselli et al. (2015)). A resource that is spread over a large area or close to state borders could create a better opportunity for conquest (by decreasing costs and risks). It should be less difficult to capture parts of a resource deposit that is spread over a large area, because protective measures are harder to provide in this case (this is under the assumption that not the entirety of stocks is captured, in which case this consideration might inverse). However, this reaches beyond the scope of this study and findings based on this variable should at this point be understood as a form of robustness test.

[72] The respective sets of control variables are employed, however, in an updated (adapted) manner to fit the time periods under investigation. This is done so that the broader availability of resource variables is not curtailed by the availability of (old) control variables. However, this also means that, besides varying periods under investigation, that the data source may differ in few instances, which makes comparability across studies less meaningful.

democracy by Jaggers and Gurr (1995) and the operationalization employed by Colgan, the state is considered a democracy for Polity IV composite scores higher than 6 (DEMOC – AUTOC scores of positive 7 to positive 10 have been defined as coherent democracy).

Furthermore, the factors population and GDP may play an important role in the assessment for likelihood of interstate conflict, as they may be tied to the perceived and real chances of success (Caselli et al.). However, this factor may be better captured by the level of *national capability* of the state, more precisely the logarithmic national capability relative to that of its opponent (as is employed by Oneal and Russett; Gleditsch et al.). The COW composite index of national capability is constructed from the total population, urban population, iron and steel production, primary energy consumption, military expenditure and military personnel. Employing this measure instead of GDP and population size also prevents the problem of high multicollinearity, as some resource variables are constructed with GDP or population as component. Due to possible similar problems between the components total population, urban population, iron and steel production and primary energy consumption, the measure could be limited to fighting capability, consisting of military expenditure and military personnel, for which multicollinearity may be decreased further, however not completely.

For the same reason, the variable of *low trade dependence*[73] from Oneal and Russett and Gleditsch et al. could be exchanged for an alternative measure which may be somewhat less correlated to the state's GDP as compared to when it is a direct component of the respective variable[74].

Furthermore, *major power status* also tends to have a significant impact on the likelihood of conflict, even when controlling for state size variables, as major powers have means to bridge the geographic proximity barrier. In line with Struever and Wegenast, the dummy for major power status is included for both states in one of the sets of control variables. The interaction term between both as employed by De Soysa et al. is considered (Oneal and Russett only consider major power existence in a given dyad).

In addition, Gleditsch et al. establish a significant relationship between the *incidence of civil war* and interstate conflict. The effects between civil war in the initiator and

[73] According to Oneal and Russett (p. 298) high trade dependence "has never proven statistically significant", which may be different for trade dependence in natural resources.

[74] For instance, Hafner-Burton and Montgomery (2012) define the dependence of state i on state j as the number of shared memberships of i and j relative to the number of total trade institution memberships of state i. In addition, the overall trade dependence (or trade openness) of state i could be estimated through the eigenvector centrality of state i in the network of dependencies, incorporating the total number of dependencies of state i and the importance of the respective dependants. Finally, an interaction term between the total number of preferential trade agreement memberships of state i and the amount of imports and exports between the states could be used as a proxy under the assumption that states that are more reliant on trade are also engaged with more PTAs (e.g. to hedge risk).

civil war in the target are almost the same[75]. Therefore, it should be sufficient to include one dummy for civil war in one of the states in the dyad and one dummy for civil war in both states.
Other important factors between the members of the dyad are *alliance*[76], *colonial contiguity*[77], *territorial contiguity*[78] and *distance (ln)* between capitals[79] and the number of *shared IGO memberships*. Finally, in line with Beck et al. (1998), a count of peace years since the last militarized dispute is included together with natural-cubic splines to smooth the observed effect over time. All variables are appropriately changed to conform with the dyadic level of analysis. This concludes the standard set of control variables for estimating the probability of conflict in a given state year dyad.

Additional potentially meaningful controls arising from the need for robustness tests in some instances are: The interaction between the *capability level* of state A and state B (e.g. De Soysa et al), the interaction between the level of *GDP* between state A and state B, the interaction between population levels between state A and state B (Due to the fact that most models contain unit fixed effects, the interaction between major power status is not included). Furthermore, a third set controls whether or not dyads consist of *two minor*[80] *powers*[81] (Oneal and Russett 1999) and for a variable measuring the aggressor's material capabilities divided by the sum of both the initiator's and the target's national capabilities, capturing the "[…] naive probability of the initiator winning the conflict" (Bennett and Stam, 2000b, 669 – both as cited in Struever and Wegenast (2016))

Initially, vector X' then contains the following most basic set of control variables as employed by Gleditsch et al. (2008)[82]:

[75] Gleditsch et al. conduct a multivariate analysis between the effect of civil war in the target state and civil war in the initiating state on MID initiation. A civil war in the target state increases the probability of conflict initiation by 1.63 and in the initiating state by 1.90. A Wald test for equivalence fails to reject the null.
[76] Measured with a binary variable taking the value 1 for joint defensive alliance membership
[77] Dummy variable indicating whether or not the two states were territorially contiguous through colonial holdings or dependent territories.
[78] A dummy variable indicating whether or not the two states were territorially contiguous, defined as sharing a land border or being separated by no more than 400 miles of water.
[79] Oneal and Russett argue that both, territorial contiguity and distance, should be employed, as each variable captures a part of the concept of geographic proximity.
[80] This is possible because the unit fixed effects are based on the level of states and not dyads.
[81] A dummy taking the value of 1 when both states in the dyad are major powers.
[82] It is to note that both variables with regard to civil conflict arise from the results of the investigation by Gleditsch et al. (2008) and not from their set of control variables. Furthermore, instead of the alliance S-score by Signorino and Ritter (1999), in line with Oneal and Russett (2005), a dummy is used indicating the presence of a defensive alliance.

Demo-Demo; ln (capability ratio); low trade dependence; civil war in one; civil war in both; alliance; territorial contiguity; ln (distance); colonial contiguity; shared IGOs; peace years; splines.

The control variables are contained by vectors X2':

gdp_1##gdp_2; cap_1##cap_2; pop_1##pop_2; ln (capability ratio); low trade dependence; civil war in one; civil war in both; alliance; territorial contiguity; ln (distance); colonial contiguity; shared IGOs; peace years; splines

And X3':

both_minor; init_cap_win; ln (capability ratio); low trade dependence; civil war in one; civil war in both; alliance; territorial contiguity; ln (distance); colonial contiguity; shared IGOs; peace years; splines

4.4 The preferred model(s)

Preceding paragraphs introduce different ways to conduct empirical testing of the introduced hypotheses in more than one instance. These different approaches arise from (1) general econometric considerations (pol. relevant vs. all dyads); (2) implications directly inherent to empirical testing in the field of international conflict studies ('how to measure the initiation of an interstate conflict?'); (3) and the manner some variables are constructed.

One of the econometric perspectives with regard to binary outcome models is that there needs to be a minimum ratio between the number of positive cases relative to negative cases. Provided that the number of conflict years compared to the number peace years is very low, and given that this difference is inflated by a dyadic research set-up the standard approach in the conflict literature has been to only consider politically relevant cases. It is argued that conflict mostly breaks out in contiguous dyads or dyads containing a major power and that all remaining cases can (should) be neglected. Limiting the sample in a systematic manner is always problematic because then unobservable cases could create spill over effects on remaining cases. Also, it has been argued that through this approach a reasonable number of positive cases is not captured[83]. Finally, the econometric argument rather refers to the absolute number of positive cases rather than the difference between positive and negative cases. The point that remains is that of insufficient power of the few positive cases in face of the large amount of negative cases which could lead to misleading conclusions with regard to the effect of variables of interest (often wrongly concluding that there is no effect). For this reason a rare event model (King and Zeng, 2001) could be employed.

[83] For instance, see Bennett (2005); Braumoeller and Carson (2011).

However in the papers discussed in Chapter 1 the rare events model where applied has always produced very similar results as the respective standard models and will therefore not be employed in this study.
However, these points also have a different implication. If variables of interest are significant in models for politically relevant dyads *and* contain sufficient power to be significant in the models containing all dyads, those results could be considered as very strong[84].

Furthermore, the greatest concern in a dyad research setup other than that with regard to inflated standard errors appears to be the identification of the conflict initiator (e.g. see Jones, Bremer, and Singer, 1996; Colgan, 2010; Caselli et al, 2014). Therefore, it is sensible to also consider all results vis-à-vis an initiator designation that is based on the identification of revisionist states in addition to the standard approach (based on State A, the state that takes the first militarized action). It is difficult to ground an argument in theoretical considerations in favour of either approach as both seem to capture valid aspects of identifying a conflict initiator. Therefore, results in this regard could be considered almost of similar weight. In case results are similar for both approaches, the respective variables of interest can be considered to enjoy strong support. Nevertheless, taking the standard COW variable for conflict initiation that is based on state A (the state conducting the first militarized action) is the most common approach.
In addition to the distinction between first action and designation as revisionist state, this study also employs a relative measure for identifying a revisionist state, because both states in a conflict dyad can be considered as revisionist. However, results of this model should not be considered with care if different from the other models, because differences may also often arise due to different regression models (in this case the dependent variable is considered as continuous and a OLS regression model is employed). Nevertheless, this model can be useful to identify especially strong results.

Lastly, different sets of control variables are used in order to test the robustness of results with regard to variables of interest that contain potential major impact

[84] An additional appropriate approach could be based on the Poisson model, as for instance employed by Colgan (2010). However, its strong assumption that the mean equals the variance usually creates problems. For this reason, ideally, a hurdle negative binomial model is employed. The advantage is that the difference between negative and positive cases is not constant, which yields a more fine-grained distinction between cases (e.g. distinction between clear misses and close misses). However, the fact that the dependent variable has to be changed fundamentally (from binary to count data) and that the value arising from comparisons with regard to other studies is considered greater than implementing an approach that arises from mostly econometric considerations leads this study to employ the standard model as presented at the end of this section. Also, studies in the field that have employed count and binary outcome models (e.g. Colgan, 2010) do not produce substantively different results.

components (for instance, if one of the components is the level of GDP). In those instances, the different sets of control variables, partly containing the respective components as controls themselves, ensure that observed effects do not arise from dynamics not intended when investigating a certain aspect[85].

These models then constitute the standard set of empirical tests that has been applied to each stage of testing (with the exception of the additional sets of control variables, which are applied in instances where necessary).

The results from the models should be considered jointly in order to arrive at a conclusion with regard to respective hypotheses. Nevertheless, the primary focus is laid upon the results produced by the 'standard model' of this study, as it appears to be most widely accepted and believed to produce most robust results. The ability to compare results across studies is crucial.

Finally, one advantage of using slightly different approaches is that in case the standard model does not yield significant results, the alternative models may do so and therefore point in a broad direction for further deliberations.

4.4.1 Standard Model - Overview

Model type:	Logistic regression
Level of analysis:	Dyadic
Pairing rule:	Politically relevant dyads
Clustering of se:	On the dyad level
Positive case:	Initiation of a MID
Identification of pos. cases:	COW var. for first militarized action (State A)
Included conflict cases:	Originators and joiners
Set of control variables:	Vector X'
Control for heterogeneity:	Unit fixed effects
Control for time:	Peace years and cubic splines

Specification of Standard model S:

$$(S)\ Conflict_{ij,t} = \alpha + \beta_1 VI_{ki/j,t-1} + \beta_2 RV_{kj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RI_{ki,t-1}$ is the variable of interest for resource k

[85] The list is not exhaustive and many other tests could be conducted (e.g. individual conflict intensities or different conflict types, etc.).

and state i/j at time t-1, , $X'_{ij,\,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,\,t}$ is the error term.

4.5 Seven stages of testing

As has become evident from the previous chapters the total number of posited mechanisms with regard to both tier one categories (Figure 2.1) is very large. It is therefore important to consider a whole battery of empirical tests in different stages, carefully observing the trajectory of overall results, and importantly, the differences of results across stages. Only when considering the broad range of tests and their results in totality authoritative and dependable conclusions about individual mechanisms can be made.

The *initial stage* of testing should serve as baseline and considers the variables of interest in their original form, including the resource variables for both states in one model. The main reason for this is the comparability of results (and confirmation for the appropriateness of the base model). As will be observable in the subsequent chapter, comparisons between results of this and other studies will be drawn. Furthermore, it is insightful to see how variables behave when they and the overall research designs are not adapted to test specific mechanisms. This can also provide some indication with regard to the distribution of dominance across mechanisms, especially those that are opposing, and general tendencies should be observable.

The *second stage* turns its attention towards the initiating state and attempts to specifically test the effects of resource scarcity. Here, resource metrics are adapted in different ways in order to adequately capture the condition of interest. Likewise, the *third stage* focuses on resource conditions in the target state in isolation and also adapts resource metrics to appropriately capture foreign resource concentrations with specific focus on costs of conquest. The main aim of these stages is to consider the plausibility of each of the posited mechanisms in isolation. Furthermore, in relation to the first stage, a comparison between the results of both sections can provide insights about the relative dominance between the two mechanisms.

The *fourth stage* uses insights from the results of stage two and three to construct testable resource metrics that consider resource conditions in both the initiating and target states. The aim is to gain additional insights and test the plausibility of the desperate predator mechanism in specific. By considering the significance of specific components of respective interactions it is also possible to acquire insights with regard to the greedy predator mechanism.

The *fifth stage* applies the approach from stages one through four to natural resources other than oil. Due to reasons of data availability, all resource variables are based on resource rents. The included resource types are: Natural gas, coal, minerals and wood.

The *sixth and seventh stages* focus on the introduction of the network level in light of the insights gained in previous stages. The aim is to improve the ability of metrics to capture respective resource conditions in line with developed frameworks from previous chapters. Results can then be compared to those of previous stages in order to evaluate their direct performance as well as the plausibility of introduced frameworks and concepts (e.g. the re-conceptualization of resource scarcity conditions).

It needs to be noted that the empirical scrutiny varies across the different stages. Based on promising evidence from previous studies as well as the consistent results of this study with regard to the set of standard tests, special focus is laid upon testing the effects of resource scarcity. As a result, additional tests are conducted, including: (1) the inclusion of regional effects; (2) the limitation to originators of the conflict without dropping on-going conflict years, (3) the exclusion of all on-going conflict years including joiners.

In addition, given that out of all scarcity models the initial results are most consistent and significant for the network measures, the network models enjoy the highest degree of scrutiny and systematic testing. The additional tests include: (1) the inclusion of regional effects; (2) the limitation to originators of the conflict without dropping on-going conflict years, (3) the exclusion of all on-going conflict years including dropping the joiners; (4) systematic comparison of AIC values across nested models; (5) the inclusion of marginal effects plots; (6) the logarithmic transformation of variables of interest; (7) the consideration the monadic level of analysis; (8) the inclusion of year fixed effects in addition to unit fixed effects; (9) the division of dataset into a pre- and post-1990 period; (10) the exclusion of dyads containing the United States; (11) first test with regard to FDI related factors

4.6 Operationalization and specification by hypothesis

In line with most studies, a logistic model with robust standard errors clustered on the country pair level is employed. Models are estimated with country fixed effects (there is insufficient variation within the dyads for dyad fixed effects, e.g. see Caselli et al. (2014)). It should not be necessary to include year fixed effect since controls for time effects are included based on Beck et al. (1998), allowing for more within variation. However, for reasons of robustness, where indicated, also year fixed effects are included to account for some additional degree for unobserved heterogeneity stemming from time trends (in addition to the one already controlled for by the number of peace years and splines). For reasons of comparison between results of this and other studies models without fixed effects are also included where the dependent variable is the standard COW variable capturing the initiator of an interstate conflict.

However, it needs to be stressed that the inclusion of unit fixed effects is considered as important.

4.6.1 Stage one – initial tests

This stage employs the resource variables for both states, for most cases operationalized in their original form. A limited number of adaptations is conducted where specified. The main aim of this stage is to provide first insights into how respective resource variables perform if not adapted towards testing specific mechanisms.

The following variables can be operationalized:

The resource variables $RV_{ki,\,t}$ and $RV_{kj,\,t}$ are consecutively based on the following variables for state 1 ((state i)[86]:

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) R_oil_val_prod, (5) R_net_oil_imp, (6) P_oil_deposits_total, (7) L_oil_fields, and (8) W_oil_rents.

Where $RV_{i,\,t}$ is the resource variable for resource k and state i at time t, and $RV_{kj,\,t}$ is the resource variable for resource k and for state j[87] at time t. K is limited to the resource oil.

For reasons of comparability to other studies the resource variables based on (1) – (4) are also included in adapted form, as follows:

(I) $RV_{ki,\,t} = ln(RV_{ki,\,t})$

(II) $RV_{kj,\,t} = ln(RV_{ki,\,t})$

(III) $RV_{ki,\,t} = (RV_{ki,\,t}/POP_{ki,\,t})$

(IV) $RV_{ki,\,t} = (RV_{kj,\,t}/POP_{kj,\,t})$

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[86] (1) production and (2) reserve data from Humphreys (2005); production data from Ross & Mahdavi (2014) measured in (3) units and in (4) USD value, and their data on (5) net imports measured in units; (6) the geo-coded oil deposit data in aggregated form as provided by PRIO-GRID (Tollefsen et al., 2012); (7) data on oil fields in disaggregated form as provided by Lujala et al. (2007); and the (8) World Bank (2014) data on oil rents.

[87] When the state is indicated with i it refers to the first state in the dyad (initiator); when the state is indicated with the letter j it refers to the second state in the dyad (target).

Where $RV_{i,t}$ is the resource variable for resource k and state i at time t, $RV_{i,t}$ is the resource variable for resource k and for state j at time t; $POP_{i,t}$ and $POP_{j,t}$ are the population levels measured in units of states i and j, respectively. K is limited to the resource oil.

The adapted resource variables included in the respective models are:

(1) H_log_oil_prod_c1, H_log_oil_prod_c2, H_oil_prod_pc_c1, H_oil_prod_pc_c2; (2) H_log_oil_reserv_c1, H_log_oil_reserv_c2, H_oil_reserves_pc_c1, H_oil_reserves_pc_c2; (3) R_log_oil_prod_c1, R_log_oil_prod_c2, R_oil_prod_pc_c1, R_oil_prod_pc_c2; (4) R_log_oil_val_prod_c1, R_log_oil_ val_prod_c2, R_oil_ val_prod_pc_c1, R_oil_ val_prod_pc_c2.

The following models can be specified:

$$(1)\ Conflict_{ij,t} = \alpha + \beta_1 RV_{ki,t-1} + \beta_2 RV_{kj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RV_{ki,t-1}$ is the resource variable for resource k and state i at time t-1, $RV_{kj,t-1}$ is the resource variable for resource k and for state j at time t-1, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

4.6.2 Stage two – resource scarcity

In this stage the resource variables of interest are adapted in order to be most suitable for capturing conditions of resource scarcity. In a first step, resource scarcity is captured by a dummy indicating the absence of oil in the initiating state. The second step employs a scarcity measure in continuous form; as elaborated in the section above, a meaningful proxy for resource scarcity for this study is *outside resource dependence*. In a third step both measures are combined to form an interaction term yielding cases that are outside dependent on resources but do not own resources themselves.

The following variable can be operationalized:

$$(1)\ RD_{ki,t} = \left(\frac{[RI_{ki,t} - RE_{ki,t}]}{GDP_{i,t}}\right)$$ [88]

Where $RD_{i,t}$ is the outside resource dependence variable for resource k and state i at time t, $RI_{ki,t}$ are the resource imports of resource k in state i at time t, and $RE_{ki,t}$ the resource exports of resource k in state i at time t. K is limited to the resource oil. The variable capturing the outside resource dependence for oil included in the analysis is *outside_oil_dep.*

It is important to note that the term $[RI_{kit} - RE_{kit}]$ is set to zero for negative cases. The reason for this is that a negative number exceeds the usefulness as a proxy for resource scarcity, i.e. resource abundance, overall resource dependence and scarcity become intertwined[89] (the proxy should be one-sided and only capture net resource flows remaining in a state). The results remain highly robust when an import measure capturing total imports rather than net-imports is employed (Appendix Section 8.5.1). A number of additional robustness checks illustrate the shift in results across different approaches of capturing resource scarcity as soon as a negative range of net imports is considered. All results behave as expected. In fact, only looking at the subset with negative values yields significant and positive coefficients, which possibly capture a higher degree of aggressiveness of exporting states (e.g. De Soysa et al. 2011). All robustness checks (complete set of net imports; subset of positive net imports; subset of zero and positive net imports; subset of negative imports; imports regardless of exports) can be found in the appendix in the set of Tables 8.5.1.

The following models can be specified:

$$(1)\ Conflict_{ij,t} = \alpha + \beta_1 D_{RENki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $D_{RENki,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state i at time t are absent and otherwise 0, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

$$(2)\ Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

[88] An alternative way to define resource dependence, which possibly better captures the resource dependence of an economy, is (1) $RDit = \left(\frac{(RENkit + [RIkit - REkit])}{GDPit * IDit}\right)$
where $RVit$ is the resource variable for state i at time t, $RENkit$ are the resource endowments of resource k in state i at time t, $RIkit$ are the resource imports, $REkit$ the resource exports, and $IDit$ the industrial development level. However, this metric would also include effects from other conflict mechanisms associated with natural resources.

[89] For instance, a negative value also captures cases that can be characterized as rentier states. As a result the effect across the range of this variable should have a u-shaped.

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

$$(3)\ Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} * D_{RENki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1, $D_{RENki,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t are absent and otherwise 0, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

The dummy $D_{RENki,t-1}$ indicating the absence of oil endowments in state i, and included in this model is consecutively based on following variables:

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) W_oil_rents, (5) P_oil_deposits_total, and (6) L_oil_fields.

And included as:

(1) H_no_oil_prod1, (2) H_no_oil_reserves1, (3) R_no_oil_prod1, (4) W_no_oil_rent1, (5) P_no_deposits1, and (6) the set of variables for oil fields: a) L_no_disc_onshore1, b) L_no_prod_onshore1, c) L_no_disc_offshore1, d) L_no_prod_offshore1, e) L_no_disc_all1, f) L_no_disc_full_on1, g) L_no_disc_full_off1, h) L_no_disc_full_all1, i) L_no_prod_all_1, j) L_no_prod_full_on1, k) L_no_prod_full_off1, and l) L_no_prod_full_all1.

4.6.3 Stage three – foreign resource concentration

In this stage the resource variables of interest are adapted in order to be most suitable to capture conditions of foreign resource concentrations. In line with the preceding stage the initial tests are based on a dummy indicating the presence of resources in the target state. In a second step, the continuous resource measures are employed in their original form. The final step adapts these measures by incorporating cost proxies in order to adequately capture foreign resource concentrations as an opportunity for conquest.

The cost proxies are limited to the level of population, gdp, capability and development, all with regard to the target state. A distinction between results can be expected for population, gdp and capability on one side and level of development on the other side, each being more relevant for a respective mechanism in that the relevance of cost proxies varies across the mechanisms. The former set better captures direct costs and also risks of conquest (e.g. too strong military capability of the target state), while the latter also includes a broader range of costs that might be more relevant in an opportunity setting (e.g. reputation costs) (also see Sections 5.2.3 & 5.2.4).

The variables are constructed by discounting the different resource metrics by the respective cost proxies. Where indicated a simple dummy approach distinguishing between high and low cost scenarios (based on the different cost proxies[90]) is also implemented for robustness reasons (confirming results)[91].

The following variables can be operationalized:

The resource variables $RV_{ki,t}$ and $RV_{kj,t}$ are consecutively based on the following variables for state 1 ((state i):

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) R_oil_val_prod, (5) R_net_oil_imp, (6) P_oil_deposits_total, (7) L_oil_fields, and (8) W_oil_rents.

Where $RV_{i,t}$ is the resource variable for resource k and state i at time t, and $RV_{kj,t}$ is the resource variable for resource k and for state j[92] at time t. K is limited to the resource oil.

The resource variables based on (1) – (4) and (6) are also included in adapted form, as follows:

$$(1)\ RC\_POP_{kj,t} = (RV_{kj,t}/POP_{j,t})$$

$$(2)\ RC\_GDP_{kj,t} = (RV_{kj,t}/GDP_{j,t})$$

[90] It should be noted that the employed cost proxies are comparatively broad and therefore contain noise with regard to approximating costs of conquest; yet, similar proxies employed by previous studies (e.g. per capita reserves) can also be characterized by a degree of noise. While it is the aim of this study to keep the research design as narrow as possible with regard to the question under investigation and to therefore exclude other underlying mechanisms that may be present, a more thorough construction of proxies reaches beyond the scope of this study (for instance, the geographic location of the target resource [also relative to state borders, e.g. see Caselli et al.], should have a significant impact on costs). The employed tests with regard to these variables should therefore be considered with care and the findings in this regard should be regarded as indication for future research directions. Nevertheless, as will become evident in chapter 5, these proxies appear to behave consistently in line with expectations arising from the concepts and frameworks introduced in this work.

[91] It should be noted that the dummy approach is not ideal due to loss of information.

[92] When the state is indicated with i it refers to the first state in the dyad (initiator); when the state is indicated with the letter j it refers to the second state in the dyad (target).

(3) $RC\_CAP_{kj,t} = (RV_{kj,t}/CAP_{j,t})$

(4) $RC\_DEV_{kj,t} = (RV_{kj,t}/[GDP_{j,t}/POP_{j,t}])$

Where $RC\_*_{kj,t}$ are the resource concentration variables for resource k and state i at time t in adapted form; $RV_{i,t}$ is the resource variable for resource k and for state j at time t; $POP_{j,t}$ is the population level of state j at time t; $GDP_{j,t}$ is the GDP level of state j at time t; $CAP_{j,t}$ is the capability level of state j at time t . K is limited to the resource oil.

The adapted resource concentration variables included in the respective models are:

(1) H_oil_prod_pop_c1, H_oil_prod_gdp_c1, H_oil_prod_cap_c1, H_oil_prod_dev_c2; (2) H_oil_reserves_pop_c2, H_oil_reserves_gdp_c2, H_oil_reserves_cap_c2, H_oil_reserves_dev_c2; (3) R_oil_prod_pop_c2, R_oil_prod_gdp_c2, R_oil_prod_cap_c2, R_oil_prod_dev_c2; (4) R_oil_val_prod_pop_c2, R_oil_val_prod_gdp_c2, R_oil_val_prod_cap_c2, R_oil_val_prod_dev_c2; (6) P_oil_dep_total_pop_c2, P_oil_dep_total_gdp_c2, P_oil_dep_total_cap_c2, P_oil_dep_total_dev_c2.

The following models can be specified:

(1) $Conflict_{ij,t} = \alpha + \beta_1 D_{RENkj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $D_{RENkj,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t are absent and otherwise 0, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

The dummy $D_{RENkj,t-1}$ indicating the presence of oil endowments in state j, and included in this model is consecutively based on following variables:

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) W_oil_rents, (5) P_oil_deposits_total, and (6) L_oil_fields.

And included as:

(1) H_oil_prod2, (2) H_oil_reserves2, (3) R_oil_prod2, (4) W_oil_rent2, (5) P_deposits2, and (6) the set of variables for oil fields: a) L_disc_onshore2, b) L_prod_onshore2, c) L_disc_offshore2, d) L_prod_offshore2, e) L_disc_all2, f)

L_disc_full_on2, g) L_disc_full_off2, h) L_disc_full_all2, i) L_prod_all_2, j) L_prod_full_on2, k) L_prod_full_off2, and l) L_prod_full_all2.

(2) $Conflict_{ij,t} = \alpha + \beta_1 RV_{ki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RV_{kj,t-1}$ is the resource variable for resource k and for state j at time t-1, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil.

(3) $Conflict_{ij,t} = \alpha + \beta_1 + RC_{kj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RC_{kj,t-1}$ is one of the resource concentration measures $RV_{kj,t-1}$, $RC\_POP_{kj,t-1}$, $RC\_GDP_{kj,t-1}$, $RC\_CAP_{kj,t-1}$, $RC\_DEV_{kj,t-1}$, respectively; $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,t}$ is the error term. K is limited to the resource oil. Due to the nature of the components of $RC_{kj,t-1}$, vector X' is exchanged for vectors X2' and X3' for robustness reasons.

4.6.4 Stage four – combination of both resource conditions

Having considered the resource conditions in the initiating and the target state separately, this stage considers the resource conditions in both states simultaneously. Therefore, only interaction terms are considered and in relation to the approach of the two preceding stages the initial components are two dummies, indicating the presence or absence of resources in the target and initiating state, respectively. In the second step, the dummy for the initiating state is exchanged with the continuous scarcity proxy from section 4.6.2. The last step also exchanges the dummy for the target state with the continuous relative resource measures from section 4.6.3.

The following variables can be operationalized:

See previous sections 4.6.2 and 4.6.3, respectively.

The following models can be specified:

(1) $Conflict_{ij,t} = \alpha + \beta_1 D_{RENki,t-1} * D_{RENkj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the resource variable for resource k and state i at time t-1, $D_{RENki,\,t\,-\,1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are absent and otherwise 0, $D_{RENkj,\,t\,-\,1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are present and otherwise 0, $X'_{ij,\,t\,-\,1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,\,t}$ is the error term. K is limited to the resource oil.

The dummy $D_{RENki,\,t\,-\,1}$ indicating the absence of oil endowments in state i, and included in this model is consecutively based on following variables:

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) W_oil_rents, (5) P_oil_deposits_total, and (6) L_oil_fields.

And included as:

(1) H_no_oil_prod1, (2) H_no_oil_reserves1, (3) R_no_oil_prod1, (4) W_no_oil_rent1, (5) P_no_deposits1, and (6) the set of variables for oil fields: a) L_no_disc_onshore1, b) L_no_prod_onshore1, c) L_no_disc_offshore1, d) L_no_prod_offshore1, e) L_no_disc_all1, f) L_no_disc_full_on1, g) L_no_disc_full_off1, h) L_no_disc_full_all1, i) L_no_prod_all_1, j) L_no_prod_full_on1, k) L_no_prod_full_off1, and l) L_no_prod_full_all1.

The dummy $D_{RENkj,\,t\,-\,1}$ indicating the presence of oil endowments in state j, and included in this model is consecutively based on following variables:

(1) H_oil_prod, (2) H_oil_reserves, (3) R_oil_prod, (4) W_oil_rents, (5) P_oil_deposits_total, and (6) L_oil_fields.

And included as:

(1) H_oil_prod2, (2) H_oil_reserves2, (3) R_oil_prod2, (4) W_oil_rent2, (5) P_deposits2, and (6) the set of variables for oil fields: a) L_disc_onshore2, b) L_prod_onshore2, c) L_disc_offshore2, d) L_prod_offshore2, e) L_disc_all2, f) L_disc_full_on2, g) L_disc_full_off2, h) L_disc_full_all2, i) L_prod_all_2, j) L_prod_full_on2, k) L_prod_full_off2, and l) L_prod_full_all2.

$$(2)\ Conflict_{ij,\,t} = \alpha + \beta_1\, RD_{ki,\,t\,-\,1} * D_{RENkj,\,t\,-\,1} + X'_{ij,\,t\,-\,1} + \upsilon_{ij,\,t}$$

Where $Conflict_{ij,\,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,\,t\,-\,1}$ is the outside resource dependence variable for resource k and state i at time t-1; $D_{RENkj,\,t\,-\,1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are present and otherwise 0; $X'_{ij,\,t\,-\,1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,\,t}$ is the error term. K is limited to the resource oil.

(3) $Conflict_{ij,\,t} \;=\; \alpha + \beta_1 + RC_{kj,\,t\,-\,1} * D_{RENkj,\,t\,-\,1} + X'_{ij,\,t\,-\,1} + \;\upsilon_{ij,\,t}$

Where $Conflict_{ij,\,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RC_{kj,\,t\,-\,1}$ is one of the resource concentration measures $RV_{kj,\,t\,-\,1}$, $RC\_POP_{kj,\,t\,-\,1}$, $RC\_GDP_{kj,\,t\,-\,1}$, $RC\_CAP_{kj,\,t\,-\,1}$, $RC\_DEV_{kj,\,t\,-\,1}$, respectively; $D_{RENkj,\,t\,-\,1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are present and otherwise 0; $X'_{ij,\,t\,-\,1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,\,t}$ is the error term. K is limited to the resource oil. Due to the nature of the components of $RC_{kj,\,t\,-\,1}$, vector X' is exchanged for vectors X2' and X3' for robustness reasons.

4.6.5 Stage five – other natural resources

This stage tests the effects for natural resources other than oil (however, oil is included for reasons of comparison). Besides the effect of different natural resources in absolute terms it may be insightful to specifically look at differences in effects between those resources. The approach to testing is the same as throughout stages 1 to 4 - with two exceptions: (1) The adaptations for reasons of comparison from section 4.6.1 are not conducted (2) The initial step from section 4.6.2 and 4.6.3 (only dummies) is not included.

The following variables can be operationalized:

The operationalization of variables is the same as in sections 4.6.2 – 4.6.4 with two differences: (A) resource k is oil gas, coal, minerals, or wood, respectively; (B) the original variables are (1) W_oil_rents (2) W_gas_rents, (3) W_coal_rents, (4) W_miner_rents, (5) W_wood_rents, respectively, and all adaptations are based upon these.

All variables are operationalized based on sections 4.6.2 – 4.6.4.

The following models can be specified:

(1) $Conflict_{ij,\,t} \;=\; \alpha + \beta_1\, RV_{ki,\,t\,-\,1} + \beta_2\, RV_{kj,\,t\,-\,1} + X'_{ij,\,t\,-\,1} + \;\upsilon_{ij,\,t}$

Where $Conflict_{ij,\,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RV_{ki,\,t\,-\,1}$ is the resource variable for resource k and state i at time t-1, $RV_{kj,\,t\,-\,1}$ is the resource variable for resource k and for state j at time t-1, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term.

$$(2)\ Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term.

$$(3)\ Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} * D_{RENki,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1, $D_{RENki,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t are absent and otherwise 0, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term.

$$(4)\ Conflict_{ij,t} = \alpha + \beta_1 + RC_{kj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RC_{kj,t-1}$ is one of the resource concentration measures $RV_{kj,t-1}$, $RC\_POP_{kj,t-1}$, $RC\_GDP_{kj,t-1}$, $RC\_CAP_{kj,t-1}$, $RC\_DEV_{kj,t-1}$, respectively; $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,t}$ is the error term.

$$(5)\ Conflict_{ij,t} = \alpha + \beta_1 D_{RENki,t-1} * D_{RENkj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $D_{RENki,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state i at time t-1 are absent and otherwise 0, $D_{RENkj,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are present and otherwise 0, $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and $\upsilon_{ij,t}$ is the error term.

$$(6)\ Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} * D_{RENkj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1; $D_{RENkj,t-1}$ is a dummy taking the value of 1 when resource endowments of resource k in state j at time t-1 are present and otherwise 0; $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,t}$ is the error term.

(7) $Conflict_{ij,t} = \alpha + \beta_1 RD_{ki,t-1} * RC_{kj,t-1} + X'_{ij,t-1} + \upsilon_{ij,t}$

Where $Conflict_{ij,t}$ is a dummy taking the value of 1 when state i initiated a conflict with state j at time t and otherwise 0; $RD_{i,t-1}$ is the outside resource dependence variable for resource k and state i at time t-1; $RC_{kj,t-1}$ is one of the resource concentration measures $RC\_POP_{kj,t-1}$, $RC\_GDP_{kj,t-1}$, $RC\_CAP_{kj,t-1}$, $RC\_DEV_{kj,t-1}$, respectively; $X'_{ij,t-1}$ is the vector of the control variables between the states i and j for time t – 1; and $\upsilon_{ij,t}$ is the error term.

4.6.6 Stage six – network resource scarcity

The remaining sections focus on investigating the effect of the network level (in form of a resource supply network) on the conflict behaviour of states with regard to certain resource conditions. Stage six specifically focuses on conditions of resource scarcity. Hence, the focus of interest is centred around the interaction between the proxy for resource scarcity and individual network centrality measures[93].
In addition to the standard approach from previous stages, a number of additional robustness tests as specified in section 4.5 is conducted.

The following variables can be operationalized:

(1.1) Degree Centrality

The first employed degree centrality measure can distinguish between the number of ties and the distribution of tie weights, given that the nodal strength is equal (the sum of tie weights is equal) (Opsahl et al., 2010). It is formalized as:

$$k^{\alpha} = k(i) \times \left(\frac{s(i)}{k(i)}\right)^{\alpha}$$

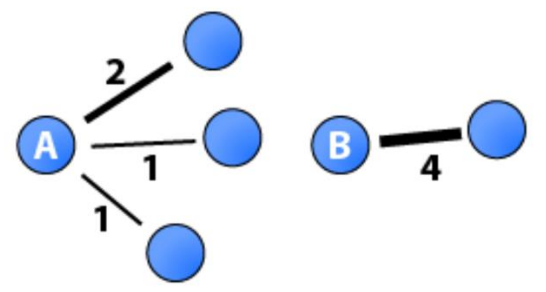
Where k(i) is the basic node centrality by Freeman (1978), s(i) is the centrality measure by Barrat et al. (2004)[94] and α is a tuning parameter controlling the relative importance between the number of ties and the node strength (sum of tie weights).

[93] A compound diversification measure comprising various centrality measures could be established

[94] Their measure considers the tie weight (sum of the weights equals the strength) instead of number of ties as with Freeman (1978). For tie weights equal to 1 the measures are equal. It is formalized as: $k^{w}(i) = s(i) = \sum_{j}^{N} wij$

Values for alpha between 0 and 1 positively weighs the number of ties and node strength, and values above 1 positively value individual tie strength and negatively value the number of ties. In the two special cases where alpha equals 0 and 1 this measure is equal to the degree centrality measures of Freeman[95] (1978) and Barrat et al. (2004), respectively.
It can be employed to test whether a state perceives a higher resource access security when it shares its resource imports across a number of trading partners as opposed to when it receives resources through a small number of key partners, given that the overall amount of resources transferred remains the same.

Figure 4.1



Degree and Strength: Two nodes with the same node strength, but different number of ties.

Source: Opsahl et al. (2010)

(1.2) Balance-Sensitive Degree Centrality

Furthermore, an additional measure (retrieved from Opsahl's blog[96]) is based on a tuning parameter to control which type of variation should be considered favourable. Assuming two nodes with the same number of ties and the same degree of nodal strength, it is still possible that they differ in the way the weights are distributed across the same amount of ties (Figure 4). It is formalized as:

$$k^{\alpha 2}(i) = \sum_j^N w_{ij}^{\alpha}$$

[95] Maoz et al. (2004) present this centrality in the context of state relations:

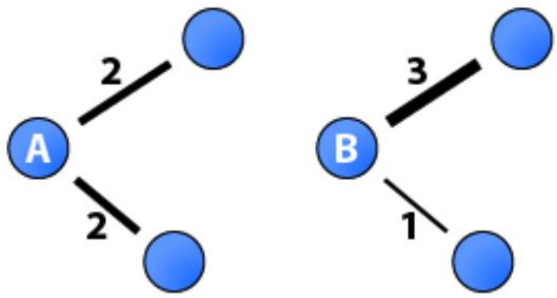
$$C_D^i = \frac{\sum_{j=1}^{n} a_{ij}}{n-1}$$

Where aij is one if states i and j have a relationship on a given property (have an alliance, trade with one another, exchange diplomatic missions, etc.), and zero otherwise, and n is the number of members (states) in the system.

[96] https://toreopsahl.com

Where w is a weighted adjacency matrix in which values larger than 0 connect node i to node j. An alpha parameter between 0 and 1 favours equally distributed tie weights, and an alpha above 1 increases the measure when the tie weights are different. For this research, it is used to test whether variations in trade ties, implying a few strong and many weak trading partners (e.g. through preferential trade agreements), are more important than equally distributed trade ties (regardless of the specific trade partner defaulting, the damage is the same), given that the total amount of trading partners is the same and that the overall amount of resources transferred remains the same.

Figure 4.2



Variation in Tie Weights: Two nodes with the same scores using Freeman's (1978), Barrat et al.'s (2004), and Opsahl et al.'s (2010) degree measures.

Measure	Node	
	A	B
Freeman's	2	2
Barrat et al.'s	4	4
Opsahl et al.'s, alpha=0.5	2.83	2.83
Opsahl et al.'s, alpha=1.5	5.66	5.66
New measure, alpha=0.5	2.83	2.73
New measure, alpha=1.5	5.66	6.20

Source: Opsahl et al. (2010)

(2) Closeness Centrality [CC]

$$C_c^i = \frac{n-1}{\sum_{j=1}^{n} d(n_i, n_j)}$$

Where $d(n_i,n_j)$ is the distance between state i and state j. An important drawback of this measure is that it is defined only for members of the system that have some connection with other members. For unconnected members, this measure is undefined (because the denominator is zero) (Maoz et al., p. 12). This measure is employed in symmetrised and non-symmetrised form[97].

The following models can be specified:

(1) $Conflict_{ijt} = \alpha + \beta_1 RD_{ki,t-1} * DIV_{ki,t-1} + X'_{ij,t-1} + \upsilon_{ijt}$

[97] Applied to a directional and non-directional network

Where RD_{it} is the outside resource dependence variable for resource k and state i at time t - 1, $DIV_{ki, t-1}$ is one of the centrality measures DC, and CC, respectively, for resource k and state i at time t - 1, X'_{ijt-1} is the vector of the control variables between the states i and j for time t - 1, and υ_{ijt} is the error term.

4.6.7 Stage seven – network resource concentration

This Stage directly builds on Stage 3 in that it aims to investigate different cost and risk factors that have an influence on the degree to which large resource concentrations are perceived as opportunity for conquest. Only at this stage these factors arise from the network level.

First, the analysis turns to assessing the risks of conquest arising from a network level. Initially, the focus is limited to testing a risk that specifically arises from the conquest of oil rich states, namely the protective shield predicted by the strategic oil hypothesis. The degree to which this shield poses a threat to potential aggressors should correlate with the size of the export egonet of the potential target state and the existence of major powers in that egonet.

The variables of interest are considered in isolation:

$$(1.1)\ Conflict_{target\, i} = \alpha + \beta_1 N_{1ekj, t-1=1} + X'_{i, t-1} + \upsilon_{it}$$

Where $N_{1ekj, t-1}$ is the size of first degree the resource export egonet for resource k and state j at time t - 1, $X'_{ij, t-1}$ is the vector of the control variables between the states i and j for time t - 1, and υ_{ijt} is the error term.

$$(1.2)\ Conflict_{target\, i} = \alpha + \beta_1 NMP_{1ekj, t-1=1} + X'_{i, t-1} + \upsilon_{it}$$

Where $NMP_{1ekj, t-1}$ is the number of major powers in the first degree the resource export egonet for resource k and state j at time t - 1, $X'_{ij, t-1}$ is the vector of the control variables between the states i and j for time t - 1, and υ_{ijt} is the error term.

And are considered as interaction between themselves:

$$(1.3)\ Conflict_{target\, i} = \alpha + \beta_1 N_{1ekj, t-1=1} * D\_MP_{kj, t-1} + X'_{i, t-1} + \upsilon_{it}$$

Where $N_{1ekj, t-1}$ is the size of first degree the resource export egonet for resource k and state j at time t – 1, $D\_MP_{kj, t-1}$ is a dummy taking the value of 1 if there is at least one major power in the first degree the resource export egonet for resource k and state j at time t - 1 , $X'_{i, t-1}$ is the vector of the control variables between the states i and j for time t - 1, and υ_{ijt} is the error term.

$(1.4)\ Conflict_{target\,i} = \alpha + \beta_1\, N_{1ekj,\,t-1=1} * NMP_{1ekj,\,t-1} + X'_{i,\,t-1} + \upsilon_{it}$

Where $N_{1ekj,\,t-1}$ is the size of first degree the resource export egonet for resource k and state j at time t – 1, $NMP_{1ekj,\,t-1}$ is the number of major powers in the first degree the resource export egonet for resource k and state j at time t - 1, $X'_{ij,\,t-1}$ is the vector of the control variables between the states i and j for time t - 1, and υ_{ijt} is the error term.

In a second step the effects of resource concentrations on the level of the first degree resource trade egonets of target states are investigated. When State B is equal to state j, $REN_{1ekj,\,t-1}$ are the aggregate resource endowments of the first order egonet of state j defined through ties k at time t, then the specification is:

$(2)\ Conflict_{target\,i} = \alpha + \beta_1\, REN_{1ekj,\,t-1=1} + X'_{i,\,t-1} + \upsilon_{it}$

Where X'_{it} is the vector of the control variables for state i at time t, and υ_{it} is the error term.

4.7 Descriptive Statistics and Data Sources

Please refer to section 8.1 and section 8.4, respectively.

5. Results

This chapter presents the empirical results of all employed models of this study, as specified in Chapter 4. Section 5.1 of this chapter summarizes overall findings and empirical support for each hypothesis, respectively. Sections 5.2 – 5.4 then discuss the results in greater detail, structured into seven stages of testing.

It needs to be noted that the way the results are presented somewhat differs from the traditional manner. The reason for this is the great number of models and the importance to consider findings in totality[98]. Therefore, results are summarized in tables 5.1-5.7 for respective sections, with individual regression tables provided where important for additional insights and robustness reasons. The great number of partly competing mechanisms warrants a more detailed and more cumbersome (due to breadth of approach) empirical analysis where special attention has to be paid towards details and weighing opposing results against each other across multiple models and variables. As a result, sections 5.2 – 5.4 elaborate on the results in somewhat more detail in a step-wise fashion and attempt to illuminate the tensions between and plausibilities of certain mechanisms. Finally, it is important to recall that the preceding chapter identifies a standard model (section 4.4.1), which should be the main point of orientation when consulting the results section and the corresponding summary tables. This model is then referred to as the 'standard model' or indicated by the abbreviation ***init*** (the dependent variable of the standard model). Furthermore, Table 5.8 at the end of this chapter provides the full output with all covariates for a selected 'standard model' of each stage. Please consult section 8.7 in the appendix for the reading manual for the summary tables *and* section 8.2 for a list of variables of interest with description in line with the summary tables for stages 1-5.

5.1 Summary

This first major focus of this study is an initial investigation of the effects of resource conditions on interstate conflict over resources, specifically with regard to resource scarcity conditions and conditions of foreign resource concentration.

Recalling the two corresponding hypotheses

Hypothesis 1: State A experiences scarcity in resource X -->[99] State A initiates a conflict against State B where resource X is present (in order to alleviate the condition of scarcity for resource X).

[98] Nevertheless, a standard model is identified, see section 4.4 (4.4.1)
[99] Denotes causal link.

Hypothesis 2: State B experiences a significant concentration in resource X and State A experiences low acquisition costs --> State A initiates an interstate conflict against State B (in order to acquire resource X).

And comparing the results between the two main sets of empirical tests associated with each hypothesis, respectively, it is observable that the mechanisms with regard to resource scarcity enjoy more support than the mechanisms associated with foreign resource concentrations.

In fact, the stage concerned with resource scarcity individually (Stage 2) is one of the very few stages that doesn't produce conflicting results (for the resource oil; with exception of the simple dummy approach). Either, results are in favour of the corresponding hypothesis (hypothesis 1) or coefficients are insignificant. As a result, support for the set of desperate predator mechanisms is reasonably strong and is especially consistent. It appears that under conditions of natural resource scarcity, states exhibit a higher propensity to initiate an interstate conflict. Interestingly, results are slightly stronger when the absence of domestic resources is measured through production rather than reserves; a point that will also become important for foreign resource concentration mechanisms. This is in line with expectations as production is a more direct measurement for actual (rather than potential) availability than reserves, which may be inaccessible for a number of reasons, e.g. inaccessibility for geographical reasons, time gap before access, unavailable extraction technology, etc). Whether or not states initiate those conflicts to acquire the needed natural resource is less clear, as results are not as consistent in that regard, at least so for the initial tests. Nevertheless, depending on the measurement for the presence of target resources, results are in favour of the set of desperate predator mechanisms, which predict that conflicts are fought over resources. It seems that states initiate interstate conflicts under conditions of resource scarcity for resource acquisitions, but also for other aims. Yet, in both cases the conflict-increasing factor is the presence of resource scarcity in the initiating state.

On the other hand, for instance with regard to oil, the results for foreign resource concentrations enjoy comparatively less support and rather point into a different direction, namely that of the strategic oil hypothesis (for more information on the strategic oil hypothesis see section 1.2.2.1). It appears that, on average, the pulling force of large resource endowments is insufficient to offset the associated costs (and risks) of a violent acquisition, ceteris paribus. This is especially interesting since previous research has mostly (and often implicitly) been focused on testing the effect of foreign resource concentrations, providing results in both directions (strategic oil and greedy predator). However, it needs to be noted that results of this and other studies in both regards are not entirely conclusive and additional empirical investigations are warranted. Nevertheless, with regard to foreign resource concentrations, the findings point into a specific direction, namely into that of cost parameters. It seems that concentrating on the conditions under which foreign resource concentrations are perceived as an opportunity, and thereby focussing on the parameter 'costs', may be a promising avenue for future research (also possibly in order to further develop the concept of foreign resource concentrations).

A number of additional insightful yet tentative points that reach beyond the direct testing of the hypotheses arise from comparing the results across stages 2-4. When comparing results for the different cost types it becomes evident that proxies capturing a broader range of acquisition costs (e.g. level of development compared to level of population of the target state) are predominantly associated with greedy predator mechanisms. In contrast, other cost measures that also address risk aspects more directly (e.g. level of capability of the target state) play a significant role for conflict initiations under conditions of resource scarcity.
Looking at greedy predator mechanisms, this effect is strongest for reserves, whereas for desperate predators it is more pronounced when resource production is present (in the target state). In fact, the results in the resource concentration section are strongest across all models when taking the level of resource reserves and level of development of the target state into account. The reason for this may be twofold. On the one hand, the preference for reserves over production for the greedy predator may be an indication for the working of the strategic oil hypothesis, because a proxy based on production better captures the potential existence of a protective shield imposed by oil importers (than a proxy based on reserves does[100]). On the other hand, a desperate predator is likely to be more concerned with the direct availability of the needed resources and less with medium term consequences in form of an importer intervention, and therefore likely prefers production over reserves (that may not be directly accessible, e.g. due to unavailable extraction technology). However, it is important to note that this is merely a tendency and the looming threat of an intervention should matter regardless of the type of the resource condition that is present[101].

Furthermore, the results for resources other than oil suggest that a distinction between strategic natural resources and economically valuable resources (whereas attributes of the resources in the former category usually also include those of the latter, e.g. with regard to economic value) may be beneficial. To be exact, this division also arises from the distinction between a threat and opportunity setting with regard to the mechanism categories and is partly revealed in the results for oil as they are significant for both mechanism types. The difference with regard to some other

[100] The focus needs to be on exports, which should be closer to production than to reserves. In fact, based on findings from Stage 7 the focus should be on export egonet size of the target state (number of export partners).
[101] This factor (arising from the strategic oil hypothesis) has been allocated to the foreign resource concentration section (also in the network part where it will be directly assessed) even though it strictly speaking should be considered a risk rather than cost that is relevant to all potential aggressors. Yet, as will become evident from the discussion in Stage 7, it appears to play a more direct role for greedy rather than desperate predator mechanisms.

natural resources is that some resources only contain economic value and should not be a relevant cause for conflict under conditions of resource scarcity. This is reflected in the results for coal or minerals (rather than for oil or gas) as these are more in line with the hypothesised mechanisms arising from an opportunity setting (and vice versa for results for oil or gas). Oil and gas are relevant for scarcity related mechanisms, and, in weaker form, for foreign resource concentration related mechanisms. Reason for this is that the high level of importance for survival of the strategic resources adds certain dynamics (e.g. see strategic oil hypothesis) that make the strategic deposits less attractive in an opportunity setting. However, it needs to be noted that empirical results in this regard are not as consistent as results for the preceding sections (and the hypotheses they address)[102].

In line with expectations arising from the introduced frameworks, general resource prices only play a subordinate role when evaluating the effect of resource conditions vis-à-vis conflict. Nevertheless, the tentative findings suggest that resource prices play a role in assessing to what degree a foreign resource concentration poses an opportunity for conquest. Results weakly point in the direction that a high general price level appears to generate additional net positive acquisition opportunities. In this case high prices could also be an additional driving force for action rather than a resultant proxy of a prior condition. The seemingly minor role of general price levels for measuring (individual) scarcity (vis-à-vis conflict) could also serve as basis for an argument against peak oil (with regard to conflict) and in favour of focusing on resource access when assessing scarcity. Not the total amount of available oil in general matters but rather the individual access to it. Nevertheless, the comparatively minor role of prices for evaluating scarcity remains somewhat surprising, as high general prices should be a good proxy for reduced access through the trade access mode, on average. Considering prices should therefore have a more significant impact also on the assessment of individual scarcities when considered in terms of access. Yet, it needs to be noted that findings in this regard are inconclusive at best and should be considered as highly tentative. Further analyses with a specific focus on the role of resource prices (from the perspective of the resource access framework) need to be conducted (also see Hendrix (2017)).

Finally, in addition to the points already discussed, the results of the initial analysis (Stage 1) with the resource measures in their original form confirm the theoretical argumentation from chapter one that unspecific tests appear to be insufficient for testing individual mechanisms and ultimately fail to generate a deeper understanding of the connection between natural resources and interstate conflict. A distinction between resource scarcity and foreign resource concentration mechanisms seems to be helpful in this regard. Furthermore, in line with the findings of Struever &

[102] Amongst other reasons this may be due to the less ideal data the respective measures are based on (resource rents). Nevertheless, tendencies are observable and additional research based on better data could be a good avenue for additional insights.

Wegenast (2016) the results of the initial tests indicate that mechanisms with regard to domestic political dynamics are less dominant than those associated with strategic or blood oil (‘blood oil’ refers to the fact that conflicts are fought over oil, then for this study ‘blood resource’ implies the same for natural resources in general). Overall, a significantly large part of findings is in line with the expectations arising from the distinction between desperate and greedy predator mechanisms introduced in Chapter 1 and the multilevel resource access framework introduced in Chapter 2.

The second major focus of this study is on the effects of the network level with regard to resource conditions, as discussed in Chapter 3.

Recalling the two network hypotheses that are advanced in Chapter 3 and the two sets of corresponding sub-hypotheses, respectively:

Hypothesis 3: The degree of diversification and the degree of resource scarcity for State A have an impact on the likelihood of conflict initiation for state A.

> *Hypothesis 3.1: The combination of number of trade partners of State A and the past trade-flows between these is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*
>
> *Hypothesis 3.2: The average degree of reachability of each note in a resource supply network by State A is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*

Hypothesis 4: The extent to which states perceive the presence of abundant resource concentrations in foreign states as acquisition opportunity is dependent upon attributes of the egonets of the target state across a specific set of networks.

> *Hypothesis 4.1: The size of and the number of major powers in the resource export egonet of State B are related to the cost(s) and risk(s) (perception) associated with an attack on State B..*
>
> *Hypothesis 4.2 The aggregate amount resource endowments of the undirected resource trade egonet of Sate B is related to the (perception of) potential resource gains from an attack on State B.*

Each hypothesis enjoys empirical support, even though to different degrees.

With regard to hypothesis 3 it appears that considerations about the characteristics (initially limited to size and distribution of past resource trade flows) and number of direct resource trading partners (hypothesis 3.1) have a stronger effect on conflict propensity than the overall access to the resource trade network (hypothesis 3.2). Overall, it appears that the empirical association between network position and

conflict initiation (two observables) provides circumstantial evidence in support of the idea that the network position affects resource access security perceptions (not directly observed).
In fact, the tests directed towards investigating the effects of degree centrality produce the most consistent and significant results out of all tests with regard to different variables of interest in this work. This point is further underlined by positive (in favour of the hypothesis) and significant results arising from the extensive degree of additional empirical scrutiny specifically with regard to this hypothesis. It appears that the concept of perceived resource access security is adequate to partly explain interstate conflict under conditions of natural resource scarcity. In assessing the degree of overall access security the dimension of trade seems to be a key factor, which, in turn, is evaluated through the network level. Ultimately, the number of import ties for the respective resource matters more than the actual size of resource flows in order to determine the degree of access security and therefore the propensity of the respective state to initiate an interstate conflict. Even further, it can be said that a balanced distribution of trade flows across a given number of ties has a positive impact on the access security. In both cases the reasoning clear: In face of a 'random' default of one trading partner, under the assumption of a balanced distribution of trade flows across trading partners, the respective state can fall back on the number of remaining trading partners and the expected disruption is less severe and its magnitude better predictable (when unevenly distributed the impact could be large or small).

To a lesser degree the overall access to the resource trade network, as captured by closeness centrality, also appears to play a role in determining the extent of resource access security (hypothesis 3.2). However, while results for this centrality variable are also very consistent, they are not as significant as the results for degree centrality when considering the whole range of tests. Nevertheless, especially the comparison between results for the measure in symmetrised and non-symmetrised form shows that closeness centrality is a useful metric to determine the resource access security. Possibly, different centrality measures could be combined in order to form an overall measure of diversification.

Against expectations, the direction of results for hypothesis 4 is not divided; support for sub-hypothesis 4.1 and 4.2 is reasonably strong. This is somewhat surprising as, unlike the complementary sub-hypotheses 3.1 and 3.2, the hypotheses at hand predict opposing effects: On the one hand a central position of the target state in a resource trade network creates risks such as potential importer intervention, but on the other hand it could also create additional benefits, especially so in an opportunity setting. For instance, targeting a key player in a dense resource trade network could lead (to some extent) to control over this network and not only over the target state.

Empirical findings are mostly in favour of hypothesis 4.1, an increase in the size of the first-degree resource export network of the target state leads to a lower propensity for this state to be targeted in an interstate conflict. In line with expectations, a greater number of export partners creates a protective shield for the exporting state because dependent importers are interested in the continued flow of needed resources and ready to intervene if the status quo is threatened. This effect is strengthened with the number of major powers in the egonet as this increases the credibility of the threat; yet, results in this specific regard are not as conclusive and only significant for one model.

Results with regard to hypothesis 4.2 are also conclusive despite the opposite expected direction. On the one hand, a very interconnected target state may enjoy a protective shield imposed by resource dependent importer states (strong support, see previous section); on the other hand a central state in a dense network may contain additional benefits for a potential aggressor that reach beyond the target state. The reason for positive results in both regards may be the different types of employed proxies, in this case the aggregate amount of present resources. Depending on the employed model the measures based on production data are significant and negative (consistent with hypothesis 4.1), significant and positive (consistent with hypothesis 4.2) or insignificant. In line with the set of greedy predator mechanisms the results are consistently significant and positive for aggregate resource reserves. However, it needs to be noted that the conclusion with regard to the second sub-hypothesis is not final, because the proxy at hand is imperfect and additional benefits that are not captured by employed proxies may exist. In order to arrive at a more determinate conclusion additional tests (that reach beyond the scope of this study) need to be conducted, for instance in the direction of dependencies of third states with regard to the target state (also see Stage 7). Yet, the distinction between oil reserves and production is apparent also when considering aggregate resource endowments. Nevertheless, the initial findings point into the direction of hypothesis 4.1: A protective shield arising from resource dependent importers creates a significant risk factor associated with the violent acquisition of natural resources.

5.2 Results for oil

Having provided a summary of results in the preceding section (5.1) the remaining sections provide a more detailed discussion in a stepwise fashion.

5.2.1 Stage one - A general test for the basic oil resource variables

As a point of departure the initial tests are conducted with a research design in line with the recent paper by Struever and Wegenast (2016). The tested oil measures are based on production and reserve data from Humphreys (2005), production data from Ross & Mahdavi (2014), the geo-coded oil data in aggregated form as provided by PRIO-GRID (Tollefsen et al., 2012), data on oil fields in disaggregated form as provided by Lujala et al. (2007), and the World Bank (2014) data on oil rents. Given the great number of employed tests the results for this section are summarized in Table 5.1. Notably, most *unaltered* resource variables become either insignificant or change the direction of effect. This point illustrates that empirical tests with regard to resource conflicts have to be designed to directly capture specific resource conditions. This point directly arises from the frameworks introduced in this work and is closely related to the resource conditions that are posited to have an effect on the conflict propensity of state.

Testing the oil variables for the standard dependent variable conflict initiation '***init***' (as provided by the COW project[103]) without employing unit fixed effects yields very similar results to Struever and Wegenast. Considering *Humphreyss* data the coefficients for absolute oil reserves (***H_oil_reserves_c1*** and ***H_oil_reserves_c2***, Table 5.1 #1)[104] are significant and positive for both attacker and target states, while per capita reserves (***H_oil_reserves_pc_c1*** and ***H_oil_reserves_pc_c2***, Table 5.1 #3) are only significant for target states. Also, when taking the logarithm[105] of the respective variables (***H_log_oil_reserv_c1*** and ***H_log_oil_reserv_c2***, Table 5.1 #2) to reduce the influence of upper range cases the results remain robust. Even though different time frames were employed in the analysis, all results are in line with Struever and Wegenast up to the point of the same significance level (which should demonstrate the adequacy of the employed model). Ross and Mahdavis' oil production data (***R_oil_prod_c1*** and ***R_oil_prod_c2***, Table 5.1 #7) confirms the initial results, however for these all per capita variables (***R_oil_prod_pc_c1*** and ***R_oil_prod_pc_c2***, Table 5.1 #9) are insignificant (also in line with Struever and Wegenast). Again, the results remain robust when taking the logarithm (***R_log_oil_prod_c1*** and ***R_log_oil_prod_c2***, Table 5.1 #8), regardless of whether oil production is measured in units or USD value. Finally, the Ross and Mahdavi variable for net oil exports (***R_net_exp_c1*** and ***R_net_exp_c2***, Table 5.1 #10) is also highly significant for both states, however with a negative coefficient. This is in direct contrast to the results above and shows that there might be an important distinction between states that own oil and states that own oil and that are integrated in international resource trade networks (as oil exporters). As elaborated in previous chapters and further below, this also indicates that it is important to carefully consider aspects of variables to be able to disentangle the numerous mechanisms for testing. To illustrate, the negative coefficient for net oil exports in the initiating state partly contradicts the strategic oil hypothesis, while the coefficient for the same variable for the target state confirms it.

The additional variables not employed by Struever and Wegenast confirm the initial results when not employing unit fixed effects: The oil production variables from

[103] Identification of initiator based on COW variable 'State A'

[104] In case the variable name is omitted in subsequent sections of the text it has been mentioned in one of the previous sections in the same relation.

[105] Observations with a value equal to 0 are assigned the value 0.00001 in order to situate those observations at the minimum end of the range of the variable for positive values

Humphreys (***H_oil_prod_c1*** and ***H_oil_prod_c1***, Table 5.1 #4) are significant with a positive coefficient for both the attacker and target state and almost all *Lujala/PRIO-GRID* variables (Table 5.1 #12-24) are highly significant with a positive coefficient at the 1% level (exceptions are #14 and 16 for the target state). Yet, the variable for oil rents (***W_oil_rents_c2***, Table 5.1 #11) in the target state is significant and negative, which implies a conflict reducing effect. However, the variable becomes insignificant when expressed as a fraction of GDP rather than in absolute terms. Notably, the per capita production variables from Humphreys (***H_oil_prod_pc_c1*** and ***H_oil_prod_pc_c2***, Table 5.1 #6) are insignificant, which is in line with the insignificant per capita production data from Ross.

Overall, the large number of highly significant and positive coefficients when considering models without the inclusion of unit fixed effects supports a large number of mechanisms connecting natural resources to interstate conflict. Natural resources in form of oil appear to increase the likelihood of a conflict initiation in cases where oil is located in the attacker state as well as when it is located in the target state. Yet, the presence of oil exports appears to decrease the likelihood that a state initiates or becomes a target in an interstate conflict.

However, these results change significantly when introducing unit fixed effects to the same model (then becoming the standard model for this study, section 4.4.1), which is an accepted and necessary approach in this field when working with panel datasets of such kind. Considering Humphreys' data all resource variables become insignificant for the attacker state (#1-6)[106] and significant but negative for oil production, per capita production and per capita reserves in the target state (#3, 4, 6). Taking the logarithm renders all production and reserve variables insignificant (#2, 5). These results are largely confirmed by Ross and Mahdavis production data: When including unit fixed effects (standard model) oil production measured in units barely remains significant with a negative coefficient for target states (#7) and per capita oil production also only remains significant but negative for the target state (#9). Taking the logarithm (#8) or considering the amount of production in terms of USD value renders the variables insignificant (with the exception for the logarithmic measure for oil production value in the initiating state), which is in line with the strategic oil hypothesis (Table 8.5.2)[107]. The results for oil rents remain the same for the target state and become significant and negative for the attacking state (#11). Furthermore, the inclusion of unit fixed effects renders the net oil export variable insignificant for attacker states and remains significant and negative for target states (#10), even though at a lower significance level (somewhat resolving the puzzle from the results for the same variable and model without fixed effects).

[106] The figure remains the same throughout this section (Stage 1)

[107] This variable is omitted in the results table due to space limitations

In case of the oil measures discussed above the results remain very robust when considering the alternative set of dependent variables for the unit fixed effects models (that is the standard model but considering all dyads [*All_Obs*], the standard model but with the binary measure for revisionist state as dependent variable [*rev_b*], and the standard model but with the relative measure for a revisionist state as dependent variable [*rev_r*]). One of the notable changes is that the variable for oil reserves in the attacker state (#1) yields a significant and positive coefficient when considering all dyads (before it was insignificant), or when measured against the relative degree of the attacker being a revisionist state. Also, the variables for oil production in logarithmic form become significant and positive for the target state when including the binary revisionist dependent variable (*rev_b*) (#8) and for relative revisionist variable (*rev_r*) (#5). The oil reserves variable in logarithmic form becomes significant in all remaining models for the initiating state, and becomes significant in the model with the relative revisionist measure (*rev_r*) and when considering all dyads (*All_Obs*) for the target state (#2).
Finally, for all of the above, the inclusion of year dummies to control for additional time effects only changes p-values slightly (e.g. consider Tables[108] 8.5.3-8.5.6 in the appendix). If not specified otherwise, only unit fixed effects are included for the remaining analyses since time effects are already taken into account based on the proposition by Beck et al. (1998), and in order to allow for more within variation of the cases under consideration.

Overall, the inclusion of unit fixed effects (while controlling for time effects based on Beck et al. (1998) in all instances) changes the results from oil having a conflict increasing effect in initiator and target states significantly: Either no effect is observable (especially with regard to oil in the initiating state) or the effect remains significant but changes direction so that the presence of oil has a conflict decreasing effect (this is mostly true for oil in the target state). Two exceptions are the slightly significant and negative coefficients for oil production in the initiating country for Ross & Mahdavi's oil data (#7) and the highly significant and positive coefficients for Humphreys' oil reserves data when considering all dyads or the relative measure for a revisionist state (#1). Taking these two exceptions into account, the results are slightly in favour of mechanisms where the presence of oil in a state leads to a higher probability that it initiates an interstate conflict, or where the probability that it itself will be targeted in an interstate conflict is decreased (empirical support at this point is stronger for the latter part). This is especially in line with the strategic oil hypothesis[109] (in this study also called the 'strategic oil mechanism') from De Soysa et al. (2011), which predicts that the presence of oil should increase the likelihood that the respective state initiates an interstate conflict and decreases the likelihood that it becomes a target. Yet, it needs to be noted that the results for the variable rents in the attacker state (#11) strongly oppose the first part of the hypothesis as its coefficients

[108] All tables and figures starting with the number 8 can be found in the appendix
[109] De Soysa strategic oil hypothesis, e.g. see section 1.2.1

are strongly significant and negative throughout the entire range of dependent variables, also remaining robust for the initiator state when measuring rents as fraction of GDP (the coefficients become insignificant for the target state in this case). This is further supported by the insignificant or significant and negative results for oil exports with regard to conflict initiation (#10). This is in direct contradiction with the first part of the results from De Soysa et al. who find a positive coefficient for states that are characterized as oil exporters. However, it needs to be noted that the data sources and the operationalization of variables differ. De Soysa et al. use data from Fearon and Laitin (2003) and appear to employ dummies rather than continuous measures in order to designate oil exporters. Also, their dataset is somewhat misleading as it includes re-exports (e.g. Singapore is considered a resource rich state in this dataset)[110]. Nevertheless, it could mostly be confirmed that the presence of oil decreases the likelihood to be targeted in an interstate conflict, which contradicts the entire set of mechanisms where conflicts are fought over resources (Figure 1.3 in Chapter 1).

However, when considering the disaggregated petro dataset from Lujala et al. (2007) and the aggregated data comprising oil discoveries provided by PRIO-GRID the results point into a different direction once more. The aggregated variable ***P_oil_deposits_total*** (#12) from PRIO-GRID is significant and positive for the target state (and insignificant for the attacker state) when tested against the standard COW measure for conflict initiation (*init*) as dependent variable for politically relevant dyads as well as for all dyads (*All_Obs*) in a fixed effects model. This means that an increase in territory with oil deposit discoveries in a given state increases the likelihood for it to be rendered a target in an interstate conflict. This finding is further supported by the petro data from Lujala et al. when considering the same dependent variable (*init*), also with regard to oil production. While all individual variables for the number of oil fields with an discovery date or with a start of production date are insignificant (#13-16) (with the exception of the number of offshore oil field discoveries where the discovery date is known (#15), almost all onshore variables become significant for the target state when combined with the variables for oil discoveries and production sites where the discovery or start of production date is unknown, respectively (#18, 22, 24). It appears that specifically the existence of onshore oil deposits increases the likelihood to be targeted in an interstate conflict. These results are in accordance with the results of the well-cited work of Caselli et al. (2015), which is not surprising since their analysis is also based on the same data. Nevertheless, this serves as a good robustness test because the operationalization of the data, the time frame, and the general research design are different (their focus lies on measuring effects of asymmetry and geographic distance relative to state borders).

Overall, the initial results are somewhat inconclusive at best and it becomes difficult to answer even more basic questions, such as whether resources have an effect on

[110] For more information consult Humphreys (2005).

conflict propensity in the first place, and if so, what is the direction of the effect? Nevertheless, two promising main avenues appear to emerge.
Considering the models without unit fixed effects, the results are plausible with a great number of posited mechanisms, including those that lie at the focus of this research (conflict over resources). Coefficients for almost all oil variables for both countries in the dyads are highly significant and positive. The two significant exceptions, negative coefficients for oil net exports in both countries and for oil rents in the target country, support mechanisms where the presence of oil leads to a decrease in the likelihood to be targeted in a conflict. This is mostly in line with the second part of the strategic oil mechanism. However, this is with regard to the exception and the large remaining part of results doesn't support the second part of the hypothesis. Furthermore, the negative and significant coefficient for a potential attacker country for net oil exports directly contradicts the first part of the strategic oil mechanism and is a much more direct measure for testing it than are the other metrics[111].

Taking into account the results of the models with unit fixed effects across the whole range of dependent variables, the coefficients for potential attacker countries mostly become insignificant or negative. The direction of the significant coefficients for potential target countries largely depends on the type of data that is employed, and partly on the type of dependent variable. Data from Humphreys and Ross & Mahdavi mostly supports mechanisms where the presence of natural resources decreases the likelihood to be targeted in a conflict or, in much weaker form (only when the dependent variable captures the relative degree of the country being a revisionist (*rev_r*) and only for variables referring to oil reserves), to initiate an interstate conflict. Notably, almost all variables that are measured relative to population are insignificant, which excludes the set of mechanisms where domestic political mechanisms usually associated with rentier states are in the foreground[112].

The aggregated oil measure based on PRIO-GRID data overall supports mechanisms in which oil in either state increases the likelihood for conflict, while results indicating an increase in the likelihood to be targeted are more robust across the whole set different dependent variables, pointing more into the direction of mechanisms where states fight over oil. This tendency is strongly confirmed when considering the same variables based on petro data by Lujala et al.. Notably, some exceptions can be found when considering the relative degree of the state being a revisionist as dependent variable (*rev_r*). In this case the exceptions somewhat confirm the main results from the Humphreys and Ross & Mahdavi data supporting

[111] Recalling the previous point that the data sources and the operationalization of variables differ. De Soysa et al. use data from Fearon and Laitin (2003) and appear to employ dummies rather than continuous measures in order to designate oil exporters. Also, their dataset is somewhat misleading as it includes re-exports (e.g. Singapore is considered a resource rich state in this dataset)
[112] The same variable will be part of a different approach in the Stage 3

mechanisms where the presence of oil leads to a lower probability for a state to be targeted and a higher probability to target another state. However, these are negligible compared to the main trajectory of the results from the second set of data (i.e. PRIO-GRID/Lujala).

As a result, out of the myriad of possible mechanisms, the significant results revolve around three partly *opposing* main sets of mechanisms:

(1) Mechanisms where the presence of natural resources (oil) in a state leads to a higher likelihood that this state initiates an interstate conflict. [weak – reasonable support]

(2) Mechanisms where the presence of natural resources (oil) in a state leads to a lower likelihood that this state initiates an interstate conflict. [weak support]

(3) Mechanisms where the presence of natural resources (oil) in a state leads to a higher likelihood that this state is being targeted in an interstate conflict. [strong support]

(4) Mechanisms where the presence of natural resources (oil) in a state leads to a lower likelihood that this state is being targeted in an interstate conflict. [strong support]

Most prominently, points 1 and 4 are together in favour of the strategic oil mechanism and point 3 is in support of the set of blood oil mechanisms. As already elaborated in previous chapters and evident from the first results, it is important to note that the different mechanisms are partly competing, which may obscure results, limit insights with regard to specific mechanisms or even lead to wrong conclusions. Given that the initial results at hand support this notion, further tests are necessary, especially with regard to certain conditions that have an impact on conflict propensities and under which specific sets of mechanisms are more pronounced than others. Furthermore, it is important to take into account resource conditions with regard to both states in the conflict dyad, as certain combinations of conditions correspond to certain mechanisms. In that, it is also important to consider the effects of the absence of natural resources rather than only the presence, i.e. to investigate the effect of conditions of resource scarcity.

As expected from the discussion in Chapter 1 and the results presented in the preceding section there appears to be a tension between various mechanisms, most prominently between the strategic oil mechanism and the set of blood oil mechanisms, upon which this study focuses. Depending on the employed data and research design, evidence is plausible with either of the posited mechanisms. As a result, and given that one part of the strategic oil mechanism is not directly situated in the same tier-one category as the blood resource mechanisms, the initial tests employing the basic resource variables do not necessarily yield definite insights about the conditions under which a state's propensity to violently acquire natural resources increases. Therefore, the following section provides the results of the empirical tests specifically tailored to investigate the two sets of mechanisms associated with conflicts over resources. As elaborated in the previous chapters, it is posited that conditions of resource scarcity (desperate predator mechanism) and conditions of foreign resource concentrations (greedy predator mechanism) increase the likelihood that an interstate conflict over natural resources (oil) is initiated.

Considering the tests specifically employed for each of the two main sets of mechanisms, and considering alternative metrics for measuring conflict, the results become more differentiated.

Table 5.1: Stage 1 Summary Table (please consult the manual in section 8.7 for reading the table)

Source	Variable	no fixed effects	including fixed effects				#
		init	init	rev_b	rev_r	All_Obs	
Humphrey	H_oil_reserves_c1	xxx	□	□	xxx	xx	1
	H_oil_reserves_c2	xxx	□	□	□	□	
	H_log_oil_reserv_c1	xxx		xx	xxx	xx	2
	H_log_oil_reserv_c2	xxx	□	□	xx□	□xx	
	H_oil_reserves_pc_c1	□	□	□	x	□	3
	H_oil_reserves_pc_c2	xxx	-xx	-x	□	□	
	H_oil_prod_c1	xxx	□	x	□	□	4
	H_oil_prod_c2	xxx	-xx	□	□	-xx	
	H_log_oil_prod_c1	xxx	□	□	□	□	5
	H_log_oil_prod_c2	xxx	□	□	xx	□	
	H_oil_prod_pc_c1	□	□	□	□	□	6
	H_oil_prod_pc_c2	□	-xx	□	□	-xx	
Ross	R_oil_prod_c1	xxx	□	□	□	-x	7
	R_oil_prod_c2	xxx	-x	□	□	-x	
	R_log_oil_prod_c1	xxx	□	□	□	xxx	8
	R_log_oil_prod_c2	xx	□	x	□	□	
	R_oil_prod_pc_c1	□	□	□	□	-x	9
	R_oil_prod_pc_c2	□	-x	-x□	-x□	-x	
	R_net_exp_c1	-xxx	□				10
	R_net_exp_c2	-xxx	-x				
World Bank	W_oil_rents_c1	□	-xxx	-xx	-xxx	-xxx	11
	W_oil_rents_c2	-xx	-xx	□	□	□	
PRIO-GRID	P_oil_deposits_total_c1	xxx	□	xx	x	□	12
	P_oil_deposits_total_c2	xxx	xxx	xx	□	xxx	

Source	Variable	no fixed effects	including fixed effects				#
		init	init	rev_b	rev_r	All_Obs	
Lujala	L_disc_onshore_c1	xx□	□	x	xx	□	13
	L_disc_onshore_c2	xx□	□	-x	□	-x	
	L_prod_onshore_c1	xxx	□	□	x	□	14
	L_prod_onshore_c2	-xxx	□	□	□	□	
	L_disc_offshore_c1	□	xxx	x	x	xxx	15
	L_disc_offshore_c2	xxx	-xx	□	□	-xx	
	L_prod_offshore_c1	xxx	□	□	□	□	16
	L_prod_offshore_c2	-x	□	□	□	□	
	L_disc_all_c1	xxx	□	□	xx	□	17
	L_disc_all_c2	xxx	□	□	□	□	
	L_disc_full_on_c1	xxx	□	□	□	□	18
	L_disc_full_on_c2	xxx	xx□	□	□	xxx	
	L_disc_full_off_c1	xxx	□	□	xx	□	19
	L_disc_full_off_c2	xxx	□	□		□	
	L_disc_full_all_c1	xxx	□	□	□	□	20
	L_disc_full_all_c2	xxx	□	□	□	x	
				□	□		
	L_prod_all_c1	xxx	□	□	□	□	21
	L_prod_all_c2	xxx	□	□	□	□	
	L_prod_full_on_c1	xxx	□	□	□	□	22
	L_prod_full_on_c2	xxx	xx□	□	□	xx□	
	L_prod_full_off_c1	xxx	□	□	□	□	23
	L_prod_full_off_c2	xxx	□	□	□	□	
	L_prod_full_all_c1	xxx	□	□	□	□	24
	L_prod_full_all_c2	xxx	xx□	□	□	xx□	

Source: Author's compilation

5.2.2 Stage two - Results for resource scarcity mechanisms

The following section first considers resource conditions in the initiating state, which should be relevant in form of conditions of resource scarcity.

Recalling the main hypothesis with regard to resource scarcity:

Hypothesis 1: State A experiences scarcity in resource X -->[113] *State A initiates a conflict against State B where resource X is present (in order to alleviate the condition of scarcity for resource X).*

The empirical investigation at hand offers general support for a connection between conditions of resource scarcity and international conflict. Depending on the specific operationalization of variables, the type of data, and the employed research design the results are either in favour of hypothesis 1 or insignificant. Importantly, and exclusively for this section (and its extension, Stage 6), significant results that negate the hypothesis have not been found.

Initially, the effect of resource scarcity can be measured with a dummy indicating the absence of natural resources (at this point oil) in a given initiator state. However, this may be an imperfect approach, as limiting the information to the presence or absence of oil is insufficient to capture conditions of resource scarcity as it fails to capture demand for or dependence upon the resource. Accordingly, results for the models only including an oil dummy based on the different data sources are insignificant or mostly significant but negative. Considering the standard model without unit fixed effects *all* dummies are highly significant with a negative coefficient (Table 5.2[114] # 2, 3, 6, 10). Including unit fixed effects to the models the significance level drops, yet remains significant with the negative coefficient (one exception is the dummy indicating the absence of oil rents (***W_no_oil_rent1,*** Table 5.2 #8). Considering all dyads (*All_Obs*) confirms these results. Finally, taking into account the alternate set of dependent variables the results are strongest for resource reserves (***H_no_oil_reserves1***, #2), which is in line a distinction between production and reserves that will become evident in the subsequent stages. Overall, a first test with a simple resource dummy capturing conditions of resource scarcity points into a different direction than expected in that the tested variables appear to have a conflict decreasing effect on the likelihood of conflict initiation or are insignificant. Either there is no conflict increasing effect of conditions of resource scarcity, or the employed proxies poorly capture the condition of interest.

[113] Denotes causal link.

[114] If not specified otherwise, the tables with regard to the index references (“#”) remain the same. For each stage it will be mentioned in the first reference, for subsequent references the same figure should always be assumed. This is true for all subsequent stages.

In order to better capture conditions of resource scarcity it is important to introduce the measure for outside resource dependence (***outside_oil_dep,*** #1). Considering this variable in isolation it is mostly insignificant, with the exception when considering the relative measure for a revisionist state as dependent variable (*rev_r*) where it is positive and significant at a 5% level. Recalling the section with the systematization of natural resource access modes for states (section 2.2), the reason for this is that states where natural resources are present may choose the trade access mode over the internal access mode (or a combination of both). In fact, in the sample at hand this is true for 68.99% of the cases when considering total oil imports and 38.59% of the cases when considering the positive amount of net oil imports, which is the more meaningful number, as the remaining fraction may mostly constitute re-exports. These cases should be excluded from the proxy for resource scarcity as those states can fall back on domestic resources in case the trade access mode is not available. This is under the reasonable assumption that the internal access mode is, on average, preferable to the violent access mode, especially under conditions of resource scarcity.

Indeed, interacting the variable for outside resource dependence with the set of dummies indicating the absence of domestic endowments or production changes the results significantly[115]. Considering the results for the interaction from models without unit fixed effects, interactions are either significant with a positive coefficient (#7, 11, 12, 13, 14, 16, 18, 19, 20, 23) or insignificant (#4, 5, 9, 15, 17, 21, 22), inversing the direction of coefficients.
Even though in a weaker form, those results are entirely confirmed when introducing unit fixed effects and considering the standard model (esp. see # 7, 11). Also when considering all dyads (*All_Obs*) and the original COW measure for conflict initiation (a meaningful model also compared to the standard model where politically irrelevant dyads[116] are dropped), are almost all positive and significant with many being highly significant (#5, 7, 9, 11, 12, 13, 16, 17, 19, 20, 21, 23). Even further, the results are much in line with the results for the same dependent variable for politically relevant dyads *without* fixed effects (*init, no fixed*). This is an additional strong confirmation for the robustness of the results. The results for all interactions are either insignificant or significant with a positive coefficient depending on the employed model. In no instance are the results contradictory.
With regard to the standard model it should be noted that results are somewhat sensitive to the type of employed net import measure in both directions (more

[115] As robustness test, cutting of the lowest 10% for each resource variable (not considering zero values) based on which the dummies are constructed in order to add states with very small resource endowments to the group of no domestic endowments yields the same results, see Table 8.5.10

[116] See section 4.1 – the approach to consider only politically relevant dyads is criticized as a number of conflicts is omitted. Even more, given the original argument that the number of positive cases is too small relative to the number of negative cases, and given that the employed model is *not* a rare events logit the positive and highly significant results should become even more meaningful.

significant when including the Ross measure for net oil imports (***R_net_imp***) and less significant when including the positive range of net imports (***O_net2_imp***) (see Tables 8.5.7-8.5.9). It appears that this measure is important to control for some additional pacifying effect of trade. However, exchanging the original term for outside dependence for the simpler import measures only yields insignificant results. It seems that the original metric performs better as a proxy for resource scarcity. Overall, and in this regard, the results are strongest where the interaction is based on production data from Ross & Mahdavi (***R_no_oil_prod1***, #7), Lujala et al. (#12-23) or PRIO-GRID (#11).

Furthermore, results are slightly more in favour of production than reserves (compare #4 with #5,7), which is reasonable as production sites make resources more readily available than possibly untapped reserves.

Finally, it is important to note that, with regard to the interaction terms, no significant result is found that negates the hypothesis with regard to resource scarcity. In fact, the reasonably large number of significant results largely confirms the conflict enhancing effects of conditions of resource scarcity. When this trajectory is confirmed in the section where conditions across both states in a dyad are considered (Stage 4) it can be concluded that strong evidence in favour of desperate predator mechanisms exists.

5.2.2.1 Additional robustness tests

Given that the desperate predator mechanism receives most scrutiny in terms of empirical testing, because initial findings in this regard are most supportive, results are also available for slightly different approaches with regard to the research design. This includes only considering originators as initiator, or dropping on-going conflict-years entirely, and including regional dummies. All robustness findings are summarised in Table 5.2. Overall, these approaches confirm previous results in a similar manner, even though in a weaker form. Again, the two most supported interactions are the ones based on Ross & Mahdavi and PRIO-GRID data (*#7* and *#11*). Also, the tendency that production is more important than reserves is confirmed across the set of results (compare #4 and #5, 7). Only for the model with regional effects and the relative measure for the state being revisionist (*rev_r*) the results are more in favour of reserves.

Table 5.2: Stage 2 Summary Table (please consult the manual in section 8.7 for reading the table)

Source	Variable	no fixed effect	including fixed effects				including regional effects			fixed effects only originator			fixed effects all ongoing dropped			
		init	init	rev_b	rev_r	All_Obs	init	rev_b	rev_r	init	rev_b	rev_r	init	rev_b	rev_r	#
OEC	outside_oil_dep_c1				x				-x							1
Humphrey	H_no_oil_reserves1	-xxx	-x	-xxx	-xxx	-xxx	-xxx	-xxx	-xxx	-xx	-xxx	-xxx	-xx	-xx	-xxx	2
	H_no_oil_prod1	-xxx			x	-x										3
	outside_oil_dep * H_no_oil_reserves1				x				xxx			xx			x	4
	outside_oil_dep * H_no_oil_prod1				xxx	x			x	xx		xxx		xx	xxx	5
Ross	R_no_oil_prod1	-xxx	-x			-xxx	-xx	?	?	?	?	?	-x	?	?	6
	outside_oil_dep * R_no_oil_prod1	xx	x	x		xxx	xx		xx					x	x	7
World Bank	W_no_oil_rent1	-xxx				-x	?	?	?	?	?	?		?	?	8
	outside_oil_dep * W_no_oil_rent1					xx										9
PRIO-GRID	P_no_deposits1	-xxx	-x			-xx	?	?	?	?	?	?	-x	?	?	10
	outside_oil_dep * P_no_deposits1	xx	x	x		xxx	x				x		x	x		11
Lujala	outside_oil_dep * L_no_disc_onshore1	x				xxx			xx							12
	outside_oil_dep * L_no_prod_onshore1	x				xxx			xxx							13
	outside_oil_dep * L_no_disc_offshore1	xx					x		xxx							14
	outside_oil_dep * L_no_prod_offshore1								x							15
	outside_oil_dep * L_no_disc_all1	xx	x			xx	x		xx							16
	outside_oil_dep * L_no_disc_full_on1	?	?	x		xx					x			x		17
	outside_oil_dep * L_no_disc_full_off1	x	?						x						x	18
	outside_oil_dep * L_no_disc_full_all1	xx		x		xx			xx		x			x		19
	outside_oil_dep * L_no_prod_all1	xx				xx	x		xxx							20
	outside_oil_dep * L_no_prod_full_on1	?	?			xx										21
	outside_oil_dep * L_no_prod_full_off1		?	x							x					22
	outside_oil_dep * L_no_prod_full_all1	x				xx			x							23

Source: Author's compilation

5.2.3 Stage three - Results for foreign resource concentration mechanisms

Having established positive results with regard to the conflict enhancing effects of conditions of natural resource scarcity (for oil), this section looks at resource conditions in the target state. Especially conditions of large resource endowments in the target state, and importantly independent from the resource conditions in the initiating state, should have a conflict increasing effect through the greedy predator mechanism.

Recalling the main hypothesis with regard to foreign resource concentrations:

Hypothesis 2: State B experiences a significant concentration in resource X and State A experiences low acquisition costs --> State A initiates an interstate conflict against State B (in order to acquire resource X).

The analysis focusing on this mechanism initially offers very week support; in fact most significant results are negating the corresponding hypothesis across the whole set of employed dependent variables. However, also here a promising avenue emerges: In line with the expectations of the resource access framework from section 2.2, the consideration of costs appears to be the paramount concern for states acting in line with this mechanism.

Similar to the approach in the preceding section, the greedy predator mechanism can initially be tested by employing simple resource dummies indicating the presence or absence of the respective natural resource in a potential target state. Considering the standard model without fixed effects *all* (with exception of the dummy based on oil rents, #28) dummies are highly significant with a positive coefficient (Table 5.3 #3, 6, 17, 30, 36-47). However, the insights of this approach are once again limited, as all dummy variables become insignificant regardless of the employed model or the type of resource variable the dummy is based on when unit fixed effects are included (Table 5.3 #3, 6, 17, 28, 30). One exception can only be found for a dummy from Lujala et al. data (#44).

Furthermore, considering the standard resource variables from Humphreys (#1, 4), Ross & Mahdavi (#15, 18), the World Bank (#29) and PRIO-GRID (#31) in their original form (and in logarithmic form, #2, 5, 16, 19), the only difference to the models from the first section is the omission of the oil variables for the initiating state. One important assumption of the greedy predator mechanism is that the presence of significant foreign resource concentrations should be perceived as opportunity and increase the likelihood to be targeted *regardless* of the resource conditions in the initiating state. Consequently, when controlling for oil in the initiating state the results should be the same compared to when only a variable for oil in the target state is included. Indeed, results are almost identical in terms of coefficient significance and direction of effects, also across the entire set of dependent variables and research designs (in-/exclusion of fixed effects, politically relevant vs. all dyads).

Recalling the results of the models without unit fixed effects from first stage, almost all original resource variables are significant and positive in this stage as well, and therefore in line with the hypothesis at hand. However, when introducing unit fixed effects all results with regard to those variables change significantly and become insignificant or significant and negative for the standard model (with exception for the continuous PRIO-GRID variable [#31] and the Lujala et al. variable for offshore oil field discoveries, #44). All continuous production or rent variables are significant with a negative coefficient (#4, 15, 29), negating the greedy predator mechanism. Considering all dyads in the standard model (*All_Obs*) or the alternative dependent variables (*rev_b*, *rev_r*) it becomes evident that the support is strongest when the variable is based on reserves (#1, 2, 3). In light of these conflicting results initial insights are limited and point in different directions. However, it can be noted that results are slightly more in favour of negating the hypothesis at hand, especially when considering the results for production in the target state.

In order to possibly bridge the opposing results and gain better understanding it is important to consider the original variables in adapted form. Recalling that states in the greedy predator mechanism act to capitalize on an opportunity (in most cases in order to increase economic gains), the costs of conquest should become the decisive factor influencing to which extend a situation is perceived as opportunity. In order to account for this aspect, the reserve and production variables from Humphreys (#7-14), Ross & Mahdavi (#20-27) and PRIO-GRID (#32-35) are discounted by proxies that may capture the costs of conquest (initially, those proxies are population size, size of GDP, level of military capability, and level of development [measured by GDP pc]).

Indeed, the results for these variables across the whole range of models support this argument, also in terms of differences of results between the cost proxies. Considering the results of models without unit fixed effects, the relative oil resource endowment variables are significant and positive across all cost proxies for oil reserves (***H_oil_reserves_pop_c2*** [#7], ***H_oil_reserves_gdp_c2*** [#8], ***H_oil_reserves_cap_c2*** [#9], ***H_oil_reserves_dev_c2*** [#10]), and only significant and positive for all production variables when measured relative to the level of development (***H_oil_prod_dev_c1*** [#14], ***R_oil_prod_dev_c2*** [#23] – only for the production measure based on Ross' data when measured in USD value the coefficients are also significant and positive when measured relative to gdp (***R_oil_val_prod_gdp_c2*** [#25]) (in addition to those relative to level of development [***R_oil_val_prod_dev_c2*** {#27}]). It appears that a high price level yields additional net positive acquisition opportunities. Also the PRIO-GRID based variables are only significant and positive relative to the level of development (***P_oil_dep_total_dev_c2*** [#35]) and even negative when discounted by GDP (***P_oil_dep_total_gdp_c2*** [#33]).

This is largely confirmed by models including unit fixed effects: When measured by the COW dependent variable for MID initiation (*init*), the standard model, the reserves and production variables are significant and positive when measured relative to the level of development (#10, 23) (the exception is the production variable based on Humphreys' oil data, and the production measure based on Ross' oil data when measured in USD value – though both are significant with a positive coefficient for the binary measure for a revisionist state (*rev_b*) [#14, 27]). Again, these results are entirely confirmed by the PRIO-GRID variables (#35) and, furthermore, hold in all cases regardless of whether only politically relevant or all dyads (*All_Obs*) are considered, and are mostly confirmed by models with the binary measure for revisionist state as dependent variable (*rev_b*). Notably, the variables are largely insignificant for the relative measure for being a revisionist (*rev_r*). Somewhat surprising, for the standard model with (*All_Obs*) and without (*init*) all dyads, all production variables that are measured in units are significant but negative when measured relative to population (#11, 20), GDP (#12, 21) or capability (#13, 22). As a result there is a stark difference between results for foreign oil resource concentrations depending on whether the concentrations are discounted by the level of development on one side or population, GDP or capability on the other side.
One reason for this difference could be that the level of development better captures a broader set of costs. For instance, developed states are possibly more likely to be able to maintain more ties to other states and be member in a greater number of international organisations. Besides other advantages (like being able to rely on a defence network, such as when being a member of NATO) this could create high 'image' costs for the attacking state, as the attacked state could also use its 'softer power' to have a defensive impact on the attacking state. Interestingly, as shown in the subsequent section (Stage 4), a different set of cost proxies is significant under conditions of resource scarcity in the initiating state. This is in line with the expected differences between the resource scarcity and foreign resource concentration mechanisms where in the former a state acts in face of a threat and in the latter in face of an opportunity. Given the opportunity setting, it is likely that it is important to consider the broadest spectrum of costs, while under conditions of resource scarcity a state more likely focuses on risks, also especially in terms of likelihood that the aggressive endeavour may not succeed, e.g. when the potential target state is characterised by a high degree of military capability.

Furthermore, these results are strongly confirmed by two dummy approaches where dummies indicate a high cost target based on either cost proxy, or indicate a high positive ratio between the cost levels in the initiating state and the target state (here also indicative for relative power), respectively. For instance, considering the variable target resource reserves relative to level of development, Table 8.3.3.2 shows a significant and negative coefficient for the interaction term and a significant positive coefficient for the subcomponent. In case the target state is characterized by a high level of development (and the presence of oil reserves) the likelihood to be targeted is decreased; when it is characterized by a lower level of development the likelihood to be targeted is increased. The same is true for level of gdp. In addition, for the same variable, Table 8.3.3.3 shows a highly significant and positive coefficient for the interaction term between the proxy ratio and the target resource. If the dyad is characterized by an uneven pair in terms of level of development where the level of the initiator is significantly higher than the level of the target state, the likelihood for the second state to be targeted increases. The same is true for level of gdp and level of capability.

Finally, these results could possibly be susceptible to changes in the set of control variables, as there is no direct control for levels of GDP, population, or capability in the original set of control variables. Yet, since are measures constitute a component of the variables of interest in this section, and since some effect with regard to these variables by themselves can be expected, it is possible that the effect of the variables of interest is biased. In fact, results change somewhat with a change in the set of control variables; yet, with regard to the important variables of interest the results remain highly robust. While the variables based on resource production data by Ross become insignificant when including the controls of vector X2' (they remain robust for vector X3'[117]), the reserves variable relative to level of development remains highly significant throughout all models (Tables 8.5.11-8.5.18). Results for the production variables based on Humphreys' data also remain unchanged.

Notably, in many instances across the whole range of tests, results are more robust for variables with regard to oil reserves than oil production, for instance the variable for reserves relative to level of development (H_oil_reserves_dev_c2, #10) is significant for almost all models (only when the dependent variable is the relative measure for revisionist state (*rev_r*) the result becomes insignificant). This could be an indication for the effect of the protective shield important oil exporters (and therefore producers) enjoy, as predicted by the strategic oil hypothesis by De Soysa et al., for which the initial part of the analysis of this research finds reasonably strong support. Therefore, it is sensible to control for this effect (Stage 7) as this may explain a large part of non-action with regard to conquest of states characterised by a high level of oil production, or more directly, characterised by a high level of oil exports[118].
Furthermore, it could be possible that a high level of endowments alone may not always have a positive impact on the degree to which oil resource deposits are perceived as opportunity, since a high level may correlate with increasingly large costs and risks of conquest. One indication for this is the higher significance level of discounted oil measures compared to non-discounted ones. Besides the ability for the

[117] Yet, this vector does not contain the interaction between the level of GDP, capability and population between both states of the dyad.
[118] However, the levels of oil production and oil exports should be reasonably correlated; in the case of the dataset at hand the correlation coefficient is around 0.6 for the range of reserve and production variables when compared to total exports. Nevertheless, the level of oil exports should yield a more direct measure for this effect, yet it would need to be interacted with a dummy for oil producer in order to exclude transit states.

oil producing state to spend more funds on hard protective measures in form of military equipment, again, it can benefit from aspects of the strategic oil mechanisms. States with very large resource endowments may, on average, more often be important exporters on an international level and therefore enjoy the protection of patronage powers. Hence, possibly medium sized or even small deposits could be perceived as more attractive opportunity. The point with regard to size of endowments may exist in addition to the distinction between production and reserves. However, it is partly tied to the same effect, namely the protective shield. Yet, both considerations only imperfectly capture this effect.

Overall, compared to the resource scarcity mechanism, support for this mechanism is somewhat weaker. Yet, given the promising avenue with regard to costs it cannot be definitely negated and additional research could gain further insights in this direction.

Table 5.3: Stage 3 Summary Table (please consult the manual in section 8.7 for reading the table)

Source	Variable	no fixed effects	including fixed effects				#
		init	init	rev_b	rev_r	All_Obs	
Humphrey	H_oil_reserves_c2	xxx	?	?		?	1
	H_log_oil_reserv_c2	xxx	?	?	xxx	xxx	2
	H_oil_reserves2	xxx	?	?	xx	xxx	3
	H_oil_prod_c2	xxx	-xx	?		-xx	4
	H_log_oil_prod_c2	xx	?	?	xx	?	5
	H_oil_prod2	xxx	?	?	x	?	6
	H_oil_reserves_pop_c2	xx	-x	-x		? ?	7
	H_oil_reserves_gdp_c2	xx	?	?		?	8
	H_oil_reserves_cap_c2	xx	?	?	?	?	9
	H_oil_reserves_dev_c2	xxx	xxx	xxx	?	xxx	10
	H_oil_prod_pop_c2	?	-xx	?	?	-xx	11
	H_oil_prod_gdp_c2	?	-xx	?	?	-xx	12
	H_oil_prod_cap_c2	?	-xx		-x	-xxx	13
	H_oil_prod_dev_c2	xxx	?	x	?	?	14
Ross	R_oil_prod_c2	xxx	-x	?		-x	15
	R_log_oil_prod_c2	xxx	?	x		?	16
	R_oil_prod2	xxx	?	xx	?	?	17
	R_oil_val_prod_c2	xxx	-xx	?		?	18
	R_log_oil_val_prod_c2	xx	?	xx		?	19
	R_oil_prod_pop_c2	?	-x	-x	?	-x	20
	R_oil_prod_gdp_c2	?	-x	?	?	-x	21
	R_oil_prod_cap_c2	-x	-xx	-x	?	-xxx	22
	R_oil_prod_dev_c2	xxx	xx	?	?	xx	23
Ross (cont.)	R_oil_val_prod_pop_c2	?	?	?	?		24
	R_oil_val_prod_gdp_c2	x	x	xxx	x	x	25
	R_oil_val_prod_cap_c2	?	-x	?	?	-x	26
	R_oil_val_prod_dev_c2	xxx	?	x	?	?	27
World Bank	W_oil_rents2	-x	?	?	?	?	28
	W_oil_rents_c2	?	-xx	-xx	?	-x	29
PRIO-GRID	P_deposits2	xxx	?	?	?	?	30
	P_oil_deposits_total_c2	xxx	xxx	xx	?	xxx	31
	P_oil_dep_total_pop_c2	?	x	?	xx	?	32
	P_oil_dep_total_gdp_c2	-xx	-xx	-x	-xxx	-xxx	33
	P_oil_dep_total_cap_c2	?	?	?	?	?	34
	P_oil_dep_total_dev_c2	x	xx	?	-xxx	xx	35
Lujala	L_disc_onshore2	x	?	?			36
	L_prod_onshore2	xx	?	?		x	37
	L_disc_offshore2	xxx	?	?		?	38
	L_prod_offshore2	xxx	?	?		?	39
	L_disc_all2	xx	?			?	40
	L_disc_full_on2	xx	?			?	41
	L_disc_full_off2	xxx	?		xx	?	42
	L_disc_full_all2	xxx	?			?	43
	L_prod_all2	xxx	x			xxx	44
	L_prod_full_on2	xx	?	?	?	?	45
	L_prod_full_off2	xxx	?			?	46
	L_prod_full_all2	xxx	?	?	?	?	47

Source: Author's compilation

5.2.4 Stage four - Results for joint resource conditions of both states

Having considered resource conditions in initiating and target states in isolation, it is advisable to also consider these jointly since interactions between conditions in both states are important for testing certain resource conflict mechanisms. For the case at hand, this is especially true for testing the plausibility of the desperate predator mechanism (resource scarcity conditions), since limiting tests to conditions in the initiating state fails to consider the presence of resources in the target state and therefore to plausibly exclude other competing mechanisms that may be active. However, this should be irrelevant for testing the greedy predator mechanism (conditions of foreign resource concentrations), since one specific predictions of this mechanism is that resource conditions in the initiating state have *no* impact.

Initially, as in the case for the investigation for the individual resource conditions in isolation, the simplest test is that of resource asymmetry, as captured by an interaction between simple dummies indicating the absence or presence of natural resources, in this case oil reserves or oil production. When considering the standard model (*init*) without unit fixed effects the results are inconsistent, being insignificant (Table 5.4 # 1, 2, 17, 39, 40, 43, 45, 47, 49) significant and negative (#31, 33, 44, 46, 48, 50) and only in two cases significant and positive (#41, 42) (a positive coefficient is in line with expectations). The inconsistency in results is only somewhat mitigated when including fixed effects to arrive at the standard model as only the interaction for offshore production based on Lujala et al.'s data produces a significant and positive coefficient (***L_no_prod_offshore *L_prod_offshore***, #42). All other interactions remain either insignificant (#2, 41, 43, 45, 49) or are significant with a negative coefficient (#1, 17, 31, 33, 34, 39, 40, 44, 46, 47, 48, 50). These results do not changed considerably when including the other dependent variables (binary and relative measures for revisionist state [*rev_b*, *rev_r*]). Overall, initial findings mostly appear to oppose the mechanisms under investigation. Notably, results for the initial tests are especially significant and negative across all models for the interaction based on Ross' production data (#17).

When exchanging the first dummy of the interaction (indicating the absence of oil in the initiating state) for the measure of outside resource dependence (***outside_oil_dep***) from the resource scarcity section the results somewhat change. While results were mostly significant and negative for the initial interaction, in this case the coefficients mostly become insignificant, regardless of the employed model. Only for the interaction with the PRIO-GRID oil dummy (***P_deposits2***, #34) the coefficient is significant and negative across all models except when the relative measure for revisionist state (*rev_r*) is employed (the other instances are negligible [#18, 32]). Overall, the results become more slightly more conclusive when departing from the simple interaction between two dummies, however, not in favour of the mechanisms under investigation.

Finally, when also exchanging the second dummy in the interaction (indicating the presence of oil in the target state) for the target oil measures discounted by different cost proxies as employed in the preceding section, the results change in terms of support for hypothesis 1.
Recalling that results for the relative target resource variables from the preceding section (Stage 3) are significant and positive when oil endowments are measured relative to the level of development and negative with regard to GDP, capability and population, this pattern of results inverses under conditions of resource scarcity in the initiating state. Considering the models with the COW variable for conflict initiation as dependent variable (standard model), coefficients are significant and positive for Humphreys' reserves and production data relative to GDP (**H_oil_reserves_gdp_c2**, #10), and capability and gdp (**H_oil_prod_gdp_c1**, #14 & **H_oil_prod_cap_c1**, #15), respectively; and for all variables based on PRIO-GRIDs oil data (**P_oil_dep_total_pop_c2** [#35], **P_oil_dep_total_gdp_c2** [#36], **P_oil_dep_total_cap_c2** [#37], **P_oil_dep_total_dev_c2** [#38]) (with higher significance levels when considering gdp and capability. Notably, the results for Ross & Mahdavi's production variables are only weakly significant for the standard model when considering all dyads and measured relative to gdp (**R_oil_ prod_gdp_c1**, #24) and entirely insignificant when measured in USD value (rather than units). This (weak) difference is somewhat surprising since it could be expected that the level of oil prices could serve as additional meaningful proxy for scarcity conditions.

All results are largely confirmed by the inclusion of all dyads and by the set of alternative dependent variables. The overall results are especially strong for the oil production measure from Humphreys (#15) relative to the level of capability of the target state and the PRIO-GRID measure relative to capability (#37) – and especially weak for the resource reserve variables (#9-12), which is an important point. This notion is further supported when considering the individual sub-components of the respective interactions. The subcomponent with regard to the resource concentrations of the interactions is only weakly significant and positive for interactions including the development level and production (Table 8.3.7), and highly significant for the interaction including oil reserves rather than production (e.g. see Table 8.3.5). The respective subcomponents of interactions are insignificant or significant or negative in *all* other instances.

In line with tests from the previous sections, the models of this stage are also tested against different sets of control variables for the same reason. Unlike there, the findings remain entirely unchanged in terms of the level of significance for the models at hand (Tables 8.5.19 - 8.5.26). Results also remain robust for different import measures (Table 8.5.27 - 8.5.30).

The difference in results compared to those on resource concentrations from the preceding section (Stage 3) is in line with the expected state behaviour under conditions of resource scarcity. All discussed points on the findings further underline the distinction between resource reserves and level of development on one side, and production and level of capability on the other side. The initial indication for a meaningful distinction in this regard appears to gain in substance, further supporting the distinction between threat and opportunity settings. Given the threat setting a state more likely focuses on risks, also especially in terms of likelihood that the violent endeavour may not succeed, e.g. when the potential target state is characterised by a high degree of military capability. Notably, these results are stronger for variables measuring oil production than oil reserves. This is again an inverse to the results from the resource concentration section and in line with the mechanism at hand, since under threat conditions it is likely that readily available resource endowments are preferred over those that need investment of any kind (including time) for their extraction/access. Somewhat surprising are the weakly significant or completely insignificant production measures based on Ross' oil data when measured in units or USD value, respectively.

To summarize, under conditions of resource scarcity in the initiating state, the degree of resource production in the target state is more relevant than the degree of resource reserves and the capability level of the target state is the most important factor to consider. Under conditions of absence of resource scarcity in the initiating state, resource reserves[119] in the target state exhibit a larger effect on the conflict propensity of an initiating state than production and the level of development of the target state appears to be a good proxy for acquisition costs (in order to evaluate the degree of the opportunity). All points are as expected and in line with introduced theories, frameworks and respective mechanisms.

[119] Notably, resource production cannot be present without resource reserves; yet, reserves by themselves could remain untapped.

Table 5.4: Stage 4 Summary Table (please consult the manual in section 8.7 for reading the table)

Source	Variable	no fixed effects: init	including fixed effects: init	rev_b	rev_r	All_Obs	#
Humphrey	H_no_oil_reserves1?*?H_oil_reserves2	?	-xx	?	?	-xxx	1
	H_no_oil_prod1?*?H_oil_prod2	?	?	?	?	-xxx	2
	outside_oil_dep?*?H_oil_reserves2	? [?]		?	????	?	3
	outside_oil_dep?*?H_oil_prod2	?	?	?	?	?	4
	H_no_oil_reserves1?*?H_oil_reserves_c2	xx	?	?	?	?	5
	H_no_oil_prod1?*?H_oil_prod_c2	?	-xx	?	?	-xxx	6
	outside_oil_dep?*?H_oil_reserves_c2				-x		7
	outside_oil_dep?*?H_oil_prod_c2				-x		8
	outside_oil_dep?*?H_oil_reserves_pop_c2		?	?		?	9
	outside_oil_dep?*?H_oil_reserves_gdp_c2		x	x		xx	10
	outside_oil_dep?*?H_oil_reserves_cap_c2		?	?		?	11
	outside_oil_dep?*?H_oil_reserves_dev_c2		?	?		?	12
	outside_oil_dep?*?H_oil_prod_pop_c2					?	13
	outside_oil_dep?*?H_oil_prod_gdp_c2			x		xx	14
	outside_oil_dep?*?H_oil_prod_cap_c2	xx	x	x		xxx	15
	outside_oil_dep?*?H_oil_prod_dev_c2	-x					16
Ross	R_no_oil_prod1?*?R_oil_prod2	?	-xxx	-xxx	[??????]	-xxx	17
	outside_oil_dep?*?R_oil_prod2	-xx	?	-x	?	?	18
	R_no_oil_prod1?*?R_oil_prod_c2	?	-x	?	?	?	19
	R_no_oil_prod1?*?R_oil_val_prod_c2	?	-x	?	?	?	20
	outside_oil_dep?*?R_oil_prod_c2						21
	outside_oil_dep?*?R_oil_val_prod_c2	-x					22
	outside_oil_dep?*?R_oil_prod_pop_c2		?			?	23
	outside_oil_dep?*?R_oil_prod_gdp_c2		?			x	24
	outside_oil_dep?*?R_oil_prod_cap_c2		?			?	25
	outside_oil_dep?*?R_oil_prod_dev_c2		?		xx	?	26
Ross (cont.)	outside_oil_dep?*?R_oil_val_prod_pop_c2	?	?	?		?	27
	outside_oil_dep?*?R_oil_val_prod_gdp_c2	?	?	?		?	28
	outside_oil_dep?*?R_oil_val_prod_cap_c2	?	?	?		?	29
	outside_oil_dep?*?R_oil_val_prod_dev_c2	?	?	?		?	30
World Bank	W_no_oil_rent1?*?W_oil_rents2	-xx	-xx	?	?	-xxx	31
	outside_oil_dep?*?W_oil_rents2	?	?	?	x		32
PRIO GRID	P_no_deposits1?*?P_deposits2	-xx	-xxx	-xxx	?	-xxx	33
	outside_oil_dep?*?P_deposits2	-xxx	-x	-xx	?	-xx	34
	outside_oil_dep?*?P_oil_dep_total_pop_c2	xxx	x		xx	xxx	35
	outside_oil_dep?*?P_oil_dep_total_gdp_c2	xx	xx		xxx	xxx	36
	outside_oil_dep?*?P_oil_dep_total_cap_c2	xxx	xx	x	xxx	xxx	37
	outside_oil_dep?*?P_oil_dep_total_dev_c2		x		xxx	xxx	38
Lujala	L_no_disc_onshore1?*?L_disc_onshore2	?	-x	-x	?	-xxx	39
	L_no_prod_onshore1?*?L_prod_onshore2	?	-x	-xx	?	-xxx	40
	L_no_disc_offshore1?*?L_disc_offshore2	x	?	?	?	?	41
	L_no_prod_offshore1?*?L_prod_offshore2	xxx?	xx	xxx?	xxx?	xxx?	42
	L_no_disc_all1?*?L_disc_all2		?	-x	?	-xxx	43
	L_no_disc_full_on1?*?L_disc_full_on2	-xx	-xxx	-xxx	?	-xxx	44
	L_no_disc_full_off1?*?L_disc_full_off2		?	?	?	?	45
	L_no_disc_full_all1?*?L_disc_full_all2	-xx	-xxx	?	?	-xxx	46
	L_no_prod_all_1?*?L_prod_all2		-xx	-xx	?	-xxx	47
	L_no_prod_full_on1?*?L_prod_full_on2	-xx	-xxx	-xx	?	-xxx	48
	L_no_prod_full_off1?*?L_prod_full_off2		?	xx	?	?	49
	L_no_prod_full_all1?*?L_prod_full_all2	-xx	-xxx	?	?	-xxx	50

Source: Author's compilation

5.3 Stage 5 - Results for natural resources other than oil

Due to reasons of data availability and the focus of this study, empirical tests for other natural resources have not been as extensive as they have been for the resource oil. In fact, all tests are based on respective resource rents obtained from the World Bank (2014) and transformed into absolute quantities (originally expressed as fraction of GDP). The approach to testing individual mechanisms is the same as it has been for oil, for which results based on rents are included in the results table for reasons of convenience. All results are summarized in Table 5.5. It needs to be noted that results for all rent variables are weaker than alternative variables when looking at the resource oil. Hence, following findings need to be considered with care, as it is likely that rents are not the ideal measure for testing the theories at hand. This is possibly so because this metric does not directly capture resource quantities as it measures the gross profit derived from natural resources, which depends on more factors than the available or produced quantity. Therefore, the following results merely serve as a first indication and need to be backed with data from alternative sources[120]. All results from this section have to be considered as tentative.

The main motivation behind considering an initial test with regard to natural resources other than oil is to investigate the notion that the type of natural resource also matters with regard to the conditions under which the conflict propensity of states is increased, alluding to the possible useful distinction between strategic and economically valuable natural resources that has been noted before (e.g. consider: "[...] large- scale deposits of strategically and economically valuable resources present attractive spoils of war regardless of the resource endowments of the conflict- initiating party" (Struever, 2010, p.8)). This may become especially relevant in relation to the proposed resource conditions. In this respect, strategic resources can also be considered as economically valuable and should be relevant with regard to the conditions of resource scarcity and foreign resource concentration. However economic resources are not strategically important and should play a predominant role in greedy predator mechanisms.

In essence this section supports the distinction between threat and opportunity settings and therefore between conditions of resource scarcity and foreign resource concentration. In that, it finds some indication for a useful distinction between strategic and economically valuable resources where the former is more relevant under resource scarcity conditions and the latter under conditions of foreign resource concentration. For instance, natural gas appears to be relevant for both sets of mechanisms (being slightly more relevant for desperate predator mechanisms), while

[120] For instance there is data on most resources in the form of absence or presence in land grid cells made available by PRIO-GRID. However, further testing for natural resources other than oil goes beyond the scope of this research and should be subject of future studies. Furthermore, information about the size of respective endowments is not readily available in the suggested data set.

coal is only relevant for greedy predator mechanisms. However, it needs to be noted that the distinctions across the different resource types are not entirely clear cut and further investigations based on better data are warranted. Nevertheless, first tendencies are observable.

Natural Gas

Considering gas rents for both states in one model in its original form the results are mostly significant but negative across the range of dependent variables, suggesting that the presence of gas decreases the likelihood of conflict. Similar to oil, results are slightly more robust for the presence of gas in the attacking state than they are for the target state. The coefficient for gas rents in the target state (***W_gas_rents_c2***, Table 5.5 #2) is insignificant for the COW variable for conflict initiation as dependent variable (*init*) for both politically relevant and all dyads. While the model with the relative measure for being revisionist (*rev_r*) as dependent variable is significant for both states it is insignificant for the model with the binary revisionist dependent variable (*rev_b*). Overall, the initial results are similar to those for oil (when considering the variables measuring resource rents), even though slightly weaker as expressed by lower levels of significance for all models.

However, when looking at scarcity conditions in the initiating state with regard to natural gas, the results considerably differ from those for oil rents. While the variable outside oil dependence is only significant and positive for the relative measure for being revisionist when considered in isolation, the coefficient for outside gas dependence (***outside_gas_dep***, #8) is highly significant and positive for the standard model. This result is very robust across the whole range of models, with the exception for the model without unit fixed effects where it is insignificant. Even more, when considering the interaction between outside gas dependence and the dummy indicating the absence of gas rents in the initiating state (***no_gas_rents***, #9), results for the interaction are significant and negative for both revisionist dependent variables (*rev_b*, *rev_r*) and when all dyads are considered (*All_Obs*) for the interaction; and significant and positive for its component outside gas dependence (Table 8.5.3.1). This means that, unlike for oil, states that are outside dependent on gas tend to be more aggressive, regardless of the domestic presence of natural gas[121]. This is surprising when recalling the significant and negative coefficient for gas rents in the initiating state, yet, is somewhat reconciled when considering the significant interaction between outside gas dependence and the dummy for no gas rents with a negative coefficient, reducing the effect if the respective state has no gas rents on its own. Overall, results are somewhat inconclusive with the reasoning from the oil scarcity section and pose a puzzle that requires further scrutiny, especially in face of

[121] Different from e.g. wood, the dummy for absence for gas (as component of the interaction) is not significant, compare tables 8.5.31 and 8.5.32.

such robust results for the variable for outside gas dependence considered individually.

Looking at the variables measuring gas rents in the target state relative to different cost proxies the results are very similar to those from the previous section on foreign resource concentrations with regard to oil (Stage 3). For the gas rent variables measured relative to population (***W_gas_rents_pop_c2***, #22), GDP (***W_gas_rents_gdp_c2***, #23) or capability (***W_gas_rents_cap_c2***, #24) the coefficients are either significant but negative or insignificant across the different models. Yet, the variable capturing gas rents relative to the level of development (***W_gas_rents_dev_c2***, #25) is significant with a positive coefficient for the standard model (*init*) and when including all dyads (*All_Obs*). It appears the risk and cost considerations of states when evaluating foreign gas concentrations in an opportunity setting are the same as for oil.

This is also the case when taking resource conditions of both states into account. The interaction between the two dummies indicating the absence of rents in the initiating state and the presence of rents in the target state (***W_no_gas_rent1 * W_gas_rents2***, #49) is significant and negative for all models with the standard COW variable for conflict initiation (*init*) as dependent variable, almost to the exact same significance level as the same interaction for oil. Corresponding to the results for oil, the results for gas change when introducing the interaction between conditions of gas scarcity in the initiating state and the different relative measures for gas rents in the target state, yet, in a weaker form. The gas rent variable relative to level of development becomes significant and negative for the standard model (*init*) and insignificant for the remaining models (#56). In line with results for oil, the coefficients for the gas rent variables relative to GDP and capability level are significant and positive for the binary dependent variable for revisionist state (*rev_b*) (#54, 55). It appears that the risk and cost considerations for states for the natural resources oil and gas are similar across threat and opportunity settings, even though results are somewhat weaker for gas than for oil.

Coal

The individual variables for coal rents in attacker and defender (***W_oil_rents_c1***, ***W_oil_rents_c2***, #3) states are insignificant for the whole range of employed models, even for the model with the COW variable for conflict initiation when including fixed effects and considering all dyads (*All_Obs*). This means that initially there is no evidence that state where coal resources are present are targeted more often in interstate conflicts, or target other states more often.
The results change little when considering the effects of coal scarcity in the initiating state in isolation. Again, all variables are insignificant without exception (#10, 11). This may indicate that coal is not considered as ‘strategic’ natural resource that is

necessary for survival. It is also the first indication that a distinction between strategic and non-strategic (economic) natural resources may be beneficial, because the pattern of active mechanisms appears to be different depending on the resource classification in this regard.

This point is further supported by the results for foreign concentrations of coal rents in isolation (#27-30), which differ considerably from the results for the same variables for resource oil and gas and are more in line to the results for minerals. While results for oil and gas are mostly insignificant or significant and negative for all relative resource measures but the one for level of development, all variables are either insignificant or significant and positive for the resource coal. Positive coefficients for the relative coal rent variables do not appear to depend on scarcity conditions in the initiating state, which is in line with the greedy predator mechanism. Coal seems to have lost its strategic importance, yet, still appears to be relevant for acquisitions arising from an opportunity setting (this is somewhat in line with the findings for coal by Macaulay & Hensel (2014).

Not surprisingly, results for the interactions between coal scarcity in the initiation state and the relative coal rent measures in the target state are all insignificant (#62, 64). Table 8.3.8 and 8.3.9 show the difference in significance between oil (strategic resource) and coal (non-strategic resource) for the standard model – these results are reversed under conditions of scarcity.

Minerals

In line with the initial results for coal, the variable for mineral rents (**W_miner_rents**, #4) in its original form is insignificant in almost all instances, with exception when considering the relative measure for revisionist state (*rev_r*), where the coefficient is significant and negative for the initiating state. The small difference to the results for coal is somewhat surprising, because the economic value of mineral resources is, on average, higher than that of coal (e.g. gold and silver fall under this category).

Even more surprising, results for the resource scarcity variable alone are very similar to those for natural gas; all results for models including unit fixed effects are highly significant and positive (#12). Different from natural gas, results for the interaction between the absence of mineral resource rents and the proxy for resource scarcity are weakly significant and positive for the relative measure for being revisionist and for the COW measure conflict initiation when all dyads are considered (#13). It appears that, similar to natural gas, an outside dependence on mineral resources is critical regardless of whether or not minerals are present in the respective state; yet, unlike with gas the effect is strengthened when no resource rents are present in the initiating state. Possibly, the category minerals also contains strategically valuable resources. However, given the broad nature of this category results should be considered with care. Notably, all sub-components are insignificant for the interaction. It is possible (and likely) that the type of mineral causing the components to be insignificant is a

different one than the type of mineral impacting the variable for outside resource dependence, possibly biasing the results.
Results for the relative mineral rent variables in isolation are similar to those of coal in the sense that results are either insignificant or mostly significant and positive (#26-30). However, the pattern of results somewhat differs from that of coal and is less consistent given the significant and negative coefficient when measured relative to the capability level (#34) or population level (#32) for the model with the binary measure for revisionist state (*rev_b)*.
Furthermore, when considering the relative measures under conditions of mineral scarcity in the initiating state (#69–72) all but one measure becomes insignificant. When considered relative to the level of development of the target state, the measure is highly significant with a positive coefficient for the binary revisionist model (*rev_b*).

Overall, results neither consistently support the greedy predator mechanism, nor the desperate predator mechanism. In fact, when comparing the relative measures in general and under scarcity conditions, the pattern is somewhat inverted to what is expected and observed for the other resources (i.e. development level relevant for greedy predators and other levels for desperate predators). The distinction between the different cost proxies is not as clear-cut as for other resources; reason for this could be that the category is very broad compared to the others, including highly valuable resources (e.g. gold) as well as comparatively inexpensive ones (e.g. tin), and including different degrees of strategic importance (e.g. tin vs. iron). Additional testing, especially with regard to the disaggregated components of the variable, may be required in order to explain the observed pattern.

Wood

Results for the natural resource wood are somewhat inconclusive across all sections. The original variables for wood rents are insignificant for all models that include unit fixed effects (#5). When excluding unit fixed effects the variables become significant and positive for both states. However, given that the positive results can only be observed for models without unit fixed effects evidence for a conflict enhancing effect with regard to the presence of wood resources is inconclusive at this point.
When considering the effects of wood scarcity in the initiating state in isolation, the variable for outside wood dependence alone is significant and positive for both revisionist dependent variables and insignificant for the remaining models (#14). However, its interaction with the dummy indicating the absence of wood rents in the initiating state inverses the results, models with a revisionist dependent variable become insignificant and all models with the COW variable for conflict initiation become significant, yet, with a negative coefficient (#15). Initially, it appears that states are more aggressive when being a wood producer that is also dependent on outside sources for wood, which is similar to the results for natural gas. However,

unlike with gas, the subcomponent dummy indicating the absence of wood rents (Table 8.5.32) is highly significant and positive (and insignificant for gas and minerals) and the subcomponent for outside wood dependence is insignificant (and significant for gas and minerals), suggesting that the absence of both, outside dependence and wood rents, (in the aggressor state) increases the likelihood of a conflict initiation. Possibly, this difference is due to the fact that the value of this resource is mostly limited to the economic dimension, while for oil and gas both dimensions should be relevant. Furthermore, it is also plausible in this case to acquire wood through violent means even though not being dependent on it. However, results in this specific section should be considered with very high caution – only 0.35% of the cases don't receive any rents from wood. This makes the distinction arising from the dummy almost meaningless (this does not apply to the other results). Consequently, disregarding outside dependence and domestic presence, and only considering the presence of wood in the target state may be a better predictor for conflict in the case of the natural resource wood[122].

However, the section on the effect of foreign resource concentrations poses further inconsistencies with regard to the resource wood (#36-40). When considered in isolation the measures for resource rents in the target state discounted by different cost proxies are either insignificant or significant and negative for the variables measured relative to population or to GDP (#37, 38) when considering a revisionist measure as dependent variable or excluding unit fixed effects. This is especially surprising because the original measure for resource rents in the target state is highly significant and positive, however only when excluding unit fixed effects.

Somewhat less surprising, all results are either insignificant when interacting the proxy for outside wood dependence with the relative measures of foreign wood rents (#77-80), or significant and negative relative to level of development for the standard model (*init*) (#80) or relative to the level of capability when considering all dyads (*All_Obs*) (#79).

Overall, each section for the resource wood contains some inconsistencies with regard to the mechanisms at hand and compared to the results for other natural resources. Possibly, there is a different set of mechanisms that is more appropriate to connect the presence of wood to international conflict, if such connection exists in the first place. Given the presence of wood resources across a very broad range of countries it is difficult to draw conclusions from the tests conducted in this study. However, this

[122] It should be noted that results change once again when the lowest 10% of rents are cut off for the construction of the dummy indicating the absence of wood rents. Coefficients become significant and positive for the interaction when considering all dyads or the binary variable for revisionist state as dependent variable, yet with insignificant sub-components (Table 8.5.32.1. All coefficients are insignificant for the remaining models. This means that outside dependence on wood becomes relevant when the respective state produces no or little wood rents. This does not necessarily classify wood as strategic resource. It is possible that states that produce little wood by themselves but import it for economic reasons are also interested in increasing the economic gain through violent acquisitions (as opposed to states that use wood to increase economic benefits based on own production and imports), given that processing (and selling) capabilities are present in both cases.

does not mean to disregard this resource for future research as it, in fact, does appear to have conflict increasing potential, also on the international level (e.g. see Thomson & Kanaan, 2004).

Table 5.5: Stage 5 Summary Table (please consult the manual in section 8.7 for reading the table)

Resource Type	Section / Variable	no fixed effects: init	including fixed effects: init	rev_b	rev_r	All_OBS	#
	Individual						
Oil							
	W_oil_rents_c1	?	-xxx	-xx	-xxx	-xxx	1
	W_oil_rents_c2	-xx	-xx	?	?	-x	
Gas							
	W_gas_rents_c1	?	-xx	?	-x	-xx	2
	W_gas_rents_c2	-x	?	?	-x	?	
Coal							
	W_coal_rents_c1						3
	W_coal_rents_c2						
Minerals							
	W_miner_rents_c1				-x		4
	W_miner_rents_c2				?		
Wood							
	W_wood_rents_c1	xxx				?	5
	W_wood_rents_c2	xx				?	
	Resource Scarcity						
Oil							
	outside_oil_dep	?	?	?	xx	?	6
	outside_oil_dep*W_no_oil_rent1	?	?	?	?		7
Gas							
	outside_gas_dep	?	xx	xx	xxx	xxx	8
	outside_gas_dep*W_no_gas_rent1	?	?	-x	-xxx	-xxx	9
Coal							
	outside_coal_dep	?	?			?	10
	outside_coal_dep*W_no_coal_rent1	?	?			?	11
Minerals							
	outside_miner_dep	?	xxx	xxx	xxx	xxx	12
	outside_miner_dep*W_no_miner_rent1	?	?	?	x	x	13
Wood							
	outside_wood_dep	?	?	xxx	xxx	?	14
	outside_wood_dep*W_no_wood_rent1	-xx	-xxx	?	?		15
	Resource Concentration						
Oil							
	W_oil_rents2	x			?		16
	W_oil_rents_pop_c2	?	?	?	-x		17
	W_oil_rents_gdp_c2	-xx	-x			-xx	18
	W_oil_rents_cap_c2	-xx	-xx	?	-xx	-xx	19
	W_oil_rents_dev_c2	?	?	?	?		20
Gas							
	W_gas_rents2	xxx			?	?	21
	W_gas_rents_pop_c2	-xxx	-xxx	-xxx	?	-xxx	22
	W_gas_rents_gdp_c2	?	?	?	?		23
	W_gas_rents_cap_c2	?	?	-xx	?	?	24
	W_gas_rents_dev_c2	?	x	?	?	x	25
Coal							
	W_coal_rents2	xxx	x	x			26
	W_coal_rents_pop_c2					?	27
	W_coal_rents_gdp_c2	?	xx	?	?	xx	28
	W_coal_rents_cap_c2					?	29
	W_coal_rents_dev_c2	xxx	x	?	?	x	30
Minerals							
	W_miner_rents2	xxx					31
	W_miner_rents_pop_c2			-x			32
	W_miner_rents_gdp_c2		x			xxx	33
	W_miner_rents_cap_c2			-x			34
	W_miner_rents_dev_c2	xx					35
Wood							
	W_wood_rents2		-x			-x	36
	W_wood_rents_pop_c2	-x			-xx	?	37
	W_wood_rents_gdp_c2	-xxx			-xx	?	38
	W_wood_rents_cap_c2					?	39
	W_wood_rents_dev_c2					?	40

Resource Type	Section / Variable	no fixed effects: init	including fixed effects: init	rev_b	rev_r	All_OBS	#
	Both_Sides						
Oil							
	W_no_oil_rent1*W_oil_rents2	-xx	-xx	?	?	-xxx	41
	outside_oil_dep*W_oil_rents2	?	?	?	?	?	42
	W_no_oil_rent1*W_oil_rents_c2	?	-x	?	?	?	43
	outside_oil_dep*W_oil_rents_c2	?	?	?	x		44
	outside_oil_dep*W_oil_rents_pop_c2	?	?	?	?		45
	outside_oil_dep*W_oil_rents_gdp_c2	?		xxx	?		46
	outside_oil_dep*W_oil_rents_cap_c2	?	?	xx	?	xxx	47
	outside_oil_dep*W_oil_rents_dev_c2	?	?	?	x	?	48
Gas							
	W_no_gas_rent1*W_gas_rents2	-xxx	-xx	?		-xxx	49
	outside_gas_dep*W_gas_rents2	?	?	x		?	50
	W_no_gas_rent1*W_gas_rents_c2	?	?	?		?	51
	outside_gas_dep*W_gas_rents_c2	-xx	-x	?	?	-x	52
	outside_gas_dep*W_gas_rents_pop_c2	?	?	?	?	?	53
	outside_gas_dep*W_gas_rents_gdp_c2	?	?	xxx	?		54
	outside_gas_dep*W_gas_rents_cap_c2	?	?	xx	?	?	55
	outside_gas_dep*W_gas_rents_dev_c2	?	-x	?	?	?	56
Coal							
	W_no_coal_rent1*W_coal_rents2	?	?	?		?	57
	outside_coal_dep*W_coal_rents2	?	?	?		?	58
	W_no_coal_rent1*W_coal_rents_c2	?	?	xxx		?	59
	outside_coal_dep*W_coal_rents_c2			xx			60
	outside_coal_dep*W_coal_rents_pop_c2						61
	outside_coal_dep*W_coal_rents_gdp_c2					?	62
	outside_coal_dep*W_coal_rents_cap_c2						63
	outside_coal_dep*W_coal_rents_dev_c2					?	64
Minerals							
	W_no_miner_rent1*W_miner_rents2	?	?	?	?	?	65
	outside_miner_dep*W_miner_rents2	?	?	?	?	?	66
	W_no_miner_rent1*W_miner_rents_c2	?	?	?	x	xxx	67
	outside_miner_dep*W_miner_rents_c2			xxx			68
	outside_miner_dep*W_miner_rents_pop_c2						69
	outside_miner_dep*W_miner_rents_gdp_c2						70
	outside_miner_dep*W_miner_rents_cap_c2						71
	outside_miner_dep*W_miner_rents_dev_c2			xxx		?	72
Wood							
	W_no_wood_rent1*W_wood_rents2	-	-	-	-	-	73
	outside_wood_dep*W_wood_rents2	?	?	?	?	?	74
	W_no_wood_rent1*W_wood_rents_c2	-xxx	-x	-xxx	?	-xx	75
	outside_wood_dep*W_wood_rents_c2	x				xx	76
	outside_wood_dep*W_wood_rents_pop_c2					?	77
	outside_wood_dep*W_wood_rents_gdp_c2					?	78
	outside_wood_dep*W_wood_rents_cap_c2					-x	79
	outside_wood_dep*W_wood_rents_dev_c2		-xx			?	80

Source: Author's compilation

5.4 The Network Level

The remaining two stages of empirical tests focus on the network level and its implications for the link between resource conditions and interstate conflict.

5.4.1 Stage 6 – Resource scarcity

Building on the insights from the results established above, the empirical approach in this stage slightly differs from the previous one - rather than first considering the results for simple dummies, already from the beginning the models focus on the interaction between outside resource dependence and different network measures. With exception of this alteration all other tests remain the same (i.e. different dependent variables for conflict initiation and politically relevant vs. all dyads – different resource production/reserve variables become irrelevant as all variables are constructed based on trade data). Empirical models from this section enjoy most scrutiny since here initial results are most promising (e.g. Stage 2) and the implications for theory and the conceptualization of resource conditions are most significant (Chapter 3 in general and Figure 3.5). It is crucial to appropriately investigate the key proposition that network considerations are an integral part for assessing resource scarcity conditions with regard to interstate conflict as they determine the degree of access security. Furthermore, this section refers to tables displaying all variables and coefficients as this allows for a more direct consideration of the results (and notably sub-components of interactions); yet, for reasons of overview this section also includes the summary results table. Similar to the first stages of testing, this stage also focuses exclusively on the natural resource oil.

Recalling the main hypothesis with regard to the network level and resource scarcity conditions and the corresponding sub hypotheses:

Hypothesis 3: The degree of diversification and the degree of resource scarcity for State A have an impact on the likelihood of conflict initiation for state A.

> *Hypothesis 3.1: The combination of number of trade partners of State A and the past trade-flows between these is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*
>
> *Hypothesis 3.2: The average degree of reachability of each note in a resource supply network by State A is negatively related to the probability of State A initiating an interstate conflict in order to acquire natural resources.*

The main hypothesis enjoys the strongest empirical support out of all hypotheses of this study across a wide range of tests. A diversification effect in the form presented in this study appears to exits and to constitute an important factor of a states degree of resource access security (perception).

Initially, it is important to compare results across different centrality measures. Table 8.3.10 presents the results of the interactions for the degree and closeness centrality measures for the resource oil (where degree centrality is set at alpha equal to 0) with the standard COW variable for conflict initiation as dependent variable and the inclusion of unit fixed effects (standard model). The variable for outside oil dependence (***outside_oil_dep_c1***) and the interaction for the most direct centrality measure, in-degree centrality (***O_in_degree_c1***), are both highly significant. While both measures are significant at the 1% level with a positive and negative coefficient, respectively, the remaining interaction component, the centrality measure by itself, stays insignificant for the dyadic model (see section 5.4.1.1 for more information). As predicted by the theory, states with high outside resource dependence are more prone to initiate an interstate conflict, if their position in the resource trade network can be characterized as not diversified, and vice versa. Also importantly, the variable for net oil resource imports (***O_net3_oil_imp_c1***) is either significant at a lower level or entirely insignificant indicating that, indeed, the number and kind of trading partners is significantly more important than the total trade volume[123]. These results do not change when testing different operationalizations for total net imports (see Table 8.5.33) or when also including year fixed effects (Section 5.4.1.1). Notably, all alternative import measures remain insignificant. The remaining centrality measures remain insignificant for the standard model. However, when taking into account all dyads, the non-symmetrised closeness centrality measure (***O_closeness_nosym***) becomes highly significant at the 1% level (Figure 5.6 #6) and the degree centrality measure remains highly significant (#4). Furthermore, taking into account the other ways to capture the initiation of a conflict, both closeness centrality measures become highly significant at the 1% level for both revisionist dependent variables when including all dyads, while the significance level for degree centrality slightly drops. Finally, both closeness centrality measures remain significant for the alternative dependent variables (*rev_b*, *rev_r*) also when excluding politically irrelevant dyads (#2, 3); however, the degree centrality measure becomes insignificant in both instances (#1). Furthermore, the adequacy of closeness centrality to capture the degree of access security additionally arises from comparing the results for the symmetrised and non-symmetrised measures. In case of the former, the end points of tie-paths between nodes can be an oil exporter or an oil importer, while for the latter the end points are always oil exporters, at least from the perspective of the previous node on the respective path, making it a more relevant measure. In fact, this difference is reflected in the empirical results, as the findings for the non-symmetrised closeness

[123] The respective import variable is only weakly significant when considering total net imports in a dyadic model – it is insignificant when considering total imports or the positive range of total net imports and, finally, insignificant in all forms for the monadic interaction models. This tendency supports the theory at hand: Not the total amount of trade but rather the number and kind of trading partners matters.

measure are characterized by a distinctly higher level of significance. In line with expectations this finding further underlines the adequacy and usefulness of the introduced resource access security concept.

As a result, both interactions, those including degree and the closeness centrality measures, enjoy significant support in line with the theory at hand. Nevertheless, results for degree centrality are more consistent and significant than those for the closeness centrality when considering the standard model with and without excluding politically relevant dyads and are therefore under additional scrutiny.

Given the apparent importance of the interaction including the degree centrality measure (and its individual components), and the insignificance of total net (oil) resource imports, Table 8.3.11 provides the measures for the degree centrality measure for oil with changes for the tuning parameter between 0.0 and 0.9 in steps equal to 0.1. It can be observed that the significance level peaks at alpha=0.1 at a significance level above 1% and then fades until becoming insignificant at alpha=0.9. This further supports the theory and underlines the previous finding that the conflict decreasing effect is highest when the respective state is diversified in terms of the number of trading partners, and not when most of the trade is derived from a limited number of partners. Even more, Table 8.3.12 presents the results for the balance-sensitive degree centrality measure for oil and shows that the highest significance level lies at alpha=0.0, becoming insignificant at alpha=0.9. In line with the presented theory, this means that the conflict decreasing effect is highest when trade is equally distributed among the trading partners, which limits the maximum level of negative impact when faced with a default of the most important trading partners[124].

5.4.1.1 Additional robustness tests

As indicated above, this section discusses the insights of the additional tests conducted for the hypothesis of this stage. The results for degree centrality (in some instances with small shifts for the tuning parameter in terms of peak significance), remain highly robust across the large number of robustness tests. Different from the results of previous stages, all results of this stage are consistent with the hypothesis at

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[124] It should be noted that there is a second weaker significance hike at alpha levels equal to 1.1 and 1.0 for the two centrality measures, respectively (notably, an alpha of 1.0 is not equal to total net imports, because negative net imports are set to zero for the calculation of bilateral trade ties resulting in no edge. As a result this alpha yields a higher value than total net imports.). This result could imply that a very close trade relationship is considered as a secure access to resources. However, it may be questionable to what extend it is prudent to measure a ‘trust relationship’ purely through the amount of past trade flows for a given resource. Nevertheless, this may be a question of interest for future research.

hand entirely lacking conflicting coefficients for the variables of interest[125]. An overview of significance levels across most tests is presented in Table 5.6, tables displaying all variables and coefficients are also provided selectively.

Similar to the additional tests from the resource scarcity stage above, this stage also includes models that only consider originators as initiator or drop on going conflict-years. Overall, these approaches confirm previous results in a similar manner, even though in a weaker form. Also, it divides the dataset into pre and post 1990 (globalisation – increased importance of global trade where resources can be accessed through international markets with increased reliability) and drops all dyads including the United States on either side.
All adaptations provide robust results for the effect of degree centrality, the level of significance does not change when only including the originators of a conflict and the significance level increases when excluding all dyads including the United States. Notably, when dividing the dataset into a pre- and post-globalisation period the interaction of interest is insignificant for the pre-1990 period and significant for the post-1990 period (e.g. consider the standard model with (#1) and without excluding politically irrelevant dyads (#4)). This is an interesting result as it suggests that the availability of all three access modes for states, or the high level of reliability of the trade access mode, appears to be a more recent phenomenon. In fact, this could have implications for understanding the causes of conflicts nested in considerations about the availability and reliability of international trade[126] and may be one of the reasons why the number of interstate conflicts has decreased over the past decades (e.g. the age of colonisation vs. the age of globalisation). At the same time it is an indication for the importance of the trade network level in explaining conflict in contemporary times.

In addition to the inclusion and exclusion of unit fixed effects similar to the models above, this section also provides results for different combinations of unit and year fixed effects (Table 8.5.34). Interestingly, the interaction between outside resource dependence and degree centrality becomes insignificant when including only year fixed effects, but remains significant when including both year and unit fixed effects. Excluding both fixed effects types shifts the significance peak to alphas equal to 0.1/0.2. The model with only year fixed effects is one of the few instances where a test in this stage remains insignificant. Ideally, results remain robust for no, unit, and year fixed effects models[127].

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[125] This is similar to the results of the stage dealing with resource scarcity conditions individually (Stage 2) in that there are no conflicting results. The difference to here is that the number of insignificant results is much lower and opposing results are entirely missing.
[126] This point touches the trade expectations theory by Copeland (1996), which distinguishes between the positive and negative effects of interstate trade on conflict based on the future expectations of trade in the respective instance.
[127] However, from an econometric perspective the within case variation should be preferred as it provides 'cleaner' results (as unobserved heterogeneity is controlled for) than models

Table 8.5.35 provides results of nested models with unit fixed effects and AIC values. Notably, the variable for total net imports is insignificant in all models without the interaction and the AIC value for the model with and without this variable is almost the same (a decrease by 0.9 points from 9776.2 – compared to a decrease by 615,1 points for the model with the interaction containing degree centrality). Also, the variable for degree centrality is insignificant when included individually and only becomes highly significant when interacted with outside resource dependence. In accordance with the introduced theory, the diversification effect is conditional (This insight will be adapted when considering the results for monadic models in the subsequent paragraph). This and the insignificance of total net oil imports again support one of the main arguments of this work with regard to resource scarcity, namely that the number of trading partners rather than the total amount of trade has an impact on the resource access security of a state.

Due to criticism from an econometric perspective with regard to underestimated standard errors (e.g. see Erikson, Pinto and Rader, 2014) results for a monadic research design are also included in the robustness section in the appendix. The results are robust, with some notable differences compared to the dyadic level of analysis.

Considering the nested models (Table 8.5.36) it can be observed that the variable for net imports is insignificant when included in isolation as well as in conjunction with the variables of interest. In line with the results from the dyadic level of analysis, the interaction term is highly significant at the 1% level with a negative coefficient and the component for outside dependence is significant with a positive coefficient. These results are entirely robust to a different operationalization of net oil imports (Table 8.5.36.2). The only change is that the variable for net imports is significant when included in isolation, however, it becomes insignificant as soon as an additional variable of interest is included. Interestingly, when exchanging the variable for degree centrality with its standardized version (***O_st_in_degree_*****c1**) it becomes significant without interaction and so regardless of the inclusion of the variable for total net oil imports, which is a different result from that of the dyadic level of analysis (Table 8.5.36.3). Provided that the individual variable has a lower significance level than its interaction term one can still consider that some degree of conditionality exists. Nevertheless, it needs to be noted that the marginal effects plots are more consistent for the dyadic (section 8.6.2.1) than for the monadic level of analysis (section 8.6.2.3). Finally, the interaction term in monadic models has a higher significance level and larger coefficient compared to the interactions of interest in the dyadic models.

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focusing on the between case variation when faced with panel data such as that of this study. This is under the assumption that the within case variation is sufficiently high, which is the case for this analysis. Also, the AIC values are lowest for models with no or year fixed effects. As a result this inconsistency should not be of significant concern.

Furthermore, the monadic level confirms the findings from the dyadic models where the interaction between degree centrality and outside resource dependence becomes insignificant when only including year fixed effects, Table 8.5.37 – again results are robust to changes in the import variable (Table 8.5.38).
Overall, it can be concluded that the monadic level of analysis, with much more reasonably estimated standard errors (and therefore significance levels for the variables of interest) very strongly supports the findings of the dyadic level of analysis.

In addition, it could be suggested that the level of FDI also plays an important role in determining the level of resource access security. This is especially so in terms of increasing the reliability of individual trade ties.
Initially, this point can only be confirmed weakly. Considering the monadic level of analysis (Table 8.5.43) the level of outflowing FDI[128] remains highly insignificant when included in isolation and in conjunction with the variable for degree centrality. When included in conjunction with the interaction term between outside dependence and degree centrality it somewhat decreases the significance level of this interaction, even though itself remaining highly insignificant at an p value close to .8. This could allude to the possibility that FDI indeed has a resource securing. In fact, interacting the level of FDI with outside dependence yields a significant negative coefficient, confirming this notion. However, this effect is only observable on the monadic level of analysis.
Considering the dyadic level of analysis, the FDI variable for State A is only significant when included as interaction with the FDI level for State B and otherwise remains insignificant (Table 8.5.44). Furthermore, the inclusion of the significant interaction between the FDI levels of State A and B has almost no effect with regard to the interaction effect between degree centrality and outside dependence (Table 8.5.45). Yet, in line with the findings from the monadic level of analysis, the FDI level does decrease the significance level of the interaction when only included in form of the highly insignificant FDI variable (p value around .8) for State A. The significant interaction between the level of FDI and outside dependence from the monadic level could not be confirmed for the dyadic level of analysis (Table 8.5.46).
Overall, it is important to note that the initial evidence for an effect of FDI, while showing some initial promise, is somewhat weak and the factor FDI should be considered an additional layer to evaluate individual trade ties and the core element is still the general ability of the market to provide secure access to natural resources for a given state, as captured by the overall resource trade network of the state. Further, the question of whether FDI causes trade or vice versa arises. Additional research with regards to the effects of FDI is warranted before formalizing it further.

[128] All FDI variables are in current USD and based on the data from World Bank (2017) Foreign direct investment, net outflows. Retrieved from: https://data.worldbank.org/indicator/BM.KLT.DINV.CD.WD?view=chart

Finally, the effect size, for instance for the degree centrality measure, is considerable. For the monadic model without unit fixed effects and only degree centrality considered in isolation while keeping all other covariates at their mean the average likelihood of conflict decreases by ca. 2.6% with a increase of the degree centrality variable from the 25th to the 75th percentile, by ca. 5.8% for the difference 5th to 95th percentile and by ca. 8% when considering the maximum difference (all other variables held at their means). Confidence intervals are not overlapping. Compared, a difference between major and minor power in this model yields a difference of ca. 7.5%. The effect size remains robust when comparing odds ratios for the same model with and without unit fixed effects. This tendency is mostly confirmed by the (dyadic) interaction model with the effect size slightly decreased, dependent on the value of the moderator variable outside dependence (also see the marginal effect plots, section 8.6).

Table 5.6: Stage 6 Summary Table (please consult the manual in section 8.7 for reading the table)

Variable	no_fixed	init	rev_b	rev_r	Regional Effects	Only_Originator	Ongoing_Dropped	Pre_1990	Post_1990	No_USA	#
Politically Relevant Dyads											
outside_oil_dep_c1		xxx	x			xx	xxx		xx	xxx	
O_in_degree_c1	x										1
O_in_degree_c1□*□outside_oil_dep	alpha=.2/.3	-xxx				-xx	-xx		-xx	-xxx	
□outside_oil_dep_c1	x		xx	xx	x						
O_closeness_c1	xx										2
O_closeness_c1□*□outside_oil_dep	-xx		-xx	-xx	-xx						
□outside_oil_dep_c1			x	xxx			x				
□O_closeness_nosym_c1											3
closeness_nosym□*□outside_oil_dep			-x	-xxx			-x				
All Dyads	no_fixed	init	rev_b	rev_r	Regional	Only_Originator	Ongoing_Dropped	Pre_1990	Post_1990	No_USA	
outside_oil_dep_c1	xx	xxx	xx	□		xxx	xxx		xx	xxx	
O_in_degree_c1			□	xxx							4
O_in_degree_c1□*□outside_oil_dep	-xxx	-xxx	-xx	□		-xxx	-xxx		-xxx	-xxx	
□outside_oil_dep_c1			xxx	xx						□	
O_closeness_c1	xxx	-xx	-xx	xx	xxx		-xx	-xxx		-xx	5
O_closeness_c1□*□outside_oil_dep	-x		-xxx	-xx						-x	
□outside_oil_dep_c1	-x	xxx	xx	xxx		xxx	xxx	x		xxx	
□O_closeness_nosym_c1		xx	xx	xxx			xx		xx	xx	6
closeness_nosym□*□outside_oil_dep		-xxx	-xxx	-xxx		-xxx	-xxx	-x		-xxx	

Source: Author's compilation

5.4.2 Stage 7 – Foreign resource concentration

This stage is a direct extension of the third stage addressing mechanisms associated with foreign resource concentrations in that it addresses costs and risks; only here the considerations arise from the network level. Recalling that the strategic oil hypothesis predicts the existence of a protective shield for important oil exporters, this section aims to directly address this dynamic as it is posited to be a conflict-inhibiting factor and may therefore explain non-action of states when faced with an opportunity in form of large foreign resource concentrations relative to low perceived costs with regard to their violent acquisition. Similar to the foregoing stage, this section provides the summary results tables as well as individual output tables, because this enables more direct insights into selected results and, more importantly, allows assessing the coefficients of individual components of interactions.

Recalling hypothesis 4 and the two *opposing* sub-hypotheses

Hypothesis 4: The extent to which states perceive the presence of abundant resource concentrations in foreign states as acquisition opportunity is dependent upon attributes of the egonets of the target state across a specific set of networks.

> *Hypothesis 4.1: The size of and the number of major powers in the resource export egonet of State B are related to the cost(s) and risk(s) (perception) associated with an attack on State B.*
>
> *Hypothesis 4.2 The aggregate amount resource endowments of the undirected resource trade egonet of Sate B is related to the (perception of) potential resource gains from an attack on State B.*

Somewhat surprisingly the empirical findings support hypothesis 4.1 and 4.2.

The network level is able to identify the size of the oil export egonet of a potential target, which can serve as a proxy for a potential protective shield. In fact, it appears that the size of the export egonet of a state is negatively related to the likelihood of this state to be targeted in an interstate conflict. The variable for export degree centrality for the target state (***O_in_degree_exp_c2***, Table 5.7 #1; Table 8.3.13) is highly significant at the 1% level with a negative coefficient when considered individually in a model with unit fixed effects and the standard COW variable for conflict initiation as dependent variable (standard model), regardless of whether only politically relevant or all dyads are considered. The significance drops to the 5% level when considering the binary measure for revisionist state as dependent variable and becomes insignificant when excluding unit fixed effects. Surprisingly and not in line with expectations, for the relative measure of a state being revisionist as dependent variable the coefficient is weakly significant and positive. Nevertheless, overall results for the size of a state's export network are strong and in line with expectations;

the effect of the protective shield appears to hold, ceteris paribus. In order to distinguish whether or not foreign resource concentrations are considered as opportunity for conquest it is important to make a distinction between more and less important oil exporters.

It is possible to interact the different measures for target resource production and reserves with a dummy taking the value of 1 when a target state is considered an oil exporter and otherwise taking the value 0. Testing for different cut-off values based on the number of import partners in order to arrive at a meaningful dummy variable, the number of five trading partners appears to produce most robust results for the dataset at hand[129]. The protective shield appears to become a serious concern if a potential target state has five or more trading partners. Regardless of the employed oil measure, the interaction is highly significant and negative (Table 8.5.39). It is important to note that in each case also the interaction component that constitutes the oil measure is highly significant with a positive coefficient. In case the number of trading partners is lower than five the risk of intervention appears to be sufficiently low so that a resource concentration can be perceived as opportunity. However, as shown in Stage 3, this depends on additional considerations with regard to potential costs and other risks. However, these results are highly preliminary, for instance, it remains unclear why the likelihood to be attacked is not highest for oil rich states that are isolated in terms of trade. Nevertheless, the degree to which a potential target state is embedded in international resource export networks appears to be an important risk consideration when explaining violent resource acquisitions.

The initial results with regard to the size of the export egonet of potential target states are further confirmed by taking into account the number of major powers in the egonet. The existence of major powers in this network should strengthen the effect of the protective shield, as these powers are relatively more capable to conduct military interventions on a global scale. Yet, surprisingly, the measure for the number of major powers in the export egonet of a potential target (***majpow_count_exp_c2***, #8) is highly significant with a positive coefficient when considering the standard COW variable for conflict initiation as dependent variable without unit fixed effects. However, this result becomes insignificant when taking into account unit fixed effects or the alternative dependent variables and can therefore be considered to have little or no effect when considered in isolation. In fact the one significant result across models with unit fixed effects can be observed for the interaction between the major power dummy and the export egonet (***majpow_exp * O_in_degree_exp_c2***, #9), with a positive coefficient when considering the standard dependent variable for conflict initiation or with a negative coefficient for the relative revisionist measure. The results for the interaction term between the export egonet and the measure for number of major powers in the egonet (***majpow_count_exp_c2 * O_in_degree_exp_c2***, #10)

[129] It is important to note that this specific result is inherent in this specific dataset and does not arise from theoretic considerations for a meaningful threshold.

are more consistent in that both models with a significant interaction have a negative coefficient. Nevertheless, support with regard to an additional effect between the size of the export egonet and the number of major powers within this egonet the results remains weak.

In line with the approach from Stage 3 regarding costs, the different oil production and reserve variables are discounted by the number of export partners in order to account for the threat of violent intervention by import dependent states. Considering the models without unit fixed effects and the standard COW measure for conflict initiation as dependent variable all oil measures become highly significant at the 1% level (#2-6). The inclusion of unit fixed effects decreases almost all significance levels: The Ross & Mahdavi variable for oil production measured in units (***R_oil_prod_exp_c2***, #4) drops in significance and becomes insignificant when measured in terms of USD value (***R_oil_val_prod_exp_c2***, #5); the Humphreys measure for oil production (***H_oil_prod_exp_c2***, #3) also becomes insignificant. Only Humphreys' oil reserve variable remains significant at the 1% level (***H_oil_reserves_exp_c2***, #2), which is in line with expectations for greedy predator mechanisms. The distinction between production and reserves continues to play an important role.

Finally, recalling the discussion on effect size with regard to (network) resource scarcity conditions from section 5.4.1.1, it is insightful to contrast the effect size with regard to conditions of foreign resource concentration. Furthermore, recalling from Stage 3 that the most suitable variable for testing resource concentration mechanisms is based on reserves data, the effect size for the oil reserves variable discounted by the size of the protective shield (H_oil_reserves_exp_c2) should be an appropriate point of departure to compare effect sizes across the two sets of resource conditions.
In line with expectations the effect size is reasonably small in the middle range. For the dyadic model without unit fixed effects and all covariates at their means, the likelihood for conflict is raised by only 0.02% when increasing the value of the reserve variable from the 25th to the 75th percentile. As expected, the magnitude of the effect size does not increase in a linear fashion towards the outer ranges. For instance an increase by 5.72% can be observed when moving the resource concentration variable from its minimum to its maximum value. The effect sizes, also in the medium range, is increased when considering the average adjusted predictions.
In comparison, the main resource concentration variable from stage 3, resource reserves discounted by the level of development (H_oil_reserves_dev_c2), can be characterized by somewhat smaller changes on the outer ranges, but slightly larger changes on the inner range. For instance, an increase of the variable from its 5^{th} to 95^{th} percentile yields an increase in the likelihood of conflict by 0.62%, compared to only 0.08% for the variable above. The difference in likelihood for conflict for the minimum and maximum levels of this reserve variable is equal to 2.27%.

Overall, in line with expectations, the effect size with regard to the set of greedy predator mechanisms appears to be smaller than that of desperate predator mechanisms (see section 5.4.1.1).

With regard to hypothesis 4.2 the empirical findings are in line with expectations from the greedy predator mechanism, also in terms of differences in results between aggregate production and aggregate reserves.
Considering the results for the measures arising from the undirected network for the standard model (with unit fixed effects and the COW variable for conflict initiation) the variable for aggregate production (***R_prod_agg_total***, #11; Table 8.3.14) that is based on Ross and Mahdavi's data is highly significant with a negative coefficient. However, this changes when considering the alternative dependent variables; the measure becomes significant and positive for the relative dependent variable for a revisionist state (*rev_r*), and insignificant for the same in binary form (*rev_r*) or when considering all dyads (*All_Obs*). As a result, the effects for aggregate production are inconclusive, yet, with a tendency to be conflict reducing.
However, the same variable based on Humphreys' oil reserve data (***H_reserve_agg_total***, #12) is highly significant with a positive coefficient in for all models, with the exception for the insignificant coefficient when the relative revisionist measure is employed as dependent variable (*rev_r*). This result is initially very strong in favour of the hypothesis at hand. However, it should be considered with care as the employed proxy may not be an ideal measurement to capture potential compound benefits arising from the control of the key element in a target network. Notably, the resource reserves variable for the target state alone is insignificant across *all* models with unit fixed effects.

Yet, when changing the undirected network into an export network where a tie could weakly be interpreted as dependence, and contrasting the results to those of an import network, the findings possibly further support additional considerations in this direction. Both variables remain highly significant with expected directions when considering the export network, but become insignificant or only weakly significant for the aggregate production and the aggregate reserves variable, respectively, when considering the import network (in both cases for the standard model) (Table 8.5.41). It seems that additional benefits could be attained through dependencies of other states with regard to the target state.

Table 5.7: Stage 7 Summary Table (please consult the manual in section 8.7 for reading the table)

Variable	no_fixed_effects	including fixed effects							#
	init	init	rev_b	rev_r	AllObs	Regional Effects	Only_Originator	Ongoing_Dropped	
O_in_degree_exp_c2		-xxx	-xx	x	-xxx	⍰	-xxx	-xxx	1
H_oil_reserves_exp_c2	xxx	xxx			xxx	xxx	xx	xxx	2
H_oil_prod_exp_c2	xxx					xxx	⍰	⍰	3
R_oil_prod_exp_c2	xxx	x		-x	x	xxx	⍰	x	4
R_oil_val_prod_exp_c2	xxx			-xx		xxx	xxx	xx	5
P_oil_dep_total_exp_c2	xxx		-x	-xxx		xxx	⍰	⍰	6
majpow_exp	xxx				x	⍰	⍰	⍰	7
majpow_count_exp_c2	xxx				⍰	xx	⍰	⍰	8
majpow_exp ⍰*⍰ O_in_degree_exp_c2		x		-xx	⍰	⍰	⍰	xx	9
majpow_count_exp_c2 ⍰*⍰ O_in_degree_exp_c2	-xxx			-x	⍰	⍰	⍰	⍰	10
R_prod_agg_total	xxx	-xx		xx	⍰	xx	⍰	-xx	11
H_reserve_agg_total	xxx	xx	xxx		xxx	xx	xx	xx	12

Source: Author's compilation

Table 5.8: Selected model of each stage incl. all covariates (model number refers to stage)

	(1) init	(2) init	(3) init	(4) init	(5) init	(6) init	(7) init
init							
R_oil_prod_c1	-1.14e-09						
	(7.22e-10)						
R_oil_prod_c2	-1.43e-09*						
	(7.53e-10)						
contig	-3.454***	-3.311***	-4.129***	-4.120***	-0.753	-2.614***	-2.730***
	(0.831)	(0.835)	(0.878)	(0.870)	(1.244)	(0.894)	(0.882)
ln_dist	-0.613***	-0.595***	-0.689***	-0.691***	-0.316**	-0.510***	-0.521***
	(0.103)	(0.104)	(0.109)	(0.108)	(0.157)	(0.111)	(0.110)
colcont	0.535***	0.543***	0.646***	0.654***	0.834***	0.531***	0.511***
	(0.180)	(0.180)	(0.194)	(0.188)	(0.254)	(0.180)	(0.179)
L_demo_both	-0.910***	-0.883***	-1.041***	-1.016***	-0.797***	-0.844***	-0.895***
	(0.165)	(0.163)	(0.208)	(0.205)	(0.165)	(0.164)	(0.174)
ln_capratio	-0.261***	-0.263***	-0.271***	-0.279***	-0.225***	-0.243***	-0.231***
	(0.0312)	(0.0316)	(0.0375)	(0.0377)	(0.0436)	(0.0315)	(0.0311)
alliance	-0.0995	-0.0662	-0.146	-0.153	0.185	-0.0259	-0.0529
	(0.104)	(0.105)	(0.121)	(0.120)	(0.116)	(0.104)	(0.107)
min_trade_dep	3167.4	1855.7	11635.1**	-1082.6	3305.3	1713.3	3569.7
	(2811.6)	(3946.9)	(5711.1)	(6195.4)	(6412.3)	(4060.5)	(2386.1)
L_number_IGOs	0.0124***	0.00960**	0.0142***	0.0151***	0.00467	0.0123***	0.0178***
	(0.00373)	(0.00381)	(0.00515)	(0.00529)	(0.00424)	(0.00401)	(0.00394)
L_civ_one	0.184**	0.195**	0.258**	0.233**	0.293***	0.232**	0.267***
	(0.0897)	(0.0884)	(0.102)	(0.105)	(0.111)	(0.0909)	(0.0938)
L_civ_both	0.324*	0.351**	0.482***	0.483***	0.436**	0.379**	0.431**
	(0.172)	(0.166)	(0.176)	(0.176)	(0.192)	(0.167)	(0.172)
peaceyrs	-0.299***	-0.300***	-0.323***	-0.320***	-0.218***	-0.301***	-0.296***
	(0.0215)	(0.0214)	(0.0244)	(0.0244)	(0.0245)	(0.0224)	(0.0223)
_spline1	-0.00179***	-0.00179***	-0.00249***	-0.00247***	-0.000919***	-0.00178***	-0.00172***
	(0.000276)	(0.000278)	(0.000347)	(0.000348)	(0.000323)	(0.000280)	(0.000278)
_spline2	0.00101***	0.00102***	0.00196***	0.00195***	0.000357	0.00101***	0.000980***
	(0.000249)	(0.000252)	(0.000372)	(0.000374)	(0.000287)	(0.000252)	(0.000249)
_spline3	-0.0000850	-0.0000974	-0.000723***	-0.000723***	0.0000901	-0.0000946	-0.000106
	(0.000107)	(0.000109)	(0.000220)	(0.000220)	(0.000118)	(0.000109)	(0.000106)
outside_oil_dep_c1		-0.00758		0.000426		0.0102***	
		(0.00549)		(0.00149)		(0.00352)	
1.R_no_oil_prod1		-0.412*					
		(0.213)					
1.R_no_oil_prod1#c.outside_o~p		0.00932*					
		(0.00553)					
O_net3_oil_imp_c1		1.56e-12		-3.98e-12		2.66e-12**	
		(1.35e-12)		(6.78e-12)		(1.28e-12)	
H_oil_reserves_dev_c2			2.55e-08***				
			(7.28e-09)				
H_oil_prod_cap_c2				-1.18e-12**			
				(5.48e-13)			
c.outside_oil_dep_c1#c.H_oil~_				2.41e-14*			
				(1.36e-14)			
W_coal_rents_dev_c2					1.29e-08*		
					(6.88e-09)		
O_in_degree_c1						0.000666	
						(0.00433)	
c.O_in_degree_c1#c.outside_o~p						-0.000510***	
						(0.000193)	
O_in_degree_exp_c2							-0.0107***
							(0.00234)
_cons	5.960***	4.884***	5.437***	5.702***	1.736	3.866***	4.582***
	(0.993)	(0.952)	(1.009)	(1.023)	(1.349)	(0.998)	(0.998)
N	85263	82502	55510	55432	55442	79572	82341

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

6. Conclusion

The main subject of this work is the exploration of the nexus between natural resource conditions and interstate conflict. It focuses specifically on understanding when states pursue a violent resource acquisition strategy and what the main factors explaining the choice between violent and non-violent resource acquisitions by states are. In doing so the study hypothesizes that two main natural resource conditions play an important role, each comprising a set of specific mechanisms in their own right through which the connection to interstate conflicts is established.

On the one hand *conditions of natural resource scarcity*[130] create a threat setting, pushing the respective state into an interstate conflict in order to mitigate the threat by violently accessing additional required natural resources. On the other hand, *foreign natural resource concentrations*[131] create an opportunity setting in which the respective state is pulled into an interstate conflict, motivated by the notion of additional, mostly economic, gains, acquired by violent means.

This distinction, which is introduced by this work, is fundamentally important for understanding the resource-conflict link as it identifies the focal point for assessing the respective resource condition (scarcity in initiator states and foreign concentration in target states) and allows to discern between partly opposing forces amongst a multitude of mechanisms that arise from resource settings in general. This is also reflected in the empirical findings of this work, most evidently by comparing the different results in the progression of the tests throughout seven stages of testing.

In addition to the distinction between resource conditions, this study has introduced a *multilevel framework of resource access,* systemizing considerations about state behaviour with regard to natural resource access from a rational actor perspective. This allows for a clear identification of key aspects with regard to each mechanism, generating important insights and the set-up for their empirical evaluation.

With regard to resource scarcity conditions, this study uses the multilevel resource access framework as point of departure to develop the resource access security perspective from which conditions of resource scarcity should be considered. The main implication arising from both is that the most important level of consideration with regard to interstate conflict is the access to resource through trade, which should be assessed through two dimensions: 1) The reliability of individual trading partners, and 2) the position of the state in relation to trading partners directly and indirectly. The study tests the hypothesis arising from the second point by introducing the network level and shows that a central position in a resource supply network decreases the propensity of a state to initiate an interstate conflict, likely through an increase in perceived resource access security. A number of additional empirical tests confirm this tendency by showing that this effect can be observed in situations where

[130] Associated with the set of *desperate predator mechanisms*.
[131] Associated with the set of *greedy predator mechanisms*.

a state is characterized by having a number of trading partners among which the total amount of trade flows is equally shared. All tests point in the direction that the degree of diversification may in fact have a positive impact on the (*perception of) resource access security* for states.

The findings regarding scarcity conditions may also have implications for the resource scarcity debate in general[132] (touching the general debate on the resource-conflict link) and direct the focus to the evaluation of access security, specifically trade access security. It suggests a shift from the evaluation of owned endowments and metrics capturing rather general levels of scarcity to state-individual and multi-level scarcities and the inclusion of the security dimension. In fact, in times of potentially weakened international trade institutions the global availability of access to important energy resources the question of the trade access-conflict link gains in importance. Even more so this is true for future potential financial crises that have the potential of a significant negative impact on global trade flows. Given the theory at hand a collapse of global markets could have a significant impact on the conflict propensity of states over a longer period of time.
However, it needs to be mentioned that other considerations with regard to resource scarcity are established in general terms. In contrast, the scarcity concept introduced in this study is developed in relation to assessing interstate conflicts (yet, could also have implications beyond this). It seems that the adequacy of a resource scarcity concept is conditional on its purpose.

Having established the importance of the concept of resource access security, the next step of this research in this regard should be the formulation and testing of a framework for assessing the reliability of individual trading partners and the testing of more complex network measures capturing indirect and also network wide effects, in order to arrive at a more comprehensive resource access security framework. In addition to past and present relationships and state characteristics some network metrics could also be useful to evaluate the reliability dimension, as the direct trade partners can be evaluated in relation to the kind and number of ties to other states.
For instance, the *triad census* can evaluate whether a direct trading partner is an ally of an ally or an ally of an enemy (or other attributes)[133], and the *eigenvector*

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[132] However, it needs to be mentioned that other considerations with regard to resource scarcity are established in general terms, while the scarcity concept introduced in this study is developed in relation to assessing interstate conflicts, yet, could also have implications beyond this.

[133] This may be an important factor in the creation of trade ties and for the reliability of a supply network. For instance, it is possible that State A does not engage into trade with State B, because both are enemies, but rather, because State B is and ally with State C, which in turn is an enemy of State A. In other words, the potential trade partner of State A is an ally of an enemy of State A. As a result, the consideration of direct trade ties is based on the indirect alliance relationship rather than the direct one. For instance, a historic example (Haim, 2015) is the increased trade of the US with western bloc aligned states and decreased trade relations

centrality[134] captures the degree of centrality of the direct ties of the original node. Also the degree of interdependence[135] could have some explanatory power over the reliability of individual trading partners.

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with soviet bloc aligned states. The reason for the US to limit trade ties to the eastern states is not because of their direct relationship, but rather because of their ties to direct enemies of the US. Vice versa, it is possible that State A is more likely to engage into trade with State B (as compared to an isolated State D), because State B, while yet unrelated to State A, is an ally to State C, that in turn is a direct ally of State A. In other words, the potential trade partner for State A is an ally of an ally of State A, and therefore preferred. One reason may be that future probability of conflict (that would potentially disrupt trade flows) would be considered low.

[134] For the analysis at hand this implies that the degree to which direct trading partners are in turn centrally embedded in the resource network can be taken into consideration when assessing the resource access security of a state. This could serve as a metric to evaluate the reliability and value of trade partners individually. States with a high score in eigenvector centrality should be perceived as more secure, as their trading partners can also be characterized by a high degree of resource access security. If the access point for resources is a resources importer in itself this measure could capture a higher degree of robustness vis-à-vis trade defaults in a similar way the direct degree centrality does for the initial state and could therefore be also regarded as more reliable for the initial state, ceteris paribus. Also, these states could serve as gates to a greater number of resource exporters and could therefore be regarded as more valuable. However, the willingness of the second state to continue to pass on resources when faced with trading defaults to the initial state could be regarded as highly questionable – still, relatively speaking it should be higher than compared to a state that only receives resources from a more limited number of trading partners (in fact, an additional counter argument could be that this state is more susceptible to outside shocks as it is more connected in the network, under the assumption that its connections are interconnected by themselves). As a result, this measure would be imperfect in assessing the reliability (quality) dimension of individual trading partners and only serve as starting point to assess the reliability of trade partners.

[135] Interdependence measures the degree of change in one actor, based on the degree of change in another actor, in both directions (dependence measures one direction). For the case at hand, it should be conceptually differentiated between sensitivity dependence, reflecting the degree to which a change in one actor affects a change in other actors, and vulnerability dependence, reflecting the opportunity costs of breaking up a tie (Maoz, 2011). The sensitivity dependence can then be used to measure the extent to which the degree of resource access of a state depends on its resource trade egonet. However, especially useful to measure the reliability of a states trade network is to assess the aggregate multiplex vulnerability dependence of the trading partners (in the states network) on the state. For instance, high levels of alliance dependence (aid dependence, arms dependence) from the trading partners towards the state can translate to a higher degree of access security, because the trading partners are 'locked in' and exiting the states trade network is connected to high exit costs. Then, this directly addresses the assessment of likelihood that a trading partner in the trading network of a state defaults by decision. This assessment also extends beyond direct ties. For instance, a State A can be dependent on State B for resource imports. However, the actual resource originates in State C. This means that State A is indirectly dependent on State C, because if State C defaults, this will have an impact on State B, which in turn, through a direct tie, has an impact on State A. However, the degree of effect for the indirect ties should be somewhat lower (in this case depending on the share of trade derived from State C that is meant for State A). Therefore, indirect interdependencies need to be discounted by the extent of indirectness (Maoz, 2011).

Furthermore, considerations about spillover[136] effects (and multiplexity in specific) between the resource trade and other networks such as aid, FDI, arms trade, etc. could enable additional important insights with regard to resource access dynamics.
In addition, the notion to focus the analysis on different degree egonets (for instance to evaluate effects of egonet scarcity[137], to assess power concentration[138] across different dimensions, or to analyse the degree of connectivity[139]) could yield additional insights, also with regard to additional threat factors or power dynamics arising from resource trade networks.

With regard to foreign resource concentrations, this study uses the multilevel resource access framework to point into the direction of opportunity assessment. The main aspect in evaluating state action under the greedy predator mechanism is the evaluation of the degree to which resource concentrations are perceived as a conquest opportunity, and in that the key factor is the parameter costs.

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[136] Spillover considerations can take two forms, first, it is possible that the position of a state in one network is (also) determined by its position in another network (multiplexity). For instance, a state being in a highly central position in the arms[136] supplier network is possibly also in a central position in the resource import network. An additional important network to consider is the aid flows network. Furthermore, it is possible that the structure of one network affects structural aspects of another.

[137] 'regional' scarcity

[138] E.g. captured by the measure of capability concentration (Maoz, 2011)

[139] A supply network that is characterised by a high degree of connectivity is also highly susceptible to outside and inside shocks that disseminate through ties and may therefore affect entire groups or even the entire network. For instance, through a very high level of interconnectedness of financial markets, the financial crisis originating in the United States in 2008 was able spread significantly, resulting in a global crisis. Therefore, this specific aspect becomes highly important for the resource access security concept in the sense that it measures the robustness of the supply network with regard to introduced shocks, and therefore has a direct impact on the assessment of the reliability of the trade access mode. Initially, the overall connectivity can be measured through the degree of density, which is defined through the number of ties in a network relative to all ties in the network. However, in order to capture the issues at hand, the concept of components is much more useful. Components are subsets of nodes which are reachable from all of the nodes in the component, but none is reachable from nodes outside the component. Then the proportion of components within the supply network, for instance measured through alliance or general trade ties, measures the degree of independence amongst the suppliers (and possibly the supplied) across the specified dimensions. For example, if the supply network is also one large alliance, a war with regard to one supplier state can draw the entire network into conflict; a resource supply network that is highly interconnected in general trade terms, also becomes "contagious" in that trade related shocks can disseminate through the entire network. This directly affects the overall measure of diversification, as highly independent units (preferably with different effect directions to occurrences) significantly increase the degree of diversification, especially for a low number of trading partners. In fact, it can be argued, that a minimum degree of independence is a necessary requirement for diversification when effect directions are the same.

The initial empirical analysis employed for this section finds no positive relationship between the presence of target resources and interstate conflict. In fact, in the instances of significant coefficients the direction suggests a conflict reducing effect. Only when incorporating cost proxies to the target resource metrics the empirical findings suggest that under certain conditions foreign resource concentrations do, in fact, exert sufficient pulling force to induce a state towards a violent resource acquisition, and so regardless of its domestic resource condition. Furthermore, the network level of the analysis shows that the main mechanism preventing the frequent materialization of the greedy predator mechanism is a protective shield arising from the strategic considerations of resource importing states. Also with regard to potential benefits, the network level produces first tentative results as it suggests a positive connection between aggregate resource reserves of an interconnected target resource trade egonet and the likelihood of conflict initiation.

The next steps of this research in this regard should be the development and testing of a more comprehensive cost framework that could aid in the determination of better (more direct) cost proxies that are important for assessing the degree to which a resource concentration is perceived as an opportunity; and employment of network dependency measures[140] in order to capture potential compound benefits reaching beyond a single target state. Another helpful metric arising from the network level may be the betweeness centrality as it could identify broker / key positions in a global resource trade network, which, besides possibly being a valuable target, could also function as a source of power for the state that inhabits this position.

Overall, the two distinct resource conditions vary in terms of the degree of empirical support they enjoy based on the findings of this study. In fact, significant support based on an extensive range of empirical tests has been found for the conflict enhancing effect of resource scarcity conditions, especially so if conceptualized in form of perceived resource access security that is nested in the network dimension. With regard to foreign resource conditions empirical support is somewhat lower; the reason for this may be the opposing effect of a protective shield arising from implications of the strategic oil hypothesis for which this analysis also finds considerable support, especially when captured through the network level. Overall, it appears that the conflict-related dynamics (*pushing forces*) arising from a resource threat setting are stronger than those (*pulling forces*) arising from a resource opportunity setting.

A number of additional tentative insights that touch upon both resource conditions and that are supported by findings of this study have been established.
First, there is a distinction in importance between resource production and resource reserves with regard to both resource conditions. The presence of resource production appears to have an effect on desperate states, as the required resources are presently

[140] See footnote 135

available. On the other hand, the presence of resource reserves seems to be of more interest to greedy states since the risk of importer intervention can be mitigated by accessing untapped, or especially not traded, reserves.
Second, there appears to be a difference in terms of important assessment parameters for state action in the regard at hand. For a desperate state, considerations about the capability level or population size appear to be the paramount concerns as they have a direct impact on the likelihood of success with regard to the violent endeavour ('feasibility'). On the other hand, the level of development and the size of the first degree export egonet of a target state seem to best capture the entire breadth of additional cost (and medium term risk) factors that are relevant for a greedy state when assessing an opportunity.
Third, the role of resource prices is ambiguous, yet, seems to be slightly more influential on perceptions of an opportunity, rather than on perceptions of scarcity. A high general price level appears to generate additional net positive acquisition opportunities.

Overall, the set of findings of this study may also have implications for the direction of future research in general. For instance, given the important implications with regard to trade access, one of the additional next steps of this research will be the evaluation of the degree of security of trade routes. Examples for its importance can be found in recent history, as especially the US has taken on the role of protecting free flow of resources (especially oil) throughout the globe (Chapman, 2009). After Kuwaiti oil tankers had been attacked by Iran, Reagan authorized reflagging the ships with US flags as an interruption of oil flow was considered a security threat (Palmer, 1992); the US has declared on numerous occasions that it is prepared to undertake military operations in the event of an Iranian attempt to block the Strait of Hormuz (Talmadge, 2008)[141]; the British and French militarily intervened in light of the nationalization of the Suez Canal by Egypt during the Suez Crisis. Also other countries are concerned with the free flow of resources, one example is the joint effort of EU countries to curb pirate activity on the northern coast of Africa (mission EU NAVFOR Somalia, cooperating with the US led Combined Maritime Forces [CMF]). In fact, regardless of the affected country in question, the free flow of resources (oil) is considered a paramount security concern, as a disruption of supplies is likely to have a significant negative impact on the stability of global economies and therefore also security (Klare, 2016). While this is a generally accepted point, this implication also arises from the introduced resource access framework.

Other promising research avenues relate to the role of institutions in facilitating reliable access to resources through the trade access mode, the role of FDI in increasing the overall resource access security, the duration and intensity of resource related conflicts (and the conditions under which these factors vary), the

[141] These sources as cited in Klare (2016)

deconstruction of the MID variable to only include MIDs including relevant types of action, and a focused empirical investigation with regard to the proposed resource conditions for natural resources other than oil.

Finally, this work may also have important implications for the trade-conflict debate as it could create additional insights with regard to the conditions under which trade has a specific effect on conflict. Particularly the notions with regard to the direct link between natural resources and survival, the resulting resource (inter)dependencies, and the proposed (network) resource conditions together with the introduced resource access framework (specifically with regard to costs and risks) could facilitate insights in this debate.

In conclusion, recalling the points presented in the introduction, this work carefully suggests that (1) it may be beneficial to distinguish between conflicts over resources that are resource scarcity driven and arise from a threat setting (push mechanism), and conflicts that are driven by foreign resource concentrations and arise from an opportunity setting (pull mechanism). (2) A research focus with regard to resource scarcity could yield valuable insights for the resource-conflict debate. In fact, all studies with the exception of Casselli et al. (2014) and Struever and Wegenast (2016)[142], find no support for the foreign resource concentration mechanism and the few studies focusing on the effects of resource scarcity (Stalley [2003], Wasson [2007]), find first support for the scarcity conflict link. (3) Vis-à-vis interstate conflict, the evaluation of resource scarcity conditions should be framed in terms of perceived resource access security, where conditions of resource scarcity (when approximated in form of outside resource dependence – capturing the current condition) are mitigated by a low anticipated risk of resource deficiency (when approximated by the level of network centrality – capturing the expected future condition). Current conditions of scarcity are mitigated by expectations of sustained or increased resource access in the future. This results in a higher degree of perceived resource access security. (4) In doing so the trade dimension appears to be a highly defining factor and should be considered in future models investigating the resource scarcity – conflict link. (5) A research focus with regard to the effect of foreign resource concentrations should focus on the assessment of conquest opportunities and in that on factors that influence the parameter costs. For instance, the presence of a civil conflict in the target state could have a negative impact on the costs, therefore creating an opportunity for a violent resource acquisition (here, in form of a military intervention in a civil conflict). (6) In doing so, the risk of importer intervention needs to be taken into consideration, as it appears to be a main factor for state inaction with regard to violent resource acquisitions in an opportunity setting.

[142] Although results of this study are based on models without unit fixed effects. Yet, as shown by the study at hand, their inclusion changes results significantly, especially with regard to the presence of target resources.

Overall, this work should demonstrate that the concepts of *network scarcity* and *network concentration*, together with the introduced multilevel resource access framework, could add valuable insights to the resource conflict literature and the realist-liberalist debate in general. The struggle over natural resources should not be framed in terms of absolute quantity ('peak oil') but much rather in terms of competition with regard to resource access. Ultimately, this work arises from, and aspires to touch upon, the elemental interplay between survival – resources – and power[143], which could be the main subject of a *resource realism*[144] in its own right.

[143] A focus on these factors addresses very fundamental driving forces underlying state behaviour, often hidden under multiple layers of interactions between a multitude of aspects across many levels. Specifically the need for resources [from an extrinsic perspective] and the need for survival [from an intrinsic perspective] is inevitable as it is arising from the necessities nested in a physical environment – this is less so for the aspect of power (i.e. resources are a necessary requirement for survival [existence], while power may be a sufficient requirement.

[144] The term 'resource realism' is first introduced in this work at the very end of the conclusion and relates directly to the aforementioned fundamental relationship (resources, power and survival). It should be noted that this is a new notion that warrants a more extensive and focussed exploration in a wider context before formalizing it further.

7. References

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8. Appendix

8.1 Descriptive Statistics

8.1.1 Dyadic

	(1) count	mean	sd	min	max
All_Obs	1349151	.0014928	.0386078	0	1
H_no_oil_prod1	804136	.4959783	.4999841	0	1
H_no_oil_reserves1	808192	.7079902	.4546871	0	1
H_oil_prod2	804092	.5039262	.4999849	0	1
H_oil_prod_c1	804136	1.23e+08	4.14e+08	-6040750	3.68e+09
H_oil_prod_c2	804092	1.22e+08	4.14e+08	-6040750	3.68e+09
H_oil_prod_cap_c2	778697	3.74e+10	1.67e+11	-3.08e+08	5.40e+12
H_oil_prod_dev_c2	776549	43656.68	158946.6	-1796.254	2687956
H_oil_prod_exp_c2	614386	5008367	1.03e+07	-566206.3	9.78e+07
H_oil_prod_gdp_c2	776549	.0028593	.0139292	-.0000472	.2652073
H_oil_prod_pop_c2	776549	16.17211	94.7582	-.1381397	1792.494
H_oil_reserves2	808151	.2918563	.4546168	0	1
H_oil_reserves_c1	808192	3.96e+09	1.89e+10	0	2.61e+11
H_oil_reserves_c2	808151	3.96e+09	1.89e+10	0	2.61e+11
H_oil_reserves_cap_c2	778836	1.18e+12	6.33e+12	0	7.95e+13
H_oil_reserves_dev_c2	776688	1111755	4905433	0	7.73e+07
H_oil_reserves_exp_c2	614386	1.65e+08	7.19e+08	0	2.50e+10
H_oil_reserves_gdp_c2	776688	.1004384	.7818495	0	23.90612
H_oil_reserves_pop_c2	776688	774.7255	6355.856	0	161577.6
H_reserve_agg_total_c2	1312147	134.4227	197.408	0	961.4235
L_Prio_const_disc_off	1309229	.4843278	1.596993	0	12
L_Prio_const_disc_off2	1309229	.4833272	1.594855	0	12
L_Prio_const_disc_ons	1309229	1.242592	4.098608	0	41
L_Prio_const_disc_ons2	1309229	1.239024	4.08855	0	41
L_Prio_const_prod_off	1309229	.9003383	2.50565	0	19
L_Prio_const_prod_off2	1309229	.898719	2.502448	0	19
L_Prio_const_prod_ons	1309229	2.264936	6.558385	0	77
L_Prio_const_prod_ons2	1309229	2.258891	6.542709	0	77
L_Prio_disc_offshore	1309229	.8083437	1.694869	0	9
L_Prio_disc_offshore2	1309229	.8075172	1.694022	0	9
L_Prio_disc_onshore	1309229	2.291937	5.605956	0	63
L_Prio_disc_onshore2	1309229	2.287935	5.598372	0	63
L_Prio_prod_offshore	1309229	.4131172	.9895609	0	8
L_Prio_prod_offshore2	1309229	.4130515	.98964	0	8
L_Prio_prod_onshore	1309229	1.303944	3.354667	0	34
L_Prio_prod_onshore2	1309229	1.302432	3.351462	0	34
L_civ_both	1310711	.0228784	.1495159	0	1
L_civ_one	1310711	.2566485	.4367839	0	1
L_demo_both	967030	.149925	.3569981	0	1
L_disc_all2	1309229	.5281093	.4992094	0	1
L_disc_all_c1	1309229	3.10028	6.777818	0	70
L_disc_all_c2	1309229	3.095452	6.768963	0	70
L_disc_full_all2	1309229	.5567315	.4967713	0	1
L_disc_full_all_c1	1309229	4.827201	11.3497	0	121
L_disc_full_all_c2	1309229	4.817803	11.32911	0	121
L_disc_full_off2	1309229	.3394418	.47352	0	1

L_disc_full_off_c1	1309229	1.292671	2.872574	0	21
L_disc_full_off_c2	1309229	1.290844	2.869737	0	21
L_disc_full_on2	1309229	.5057465	.4999672	0	1
L_disc_full_on_c1	1309229	3.534529	9.219065	0	104
L_disc_full_on_c2	1309229	3.526959	9.201683	0	104
L_disc_offshore2	1309229	.2933268	.4552871	0	1
L_disc_onshore2	1309229	.482474	.4996929	0	1
L_no_disc_all1	1309229	.4718052	.4992046	0	1
L_no_disc_full_all1	1309229	.4431578	.4967586	0	1
L_no_disc_full_off1	1309229	.6604177	.4735677	0	1
L_no_disc_full_on1	1309229	.4941809	.4999663	0	1
L_no_disc_offshore1	1309229	.7065296	.4553523	0	1
L_no_disc_onshore1	1309229	.5174267	.4996964	0	1
L_no_prod_all1	1309229	.5332551	.4988931	0	1
L_no_prod_full_all1	1309229	.4308116	.49519	0	1
L_no_prod_full_off1	1309229	.6529499	.476032	0	1
L_no_prod_full_on1	1309229	.4900579	.4999013	0	1
L_no_prod_offshore1	1309229	.7755565	.4172155	0	1
L_no_prod_onshore1	1309229	.576123	.4941715	0	1
L_number_IGOs	1310475	24.00499	12.14466	0	108
L_prod_all2	1309229	.466667	.4988879	0	1
L_prod_all_c1	1309229	1.717061	3.891189	0	37
L_prod_all_c2	1309229	1.715484	3.887919	0	37
L_prod_full_all2	1309229	.569093	.4952033	0	1
L_prod_full_all_c1	1309229	4.882335	11.52452	0	123
L_prod_full_all_c2	1309229	4.873094	11.50246	0	123
L_prod_full_off2	1309229	.3469118	.4759876	0	1
L_prod_full_off_c1	1309229	1.313455	2.952652	0	21
L_prod_full_off_c2	1309229	1.311771	2.949722	0	21
L_prod_full_on2	1309229	.5098833	.4999025	0	1
L_prod_full_on_c1	1309229	3.56888	9.306073	0	104
L_prod_full_on_c2	1309229	3.561323	9.287456	0	104
L_prod_offshore2	1309229	.2244229	.4172019	0	1
L_prod_onshore2	1309229	.4237723	.4941554	0	1
O_closeness_c1	1312147	.5519546	.1600802	0	.9622642
O_in_degree_c1	1312147	17.65109	13.41288	0	83
O_net2_coal_imp_c1	1310711	1.10e+08	6.98e+08	0	2.71e+10
O_net2_gas_imp_c1	1310711	2.69e+08	1.81e+09	0	5.50e+10
O_net2_miner_imp_c1	1310711	2.15e+08	1.94e+09	0	8.77e+10
O_net2_oil_imp_c1	1310711	1.52e+09	9.86e+09	0	3.60e+11
O_net2_wood_imp_c1	1310711	1.08e+08	6.02e+08	0	1.12e+10
O_net3_oil_imp_c1	1310711	-3353222	1.32e+10	-2.37e+11	3.60e+11
O_total_coal_imp_c1	1310711	1.32e+08	7.33e+08	0	2.75e+10
O_total_gas_imp_c1	1310711	3.65e+08	2.10e+09	0	5.59e+10
O_total_miner_imp_c1	1310711	4.57e+08	2.40e+09	0	9.81e+10
O_total_oil_imp_c1	1310711	2.15e+09	1.14e+10	0	4.14e+11
O_total_wood_imp_c1	1310711	1.91e+08	7.92e+08	0	1.17e+10
P_deposits2	1282930	.523451	.4994499	0	1
P_no_deposits1	1282936	.4764914	.4994472	0	1
P_oil_dep_total_cap_c2	1282930	10672.28	33959.97	0	853505.5
P_oil_dep_total_dev_c2	1282930	.0244086	.1382359	0	3.743172
P_oil_dep_total_exp_c2	1010381	3.181558	8.328128	0	217
P_oil_dep_total_gdp_c2	1282930	1.10e-09	4.66e-09	0	2.33e-07
P_oil_dep_total_pop_c2	1282930	2.38e-06	6.73e-06	0	.00011
R_no_oil_prod1	1222448	.490681	.4999134	0	1
R_oil_bar_prod_c1	1222448	1.36e+08	4.56e+08	0	4.52e+09
R_oil_bar_prod_c2	1222449	1.36e+08	4.55e+08	0	4.52e+09
R_oil_prod2	1222449	.5092376	.4999149	0	1

R_oil_prod_cap_c2	1222449	5.83e+09	2.51e+10	0	7.59e+11
R_oil_prod_dev_c2	1214446	5346.664	21127.57	0	362423.4
R_oil_prod_exp_c2	988679	683068	1645444	0	2.70e+07
R_oil_prod_gdp_c2	1214446	.0003228	.0016875	0	.0391533
R_oil_prod_pop_c2	1214446	2.5003	13.50185	0	273.1093
R_oil_val_prod_cap_c2	1222449	1.88e+12	9.00e+12	0	2.94e+14
R_oil_val_prod_dev_c2	1214446	1522375	6501635	0	1.41e+08
R_oil_val_prod_exp_c2	988679	2.26e+08	6.63e+08	0	1.38e+10
R_oil_val_prod_gdp_c2	1214446	.0812187	.3179659	0	6.417792
R_oil_val_prod_pop_c2	1214446	764.3053	4084.639	0	93657.1
R_prod_agg_total_c2	1312147	1.26e+09	9.73e+08	0	3.86e+09
W_coal_rents_c1	1023769	4.16e+08	6.70e+09	0	3.88e+11
W_coal_rents_c2	1023690	4.16e+08	6.71e+09	0	3.88e+11
W_gas_rents_c1	1013872	1.98e+09	1.16e+10	0	2.76e+11
W_gas_rents_c2	1013779	1.98e+09	1.16e+10	0	2.76e+11
W_miner_rents_c1	1028907	7.24e+08	6.11e+09	0	2.65e+11
W_miner_rents_c2	1028827	7.24e+08	6.11e+09	0	2.65e+11
W_no_oil_rent1	1003187	.5155789	.4997575	0	1
W_oil_rents2	1003097	.48433	.4997546	0	1
W_oil_rents_c1	1003187	5.81e+09	2.43e+10	0	4.63e+11
W_oil_rents_c2	1003097	5.80e+09	2.43e+10	0	4.63e+11
W_wood_rents_c1	951176	1.21e+09	4.03e+09	0	5.79e+10
W_wood_rents_c2	951060	1.20e+09	4.03e+09	0	5.79e+10
_spline1	1349151	-7249.076	8408.693	-30912	0
_spline2	1349151	-9634.787	12386.98	-46563	0
_spline3	1349151	-7425.576	10549.64	-42000	0
aggr_prod_exp_c2	1312147	3.60e+08	4.94e+08	0	3.27e+09
aggr_prod_imp_c2	1312147	9.04e+08	7.23e+08	0	3.47e+09
aggr_reserves_exp_c2	1312147	29.19309	69.49224	0	585.15
aggr_reserves_imp_c2	1312147	105.2296	163.8333	0	900.0073
alliance	1349151	.0675617	.2509924	0	1
alpha00	1311864	17.6549	13.41182	0	83
alpha01	1311864	93.00896	90.58092	0	738.3249
alpha02	1311864	516.2925	642.8825	0	6567.755
alpha03	1311864	3008.508	4722.377	0	58423.34
alpha04	1311864	18326.37	35700.86	0	536025.3
alpha05	1311864	116197.5	276877	0	5050733
alpha06	1311864	763628.9	2197130	0	4.76e+07
alpha07	1311864	5181090	1.78e+07	0	4.48e+08
alpha08	1311864	3.62e+07	1.47e+08	0	4.23e+09
alpha09	1311864	2.59e+08	1.23e+09	0	3.98e+10
alpha_2_00	1311864	17.6549	13.41182	0	83
alpha_2_01	1311864	70.45002	69.39998	0	603.8646
alpha_2_02	1311864	327.6664	431.9364	0	4658.403
alpha_2_03	1311864	1745.697	2981.19	0	38135.72
alpha_2_04	1311864	10405.51	22131.49	0	345946.4
alpha_2_05	1311864	67858.26	174520.1	0	3266655
alpha_2_06	1311864	475578.3	1450791	0	3.19e+07
alpha_2_07	1311864	3534705	1.26e+07	0	3.22e+08
alpha_2_08	1311864	2.76e+07	1.15e+08	0	3.32e+09
alpha_2_09	1311864	2.25e+08	1.08e+09	0	3.50e+10
cap_1	1349151	.0060403	.0199635	2.46e-07	.2154438
cap_2	1349151	.0060351	.0199477	2.46e-07	.2154438
ccode1	1349151	457.7531	256.5495	2	990
ccode2	1349151	457.7456	256.5514	2	990
colcont	1349151	.0070674	.0837703	0	1
contig	1349151	.0329911	.1786133	0	1
dyad_exp_c1	1047009	173.5437	2492.964	0	387579.9

dyad_imp_c1	1047006	173.0613	2467.827	0	387579.9
gdp_1	1333929	1.62e+08	7.33e+08	32717.44	1.43e+10
gdp_2	1333924	1.62e+08	7.32e+08	32717.44	1.43e+10
init	1349151	.0014928	.0386078	0	1
init_cap_win	1310711	.5000699	.373067	1.22e-06	.9999988
ln_capratio	1310711	2.615765	2.093867	.0000128	13.61773
ln_dist	1349151	8.04814	1.627508	0	9.421168
majpow_count_exp_c2	1312147	1.236886	1.66346	0	7
min_trade_dep	975298	7.38e-07	7.92e-06	0	.0019894
no_fixed	1349151	.0014928	.0386078	0	1
outside_oil_dep_c1	1296635	13.63498	52.05735	0	2244.241
peaceyrs	1349151	19.59185	13.62899	0	50
year	1349151	1989.39	13.8613	1960	2010
N	1349151				

8.1.2 Monadic

	(1) count	mean	sd	min	max
L_cap_1	8021	.0062405	.0205533	2.46e-07	.2154438
L_gdp_1	7946	1.43e+08	6.62e+08	32717.44	1.42e+10
O_in_degree_c1	7887	17.12616	13.14118	0	83
O_net2_oil_imp_c1	8222	1.49e+09	9.83e+09	0	3.60e+11
O_net3_oil_imp_c1	8021	357256.8	1.24e+10	-2.37e+11	3.60e+11
O_total_oil_imp_c1	8021	1.95e+09	1.07e+10	0	4.14e+11
_spline1	8222	-407.9641	766.7482	-4851	0
_spline2	8222	-1607.919	3278.424	-21375	0
_spline3	8222	-2585.656	5971.343	-41847	0
contig_num	8222	5.554853	3.280259	0	28
init	8222	.1565313	.3633804	0	1
ln_gdp	8141	7.743703	1.434146	4.360931	11.94389
ln_pop	8141	8.617344	1.935093	2.772589	14.09175
majpow1	8222	.0358793	.1860006	0	1
outside_oil_dep_c1	7946	13.0037	49.69301	0	2244.241
peaceyrs	8222	8.681464	10.06307	0	50
polity_c1	7105	.4468684	7.578439	-10	10
N	8222				

8.2 Variable Overview

8.2.1 Variables of Interest – Sorted in line with Summary Result Tables

Figure 8.2.1: Variables of Interest for Stages 1-5

Data Source	Stage 1 (Section 4.6.1) Variable Names	Stage 1 Description	Stage 2 (Section 4.6.2) Variable Names	Stage 2 Description	Stage 3 (Section 4.6.3) Variable Names	Stage 3 Description	Stage 4 (Section 4.6.4) Variable Names	Stage 4 Description	Stage 5 (Section 4.6.5) Variable Names	Stage 5 Description
OEC	-	-	*outside_oil_dep*	Degree of outside dependence on oil for state A; continuous			*outside_oil_dep*	Degree of outside dependence on oil for state A; continuous	*outside_oil_dep*	Degree of outside dependence on oil for state A; continuous
Humphrey	*H_oil_reserves_c1*	Amount of oil reserves in state A; continuous; barrels	*H_no_oil_reserves1*	Indicator for absense of oil reserves in State A; dummy	*H_oil_reserves_c2*	Amount of oil reserves in state A; continuous; barrels	*H_no_oil_reserves1*	Indicator for absense of oil reserves in State A; dummy	*outside_gas_dep*	Degree of outside dependence on gas for state A; continuous
	H_oil_reserves_c2	Amount of oil reserves in state B; continuous; barrels	*H_no_oil_prod1*	Indicator for absense of oil production in State A; dummy	*H_oil_reserves2*	Amount of oil reserves in state B; continuous; barrels	*H_oil_reserves2*	Indicator for presence of oil reserves in State B; dummy	*outside_coal_dep*	Degree of outside dependence on coal for state A; continuous
	log_oil_reserv_c1	Amount of oil reserves in state A; continuous; log			*H_log_oil_reserv_c2*	Amount of oil reserves in state B; continuous; log	*H_oil_reserves_pop_c2*	Amount of oil reserves in state B discounted by level of population of state B; continuous	*outside_miner_dep*	Degree of outside dependence on minerals for state A; continuous
	H_log_oil_reserv_c2	Amount of oil reserves in state B; continuous; log			*H_oil_reserves_pop_c2*	Amount of oil reserves in state B discounted by level of population of state B; continuous	*H_oil_reserves_gdp_c2*	Amount of oil reserves in state B discounted by level of GDP of state B; continuous	*outside_wood_dep*	Degree of outside dependence on wood for state A; continuous
	H_oil_reserves_pc_c1	Amount of oil reserves in state A; continuous; per capita			*H_oil_reserves_gdp_c2*	Amount of oil reserves in state B discounted by level of GDP of state B; continuous	*H_oil_reserves_cap_c2*	Amount of oil reserves in state B discounted by level of capability of state B; continuous		
	H_oil_reserves_pc_c2	Amount of oil reserves in state B; continuous; per capita			*H_oil_reserves_cap_c2*	Amount of oil reserves in state B discounted by level of capability of state B; continuous	*H_oil_reserves_dev_c2*	Amount of oil reserves in state B discounted by level of development of state B; continuous		
	H_oil_prod_c1	Amount of oil production in state A; continuous; barrels			*H_oil_reserves_dev_c2*	Amount of oil reserves in state B discounted by level of development of state B; continuous	*H_no_oil_prod1*	Indicator for absense of oil production in State A; dummy		
	H_oil_prod_c2	Amount of oil production in state B; continuous; barrels			*H_oil_prod_c2*	Amount of oil production in state B; continuous; barrels	*H_oil_prod2*	Indicator for presence of oil production in State B; dummy		
	H_log_oil_prod_c1	Amount of oil production in state A; continuous; log			*H_oil_prod2*	Indicator for presence of oil production in State B; dummy	*H_oil_prod_pop_c1*	Amount of oil production in state B discounted by level of population of state B; continuous		
	H_log_oil_prod_c2	Amount of oil production in state B; continuous; log			*H_log_oil_prod_c2*	Amount of oil production in state B; continuous; log	*H_oil_prod_gdp_c1*	Amount of oil production in state B discounted by level of GDP of state B; continuous		
	H_oil_prod_pc_c1	Amount of oil production in state A; continuous; per capita			*H_oil_prod_pop_c1*	Amount of oil production in state B discounted by level of population of state B; continuous	*H_oil_prod_cap_c1*	Amount of oil production in state B discounted by level of capability of state B; continuous		
	H_oil_prod_pc_c2	Amount of oil production in state B; continuous; per capita			*H_oil_prod_gdp_c1*	Amount of oil production in state B discounted by level of GDP of state B; continuous	*H_oil_prod_dev_c1*	Amount of oil production in state B discounted by level of development of state B; continuous		
					H_oil_prod_cap_c1	Amount of oil production in state B discounted by level of capability of state B; continuous				
					H_oil_prod_dev_c1	Amount of oil production in state B discounted by level of development of state B; continuous				

Source: Author's compilation

Figure 8.2.1 continued

Data Source	Stage 1 (Section 4.6.1) Variable Names	Stage 1 Description	Stage 2 (Section 4.6.2) Variable Names	Stage 2 Description	Stage 3 (Section 4.6.3) Variable Names	Stage 3 Description	Stage 4 (Section 4.6.4) Variable Names	Stage 4 Description	Stage 5 (Section 4.6.5) Variable Names	Stage 5 Description
Ross & Mahdavi	R_oil_prod_c1	Amount of oil production in state A; continuous; metric tonnes	R_no_oil_prod1	Indicator for absense of oil production in State A; dummy	R_oil_prod_c2	Amount of oil production in state B; continuous; metric tonnes	R_no_oil_prod1	Indicator for absense of oil production in State A; dummy		
	R_oil_prod_c2	Amount of oil production in state B; continuous; metric tonnes	R_net_imp_c1	Amount of net oil imports of State A; continuous; metric tonnes	R_log_oil_prod_c2	Amount of oil production in state B; continuous; log	R_oil_prod2	Indicator for presence of oil production in State B; dummy		
	R_log_oil_prod_c1	Amount of oil production in state A; continuous; log			R_oil_prod2	Indicator for presence of oil production in State B; dummy	R_oil_prod_c2	Amount of oil production in state B; continuous; metric tonnes		
	R_log_oil_prod_c2	Amount of oil production in state B; continuous; log			R_oil_val_prod_c2	Amount of oil production in state B; continuous; current USD	R_oil_val_prod_c2	Amount of oil production in state B; continuous; current USD		
	R_oil_prod_pc_c1	Amount of oil production in state A; continuous; per capita			R_log_oil_val_prod_c2	Amount of oil production in state B; continuous; log	R_oil_prod_pop_c2	Amount of oil production in state B discounted by level of population of state B; continuous		
	R_oil_prod_pc_c2	Amount of oil production in state B; continuous; per capita			R_oil_prod_pop_c2	Amount of oil production in state B discounted by level of population of state B; continuous	R_oil_prod_gdp_c2	Amount of oil production in state B discounted by level of GDP of state B; continuous		
	R_oil_val_prod_c1	Value of oil production in state A; continuous; current USD			R_oil_prod_gdp_c2	Amount of oil production in state B discounted by level of GDP of state B; continuous	R_oil_prod_cap_c2	Amount of oil production in state B discounted by level of capability of state B; continuous		
	R_oil_val_prod_c2	Value of oil production in state B; continuous; current USD			R_oil_prod_cap_c2	Amount of oil production in state B discounted by level of capability of state B; continuous	R_oil_prod_dev_c2	Amount of oil production in state B discounted by level of development of state B; continuous		
	R_log_oil_val_prod_c1	Value of oil production in state A; continuous; log			R_oil_prod_dev_c2	Amount of oil production in state B discounted by level of development of state B; continuous	R_oil_val_prod_pop_c1	Value of oil production in state B discounted by level of population of state B; continuous		
	R_log_oil_val_prod_c2	Value of oil production in state B; continuous; log			R_oil_val_prod_pop_c2	Value of oil production in state B discounted by level of population of state B; continuous	R_oil_val_prod_gdp_c1	Value of oil production in state B discounted by level of GDP of state B; continuous		
	R_oil_val_prod_pc_c1	Value of oil production in state A; continuous; per capita			R_oil_val_prod_gdp_c2	Value of oil production in state B discounted by level of GDP of state B; continuous	R_oil_val_prod_cap_c1	Value of oil production in state B discounted by level of capability of state B; continuous		
	R_oil_val_prod_pc_c2	Value of oil production in state B; continuous; per capita			R_oil_val_prod_cap_c2	Value of oil production in state B discounted by level of capability of state B; continuous	R_oil_val_prod_dev_c1	Value of oil production in state B discounted by level of development of state B; continuous		
	R_net_imp_c1	Amount of net oil imports of State A; continuous; metric tonnes			R_oil_val_prod_dev_c2	Value of oil production in state B discounted by level of development of state B; continuous				
	R_net_imp_c2	Amount of net oil imports of State B; continuous; metric tonnes								

Source: Author's compilation

Figure 8.2.1 continued

	Stage 1 (Section 4.6.1)		Stage 2 (Section 4.6.2)		Stage 3 (Section 4.6.3)		Stage 4 (Section 4.6.4)		Stage 5 (Section 4.6.5)	
Data Source	Variable Names	Description	Variable Names	Description	Variable Names	Description	Variable Names	Description	Variable Names	Description
World Bank	*W_oil_rents_c1*	Amount of oil rents received by state A; continuous; current USD	*W_no_oil_rent1*	Indicator for absence of oil rents in State A; dummy	*W_oil_rents_c2*	Indicator for presence of oil rents in State B; dummy	*W_no_oil_rent1*	Indicator for absence of oil rents in State A; dummy	***Note:***	Replace every 'res' (resource) with following: (1) 'oil'; (2) 'gas'; (3) 'coal'; (4) 'miner'; (5) 'wood'.
	W_oil_rents_c2	Amount of oil rents received by state B; continuous; current USD					*W_oil_rents2*	Indicator for presence of oil rents in State B; dummy	*W_no_res_rent1*	Indicator for absence of res rents in State A; dummy
PRIO-GRID	*P_oil_deposits_total_c1*	Number of grid cells containing oil deposits in state A; integer	*P_no_deposits1*	Indicator for absence of grid cells containing oil in State A; dummy	*P_oil_deposits_total_c2*	Indicator for presence of grid cells containing oil in State B; dummy	*P_no_deposits1*	Indicator for absence of grid cells containing oil in State A; dummy	*W_res_rents2*	Indicator for presence of res rents in State B; dummy
	P_oil_deposits_total_c2	Number of grid cells containing oil deposits in state B; integer			*P_oil_dep_total_pop_c2*	Number of grid cells containing oil deposits in state B discounted by level of population of state B; continuous	*P_deposits2*	Indicator for presence of grid cells containing oil in State B; dummy	*W_res_rents_c1*	Amount of res rents received by state A; continuous; current USD
					P_oil_dep_total_gdp_c2	Number of grid cells containing oil deposits in state B discounted by level of GDP of state B; continuous	*P_oil_dep_total_pop_c2*	Number of grid cells containing oil deposits in state B discounted by level of population of state B; continuous	*W_res_rents_c2*	Amount of res rents received by state B; continuous; current USD
					P_oil_dep_total_cap_c2	Number of grid cells containing oil deposits in state B discounted by level of capability of state B; continuous	*P_oil_dep_total_gdp_c2*	Number of grid cells containing oil deposits in state B discounted by level of GDP of state B; continuous	*W_res_rents_pop_c2*	Amount of res rents received by state B discounted by level of population of state B; continuous
					P_oil_dep_total_dev_c2	Number of grid cells containing oil deposits in state B discounted by level of development of state B; continuous	*P_oil_dep_total_cap_c2*	Number of grid cells containing oil deposits in state B discounted by level of capability of state B; continuous	*W_res_rents_gdp_c2*	Amount of res rents received by state B discounted by level of GDP of state B; continuous
							P_oil_dep_total_dev_c2	Number of grid cells containing oil deposits in state B discounted by level of development of state B; continuous	*W_res_rents_cap_c2*	Amount of res rents received by state B discounted by level of capability of state B; continuous
									W_res_rents_dev_c2	Amount of res rents received by state B discounted by level of development of state B; continuous

Source: Author's compilation

Figure 8.2.1 continued

Data Source	Stage 1 (Section 4.6.1) Variable Names	Description	Stage 2 (Section 4.6.2) Variable Names	Description	Stage 3 (Section 4.6.3) Variable Names	Description	Stage 4 (Section 4.6.4) Variable Names	Description	Stage 5 (Section 4.6.5) Variable Names	Description
Lujala et al.	*L_disc_onshore_c1*	Number of onshore fields with a known discovery date in State A; integer	*L_no_disc_onshore1*	Indicator for absence of onshore fields with a known discovery date in State A; dummy			*L_no_disc_onshore1*	Indicator for absence of onshore fields with a known discovery date in State A; dummy		
	L_disc_onshore_c2	Number of onshore fields with a known discovery date in State B; integer			*L_disc_onshore2*	Indicator for presence of onshore fields with a known discovery date in State B; dummy	*L_disc_onshore2*	Indicator for presence of onshore fields with a known discovery date in State B; dummy		
	L_prod_onshore_c1	Number of onshore fields with a known start of production date in State A; integer	*L_no_prod_onshore1*	Indicator for absence of onshore fields with a known start of production date in State A; dummy			*L_no_prod_onshore1*	Indicator for absence of onshore fields with a known start of production date in State A; dummy		
	L_prod_onshore_c2	Number of onshore fields with a known start of production date in State B; integer			*L_prod_onshore2*	Indicator for presence of onshore fields with a known start of production date in State B; dummy	*L_prod_onshore2*	Indicator for presence of onshore fields with a known start of production date in State B; dummy		
	L_disc_offshore_c1	Number of offshore fields with a known discovery date in State A; integer	*L_no_disc_offshore1*	Indicator for absence of offshore fields with a known discovery date in State A; dummy			*L_no_disc_offshore1*	Indicator for absence of offshore fields with a known discovery date in State A; dummy		
	L_disc_offshore_c2	Number of offshore fields with a known discovery date in State B; integer			*L_disc_offshore2*	Indicator for presence of offshore fields with a known discovery date in State B; dummy	*L_disc_offshore2*	Indicator for presence of offshore fields with a known discovery date in State B; dummy		
	L_prod_offshore_c1	Number of offshore fields with a known start of production date in State A; integer	*L_no_prod_offshore1*	Indicator for absence of offshore fields with a known start of production date in State A; dummy			*L_no_prod_offshore1*	Indicator for absence of offshore fields with a known start of production date in State A; dummy		
	L_prod_offshore_c2	Number of offshore fields with a known start of production date in State B; integer			*L_prod_offshore2*	Indicator for presence of offshore fields with a known start of production date in State B; dummy	*L_prod_offshore2*	Indicator for presence of offshore fields with a known start of production date in State B; dummy		
	L_disc_all_c1	Number of onshore and offshore fields where the discovery date is known combined in State A; integer	*L_no_disc_all1*	Indicator for absence of onshore and offshore fields where the discovery date is known combined in State A; dummy			*L_no_disc_all1*	Indicator for absence of onshore and offshore fields where the discovery date is known combined in State A; dummy		
	L_disc_all_c2	Number of onshore and offshore fields where the discovery date is known combined in State B; integer			*L_disc_all2*	Indicator for presence of onshore and offshore fields where the discovery date is known combined in State B; dummy	*L_disc_all2*	Indicator for presence of onshore and offshore fields where the discovery date is known combined in State B; dummy		
	L_disc_full_on_c1	Number of onshore fields where the discovery date is known and unknown combined in State A; integer	*L_no_disc_full_on1*	Indicator for absence of onshore fields where the discovery date is known and unknown combined in State A; dummy			*L_no_disc_full_on1*	Indicator for absence of onshore fields where the discovery date is known and unknown combined in State A; dummy		
	L_disc_full_on_c2	Number of onshore fields where the discovery date is known and unknown combined in State B; integer			*L_disc_full_on2*	Indicator for presence of onshore fields where the discovery date is known and unknown combined in State B; dummy	*L_disc_full_on2*	Indicator for presence of onshore fields where the discovery date is known and unknown combined in State B; dummy		
	L_disc_full_off_c1	Number of offshore fields where the discovery date is known and unknown combined in State A; integer	*L_no_disc_full_off1*	Indicator for absence of offshore fields where the discovery date is known and unknown combined in State A; dummy			*L_no_disc_full_off1*	Indicator for absence of offshore fields where the discovery date is known and unknown combined in State A; dummy		
	L_disc_full_off_c2	Number of offshore fields where the discovery date is known and unknown combined in State B; integer			*L_disc_full_off2*	Indicator for presence of offshore fields where the discovery date is known and unknown combined in State B; dummy	*L_disc_full_off2*	Indicator for presence of offshore fields where the discovery date is known and unknown combined in State B; dummy		

Source: Author's compilation

Figure 8.2.1 continued

	Stage 1 (Section 4.6.1)		Stage 2 (Section 4.6.2)		Stage 3 (Section 4.6.3)		Stage 4 (Section 4.6.4)		Stage 5 (Section 4.6.5)	
Data Source	Variable Names	Description	Variable Names	Description	Variable Names	Description	Variable Names	Description	Variable Names	Description
Lujala et al. (cont.)	*L_disc_full_all_c1*	Number of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State A; integer	*L_no_disc_full_all1*	Indicator for absence of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State A; dummy			*L_no_disc_full_all1*	Indicator for absence of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State A; dummy		
	L_disc_full_all_c2	Number of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State B; integer			*L_disc_full_all2*	Indicator for presence of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State B; dummy	*L_disc_full_all2*	Indicator for presence of onshore fields where the discovery date is known and unknown and offshore fields where the discovery date is known and unknown combined in State B; dummy		
	L_prod_all_c1	Number of onshore and offshore fields where the start of production date is known combined in State A; integer	*L_no_prod_all1*	Indicator for absence of onshore and offshore fields where the start of production date is known combined in State A; dummy			*L_no_prod_all1*	Indicator for absence of onshore and offshore fields where the start of production date is known combined in State A; dummy		
	L_prod_all_c2	Number of onshore and offshore fields where the start of production date is known combined in State B; integer			*L_prod_all2*	Indicator for presence of onshore and offshore fields where the start of production date is known combined in State A; dummy	*L_prod_all2*	Indicator for presence of onshore and offshore fields where the start of production date is known combined in State A; dummy		
	L_prod_full_on_c1	Number of onshore fields where the start of production date is known and unknown combined in State A; integer	*L_no_prod_full_on1*	Indicator for absence of onshore fields where the start of production date is known and unknown combined in State A; dummy			*L_no_prod_full_on1*	Indicator for absence of onshore fields where the start of production date is known and unknown combined in State A; dummy		
	L_prod_full_on_c2	Number of onshore fields where the start of production date is known and unknown combined in State B; integer			*L_prod_full_on2*	Indicator for presence of onshore fields where the start of production date is known and unknown combined in State A; dummy	*L_prod_full_on2*	Indicator for presence of onshore fields where the start of production date is known and unknown combined in State A; dummy		
	L_prod_full_off_c1	Number of offshore fields where the start of production date is known and unknown combined in State A; integer	*L_no_prod_full_off1*	Indicator for absence of offshore fields where the start of production date is known and unknown combined in State A; dummy			*L_no_prod_full_off1*	Indicator for absence of offshore fields where the start of production date is known and unknown combined in State A; dummy		
	L_prod_full_off_c2	Number of offshore fields where the start of production date is known and unknown combined in State B; integer			*L_prod_full_off2*	Indicator for presence of offshore fields where the start of production date is known and unknown combined in State A; dummy	*L_prod_full_off2*	Indicator for presence of offshore fields where the start of production date is known and unknown combined in State A; dummy		
	L_prod_full_all_c1	Number of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State A; integer	*L_no_prod_full_all1*	Indicator for absence of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State A; dummy			*L_no_prod_full_all1*	Indicator for absence of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State A; dummy		
	L_prod_full_all_c2	Number of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State B; integer			*L_prod_full_all2*	Indicator for presence of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State A; dummy	*L_prod_full_all2*	Indicator for presence of onshore fields where the start of production date is known and unknown and offshore fields where the start of production date is known and unknown combined in State A; dummy		

Source: Author's compilation

8.3 Selected Regression Outputs

Table 8.3.1: Selected table for Stage 1

Stage 1 - SELECTED

	(1)	(2)	(3)	(4)	(5)	(6)
	init	init	init	init	init	init
init						
H_oil_reserves_c1	5.70e-12					
	(4.55e-12)					
H_oil_reserves_c2	1.53e-12					
	(3.98e-12)					
H_log_oil_reserv_c1		-1.011				
		(0.854)				
H_log_oil_reserv_c2		-0.166				
		(0.368)				
H_oil_reserves_pc_c1			-0.397			
			(22.63)			
H_oil_reserves_pc_c2			-12.28**			
			(6.237)			
R_oil_prod_c1				-1.14e-09		
				(7.22e-10)		
R_oil_prod_c2				-1.43e-09*		
				(7.53e-10)		
R_log_oil_prod_c1					0.427	
					(0.625)	
R_log_oil_prod_c2					-0.142	
					(0.509)	
R_oil_prod_pc_c1						-0.00000645
						(0.00000434)
R_oil_prod_pc_c2						-0.00000859*
						(0.00000497)
_cons	5.328***	1.506	5.327***	5.960***	3.675	4.787***
	(1.011)	(5.373)	(1.009)	(0.993)	(2.475)	(0.942)
N	55007	3032	53214	85263	43089	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.2: Selected table for Stage 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	no_fixed	no_fixed	no_fixed	no_fixed	init	init	init	init	All_Obs	All_Obs	All_Obs	All_Obs
main												
outside_oil_dep_c1	-0.0297*	-0.0164	-0.0304***	-0.0310***	-0.0399	-0.0339*	-0.0303***	-0.0295**	-0.0643***	-0.0524***	-0.0438***	-0.0417***
	(0.0161)	(0.0116)	(0.00962)	(0.00999)	(0.0299)	(0.0186)	(0.0114)	(0.0124)	(0.0223)	(0.0119)	(0.00900)	(0.00882)
1.H_no_oil_reserves1	-0.720***				-1.455***				-1.899***			
	(0.140)				(0.336)				(0.322)			
1.H_no_oil_reserves1#c.outsi~l	0.0443***				0.0527*				0.0676***			
	(0.0170)				(0.0313)				(0.0242)			
R_net_oil_imp_c1	1.53e-09	1.50e-09	2.60e-09***	2.58e-09***	-1.13e-09	-1.41e-09	1.64e-09	1.60e-09	-1.10e-09	-1.23e-09	1.36e-09	1.29e-09
	(1.14e-09)	(1.12e-09)	(6.69e-10)	(6.80e-10)	(1.81e-09)	(1.72e-09)	(1.16e-09)	(1.15e-09)	(1.99e-09)	(1.94e-09)	(1.23e-09)	(1.22e-09)
1.H_no_oil_prod1		-0.709***				-12.61***				0.115		
		(0.166)				(1.067)				(1.250)		
1.H_no_oil_prod1#c.outside_o~p		0.0323**				0.0602***				0.0788***		
		(0.0129)				(0.0232)				(0.0183)		
1.R_no_oil_prod1			-0.498***				-0.977				-0.538	
			(0.132)				(0.804)				(0.695)	
1.R_no_oil_prod1#c.outside_o~p			0.0320***				0.0296**				0.0445***	
			(0.00969)				(0.0116)				(0.00910)	
1.P_no_deposits1				-0.362***				-0.189				-0.384
				(0.135)				(0.411)				(0.387)
1.P_no_deposits1#c.outside_o~p				0.0321***				0.0281**				0.0418***
				(0.0101)				(0.0127)				(0.00902)
_cons	1.393	0.659	-1.492	-1.580	7.016***	6.630***	3.048*	3.044*	8.527***	8.115***	5.105***	5.120***
	(1.362)	(1.334)	(1.232)	(1.243)	(1.850)	(1.839)	(1.634)	(1.631)	(1.382)	(1.369)	(1.263)	(1.260)
N	27619	27619	57324	57335	14825	14825	36224	36224	91578	91578	244793	244793

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.3: Selected table for Stage 3 – Relative reserve measures

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
H_oil_reserves_c2	2.38e-12				
	(3.85e-12)				
H_oil_reserves_pop_c2		-0.0000111*			
		(0.00000621)			
H_oil_reserves_gdp_c2			0.0125		
			(0.0450)		
H_oil_reserves_cap_c2				-7.07e-15	
				(1.27e-14)	
H_oil_reserves_dev_c2					2.58e-08***
					(7.26e-09)
_cons	5.471***	5.468***	5.452***	5.515***	5.339***
	(1.004)	(1.006)	(1.006)	(1.000)	(1.004)
N	56433	55532	55532	56433	55532

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.3.2: Selected table for Stage 3 – Dummy approach I

	(1) init	(2) init	(3) init	(4) init
init				
H_oil_reserves_c2	1.70e-12	2.00e-11**	1.80e-12	1.29e-11**
	(4.40e-12)	(9.89e-12)	(6.44e-12)	(5.95e-12)
1.D_pop	0.287			
	(0.262)			
1.D_pop#c.H_oil_reserves_c2	3.65e-12			
	(7.29e-12)			
1.D_gdp		0.113		
		(0.151)		
1.D_gdp#c.H_oil_reserves_c2		-1.73e-11**		
		(7.24e-12)		
1.D_cap			-0.221	
			(0.403)	
1.D_cap#c.H_oil_reserves_c2			1.16e-12	
			(5.13e-12)	
1.D_dev				0.256*
				(0.145)
1.D_dev#c.H_oil_reserves_c2				-1.09e-11**
				(4.79e-12)
_cons	5.139***	5.459***	5.757***	5.358***
	(1.047)	(1.019)	(1.072)	(1.010)
N	55510	55510	56411	55510

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.3.3: Selected table for Stage 3 – Relative reserve measures

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
H_oil_reserves_c2	3.57e-12	7.24e-13	2.68e-13	-1.72e-12
	(3.90e-12)	(3.40e-12)	(4.03e-12)	(3.20e-12)
1.R_pop	-0.0681			
	(0.167)			
1.R_pop#c.H_oil_reserves_c2	-1.91e-12			
	(3.32e-12)			
1.R_gdp		0.0566		
		(0.155)		
1.R_gdp#c.H_oil_reserves_c2		5.26e-12*		
		(2.92e-12)		
1.R_cap			-0.0333	
			(0.145)	
1.R_cap#c.H_oil_reserves_c2			4.65e-12*	
			(2.66e-12)	
1.R_dev				-0.133
				(0.119)
1.R_dev#c.H_oil_reserves_c2				1.17e-11***
				(2.88e-12)
_cons	5.488***	5.386***	5.573***	5.563***
	(1.025)	(1.020)	(1.020)	(1.013)
N	54531	54531	56411	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.4: Selected table for Stage 3 – Relative production measures

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
H_oil_prod_c2	-3.08e-10**				
	(1.37e-10)				
H_oil_prod_pop_c2		-0.00130**			
		(0.000608)			
H_oil_prod_gdp_c2			-5.748**		
			(2.854)		
H_oil_prod_cap_c2				-1.12e-12**	
				(5.22e-13)	
H_oil_prod_dev_c2					7.13e-09
					(0.000000330)
_cons	6.420***	5.497***	5.507***	5.543***	5.454***
	(1.078)	(1.006)	(1.006)	(1.000)	(1.024)
N	56433	55532	55532	56433	55532

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.5: Selected table for Stage 4 – relative reserve measures

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep_c1	0.00126	0.000793	0.00120	0.00130
	(0.00129)	(0.00135)	(0.00132)	(0.00136)
H_oil_reserves_pop_c2	-0.0000110*			
	(0.00000602)			
c.outside_oil_dep_c1#c.H_oil~r	0.000000127			
	(0.000000622)			
O_net3_oil_imp_c1	-3.34e-12	-3.82e-12	-3.92e-12	-3.81e-12
	(6.96e-12)	(6.85e-12)	(6.83e-12)	(6.85e-12)
H_oil_reserves_gdp_c2		0.00347		
		(0.0443)		
c.outside_oil_dep_c1#c.H_oil~r		0.0115*		
		(0.00626)		
H_oil_reserves_cap_c2			-6.93e-15	
			(1.26e-14)	
c.outside_oil_dep_c1#c.H_oil~r			1.11e-16	
			(5.23e-16)	
H_oil_reserves_dev_c2				2.57e-08***
				(7.44e-09)
c.outside_oil_dep_c1#c.H_oil~r				-2.65e-11
				(3.87e-10)
_cons	5.585***	5.567***	5.674***	5.468***
	(1.028)	(1.031)	(1.023)	(1.025)
N	54531	54531	55432	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.6: Selected table for Stage 4 – relative production measures - Humphreys

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep_c1	0.00103	0.000529	0.000426	0.00189
	(0.00133)	(0.00148)	(0.00149)	(0.00134)
H_oil_prod_pop_c2	-0.00136**			
	(0.000636)			
c.outside_oil_dep_c1#c.H_oil~_	0.0000236			
	(0.0000227)			
O_net3_oil_imp_c1	-3.43e-12	-3.45e-12	-3.98e-12	-3.27e-12
	(6.97e-12)	(6.81e-12)	(6.78e-12)	(6.91e-12)
H_oil_prod_gdp_c2		-6.195**		
		(3.141)		
c.outside_oil_dep_c1#c.H_oil~_		0.384		
		(0.278)		
H_oil_prod_cap_c2			-1.18e-12**	
			(5.48e-13)	
c.outside_oil_dep_c1#c.H_oil~_			2.41e-14*	
			(1.36e-14)	
H_oil_prod_dev_c2				7.91e-08
				(0.000000336)
c.outside_oil_dep_c1#c.H_oil~_				-2.51e-08
				(2.16e-08)
_cons	5.618***	5.604***	5.702***	5.581***
	(1.028)	(1.027)	(1.023)	(1.046)
N	54531	54531	55432	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.7: Selected table for Stage 4 – relative production measures - Ross

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep_c1	-0.000525	-0.00123	-0.00103	-0.000142
	(0.00143)	(0.00178)	(0.00169)	(0.00137)
R_oil_prod_pop_c2	-0.00933*			
	(0.00528)			
c.outside_oil_dep_c1#c.R_oil~_	0.000113			
	(0.000155)			
R_oil_prod_gdp_c2		-43.32*		
		(25.56)		
c.outside_oil_dep_c1#c.R_oil~_		3.269		
		(2.397)		
R_oil_prod_cap_c2			-9.90e-12**	
			(4.47e-12)	
c.outside_oil_dep_c1#c.R_oil~_			1.43e-13	
			(1.11e-13)	
R_oil_prod_dev_c2				0.00000327**
				(0.00000153)
c.outside_oil_dep_c1#c.R_oil~_				-3.51e-08
				(6.33e-08)
_cons	4.776***	4.759***	4.866***	4.531***
	(0.942)	(0.941)	(0.939)	(0.953)
N	80071	80071	82493	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.8: Selected table for Stage 5 – Oil rents

	(1) init	(2) init	(3) init	(4) init
init				
W_oil_rents_pop_c2	-0.0000461			
	(0.0000345)			
W_oil_rents_gdp_c2		-1.583*		
		(0.839)		
W_oil_rents_cap_c2			-3.96e-14**	
			(1.82e-14)	
W_oil_rents_dev_c2				1.95e-09
				(5.46e-09)
_cons	1.858	1.827	1.814	1.801
	(1.360)	(1.355)	(1.357)	(1.357)
N	54464	54464	54464	54464

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.9: Selected table for Stage 5 – Coal rents

	(1) init	(2) init	(3) init	(4) init
init				
W_coal_rents_pop_c2	0.00123			
	(0.00162)			
W_coal_rents_gdp_c2		14.71**		
		(6.864)		
W_coal_rents_cap_c2			1.93e-13	
			(2.36e-13)	
W_coal_rents_dev_c2				1.29e-08*
				(6.88e-09)
_cons	1.759	1.725	1.774	1.736
	(1.351)	(1.349)	(1.351)	(1.349)
N	55442	55442	55442	55442

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.10: Selected table for Stage 6 - Centrality Measures

Stage 6 - SELECTED

	(1) init	(2) init	(3) init
init			
outside_oil_dep_c1	0.0102***	0.0230	0.0245
	(0.00352)	(0.0197)	(0.0238)
O_in_degree_c1	0.000666		
	(0.00433)		
c.outside_oil_dep_c1#c.O_in_~e	-0.000510***		
	(0.000193)		
O_net3_oil_imp_c1	2.66e-12**	1.88e-12	1.39e-12
	(1.28e-12)	(1.40e-12)	(1.26e-12)
O_closeness_c1		-0.799	
		(0.570)	
c.outside_oil_dep_c1#c.O_clo~s		-0.0399	
		(0.0343)	
O_closeness_nosym_c1			0.501
			(0.533)
c.outside_oil_dep_c1#c.O_clo~s			-0.0467
			(0.0434)
_cons	3.866***	4.578***	3.666***
	(0.998)	(1.061)	(1.021)
N	79572	79572	79572
AIC	9161.1	9161.9	9164.7

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.11: Selected table for Stage 6 – Centrality Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	init	init	init	init	init	init	init	init	init
init									
outside_oil_dep_c1	0.0102***	0.0103***	0.00859***	0.00667**	0.00498**	0.00361*	0.00254	0.00119	0.000795
	(0.00352)	(0.00329)	(0.00303)	(0.00271)	(0.00241)	(0.00213)	(0.00189)	(0.00163)	(0.00160)
alpha00	0.000666								
	(0.00433)								
c.outside_oil_dep_c1#c.alpha00	-0.000510***								
	(0.000193)								
O_net3_oil_imp_c1	2.66e-12**	3.20e-12**	3.59e-12**	3.88e-12**	4.12e-12**	4.32e-12**	4.47e-12**	4.63e-12**	4.65e-12**
	(1.28e-12)	(1.41e-12)	(1.57e-12)	(1.72e-12)	(1.83e-12)	(1.91e-12)	(1.96e-12)	(2.00e-12)	(1.99e-12)
alpha01		0.000365							
		(0.000645)							
c.outside_oil_dep_c1#c.alpha01		-0.0000832***							
		(0.0000292)							
alpha02			0.0000664						
			(0.0000900)						
c.outside_oil_dep_c1#c.alpha02			-0.0000115***						
			(0.00000424)						
alpha03				0.00000916					
				(0.0000120)					
c.outside_oil_dep_c1#c.alpha03				-0.00000144**					
				(0.000000564)					
alpha04					0.00000110				
					(0.00000157)				
c.outside_oil_dep_c1#c.alpha04					-0.000000172**				
					(7.18e-08)				
alpha05						0.000000123			
						(0.000000202)			
c.outside_oil_dep_c1#c.alpha05						-1.98e-08**			
						(8.91e-09)			
alpha06							1.29e-08		
							(2.57e-08)		
c.outside_oil_dep_c1#c.alpha06							-2.22e-09**		
							(1.09e-09)		
alpha08								1.30e-10	
								(3.97e-10)	
c.outside_oil_dep_c1#c.alpha08								-2.67e-11*	
								(1.57e-11)	
alpha09									1.32e-11
									(4.82e-11)
c.outside_oil_dep_c1#c.alpha09									-2.90e-12
									(1.86e-12)
_cons	3.866***	3.833***	3.817***	3.811***	3.811***	3.814***	3.816***	3.816***	3.814***
	(0.998)	(1.000)	(1.001)	(1.003)	(1.004)	(1.004)	(1.005)	(1.004)	(1.003)
N	79572	79572	79572	79572	79572	79572	79572	79572	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.12: Selected table for Stage 6 – Balance-Sensitive Degree Centrality Measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	init	init	init	init	init	init	init	init	init
init									
outside_oil_dep_c1	0.0102***	0.00768**	0.00556**	0.00419*	0.00324	0.00251	0.00190	0.00102	0.000727
	(0.00352)	(0.00315)	(0.00273)	(0.00244)	(0.00222)	(0.00202)	(0.00185)	(0.00164)	(0.00160)
alpha_2_00	0.000666								
	(0.00433)								
c.outside_oil_dep_c1#c.alph~00	-0.000510***								
	(0.000193)								
O_net3_oil_imp_c1	2.66e-12**	2.75e-12*	2.78e-12*	2.98e-12*	3.29e-12*	3.64e-12*	3.96e-12**	4.44e-12**	4.57e-12**
	(1.28e-12)	(1.43e-12)	(1.58e-12)	(1.70e-12)	(1.79e-12)	(1.86e-12)	(1.92e-12)	(1.97e-12)	(1.98e-12)
alpha_2_01		0.000796							
		(0.000834)							
c.outside_oil_dep_c1#c.alph~01		-0.0000955**							
		(0.0000392)							
alpha_2_02			0.000158						
			(0.000131)						
c.outside_oil_dep_c1#c.alph~02			-0.0000147**						
			(0.00000637)						
alpha_2_03				0.0000219					
				(0.0000186)					
c.outside_oil_dep_c1#c.alph~03				-0.00000202**					
				(0.000000904)					
alpha_2_04					0.00000258				
					(0.00000246)				
c.outside_oil_dep_c1#c.alph~04					-0.000000256**				
					(0.000000117)				
alpha_2_05						0.000000271			
						(0.000000309)			
c.outside_oil_dep_c1#c.alph~05						-3.00e-08**			
						(1.43e-08)			
alpha_2_06							2.61e-08		
							(3.74e-08)		
c.outside_oil_dep_c1#c.alph~06							-3.29e-09**		
							(1.65e-09)		
alpha_2_08								1.99e-10	
								(4.95e-10)	
c.outside_oil_dep_c1#c.alph~08								-3.43e-11*	
								(2.00e-11)	
alpha_2_09									1.65e-11
									(5.43e-11)
c.outside_oil_dep_c1#c.alph~09									-3.33e-12
									(2.12e-12)
_cons	3.866***	3.809***	3.781***	3.782***	3.793***	3.805***	3.813***	3.818***	3.816***
	(0.998)	(1.000)	(1.002)	(1.003)	(1.004)	(1.004)	(1.005)	(1.004)	(1.003)
N	79572	79572	79572	79572	79572	79572	79572	79572	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.13: Selected table for Stage 7 – Oil measures discounted by target state export egonet size

Stage 7

	(1) init	(2) init	(3) init	(4) init	(5) init	(6) init
init						
O_in_degree_exp_c2	-0.0107***					
	(0.00234)					
R_oil_prod_exp_c2		2.65e-08*				
		(1.53e-08)				
R_oil_val_prod_exp_c2			8.14e-11**			
			(3.22e-11)			
H_oil_prod_exp_c2				-1.99e-09		
				(5.52e-09)		
H_oil_reserves_exp_c2					1.38e-10***	
					(3.36e-11)	
P_oil_dep_total_exp_c2						0.00273
						(0.00175)
_cons	4.582***	4.204***	4.224***	4.938***	4.860***	4.148***
	(0.998)	(0.971)	(0.960)	(1.095)	(1.072)	(0.979)
N	82341	73309	73309	46009	46009	70957

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 8.3.14: Selected table for Stage 7 – Oil measures discounted by target state export egonet size

Stage 7 - Aggregate Concentrations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	no_fixed	no_fixed	init	init	rev_b	rev_b	rev_r	rev_r	All_Obs	All_Obs
main										
R_prod_agg_total_c2	1.76e-10***		-1.44e-10**		-4.00e-11		2.22e-12**		-4.87e-11	
	(5.37e-11)		(6.56e-11)		(9.20e-11)		(1.06e-12)		(6.35e-11)	
H_reserve_agg_total_c2		0.000596***		0.000389**		0.000546***		0.00000134		0.000551***
		(0.000161)		(0.000159)		(0.000195)		(0.00000179)		(0.000155)
_cons	-2.187**	-2.219**	4.305***	3.967***	2.229	1.885	0.0716***	0.0740***	5.942***	5.603***
	(0.962)	(0.975)	(0.987)	(0.975)	(1.418)	(1.406)	(0.0165)	(0.0165)	(0.852)	(0.860)
N	100211	100211	82341	82341	70984	70984	100211	100211	560595	560595

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

8.4 Data Sources

Data	Period	Type	Source	Citation	Available by
Militarized interstate dispute level	1816 – 2010	event	http://correlatesofwar.org/data-sets/MIDs	Palmer, Glenn, Vito D'Orazio, Michael Kenwick, and Matthew Lane. 2015. "The MID4 Data Set: Procedures, Coding Rules, and Description." Conflict Management and Peace Science. Forthcoming.	Correlates of War
Reserves oil	1960 – 1999	barrels	http://www.macartan.nyc/writing/	Humphreys, M. (2005). Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. Journal of Conflict Resolution, 49, 508-38.	Humphreys (2005)
Extraction oil	1960 – 1999	barrels	http://www.macartan.nyc/writing/	Humphreys, M. (2005). Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. Journal of Conflict Resolution, 49, 508-38.	Humphreys (2005)
Production oil	1932 – 2014	metric tonnes	https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/ZTPW0Y	Ross, Michael; Mahdavi, Paasha, 2015, "Oil and Gas Data, 1932-2014", Harvard Dataverse, V2	Ross & Mahdavi (2014)
Value production oil	1932 – 2014	current US dollars	https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/ZTPW0Y	Ross, Michael; Mahdavi, Paasha, 2015, "Oil and Gas Data, 1932-2014", Harvard Dataverse, V2	Ross & Mahdavi (2014)
Net imports oil	1932 – 2014	metric tonnes	https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/ZTPW0Y	Ross, Michael; Mahdavi, Paasha, 2015, "Oil and Gas Data, 1932-2014", Harvard Dataverse, V2	Ross & Mahdavi (2014)
Fields oil & gas	constant	dummy for resource presence	https://www.prio.org/Data/Geographical-and-Resource-Datasets/Petroleum-Dataset/Petroleum-Dataset-v-12/	Lujala, R. & Thieme, N. (2007). Fighting over Oil: Introducing a New Datast. *Conflict Management and Peace Science*, 24, 239-256.	PRIO-GRID
Rents oil	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank
Rents natural gas	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank
Rents Coal	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank
Rents mineral	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank
Rents forest	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank
Total natural resource rents	1970 – 2013	% of GDP	http://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS	Estimates based on sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium" (World Bank, 2011).	World Bank

8.4 Data Sources – continued

Data	Period	Type	Source	Citation	Available by
Oil transfers	1962–2014	current US dollars	http://atlas.media.mit.edu/de/	Feenstra, R. C., et al. (2005). World Trade Flows, 1962–2000. NBER working paper 11040 United Nations Statistics Division. UN comtrade. New York: United Nations.	Observatory of Economic Complexity
Population	1960–2014	population count	http://privatewww.essex.ac.uk/~ksg/exptradegdp.html	Gleditsch, Kristian Skrede (2002) Expanded Trade and GDP Data, Journal of Conflict Resolution 46(5): 712–724.	Gleditsch (2002)
GDP		current US dollars	http://privatewww.essex.ac.uk/~ksg/exptradegdp.html	Gleditsch, Kristian Skrede (2002) Expanded Trade and GDP Data, Journal of Conflict Resolution 46(5): 712–724.	Gleditsch (2002)
Dyadic trade	1870–2009	current US dollars	http://correlatesofwar.org/data-sets/bilateral-trade	Barbieri, Katherine and Omar Keshk. 2012. Correlates of War Project Trade Data Set Codebook, Version 3.0. Online: http://correlatesofwar.org. Barbieri, Katherine, Omar M. G. Keshk, and Brian Pollins. 2009. "TRADING DATA: Evaluating our Assumptions and Coding Rules." Conflict Management and Peace Science. 26(5): 471-491.	Correlates of War
Territorial change	1816–2014	area, population	http://correlatesofwar.org/data-sets/territorial-change	Tir, Jaroslav, Philip Schafer, Paul Diehl, and Gary Goertz. 1998. "Territorial Changes, 1816-1996: Procedures and Data" Conflict Management and Peace Science 16:89-97.	Correlates of War
Formal alliance	1816–2012	alliance type	http://correlatesofwar.org/data-sets/formal-alliances	Gibler, Douglas M. 2009. International military alliances, 1648-2008. CQ Press.	Correlates of War
National material capabilities	1816–2007	capability level	http://correlatesofwar.org/data-sets/national-material-capabilities	Singer, J. David, Stuart Bremer, and John Stuckey. (1972). "Capability Distribution, Uncertainty, and Major Power War, 1820-1965." in Bruce Russett (ed) Peace, War, and Numbers, Beverly Hills: Sage, 19-48.	Correlates of War
Intergovernmental organizations	1815–2005	membership type	http://correlatesofwar.org/data-sets/IGOs	Pevehouse, Jon C., Timothy Nordstrom, and Kevin Warnke. 2004. "The COW-2 International Organizations Dataset Version 2.0," Conflict Management and Peace Science 21:101-119.	Correlates of War
Direct contiguity	1816–2006	contiguity type	http://correlatesofwar.org/data-sets/direct-contiguity	Correlates of War Project. Direct Contiguity Data, 1816-2006. Version 3.1. Online: http://correlatesofwar.org.	Correlates of War
Colonial / Dependency contiguity	1816–2002	contiguity type	http://correlatesofwar.org/data-sets/colonial-dependency-contiguity	Correlates of War 2 Project. Colonial/Dependency Contiguity Data, 1816-2002. Version 3.0. Online: http://correlatesofwar.org.	Correlates of War
Civil	1946–2015	event	https://www.prio.org/Data/Armed-Conflict/UCDP-PRIO/	Gleditsch, Nils Petter; Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg & Håvard Strand (2002) Armed Conflict 1946–2001: A New Dataset. Journal of Peace Research 39(5): 615–637. Pettersson, Therése & Peter Wallensteen (2015) Armed Conflict, 1946-2014 Journal of Peace Research 52(4).	UCDP-PRIO
Democracy	1800–2015	Polity Index	http://www.systemicpeace.org/inscrdata.html	Marshall, Monty G., and Keith Jaggers. (2010). Polity IV Project: Political Regime Characteristics and Transitions, 1800–2008.	Center for Systemic Peace

8.5 Additional Selected Robustness Tables (in order of in-text reference)

Table (set) 8.5.1: Robustness Tests for different operationalizations of resource dependence and resource imports

All presented tests are conducted (I) **Monadic** level with **non-standardized** degree centrality (II) **Monadic level** with **standardized** degree centrality (III) **Dyadic** level with **non-standardized** degree centrality and control vector **X'** (IV) **Dyadic** level with **non-standardized** degree centrality and control vector **X2'** (V) **Dyadic** level with **standardized** degree centrality and control vector **X'** (VI) **Dyadic** level with **standardized** degree centrality and control vector **X2'**– the results are highly robust throughout *all* models.

For Monadic: [(1) i.region (2) i.region i.ccode1 (3) i.region i.year (4) i.region i.ccode1 i.year]
For Dyadic: [(1) – (2) i.ccode1 i.ccode2 (3) i.year (4) i.ccode1 i.ccode2 i.year]

Table (set) 8.5.1.1 - (I) **Monadic** level with **non-standardized** degree centrality

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep2_c1	-0.000527	-0.000776	-0.000638	-0.00108
	(0.000600)	(0.00113)	(0.000604)	(0.00123)
O_in_degree_c1	-0.0122***	-0.00866	-0.0106**	-0.00817
	(0.00425)	(0.00616)	(0.00481)	(0.00759)
c.outside_oil_dep2_c1#c.O_in~e	0.0000321	0.00000209	0.0000376	-0.00000201
	(0.0000413)	(0.0000727)	(0.0000431)	(0.0000812)
O_net3_oil_imp_c1	3.29e-12	1.69e-12	3.09e-12	2.29e-12
	(2.22e-12)	(2.84e-12)	(2.34e-12)	(2.96e-12)
_cons	-4.199***	-2.636	-4.528***	2.141
	(0.633)	(1.683)	(0.748)	(2.491)
N	6693	5900	6693	5900

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00424	0.00764	0.00188	0.00192
	(0.00424)	(0.00656)	(0.00419)	(0.00716)
O_in_degree_c1	-0.00651	-0.00140	-0.00780	-0.00446
	(0.00626)	(0.00917)	(0.00670)	(0.0113)
c.outside_oil_dep2_c1#c.O_in~e	-0.000478**	-0.000573*	-0.000280	-0.000254
	(0.000212)	(0.000309)	(0.000204)	(0.000307)
O_net3_oil_imp_c1	3.80e-12	-5.53e-13	6.45e-12**	3.57e-12
	(2.58e-12)	(2.94e-12)	(2.87e-12)	(5.42e-12)
_cons	-4.724***	-2.805	-4.964***	-0.339
	(0.782)	(2.332)	(0.986)	(3.944)
N	4702	4013	4702	4013

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep2_c1	0.00255	0.00770	-0.000124	0.00282
	(0.00480)	(0.00642)	(0.00471)	(0.00689)
O_in_degree_c1	-0.00904	-0.00111	-0.00989	-0.00276
	(0.00796)	(0.00965)	(0.00850)	(0.0121)
c.outside_oil_dep2_c1#c.O_in~e	-0.000412*	-0.000550*	-0.000215	-0.000233
	(0.000230)	(0.000311)	(0.000221)	(0.000303)
O_net3_oil_imp_c1	4.10e-12	-7.38e-13	6.79e-12**	3.43e-12
	(2.67e-12)	(2.93e-12)	(2.98e-12)	(5.46e-12)
_cons	-4.630***	-3.043	-4.756***	-0.519
	(0.827)	(2.372)	(1.047)	(4.111)
N	4439	3768	4439	3768

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00135**	-0.00143	-0.00121**	-0.00150
	(0.000573)	(0.00131)	(0.000590)	(0.00138)
O_in_degree_c1	-0.00818	-0.00580	-0.00977	-0.00510
	(0.00867)	(0.0141)	(0.0106)	(0.0165)
c.outside_oil_dep2_c1#c.O_in~e	0.000139**	0.000106	0.000132**	0.0000732
	(0.0000585)	(0.0000888)	(0.0000592)	(0.0000948)
O_net3_oil_imp_c1	2.45e-12	2.72e-12	-3.35e-13	-2.25e-12
	(2.88e-12)	(3.51e-12)	(4.38e-12)	(5.63e-12)
_cons	-3.996***	-2.480	-4.410***	-2.199
	(1.320)	(3.275)	(1.455)	(4.134)
N	1991	1675	1991	1675

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00399	0.00725**	0.00184	0.00418
	(0.00307)	(0.00326)	(0.00324)	(0.00320)
O_in_degree_c1	-0.00367	0.00141	-0.00561	-0.00300
	(0.00500)	(0.00672)	(0.00541)	(0.00822)
c.outside_oil_dep3_c1#c.O_in~e	-0.000442***	-0.000593***	-0.000267*	-0.000358**
	(0.000164)	(0.000192)	(0.000155)	(0.000178)
O_total_oil_imp_c1	3.08e-12	-3.84e-14	5.58e-12**	3.40e-12
	(2.17e-12)	(2.98e-12)	(2.61e-12)	(5.46e-12)
_cons	-3.925***	-2.408	-4.233***	2.556
	(0.654)	(1.629)	(0.778)	(2.456)
N	6693	5900	6693	5900

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table (set) 8.5.1.2- (II) **Monadic level** with **standardized** degree centrality

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.000500	-0.000699	-0.000590	-0.00104
	(0.000632)	(0.00120)	(0.000644)	(0.00127)
st_in_degree_L_net_oil_imp_c1	-2.313***	-2.242**	-1.863**	-1.642
	(0.759)	(1.092)	(0.820)	(1.263)
c.outside_oil_dep2_c1#c.st_i~r	0.00514	-0.000447	0.00563	-0.000745
	(0.00789)	(0.0136)	(0.00828)	(0.0146)
O_net3_oil_imp_c1	3.38e-12	1.93e-12	3.02e-12	2.19e-12
	(2.13e-12)	(2.77e-12)	(2.30e-12)	(2.82e-12)
_cons	-4.046***	-2.438	-4.477***	2.029
	(0.619)	(1.638)	(0.746)	(2.466)
N	6693	5900	6693	5900

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00559	0.00929	0.00448	0.00626
	(0.00424)	(0.00591)	(0.00413)	(0.00665)
st_in_degree_L_net_oil_imp_c1	-1.443	-0.864	-1.467	-0.769
	(1.103)	(1.577)	(1.144)	(1.878)
c.outside_oil_dep2_c1#c.st_i~r	-0.0872***	-0.104**	-0.0648**	-0.0719
	(0.0336)	(0.0470)	(0.0330)	(0.0477)
O_net3_oil_imp_c1	3.65e-12	-4.65e-13	6.55e-12**	4.04e-12
	(2.50e-12)	(2.94e-12)	(2.84e-12)	(5.58e-12)
_cons	-4.624***	-2.608	-5.031***	-0.492
	(0.772)	(2.307)	(0.991)	(3.988)
N	4702	4013	4702	4013

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00373	0.00868	0.00257	0.00604
	(0.00491)	(0.00591)	(0.00470)	(0.00651)
st_in_degree_L_net_oil_imp_c1	-1.974	-0.924	-1.880	-0.594
	(1.380)	(1.681)	(1.461)	(2.060)
c.outside_oil_dep2_c1#c.st_i~r	-0.0741**	-0.0970**	-0.0541	-0.0640
	(0.0374)	(0.0489)	(0.0366)	(0.0526)
O_net3_oil_imp_c1	3.98e-12	-6.34e-13	6.91e-12**	3.88e-12
	(2.59e-12)	(2.92e-12)	(2.96e-12)	(5.58e-12)
_cons	-4.491***	-2.867	-4.819***	-0.639
	(0.808)	(2.352)	(1.043)	(4.157)
N	4439	3768	4439	3768

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00144**	-0.00143	-0.00131**	-0.00154
	(0.000583)	(0.00133)	(0.000587)	(0.00138)
st_in_degree_L_net_oil_imp_c1	-1.825	-2.018	-1.579	-1.288
	(1.639)	(2.741)	(1.878)	(2.907)
c.outside_oil_dep2_c1#c.st_i~r	0.0262**	0.0184	0.0251**	0.0138
	(0.0103)	(0.0161)	(0.0103)	(0.0169)
O_net3_oil_imp_c1	2.63e-12	3.00e-12	-4.39e-13	-2.13e-12
	(2.83e-12)	(3.42e-12)	(4.31e-12)	(5.53e-12)
_cons	-3.944***	-2.326	-4.347***	-2.205
	(1.308)	(3.136)	(1.432)	(4.115)
N	1991	1675	1991	1675

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00429	0.00762**	0.00296	0.00536*
	(0.00308)	(0.00331)	(0.00317)	(0.00316)
st_in_degree_L_net_oil_imp_c1	-0.905	-0.686	-0.953	-0.696
	(0.883)	(1.169)	(0.929)	(1.376)
c.outside_oil_dep3_c1#c.st_i~r	-0.0743***	-0.0980***	-0.0536**	-0.0687**
	(0.0265)	(0.0307)	(0.0257)	(0.0282)
O_total_oil_imp_c1	2.85e-12	-4.50e-14	5.48e-12**	3.40e-12
	(2.07e-12)	(2.95e-12)	(2.53e-12)	(5.38e-12)
_cons	-3.859***	-2.423	-4.236***	2.343
	(0.645)	(1.600)	(0.778)	(2.455)
N	6693	5900	6693	5900

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table (set) 8.5.1.3 - (III) **Dyadic** level with **non-standardized** degree centrality and control vector **X'**

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00158***	-0.00168***	-0.00147***	-0.00163***
	(0.000283)	(0.000573)	(0.000322)	(0.000592)
O_in_degree_c1	0.00638	-0.00273	0.00471	-0.00137
	(0.00727)	(0.00506)	(0.00671)	(0.00638)
c.outside_oil_dep2_c1#c.O_in~e	0.0000901***	0.0000702	0.0000933***	0.0000648
	(0.0000295)	(0.0000468)	(0.0000311)	(0.0000491)
O_net3_oil_imp_c1	2.86e-12***	1.78e-12	3.55e-12***	1.94e-12**
	(8.73e-13)	(1.82e-12)	(1.14e-12)	(9.62e-13)
_cons	-1.945	3.958***	-2.530*	3.507***
	(1.240)	(1.039)	(1.378)	(1.104)
N	97061	79572	97061	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00482	0.0129**	-0.00104	0.00934*
	(0.00505)	(0.00558)	(0.00496)	(0.00530)
O_in_degree_c1	0.0264***	0.00877	0.0195**	0.0000815
	(0.00746)	(0.00567)	(0.00780)	(0.00774)
c.outside_oil_dep2_c1#c.O_in~e	-0.000549*	-0.000606**	-0.000371	-0.000467*
	(0.000290)	(0.000287)	(0.000272)	(0.000266)
O_net3_oil_imp_c1	4.64e-12**	9.26e-14	5.90e-12***	1.88e-12
	(2.02e-12)	(1.42e-12)	(1.96e-12)	(1.55e-12)
_cons	-2.136*	6.004***	-2.732*	5.899***
	(1.243)	(1.809)	(1.487)	(1.982)
N	63666	44023	63666	44023

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00576	0.0135**	-0.000215	0.0102**
	(0.00484)	(0.00551)	(0.00487)	(0.00516)
O_in_degree_c1	0.0273***	0.00873	0.0214***	0.00128
	(0.00733)	(0.00601)	(0.00781)	(0.00817)
c.outside_oil_dep2_c1#c.O_in~e	-0.000578**	-0.000551*	-0.000412	-0.000429
	(0.000288)	(0.000305)	(0.000277)	(0.000286)
O_net3_oil_imp_c1	4.47e-12**	-2.08e-13	5.80e-12***	1.66e-12
	(2.01e-12)	(1.47e-12)	(1.96e-12)	(1.54e-12)
_cons	-2.305*	6.056***	-2.957**	5.756***
	(1.223)	(1.830)	(1.458)	(2.003)
N	62455	43475	62455	43475

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00186***	-0.00190***	-0.00158***	-0.00167***
	(0.000309)	(0.000526)	(0.000442)	(0.000646)
O_in_degree_c1	-0.00620	-0.00620	-0.00464	0.00912
	(0.00773)	(0.0137)	(0.00882)	(0.0140)
c.outside_oil_dep2_c1#c.O_in~e	0.000215***	0.000128**	0.000191***	0.000116*
	(0.0000440)	(0.0000515)	(0.0000497)	(0.0000637)
O_net3_oil_imp_c1	2.01e-12	6.46e-12***	-5.94e-13	1.12e-12
	(1.27e-12)	(1.80e-12)	2.17e-12)	(3.61e-12)
_cons	-2.172	2.499	-2.594	2.014
	(2.187)	(1.707)	(2.281)	(1.809)
N	33395	24094	33395	24094

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00326	0.00881**	0.0000401	0.00694*
	(0.00453)	(0.00416)	(0.00504)	(0.00415)
O_in_degree_c1	0.00968	0.00247	0.00853	0.00251
	(0.00869)	(0.00535)	(0.00793)	(0.00654)
c.outside_oil_dep3_c1#c.O_in~e	-0.000509*	-0.000421**	-0.000417	-0.000365*
	(0.000271)	(0.000190)	(0.000284)	(0.000197)
O_total_oil_imp_c1	6.06e-12***	1.32e-12	6.69e-12***	2.52e-12**
	(1.80e-12)	(1.10e-12)	(1.64e-12)	(1.17e-12)
_cons	-1.659	3.927***	-2.286*	3.357***
	(1.255)	(1.057)	(1.375)	(1.091)
N	97061	79572	97061	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table (set) 8.5.1.4 - (IV) **Dyadic** level with **non-standardized** degree centrality and control vector **X2'**

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00165***	-0.00170***	-0.00158***	-0.00165***
	(0.000275)	(0.000572)	(0.000300)	(0.000577)
O_in_degree_c1	0.00171	-0.00208	0.000849	-0.00198
	(0.00486)	(0.00627)	(0.00440)	(0.00749)
c.outside_oil_dep2_c1#c.O_in~e	0.0000910***	0.0000698	0.0000938***	0.0000675
	(0.0000307)	(0.0000470)	(0.0000314)	(0.0000475)
O_net3_oil_imp_c1	-8.46e-13	1.56e-12	1.17e-13	1.03e-12
	(1.99e-12)	(2.72e-12)	(1.17e-12)	(1.63e-12)
L_g_pop_1	-7.43e-08	0.000000523	-0.000000177	0.000000147
	(0.000000185)	(0.000000559)	(0.000000229)	(0.000000540)
L_g_pop_2	-1.40e-10	-1.28e-10	-2.51e-10	-6.36e-10
	(2.28e-10)	(7.99e-10)	(2.24e-10)	(8.59e-10)
c.L_g_pop_1#c.L_g_pop_2	-1.02e-15***	-7.62e-16**	-8.68e-16***	-7.16e-16*
	(2.87e-16)	(3.68e-16)	(2.57e-16)	(3.86e-16)
L_gdp_1	8.55e-11**	-9.27e-13	5.10e-11*	1.47e-11
	(3.79e-11)	(6.54e-11)	(2.81e-11)	(4.95e-11)
L_gdp_2	3.41e-14	-5.82e-14	-1.31e-15	-5.95e-14
	(3.83e-14)	(4.13e-14)	(4.08e-14)	(4.64e-14)
c.L_gdp_1#c.L_gdp_2	-1.81e-23	-3.88e-24	-6.10e-24	3.52e-24
	(2.07e-23)	(1.59e-23)	(1.64e-23)	(1.35e-23)
L_cap_1	7.109***	-0.401	8.236***	1.252
	(1.162)	(1.480)	(1.519)	(1.673)
L_cap_2	8.008***	3.884	9.307***	6.449**
	(1.273)	(2.549)	(1.384)	(2.721)
c.L_cap_1#c.L_cap_2	-2.388	35.12**	-12.83	26.91
	(15.50)	(16.68)	(16.66)	(16.50)
_cons	-1.562*	2.785**	-2.404**	1.996
	(0.893)	(1.396)	(0.982)	(1.494)
N	93906	77170	93906	77170

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00113	0.0112**	-0.00302	0.00760
	(0.00422)	(0.00557)	(0.00398)	(0.00511)
O_in_degree_c1	0.00987	0.00466	0.00429	-0.00215
	(0.00666)	(0.00767)	(0.00642)	(0.00933)
c.outside_oil_dep2_c1#c.O_in~e	-0.000124	-0.000511*	-0.0000243	-0.000368
	(0.000224)	(0.000286)	(0.000202)	(0.000246)
O_net3_oil_imp_c1	-4.62e-12***	-2.59e-12	-4.50e-13	9.36e-14
	(1.60e-12)	(1.71e-12)	(1.94e-12)	(2.22e-12)
L_g_pop_1	-0.000000249	0.000000981	-0.000000308	0.000000807
	(0.000000254)	(0.00000141)	(0.000000254)	(0.00000139)
L_g_pop_2	1.19e-10	-1.63e-09	-3.10e-11	-2.22e-09**
	(2.25e-10)	(1.03e-09)	(2.34e-10)	(1.13e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.08e-15***	-7.25e-16	-8.22e-16**	-5.64e-16
	(2.61e-16)	(5.50e-16)	(3.25e-16)	(5.18e-16)
L_gdp_1	1.28e-10***	6.46e-11	4.47e-11	5.29e-11
	(4.49e-11)	(5.18e-11)	(3.96e-11)	(5.07e-11)
L_gdp_2	6.50e-14	2.68e-14	1.00e-14	3.13e-14
	(5.16e-14)	(4.84e-14)	(5.33e-14)	(5.55e-14)
c.L_gdp_1#c.L_gdp_2	-7.66e-24	-7.35e-24	9.77e-25	-5.18e-24
	(1.61e-23)	(1.15e-23)	(1.43e-23)	(1.06e-23)
L_cap_1	9.397***	-3.578	11.45***	1.937
	(1.457)	(3.211)	(1.623)	(3.859)
L_cap_2	9.110***	13.84***	10.73***	17.34***
	(2.012)	(3.170)	(2.062)	(3.110)
c.L_cap_1#c.L_cap_2	-30.73*	37.06*	-42.18**	23.77
	(18.53)	(21.12)	(17.75)	(22.63)
_cons	-1.090	3.505*	-1.980*	2.328
	(1.031)	(2.073)	(1.158)	(2.439)
N	61504	42539	61504	42539

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep2_c1	0.00161	0.0118**	-0.00289	0.00850*
	(0.00428)	(0.00542)	(0.00410)	(0.00494)
O_in_degree_c1	0.0109	0.00440	0.00533	-0.000896
	(0.00685)	(0.00822)	(0.00699)	(0.00986)
c.outside_oil_dep2_c1#c.O_in~e	-0.000144	-0.000444	-0.0000365	-0.000327
	(0.000232)	(0.000302)	(0.000215)	(0.000259)
O_net3_oil_imp_c1	-4.21e-12***	-3.15e-12*	-4.71e-13	-4.51e-13
	(1.52e-12)	(1.77e-12)	(2.06e-12)	(2.30e-12)
L_g_pop_1	-0.000000262	0.000000938	-0.000000311	0.000000652
	(0.000000247)	(0.00000141)	(0.000000246)	(0.00000136)
L_g_pop_2	2.44e-11	-1.93e-09*	-9.10e-11	-2.53e-09**
	(2.33e-10)	(9.99e-10)	(2.39e-10)	(1.10e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.03e-15***	-6.97e-16	-7.97e-16**	-5.36e-16
	(2.66e-16)	(5.29e-16)	(3.22e-16)	(5.00e-16)
L_gdp_1	1.16e-10**	6.92e-11	4.32e-11	6.04e-11
	(4.56e-11)	(5.30e-11)	(4.26e-11)	(5.29e-11)
L_gdp_2	5.61e-14	3.45e-14	7.97e-15	4.56e-14
	(5.87e-14)	(4.80e-14)	(5.82e-14)	(5.29e-14)
c.L_gdp_1#c.L_gdp_2	-5.93e-24	-6.88e-24	1.73e-24	-5.73e-24
	(1.64e-23)	(1.13e-23)	(1.46e-23)	(1.05e-23)
L_cap_1	9.412***	-3.323	11.30***	2.450
	(1.489)	(3.145)	(1.649)	(4.001)
L_cap_2	9.304***	14.95***	10.76***	18.43***
	(2.004)	(3.079)	(2.039)	(3.021)
c.L_cap_1#c.L_cap_2	-30.47	33.06	-41.61**	21.10
	(19.22)	(21.08)	(18.26)	(22.76)
_cons	-1.257	3.422	-2.146*	1.964
	(1.065)	(2.105)	(1.196)	(2.502)
N	60362	42026	60362	42026

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00217***	-0.00182***	-0.00200***	-0.00172***
	(0.000254)	(0.000536)	(0.000339)	(0.000649)
O_in_degree_c1	0.00202	-0.00125	0.00447	0.0134
	(0.00856)	(0.0132)	(0.00888)	(0.0160)
c.outside_oil_dep2_c1#c.O_in~e	0.000227***	0.000142***	0.000215***	0.000142**
	(0.0000477)	(0.0000527)	(0.0000530)	(0.0000655)
O_net3_oil_imp_c1	1.91e-13	2.52e-12**	-3.05e-12	-1.61e-12
	(1.18e-12)	(1.13e-12)	(2.38e-12)	(3.24e-12)
L_g_pop_1	-0.000000160	0.000000550	-0.000000212	-0.000000388
	(0.000000213)	(0.00000248)	(0.000000246)	(0.00000244)
L_g_pop_2	-9.19e-10**	1.74e-09	-9.57e-10***	1.22e-09
	(3.72e-10)	(2.12e-09)	(3.55e-10)	(2.24e-09)
c.L_g_pop_1#c.L_g_pop_2	-3.32e-16	2.00e-17	-4.42e-16	-2.85e-16
	(7.58e-16)	(7.97e-16)	(7.14e-16)	(9.10e-16)
L_gdp_1	-1.13e-10	-3.38e-10	-2.30e-10*	-3.71e-10
	(1.04e-10)	(2.19e-10)	(1.37e-10)	(2.91e-10)
L_gdp_2	6.50e-14	-1.17e-13*	5.89e-14	-1.30e-13*
	(4.09e-14)	(6.92e-14)	(4.58e-14)	(7.69e-14)
c.L_gdp_1#c.L_gdp_2	-1.02e-22***	-8.82e-23*	-8.55e-23**	-7.15e-23
	(3.02e-23)	(4.66e-23)	(3.55e-23)	(5.22e-23)
L_cap_1	6.018***	-2.682	7.041***	-1.547
	(1.338)	(4.369)	(1.702)	(4.155)
L_cap_2	6.877***	-8.088**	7.199***	-7.552**
	(1.433)	(3.652)	(1.410)	(3.677)
c.L_cap_1#c.L_cap_2	36.88*	2.253	33.73	1.233
	(20.97)	(18.98)	(20.89)	(19.10)
_cons	-2.448	4.196**	-2.958*	3.982*
	(1.613)	(2.021)	(1.716)	(2.147)
N	32402	23322	32402	23322

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00392	0.00855**	0.00225	0.00698
	(0.00357)	(0.00431)	(0.00359)	(0.00428)
O_in_degree_c1	0.00419	0.00199	0.00463	0.00218
	(0.00555)	(0.00738)	(0.00529)	(0.00858)
c.outside_oil_dep3_c1#c.O_in~e	-0.000358	-0.000404*	-0.000350	-0.000368*
	(0.000218)	(0.000206)	(0.000221)	(0.000210)
O_total_oil_imp_c1	-1.36e-12	5.96e-13	2.15e-12	2.46e-12
	(2.46e-12)	(2.91e-12)	(2.40e-12)	(2.56e-12)
L_g_pop_1	-0.000000181	0.000000204	-0.000000246	2.17e-08
	(0.000000191)	(0.000000524)	(0.000000233)	(0.000000529)
L_g_pop_2	-1.45e-10	-4.99e-11	-2.61e-10	-6.08e-10
	(2.26e-10)	(8.10e-10)	(2.22e-10)	(8.59e-10)
c.L_g_pop_1#c.L_g_pop_2	-9.73e-16***	-7.35e-16*	-8.44e-16***	-6.96e-16*
	(2.83e-16)	(3.81e-16)	(2.58e-16)	(3.89e-16)
L_gdp_1	1.15e-10**	2.61e-11	3.45e-11	1.01e-12
	(5.10e-11)	(7.34e-11)	(4.71e-11)	(6.60e-11)
L_gdp_2	3.60e-14	-6.15e-14	2.14e-15	-5.94e-14
	(3.79e-14)	(4.31e-14)	(3.99e-14)	(4.64e-14)
c.L_gdp_1#c.L_gdp_2	-1.84e-23	-3.92e-24	-6.65e-24	3.08e-24
	(1.97e-23)	(1.58e-23)	(1.60e-23)	(1.36e-23)
L_cap_1	6.711***	0.238	8.009***	1.309
	(1.182)	(1.505)	(1.503)	(1.359)
L_cap_2	7.912***	3.833	9.180***	6.350**
	(1.280)	(2.643)	(1.375)	(2.739)
c.L_cap_1#c.L_cap_2	-1.445	35.26**	-12.02	27.45*
	(15.49)	(17.07)	(16.70)	(16.44)
_cons	-1.447*	2.645*	-2.329**	1.863
	(0.879)	(1.391)	(0.980)	(1.461)
N	93906	77170	93906	77170

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table (set) 8.5.1.5 - (V) **Dyadic** level with **standardized** degree centrality and control vector **X’**

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep2_c1	-0.00161***	-0.00169***	-0.00153***	-0.00165***
	(0.000299)	(0.000577)	(0.000333)	(0.000596)
st_in_degree_L_net_oil_imp_c1	0.389	-1.052	0.536	-0.580
	(1.369)	(0.913)	(1.210)	(1.077)
c.outside_oil_dep2_c1#c.st_i~r	0.0167***	0.0128	0.0174***	0.0118
	(0.00561)	(0.00825)	(0.00583)	(0.00858)
O_net3_oil_imp_c1	3.93e-12***	2.05e-12	4.02e-12***	2.12e-12**
	(9.31e-13)	(1.74e-12)	(1.09e-12)	(9.97e-13)
_cons	-1.971	4.077***	-2.548*	3.581***
	(1.251)	(1.047)	(1.400)	(1.114)
N	97061	79572	97061	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00552	0.0130**	0.00109	0.0120**
	(0.00565)	(0.00535)	(0.00538)	(0.00523)
st_in_degree_L_net_oil_imp_c1	3.664**	0.808	3.423**	0.0397
	(1.683)	(0.996)	(1.391)	(1.288)
c.outside_oil_dep2_c1#c.st_i~r	-0.0920*	-0.0960**	-0.0804*	-0.0954**
	(0.0536)	(0.0441)	(0.0466)	(0.0427)
O_net3_oil_imp_c1	6.14e-12***	2.99e-13	6.38e-12***	1.92e-12
	(2.25e-12)	(1.34e-12)	(1.94e-12)	(1.54e-12)
_cons	-2.218*	6.085***	-2.844*	5.913***
	(1.293)	(1.833)	(1.519)	(1.999)
N	63666	44023	63666	44023

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.00649	0.0127**	0.00210	0.0121**
	(0.00547)	(0.00548)	(0.00527)	(0.00529)
st_in_degree_L_net_oil_imp_c1	3.873**	0.808	3.678***	0.185
	(1.680)	(1.059)	(1.410)	(1.379)
c.outside_oil_dep2_c1#c.st_i~r	-0.0976*	-0.0846*	-0.0884*	-0.0885*
	(0.0534)	(0.0502)	(0.0474)	(0.0495)
O_net3_oil_imp_c1	5.96e-12***	2.15e-14	6.39e-12***	1.77e-12
	(2.25e-12)	(1.40e-12)	(1.96e-12)	(1.55e-12)
_cons	-2.397*	6.133***	-3.074**	5.787***
	(1.271)	(1.850)	(1.493)	(2.018)
N	62455	43475	62455	43475

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00197***	-0.00197***	-0.00168***	-0.00175***
	(0.000293)	(0.000501)	(0.000422)	(0.000599)
st_in_degree_L_net_oil_imp_c1	-1.282	-1.249	-1.052	1.076
	(1.373)	(2.390)	(1.540)	(2.447)
c.outside_oil_dep2_c1#c.st_i~r	0.0384***	0.0236***	0.0346***	0.0221**
	(0.00808)	(0.00803)	(0.00865)	(0.0100)
O_net3_oil_imp_c1	2.19e-12*	6.45e-12***	-5.20e-13	1.45e-12
	(1.23e-12)	(1.75e-12)	(2.14e-12)	(3.52e-12)
_cons	-2.144	2.579	-2.582	2.070
	(2.174)	(1.695)	(2.268)	(1.827)
N	33395	24094	33395	24094

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00347	0.00852**	0.00105	0.00755*
	(0.00457)	(0.00412)	(0.00503)	(0.00434)
st_in_degree_L_net_oil_imp_c1	0.995	-0.330	1.310	0.0509
	(1.611)	(0.953)	(1.440)	(1.084)
c.outside_oil_dep3_c1#c.st_i~r	-0.0802*	-0.0633**	-0.0765	-0.0635*
	(0.0448)	(0.0304)	(0.0470)	(0.0326)
O_total_oil_imp_c1	6.60e-12***	1.42e-12	6.95e-12***	2.62e-12**
	(1.79e-12)	(1.01e-12)	(1.62e-12)	(1.21e-12)
_cons	-1.709	4.078***	-2.320*	3.440***
	(1.268)	(1.063)	(1.396)	(1.101)
N	97061	79572	97061	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table (set) 8.5.1.6 - (VI) **Dyadic** level with **standardized** degree centrality and control vector **X2'**– the results are highly robust throughout *all* models

(1) Negative range included for oil dependence and net oil imports

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00167***	-0.00170***	-0.00164***	-0.00167***
	(0.000291)	(0.000580)	(0.000306)	(0.000582)
st_in_degree_L_net_oil_imp_c1	-0.344	-1.135	-0.0352	-0.731
	(0.855)	(1.035)	(0.746)	(1.184)
c.outside_oil_dep2_c1#c.st_i~r	0.0170***	0.0126	0.0174***	0.0122
	(0.00575)	(0.00834)	(0.00586)	(0.00837)
O_net3_oil_imp_c1	-4.33e-13	1.68e-12	2.61e-13	1.12e-12
	(2.14e-12)	(2.77e-12)	(1.21e-12)	(1.69e-12)
L_g_pop_1	-3.93e-08	0.000000713	-0.000000165	0.000000255
	(0.000000196)	(0.000000613)	(0.000000231)	(0.000000554)
L_g_pop_2	-1.19e-10	-1.40e-10	-2.46e-10	-6.38e-10
	(2.28e-10)	(7.97e-10)	(2.23e-10)	(8.59e-10)
c.L_g_pop_1#c.L_g_pop_2	-1.02e-15***	-7.64e-16**	-8.69e-16***	-7.19e-16*
	(2.92e-16)	(3.64e-16)	(2.58e-16)	(3.85e-16)
L_gdp_1	9.84e-11***	6.17e-12	5.49e-11**	1.70e-11
	(3.60e-11)	(6.14e-11)	(2.73e-11)	(4.52e-11)
L_gdp_2	3.35e-14	-5.63e-14	-1.49e-15	-5.88e-14
	(3.80e-14)	(4.11e-14)	(4.09e-14)	(4.64e-14)
c.L_gdp_1#c.L_gdp_2	-1.87e-23	-3.93e-24	-6.26e-24	3.51e-24
	(2.09e-23)	(1.58e-23)	(1.64e-23)	(1.34e-23)
L_cap_1	6.872***	-0.636	8.164***	1.101
	(1.249)	(1.531)	(1.552)	(1.669)
L_cap_2	7.914***	3.895	9.281***	6.446**
	(1.290)	(2.548)	(1.382)	(2.735)
c.L_cap_1#c.L_cap_2	-1.386	35.60**	-12.59	27.03*
	(15.43)	(16.66)	(16.64)	(16.43)
_cons	-1.551*	2.909**	-2.400**	2.079
	(0.910)	(1.382)	(0.987)	(1.494)
N	93906	77170	93906	77170

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(2) Subset where negative cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.000536	0.0110**	-0.000865	0.0107**
	(0.00454)	(0.00508)	(0.00452)	(0.00491)
st_in_degree_L_net_oil_imp_c1	0.437	-0.182	0.760	-0.333
	(1.148)	(1.153)	(1.087)	(1.439)
c.outside_oil_dep2_c1#c.st_i~r	-0.00901	-0.0768*	-0.0213	-0.0822**
	(0.0342)	(0.0403)	(0.0364)	(0.0373)
O_net3_oil_imp_c1	-5.30e-12***	-3.14e-12*	-3.70e-14	5.14e-13
	(1.32e-12)	(1.68e-12)	(1.92e-12)	(2.11e-12)
L_g_pop_1	-0.000000208	0.00000126	-0.000000306	0.000000907
	(0.000000254)	(0.00000148)	(0.000000251)	(0.00000142)
L_g_pop_2	1.38e-10	-1.62e-09	-3.04e-11	-2.22e-09**
	(2.22e-10)	(1.04e-09)	(2.33e-10)	(1.13e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.11e-15***	-7.31e-16	-8.21e-16**	-5.66e-16
	(2.64e-16)	(5.48e-16)	(3.24e-16)	(5.18e-16)
L_gdp_1	1.66e-10***	7.83e-11*	4.43e-11	4.40e-11
	(3.73e-11)	(4.76e-11)	(3.69e-11)	(4.68e-11)
L_gdp_2	6.69e-14	2.70e-14	9.36e-15	3.03e-14
	(5.05e-14)	(4.84e-14)	(5.33e-14)	(5.54e-14)
c.L_gdp_1#c.L_gdp_2	-9.28e-24	-7.37e-24	8.08e-25	-5.01e-24
	(1.63e-23)	(1.13e-23)	(1.43e-23)	(1.06e-23)
L_cap_1	9.417***	-4.761	11.46***	1.435
	(1.595)	(3.231)	(1.676)	(3.839)
L_cap_2	9.019***	13.74***	10.75***	17.33***
	(2.072)	(3.196)	(2.075)	(3.110)
c.L_cap_1#c.L_cap_2	-29.50	37.56*	-42.31**	23.53
	(18.70)	(20.93)	(17.82)	(22.72)
_cons	-0.956	3.788*	-1.987*	2.450
	(1.073)	(2.076)	(1.184)	(2.455)
N	61504	42539	61504	42539

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(3) Subset where negative cases and cases equal to zero for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	0.000755	0.0106**	-0.000737	0.0105**
	(0.00466)	(0.00492)	(0.00467)	(0.00496)
st_in_degree_L_net_oil_imp_c1	0.542	-0.240	0.867	-0.230
	(1.207)	(1.211)	(1.174)	(1.538)
c.outside_oil_dep2_c1#c.st_i~r	-0.0103	-0.0618	-0.0229	-0.0717
	(0.0359)	(0.0413)	(0.0382)	(0.0440)
O_net3_oil_imp_c1	-5.02e-12***	-3.72e-12**	-1.01e-13	-1.16e-13
	(1.27e-12)	(1.64e-12)	(2.04e-12)	(2.17e-12)
L_g_pop_1	-0.000000219	0.00000121	-0.000000308	0.000000764
	(0.000000248)	(0.00000148)	(0.000000244)	(0.00000139)
L_g_pop_2	5.53e-11	-1.92e-09*	-8.83e-11	-2.52e-09**
	(2.31e-10)	(1.01e-09)	(2.39e-10)	(1.10e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.05e-15***	-7.06e-16	-7.97e-16**	-5.39e-16
	(2.69e-16)	(5.26e-16)	(3.21e-16)	(4.99e-16)
L_gdp_1	1.57e-10***	8.38e-11*	4.49e-11	5.43e-11
	(3.89e-11)	(4.75e-11)	(3.94e-11)	(4.78e-11)
L_gdp_2	5.97e-14	3.63e-14	7.26e-15	4.50e-14
	(5.69e-14)	(4.76e-14)	(5.80e-14)	(5.28e-14)
c.L_gdp_1#c.L_gdp_2	-7.77e-24	-7.06e-24	1.49e-24	-5.60e-24
	(1.65e-23)	(1.11e-23)	(1.46e-23)	(1.05e-23)
L_cap_1	9.391***	-4.425	11.31***	1.929
	(1.631)	(3.137)	(1.707)	(3.951)
L_cap_2	9.172***	14.85***	10.78***	18.41***
	(2.062)	(3.113)	(2.052)	(3.027)
c.L_cap_1#c.L_cap_2	-29.10	33.52	-41.76**	20.79
	(19.35)	(20.86)	(18.30)	(22.83)
_cons	-1.098	3.692*	-2.146*	2.110
	(1.116)	(2.106)	(1.224)	(2.516)
N	60362	42026	60362	42026

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(4) Subset where positive cases for resource dependence are excluded

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep2_c1	-0.00226***	-0.00187***	-0.00208***	-0.00178***
	(0.000260)	(0.000514)	(0.000335)	(0.000611)
st_in_degree_L_net_oil_imp_c1	0.0505	-0.745	0.512	1.556
	(1.511)	(2.285)	(1.603)	(2.814)
c.outside_oil_dep2_c1#c.st_i~r	0.0398***	0.0251***	0.0379***	0.0257**
	(0.00872)	(0.00833)	(0.00937)	(0.0104)
O_net3_oil_imp_c1	6.13e-13	2.67e-12**	-2.69e-12	-1.08e-12
	(1.22e-12)	(1.19e-12)	(2.39e-12)	(3.17e-12)
L_g_pop_1	-0.000000151	0.000000692	-0.000000206	-0.000000244
	(0.000000218)	(0.00000251)	(0.000000248)	(0.00000249)
L_g_pop_2	-9.08e-10**	1.75e-09	-9.41e-10***	1.24e-09
	(3.80e-10)	(2.13e-09)	(3.57e-10)	(2.24e-09)
c.L_g_pop_1#c.L_g_pop_2	-3.45e-16	1.90e-17	-4.59e-16	-2.75e-16
	(7.67e-16)	(7.91e-16)	(7.21e-16)	(9.08e-16)
L_gdp_1	-9.59e-11	-3.39e-10	-2.06e-10	-3.62e-10
	(1.10e-10)	(2.24e-10)	(1.40e-10)	(2.96e-10)
L_gdp_2	6.32e-14	-1.18e-13*	5.91e-14	-1.30e-13*
	(4.02e-14)	(6.93e-14)	(4.55e-14)	(7.68e-14)
c.L_gdp_1#c.L_gdp_2	-1.01e-22***	-8.70e-23*	-8.53e-23**	-7.09e-23
	(3.06e-23)	(4.65e-23)	(3.54e-23)	(5.19e-23)
L_cap_1	5.819***	-2.974	6.782***	-1.751
	(1.310)	(4.373)	(1.689)	(4.220)
L_cap_2	6.870***	-8.107**	7.137***	-7.614**
	(1.443)	(3.623)	(1.402)	(3.669)
c.L_cap_1#c.L_cap_2	36.89*	2.260	34.09	1.729
	(20.89)	(18.97)	(20.79)	(19.09)
_cons	-2.420	4.307**	-2.940*	4.049*
	(1.613)	(2.022)	(1.715)	(2.178)
N	32402	23322	32402	23322

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

(5) Only imports are considered for oil dependence and resource imports variables

Robustness - Different outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep3_c1	0.00406	0.00806*	0.00312	0.00743*
	(0.00357)	(0.00420)	(0.00354)	(0.00437)
st_in_degree_L_net_oil_imp_c1	0.0257	-0.655	0.668	-0.112
	(0.923)	(1.142)	(0.874)	(1.293)
c.outside_oil_dep3_c1#c.st_i~r	-0.0547	-0.0573*	-0.0649*	-0.0618*
	(0.0345)	(0.0314)	(0.0351)	(0.0331)
O_total_oil_imp_c1	-1.68e-12	-6.95e-15	2.13e-12	2.27e-12
	(2.60e-12)	(2.79e-12)	(2.38e-12)	(2.44e-12)
L_g_pop_1	-0.000000143	0.000000453	-0.000000235	0.000000187
	(0.000000203)	(0.000000574)	(0.000000233)	(0.000000539)
L_g_pop_2	-1.26e-10	-6.04e-11	-2.57e-10	-6.10e-10
	(2.27e-10)	(8.06e-10)	(2.21e-10)	(8.57e-10)
c.L_g_pop_1#c.L_g_pop_2	-9.80e-16***	-7.43e-16**	-8.50e-16***	-7.00e-16*
	(2.90e-16)	(3.76e-16)	(2.58e-16)	(3.87e-16)
L_gdp_1	1.35e-10***	4.22e-11	3.96e-11	6.52e-12
	(4.81e-11)	(6.53e-11)	(4.45e-11)	(5.78e-11)
L_gdp_2	3.30e-14	-6.08e-14	1.20e-15	-5.96e-14
	(3.78e-14)	(4.28e-14)	(4.01e-14)	(4.65e-14)
c.L_gdp_1#c.L_gdp_2	-1.89e-23	-3.88e-24	-6.73e-24	3.19e-24
	(2.00e-23)	(1.57e-23)	(1.61e-23)	(1.35e-23)
L_cap_1	6.458***	-0.0674	7.949***	1.077
	(1.254)	(1.633)	(1.528)	(1.343)
L_cap_2	7.876***	3.823	9.185***	6.342**
	(1.298)	(2.646)	(1.375)	(2.753)
c.L_cap_1#c.L_cap_2	-0.659	35.71**	-11.88	27.56*
	(15.42)	(16.96)	(16.72)	(16.34)
_cons	-1.461	2.812**	-2.333**	1.967
	(0.890)	(1.376)	(0.982)	(1.458)
N	93906	77170	93906	77170

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.2: Ross oil production value measures for the standard model (1) – (3) and the standard model with year fixed effects (4-6)

	(1)	(2)	(3)	(4)	(5)	(6)
	init	init	init	init	init	init
init						
R_oil_val_prod_c1	-4.11e-13			-1.31e-12		
	(8.63e-13)			(9.23e-13)		
R_oil_val_prod_c2	3.90e-13			-6.81e-13		
	(1.05e-12)			(1.09e-12)		
R_log_oil_val_prod_c1		0.0125*			0.00737	
		(0.00712)			(0.00755)	
R_log_oil_val_prod_c2		0.00494			0.000651	
		(0.00609)			(0.00623)	
R_oil_val_prod_pc_c1			1.01e-08			4.98e-09
			(1.67e-08)			(1.61e-08)
R_oil_val_prod_pc_c2			-6.60e-09			-1.08e-08
			(1.51e-08)			(1.42e-08)
_cons	4.976***	4.661***	4.750***	5.223***	4.906***	4.789***
	(0.937)	(0.949)	(0.941)	(0.992)	(1.002)	(0.993)
N	85263	85263	80071	85263	85263	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.3: Humphreys oil reserves variables for the standard model (1)-(3) and the standard model with year fixed effects (4-6)

	(1)	(2)	(3)	(4)	(5)	(6)
	init	init	init	init	init	init
init						
H_oil_reserves_c1	5.93e-12			6.66e-12		
	(4.62e-12)			(4.99e-12)		
H_oil_reserves_c2	1.56e-12			1.36e-12		
	(4.01e-12)			(3.99e-12)		
H_log_oil_reserv_c1		0.00613			0.00393	
		(0.00456)			(0.00490)	
H_log_oil_reserv_c2		0.00234			0.000156	
		(0.00408)			(0.00439)	
H_oil_reserves_pc_c1			-5.91e-11			2.36e-09
			(2.27e-08)			(2.33e-08)
H_oil_reserves_pc_c2			-0.0000123**			-0.0000101
			(0.00000624)			(0.00000619)
_cons	5.224***	5.331***	5.230***	5.632***	5.774***	5.662***
	(1.007)	(1.000)	(1.005)	(1.044)	(1.040)	(1.043)
N	55033	55033	53240	55033	55033	53240

Standard errors in parentheses

Table 8.5.4: Humphreys oil production variables for the standard model (1)-(3) and the standard model with year fixed effects (4-6)

	(1) init	(2) init	(3) init	(4) init	(5) init	(6) init
init						
H_oil_prod_c1	1.33e-10			9.82e-11		
	(1.18e-10)			(1.20e-10)		
H_oil_prod_c2	-3.14e-10**			-3.85e-10**		
	(1.41e-10)			(1.53e-10)		
H_log_oil_prod_c1		0.00756			0.00429	
		(0.00603)			(0.00611)	
H_log_oil_prod_c2		-0.000443			-0.00451	
		(0.00545)			(0.00566)	
H_oil_prod_pc_c1			-0.000000487			-0.000000369
			(0.00000108)			(0.00000114)
H_oil_prod_pc_c2			-0.00130**			-0.00126**
			(0.000596)			(0.000628)
_cons	5.933***	5.216***	5.259***	6.691***	5.729***	5.657***
	(1.118)	(1.002)	(1.005)	(1.150)	(1.036)	(1.042)
N	55033	54857	53240	55033	54857	53240

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.5: Ross oil production variables for the standard model (1)-(3) and the standard model with year fixed effects (4-6)

	(1)	(2)	(3)	(4)	(5)	(6)
	init	init	init	init	init	init
init						
R_oil_prod_c1	-1.18e-09*			-2.20e-09***		
	(7.16e-10)			(7.59e-10)		
R_oil_prod_c2	-1.50e-09*			-2.59e-09***		
	(7.71e-10)			(8.08e-10)		
R_log_oil_prod_c1		0.0128			0.00749	
		(0.00867)			(0.00921)	
R_log_oil_prod_c2		0.00434			-0.000119	
		(0.00740)			(0.00766)	
R_oil_prod_pc_c1			-0.00000664			-0.00000656
			(0.00000435)			(0.00000442)
R_oil_prod_pc_c2			-0.00863*			-0.00843
			(0.00500)			(0.00582)
_cons	5.922***	4.642***	4.700***	6.665***	4.869***	4.704***
	(0.994)	(0.951)	(0.944)	(1.039)	(1.003)	(0.995)
N	85293	85293	80102	85293	85293	80102

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.6: Ross oil production value variables for the standard model (1)-(3) and the standard model with year fixed effects (4-6)

	(1) init	(2) init	(3) init	(4) init	(5) init	(6) init
init						
R_oil_val_prod_c1	-4.71e-13			-1.35e-12		
	(8.60e-13)			(9.21e-13)		
R_oil_val_prod_c2	3.19e-13			-7.25e-13		
	(1.06e-12)			(1.10e-12)		
R_log_oil_val_prod_c1		0.0120*			0.00693	
		(0.00718)			(0.00761)	
R_log_oil_val_prod_c2		0.00488			0.000747	
		(0.00609)			(0.00625)	
R_oil_val_prod_pc_c1			9.78e-09			4.86e-09
			(1.67e-08)			(1.61e-08)
R_oil_val_prod_pc_c2			-0.00000674			-0.0000107
			(0.0000151)			(0.0000142)
_cons	4.899***	4.582***	4.662***	5.154***	4.833***	4.711***
	(0.939)	(0.951)	(0.943)	(0.995)	(1.006)	(0.996)
N	85293	85293	80102	85293	85293	80102

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.7: Stage 1 results for O_net_3_oil_imp for the standard model (1)-(3) and the standard model incl. all dyads (4-6)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	init	init	init	init	All_Obs	All_Obs	All_Obs	All_Obs
main								
outside_oil_dep_c1	0.00707	-0.00350	-0.00787	-0.00440	-0.00360	-0.0122	-0.0155***	-0.0112**
	(0.00922)	(0.00478)	(0.00557)	(0.00348)	(0.00975)	(0.00745)	(0.00558)	(0.00495)
1.H_no_oil_reserves1	-0.212				-0.471***			
	(0.144)				(0.136)			
1.H_no_oil_reserves1#c.outsi~l	-0.00650				0.00264			
	(0.00906)				(0.00959)			
O_net3_oil_imp_c1	-3.51e-12	-1.29e-12	1.57e-12	1.36e-12	-3.48e-12	-2.31e-12	2.31e-12	2.02e-12
	(6.78e-12)	(6.74e-12)	(1.31e-12)	(1.28e-12)	(7.60e-12)	(7.69e-12)	(1.59e-12)	(1.58e-12)
1.H_no_oil_prod1		-0.226				-0.351**		
		(0.159)				(0.151)		
1.H_no_oil_prod1#c.outside_o~p		0.00746				0.0141*		
		(0.00494)				(0.00739)		
1.R_no_oil_prod1			-0.400*				-0.611***	
			(0.215)				(0.183)	
1.R_no_oil_prod1#c.outside_o~p			0.00958*				0.0168***	
			(0.00561)				(0.00562)	
1.P_no_deposits1				-0.489**				-0.523**
				(0.242)				(0.234)
1.P_no_deposits1#c.outside_o~p				0.00619*				0.0130***
				(0.00362)				(0.00500)
_cons	5.511***	5.453***	4.797***	4.739***	7.272***	7.137***	6.354***	6.228***
	(0.985)	(0.994)	(0.951)	(0.947)	(0.907)	(0.912)	(0.884)	(0.882)
N	56732	56732	82533	82533	392227	392227	579960	579960

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.8: Stage 1 results for O_net_2_oil_imp for the standard model (1)-(3) and the standard model incl. all dyads (4-6)

	(1) init	(2) init	(3) init	(4) init	(5) All_Obs	(6) All_Obs	(7) All_Obs	(8) All_Obs
main								
outside_oil_dep_c1	0.00321	-0.00587	-0.00651	-0.00367	-0.0103	-0.0167**	-0.0143***	-0.0103**
	(0.0104)	(0.00699)	(0.00507)	(0.00308)	(0.0116)	(0.00816)	(0.00547)	(0.00476)
1.H_no_oil_reserves1	-0.234				-0.502***			
	(0.146)				(0.138)			
1.H_no_oil_reserves1#c.outsi~l	-0.00287				0.00902			
	(0.0103)				(0.0114)			
O_net2_oil_imp_c1	3.21e-12	5.75e-12	4.57e-13	1.43e-13	8.18e-12	1.01e-11	1.42e-12	9.19e-13
	(8.79e-12)	(8.61e-12)	(2.00e-12)	(2.00e-12)	(1.08e-11)	(1.06e-11)	(2.33e-12)	(2.38e-12)
1.H_no_oil_prod1		-0.252				-0.393**		
		(0.161)				(0.153)		
1.H_no_oil_prod1#c.outside_o~p		0.00971				0.0183**		
		(0.00702)				(0.00810)		
1.R_no_oil_prod1			-0.393*				-0.609***	
			(0.215)				(0.184)	
1.R_no_oil_prod1#c.outside_o~p			0.00824				0.0156***	
			(0.00513)				(0.00552)	
1.P_no_deposits1				-0.486**				-0.522**
				(0.242)				(0.234)
1.P_no_deposits1#c.outside_o~p				0.00548*				0.0122**
				(0.00325)				(0.00483)
_cons	5.374***	5.302***	4.872***	4.818***	7.036***	6.867***	6.422***	6.302***
	(0.985)	(0.994)	(0.950)	(0.946)	(0.906)	(0.911)	(0.876)	(0.874)
N	56732	56732	82533	82533	392227	392227	579960	579960

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.9: Stage 1 results for no import variable for the standard model (1)-(3) and the standard model incl. all dyads (4-6)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	init	init	init	init	All_Obs	All_Obs	All_Obs	All_Obs
main								
outside_oil_dep_c1	0.00564	-0.00361	-0.00588	-0.00349	-0.00485	-0.0126*	-0.0127**	-0.00956**
	(0.00920)	(0.00491)	(0.00469)	(0.00297)	(0.00975)	(0.00740)	(0.00521)	(0.00454)
1.H_no_oil_reserves1	-0.229				-0.485***			
	(0.145)				(0.136)			
1.H_no_oil_reserves1#c.outsi~l	-0.00517				0.00382			
	(0.00911)				(0.00967)			
1.H_no_oil_prod1		-0.237				-0.360**		
		(0.161)				(0.154)		
1.H_no_oil_prod1#c.outside_o~p		0.00759				0.0144*		
		(0.00509)				(0.00739)		
1.R_no_oil_prod1			-0.400*				-0.598***	
			(0.213)				(0.184)	
1.R_no_oil_prod1#c.outside_o~p			0.00763				0.0141***	
			(0.00475)				(0.00525)	
1.P_no_deposits1				-0.488**				-0.523**
				(0.242)				(0.234)
1.P_no_deposits1#c.outside_o~p				0.00531*				0.0115**
				(0.00313)				(0.00460)
_cons	5.535***	5.522***	4.977***	4.911***	7.315***	7.199***	6.567***	6.434***
	(0.972)	(0.979)	(0.945)	(0.940)	(0.897)	(0.900)	(0.881)	(0.879)
N	56704	56704	82502	82502	392171	392171	579893	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.10: Cut off at 10^{th} percentile for respective resource measures

Stage 2 - Cutoff@10

	(1) init	(2) init	(3) init	(4) init
init				
outside_oil_dep_c1	-0.0136	-0.00981	-0.0304***	-0.0424***
	(0.0203)	(0.0195)	(0.0114)	(0.0148)
1.C_H_no_oil_reserves1	-1.540***			
	(0.332)			
1.C_H_no_oil_reserves1#c.out~o	0.0170			
	(0.0245)			
R_net_oil_imp_c1	-1.10e-09	-1.26e-09	1.57e-09	1.77e-09
	(1.80e-09)	(1.77e-09)	(1.17e-09)	(1.19e-09)
1.C_H_no_oil_prod1		0.128		
		(0.707)		
1.C_H_no_oil_prod1#c.outside~d		0.0130		
		(0.0243)		
1.C_R_no_oil_prod1			-0.974	
			(0.803)	
1.C_R_no_oil_prod1#c.outside~d			0.0297**	
			(0.0116)	
1.C_P_no_deposits1				-0.0993
				(0.259)
1.C_P_no_deposits1#c.outside~d				0.0404***
				(0.0149)
_cons	6.648***	6.286***	3.087*	3.105*
	(1.816)	(1.838)	(1.636)	(1.644)
N	14814	14814	36211	36211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.11: Robustness test for relative resource measures for control vector X2'

Stage 3 - diff. controls - H_oil_reserves_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
H_oil_reserves_c2	1.69e-12				
	(3.94e-12)				
L_g_pop_1	-6.71e-10	-6.83e-10	-7.04e-10	-6.94e-10	-6.93e-10
	(8.76e-10)	(8.79e-10)	(8.79e-10)	(8.79e-10)	(8.73e-10)
L_g_pop_2	-5.09e-10	-4.46e-10	-4.65e-10	-4.49e-10	-6.49e-10
	(8.64e-10)	(8.51e-10)	(8.51e-10)	(8.52e-10)	(9.50e-10)
c.L_g_pop_1#c.L_g_pop_2	-1.58e-18*	-1.58e-18**	-1.57e-18*	-1.57e-18*	-1.67e-18**
	(8.08e-19)	(8.08e-19)	(8.07e-19)	(8.07e-19)	(8.30e-19)
L_gdp_1	2.05e-15	4.19e-15	4.00e-15	4.72e-15	-4.65e-15
	(7.87e-14)	(7.94e-14)	(7.93e-14)	(7.94e-14)	(7.78e-14)
L_gdp_2	-1.92e-14	-2.34e-14	-2.35e-14	-2.41e-14	1.82e-14
	(5.64e-14)	(5.53e-14)	(5.53e-14)	(5.54e-14)	(5.69e-14)
c.L_gdp_1#c.L_gdp_2	-1.03e-25	-1.04e-25	-1.04e-25	-1.04e-25	-9.94e-26
	(1.09e-25)	(1.09e-25)	(1.09e-25)	(1.09e-25)	(1.07e-25)
L_cap_1	-4.094	-4.080	-4.042	-4.089	-4.005
	(3.348)	(3.352)	(3.351)	(3.352)	(3.382)
L_cap_2	-1.615	-1.724	-1.719	-1.790	-1.173
	(3.314)	(3.293)	(3.288)	(3.288)	(3.361)
c.L_cap_1#c.L_cap_2	57.78***	57.40***	58.11***	58.16***	57.37***
	(18.48)	(18.46)	(18.47)	(18.45)	(18.24)
H_oil_reserves_pop_c2		-0.0000106*			
		(0.00000636)			
H_oil_reserves_gdp_c2			0.0178		
			(0.0458)		
H_oil_reserves_cap_c2				-8.30e-15	
				(1.27e-14)	
H_oil_reserves_dev_c2					2.42e-08***
					(7.62e-09)
_cons	6.045***	6.109***	6.072***	6.096***	5.859***
	(1.457)	(1.451)	(1.451)	(1.450)	(1.457)
N	54531	54531	54531	54531	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.12: Robustness test for relative resource measures for control vector X2'

Stage 3 - diff. controls - H_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
H_oil_prod_c2	-4.18e-10***				
	(1.53e-10)				
L_g_pop_1	-7.59e-10	-6.53e-10	-6.56e-10	-6.93e-10	1.01e-09
	(8.80e-10)	(8.79e-10)	(8.79e-10)	(8.80e-10)	(9.79e-10)
L_g_pop_2	4.28e-10	-4.21e-10	-4.04e-10	-3.12e-10	1.68e-09
	(9.24e-10)	(8.53e-10)	(8.54e-10)	(9.24e-10)	(1.13e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.57e-18*	-1.59e-18**	-1.57e-18*	-1.53e-18*	-5.43e-19
	(8.04e-19)	(8.07e-19)	(8.08e-19)	(8.04e-19)	(4.23e-19)
L_gdp_1	1.14e-14	2.65e-15	2.70e-15	4.33e-15	-2.43e-14
	(7.78e-14)	(7.93e-14)	(7.93e-14)	(7.90e-14)	(6.08e-14)
L_gdp_2	-7.14e-14	-2.34e-14	-2.46e-14	-4.68e-14	-1.10e-13**
	(5.88e-14)	(5.53e-14)	(5.54e-14)	(7.81e-14)	(4.88e-14)
c.L_gdp_1#c.L_gdp_2	-1.02e-25	-1.03e-25	-1.03e-25	-1.02e-25	1.66e-26*
	(1.06e-25)	(1.09e-25)	(1.09e-25)	(1.08e-25)	(9.34e-27)
L_cap_1	-4.019	-4.228	-4.365	-4.086	2.135
	(3.356)	(3.359)	(3.373)	(3.344)	(3.092)
L_cap_2	-8.184**	-1.885	-2.232	-1.856	-1.536
	(4.142)	(3.299)	(3.304)	(3.349)	(5.422)
c.L_cap_1#c.L_cap_2	57.41***	57.08***	58.70***	57.61***	-16.78
	(18.17)	(18.46)	(18.47)	(18.41)	(30.68)
H_oil_prod_pop_c2		-0.00127*			
		(0.000655)			
H_oil_prod_cap_c2			-1.13e-12**		
			(5.31e-13)		
H_oil_prod_dev_c2				-0.000000195	
				(0.000000458)	
W_oil_rents2					0.0508
					(0.230)
_cons	8.294***	6.187***	6.221***	6.221***	1.903
	(1.619)	(1.454)	(1.452)	(1.509)	(1.597)
N	54531	54531	54531	54531	54283

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.13: Robustness test for relative resource measures for control vector X2'

Stage 3 - diff. controls - R_oil_prod_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
R_oil_prod_c2	-2.15e-09***				
	(7.79e-10)				
L_g_pop_1	-0.000000792	-0.000000777	-0.000000782	-0.000000782	-0.000000821
	(0.000000665)	(0.000000663)	(0.000000663)	(0.000000662)	(0.000000662)
L_g_pop_2	7.93e-10	3.03e-10	3.14e-10	3.26e-10	2.64e-10
	(9.00e-10)	(8.23e-10)	(8.21e-10)	(8.25e-10)	(8.33e-10)
c.L_g_pop_1#c.L_g_pop_2	-8.03e-16*	-7.77e-16*	-7.77e-16*	-7.73e-16*	-7.75e-16*
	(4.32e-16)	(4.15e-16)	(4.15e-16)	(4.17e-16)	(4.17e-16)
L_gdp_1	3.37e-11	3.18e-11	3.09e-11	3.28e-11	3.28e-11
	(3.78e-11)	(3.79e-11)	(3.80e-11)	(3.79e-11)	(3.78e-11)
L_gdp_2	-7.38e-14*	-5.89e-14	-5.98e-14	-5.99e-14	-5.23e-14
	(4.10e-14)	(4.23e-14)	(4.23e-14)	(4.24e-14)	(4.63e-14)
c.L_gdp_1#c.L_gdp_2	-7.75e-24	-6.42e-24	-6.25e-24	-6.47e-24	-6.68e-24
	(9.24e-24)	(9.79e-24)	(9.75e-24)	(9.76e-24)	(9.69e-24)
L_cap_1	1.528	1.648	1.738	1.496	1.830
	(2.345)	(2.320)	(2.316)	(2.334)	(2.329)
L_cap_2	2.240	2.491	2.563	2.113	2.035
	(2.784)	(2.657)	(2.651)	(2.669)	(3.022)
c.L_cap_1#c.L_cap_2	48.02***	45.23***	45.26***	46.58***	45.43***
	(16.53)	(16.41)	(16.46)	(16.42)	(16.32)
R_oil_prod_pop_c2		-0.00847			
		(0.00524)			
R_oil_prod_gdp_c2			-36.23		
			(23.77)		
R_oil_prod_cap_c2				-8.87e-12**	
				(4.31e-12)	
R_oil_prod_dev_c2					0.000000776
					(0.00000207)
_cons	4.316***	3.494***	3.475***	3.536***	3.449***
	(1.214)	(1.211)	(1.212)	(1.210)	(1.205)
N	80071	80071	80071	80071	80071

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.14: Robustness test for relative resource measures for control vector X2'

Stage 3 - diff. controls - R_oil_val_prod_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
R_oil_val_prod_c2	-1.44e-12				
	(2.03e-12)				
L_g_pop_1	-8.46e-10	-8.43e-10	-7.83e-10	-9.01e-10	-8.13e-10
	(6.62e-10)	(6.64e-10)	(6.62e-10)	(6.64e-10)	(6.63e-10)
L_g_pop_2	3.12e-10	2.34e-10	2.89e-10	2.06e-10	4.47e-11
	(8.32e-10)	(8.21e-10)	(8.21e-10)	(8.21e-10)	(8.28e-10)
c.L_g_pop_1#c.L_g_pop_2	-7.70e-19*	-7.70e-19*	-7.79e-19*	-7.62e-19*	-7.86e-19*
	(4.19e-19)	(4.16e-19)	(4.14e-19)	(4.18e-19)	(4.13e-19)
L_gdp_1	3.37e-14	3.36e-14	3.17e-14	3.74e-14	3.16e-14
	(3.80e-14)	(3.81e-14)	(3.78e-14)	(3.85e-14)	(3.79e-14)
L_gdp_2	-5.07e-14	-5.89e-14	-5.69e-14	-6.01e-14	-5.37e-14
	(4.42e-14)	(4.23e-14)	(4.21e-14)	(4.25e-14)	(4.16e-14)
c.L_gdp_1#c.L_gdp_2	-6.40e-27	-6.71e-27	-6.45e-27	-6.97e-27	-6.38e-27
	(9.77e-27)	(9.86e-27)	(9.77e-27)	(9.89e-27)	(9.73e-27)
L_cap_1	1.868	1.781	1.739	1.752	1.794
	(2.327)	(2.321)	(2.316)	(2.335)	(2.327)
L_cap_2	2.121	2.582	2.613	2.410	2.921
	(2.745)	(2.657)	(2.649)	(2.673)	(2.636)
c.L_cap_1#c.L_cap_2	45.54***	45.94***	45.44***	46.94***	45.41***
	(16.30)	(16.42)	(16.43)	(16.46)	(16.64)
R_oil_val_prod_pop_c2		-0.0000401			
		(0.0000389)			
R_oil_val_prod_gdp_c2			0.786*		
			(0.452)		
R_oil_val_prod_cap_c2				-3.92e-14**	
				(1.96e-14)	
R_oil_val_prod_dev_c2					1.22e-08
					(1.02e-08)
_cons	3.515***	3.419***	3.459***	3.397***	3.377***
	(1.213)	(1.212)	(1.210)	(1.212)	(1.206)
N	80071	80071	80071	80071	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.15: Robustness test for relative resource measures for control vector X3’

Stage 3 - diff. controls - H_oil_reserves_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
H_oil_reserves_c2	2.52e-12				
	(3.80e-12)				
init_cap_win	0.482	0.381	0.405	0.461	0.373
	(0.440)	(0.440)	(0.439)	(0.438)	(0.442)
both_minor	0.123	0.107	0.114	0.123	0.108
	(0.352)	(0.353)	(0.353)	(0.351)	(0.350)
H_oil_reserves_pop_c2		-0.0000103*			
		(0.00000626)			
H_oil_reserves_gdp_c2			0.0128		
			(0.0444)		
H_oil_reserves_cap_c2				-7.46e-15	
				(1.24e-14)	
H_oil_reserves_dev_c2					2.53e-08***
					(7.31e-09)
_cons	5.291***	5.344***	5.315***	5.349***	5.220***
	(1.051)	(1.056)	(1.055)	(1.046)	(1.057)
N	56411	55510	55510	56411	55510

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.16: Robustness test for relative resource measures for control vector X3'

Stage 3 - diff. controls - H_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
H_oil_prod_c2	-3.25e-10**				
	(1.33e-10)				
init_cap_win	0.515	0.382	0.437	0.509	0.405
	(0.439)	(0.440)	(0.440)	(0.441)	(0.440)
both_minor	0.0889	0.0995	0.107	0.120	0.112
	(0.345)	(0.353)	(0.354)	(0.351)	(0.353)
H_oil_prod_pop_c2		-0.00127**			
		(0.000617)			
H_oil_prod_gdp_c2			-5.921**		
			(2.902)		
H_oil_prod_cap_c2				-1.15e-12**	
				(5.14e-13)	
H_oil_prod_dev_c2					-6.12e-09
					(0.000000333)
_cons	6.283***	5.373***	5.352***	5.351***	5.324***
	(1.108)	(1.055)	(1.053)	(1.045)	(1.069)
N	56411	55510	55510	56411	55510

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.17: Robustness test for relative resource measures for control vector X3'

Stage 3 - diff. controls - R_oil_prod_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
R_oil_prod_c2	-1.40e-09*				
	(7.45e-10)				
init_cap_win	0.452	0.469	0.501	0.537	0.536
	(0.400)	(0.393)	(0.393)	(0.393)	(0.388)
both_minor	-0.180	-0.183	-0.176	-0.176	-0.187
	(0.282)	(0.283)	(0.283)	(0.283)	(0.283)
R_oil_prod_pop_c2		-0.00931*			
		(0.00532)			
R_oil_prod_gdp_c2			-41.26*		
			(23.99)		
R_oil_prod_cap_c2				-9.97e-12**	
				(4.41e-12)	
R_oil_prod_dev_c2					0.00000332**
					(0.00000149)
_cons	5.287***	4.638***	4.625***	4.686***	4.331***
	(1.021)	(0.979)	(0.979)	(0.973)	(0.987)
N	85263	82841	82841	85263	82841

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.18: Robustness test for relative resource measures for control vector X3’

Stage 3 - diff. controls - R_oil_val_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_val_prod_c2	-3.65e-12**				
	(1.76e-12)				
init_cap_win	0.489	0.464	0.508	0.475	0.482
	(0.391)	(0.393)	(0.394)	(0.391)	(0.392)
both_minor	-0.182	-0.176	-0.171	-0.175	-0.172
	(0.283)	(0.283)	(0.283)	(0.283)	(0.283)
R_oil_val_prod_pop_c2		-0.0000348			
		(0.0000370)			
R_oil_val_prod_gdp_c2			0.860**		
			(0.433)		
R_oil_val_prod_cap_c2				-3.60e-14*	
				(1.91e-14)	
R_oil_val_prod_dev_c2					1.32e-08
					(1.06e-08)
_cons	4.826***	4.597***	4.623***	4.659***	4.569***
	(0.977)	(0.980)	(0.976)	(0.975)	(0.974)
N	85263	82841	82841	85263	82841

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.19: Robustness test for relative resource measures for control vector X2'

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.H_oil_reserves_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
outside_oil_dep_c1	0.00105	0.000905	0.000372	0.000851	0.000966
	(0.00137)	(0.00132)	(0.00138)	(0.00134)	(0.00136)
H_oil_reserves_c2	1.72e-12				
	(3.93e-12)				
c.outside_oil_dep_c1#c.H_oil~r	-2.53e-14				
	(7.37e-14)				
L_g_pop_1	-0.000000673	-0.000000683	-0.000000712	-0.000000694	-0.000000691
	(0.000000876)	(0.000000879)	(0.000000877)	(0.000000879)	(0.000000872)
L_g_pop_2	-5.06e-10	-4.48e-10	-4.68e-10	-4.51e-10	-6.46e-10
	(8.66e-10)	(8.54e-10)	(8.53e-10)	(8.54e-10)	(9.49e-10)
c.L_g_pop_1#c.L_g_pop_2	-1.58e-15*	-1.59e-15**	-1.58e-15*	-1.58e-15*	-1.68e-15**
	(8.08e-16)	(8.08e-16)	(8.08e-16)	(8.08e-16)	(8.34e-16)
L_gdp_1	1.96e-12	4.00e-12	3.37e-12	4.48e-12	-4.86e-12
	(7.88e-11)	(7.95e-11)	(7.94e-11)	(7.95e-11)	(7.79e-11)
L_gdp_2	-1.95e-14	-2.34e-14	-2.43e-14	-2.41e-14	1.80e-14
	(5.65e-14)	(5.54e-14)	(5.54e-14)	(5.54e-14)	(5.70e-14)
c.L_gdp_1#c.L_gdp_2	-1.03e-22	-1.03e-22	-1.03e-22	-1.04e-22	-9.91e-23
	(1.09e-22)	(1.09e-22)	(1.09e-22)	(1.09e-22)	(1.07e-22)
L_cap_1	-4.058	-4.043	-3.960	-4.051	-3.976
	(3.347)	(3.349)	(3.339)	(3.348)	(3.379)
L_cap_2	-1.621	-1.699	-1.692	-1.766	-1.160
	(3.326)	(3.296)	(3.292)	(3.291)	(3.368)
c.L_cap_1#c.L_cap_2	57.64***	57.25***	57.78***	58.00***	57.18***
	(18.48)	(18.45)	(18.52)	(18.45)	(18.20)
H_oil_reserves_pop_c2		-0.0000106*			
		(0.00000632)			
c.outside_oil_dep_c1#c.H_oil~r		9.31e-08			
		(0.000000623)			
H_oil_reserves_gdp_c2			0.00792		
			(0.0449)		
c.outside_oil_dep_c1#c.H_oil~r			0.0114*		
			(0.00621)		
H_oil_reserves_cap_c2				-8.29e-15	
				(1.27e-14)	
c.outside_oil_dep_c1#c.H_oil~r				1.15e-16	
				(5.00e-16)	
H_oil_reserves_dev_c2					2.44e-08***
					(7.66e-09)
c.outside_oil_dep_c1#c.H_oil~r					-5.83e-11
					(3.99e-10)
_cons	6.036***	6.094***	6.043***	6.081***	5.848***
	(1.458)	(1.453)	(1.451)	(1.452)	(1.460)
N	54531	54531	54531	54531	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.20: Robustness test for relative resource measures for control vector X2'

Stage 3 - diff. controls - c.outside_oil_dep_c1##c.H_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.00146	0.000660	0.0000300	0.00153	-0.00457
	(0.00135)	(0.00135)	(0.00152)	(0.00134)	(0.00316)
H_oil_prod_c2	-4.09e-10***				
	(1.55e-10)				
c.outside_oil_dep_c1#c.H_oil~_	-5.58e-12				
	(6.44e-12)				
L_g_pop_1	-0.000000767	-0.000000652	-0.000000653	-0.000000667	0.00000102
	(0.000000883)	(0.000000879)	(0.000000879)	(0.000000882)	(0.000000984)
L_g_pop_2	5.06e-10	-4.20e-10	-4.00e-10	-2.17e-10	1.64e-09
	(9.35e-10)	(8.54e-10)	(8.55e-10)	(9.02e-10)	(1.12e-09)
c.L_g_pop_1#c.L_g_pop_2	-1.56e-15*	-1.60e-15**	-1.58e-15*	-1.62e-15**	-5.24e-16
	(8.03e-16)	(8.08e-16)	(8.08e-16)	(8.13e-16)	(4.24e-16)
L_gdp_1	1.16e-11	2.58e-12	2.55e-12	2.63e-12	-2.37e-11
	(7.77e-11)	(7.94e-11)	(7.94e-11)	(7.95e-11)	(6.14e-11)
L_gdp_2	-7.46e-14	-2.35e-14	-2.50e-14	-4.80e-14	-1.11e-13**
	(5.87e-14)	(5.53e-14)	(5.54e-14)	(7.70e-14)	(4.88e-14)
c.L_gdp_1#c.L_gdp_2	-1.04e-22	-1.03e-22	-1.03e-22	-1.02e-22	1.69e-23*
	(1.06e-22)	(1.09e-22)	(1.09e-22)	(1.09e-22)	(9.39e-24)
L_cap_1	-3.997	-4.186	-4.335	-4.122	2.117
	(3.357)	(3.356)	(3.370)	(3.346)	(3.091)
L_cap_2	-8.747**	-1.855	-2.214	-2.208	-1.561
	(4.226)	(3.303)	(3.307)	(3.362)	(5.426)
c.L_cap_1#c.L_cap_2	57.03***	56.86***	58.57***	56.70***	-16.10
	(18.25)	(18.46)	(18.47)	(18.44)	(30.64)
H_oil_prod_pop_c2		-0.00131*			
		(0.000685)			
c.outside_oil_dep_c1#c.H_oil~_		0.0000223			
		(0.0000226)			
H_oil_prod_cap_c2			-1.18e-12**		
			(5.55e-13)		
c.outside_oil_dep_c1#c.H_oil~_			2.45e-14*		
			(1.34e-14)		
H_oil_prod_dev_c2				-0.000000112	
				(0.000000459)	
c.outside_oil_dep_c1#c.H_oil~_				-2.45e-08	
				(2.18e-08)	
W_oil_rents2					-0.0693
					(0.236)
c.outside_oil_dep_c1#c.W_oil~s					0.00307
					(0.00432)
_cons	8.428***	6.172***	6.205***	6.301***	1.945
	(1.632)	(1.455)	(1.453)	(1.506)	(1.579)
N	54531	54531	54531	54531	54283

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.21: Robustness test for relative resource measures for control vector X2'

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.R_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	-0.0000821	-0.000602	-0.00132	-0.00107	-0.000298
	(0.00136)	(0.00144)	(0.00179)	(0.00167)	(0.00142)
R_oil_prod_c2	-2.06e-09***				
	(7.89e-10)				
c.outside_oil_dep_c1#c.R_oil~_	-1.26e-11				
	(2.29e-11)				
L_g_pop_1	-0.000000795	-0.000000778	-0.000000801	-0.000000781	-0.000000813
	(0.000000666)	(0.000000663)	(0.000000661)	(0.000000663)	(0.000000664)
L_g_pop_2	7.93e-10	3.04e-10	3.12e-10	3.27e-10	2.73e-10
	(9.00e-10)	(8.23e-10)	(8.20e-10)	(8.23e-10)	(8.31e-10)
c.L_g_pop_1#c.L_g_pop_2	-8.04e-16*	-7.76e-16*	-7.74e-16*	-7.72e-16*	-7.81e-16*
	(4.33e-16)	(4.15e-16)	(4.16e-16)	(4.17e-16)	(4.18e-16)
L_gdp_1	3.39e-11	3.21e-11	3.21e-11	3.27e-11	3.27e-11
	(3.78e-11)	(3.79e-11)	(3.80e-11)	(3.81e-11)	(3.79e-11)
L_gdp_2	-7.32e-14*	-5.89e-14	-5.99e-14	-6.00e-14	-5.24e-14
	(4.12e-14)	(4.23e-14)	(4.23e-14)	(4.24e-14)	(4.63e-14)
c.L_gdp_1#c.L_gdp_2	-7.56e-24	-6.41e-24	-6.26e-24	-6.43e-24	-6.63e-24
	(9.27e-24)	(9.80e-24)	(9.77e-24)	(9.79e-24)	(9.69e-24)
L_cap_1	1.527	1.651	1.796	1.493	1.805
	(2.348)	(2.319)	(2.303)	(2.334)	(2.329)
L_cap_2	2.154	2.488	2.549	2.116	1.981
	(2.819)	(2.659)	(2.655)	(2.673)	(3.051)
c.L_cap_1#c.L_cap_2	48.03***	45.33***	45.44***	46.75***	45.46***
	(16.57)	(16.41)	(16.47)	(16.43)	(16.34)
R_oil_prod_pop_c2		-0.00862			
		(0.00535)			
c.outside_oil_dep_c1#c.R_oil~_		0.000121			
		(0.000151)			
R_oil_prod_gdp_c2			-41.49		
			(26.35)		
c.outside_oil_dep_c1#c.R_oil~_			3.398		
			(2.390)		
R_oil_prod_cap_c2				-9.18e-12**	
				(4.37e-12)	
c.outside_oil_dep_c1#c.R_oil~_				1.50e-13	
				(1.09e-13)	
R_oil_prod_dev_c2					0.000000866
					(0.00000213)
c.outside_oil_dep_c1#c.R_oil~_					-2.11e-08
					(5.97e-08)
_cons	4.322***	3.490***	3.439***	3.524***	3.463***
	(1.218)	(1.211)	(1.207)	(1.210)	(1.207)
N	80071	80071	80071	80071	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.22: Robustness test for relative resource measures for control vector X2'

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.0000270	-0.000644	-0.00133	-0.000796	-0.000311
	(0.00132)	(0.00146)	(0.00185)	(0.00154)	(0.00143)
R_oil_val_prod_c2	-5.29e-13				
	(2.26e-12)				
c.outside_oil_dep_c1#c.R_oil~p	-9.37e-14				
	(8.90e-14)				
L_g_pop_1	-8.61e-10	-8.43e-10	-7.95e-10	-8.98e-10	-8.09e-10
	(6.65e-10)	(6.65e-10)	(6.61e-10)	(6.65e-10)	(6.63e-10)
L_g_pop_2	3.11e-10	2.33e-10	2.85e-10	2.04e-10	3.60e-11
	(8.31e-10)	(8.20e-10)	(8.19e-10)	(8.20e-10)	(8.25e-10)
c.L_g_pop_1#c.L_g_pop_2	-7.72e-19*	-7.69e-19*	-7.77e-19*	-7.61e-19*	-7.98e-19*
	(4.20e-19)	(4.16e-19)	(4.15e-19)	(4.18e-19)	(4.15e-19)
L_gdp_1	3.46e-14	3.37e-14	3.21e-14	3.72e-14	3.17e-14
	(3.79e-14)	(3.82e-14)	(3.79e-14)	(3.86e-14)	(3.79e-14)
L_gdp_2	-5.36e-14	-5.90e-14	-5.74e-14	-6.02e-14	-5.34e-14
	(4.45e-14)	(4.23e-14)	(4.22e-14)	(4.25e-14)	(4.17e-14)
c.L_gdp_1#c.L_gdp_2	-5.79e-27	-6.71e-27	-6.44e-27	-6.98e-27	-6.17e-27
	(9.64e-27)	(9.88e-27)	(9.79e-27)	(9.93e-27)	(9.69e-27)
L_cap_1	1.905	1.773	1.776	1.729	1.775
	(2.329)	(2.323)	(2.308)	(2.340)	(2.328)
L_cap_2	2.227	2.578	2.603	2.410	2.940
	(2.745)	(2.660)	(2.653)	(2.676)	(2.637)
c.L_cap_1#c.L_cap_2	45.36***	46.08***	45.71***	47.18***	45.35***
	(16.39)	(16.42)	(16.43)	(16.46)	(16.71)
R_oil_val_prod_pop_c2		-0.0000448			
		(0.0000384)			
c.outside_oil_dep_c1#c.R_oil~p		0.000000685			
		(0.000000515)			
R_oil_val_prod_gdp_c2			0.631		
			(0.495)		
c.outside_oil_dep_c1#c.R_oil~p			0.0133		
			(0.0100)		
R_oil_val_prod_cap_c2				-4.26e-14**	
				(2.01e-14)	
c.outside_oil_dep_c1#c.R_oil~p				4.96e-16	
				(3.59e-16)	
R_oil_val_prod_dev_c2					1.44e-08
					(1.13e-08)
c.outside_oil_dep_c1#c.R_oil~p					-2.28e-10
					(3.78e-10)
_cons	3.506***	3.414***	3.423***	3.389***	3.389***
	(1.216)	(1.212)	(1.205)	(1.212)	(1.209)
N	80071	80071	80071	80071	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.23: Robustness test for relative resource measures for control vector X3' (controls omitted from output)

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.H_oil_reserves_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.00114	0.00102	0.000502	0.000911	0.00106
	(0.00136)	(0.00131)	(0.00136)	(0.00133)	(0.00135)
H_oil_reserves_c2	2.64e-12				
	(3.83e-12)				
c.outside_oil_dep_c1#c.H_oil~r	-3.00e-14				
	(7.91e-14)				
H_oil_reserves_pop_c2		-0.0000106*			
		(0.00000613)			
c.outside_oil_dep_c1#c.H_oil~r		0.000000173			
		(0.000000607)			
H_oil_reserves_gdp_c2			0.00220		
			(0.0438)		
c.outside_oil_dep_c1#c.H_oil~r			0.0119*		
			(0.00621)		
H_oil_reserves_cap_c2				-7.21e-15	
				(1.25e-14)	
c.outside_oil_dep_c1#c.H_oil~r				1.49e-16	
				(5.16e-16)	
H_oil_reserves_dev_c2					2.58e-08***
					(7.42e-09)
c.outside_oil_dep_c1#c.H_oil~r					-4.84e-11
					(4.01e-10)
_cons	5.140***	5.168***	5.114***	5.196***	5.045***
	(1.042)	(1.044)	(1.045)	(1.038)	(1.045)
N	55454	54553	54553	55454	54553

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.24: Robustness test for relative resource measures for control vector X3' (controls omitted from output)

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.H_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.00161	0.000836	0.000171	0.00175	-0.00417
	(0.00134)	(0.00132)	(0.00150)	(0.00133)	(0.00323)
H_oil_prod_c2	-3.05e-10**				
	(1.37e-10)				
c.outside_oil_dep_c1#c.H_oil~_	-5.08e-12				
	(6.53e-12)				
H_oil_prod_pop_c2		-0.00134**			
		(0.000640)			
c.outside_oil_dep_c1#c.H_oil~_		0.0000248			
		(0.0000224)			
H_oil_prod_cap_c2			-1.21e-12**		
			(5.40e-13)		
c.outside_oil_dep_c1#c.H_oil~_			2.53e-14*		
			(1.34e-14)		
H_oil_prod_dev_c2				7.06e-08	
				(0.000000338)	
c.outside_oil_dep_c1#c.H_oil~_				-2.63e-08	
				(2.21e-08)	
W_oil_rents2					-0.0829
					(0.234)
c.outside_oil_dep_c1#c.W_oil~s					0.00278
					(0.00430)
_cons	6.226***	5.295***	5.292***	5.250***	0.983
	(1.101)	(1.048)	(1.041)	(1.062)	(1.396)
N	55432	54531	55432	54531	54283

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.25: Robustness test for relative resource measures for control vector X3' (controls omitted from output)

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.R_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.000179	-0.000537	-0.00126	-0.00107	-0.0000659
	(0.00129)	(0.00145)	(0.00182)	(0.00173)	(0.00137)
R_oil_prod_c2	-1.40e-09*				
	(7.64e-10)				
c.outside_oil_dep_c1#c.R_oil~_	-2.59e-11				
	(2.86e-11)				
R_oil_prod_pop_c2		-0.00939*			
		(0.00538)			
c.outside_oil_dep_c1#c.R_oil~_		0.000123			
		(0.000150)			
R_oil_prod_gdp_c2			-45.20*		
			(26.15)		
c.outside_oil_dep_c1#c.R_oil~_			3.383		
			(2.402)		
R_oil_prod_cap_c2				-1.02e-11**	
				(4.45e-12)	
c.outside_oil_dep_c1#c.R_oil~_				1.51e-13	
				(1.12e-13)	
R_oil_prod_dev_c2					0.00000336**
					(0.00000149)
c.outside_oil_dep_c1#c.R_oil~_					-4.50e-08
					(6.61e-08)
_cons	5.142***	4.414***	4.375***	4.460***	4.125***
	(1.027)	(0.982)	(0.980)	(0.977)	(0.997)
N	82524	80102	80102	82524	80102

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.26: Robustness test for relative resource measures for control vector X3’

Stage 4 - diff. controls - c.outside_oil_dep_c1##c.R_oil_val_prod_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
outside_oil_dep_c1	0.000181	-0.000477	-0.00118	-0.000995	-0.0000554
	(0.00129)	(0.00142)	(0.00178)	(0.00170)	(0.00136)
R_oil_prod_c2	-1.35e-09*				
	(7.51e-10)				
c.outside_oil_dep_c1#c.R_oil~_	-2.29e-11				
	(2.71e-11)				
init_cap_win	0.481	0.482	0.517	0.551	0.551
	(0.402)	(0.394)	(0.394)	(0.394)	(0.390)
both_minor	-0.173	-0.172	-0.161	-0.163	-0.176
	(0.281)	(0.284)	(0.283)	(0.283)	(0.284)
R_oil_prod_pop_c2		-0.00934*			
		(0.00535)			
c.outside_oil_dep_c1#c.R_oil~_		0.000120			
		(0.000151)			
R_oil_prod_gdp_c2			-44.90*		
			(26.00)		
c.outside_oil_dep_c1#c.R_oil~_			3.322		
			(2.401)		
R_oil_prod_cap_c2				-1.02e-11**	
				(4.46e-12)	
c.outside_oil_dep_c1#c.R_oil~_				1.48e-13	
				(1.12e-13)	
R_oil_prod_dev_c2					0.00000344**
					(0.00000152)
c.outside_oil_dep_c1#c.R_oil~_					-3.73e-08
					(6.28e-08)
_cons	5.197***	4.502***	4.463***	4.550***	4.206***
	(1.029)	(0.984)	(0.982)	(0.978)	(0.994)
N	82493	80071	80071	82493	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.27: Robustness test for different import measures

Stage 4 - import robustness - c.outside_oil_dep_c1##c.H_oil_reserves_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.00108	0.000968	0.000471	0.000874	0.00101
	(0.00139)	(0.00133)	(0.00140)	(0.00137)	(0.00140)
H_oil_reserves_c2	2.23e-12				
	(3.80e-12)				
c.outside_oil_dep_c1#c.H_oil~r	-3.11e-14				
	(7.92e-14)				
O_net2_oil_imp_c1	1.97e-12	2.13e-12	1.78e-12	2.03e-12	1.91e-12
	(8.44e-12)	(8.43e-12)	(8.22e-12)	(8.42e-12)	(8.23e-12)
H_oil_reserves_pop_c2		-0.0000112*			
		(0.00000604)			
c.outside_oil_dep_c1#c.H_oil~r		0.000000105			
		(0.000000624)			
H_oil_reserves_gdp_c2			0.00236		
			(0.0441)		
c.outside_oil_dep_c1#c.H_oil~r			0.0113*		
			(0.00616)		
H_oil_reserves_cap_c2				-7.13e-15	
				(1.26e-14)	
c.outside_oil_dep_c1#c.H_oil~r				9.34e-17	
				(5.23e-16)	
H_oil_reserves_dev_c2					2.56e-08***
					(7.42e-09)
c.outside_oil_dep_c1#c.H_oil~r					-4.76e-11
					(4.04e-10)
_cons	5.478***	5.440***	5.416***	5.515***	5.315***
	(1.030)	(1.030)	(1.033)	(1.025)	(1.027)
N	55432	54531	54531	55432	54531

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.28: Robustness test for different import measures

Stage 4 - import robustness - c.outside_oil_dep_c1##c.H_oil_prod_c2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
outside_oil_dep_c1	0.00143	0.000719	0.0000575	0.00161	-0.00158
	(0.00137)	(0.00137)	(0.00156)	(0.00137)	(0.00321)
H_oil_prod_c2	-3.01e-10**				
	(1.41e-10)				
c.outside_oil_dep_c1#c.H_oil~_	-4.91e-12				
	(6.61e-12)				
O_net2_oil_imp_c1	2.73e-12	2.14e-12	2.06e-12	2.46e-12	7.98e-13
	(8.40e-12)	(8.40e-12)	(8.32e-12)	(8.33e-12)	(2.38e-12)
H_oil_prod_pop_c2		-0.00136**			
		(0.000628)			
c.outside_oil_dep_c1#c.H_oil~_		0.0000235			
		(0.0000227)			
H_oil_prod_cap_c2			-1.18e-12**		
			(5.51e-13)		
c.outside_oil_dep_c1#c.H_oil~_			2.43e-14*		
			(1.35e-14)		
H_oil_prod_dev_c2				7.26e-08	
				(0.000000338)	
c.outside_oil_dep_c1#c.H_oil~_				-2.61e-08	
				(2.21e-08)	
W_oil_rents2					0.0869
					(0.233)
c.outside_oil_dep_c1#c.W_oil~s					-0.00302
					(0.00438)
_cons	6.450***	5.469***	5.541***	5.436***	1.704
	(1.094)	(1.030)	(1.026)	(1.048)	(1.410)
N	55432	54531	55432	54531	54283

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.29: Robustness test for different import measures

Stage 4 - import robustness - c.outside_oil_dep_c1##c.R_oil_prod_c2

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.0000750	-0.000496	-0.00119	-0.00101	-0.000127
	(0.00131)	(0.00141)	(0.00176)	(0.00167)	(0.00136)
R_oil_prod_c2	-1.40e-09*				
	(7.52e-10)				
c.outside_oil_dep_c1#c.R_oil~_	-2.07e-11				
	(2.68e-11)				
O_net2_oil_imp_c1	1.89e-14	-2.17e-13	-2.23e-13	-1.32e-13	-1.20e-13
	(2.01e-12)	(2.08e-12)	(2.10e-12)	(2.06e-12)	(1.97e-12)
R_oil_prod_pop_c2		-0.00933*			
		(0.00529)			
c.outside_oil_dep_c1#c.R_oil~_		0.000112			
		(0.000155)			
R_oil_prod_gdp_c2			-43.34*		
			(25.58)		
c.outside_oil_dep_c1#c.R_oil~_			3.261		
			(2.397)		
R_oil_prod_cap_c2				-9.89e-12**	
				(4.47e-12)	
c.outside_oil_dep_c1#c.R_oil~_				1.43e-13	
				(1.11e-13)	
R_oil_prod_dev_c2					0.00000327**
					(0.00000152)
c.outside_oil_dep_c1#c.R_oil~_					-3.51e-08
					(6.32e-08)
_cons	5.484***	4.786***	4.769***	4.871***	4.537***
	(0.983)	(0.950)	(0.949)	(0.946)	(0.960)
N	82493	80071	80071	82493	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.30: Robustness test for different import measures

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.0000394	-0.000547	-0.00117	-0.000740	-0.000192
	(0.00131)	(0.00143)	(0.00179)	(0.00154)	(0.00139)
R_oil_val_prod_c2	-3.20e-12				
	(2.14e-12)				
c.outside_oil_dep_c1#c.R_oil~p	-7.05e-14				
	(8.99e-14)				
O_net2_oil_imp_c1	3.26e-13	-1.89e-13	-3.53e-13	3.92e-14	-3.17e-13
	(1.95e-12)	(2.10e-12)	(2.11e-12)	(2.09e-12)	(2.13e-12)
R_oil_val_prod_pop_c2		-0.0000430			
		(0.0000380)			
c.outside_oil_dep_c1#c.R_oil~p		0.000000654			
		(0.000000524)			
R_oil_val_prod_gdp_c2			0.705		
			(0.481)		
c.outside_oil_dep_c1#c.R_oil~p			0.0122		
			(0.0100)		
R_oil_val_prod_cap_c2				-4.13e-14**	
				(2.05e-14)	
c.outside_oil_dep_c1#c.R_oil~p				4.53e-16	
				(3.75e-16)	
R_oil_val_prod_dev_c2					1.53e-08
					(1.17e-08)
c.outside_oil_dep_c1#c.R_oil~p					-2.56e-10
					(3.98e-10)
_cons	4.985***	4.738***	4.775***	4.799***	4.744***
	(0.947)	(0.951)	(0.946)	(0.948)	(0.947)
N	82493	80071	80071	82493	80071

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.31: Outside gas dependence – significant sub-component for outside dependence

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.0222	0.0423*	0.0907**	0.000635***	0.108***
	(0.0217)	(0.0246)	(0.0448)	(0.000198)	(0.0356)
1.W_no_gas_rent1	-0.387***	-0.0281	-0.115	0.00591	0.121
	(0.0984)	(0.236)	(0.295)	(0.00378)	(0.261)
1.W_no_gas_rent1#c.outside_g~p	-0.00521	-0.0574	-0.0787*	-0.000581***	-0.0968***
	(0.0456)	(0.0372)	(0.0459)	(0.000196)	(0.0374)
_cons	-2.382**	3.643***	2.722*	0.0694***	4.101***
	(1.074)	(1.209)	(1.608)	(0.0170)	(1.383)
N	77662	59664	51308	77662	343032

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.32: Outside wood dependence – significant sub-component for wood dummy

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) rev_b
main					
outside_wood_dep	-0.000655	0.0157	0.0506	0.000355	0.0461
	(0.0281)	(0.0343)	(0.0308)	(0.000250)	(0.0334)
1.W_no_wood_rent1	1.448**	1.204***	0.144	0.0215	0.123
	(0.573)	(0.380)	(0.591)	(0.0189)	(0.487)
1.W_no_wood_rent1#c.outside_~d	-6.421**	-10.38***	-2.349	-0.0248	-3.294
	(2.790)	(2.386)	(3.461)	(0.0351)	(2.341)
_cons	-2.390**	3.897***	2.944*	0.0755***	4.260***
	(1.105)	(1.209)	(1.591)	(0.0174)	(1.375)
N	76264	58677	50507	76264	336761

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.32.1: Outside wood dependence – significant sub-component for wood dummy

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	-0.00270	0.0283	0.0253	0.000238	0.0404
	(0.0304)	(0.0303)	(0.0338)	(0.000236)	(0.0330)
1.C_W_no_wood_rent1	-0.148	-0.0658	-0.0351	0.00112	0.280
	(0.197)	(0.394)	(0.544)	(0.00459)	(0.268)
1.C_W_no_wood_rent1#c.outsid~d	0.0486	-0.0831	0.330**	0.00208	0.616***
	(0.0837)	(0.128)	(0.160)	(0.00186)	(0.192)
_cons	-2.346**	3.877***	2.936*	0.0755***	4.289***
	(1.108)	(1.210)	(1.591)	(0.0174)	(1.378)
N	76264	58677	50507	76264	336761

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.33: Robustness for different operationalization of net imports

Stage 6 - imp2

	(1)	(2)	(3)
	init	init	init
init			
outside_oil_dep_c1	0.00885**	0.0153	0.0227
	(0.00350)	(0.0196)	(0.0234)
O_in_degree_c1	0.00180		
	(0.00428)		
c.outside_oil_dep_c1#c.O_in_~e	-0.000438**		
	(0.000188)		
O_net2_oil_imp_c1	1.44e-12	6.55e-13	1.61e-13
	(1.96e-12)	(2.13e-12)	(1.97e-12)
O_closeness_c1		-0.908	
		(0.562)	
c.outside_oil_dep_c1#c.O_clo~s		-0.0263	
		(0.0339)	
O_closeness_nosym_c1			0.535
			(0.536)
c.outside_oil_dep_c1#c.O_clo~s			-0.0431
			(0.0428)
_cons	3.962***	4.749***	3.742***
	(0.996)	(1.055)	(1.023)
N	79572	79572	79572
AIC	9164.0	9163.7	9166.0

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.34: Robustness for different fixed effects - [(1) no FE – (2) i.ccode1 i.ccode2 (3) i.year (4) i.ccode1 i.ccode2 i.year] and with AIC

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep_c1	-0.00850	0.0102***	-0.0110*	0.00789**
	(0.00632)	(0.00352)	(0.00622)	(0.00368)
O_in_degree_c1	0.00745*	0.000666	0.00634	0.00180
	(0.00440)	(0.00433)	(0.00440)	(0.00505)
c.outside_oil_dep_c1#c.O_in_~e	-0.0000183	-0.000510***	0.0000385	-0.000444**
	(0.000210)	(0.000193)	(0.000201)	(0.000201)
O_net3_oil_imp_c1	3.27e-12**	2.66e-12**	3.81e-12**	2.63e-12*
	(1.41e-12)	(1.28e-12)	(1.62e-12)	(1.51e-12)
_cons	-1.844**	3.866***	-2.475***	3.362***
	(0.919)	(0.998)	(0.961)	(1.018)
N	97061	79572	97061	79572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.35: Nested Models for Degree Centrality with AIC

Stage 6 - NESTED MODELS & AIC

	(1) init	(2) init	(3) init	(4) init
init				
O_net3_oil_imp_c1		1.08e-12	1.64e-12	2.66e-12**
		(1.31e-12)	(1.17e-12)	(1.28e-12)
O_in_degree_c1			-0.00283	0.000666
			(0.00387)	(0.00433)
outside_oil_dep_c1				0.0102***
				(0.00352)
c.outside_oil_dep_c1#c.O_in_~e				-0.000510***
				(0.000193)
_cons	4.987***	4.912***	4.110***	3.866***
	(0.932)	(0.940)	(0.987)	(0.998)
N	85273	85273	82341	79572
AIC	9776.2	9775.3	9211.0	9161.1

Standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.36: Monadic Results - Nested Models for Degree Centrality with AIC

MONADIC - NESTED MODELS & AIC

	(1) init	(2) init	(3) init	(4) init
init				
O_net3_oil_imp_c1		-8.22e-13	7.03e-13	2.69e-12
		(2.53e-12)	(2.41e-12)	(2.35e-12)
O_in_degree_c1			-0.00905	-0.000743
			(0.00623)	(0.00662)
outside_oil_dep_c1				0.00942**
				(0.00419)
c.outside_oil_dep_c1#c.O_in_~e				-0.000696***
				(0.000256)
_cons	-2.144	-1.335	-2.696	-2.566
	(1.536)	(1.518)	(1.647)	(1.658)
N	6332	6188	5900	5900
AIC	4799.8	4712.3	4611.3	4587.3

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.36.2: Monadic Results - Nested Models for Degree Centrality with AIC

MONADIC - NESTED MODELS & AIC

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
O_net2_oil_imp_c1		-4.86e-12**	-2.57e-12	5.31e-13
		(2.19e-12)	(2.62e-12)	(3.25e-12)
O_in_degree_c1			-0.00815	-0.000485
			(0.00634)	(0.00671)
outside_oil_dep_c1				0.00879**
				(0.00415)
c.outside_oil_dep_c1#c.O_in_~e				-0.000659***
				(0.000253)
_cons	-2.144	-1.406	-2.635	-2.432
	(1.536)	(1.512)	(1.626)	(1.637)
N	6332	6188	5900	5900
AIC	4799.8	4711.1	4611.0	4587.9

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.36.3: Monadic Results - Nested Models for Degree Centrality with AIC

MONADIC - NESTED MODELS & AIC

	(1) init	(2) init	(3) init	(4) init
init				
O_net3_oil_imp_c1		-8.22e-13	9.15e-13	2.64e-12
		(2.53e-12)	(2.38e-12)	(2.30e-12)
O_st_in_degree_c1			-2.313**	-0.969
			(1.105)	(1.167)
outside_oil_dep_c1				0.0103**
				(0.00418)
c.outside_oil_dep_c1# c.O_st_~e				-0.119***
				(0.0415)
_cons	-2.144	-1.335	-2.501	-2.524
	(1.536)	(1.518)	(1.607)	(1.613)
N	6332	6188	5900	5900
AIC	4799.8	4712.3	4607.8	4588.7

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.37: Monadic Results – Different Fixed Effects – imp3 [(1) i.region – (2) i.region i.ccode1 (3) i.region i.year (4) i.region i.ccode1 i.year]

MONADIC - Different fixed effects

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep_c1	0.00569	0.00971**	0.00235	0.00423
	(0.00416)	(0.00436)	(0.00446)	(0.00469)
O_in_degree_c1	-0.00576	-0.000713	-0.00622	-0.00428
	(0.00512)	(0.00732)	(0.00554)	(0.00863)
c.outside_oil_dep_c1#c.O_in_~e	-0.000531**	-0.000716***	-0.000318	-0.000369
	(0.000211)	(0.000273)	(0.000218)	(0.000254)
O_net3_oil_imp_c1	3.24e-12	3.60e-12	9.81e-13	8.91e-13
	(3.28e-12)	(3.99e-12)	(3.55e-12)	(4.28e-12)
_cons	-3.636***	-12.13***	-3.883***	-5.854
	(0.662)	(2.706)	(0.762)	(3.624)
N	6693	5900	6693	5900

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.38: Monadic Results – Different Fixed Effects – imp2 [(1) i.region – (2) i.region i.ccode1 (3) i.region i.year (4) i.region i.ccode1 i.year]

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
outside_oil_dep_c1	0.00504	0.00879**	0.00267	0.00465
	(0.00392)	(0.00415)	(0.00418)	(0.00459)
O_in_degree_c1	-0.00517	-0.000485	-0.00586	-0.00382
	(0.00497)	(0.00671)	(0.00541)	(0.00811)
c.outside_oil_dep_c1#c.O_in_~e	-0.000488**	-0.000659***	-0.000331	-0.000395
	(0.000193)	(0.000253)	(0.000203)	(0.000247)
O_net2_oil_imp_c1	4.47e-12*	5.31e-13	6.59e-12**	4.26e-12
	(2.61e-12)	(3.25e-12)	(2.83e-12)	(6.10e-12)
_cons	-3.898***	-2.432	-4.225***	2.510
	(0.653)	(1.637)	(0.775)	(2.444)
N	6693	5900	6693	5900
AIC	4961.6	4587.9	4943.5	4571.1

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.39: Different thresholds for exporter identification – 10 iterations (the respective cut off values)

Stage 7 - LOOP iteration 0

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	-1.77e-09**				
	(8.37e-10)				
1.exporter	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
1.exporter#c.R_oil_prod_c2	0				
	(.)				
R_oil_val_prod_c2		3.05e-13			
		(1.07e-12)			
1.exporter#c.R_oil_val_prod_c2		0			
		(.)			
H_oil_prod_c2			-3.83e-10***		
			(1.47e-10)		
1.exporter#c.H_oil_prod_c2			0		
			(.)		
H_oil_reserves_c2				1.03e-12	
				(4.59e-12)	
1.exporter#c.H_oil_reserves_c2				0	
				(.)	
P_oil_deposits_total_c2					0.000800***
					(0.000192)
1.exporter#c.P_oil_deposits_~_					0
					(.)
_cons	4.881***	4.135***	5.772***	4.610***	2.870***
	(1.008)	(0.978)	(1.158)	(1.073)	(0.987)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 1

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
R_oil_prod_c2	-0.00000154**				
	(0.000000742)				
1.exporter	0.0192	0.0193	-0.00134	0.0418	-0.0203
	(0.137)	(0.138)	(0.161)	(0.157)	(0.146)
1.exporter#c.R_oil_prod_c2	0.00000153**				
	(0.000000742)				
R_oil_val_prod_c2		-7.93e-09***			
		(2.97e-09)			
1.exporter#c.R_oil_val_prod_c2		7.93e-09***			
		(2.97e-09)			
H_oil_prod_c2			-0.000000119*		
			(6.40e-08)		
1.exporter#c.H_oil_prod_c2			0.000000118*		
			(6.40e-08)		
H_oil_reserves_c2				3.79e-12	
				(6.13e-10)	
1.exporter#c.H_oil_reserves_c2				-2.75e-12	
				(6.13e-10)	
P_oil_deposits_total_c2					-0.0114
					(0.0121)
1.exporter#c.P_oil_deposits_~_					0.0122
					(0.0121)
_cons	4.876***	4.135***	5.788***	4.573***	2.896***
	(1.007)	(0.976)	(1.166)	(1.077)	(0.986)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 2

	(1)	(2)	(3)	(4)	(5)
	init	init	init	init	init
init					
R_oil_prod_c2	-0.000000998**				
	(0.000000473)				
1.exporter	0.111	0.144	0.104	0.206	-0.0499
	(0.145)	(0.143)	(0.173)	(0.170)	(0.149)
1.exporter#c.R_oil_prod_c2	0.000000996**				
	(0.000000473)				
R_oil_val_prod_c2		-2.04e-09			
		(1.44e-09)			
1.exporter#c.R_oil_val_prod_c2		2.04e-09			
		(1.44e-09)			
H_oil_prod_c2			-0.000000182***		
			(7.06e-08)		
1.exporter#c.H_oil_prod_c2			0.000000182***		
			(7.06e-08)		
H_oil_reserves_c2				-6.95e-10	
				(9.53e-10)	
1.exporter#c.H_oil_reserves_c2				6.96e-10	
				(9.53e-10)	
P_oil_deposits_total_c2					-0.0330**
					(0.0143)
1.exporter#c.P_oil_deposits_~_					0.0338**
					(0.0143)
_cons	4.832***	4.049***	5.731***	4.425***	2.950***
	(1.005)	(0.974)	(1.164)	(1.076)	(0.986)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 3

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	-6.97e-08				
	(6.19e-08)				
1.exporter	0.154	0.171	0.202	0.260*	0.0288
	(0.125)	(0.125)	(0.157)	(0.150)	(0.130)
1.exporter#c.R_oil_prod_c2	6.78e-08				
	(6.17e-08)				
R_oil_val_prod_c2		-1.95e-10			
		(2.19e-10)			
1.exporter#c.R_oil_val_prod_c2		1.95e-10			
		(2.18e-10)			
H_oil_prod_c2			-3.10e-08*		
			(1.74e-08)		
1.exporter#c.H_oil_prod_c2			3.06e-08*		
			(1.73e-08)		
H_oil_reserves_c2				-4.37e-10	
				(3.66e-10)	
1.exporter#c.H_oil_reserves_c2				4.39e-10	
				(3.66e-10)	
P_oil_deposits_total_c2					-0.0114
					(0.00707)
1.exporter#c.P_oil_deposits_~_					0.0122*
					(0.00707)
_cons	4.819***	4.023***	5.641***	4.393***	2.893***
	(1.010)	(0.975)	(1.168)	(1.076)	(0.984)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 4

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	4.30e-08***				
	(1.49e-08)				
1.exporter	0.249*	0.255**	0.291*	0.303*	0.165
	(0.129)	(0.130)	(0.169)	(0.163)	(0.129)
1.exporter#c.R_oil_prod_c2	-4.45e-08***				
	(1.48e-08)				
R_oil_val_prod_c2		2.36e-10***			
		(7.21e-11)			
1.exporter#c.R_oil_val_prod_c2		-2.35e-10***			
		(7.20e-11)			
H_oil_prod_c2			7.24e-09		
			(9.84e-09)		
1.exporter#c.H_oil_prod_c2			-7.61e-09		
			(9.83e-09)		
H_oil_reserves_c2				4.07e-10*	
				(2.40e-10)	
1.exporter#c.H_oil_reserves_c2				-4.06e-10*	
				(2.40e-10)	
P_oil_deposits_total_c2					0.00267***
					(0.001000)
1.exporter#c.P_oil_deposits_~_					-0.00187*
					(0.000988)
_cons	4.595***	3.917***	5.494***	4.354***	2.759***
	(1.007)	(0.979)	(1.167)	(1.079)	(0.986)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 5

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	4.64e-08***				
	(1.67e-08)				
1.exporter	0.178	0.183	0.281*	0.180	0.101
	(0.127)	(0.127)	(0.170)	(0.159)	(0.131)
1.exporter#c.R_oil_prod_c2	-4.79e-08***				
	(1.65e-08)				
R_oil_val_prod_c2		2.46e-10***			
		(7.96e-11)			
1.exporter#c.R_oil_val_prod_c2		-2.46e-10***			
		(7.95e-11)			
H_oil_prod_c2			1.80e-08***		
			(6.45e-09)		
1.exporter#c.H_oil_prod_c2			-1.84e-08***		
			(6.43e-09)		
H_oil_reserves_c2				3.27e-11***	
				(8.77e-12)	
1.exporter#c.H_oil_reserves_c2				-3.41e-11***	
				(8.93e-12)	
P_oil_deposits_total_c2					0.00313***
					(0.000978)
1.exporter#c.P_oil_deposits_~_					-0.00232**
					(0.000961)
_cons	4.617***	3.964***	5.408***	4.504***	2.793***
	(1.010)	(0.982)	(1.168)	(1.085)	(0.990)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 6

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	3.69e-08***				
	(1.41e-08)				
1.exporter	-0.0634	-0.0824	0.0111	-0.0712	-0.161
	(0.131)	(0.128)	(0.166)	(0.156)	(0.131)
1.exporter#c.R_oil_prod_c2	-3.83e-08***				
	(1.39e-08)				
R_oil_val_prod_c2		1.62e-10***			
		(5.57e-11)			
1.exporter#c.R_oil_val_prod_c2		-1.62e-10***			
		(5.56e-11)			
H_oil_prod_c2			1.21e-08***		
			(4.52e-09)		
1.exporter#c.H_oil_prod_c2			-1.25e-08***		
			(4.50e-09)		
H_oil_reserves_c2				3.01e-11***	
				(8.78e-12)	
1.exporter#c.H_oil_reserves_c2				-3.17e-11***	
				(8.93e-12)	
P_oil_deposits_total_c2					0.00256***
					(0.000954)
1.exporter#c.P_oil_deposits_~_					-0.00173*
					(0.000937)
_cons	4.739***	4.143***	5.679***	4.711***	2.930***
	(1.016)	(0.986)	(1.164)	(1.088)	(0.993)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 7

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	2.87e-08**				
	(1.26e-08)				
1.exporter	-0.0558	-0.0722	-0.167	-0.145	-0.135
	(0.129)	(0.128)	(0.152)	(0.146)	(0.129)
1.exporter#c.R_oil_prod_c2	-3.02e-08**				
	(1.24e-08)				
R_oil_val_prod_c2		1.29e-10**			
		(5.34e-11)			
1.exporter#c.R_oil_val_prod_c2		-1.29e-10**			
		(5.33e-11)			
H_oil_prod_c2			3.71e-09		
			(2.43e-09)		
1.exporter#c.H_oil_prod_c2			-4.08e-09*		
			(2.42e-09)		
H_oil_reserves_c2				2.93e-11***	
				(8.79e-12)	
1.exporter#c.H_oil_reserves_c2				-3.08e-11***	
				(8.94e-12)	
P_oil_deposits_total_c2					0.00246**
					(0.000957)
1.exporter#c.P_oil_deposits_~_					-0.00164*
					(0.000939)
_cons	4.763***	4.140***	5.867***	4.767***	2.909***
	(1.017)	(0.987)	(1.170)	(1.090)	(0.995)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 8

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	2.72e-08**				
	(1.30e-08)				
1.exporter	0.0233	0.0170	-0.164	-0.135	-0.0543
	(0.126)	(0.126)	(0.158)	(0.145)	(0.124)
1.exporter#c.R_oil_prod_c2	-2.87e-08**				
	(1.29e-08)				
R_oil_val_prod_c2		1.31e-10**			
		(5.29e-11)			
1.exporter#c.R_oil_val_prod_c2		-1.31e-10**			
		(5.28e-11)			
H_oil_prod_c2			3.10e-09		
			(2.64e-09)		
1.exporter#c.H_oil_prod_c2			-3.48e-09		
			(2.63e-09)		
H_oil_reserves_c2				2.93e-11***	
				(8.81e-12)	
1.exporter#c.H_oil_reserves_c2				-3.08e-11***	
				(8.95e-12)	
P_oil_deposits_total_c2					0.00256***
					(0.000961)
1.exporter#c.P_oil_deposits_~_					-0.00175*
					(0.000944)
_cons	4.739***	4.090***	5.872***	4.761***	2.868***
	(1.016)	(0.986)	(1.172)	(1.091)	(0.994)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 9

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	1.34e-08				
	(1.35e-08)				
1.exporter	-0.0909	-0.105	-0.314*	-0.176	-0.145
	(0.127)	(0.126)	(0.165)	(0.147)	(0.123)
1.exporter#c.R_oil_prod_c2	-1.50e-08				
	(1.34e-08)				
R_oil_val_prod_c2		6.30e-11			
		(4.56e-11)			
1.exporter#c.R_oil_val_prod_c2		-6.26e-11			
		(4.55e-11)			
H_oil_prod_c2			-1.75e-09		
			(3.09e-09)		
1.exporter#c.H_oil_prod_c2			1.37e-09		
			(3.08e-09)		
H_oil_reserves_c2				2.82e-11***	
				(8.88e-12)	
1.exporter#c.H_oil_reserves_c2				-2.97e-11***	
				(8.99e-12)	
P_oil_deposits_total_c2					0.00189*
					(0.00103)
1.exporter#c.P_oil_deposits_~_					-0.00108
					(0.00102)
_cons	4.843***	4.171***	6.026***	4.790***	2.913***
	(1.016)	(0.985)	(1.171)	(1.089)	(0.994)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - LOOP iteration 10

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
R_oil_prod_c2	9.67e-09				
	(1.31e-08)				
1.exporter	-0.189	-0.185	-0.463**	-0.317*	-0.238*
	(0.138)	(0.134)	(0.187)	(0.166)	(0.130)
1.exporter#c.R_oil_prod_c2	-1.13e-08				
	(1.30e-08)				
R_oil_val_prod_c2		5.85e-11			
		(3.86e-11)			
1.exporter#c.R_oil_val_prod_c2		-5.81e-11			
		(3.85e-11)			
H_oil_prod_c2			-2.04e-09		
			(2.64e-09)		
1.exporter#c.H_oil_prod_c2			1.65e-09		
			(2.63e-09)		
H_oil_reserves_c2				2.65e-11***	
				(9.00e-12)	
1.exporter#c.H_oil_reserves_c2				-2.79e-11***	
				(9.09e-12)	
P_oil_deposits_total_c2					0.00172*
					(0.00103)
1.exporter#c.P_oil_deposits_~_					-0.000894
					(0.00102)
_cons	4.887***	4.209***	6.131***	4.897***	2.946***
	(1.017)	(0.986)	(1.170)	(1.090)	(0.995)
N	82331	82331	53214	53214	79939

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.40: Scarcity & Discounted Measures

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
outside_oil_dep_c1	0.000505	0.000239	0.00166	0.00104	0.000106
	(0.00118)	(0.00126)	(0.00138)	(0.00130)	(0.00127)
R_oil_prod_exp_c2	2.77e-08*				
	(1.56e-08)				
c.outside_oil_dep_c1#c.R_oil~_	-3.34e-10				
	(5.98e-10)				
R_oil_val_prod_exp_c2		8.36e-11**			
		(3.31e-11)			
c.outside_oil_dep_c1#c.R_oil~p		-2.60e-13			
		(8.80e-13)			
H_oil_prod_exp_c2			-1.75e-09		
			(5.58e-09)		
c.outside_oil_dep_c1#c.H_oil~_			-9.28e-11		
			(1.50e-10)		
H_oil_reserves_exp_c2				1.32e-10***	
				(3.63e-11)	
c.outside_oil_dep_c1#c.H_oil~r				2.47e-12	
				(2.88e-12)	
P_oil_dep_total_exp_c2					0.00263
					(0.00178)
c.outside_oil_dep_c1#c.P_oil~t					0.0000541
					(0.000105)
_cons	4.067***	4.076***	4.890***	4.792***	3.963***
	(0.977)	(0.967)	(1.090)	(1.070)	(0.983)
N	70937	70937	45209	45209	68584

Table 8.5.41: Aggregate resource concentrations based on import and export ties

Stage 7 - Aggregate Concentrations

	(1)	(2)	(3)	(4)
	init	init	init	init
init				
aggr_prod_imp_c2	-3.86e-12			
	(7.52e-11)			
aggr_reserves_imp_c2		0.000342*		
		(0.000178)		
aggr_prod_exp_c2			-3.72e-10***	
			(1.02e-10)	
aggr_reserves_exp_c2				0.00103**
				(0.000481)
_cons	4.173***	4.018***	4.157***	4.084***
	(0.985)	(0.977)	(0.984)	(0.976)
N	82341	82341	82341	82341

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.42: Different centrality measures and logarithm of outside dependence

	(1) init	(2) init	(3) init	(4) init
init				
ln_out_dep_c1	0.0485	0.102**	0.120	0.279
	(0.0313)	(0.0432)	(0.167)	(0.240)
O_net3_oil_imp_c1	-1.20e-12	1.28e-13	-7.41e-13	-9.35e-13
	(1.82e-12)	(1.80e-12)	(1.97e-12)	(1.84e-12)
O_in_degree_c1		0.0123		
		(0.00836)		
c.ln_out_dep_c1#c.O_in_degre~1		-0.00491**		
		(0.00233)		
O_closeness_c1			0.585	
			(1.345)	
c.ln_out_dep_c1#c.O_closenes~1			-0.136	
			(0.305)	
O_closeness_nosym_c1				0.945
				(1.362)
c.ln_out_dep_c1#c.O_closenes~y				-0.449
				(0.472)
_cons	6.295***	6.174***	5.888***	5.844***
	(1.575)	(1.586)	(1.829)	(1.667)
N	43475	43475	43475	43475

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.43: FDI – Monadic level of Analysis

MONADIC - FDI in different combinations

	(1) init	(2) init	(3) init	(4) init	(5) init
init					
WB_FDI_c1	2.15e-13	1.51e-13	-4.44e-13	3.20e-12	6.29e-12
	(1.54e-12)	(1.51e-12)	(1.68e-12)	(2.08e-12)	(5.48e-12)
2.region1	-0.380	-0.0453	-0.329	-0.520	0.00884
	(0.779)	(0.787)	(0.843)	(0.811)	(0.792)
3.region1	1.991	2.618*	2.036	1.553	2.668*
	(1.502)	(1.581)	(1.684)	(1.589)	(1.582)
4.region1	0.283	1.016	0.374	0.210	1.011
	(1.241)	(1.302)	(1.363)	(1.236)	(1.297)
5.region1	-10.17***	-10.33***	-9.566***	-9.240***	-10.19***
	(2.574)	(2.798)	(2.848)	(2.747)	(2.775)
O_in_degree_c1		-0.0223***	-0.00976		-0.0210***
		(0.00834)	(0.00953)		(0.00812)
O_net3_oil_imp_c1		4.81e-13	3.38e-12	6.63e-12**	2.62e-12
		(4.40e-12)	(4.45e-12)	(3.11e-12)	(5.22e-12)
outside_oil_dep_c1			0.00259	-0.0216	
			(0.0149)	(0.0136)	
c.outside_oil_dep_c1#c.O_in_~e			-0.000705*		
			(0.000382)		
c.outside_oil_dep_c1#c.WB_FD~1				-5.56e-13***	
				(1.01e-13)	
c.WB_FDI_c1#c.O_in_degree_c1					-1.29e-13
					(1.19e-13)
_cons	11.94**	8.074	9.053	10.82**	8.149
	(5.108)	(5.569)	(5.618)	(5.238)	(5.570)
N	2894	2894	2894	2894	2894

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.44: FDI only – Dyadic level of Analysis

DYADIC - FDI only

	(1)	(2)	(3)
	init	init	init
init			
WB_FDI_c1	8.49e-13	2.37e-12	3.89e-12**
	(1.09e-12)	(1.48e-12)	(1.57e-12)
WB_FDI_c2		-2.41e-13	1.81e-12
		(1.64e-12)	(1.81e-12)
O_net3_oil_imp_c1		1.68e-12	1.39e-12
		(1.75e-12)	(1.84e-12)
c.WB_FDI_c1#c.WB_FDI_c2			-1.55e-22***
			(5.67e-23)
_cons	3.404**	-0.235	-0.320
	(1.341)	(1.760)	(1.750)
N	42962	27868	27868

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.45: FDI and Degree Centrality – Dyadic level of Analysis

DYADIC - FDI and Degree Centrality

	(1) init	(2) init	(3) init
init			
O_in_degree_c1	-0.00105	0.0000523	-0.000877
	(0.00578)	(0.00788)	(0.00802)
outside_oil_dep_c1	0.00639	0.0256**	0.0249*
	(0.00898)	(0.0129)	(0.0129)
c.O_in_degree_c1#c.outside_o~p	-0.000472	-0.00106**	-0.00103**
	(0.000293)	(0.000497)	(0.000492)
WB_FDI_c1	2.83e-13	2.84e-12*	4.41e-12***
	(1.22e-12)	(1.61e-12)	(1.70e-12)
O_net3_oil_imp_c1	2.76e-12*	3.78e-12**	3.48e-12*
	(1.54e-12)	(1.84e-12)	(1.96e-12)
WB_FDI_c2		6.87e-14	2.14e-12
		(1.65e-12)	(1.82e-12)
c.WB_FDI_c1#c.WB_FDI_c2			-1.55e-22***
			(5.73e-23)
_cons	3.077**	-0.382	-0.488
	(1.363)	(1.755)	(1.739)
N	40767	27750	27750

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Table 8.5.46: Interaction FDI and Outside Dependence – Dyadic level of Analysis

DYADIC - FDI and Outside Dependence INTERACTION

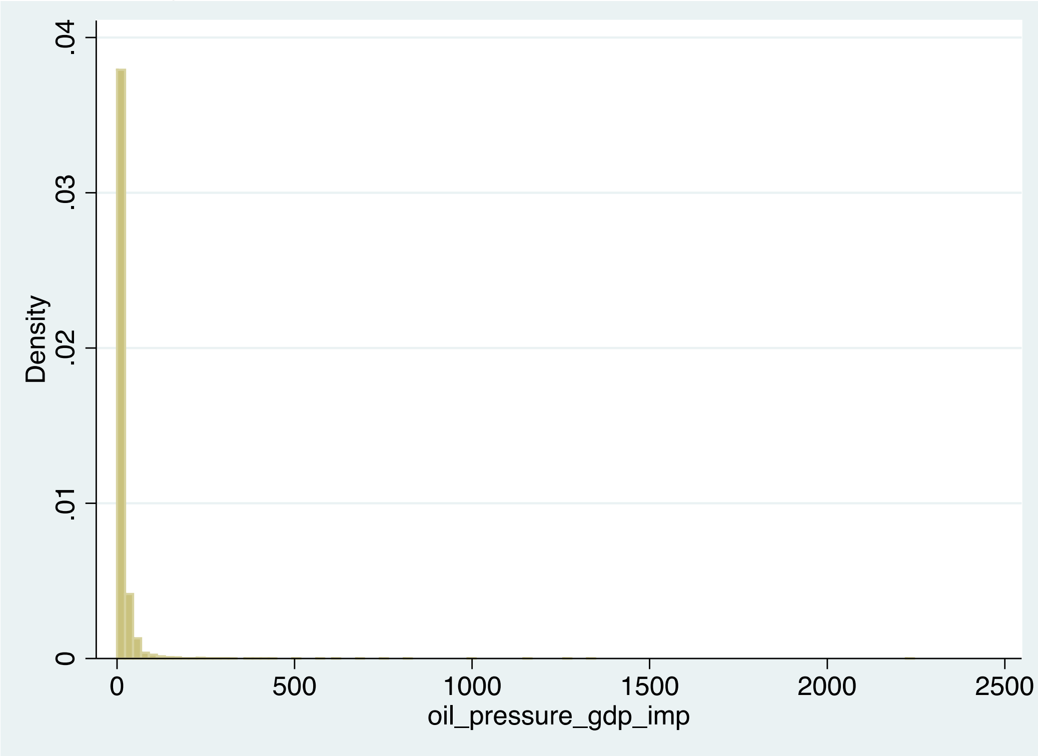
	(1) init	(2) init
init		
O_in_degree_c1	-0.00554	
	(0.00508)	
WB_FDI_c1	-1.86e-12	1.18e-12
	(3.12e-12)	(1.82e-12)
c.O_in_degree_c1#c.WB_FDI_c1	3.70e-14	
	(4.67e-14)	
O_net3_oil_imp_c1	1.04e-12	2.59e-12
	(1.53e-12)	(1.87e-12)
outside_oil_dep_c1		-0.00663
		(0.00696)
c.WB_FDI_c1#c.outside_oil_de~1		-9.68e-14
		(1.18e-13)
_cons	3.406**	3.068**
	(1.351)	(1.350)
N	42962	40767

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

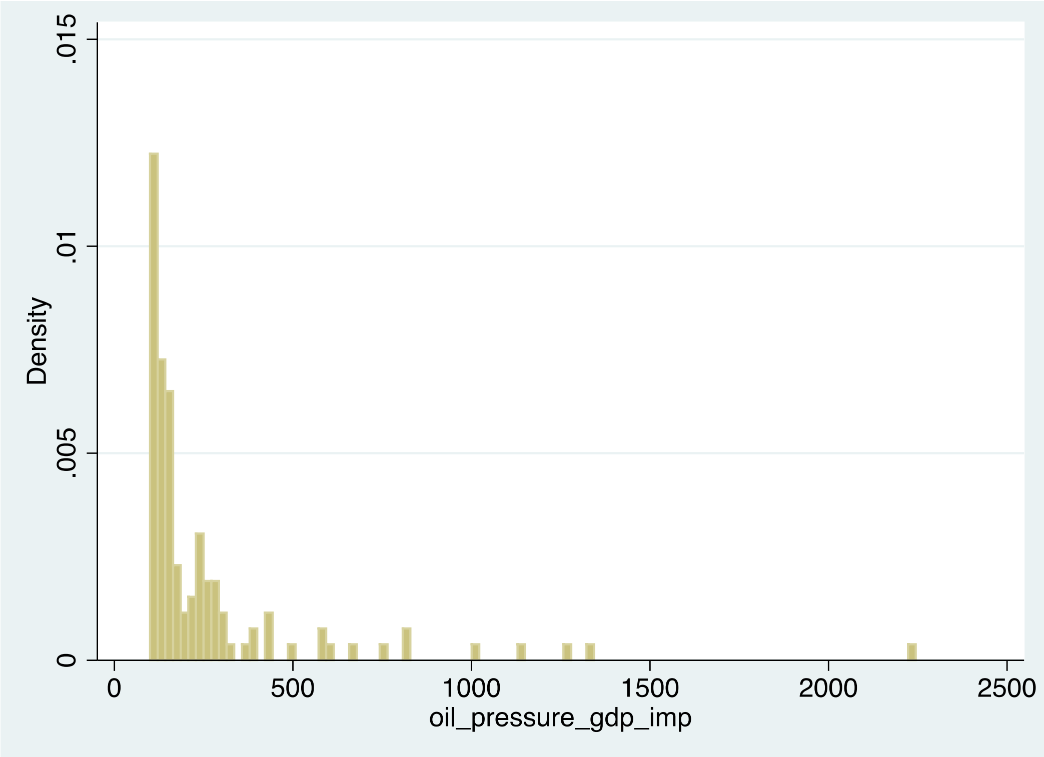
8.6 Graphs

Note: The variable for outside oil dependence is somewhat skewed. Normally, one remedy for skewness is taking the logarithm of the respective variable. However, since changes on lower end of oil dependence are expected to have smaller effects this strategy is not preferred for this study. Nevertheless, results for the interaction between different centralities and the logarithm of outside oil dependence can be found in Table 8.5.42 (preceding page). Findings are entirely robust (with some drop in significance). The (consistent) marginal effect plots for the variable in logarithmic form can be found in section 8.6.2.2.

8.6.1.1 Histogram of outside_oil_dep

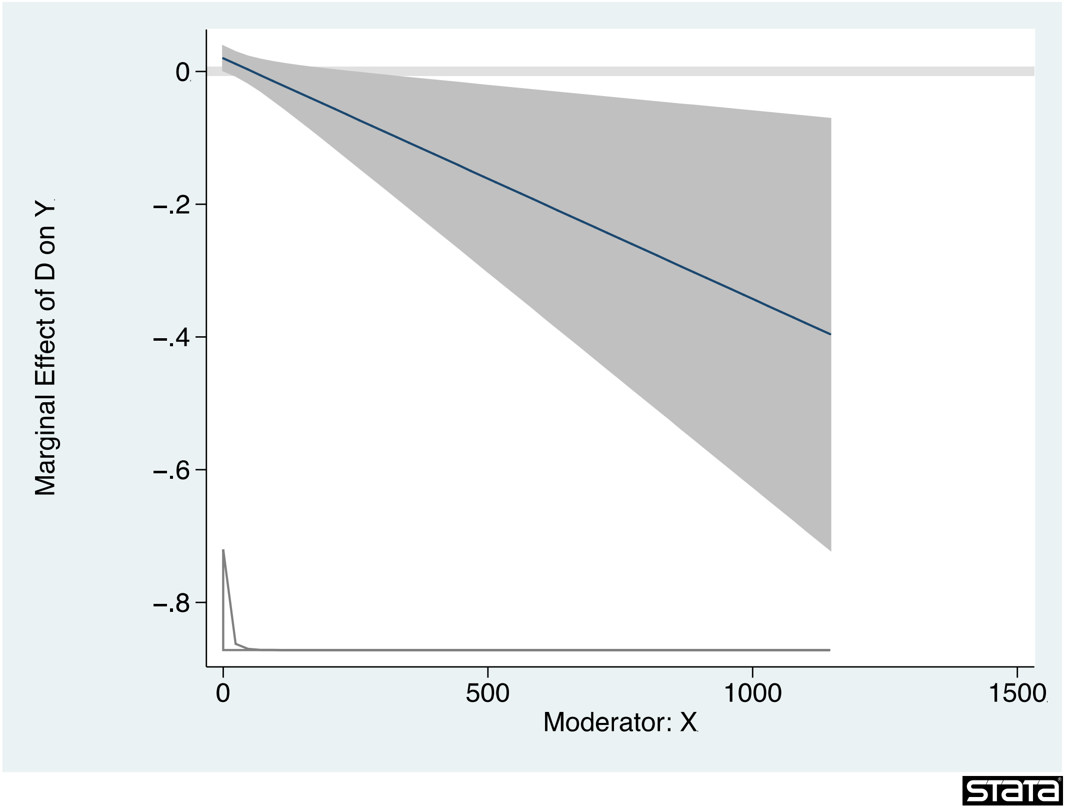


8.6.1.2 Histogram of outside_oil_dep where obs for values below 100 are omitted for better resolution

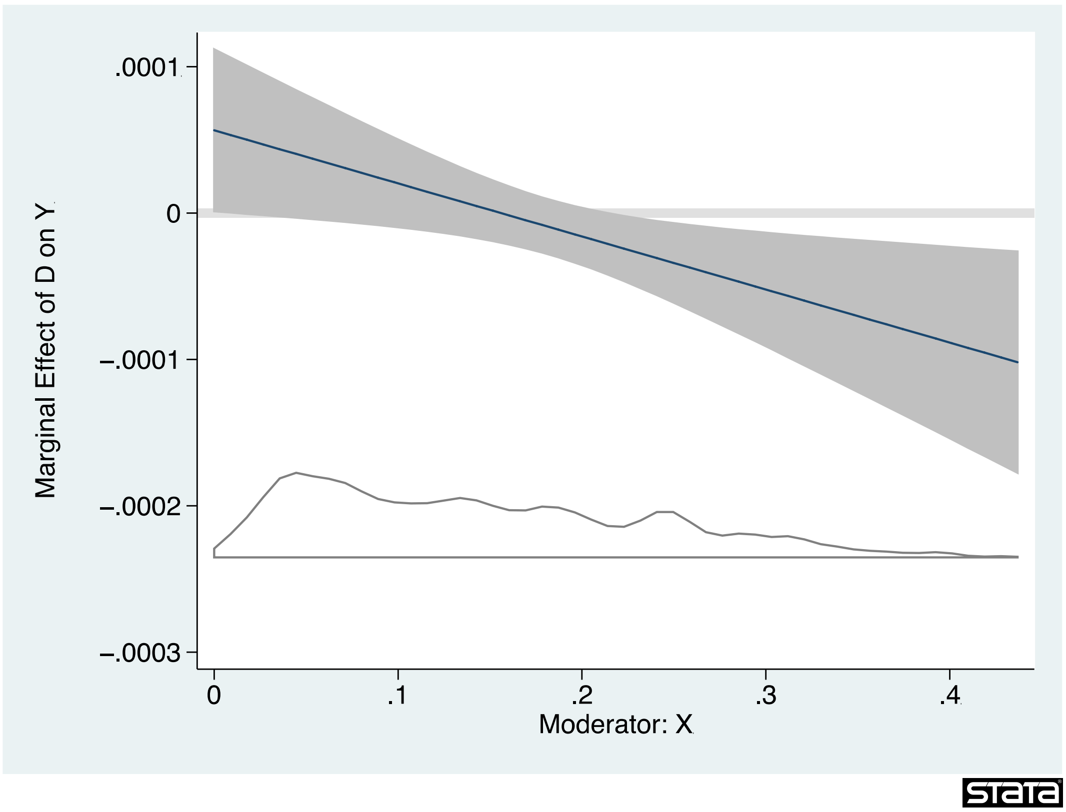


8.6.2.1 Marginal effects plot for the interaction term outside_oil_dep*in_degree with (1) unit fixed effects (2) unit and year fixed effects – Dyadic (all graphs created with the interflex package for Stata)

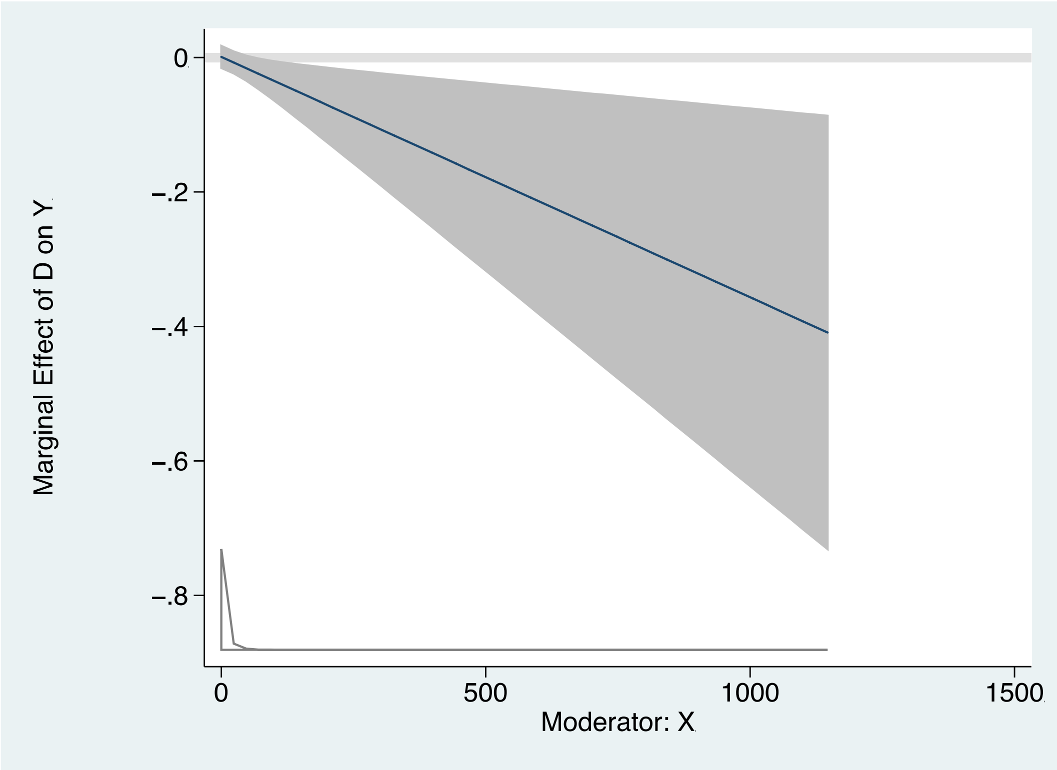
(1.1) Effect of Degree Centrality across values of oil dependence (linear)



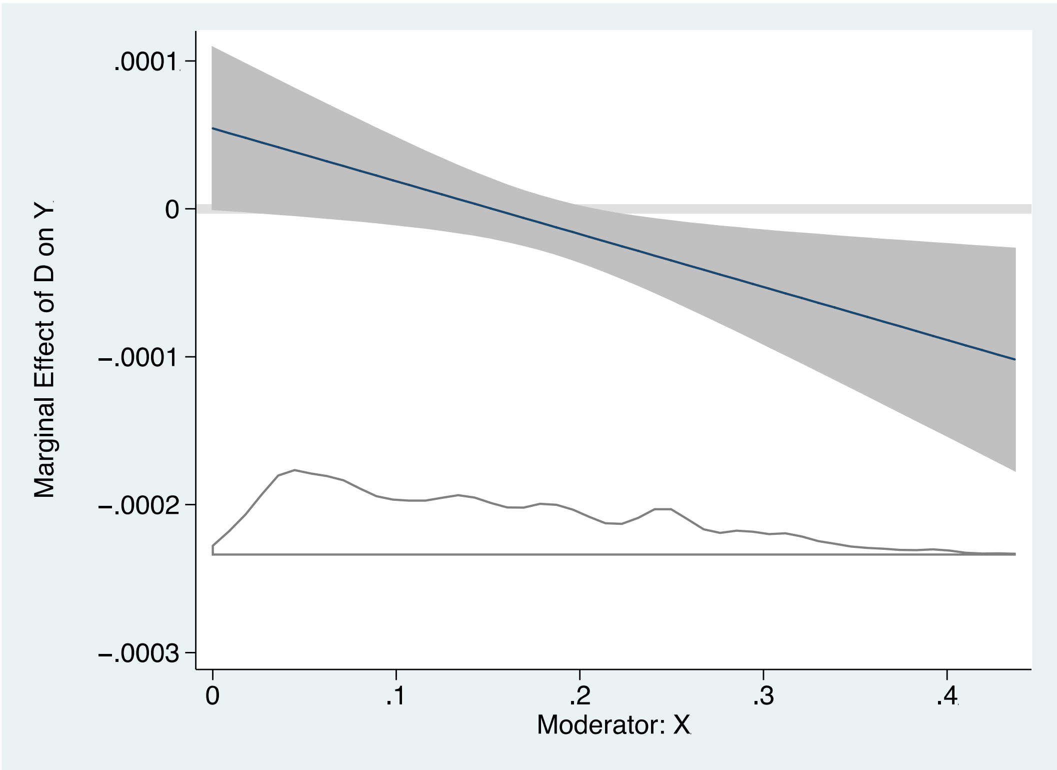
(1.2) Effect of oil dependence across values of Degree Centrality (linear)



(2.1) Effect of Degree Centrality across values of outside oil dependence (linear)

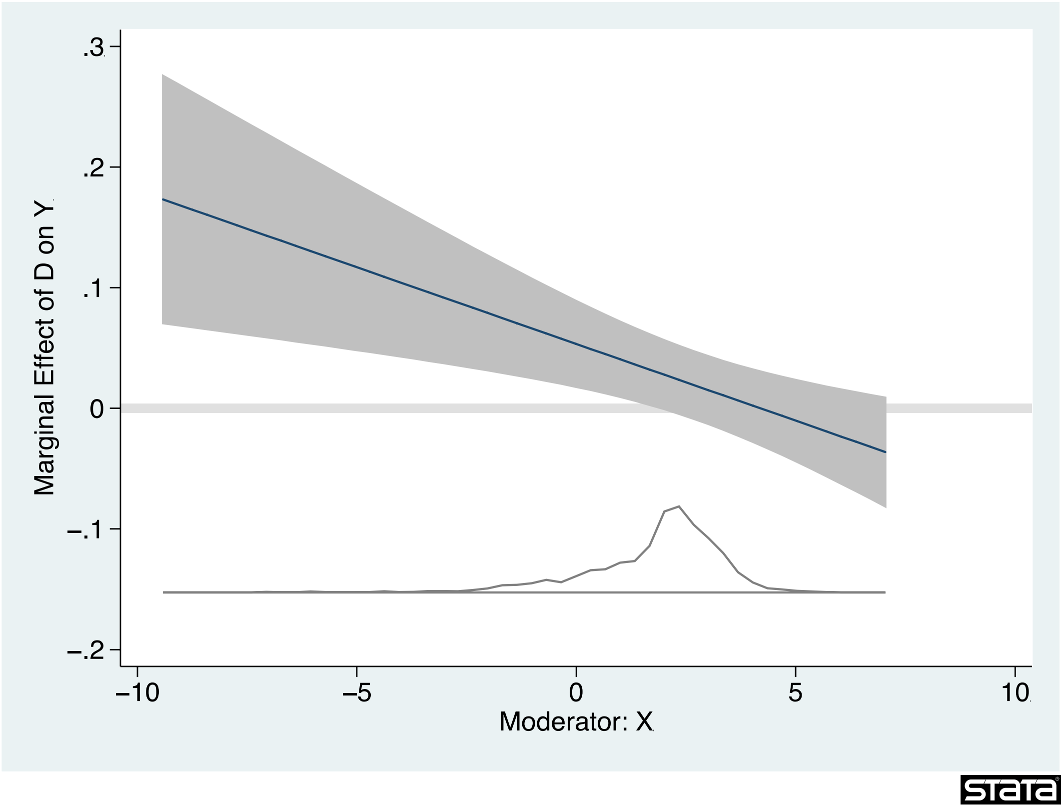


(2.2) Effect of oil dependence across values of Degree Centrality (linear)

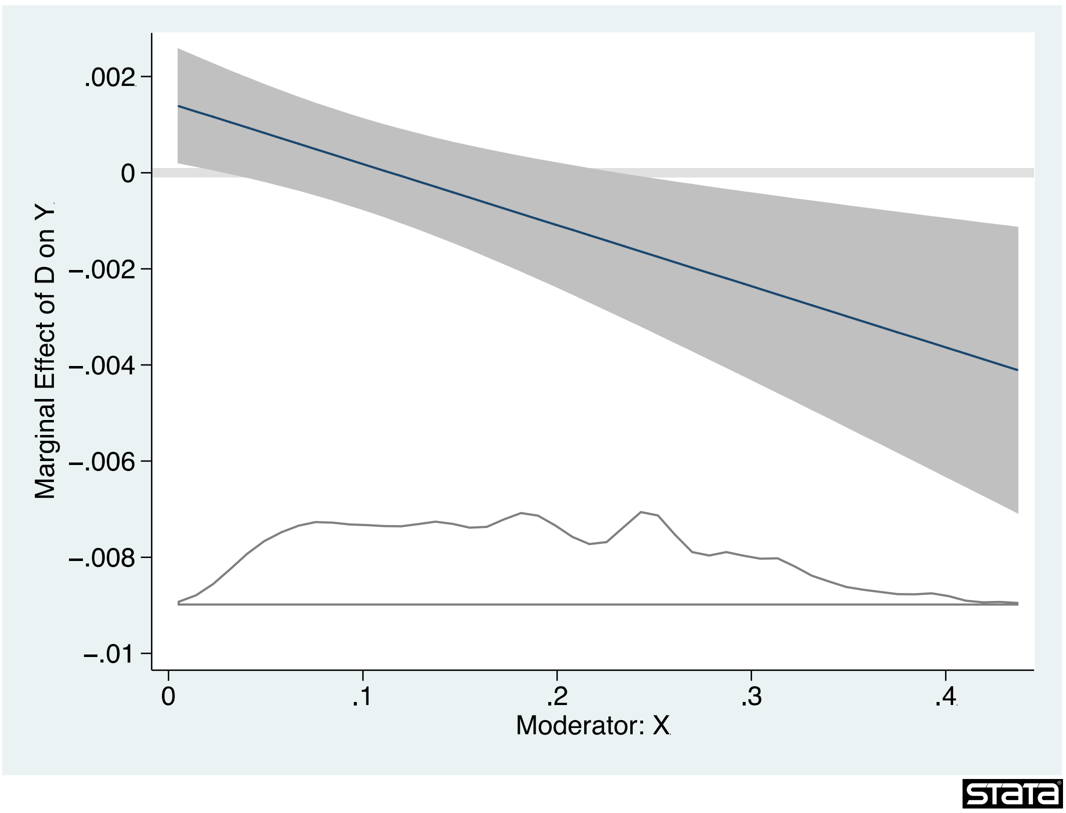


8.6.2.2 Marginal effects plot for the interaction term with (1) unit fixed effects (2) unit and year fixed effects – Dyadic – Logarithm of outside_oil_dep

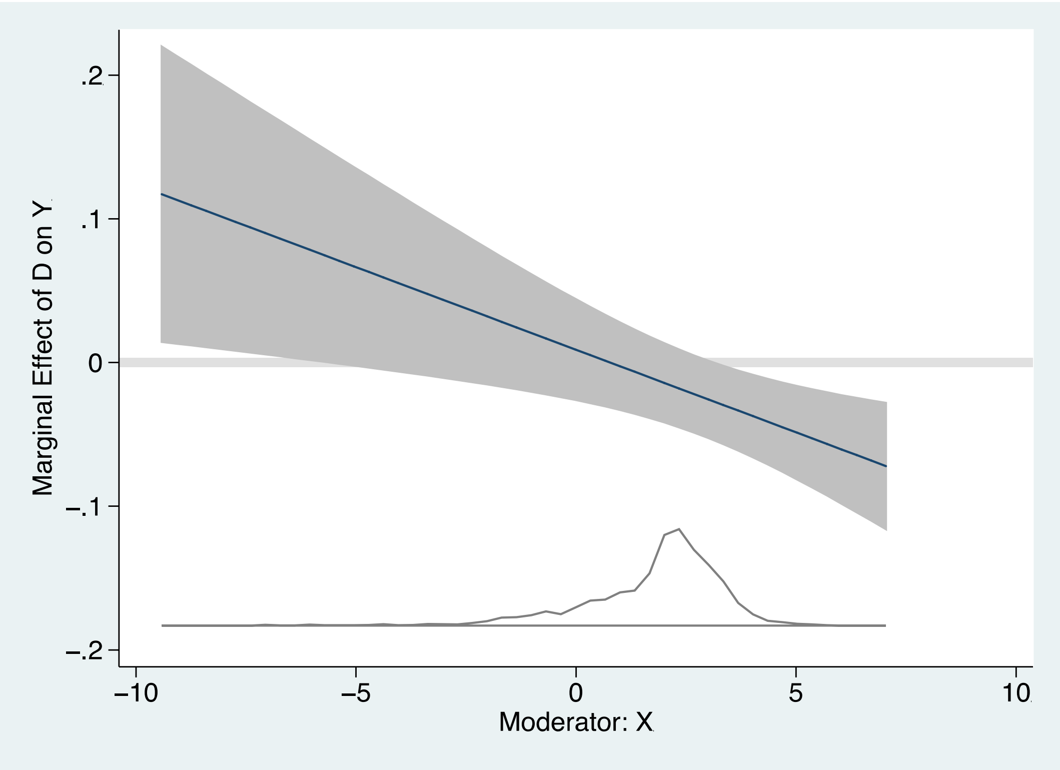
(1.1) Effect of Degree Centrality across values of oil dependence (linear)



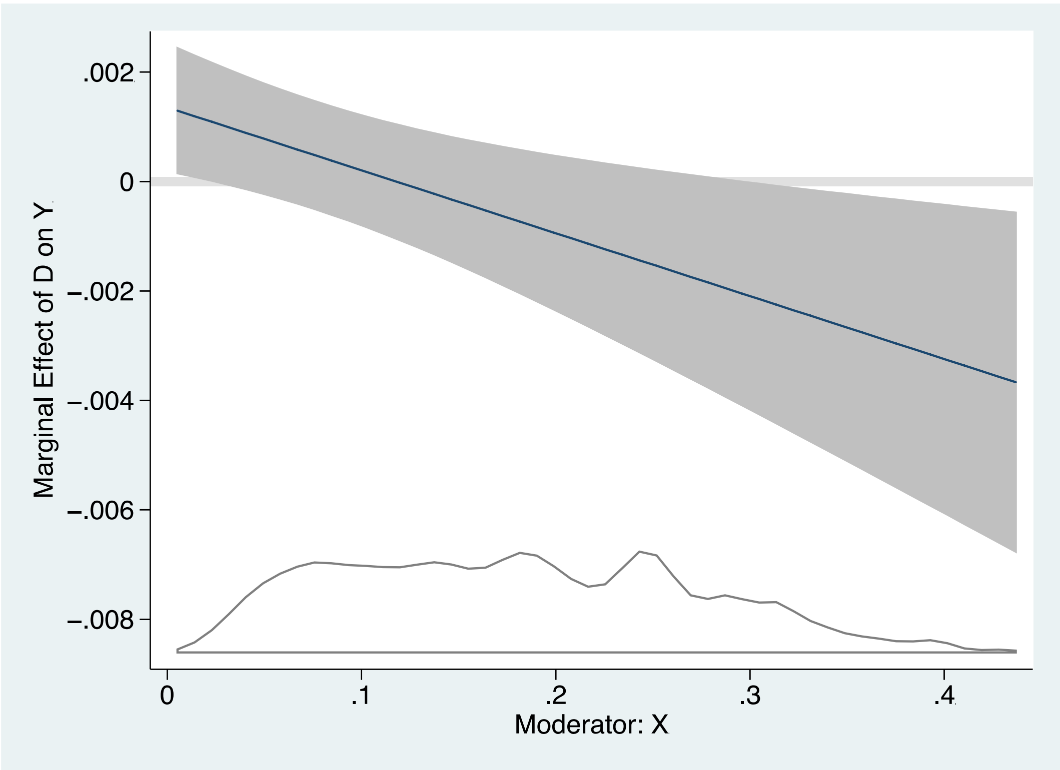
(1.2) Effect of oil dependence across values of Degree Centrality (linear)



(2.1) Effect of Degree Centrality across values of oil dependence (linear)

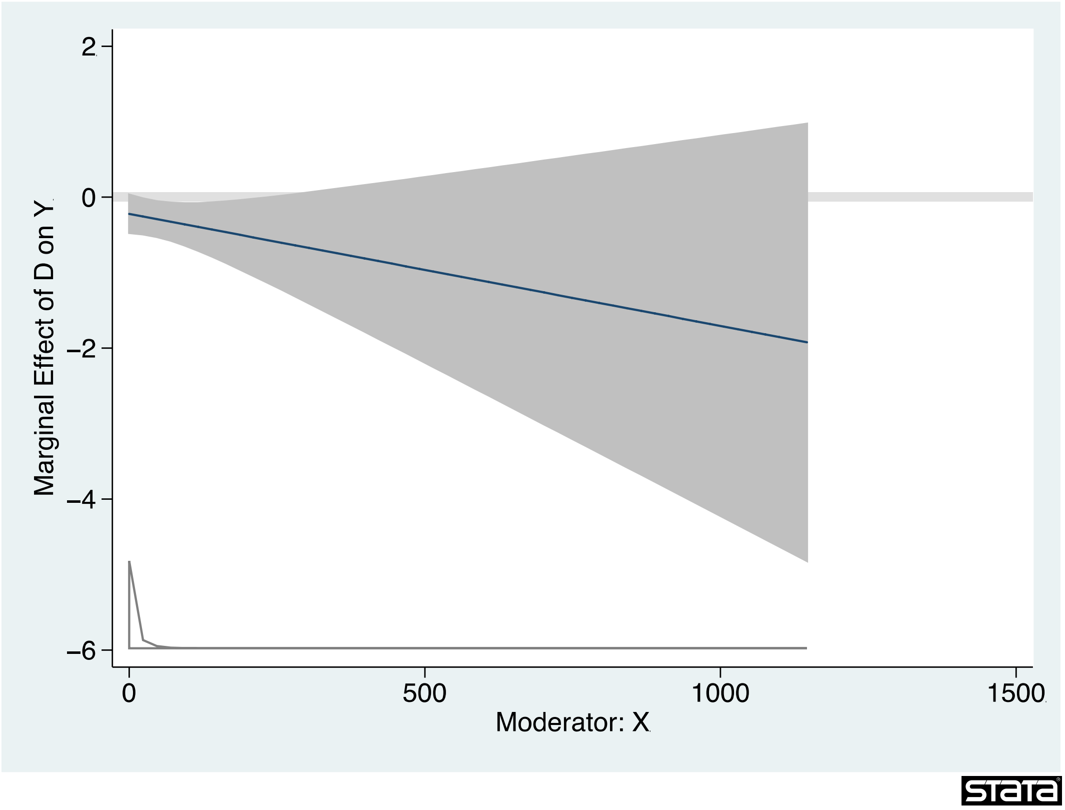


(2.2) Effect of oil dependence across values of Degree Centrality (linear)

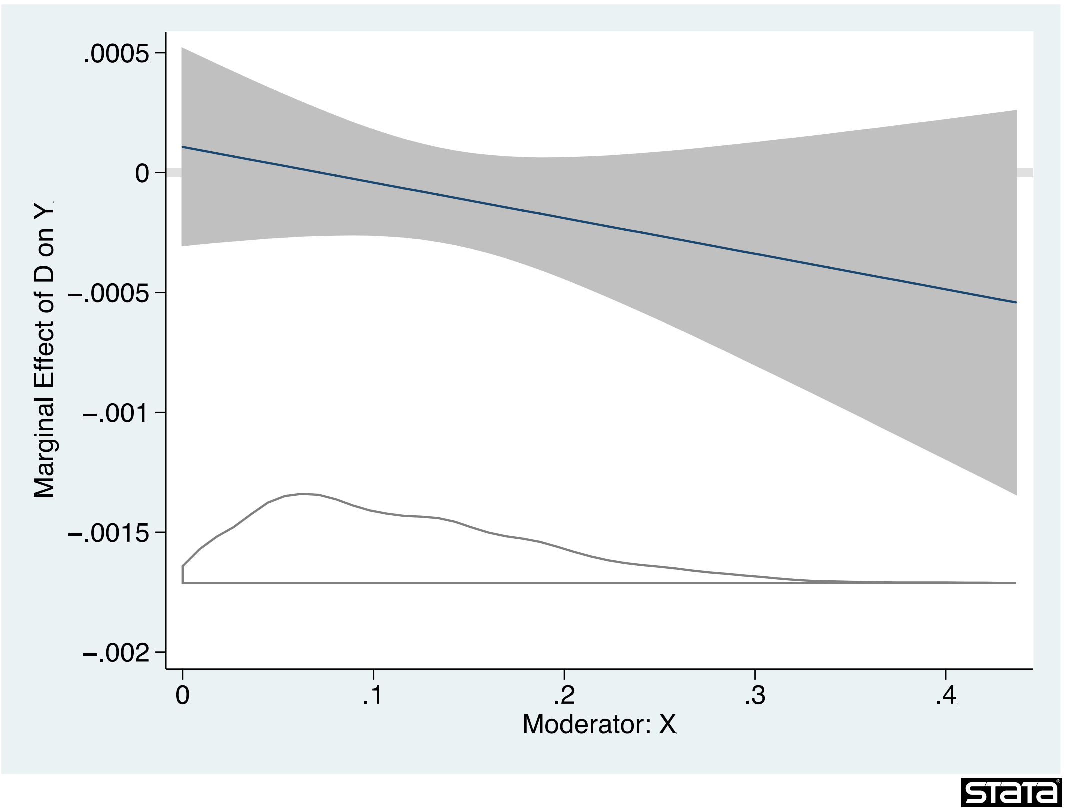


8.6.2.3 Marginal effects plot for the interaction term with unit fixed effects - Monadic

(1.1) Effect of Degree Centrality across values of oil dependence (linear)



(1.2) Effect of oil dependence across values of Degree Centrality (linear)

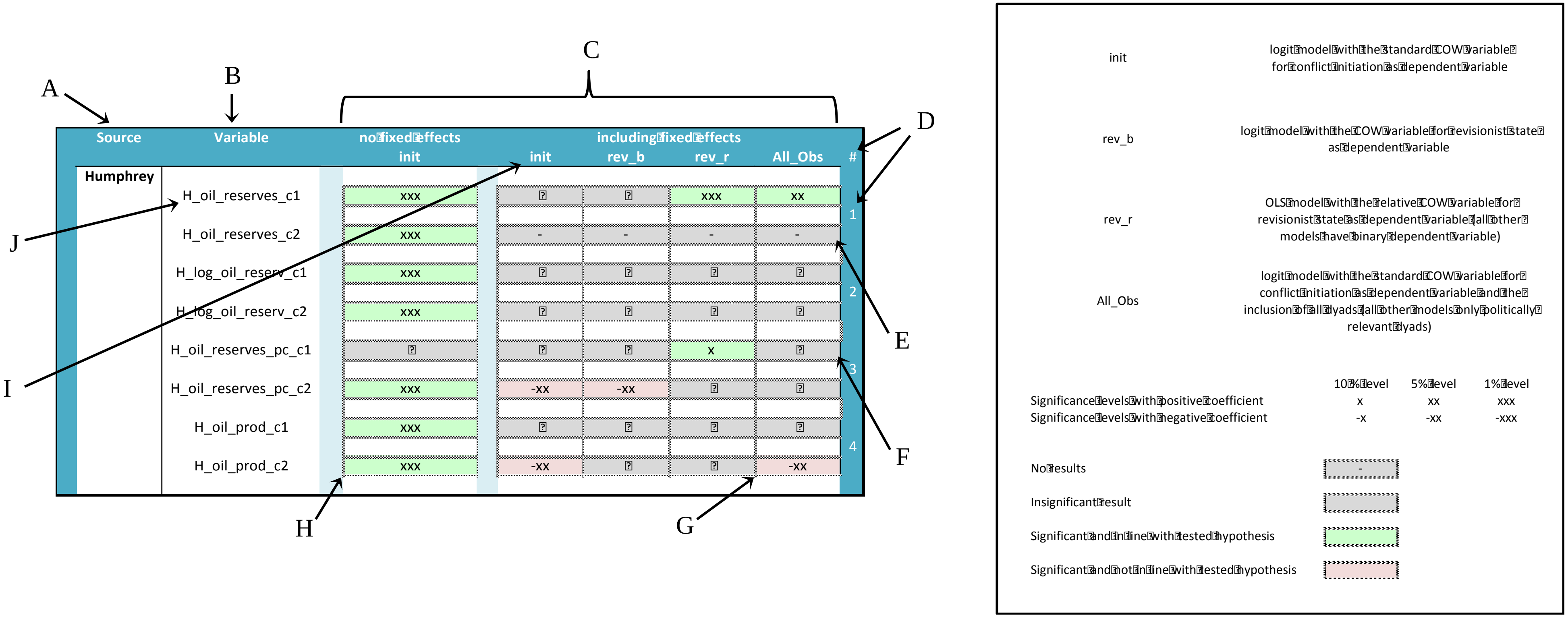


8.7 Manual

Figure 8.7.1: Manual for Summary Tables

1. Point A refers to the data source upon which the variable is based
2. Point B refers to the variable name
3. Coding rules for variable names
    a. First letter of the variable indicates the data source upon which the variable is based
    b. Variable ending indicates whether the variable is a dummy and if the variable refers to state A or state B
        i. Ending with '_c1' → continuous variable for state A
        ii. Ending with '_c2' → continuous variable for state B
        iii. Ending with '1' → dummy variable for state A
        iv. Ending with '2' → dummy variable for state B
        v. E.g. consider point J, the variable is based on Humphreys data ('H') and is a continuous variable referring to state A ('_c1')
4. Point C refers to the model type, e.g. point I refers to the standard model (section 4.4.1)
5. Point D is the index number '#' used to identify the underlying regression outputs in Appendix XX
    a. For instance, the regression output marked with 'Table 2 #4' contains the entire set of models (of this stage) for the variable H_oil_prod_c1 and H_oil_prod_c2 (note the thin black line left to the index number indicating that the variable is included for both states in this case)
6. Point D is also the index number '#' used to reference the respective variable in the text
    a. For instance, […] (H_oil_prod_c1, Table 2 #4) refers to the variable H_oil_prod_c1 in Figure 2 with the index number 4 (Y-achsis). The respective model is referred to in the text (X-achsis)
7. Cell System – each cell refers to the regression output for a specific variable of interest and model. With regard to this variable, it informs about the (1) level of significance (x; xx; xxx) (2) the direction of the coefficient (negative indicated by a '-', e.g. –xx) (3) whether it is in line with the respective hypothesis (indicated by a green colour) or not (indicated by a red colour). Insignificant coefficients are marked through the absence of an 'x' and the colour grey.
    a. Point E refers to the coefficient for variable H_oil_reserves_c2 for the model with the standard COW variable for conflict initiation (init) when including unit fixed effects and considering all dyads. The grey colour and the '-' indicate that no result is available. Reason for this can be missing data or failure of convergence (in addition to other)
    b. Point F refers to a coefficient that is insignificant at the 10% level
    c. Point G refers to a coefficient that is significant at the 5% level with a negative coefficient and not in line with the respective hypothesis
    d. Point H refers to a coefficient that is significant at the 1% level with a positive coefficient and in line with respective hypothesis
    e. For interactions only results for all components=1 are presented (one exception is Figure XX)

Figure 8.7.1 continued



8.8: Regression Outputs for Summary Tables in Chapter 5

8.8.1: Main Regression Outputs

Stage 1 - Table 5.1 - #1

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_c1	6.48e-12***	5.70e-12	5.90e-12	2.69e-13***	8.98e-12**
	(1.29e-12)	(4.55e-12)	(6.16e-12)	(8.45e-14)	(3.56e-12)
H_oil_reserves_c2	4.46e-12***	1.53e-12	-2.96e-12	-6.25e-14	1.97e-12
	(1.29e-12)	(3.98e-12)	(3.57e-12)	(8.24e-14)	(4.12e-12)
_cons	-0.416	5.328***	1.954	0.0536***	6.349***
	(0.954)	(1.011)	(1.618)	(0.0208)	(0.917)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #2

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_log_oil_reserv_c1	0.0444***	0.0158	0.0405**	0.000642***	0.0264**
	(0.00758)	(0.0127)	(0.0181)	(0.000210)	(0.0115)
H_log_oil_reserv_c2	0.0336***	0.00766	0.0162	0.000470**	0.0245**
	(0.00834)	(0.0111)	(0.0142)	(0.000194)	(0.0108)
_cons	1.424	5.561***	2.265	0.0610***	6.748***
	(0.920)	(1.003)	(1.605)	(0.0206)	(0.913)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #3

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_pc_c1	-0.344	-0.397	93.63	0.192*	19.26
	(4.554)	(22.63)	(118.3)	(0.111)	(30.75)
H_oil_reserves_pc_c2	7.163***	-12.28**	-18.16*	-0.501	-2.581
	(2.007)	(6.237)	(10.13)	(0.357)	(7.398)
_cons	-0.717	5.327***	1.927	0.0579***	6.450***
	(0.939)	(1.009)	(1.630)	(0.0212)	(0.917)
N	65813	53214	44081	65813	365064

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_prod_c1	4.73e-10***	1.39e-10	2.99e-10*	5.88e-13	2.16e-10
	(4.82e-11)	(1.18e-10)	(1.81e-10)	(3.14e-12)	(1.32e-10)
H_oil_prod_c2	4.04e-10***	-3.26e-10**	-1.56e-10	1.55e-12	-3.73e-10**
	(6.55e-11)	(1.40e-10)	(1.78e-10)	(1.95e-12)	(1.55e-10)
_cons	0.723	6.059***	1.702	0.0521*	6.997***
	(0.889)	(1.121)	(1.662)	(0.0267)	(1.000)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #5

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_log_oil_prod_c1	0.0498***	0.0251	0.0353	-0.0000676	0.0295
	(0.0112)	(0.0180)	(0.0272)	(0.000405)	(0.0183)
H_log_oil_prod_c2	0.0304***	-0.0193	0.0147	0.000575**	0.00657
	(0.0114)	(0.0169)	(0.0230)	(0.000268)	(0.0166)
_cons	0.691	5.431***	2.002	0.0587***	6.617***
	(0.908)	(1.012)	(1.622)	(0.0208)	(0.927)
N	67989	54832	45477	67989	364235

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #6

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_prod_pc_c1	14.60	-167.7	280.0	-1.713	-15.50
	(143.3)	(395.3)	(284.8)	(3.120)	(360.7)
H_oil_prod_pc_c2	93.30	-476.3**	-301.6	-12.32	-448.6**
	(98.13)	(218.2)	(237.9)	(8.009)	(201.7)
_cons	-0.713	5.355***	1.872	0.0583***	6.471***
	(0.939)	(1.009)	(1.629)	(0.0212)	(0.918)
N	65813	53214	44081	65813	365064

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #7

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_prod_c1	2.47e-09***	-1.14e-09	-4.83e-10	-3.45e-14	-1.35e-09*
	(2.36e-10)	(7.22e-10)	(7.73e-10)	(9.74e-12)	(7.88e-10)
R_oil_prod_c2	1.77e-09***	-1.43e-09*	-4.36e-10	1.02e-11	-1.58e-09*
	(3.13e-10)	(7.53e-10)	(1.15e-09)	(1.05e-11)	(9.18e-10)
_cons	-1.918**	5.960***	2.347	0.0584***	7.505***
	(0.814)	(0.993)	(1.512)	(0.0164)	(0.970)
N	102741	85263	74825	102741	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #8

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_log_oil_prod_c1	0.0197***	0.0133	0.0104	-0.0000697	0.0193***
	(0.00391)	(0.00860)	(0.0160)	(0.000169)	(0.00744)
R_log_oil_prod_c2	0.00739**	0.00439	0.0161*	0.000200	0.00645
	(0.00352)	(0.00739)	(0.00829)	(0.000171)	(0.00647)
_cons	-1.866**	4.723***	1.630	0.0599***	6.070***
	(0.887)	(0.948)	(1.395)	(0.0161)	(0.899)
N	102741	85263	74825	102741	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_prod_pc_c1	-0.00000240	-0.00000645	-0.000000911	6.47e-08	-0.00000622*
	(0.00000235)	(0.00000434)	(0.00000439)	(8.31e-08)	(0.00000368)
R_oil_prod_pc_c2	-0.00000213	-0.00000859*	-0.00000723*	-0.000000117*	-0.00000934*
	(0.00000260)	(0.00000497)	(0.00000439)	(7.00e-08)	(0.00000490)
_cons	-1.873**	4.787***	1.746	0.0620***	6.361***
	(0.895)	(0.942)	(1.461)	(0.0171)	(0.873)
N	96438	80071	70369	96438	575572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #10

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_net_imp_c1	2.23e-09***	1.25e-09	9.95e-10	3.97e-12	7.63e-10
	(7.04e-10)	(1.27e-09)	(1.81e-09)	(1.63e-11)	(1.31e-09)
R_net_exp_c2	-2.47e-09***	-3.03e-09*	-1.39e-09	-9.42e-12	-2.45e-09
	(5.56e-10)	(1.66e-09)	(1.58e-09)	(1.21e-11)	(1.66e-09)
_cons	-1.672	1.083	0.477	0.0594***	4.070***
	(1.383)	(1.913)	(2.347)	(0.0212)	(1.449)
N	58120	36278	28536	58120	239254

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #11

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents_c1	4.12e-13	-4.66e-12***	-7.27e-12**	-7.03e-14***	-6.80e-12***
	(6.86e-13)	(1.65e-12)	(3.50e-12)	(2.09e-14)	(1.98e-12)
W_oil_rents_c2	-1.60e-12**	-4.40e-12**	-3.55e-12	-1.88e-14	-3.28e-12
	(7.27e-13)	(1.75e-12)	(2.21e-12)	(1.23e-14)	(2.05e-12)
_cons	-4.506***	0.883	1.292	0.0727***	3.191***
	(1.167)	(1.508)	(2.023)	(0.0177)	(1.132)
N	67275	47416	40519	67275	323040

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_oil_deposits_total_c1	0.000517***	0.000172	0.000109	0.00000278*	0.000124
	(0.0000477)	(0.000129)	(0.000255)	(0.00000160)	(0.000143)
P_oil_deposits_total_c2	0.000407***	0.000732***	0.000722**	0.00000184	0.000891***
	(0.0000565)	(0.000179)	(0.000348)	(0.00000133)	(0.000232)
_cons	-2.648***	3.431***	0.475	0.0562***	4.909***
	(0.774)	(0.962)	(1.499)	(0.0162)	(0.985)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #13

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_onshore_c1	0.0143**	0.0147	0.0287*	0.000474**	0.0195
	(0.00678)	(0.0112)	(0.0152)	(0.000233)	(0.0118)
L_disc_onshore_c2	0.0283**	-0.0482	-0.0651*	-0.000534	-0.0541*
	(0.0131)	(0.0324)	(0.0387)	(0.000409)	(0.0327)
_cons	-1.277	5.845***	2.757*	0.0575***	7.208***
	(0.880)	(1.174)	(1.590)	(0.0158)	(1.100)
N	102763	85273	74835	102763	584635

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #14

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_onshore_c1	0.189***	0.0110	0.0981	0.00120*	0.0410
	(0.0197)	(0.0503)	(0.0621)	(0.000706)	(0.0484)
L_prod_onshore_c2	-0.0844***	-0.0267	-0.0571	-0.000241	-0.0376
	(0.0318)	(0.0513)	(0.0637)	(0.000769)	(0.0501)
_cons	-1.143	4.959***	1.549	0.0553***	6.232***
	(0.855)	(0.965)	(1.402)	(0.0172)	(0.889)
N	102763	85273	74835	102763	584635

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #15

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_disc_offshore_c1	-0.00403	0.0353***	0.0103	-0.0000867	0.0457***
	(0.0101)	(0.0114)	(0.0230)	(0.000164)	(0.0132)
L_disc_offshore_c2	0.0479***	-0.0624**	-0.00829	0.000454	-0.0795**
	(0.0172)	(0.0318)	(0.0546)	(0.000434)	(0.0349)
_cons	-1.120	5.331***	1.794	0.0516***	6.817***
	(0.903)	(1.133)	(1.771)	(0.0193)	(1.089)
N	102763	85273	74835	102763	584635

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #16

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_offshore_c1	0.136***	-0.0820	-0.0256	0.000195	-0.0510
	(0.0248)	(0.0521)	(0.0750)	(0.000850)	(0.0494)
L_prod_offshore_c2	-0.0640*	0.0206	-0.0242	0.000147	0.0210
	(0.0330)	(0.0510)	(0.0752)	(0.000798)	(0.0517)
_cons	-1.379	5.436***	2.191	0.0607***	6.682***
	(0.871)	(0.983)	(1.444)	(0.0177)	(0.911)
N	102763	85273	74835	102763	584635

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_disc_all_c1	0.0259***	-0.00379	0.00571	0.000220**	-0.000409
	(0.00270)	(0.00670)	(0.00928)	(0.000110)	(0.00711)
L_disc_all_c2	0.0183***	-0.000632	-0.00434	0.0000544	0.00310
	(0.00337)	(0.00743)	(0.0142)	(0.0000799)	(0.00874)
_cons	-1.425*	4.802***	1.598	0.0449***	5.964***
	(0.782)	(1.136)	(1.584)	(0.0161)	(1.112)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #18

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_full_on_c1	0.0165***	-0.00170	0.00142	0.000160	-0.00146
	(0.00159)	(0.00519)	(0.0101)	(0.000121)	(0.00608)
L_disc_full_on_c2	0.0116***	0.0127**	0.00247	-0.0000138	0.0165**
	(0.00202)	(0.00543)	(0.0110)	(0.0000591)	(0.00653)
_cons	-1.920**	3.878***	1.422	0.0494***	5.154***
	(0.801)	(1.120)	(1.743)	(0.0156)	(1.147)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #19

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_disc_full_off_c1	0.0681***	0.0155	0.0675	0.00107**	0.0275
	(0.00877)	(0.0309)	(0.0440)	(0.000453)	(0.0305)
L_disc_full_off_c2	0.0313***	-0.0515	-0.0683	-0.000258	-0.0221
	(0.00956)	(0.0352)	(0.0489)	(0.000462)	(0.0336)
_cons	-1.414*	4.858***	1.661	0.0522***	6.056***
	(0.839)	(1.063)	(1.477)	(0.0162)	(1.002)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #20

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_full_all_c1	0.0141***	-0.00104	0.00315	0.000158	-0.000189
	(0.00134)	(0.00459)	(0.00843)	(0.000103)	(0.00528)
L_disc_full_all_c2	0.00956***	0.00673	-0.00266	-0.0000195	0.0106*
	(0.00169)	(0.00502)	(0.00992)	(0.0000536)	(0.00604)
_cons	-1.835**	4.170***	1.625	0.0488***	5.365***
	(0.802)	(1.135)	(1.669)	(0.0155)	(1.161)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #21

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_all_c1	0.0493***	-0.0123	-0.00531	0.000179	-0.0118
	(0.00602)	(0.0140)	(0.0176)	(0.000166)	(0.0152)
L_prod_all_c2	0.0376***	-0.0150	-0.0162	0.000137	-0.0119
	(0.00604)	(0.0150)	(0.0267)	(0.000171)	(0.0167)
_cons	-0.412	5.464***	2.400	0.0485***	6.849***
	(0.793)	(1.226)	(1.741)	(0.0168)	(1.168)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #22

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_full_on_c1	0.0158***	0.00125	-0.0000835	0.000136	-0.000593
	(0.00152)	(0.00603)	(0.0117)	(0.000146)	(0.00764)
L_prod_full_on_c2	0.0111***	0.0174**	-0.000979	-0.0000914	0.0220**
	(0.00186)	(0.00694)	(0.0110)	(0.0000591)	(0.00889)
_cons	-2.071**	3.391***	1.748	0.0556***	4.749***
	(0.806)	(1.197)	(1.881)	(0.0155)	(1.308)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #23

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_full_off_c1	0.0548***	-0.00306	0.00230	0.000591	-0.0120
	(0.00769)	(0.0276)	(0.0435)	(0.000508)	(0.0318)
L_prod_full_off_c2	0.0274***	0.00979	-0.0573	-0.000347	0.0220
	(0.00813)	(0.0304)	(0.0429)	(0.000315)	(0.0345)
_cons	-1.732**	4.526***	2.131	0.0565***	6.032***
	(0.836)	(1.073)	(1.562)	(0.0151)	(1.056)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 1 - Table 5.1 - #24

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_full_all_c1	0.0130***	0.000780	-0.0000348	0.000117	-0.000804
	(0.00124)	(0.00511)	(0.00955)	(0.000119)	(0.00643)
L_prod_full_all_c2	0.00892***	0.0120**	-0.00431	-0.0000764	0.0157**
	(0.00151)	(0.00583)	(0.00923)	(0.0000502)	(0.00745)
_cons	-2.031**	3.664***	1.995	0.0555***	5.050***
	(0.806)	(1.187)	(1.825)	(0.0152)	(1.285)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #1

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00492*	-0.000620	0.000865	0.0000138*	-0.00321
	(0.00289)	(0.00147)	(0.00118)	(0.00000791)	(0.00246)
O_net3_oil_imp_c1	4.85e-12***	1.15e-12	3.00e-12	3.14e-14**	1.56e-12
	(1.42e-12)	(1.31e-12)	(1.84e-12)	(1.53e-14)	(1.62e-12)
_cons	-1.588*	4.787***	1.509	0.0594***	6.280***
	(0.886)	(0.945)	(1.471)	(0.0166)	(0.878)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #2

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_no_oil_reserves1	-0.622***	-0.258*	-0.519***	-0.00718***	-0.481***
	(0.0913)	(0.136)	(0.194)	(0.00244)	(0.126)
O_net3_oil_imp_c1	4.09e-12	-1.79e-12	3.07e-12	1.23e-13	-3.96e-12
	(6.77e-12)	(6.49e-12)	(7.59e-12)	(1.18e-13)	(7.18e-12)
_cons	0.672	5.743***	2.526	0.0586***	7.455***
	(0.875)	(0.982)	(1.576)	(0.0204)	(0.899)
N	70388	57788	48737	70388	393273

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #3

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_no_oil_prod1	-0.367***	-0.187	0.152	0.00548*	-0.253*
	(0.102)	(0.157)	(0.247)	(0.00325)	(0.141)
O_net3_oil_imp_c1	4.04e-12	-1.82e-12	1.87e-12	7.82e-14	-4.79e-12
	(8.05e-12)	(6.54e-12)	(7.84e-12)	(1.16e-13)	(7.28e-12)
_cons	-0.242	5.637***	2.170	0.0549***	7.282***
	(0.883)	(0.994)	(1.590)	(0.0203)	(0.909)
N	70388	57788	48737	70388	393273

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00269	0.00747	0.00775	-0.0000548	-0.00298
	(0.00651)	(0.00917)	(0.0133)	(0.0000684)	(0.00964)
1.H_no_oil_reserves1	-0.637***	-0.218	-0.482**	-0.00755***	-0.475***
	(0.0972)	(0.144)	(0.205)	(0.00261)	(0.136)
1.H_no_oil_reserves1#c.outsi~l	0.000540	-0.00688	-0.00585	0.000128*	0.00206
	(0.00712)	(0.00901)	(0.0131)	(0.0000711)	(0.00948)
O_net3_oil_imp_c1	7.35e-12	-3.20e-12	1.40e-12	1.28e-13	-3.17e-12
	(6.87e-12)	(6.75e-12)	(7.89e-12)	(1.20e-13)	(7.55e-12)
_cons	0.686	5.608***	2.379	0.0563***	7.386***
	(0.870)	(0.985)	(1.588)	(0.0206)	(0.905)
N	69074	56704	47756	69074	392171

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #5

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00779	-0.00331	-0.00408	0.00000875	-0.0118
	(0.00623)	(0.00458)	(0.00710)	(0.0000271)	(0.00741)
1.H_no_oil_prod1	-0.401***	-0.232	0.103	0.00444	-0.352**
	(0.111)	(0.159)	(0.245)	(0.00343)	(0.152)
1.H_no_oil_prod1#c.outside_o~p	0.00657	0.00732	0.0100	0.000109***	0.0137*
	(0.00698)	(0.00476)	(0.00727)	(0.0000386)	(0.00735)
O_net3_oil_imp_c1	8.71e-12	-9.44e-13	2.73e-12	7.39e-14	-1.99e-12
	(8.22e-12)	(6.71e-12)	(7.96e-12)	(1.18e-13)	(7.63e-12)
_cons	-0.267	5.546***	2.052	0.0527***	7.247***
	(0.876)	(0.995)	(1.598)	(0.0204)	(0.911)
N	69074	56704	47756	69074	392171

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #6

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_no_oil_prod1	-0.494***	-0.360*	-0.186	0.00166	-0.508***
	(0.103)	(0.212)	(0.399)	(0.00407)	(0.175)
O_net3_oil_imp_c1	4.21e-12***	1.11e-12	3.03e-12	3.25e-14**	1.35e-12
	(1.45e-12)	(1.31e-12)	(1.85e-12)	(1.52e-14)	(1.61e-12)
_cons	-1.336	4.969***	1.773	0.0595***	6.454***
	(0.870)	(0.943)	(1.469)	(0.0164)	(0.875)
N	102752	85273	74835	102752	584635

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #7

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.0115**	-0.00758	-0.00306	-0.00000105	-0.0150***
	(0.00541)	(0.00549)	(0.00353)	(0.0000207)	(0.00556)
1.R_no_oil_prod1	-0.554***	-0.412*	-0.217	0.00139	-0.614***
	(0.107)	(0.213)	(0.402)	(0.00417)	(0.183)
1.R_no_oil_prod1#c.outside_o~p	0.0127**	0.00932*	0.00611*	0.0000199	0.0164***
	(0.00559)	(0.00553)	(0.00370)	(0.0000218)	(0.00559)
O_net3_oil_imp_c1	5.38e-12***	1.56e-12	3.24e-12*	3.21e-14**	2.25e-12
	(1.37e-12)	(1.35e-12)	(1.86e-12)	(1.53e-14)	(1.65e-12)
_cons	-1.368	4.884***	1.552	0.0591***	6.452***
	(0.864)	(0.952)	(1.485)	(0.0167)	(0.883)
N	99602	82502	72452	99602	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #8

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_no_oil_rent1	-0.394***	-0.181	-0.0956	0.00126	-0.381*
	(0.100)	(0.253)	(0.311)	(0.00245)	(0.212)
O_net3_oil_imp_c1	4.85e-12***	9.77e-13	2.39e-12	9.98e-15	1.72e-12
	(1.22e-12)	(1.32e-12)	(1.99e-12)	(1.52e-14)	(1.44e-12)
_cons	-1.901*	3.682***	2.473	0.0659***	5.134***
	(1.052)	(1.223)	(1.634)	(0.0170)	(1.001)
N	76957	58209	50258	76957	399584

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0113**	-0.00922	-0.00870	0.00000577	-0.0223***
	(0.00544)	(0.00678)	(0.0101)	(0.0000189)	(0.00655)
1.W_no_oil_rent1	-0.423***	-0.245	-0.216	0.00138	-0.500*
	(0.111)	(0.283)	(0.332)	(0.00255)	(0.265)
1.W_no_oil_rent1#c.outside_o~p	0.00962	0.00761	0.0101	-0.00000759	0.0171**
	(0.00624)	(0.00776)	(0.0103)	(0.0000193)	(0.00830)
O_net3_oil_imp_c1	5.71e-12***	1.42e-12	2.81e-12	9.62e-15	2.81e-12*
	(1.26e-12)	(1.39e-12)	(2.09e-12)	(1.54e-14)	(1.52e-12)
_cons	-1.832*	3.724***	2.527	0.0659***	5.250***
	(1.072)	(1.227)	(1.638)	(0.0171)	(1.008)
N	76957	58209	50258	76957	399584

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_no_deposits1	-0.406***	-0.453*	-0.0462	0.00153	-0.462**
	(0.114)	(0.241)	(0.285)	(0.00230)	(0.232)
O_net3_oil_imp_c1	4.38e-12***	1.12e-12	3.06e-12*	3.23e-14**	1.37e-12
	(1.39e-12)	(1.31e-12)	(1.84e-12)	(1.54e-14)	(1.61e-12)
_cons	-1.556*	4.796***	1.508	0.0594***	6.285***
	(0.861)	(0.945)	(1.472)	(0.0166)	(0.878)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #11

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0105**	-0.00425	-0.00106	0.0000169	-0.0109**
	(0.00520)	(0.00340)	(0.00175)	(0.0000207)	(0.00490)
1.P_no_deposits1	-0.456***	-0.492**	-0.0859	0.00155	-0.528**
	(0.120)	(0.242)	(0.285)	(0.00233)	(0.234)
1.P_no_deposits1#c.outside_o~p	0.0116**	0.00607*	0.00400*	-0.00000448	0.0128***
	(0.00540)	(0.00354)	(0.00216)	(0.0000210)	(0.00495)
O_net3_oil_imp_c1	5.21e-12***	1.35e-12	3.11e-12*	3.15e-14**	1.96e-12
	(1.39e-12)	(1.32e-12)	(1.85e-12)	(1.53e-14)	(1.63e-12)
_cons	-1.518*	4.825***	1.526	0.0594***	6.327***
	(0.869)	(0.947)	(1.472)	(0.0166)	(0.880)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0123**	-0.00783	-0.00273	0.0000330	-0.0163***
	(0.00564)	(0.00688)	(0.00719)	(0.0000209)	(0.00563)
1.L_no_disc_onshore1	-0.392***	-0.551**	0.00160	0.00379	-1.256***
	(0.106)	(0.280)	(0.434)	(0.00385)	(0.280)
1.L_no_disc_onshore1#c.outsi~l	0.0105*	0.00741	0.00337	-0.0000227	0.0151***
	(0.00620)	(0.00701)	(0.00729)	(0.0000216)	(0.00583)
O_net3_oil_imp_c1	5.27e-12***	2.03e-12	3.77e-12*	3.32e-14**	2.69e-12
	(1.51e-12)	(1.35e-12)	(1.96e-12)	(1.52e-14)	(1.66e-12)
_cons	-1.467*	4.394***	1.109	0.0551***	6.093***
	(0.861)	(1.006)	(1.580)	(0.0161)	(0.931)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #13

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.0140**	-0.0107	-0.00663	0.0000204	-0.0213***
	(0.00639)	(0.00788)	(0.00923)	(0.0000204)	(0.00665)
1.L_no_prod_onshore1	-0.468***	-0.550***	-0.229	0.00388	-1.019***
	(0.0994)	(0.202)	(0.275)	(0.00348)	(0.203)
1.L_no_prod_onshore1#c.outsi~l	0.0128*	0.0105	0.00748	-0.00000782	0.0205***
	(0.00677)	(0.00796)	(0.00929)	(0.0000211)	(0.00674)
O_net3_oil_imp_c1	5.40e-12***	2.20e-12	4.00e-12**	3.39e-14**	3.00e-12*
	(1.50e-12)	(1.37e-12)	(2.00e-12)	(1.52e-14)	(1.68e-12)
_cons	-1.357	4.417***	1.150	0.0550***	6.122***
	(0.858)	(1.009)	(1.582)	(0.0161)	(0.931)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #14

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.0173**	-0.0137	-0.00967	-0.00000402	-0.0136
	(0.00698)	(0.00987)	(0.0129)	(0.0000715)	(0.00879)
1.L_no_disc_offshore1	-0.596***	-0.247	-0.239	-0.00703*	-0.347**
	(0.0956)	(0.188)	(0.378)	(0.00386)	(0.177)
1.L_no_disc_offshore1#c.outs~i	0.0153**	0.0129	0.0104	0.0000203	0.00923
	(0.00726)	(0.00989)	(0.0129)	(0.0000716)	(0.00904)
O_net3_oil_imp_c1	5.54e-12***	2.32e-12*	4.17e-12**	3.71e-14**	2.58e-12
	(1.34e-12)	(1.40e-12)	(2.08e-12)	(1.48e-14)	(1.69e-12)
_cons	-0.744	4.408***	1.160	0.0571***	6.029***
	(0.858)	(0.998)	(1.592)	(0.0161)	(0.919)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #15

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00794	-0.00869	-0.00391	-0.0000141	-0.00408
	(0.00757)	(0.0102)	(0.0138)	(0.0000764)	(0.00933)
1.L_no_prod_offshore1	-0.334***	0.0425	-0.0174	-0.00370	0.105
	(0.0998)	(0.136)	(0.210)	(0.00257)	(0.137)
1.L_no_prod_offshore1#c.outs~i	0.00216	0.00741	0.00437	0.0000306	-0.00173
	(0.00810)	(0.0102)	(0.0137)	(0.0000768)	(0.00952)
O_net3_oil_imp_c1	4.20e-12***	2.18e-12	3.79e-12*	2.81e-14*	2.33e-12
	(1.59e-12)	(1.39e-12)	(2.06e-12)	(1.49e-14)	(1.66e-12)
_cons	-1.163	4.310***	1.114	0.0581***	5.850***
	(0.860)	(0.999)	(1.603)	(0.0168)	(0.917)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #16

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0140**	-0.00797	-0.00132	0.0000381	-0.0136**
	(0.00566)	(0.00681)	(0.00668)	(0.0000232)	(0.00556)
1.L_no_disc_all1	-0.418***	-0.156	0.687	0.00660	-0.389*
	(0.110)	(0.223)	(0.476)	(0.00587)	(0.206)
1.L_no_disc_all1#c.outside_o~p	0.0129**	0.00752	0.00156	-0.0000297	0.0116**
	(0.00609)	(0.00691)	(0.00678)	(0.0000243)	(0.00574)
O_net3_oil_imp_c1	5.43e-12***	2.03e-12	3.67e-12*	3.25e-14**	2.57e-12
	(1.50e-12)	(1.35e-12)	(1.94e-12)	(1.52e-14)	(1.65e-12)
_cons	-1.451*	4.360***	1.073	0.0546***	6.024***
	(0.862)	(1.006)	(1.577)	(0.0162)	(0.925)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #17

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00968*	-0.00568	-0.00241	0.0000109	-0.0131**
	(0.00532)	(0.00445)	(0.00256)	(0.0000179)	(0.00568)
1.L_no_disc_full_on1	-0.421***	-0.641*	-0.0514	0.00180	-0.659*
	(0.113)	(0.369)	(0.505)	(0.00463)	(0.350)
1.L_no_disc_full_on1#c.outsi~l	0.00800	0.00700	0.00527*	0.00000453	0.0143**
	(0.00615)	(0.00460)	(0.00285)	(0.0000186)	(0.00576)
O_net3_oil_imp_c1	5.05e-12***	1.93e-12	3.77e-12**	3.46e-14**	2.54e-12
	(1.51e-12)	(1.33e-12)	(1.92e-12)	(1.53e-14)	(1.65e-12)
_cons	-1.528*	4.386***	1.125	0.0554***	5.995***
	(0.860)	(1.003)	(1.578)	(0.0161)	(0.927)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #18

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0145**	-0.0113	-0.00798	-0.0000123	-0.0105
	(0.00657)	(0.00817)	(0.00892)	(0.0000296)	(0.00711)
1.L_no_disc_full_off1	-0.557***	-0.267	0.170	-0.00128	-0.291
	(0.0995)	(0.270)	(0.473)	(0.00654)	(0.230)
1.L_no_disc_full_off1#c.outs~i	0.0127*	0.0118	0.0104	0.0000311	0.00626
	(0.00688)	(0.00819)	(0.00892)	(0.0000302)	(0.00760)
O_net3_oil_imp_c1	5.38e-12***	2.21e-12	4.02e-12**	3.61e-14**	2.42e-12
	(1.36e-12)	(1.37e-12)	(2.00e-12)	(1.51e-14)	(1.66e-12)
_cons	-0.986	4.392***	1.126	0.0558***	5.987***
	(0.858)	(0.999)	(1.589)	(0.0162)	(0.920)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #19

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.0109**	-0.00585	-0.00214	0.0000152	-0.0122**
	(0.00539)	(0.00446)	(0.00243)	(0.0000190)	(0.00533)
1.L_no_disc_full_all1	-0.603***	-0.0248	0.782	0.00559	0.197
	(0.113)	(0.287)	(0.591)	(0.00735)	(0.240)
1.L_no_disc_full_all1#c.outs~i	0.0114**	0.00712	0.00466*	-0.00000191	0.0130**
	(0.00566)	(0.00457)	(0.00266)	(0.0000200)	(0.00539)
O_net3_oil_imp_c1	5.18e-12***	1.93e-12	3.70e-12*	3.40e-14**	2.47e-12
	(1.48e-12)	(1.32e-12)	(1.91e-12)	(1.52e-14)	(1.64e-12)
_cons	-1.523*	4.343***	1.094	0.0550***	5.926***
	(0.856)	(1.002)	(1.571)	(0.0162)	(0.921)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #20

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0146**	-0.00915	-0.00224	0.0000286	-0.0163***
	(0.00597)	(0.00711)	(0.00720)	(0.0000234)	(0.00597)
1.L_no_prod_all1	-0.478***	-0.238	0.177	0.00465	-0.548***
	(0.102)	(0.203)	(0.349)	(0.00434)	(0.185)
1.L_no_prod_all1#c.outside_o~p	0.0137**	0.00876	0.00277	-0.0000178	0.0147**
	(0.00633)	(0.00719)	(0.00729)	(0.0000244)	(0.00611)
O_net3_oil_imp_c1	5.48e-12***	2.11e-12	3.73e-12*	3.31e-14**	2.74e-12*
	(1.49e-12)	(1.36e-12)	(1.96e-12)	(1.52e-14)	(1.66e-12)
_cons	-1.341	4.387***	1.079	0.0545***	6.095***
	(0.859)	(1.007)	(1.591)	(0.0162)	(0.928)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #21

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00867*	-0.00449	-0.00127	0.0000142	-0.0119**
	(0.00507)	(0.00372)	(0.00191)	(0.0000183)	(0.00541)
1.L_no_prod_full_on1	-0.346***	-0.366	-0.162	0.00199	-0.509*
	(0.114)	(0.289)	(0.540)	(0.00669)	(0.295)
1.L_no_prod_full_on1#c.outsi~l	0.00587	0.00541	0.00369	-0.000000103	0.0127**
	(0.00621)	(0.00392)	(0.00232)	(0.0000193)	(0.00554)
O_net3_oil_imp_c1	4.97e-12***	1.85e-12	3.70e-12*	3.45e-14**	2.47e-12
	(1.52e-12)	(1.32e-12)	(1.91e-12)	(1.53e-14)	(1.65e-12)
_cons	-1.550*	4.351***	1.122	0.0554***	5.976***
	(0.863)	(1.002)	(1.577)	(0.0161)	(0.928)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #22

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00450	-0.00174	-0.00260	-0.0000126	-0.00187
	(0.00456)	(0.00227)	(0.00276)	(0.0000298)	(0.00226)
1.L_no_prod_full_off1	-0.485***	0.217	0.878*	0.00680	-0.0510
	(0.101)	(0.344)	(0.487)	(0.00691)	(0.307)
1.L_no_prod_full_off1#c.outs~i	-0.000133	0.000207	0.00491*	0.0000315	-0.00696
	(0.00566)	(0.00328)	(0.00289)	(0.0000303)	(0.00461)
O_net3_oil_imp_c1	4.66e-12***	1.70e-12	3.73e-12*	3.54e-14**	1.96e-12
	(1.35e-12)	(1.31e-12)	(1.91e-12)	(1.52e-14)	(1.61e-12)
_cons	-1.096	4.300***	1.025	0.0546***	5.906***
	(0.851)	(0.999)	(1.578)	(0.0162)	(0.923)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #23

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.0102*	-0.00502	-0.00140	0.0000181	-0.0117**
	(0.00521)	(0.00402)	(0.00202)	(0.0000198)	(0.00521)
1.L_no_prod_full_all1	-0.515***	0.979**	1.725**	0.0114	0.869**
	(0.116)	(0.450)	(0.776)	(0.0130)	(0.369)
1.L_no_prod_full_all1#c.outs~i	0.0100*	0.00568	0.00300	-0.00000673	0.0118**
	(0.00569)	(0.00414)	(0.00241)	(0.0000215)	(0.00534)
O_net3_oil_imp_c1	5.13e-12***	1.88e-12	3.69e-12*	3.39e-14**	2.45e-12
	(1.49e-12)	(1.32e-12)	(1.91e-12)	(1.52e-14)	(1.64e-12)
_cons	-1.550*	4.319***	1.129	0.0548***	5.893***
	(0.860)	(0.999)	(1.562)	(0.0161)	(0.920)
N	98308	80136	70770	98308	569444

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #1

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_c2	4.66e-12***	2.25e-12	-3.32e-12	-7.14e-14	2.83e-12
	(1.12e-12)	(3.82e-12)	(3.20e-12)	(8.16e-14)	(4.00e-12)
_cons	-0.553	5.574***	2.208	0.0590***	6.632***
	(0.939)	(1.007)	(1.631)	(0.0202)	(0.924)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #2

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_log_oil_reserv_c2	0.0429***	0.00839	0.0211	0.000544***	0.0272***
	(0.00766)	(0.0105)	(0.0131)	(0.000187)	(0.0103)
_cons	0.452	5.656***	2.240	0.0587***	6.797***
	(0.931)	(1.003)	(1.628)	(0.0201)	(0.924)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #3

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_reserves2	0.521***	0.0816	0.212	0.00546**	0.316***
	(0.0986)	(0.126)	(0.159)	(0.00237)	(0.117)
_cons	-0.0651	5.596***	2.091	0.0549***	6.571***
	(0.933)	(1.002)	(1.622)	(0.0203)	(0.921)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #4

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_prod_c2	3.72e-10***	-3.19e-10**	-2.01e-10	1.04e-12	-3.57e-10**
	(6.38e-11)	(1.36e-10)	(1.77e-10)	(1.85e-12)	(1.51e-10)
_cons	-0.0421	6.561***	2.766*	0.0542**	7.659***
	(0.914)	(1.081)	(1.658)	(0.0212)	(0.978)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #5

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_log_oil_prod_c2	0.0392***	-0.0271	0.0107	0.000594**	0.00119
	(0.0104)	(0.0169)	(0.0221)	(0.000269)	(0.0164)
_cons	-0.0417	5.583***	2.103	0.0579***	6.751***
	(0.919)	(1.005)	(1.631)	(0.0201)	(0.933)
N	70279	56320	46816	70279	377163

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #6

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_prod2	0.333***	-0.00957	0.268	0.00469*	0.188
	(0.0974)	(0.145)	(0.191)	(0.00274)	(0.136)
_cons	-0.632	5.622***	2.008	0.0537***	6.559***
	(0.929)	(1.011)	(1.620)	(0.0200)	(0.927)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #7

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_pop_c2	0.00000591**	-0.0000110*	-0.0000174*	-0.000000440	-0.00000242
	(0.00000237)	(0.00000620)	(0.00000964)	(0.000000327)	(0.00000721)
_cons	-0.662	5.566***	2.221	0.0579***	6.647***
	(0.938)	(1.010)	(1.627)	(0.0205)	(0.921)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #8

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_gdp_c2	0.0583**	0.0124	-0.00293	-0.00131	0.0212
	(0.0234)	(0.0449)	(0.0480)	(0.00175)	(0.0423)
_cons	-0.682	5.550***	2.196	0.0581***	6.635***
	(0.940)	(1.010)	(1.626)	(0.0205)	(0.920)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_reserves_cap_c2	7.87e-15**	-7.23e-15	-1.63e-14	-2.37e-16	9.49e-15
	(3.45e-15)	(1.27e-14)	(1.42e-14)	(3.16e-16)	(1.63e-14)
_cons	-0.622	5.616***	2.154	0.0573***	6.677***
	(0.940)	(1.003)	(1.629)	(0.0202)	(0.921)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #10

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_dev_c2	2.23e-08***	2.55e-08***	2.82e-08**	2.19e-10	3.19e-08***
	(4.17e-09)	(7.28e-09)	(1.11e-08)	(1.63e-10)	(7.38e-09)
_cons	-0.458	5.437***	2.092	0.0571***	6.478***
	(0.937)	(1.009)	(1.625)	(0.0204)	(0.912)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #11

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_prod_pop_c2	0.0000947	-0.00130**	-0.000788	-0.0000304	-0.00118**
	(0.000307)	(0.000607)	(0.000627)	(0.0000201)	(0.000540)
_cons	-0.654	5.595***	2.229	0.0584***	6.677***
	(0.937)	(1.010)	(1.626)	(0.0205)	(0.922)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
H_oil_prod_gdp_c2	-0.0564	-5.765**	-1.193	-0.0786	-5.549**
	(2.519)	(2.861)	(2.736)	(0.0885)	(2.708)
_cons	-0.649	5.605***	2.210	0.0583***	6.692***
	(0.938)	(1.009)	(1.627)	(0.0205)	(0.923)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #13

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_prod_cap_c2	-1.46e-13	-1.12e-12**	-5.65e-13	-1.02e-14*	-1.03e-12***
	(2.03e-13)	(5.24e-13)	(4.12e-13)	(5.83e-15)	(3.86e-13)
_cons	-0.589	5.644***	2.174	0.0576***	6.701***
	(0.938)	(1.003)	(1.628)	(0.0202)	(0.921)
N	70370	56411	46894	70370	378500

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #14

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_prod_dev_c2	0.000000627***	-2.88e-10	0.000000686*	6.35e-09	0.000000156
	(0.000000166)	(0.000000331)	(0.000000379)	(4.24e-09)	(0.000000355)
_cons	-0.342	5.556***	1.903	0.0554***	6.574***
	(0.937)	(1.029)	(1.667)	(0.0207)	(0.967)
N	69054	55510	46148	69054	377474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #15

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_prod_c2	1.80e-09***	-1.43e-09*	-4.43e-10	1.02e-11	-1.60e-09*
	(3.44e-10)	(7.50e-10)	(1.15e-09)	(1.04e-11)	(9.13e-10)
_cons	-1.778**	5.560***	2.185	0.0583***	7.024***
	(0.841)	(0.966)	(1.530)	(0.0165)	(0.952)
N	102752	85263	74825	102752	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #16

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_log_oil_prod_c2	0.0121***	0.00462	0.0163*	0.000200	0.00690
	(0.00367)	(0.00747)	(0.00845)	(0.000171)	(0.00652)
_cons	-1.794**	4.922***	1.797	0.0589***	6.327***
	(0.907)	(0.941)	(1.435)	(0.0162)	(0.879)
N	102752	85263	74825	102752	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_prod2	0.300***	0.224	0.402**	0.00374	0.231
	(0.0977)	(0.186)	(0.204)	(0.00405)	(0.161)
_cons	-1.949**	4.813***	1.719	0.0588***	6.240***
	(0.914)	(0.950)	(1.438)	(0.0163)	(0.886)
N	102752	85263	74825	102752	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #18

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_val_prod_c2	3.42e-12***	-3.61e-12**	-4.03e-12	-2.37e-14	-4.41e-12**
	(1.12e-12)	(1.78e-12)	(3.14e-12)	(1.71e-14)	(2.15e-12)
_cons	-1.767**	5.107***	2.153	0.0630***	6.469***
	(0.893)	(0.937)	(1.417)	(0.0164)	(0.866)
N	102752	85263	74825	102752	584594

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #19

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_log_oil_val_prod_c2	0.0103***	0.00530	0.0142**	0.000161	0.00709
	(0.00307)	(0.00618)	(0.00697)	(0.000137)	(0.00541)
_cons	-1.818**	4.893***	1.777	0.0588***	6.198***
	(0.908)	(0.941)	(1.432)	(0.0162)	(0.883)
N	102752	85263	74825	102752	584594

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #20

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_prod_pop_c2	-0.00276	-0.00930*	-0.00727*	-0.000105	-0.00985*
	(0.00265)	(0.00526)	(0.00435)	(0.0000690)	(0.00514)
_cons	-1.802**	4.907***	1.991	0.0627***	6.407***
	(0.909)	(0.937)	(1.444)	(0.0167)	(0.868)
N	99597	82841	72751	99597	580312

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #21

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_prod_gdp_c2	-6.122	-39.81*	-20.33	0.0522	-58.32*
	(17.62)	(23.61)	(18.21)	(0.491)	(31.01)
_cons	-1.809**	4.912***	1.981	0.0626***	6.428***
	(0.911)	(0.937)	(1.444)	(0.0167)	(0.867)
N	99597	82841	72751	99597	580312

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #22

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_prod_cap_c2	-2.67e-12*	-9.68e-12**	-4.67e-12*	-2.13e-14	-9.43e-12***
	(1.60e-12)	(4.42e-12)	(2.70e-12)	(1.73e-14)	(3.63e-12)
_cons	-1.735*	4.995***	2.014	0.0619***	6.432***
	(0.921)	(0.933)	(1.437)	(0.0163)	(0.869)
N	102752	85263	74825	102752	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #23

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_prod_dev_c2	0.00000387***	0.00000316**	0.00000356	3.32e-09	0.00000434**
	(0.000000950)	(0.00000149)	(0.00000218)	(1.79e-08)	(0.00000170)
_cons	-1.929**	4.650***	1.736	0.0624***	6.063***
	(0.870)	(0.946)	(1.482)	(0.0168)	(0.925)
N	99597	82841	72751	99597	580312

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #24

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_val_prod_pop_c2	-0.00000468	-0.0000365	-0.0000285	-0.000000491	-0.0000294
	(0.0000227)	(0.0000373)	(0.0000343)	(0.000000455)	(0.0000330)
_cons	-1.818**	4.863***	1.943	0.0626***	6.268***
	(0.909)	(0.937)	(1.444)	(0.0167)	(0.872)
N	99597	82841	72751	99597	580379

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #25

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_val_prod_gdp_c2	0.617*	0.839*	1.078***	0.0160*	0.756*
	(0.321)	(0.434)	(0.359)	(0.00948)	(0.408)
_cons	-1.853**	4.915***	2.032	0.0629***	6.310***
	(0.911)	(0.934)	(1.439)	(0.0167)	(0.870)
N	99597	82841	72751	99597	580379

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #26

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_oil_val_prod_cap_c2	-1.20e-14	-3.62e-14*	-1.02e-14	-2.94e-17	-2.64e-14*
	(1.30e-14)	(1.90e-14)	(1.94e-14)	(3.56e-17)	(1.51e-14)
_cons	-1.765*	4.932***	1.985	0.0618***	6.282***
	(0.920)	(0.934)	(1.438)	(0.0163)	(0.876)
N	102752	85263	74825	102752	584594

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #27

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_val_prod_dev_c2	2.64e-08***	1.30e-08	2.38e-08*	3.30e-11	1.60e-08
	(6.28e-09)	(1.06e-08)	(1.31e-08)	(1.25e-10)	(1.17e-08)
_cons	-1.794**	4.847***	1.917	0.0625***	6.245***
	(0.885)	(0.932)	(1.436)	(0.0167)	(0.870)
N	99597	82841	72751	99597	580379

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #28

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents2	-0.192*	-0.0701	0.276	0.00276	-0.151
	(0.104)	(0.227)	(0.313)	(0.00365)	(0.212)
_cons	-3.392***	1.831	2.156	0.0781***	3.887***
	(1.185)	(1.356)	(1.900)	(0.0154)	(1.060)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #29

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents_c2	-7.46e-13	-3.67e-12**	-4.91e-12**	-1.53e-14	-3.28e-12*
	(7.62e-13)	(1.58e-12)	(2.24e-12)	(1.22e-14)	(1.78e-12)
_cons	-3.459***	1.893	2.359	0.0789***	3.937***
	(1.219)	(1.361)	(1.896)	(0.0154)	(1.062)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #30

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_deposits2	0.275***	0.279	0.389	0.00173	0.196
	(0.105)	(0.191)	(0.277)	(0.00237)	(0.173)
_cons	-2.082**	4.605***	1.599	0.0608***	6.186***
	(0.903)	(0.955)	(1.469)	(0.0170)	(0.883)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #31

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_oil_deposits_total_c2	0.000385***	0.000766***	0.000756**	0.00000154	0.000937***
	(0.0000726)	(0.000184)	(0.000343)	(0.00000128)	(0.000230)
_cons	-2.046**	3.782***	0.870	0.0608***	5.092***
	(0.824)	(0.949)	(1.515)	(0.0166)	(0.981)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #32

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
P_oil_dep_total_pop_c2	1647.9	7759.6*	6121.0	234.1**	4194.5
	(5040.5)	(4695.1)	(6674.0)	(111.9)	(4296.9)
_cons	-1.839**	4.811***	1.901	0.0611***	6.346***
	(0.914)	(0.941)	(1.449)	(0.0168)	(0.872)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #33

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
P_oil_dep_total_gdp_c2	-25664678.6**	-23044528.9**	-31479195.7*	-288600.8***	-38463567.4***
	(11803598.7)	(10006317.8)	(18685740.7)	(69848.1)	(14432304.9)
_cons	-1.650*	4.970***	2.084	0.0638***	6.522***
	(0.923)	(0.934)	(1.439)	(0.0167)	(0.868)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #34

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
P_oil_dep_total_cap_c2	-0.00000201	-0.00000103	-0.000000473	4.13e-09	-0.00000172
	(0.00000125)	(0.00000127)	(0.00000131)	(1.61e-08)	(0.00000117)
_cons	-1.752*	4.898***	1.970	0.0625***	6.407***
	(0.915)	(0.937)	(1.442)	(0.0167)	(0.866)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #35

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_oil_dep_total_dev_c2	0.172*	0.223**	-0.119	-0.00546***	0.310**
	(0.0910)	(0.111)	(0.164)	(0.00154)	(0.132)
_cons	-1.834**	4.812***	1.992	0.0653***	6.236***
	(0.897)	(0.940)	(1.448)	(0.0166)	(0.878)
N	99608	82851	72761	99608	580420

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #36

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_disc_onshore2	0.190*	0.0142	-0.168	-0.00553	0.0349
	(0.103)	(0.221)	(0.289)	(0.00603)	(0.196)
_cons	-1.900**	4.565***	1.800	0.0635***	6.071***
	(0.908)	(1.000)	(1.537)	(0.0166)	(0.933)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #37

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_onshore2	0.257**	0.253	0.355	0.00144	0.369*
	(0.102)	(0.234)	(0.321)	(0.00405)	(0.210)
_cons	-1.885**	4.356***	1.382	0.0572***	5.775***
	(0.907)	(0.994)	(1.559)	(0.0157)	(0.940)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #38

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_offshore2	0.276***	-0.0194	0.123	0.00361	0.155
	(0.0899)	(0.196)	(0.220)	(0.00437)	(0.168)
_cons	-1.641*	4.591***	1.577	0.0558***	5.982***
	(0.911)	(1.008)	(1.534)	(0.0163)	(0.946)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #39

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_offshore2	0.255***	0.0468	-0.124	-0.00134	0.186
	(0.0867)	(0.132)	(0.173)	(0.00220)	(0.129)
_cons	-1.683*	4.559***	1.735	0.0590***	6.024***
	(0.913)	(0.989)	(1.533)	(0.0160)	(0.929)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #40

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_all2	0.225**	-0.0247	0.106	0.00511	0.0364
	(0.103)	(0.242)	(0.248)	(0.00647)	(0.193)
_cons	-1.922**	4.595***	1.608	0.0540***	6.072***
	(0.910)	(1.016)	(1.539)	(0.0164)	(0.939)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #41

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_full_on2	0.243**	0.134	0.0783	-0.000503	-0.0211
	(0.103)	(0.300)	(0.370)	(0.00594)	(0.266)
_cons	-1.976**	4.462***	1.615	0.0589***	6.119***
	(0.911)	(1.016)	(1.570)	(0.0167)	(0.951)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #42

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_disc_full_off2	0.293***	0.0595	0.511	0.0145**	0.0359
	(0.0929)	(0.281)	(0.346)	(0.00659)	(0.220)
_cons	-1.678*	4.527***	1.234	0.0460***	6.071***
	(0.913)	(1.019)	(1.536)	(0.0160)	(0.953)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #43

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_disc_full_all2	0.297***	-0.142	0.115	0.0103	-0.212
	(0.109)	(0.267)	(0.304)	(0.00803)	(0.222)
_cons	-2.016**	4.691***	1.590	0.0492***	6.273***
	(0.915)	(1.005)	(1.542)	(0.0170)	(0.937)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #44

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_all2	0.306***	0.337*	0.371	0.00451	0.438***
	(0.0960)	(0.188)	(0.238)	(0.00445)	(0.164)
_cons	-1.907**	4.311***	1.412	0.0549***	5.749***
	(0.908)	(0.991)	(1.542)	(0.0156)	(0.930)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #45

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
L_prod_full_on2	0.229**	0.559	0.831	0.00180	0.117
	(0.106)	(0.440)	(0.642)	(0.00270)	(0.405)
_cons	-1.973**	4.038***	0.868	0.0568***	5.988***
	(0.913)	(1.071)	(1.657)	(0.0154)	(1.004)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #46

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_full_off2	0.315***	-0.146	-0.524	0.00309	0.00763
	(0.0911)	(0.251)	(0.349)	(0.00673)	(0.202)
_cons	-1.711*	4.699***	2.124	0.0559***	6.094***
	(0.911)	(0.997)	(1.576)	(0.0163)	(0.934)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 3 - Table 5.3 - #47

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
L_prod_full_all2	0.311***	0.182	0.286	0.0145	0.0348
	(0.112)	(0.358)	(0.447)	(0.0124)	(0.309)
_cons	-2.044**	4.407***	1.409	0.0449**	6.068***
	(0.919)	(1.038)	(1.595)	(0.0190)	(0.956)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #1

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.H_no_oil_reserves1	-0.561***	-0.0200	-0.290	-0.00640**	-0.0607
	(0.130)	(0.160)	(0.232)	(0.00258)	(0.141)
1.H_oil_reserves2	0.365***	0.300*	0.315	0.00473*	0.632***
	(0.138)	(0.157)	(0.199)	(0.00269)	(0.146)
1.H_no_oil_reserves1#1.H_oil~r	0.0923	-0.437**	-0.286	-0.000294	-0.749***
	(0.204)	(0.193)	(0.263)	(0.00238)	(0.188)
O_net3_oil_imp_c1	2.54e-12	-3.63e-12	2.65e-12	1.10e-13	-6.08e-12
	(7.12e-12)	(6.67e-12)	(8.04e-12)	(1.07e-13)	(7.33e-12)
_cons	1.023	5.697***	2.117	0.0564***	6.767***
	(0.932)	(1.032)	(1.638)	(0.0210)	(0.897)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #2

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.H_no_oil_prod1	-0.454***	-0.181	0.143	0.00380	0.151
	(0.155)	(0.185)	(0.253)	(0.00299)	(0.168)
1.H_oil_prod2	0.166	0.0792	0.374*	0.00426	0.486***
	(0.127)	(0.162)	(0.217)	(0.00287)	(0.153)
1.H_no_oil_prod1#1.H_oil_prod2	0.274	-0.0131	-0.151	-0.0000515	-0.643***
	(0.215)	(0.164)	(0.233)	(0.00248)	(0.159)
O_net3_oil_imp_c1	1.31e-12	-3.08e-12	1.11e-12	7.06e-14	-7.28e-12
	(8.52e-12)	(6.84e-12)	(8.38e-12)	(1.04e-13)	(7.47e-12)
_cons	-0.199	5.554***	1.731	0.0523**	6.407***
	(0.918)	(1.042)	(1.651)	(0.0207)	(0.911)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #3

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00244	0.000989	0.00172	0.0000477*	-0.0000500
	(0.00303)	(0.00152)	(0.00168)	(0.0000257)	(0.00194)
1.H_oil_reserves2	0.568***	0.0661	0.197	0.00555**	0.312***
	(0.105)	(0.125)	(0.157)	(0.00247)	(0.118)
1.H_oil_reserves2#c.outside_~e	-0.00727	0.00117	0.00124	-0.0000183	-0.00137
	(0.00710)	(0.00290)	(0.00262)	(0.0000323)	(0.00438)
O_net3_oil_imp_c1	7.84e-12	-3.99e-12	8.97e-13	7.63e-14	-7.15e-12
	(9.01e-12)	(6.84e-12)	(8.26e-12)	(1.07e-13)	(7.67e-12)
_cons	-0.0471	5.662***	1.944	0.0510**	6.734***
	(0.917)	(1.021)	(1.657)	(0.0207)	(0.940)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00127	0.00132	0.00252	0.0000530**	0.000584
	(0.00265)	(0.00167)	(0.00163)	(0.0000262)	(0.00195)
1.H_oil_prod2	0.364***	0.00410	0.277	0.00484*	0.205
	(0.101)	(0.146)	(0.192)	(0.00282)	(0.138)
1.H_oil_prod2#c.outside_oil_~1	-0.00656	-0.000100	-0.000662	-0.0000215	-0.00189
	(0.00601)	(0.00229)	(0.00212)	(0.0000334)	(0.00337)
O_net3_oil_imp_c1	5.90e-12	-3.95e-12	3.31e-13	7.35e-14	-7.69e-12
	(9.46e-12)	(6.89e-12)	(8.35e-12)	(1.06e-13)	(7.70e-12)
_cons	-0.669	5.674***	1.864	0.0498**	6.725***
	(0.914)	(1.028)	(1.657)	(0.0205)	(0.945)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #5

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.H_no_oil_reserves1	-0.624***	-0.210	-0.465**	-0.00735***	-0.396***
	(0.0962)	(0.140)	(0.197)	(0.00237)	(0.127)
H_oil_reserves_c2	2.72e-12**	2.22e-12	-2.65e-12	-5.79e-14	2.88e-12
	(1.35e-12)	(3.95e-12)	(3.29e-12)	(8.37e-14)	(4.22e-12)
1.H_no_oil_reserves1#c.H_oil~r	5.01e-12**	-8.83e-13	4.76e-15	7.54e-15	-1.09e-12
	(2.47e-12)	(3.75e-12)	(3.95e-12)	(5.44e-14)	(4.07e-12)
O_net3_oil_imp_c1	1.44e-12	-3.03e-12	3.07e-12	1.16e-13	-5.73e-12
	(7.09e-12)	(6.77e-12)	(8.11e-12)	(1.06e-13)	(7.50e-12)
_cons	0.736	5.644***	2.227	0.0601***	6.891***
	(0.919)	(1.028)	(1.644)	(0.0208)	(0.930)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #6

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.H_no_oil_prod1	-0.327***	-0.116	0.0732	0.00397	-0.144
	(0.113)	(0.175)	(0.253)	(0.00336)	(0.154)
H_oil_prod_c2	3.72e-10***	-3.00e-10**	-1.35e-10	1.69e-12	-3.38e-10**
	(7.76e-11)	(1.42e-10)	(1.79e-10)	(2.14e-12)	(1.55e-10)
1.H_no_oil_prod1#c.H_oil_pro~2	2.65e-12	-2.21e-10**	-7.71e-11	4.34e-14	-3.36e-10***
	(1.39e-10)	(1.00e-10)	(1.69e-10)	(1.82e-12)	(1.12e-10)
O_net3_oil_imp_c1	3.60e-12	-2.79e-12	1.95e-12	7.71e-14	-5.98e-12
	(8.47e-12)	(6.83e-12)	(8.30e-12)	(1.05e-13)	(7.57e-12)
_cons	0.385	6.825***	2.410	0.0502**	8.166***
	(0.903)	(1.115)	(1.689)	(0.0219)	(0.990)
N	68164	55007	45639	68164	366983

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #7

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00468	0.00140	0.00204	0.0000492**	-0.000248
	(0.00320)	(0.00135)	(0.00146)	(0.0000207)	(0.00175)
H_oil_reserves_c2	4.84e-12***	2.27e-12	-3.42e-12	-6.71e-14	2.85e-12
	(1.17e-12)	(3.83e-12)	(3.18e-12)	(8.38e-14)	(4.01e-12)
c.outside_oil_dep_c1#c.H_oil~r	7.26e-15	-2.92e-14	5.07e-15	-9.89e-16*	-2.82e-14
	(5.48e-14)	(7.59e-14)	(4.19e-14)	(5.75e-16)	(8.65e-14)
O_net3_oil_imp_c1	5.54e-12	-3.99e-12	1.04e-12	7.79e-14	-7.50e-12
	(9.35e-12)	(6.85e-12)	(8.31e-12)	(1.07e-13)	(7.69e-12)
_cons	-0.583	5.637***	2.045	0.0552***	6.804***
	(0.923)	(1.028)	(1.669)	(0.0207)	(0.945)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #8

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00281	0.00175	0.00222	0.0000541**	0.000257
	(0.00277)	(0.00134)	(0.00149)	(0.0000228)	(0.00162)
H_oil_prod_c2	4.01e-10***	-2.98e-10**	-2.03e-10	1.32e-12	-3.29e-10**
	(6.80e-11)	(1.40e-10)	(1.78e-10)	(1.88e-12)	(1.57e-10)
c.outside_oil_dep_c1#c.H_oil~_	-7.89e-12	-4.73e-12	-3.52e-13	-2.33e-14*	-4.68e-12
	(8.83e-12)	(6.38e-12)	(9.56e-13)	(1.29e-14)	(6.83e-12)
O_net3_oil_imp_c1	8.33e-12	-3.56e-12	9.52e-13	7.75e-14	-6.85e-12
	(9.34e-12)	(6.86e-12)	(8.30e-12)	(1.07e-13)	(7.70e-12)
_cons	-0.0187	6.604***	2.612	0.0501**	7.769***
	(0.885)	(1.091)	(1.690)	(0.0216)	(0.994)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00517	0.00126	0.00197	0.0000424**	-0.000212
	(0.00332)	(0.00129)	(0.00140)	(0.0000196)	(0.00170)
H_oil_reserves_pop_c2	0.00000604***	-0.0000110*	-0.0000177*	-0.000000423	-0.00000194
	(0.00000231)	(0.00000602)	(0.00000941)	(0.000000330)	(0.00000717)
c.outside_oil_dep_c1#c.H_oil~r	3.11e-08	0.000000127	0.000000124	-8.05e-09	-0.000000258
	(0.000000369)	(0.000000622)	(0.000000582)	(5.00e-09)	(0.000000560)
O_net3_oil_imp_c1	5.44e-12	-3.34e-12	2.13e-12	8.69e-14	-7.24e-12
	(9.42e-12)	(6.96e-12)	(8.40e-12)	(1.07e-13)	(7.90e-12)
_cons	-0.700	5.585***	1.983	0.0535**	6.812***
	(0.921)	(1.028)	(1.667)	(0.0210)	(0.942)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00573*	0.000793	0.00152	0.0000414**	-0.000698
	(0.00348)	(0.00135)	(0.00143)	(0.0000198)	(0.00188)
H_oil_reserves_gdp_c2	0.0474**	0.00347	-0.00776	-0.00113	0.0221
	(0.0230)	(0.0443)	(0.0474)	(0.00183)	(0.0419)
c.outside_oil_dep_c1#c.H_oil~r	0.00543	0.0115*	0.0120*	-0.0000711	0.00195**
	(0.00391)	(0.00626)	(0.00718)	(0.0000924)	(0.000836)
O_net3_oil_imp_c1	5.15e-12	-3.82e-12	1.38e-12	8.63e-14	-7.38e-12
	(9.42e-12)	(6.85e-12)	(8.19e-12)	(1.07e-13)	(7.93e-12)
_cons	-0.736	5.567***	1.930	0.0538**	6.807***
	(0.924)	(1.031)	(1.670)	(0.0210)	(0.942)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #11

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00487	0.00120	0.00192	0.0000430**	-0.000270
	(0.00327)	(0.00132)	(0.00142)	(0.0000190)	(0.00174)
H_oil_reserves_cap_c2	8.03e-15**	-6.93e-15	-1.61e-14	-2.25e-16	9.90e-15
	(3.48e-15)	(1.26e-14)	(1.42e-14)	(3.21e-16)	(1.62e-14)
c.outside_oil_dep_c1#c.H_oil~r	7.18e-17	1.11e-16	1.87e-16	-5.36e-18	-1.06e-16
	(2.25e-16)	(5.23e-16)	(4.59e-16)	(3.65e-18)	(3.97e-16)
O_net3_oil_imp_c1	5.04e-12	-3.92e-12	1.12e-12	8.10e-14	-7.54e-12
	(9.51e-12)	(6.83e-12)	(8.25e-12)	(1.07e-13)	(7.73e-12)
_cons	-0.672	5.674***	1.984	0.0534***	6.850***
	(0.925)	(1.023)	(1.668)	(0.0206)	(0.941)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #12

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00449	0.00130	0.00197	0.0000324	-0.000526
	(0.00325)	(0.00136)	(0.00147)	(0.0000205)	(0.00181)
H_oil_reserves_dev_c2	2.40e-08***	2.57e-08***	2.81e-08**	2.06e-10	3.16e-08***
	(4.37e-09)	(7.44e-09)	(1.14e-08)	(1.76e-10)	(7.48e-09)
c.outside_oil_dep_c1#c.H_oil~r	-3.61e-10	-2.65e-11	2.37e-11	2.06e-12	1.19e-10
	(3.95e-10)	(3.87e-10)	(3.71e-10)	(2.34e-12)	(1.28e-10)
O_net3_oil_imp_c1	5.67e-12	-3.81e-12	1.14e-12	8.47e-14	-7.43e-12
	(9.24e-12)	(6.85e-12)	(8.38e-12)	(1.07e-13)	(7.81e-12)
_cons	-0.491	5.468***	1.886	0.0527**	6.648***
	(0.924)	(1.025)	(1.660)	(0.0209)	(0.932)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #13

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00585*	0.00103	0.00177	0.0000401**	-0.000399
	(0.00340)	(0.00133)	(0.00144)	(0.0000194)	(0.00172)
H_oil_prod_pop_c2	0.0000483	-0.00136**	-0.000823	-0.0000304	-0.00121**
	(0.000317)	(0.000636)	(0.000633)	(0.0000208)	(0.000555)
c.outside_oil_dep_c1#c.H_oil~_	0.0000286	0.0000236	0.0000179	-0.000000102	0.00000454
	(0.0000222)	(0.0000227)	(0.0000193)	(0.000000341)	(0.0000106)
O_net3_oil_imp_c1	5.26e-12	-3.43e-12	1.81e-12	8.70e-14	-7.22e-12
	(9.51e-12)	(6.97e-12)	(8.42e-12)	(1.07e-13)	(7.93e-12)
_cons	-0.698	5.618***	2.000	0.0541***	6.842***
	(0.921)	(1.028)	(1.666)	(0.0210)	(0.943)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #14

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00692*	0.000529	0.00107	0.0000308	-0.000718
	(0.00371)	(0.00148)	(0.00158)	(0.0000193)	(0.00184)
H_oil_prod_gdp_c2	-1.529	-6.195**	-1.481	-0.0947	-5.588**
	(2.782)	(3.141)	(2.858)	(0.0947)	(2.792)
c.outside_oil_dep_c1#c.H_oil~_	0.512	0.384	0.450*	0.00565	0.0605**
	(0.347)	(0.278)	(0.257)	(0.00514)	(0.0279)
O_net3_oil_imp_c1	5.10e-12	-3.45e-12	1.62e-12	8.48e-14	-7.03e-12
	(9.44e-12)	(6.81e-12)	(8.25e-12)	(1.07e-13)	(7.88e-12)
_cons	-0.715	5.604***	1.930	0.0536**	6.855***
	(0.922)	(1.027)	(1.668)	(0.0209)	(0.944)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #15

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00648*	0.000426	0.00124	0.0000321*	-0.000836
	(0.00345)	(0.00149)	(0.00156)	(0.0000183)	(0.00181)
H_oil_prod_cap_c2	-2.29e-13	-1.18e-12**	-5.92e-13	-1.16e-14*	-1.06e-12***
	(2.03e-13)	(5.48e-13)	(4.30e-13)	(6.06e-15)	(3.89e-13)
c.outside_oil_dep_c1#c.H_oil~_	2.98e-14**	2.41e-14*	2.18e-14*	3.06e-16	6.52e-15***
	(1.46e-14)	(1.36e-14)	(1.24e-14)	(2.89e-16)	(2.24e-15)
O_net3_oil_imp_c1	4.63e-12	-3.98e-12	9.54e-13	7.97e-14	-7.41e-12
	(9.72e-12)	(6.78e-12)	(8.22e-12)	(1.07e-13)	(7.71e-12)
_cons	-0.649	5.702***	2.000	0.0536***	6.874***
	(0.924)	(1.023)	(1.665)	(0.0206)	(0.942)
N	69154	55432	46005	69154	377512

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #16

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00300	0.00189	0.00232	0.0000304	0.000245
	(0.00279)	(0.00134)	(0.00150)	(0.0000209)	(0.00164)
H_oil_prod_dev_c2	0.000000772***	7.91e-08	0.000000697*	5.72e-09	0.000000211
	(0.000000184)	(0.000000336)	(0.000000380)	(4.56e-09)	(0.000000362)
c.outside_oil_dep_c1#c.H_oil~_	-4.02e-08*	-2.51e-08	-3.32e-09	5.51e-11	-1.54e-08
	(2.41e-08)	(2.16e-08)	(9.16e-09)	(5.39e-11)	(1.67e-08)
O_net3_oil_imp_c1	6.33e-12	-3.27e-12	9.02e-13	8.60e-14	-7.27e-12
	(9.59e-12)	(6.91e-12)	(8.51e-12)	(1.07e-13)	(7.85e-12)
_cons	-0.395	5.581***	1.699	0.0511**	6.730***
	(0.919)	(1.046)	(1.702)	(0.0211)	(0.987)
N	67838	54531	45259	67838	376486

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.R_no_oil_prod1	-0.261	-0.00846	0.365	0.000959	0.0152
	(0.166)	(0.222)	(0.376)	(0.00528)	(0.189)
1.R_oil_prod2	0.305***	0.362*	0.619**	0.00341	0.481***
	(0.109)	(0.193)	(0.244)	(0.00420)	(0.168)
1.R_no_oil_prod1#1.R_oil_prod2	-0.307	-0.571***	-0.876***	0.000854	-0.898***
	(0.217)	(0.186)	(0.283)	(0.00422)	(0.158)
O_net3_oil_imp_c1	4.27e-12***	1.08e-12	3.04e-12*	3.22e-14**	1.30e-12
	(1.44e-12)	(1.30e-12)	(1.82e-12)	(1.49e-14)	(1.59e-12)
_cons	-1.618*	4.478***	0.940	0.0572***	5.844***
	(0.873)	(0.957)	(1.444)	(0.0173)	(0.860)
N	102741	85263	74825	102741	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #18

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	0.000368	0.000518	0.00271**	-0.00000210	-0.000163
	(0.00183)	(0.00151)	(0.00106)	(0.0000155)	(0.00196)
1.R_oil_prod2	0.346***	0.241	0.425**	0.00345	0.257
	(0.101)	(0.187)	(0.206)	(0.00410)	(0.162)
1.R_oil_prod2#c.outside_oil_~1	-0.00965**	-0.00250	-0.00422*	0.0000207	-0.00645
	(0.00479)	(0.00273)	(0.00248)	(0.0000180)	(0.00423)
O_net3_oil_imp_c1	5.21e-12***	1.18e-12	3.06e-12*	3.12e-14**	1.66e-12
	(1.39e-12)	(1.31e-12)	(1.84e-12)	(1.50e-14)	(1.60e-12)
_cons	-1.784**	4.605***	1.208	0.0566***	6.083***
	(0.889)	(0.962)	(1.472)	(0.0166)	(0.893)
N	99603	82493	72443	99603	579787

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #19

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.R_no_oil_prod1	-0.444***	-0.308	-0.240	0.00110	-0.490***
	(0.111)	(0.213)	(0.349)	(0.00386)	(0.176)
R_oil_prod_c2	1.75e-09***	-1.38e-09*	-7.33e-10	7.49e-12	-1.67e-09*
	(3.69e-10)	(7.48e-10)	(1.12e-09)	(1.12e-11)	(9.04e-10)
1.R_no_oil_prod1#c.R_oil_pro~2	-4.41e-10	-1.53e-09*	8.54e-10	6.62e-12	-9.81e-10
	(8.63e-10)	(8.52e-10)	(1.45e-09)	(8.77e-12)	(1.02e-09)
O_net3_oil_imp_c1	4.21e-12***	1.21e-12	3.09e-12*	3.26e-14**	1.50e-12
	(1.62e-12)	(1.30e-12)	(1.85e-12)	(1.52e-14)	(1.58e-12)
_cons	-1.387*	5.538***	2.083	0.0566***	7.111***
	(0.796)	(0.987)	(1.519)	(0.0167)	(0.965)
N	102741	85263	74825	102741	584527

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #20

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
R_no_oil_prod1	-0.479***	-0.338	-0.177	0.00117	-0.491***
	(0.105)	(0.212)	(0.399)	(0.00409)	(0.175)
R_oil_val_prod_c2	3.12e-12***	-3.03e-12	-3.54e-12	-3.05e-14	-4.18e-12*
	(1.20e-12)	(1.87e-12)	(3.08e-12)	(1.89e-14)	(2.32e-12)
c.R_no_oil_prod1#c.R_oil_val~_	-1.24e-12	-8.61e-12	-4.88e-12	2.31e-14	-6.16e-12
	(3.39e-12)	(5.52e-12)	(7.75e-12)	(2.02e-14)	(6.23e-12)
O_net3_oil_imp_c1	4.05e-12***	1.23e-12	3.11e-12*	3.19e-14**	1.64e-12
	(1.50e-12)	(1.25e-12)	(1.88e-12)	(1.52e-14)	(1.45e-12)
_cons	-1.351	5.044***	1.901	0.0610***	6.487***
	(0.847)	(0.949)	(1.461)	(0.0165)	(0.874)
N	102741	85263	74825	102741	584594

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #21

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00297	-0.000107	0.00138	0.0000159*	-0.00223
	(0.00259)	(0.00138)	(0.00118)	(0.00000934)	(0.00224)
R_oil_prod_c2	2.02e-09***	-1.44e-09*	-4.26e-10	1.13e-11	-1.56e-09*
	(3.86e-10)	(7.44e-10)	(1.13e-09)	(1.07e-11)	(8.80e-10)
c.outside_oil_dep_c1#c.R_oil~_	-4.40e-11	-2.25e-11	-2.15e-11	-2.43e-14	-3.54e-11
	(2.92e-11)	(2.80e-11)	(3.18e-11)	(4.51e-14)	(4.23e-11)
O_net3_oil_imp_c1	5.07e-12***	1.33e-12	3.07e-12*	3.10e-14**	1.82e-12
	(1.54e-12)	(1.28e-12)	(1.83e-12)	(1.53e-14)	(1.52e-12)
_cons	-1.575*	5.412***	1.731	0.0555***	6.917***
	(0.824)	(0.985)	(1.572)	(0.0168)	(0.973)
N	99603	82493	72443	99603	579787

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #22

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00383	-0.0000912	0.00158	0.0000144	-0.00221
	(0.00274)	(0.00137)	(0.00114)	(0.00000901)	(0.00220)
R_oil_val_prod_c2	4.74e-12***	-3.11e-12	-2.36e-12	-2.22e-14	-3.28e-12
	(1.38e-12)	(2.17e-12)	(3.58e-12)	(1.81e-14)	(2.70e-12)
c.outside_oil_dep_c1#c.R_oil~p	-1.60e-13**	-8.49e-14	-2.40e-13	2.38e-17	-1.65e-13
	(8.08e-14)	(9.56e-14)	(1.74e-13)	(5.98e-17)	(1.52e-13)
O_net3_oil_imp_c1	5.02e-12***	1.43e-12	3.38e-12*	3.04e-14**	2.17e-12
	(1.43e-12)	(1.24e-12)	(1.90e-12)	(1.53e-14)	(1.41e-12)
_cons	-1.562*	4.907***	1.659	0.0605***	6.308***
	(0.864)	(0.949)	(1.456)	(0.0166)	(0.876)
N	99603	82493	72443	99603	579854

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #23

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00559*	-0.000725	0.000761	0.0000127	-0.00298
	(0.00303)	(0.00150)	(0.00122)	(0.00000849)	(0.00238)
R_oil_prod_pop_c2	-0.00291	-0.00932*	-0.00737*	-0.000112	-0.00963*
	(0.00270)	(0.00526)	(0.00435)	(0.0000741)	(0.00500)
c.outside_oil_dep_c1#c.R_oil~_	0.000139	0.000114	0.0000717	0.000000519	-0.0000317
	(0.000170)	(0.000157)	(0.000153)	(0.00000191)	(0.000270)
O_net3_oil_imp_c1	4.70e-12***	1.11e-12	3.00e-12	3.15e-14**	1.52e-12
	(1.40e-12)	(1.32e-12)	(1.87e-12)	(1.55e-14)	(1.63e-12)
_cons	-1.607*	4.700***	1.495	0.0600***	6.268***
	(0.875)	(0.950)	(1.480)	(0.0170)	(0.877)
N	96448	80071	70369	96448	575572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #24

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00663**	-0.00148	0.000214	0.00000805	-0.00351
	(0.00328)	(0.00189)	(0.00144)	(0.00000854)	(0.00257)
R_oil_prod_gdp_c2	-16.33	-43.34*	-23.21	-0.124	-57.50*
	(19.49)	(25.49)	(19.07)	(0.537)	(30.86)
c.outside_oil_dep_c1#c.R_oil~_	3.646	3.336	2.677	0.0499	0.586*
	(2.662)	(2.400)	(2.183)	(0.0374)	(0.305)
O_net3_oil_imp_c1	4.75e-12***	1.14e-12	3.02e-12	3.16e-14**	1.54e-12
	(1.40e-12)	(1.33e-12)	(1.87e-12)	(1.54e-14)	(1.63e-12)
_cons	-1.629*	4.679***	1.448	0.0596***	6.287***
	(0.876)	(0.949)	(1.480)	(0.0170)	(0.877)
N	96448	80071	70369	96448	575572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #25

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00600*	-0.00126	0.000354	0.00000947	-0.00341
	(0.00312)	(0.00178)	(0.00139)	(0.00000800)	(0.00250)
R_oil_prod_cap_c2	-3.06e-12*	-9.91e-12**	-4.88e-12*	-3.35e-14*	-9.47e-12***
	(1.57e-12)	(4.48e-12)	(2.74e-12)	(1.99e-14)	(3.56e-12)
c.outside_oil_dep_c1#c.R_oil~_	1.64e-13	1.43e-13	1.30e-13	1.84e-15	3.65e-14
	(1.35e-13)	(1.14e-13)	(8.98e-14)	(1.32e-15)	(6.50e-14)
O_net3_oil_imp_c1	4.84e-12***	1.16e-12	3.00e-12	3.09e-14**	1.57e-12
	(1.43e-12)	(1.31e-12)	(1.85e-12)	(1.54e-14)	(1.61e-12)
_cons	-1.568*	4.788***	1.507	0.0593***	6.289***
	(0.887)	(0.946)	(1.472)	(0.0166)	(0.878)
N	99603	82493	72443	99603	579787

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #26

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00407	-0.000336	0.00128	0.00000527	-0.00297
	(0.00289)	(0.00145)	(0.00119)	(0.00000910)	(0.00252)
R_oil_prod_dev_c2	0.00000412***	0.00000330**	0.00000378*	-2.90e-09	0.00000439**
	(0.000000976)	(0.00000154)	(0.00000217)	(1.90e-08)	(0.00000181)
c.outside_oil_dep_c1#c.R_oil~_	-8.46e-08	-3.49e-08	-7.18e-08	6.28e-10**	-1.55e-08
	(6.95e-08)	(6.40e-08)	(0.000000107)	(2.74e-10)	(7.86e-08)
O_net3_oil_imp_c1	4.82e-12***	1.18e-12	3.02e-12	3.19e-14**	1.61e-12
	(1.45e-12)	(1.25e-12)	(1.84e-12)	(1.54e-14)	(1.50e-12)
_cons	-1.752**	4.448***	1.247	0.0599***	5.918***
	(0.849)	(0.960)	(1.526)	(0.0171)	(0.936)
N	96448	80071	70369	96448	575572

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #27

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00551*	-0.000748	0.000769	0.0000120	-0.00321
	(0.00304)	(0.00151)	(0.00121)	(0.00000859)	(0.00246)
R_oil_val_prod_pop_c2	-0.00000227	-0.0000418	-0.0000270	-0.000000550	-0.0000290
	(0.0000230)	(0.0000380)	(0.0000343)	(0.000000493)	(0.0000338)
c.outside_oil_dep_c1#c.R_oil~p	0.000000640	0.000000636	0.000000357	4.06e-09	8.91e-08
	(0.000000663)	(0.000000549)	(0.000000559)	(6.34e-09)	(0.000000878)
O_net3_oil_imp_c1	4.68e-12***	1.05e-12	2.95e-12	3.15e-14**	1.52e-12
	(1.40e-12)	(1.35e-12)	(1.90e-12)	(1.55e-14)	(1.60e-12)
_cons	-1.621*	4.659***	1.450	0.0598***	6.130***
	(0.875)	(0.950)	(1.480)	(0.0170)	(0.879)
N	96448	80071	70369	96448	575639

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #28

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00657*	-0.00144	0.000563	0.00000919	-0.00403
	(0.00340)	(0.00192)	(0.00132)	(0.00000950)	(0.00282)
R_oil_val_prod_gdp_c2	0.494	0.702	1.024**	0.0149	0.736*
	(0.308)	(0.482)	(0.413)	(0.0107)	(0.413)
c.outside_oil_dep_c1#c.R_oil~p	0.0165	0.0122	0.00393	0.000112	0.00388
	(0.0102)	(0.0102)	(0.00844)	(0.000231)	(0.00311)
O_net3_oil_imp_c1	4.60e-12***	1.08e-12	2.94e-12	3.04e-14*	1.59e-12
	(1.37e-12)	(1.33e-12)	(1.85e-12)	(1.56e-14)	(1.57e-12)
_cons	-1.672*	4.684***	1.522	0.0602***	6.166***
	(0.876)	(0.946)	(1.476)	(0.0170)	(0.877)
N	96448	80071	70369	96448	575639

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #29

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00542*	-0.000898	0.000654	0.0000116	-0.00315
	(0.00303)	(0.00161)	(0.00128)	(0.00000802)	(0.00246)
R_oil_val_prod_cap_c2	-1.18e-14	-4.13e-14**	-1.14e-14	-6.52e-17	-2.70e-14
	(1.37e-14)	(2.08e-14)	(1.99e-14)	(5.16e-17)	(1.72e-14)
c.outside_oil_dep_c1#c.R_oil~p	4.22e-16	4.32e-16	3.23e-16	2.70e-18	-3.09e-17
	(6.80e-16)	(4.22e-16)	(3.60e-16)	(2.39e-18)	(8.84e-16)
O_net3_oil_imp_c1	4.81e-12***	1.11e-12	2.95e-12	3.10e-14**	1.59e-12
	(1.45e-12)	(1.36e-12)	(1.89e-12)	(1.54e-14)	(1.61e-12)
_cons	-1.596*	4.728***	1.487	0.0593***	6.141***
	(0.886)	(0.947)	(1.473)	(0.0166)	(0.883)
N	99603	82493	72443	99603	579854

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #30

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00456	-0.000385	0.00155	0.00000826	-0.00280
	(0.00304)	(0.00147)	(0.00115)	(0.00000961)	(0.00249)
R_oil_val_prod_dev_c2	2.99e-08***	1.51e-08	3.17e-08**	1.31e-11	1.96e-08
	(6.68e-09)	(1.17e-08)	(1.42e-08)	(1.39e-10)	(1.28e-08)
c.outside_oil_dep_c1#c.R_oil~p	-4.51e-10	-2.86e-10	-1.62e-09	1.23e-12	-4.86e-10
	(3.66e-10)	(4.16e-10)	(1.21e-09)	(1.08e-12)	(5.51e-10)
O_net3_oil_imp_c1	4.66e-12***	1.08e-12	3.09e-12*	3.17e-14**	1.55e-12
	(1.43e-12)	(1.34e-12)	(1.86e-12)	(1.55e-14)	(1.58e-12)
_cons	-1.595*	4.658***	1.481	0.0598***	6.118***
	(0.858)	(0.947)	(1.487)	(0.0171)	(0.875)
N	96448	80071	70369	96448	575639

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #31

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_oil_rent1	0.0211	0.490	0.410	0.000186	0.227
	(0.171)	(0.310)	(0.364)	(0.00437)	(0.243)
1.W_oil_rents2	0.170	-0.0176	-0.456	-0.00559	0.212
	(0.127)	(0.253)	(0.370)	(0.00461)	(0.242)
1.W_no_oil_rent1#1.W_oil_ren~2	-0.511**	-0.757**	-0.196	0.00289	-0.760***
	(0.241)	(0.302)	(0.387)	(0.00401)	(0.214)
O_net3_oil_imp_c1	3.14e-12*	1.67e-12	3.44e-12	1.44e-14	2.48e-12
	(1.66e-12)	(1.61e-12)	(2.38e-12)	(1.53e-14)	(1.77e-12)
_cons	-4.195***	0.691	1.525	0.0759***	2.712**
	(1.094)	(1.548)	(2.117)	(0.0189)	(1.152)
N	67275	47416	40519	67275	323040

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #32

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00163	-0.00167	0.000864	-0.0000315*	-0.00605
	(0.00373)	(0.00328)	(0.00172)	(0.0000172)	(0.00639)
1.W_oil_rents2	0.238**	0.0818	-0.252	-0.00354	0.173
	(0.119)	(0.232)	(0.323)	(0.00378)	(0.218)
1.W_oil_rents2#c.outside_oil~c	-0.0107	-0.00337	-0.00458	0.0000311*	-0.00550
	(0.00709)	(0.00458)	(0.00366)	(0.0000186)	(0.00739)
O_net3_oil_imp_c1	3.71e-12**	2.06e-12	3.42e-12	1.87e-14	2.91e-12*
	(1.83e-12)	(1.43e-12)	(2.30e-12)	(1.17e-14)	(1.67e-12)
_cons	-3.189***	1.535	1.996	0.0844***	3.490***
	(1.174)	(1.406)	(1.950)	(0.0167)	(1.110)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #33

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.P_no_deposits1	-0.0325	-0.0478	0.638*	0.00211	0.128
	(0.185)	(0.265)	(0.331)	(0.00393)	(0.247)
1.P_deposits2	0.337***	0.415**	0.782**	0.00264	0.459**
	(0.118)	(0.206)	(0.328)	(0.00253)	(0.192)
1.P_no_deposits1#1.P_deposits2	-0.532**	-0.712***	-1.230***	-0.000914	-1.115***
	(0.250)	(0.203)	(0.292)	(0.00345)	(0.171)
O_net3_oil_imp_c1	4.29e-12***	1.12e-12	3.25e-12*	3.30e-14**	1.39e-12
	(1.39e-12)	(1.35e-12)	(1.89e-12)	(1.55e-14)	(1.67e-12)
_cons	-1.967**	4.132***	0.439	0.0567***	5.586***
	(0.847)	(0.972)	(1.526)	(0.0178)	(0.872)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #34

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	0.00147	0.00171	0.00380***	0.00000352	0.000938
	(0.00116)	(0.00120)	(0.00143)	(0.0000133)	(0.00150)
1.P_deposits2	0.336***	0.303	0.425	0.00225	0.230
	(0.109)	(0.193)	(0.278)	(0.00255)	(0.176)
1.P_deposits2#c.outside_oil_~1	-0.0133***	-0.00477*	-0.00623**	0.0000130	-0.00839**
	(0.00481)	(0.00274)	(0.00278)	(0.0000166)	(0.00394)
O_net3_oil_imp_c1	5.14e-12***	1.20e-12	3.14e-12*	3.25e-14**	1.63e-12
	(1.37e-12)	(1.34e-12)	(1.89e-12)	(1.55e-14)	(1.62e-12)
_cons	-1.908**	4.388***	1.074	0.0575***	6.024***
	(0.880)	(0.970)	(1.509)	(0.0174)	(0.893)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #35

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00793**	-0.00231	-0.000227	-0.00000471	-0.00500
	(0.00366)	(0.00217)	(0.00156)	(0.0000111)	(0.00305)
P_oil_dep_total_pop_c2	-541.9	6520.0	4766.1	181.1	4255.7
	(5042.2)	(5068.1)	(6865.5)	(110.6)	(4388.9)
c.outside_oil_dep_c1#c.P_oil~t	390.2***	328.2*	224.8	11.60**	158.4***
	(131.0)	(198.7)	(167.3)	(5.764)	(46.91)
O_net3_oil_imp_c1	4.85e-12***	1.22e-12	3.07e-12	3.28e-14**	1.65e-12
	(1.41e-12)	(1.34e-12)	(1.89e-12)	(1.54e-14)	(1.64e-12)
_cons	-1.642*	4.576***	1.383	0.0581***	6.204***
	(0.878)	(0.954)	(1.485)	(0.0171)	(0.882)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #36

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00854**	-0.00288	-0.000439	0.000000686	-0.00433
	(0.00400)	(0.00248)	(0.00175)	(0.00000867)	(0.00282)
P_oil_dep_total_gdp_c2	-33485697.8***	-25163708.3**	-31349733.6*	-333225.7***	-37673652.2***
	(12366774.5)	(10572101.6)	(18015473.4)	(76645.0)	(14163687.9)
c.outside_oil_dep_c1#c.P_oil~t	1809052.4**	1749152.3**	1193418.1	42137.4***	352153.2***
	(853744.7)	(790777.6)	(781549.0)	(15283.0)	(101418.2)
O_net3_oil_imp_c1	4.89e-12***	1.16e-12	2.98e-12	3.20e-14**	1.45e-12
	(1.38e-12)	(1.34e-12)	(1.87e-12)	(1.54e-14)	(1.65e-12)
_cons	-1.446	4.714***	1.541	0.0604***	6.387***
	(0.886)	(0.946)	(1.475)	(0.0171)	(0.877)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #37

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00816**	-0.00263	-0.000578	-0.0000110	-0.00492*
	(0.00363)	(0.00222)	(0.00168)	(0.0000115)	(0.00295)
P_oil_dep_total_cap_c2	-0.00000260**	-0.00000116	-0.000000532	-6.71e-09	-0.00000176
	(0.00000130)	(0.00000133)	(0.00000134)	(1.53e-08)	(0.00000117)
c.outside_oil_dep_c1#c.P_oil~t	0.000000147***	0.000000129**	9.95e-08*	5.65e-09***	5.38e-08***
	(3.72e-08)	(5.97e-08)	(5.25e-08)	(2.10e-09)	(1.45e-08)
O_net3_oil_imp_c1	4.86e-12***	1.20e-12	3.06e-12	3.28e-14**	1.60e-12
	(1.39e-12)	(1.33e-12)	(1.88e-12)	(1.55e-14)	(1.63e-12)
_cons	-1.557*	4.667***	1.438	0.0592***	6.271***
	(0.880)	(0.951)	(1.478)	(0.0170)	(0.875)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #38

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00538*	-0.00100	0.00124	0.00000336	-0.00387
	(0.00312)	(0.00156)	(0.00123)	(0.00000859)	(0.00256)
P_oil_dep_total_dev_c2	0.152*	0.214*	-0.0885	-0.00629***	0.289**
	(0.0924)	(0.112)	(0.164)	(0.00165)	(0.136)
c.outside_oil_dep_c1#c.P_oil~t	0.00453	0.00935*	-0.0116	0.000179***	0.0162***
	(0.00644)	(0.00537)	(0.0180)	(0.0000528)	(0.00502)
O_net3_oil_imp_c1	4.80e-12***	1.27e-12	2.92e-12	3.40e-14**	1.77e-12
	(1.41e-12)	(1.26e-12)	(1.87e-12)	(1.56e-14)	(1.51e-12)
_cons	-1.630*	4.586***	1.503	0.0627***	6.056***
	(0.862)	(0.951)	(1.492)	(0.0169)	(0.887)
N	96458	80080	70378	96458	575678

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #39

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_disc_onshore1	-0.268	-0.328	0.303	0.00283	-0.729***
	(0.182)	(0.281)	(0.434)	(0.00454)	(0.263)
1.L_disc_onshore2	0.153	0.103	-0.00181	-0.00569	0.226
	(0.132)	(0.239)	(0.331)	(0.00621)	(0.209)
1.L_no_disc_onshore1#1.L_dis~h	-0.0981	-0.330*	-0.549*	0.000716	-0.675***
	(0.230)	(0.191)	(0.299)	(0.00369)	(0.154)
O_net3_oil_imp_c1	4.15e-12***	1.57e-12	3.60e-12*	3.54e-14**	1.74e-12
	(1.59e-12)	(1.30e-12)	(1.89e-12)	(1.52e-14)	(1.62e-12)
_cons	-1.563*	4.308***	1.123	0.0614***	5.760***
	(0.863)	(1.013)	(1.556)	(0.0173)	(0.920)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #40

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_prod_onshore1	-0.303*	-0.338	0.116	0.00421	-0.624***
	(0.175)	(0.211)	(0.305)	(0.00448)	(0.200)
1.L_prod_onshore2	0.236*	0.356	0.561	0.00146	0.551**
	(0.138)	(0.257)	(0.348)	(0.00422)	(0.223)
1.L_no_prod_onshore1#1.L_pro~h	-0.137	-0.339*	-0.632**	-0.000422	-0.547***
	(0.225)	(0.187)	(0.275)	(0.00364)	(0.151)
O_net3_oil_imp_c1	4.20e-12***	1.59e-12	3.62e-12*	3.50e-14**	1.79e-12
	(1.56e-12)	(1.30e-12)	(1.89e-12)	(1.52e-14)	(1.61e-12)
_cons	-1.480*	4.086***	0.636	0.0542***	5.512***
	(0.854)	(1.007)	(1.576)	(0.0164)	(0.926)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #41

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_disc_offshore1	-0.652***	-0.211	-0.238	-0.00676*	-0.334*
	(0.117)	(0.197)	(0.330)	(0.00369)	(0.178)
1.L_disc_offshore2	0.100	-0.0619	0.0387	0.00280	0.0639
	(0.113)	(0.204)	(0.246)	(0.00467)	(0.188)
1.L_no_disc_offshore1#1.L_di~f	0.313*	0.0397	0.127	0.000610	0.117
	(0.173)	(0.180)	(0.265)	(0.00250)	(0.162)
O_net3_oil_imp_c1	4.24e-12***	1.60e-12	3.62e-12*	3.70e-14**	1.78e-12
	(1.41e-12)	(1.30e-12)	(1.92e-12)	(1.50e-14)	(1.62e-12)
_cons	-0.581	4.542***	1.360	0.0555***	6.010***
	(0.856)	(1.008)	(1.549)	(0.0165)	(0.937)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #42

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.L_no_prod_offshore1	-0.501***	-0.0889	-0.313	-0.00552**	-0.0663
	(0.117)	(0.144)	(0.208)	(0.00259)	(0.143)
1.L_prod_offshore2	-0.0989	-0.223	-0.680***	-0.00530*	-0.127
	(0.158)	(0.182)	(0.251)	(0.00293)	(0.181)
1.L_no_prod_offshore1#1.L_pr~f	0.567***	0.439**	0.871***	0.00583***	0.496***
	(0.194)	(0.171)	(0.235)	(0.00224)	(0.169)
O_net3_oil_imp_c1	3.62e-12**	1.69e-12	3.40e-12*	2.77e-14*	2.00e-12
	(1.61e-12)	(1.32e-12)	(2.00e-12)	(1.57e-14)	(1.59e-12)
_cons	-0.944	4.603***	1.816	0.0615***	6.029***
	(0.863)	(0.991)	(1.556)	(0.0168)	(0.911)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #43

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.L_no_disc_all1	-0.201	0.0552	1.066**	0.00587	0.0857
	(0.186)	(0.233)	(0.436)	(0.00627)	(0.201)
1.L_disc_all2	0.225*	0.0505	0.284	0.00499	0.228
	(0.121)	(0.263)	(0.277)	(0.00669)	(0.208)
1.L_no_disc_all1#1.L_disc_all2	-0.212	-0.300	-0.579*	0.000741	-0.687***
	(0.232)	(0.206)	(0.321)	(0.00453)	(0.169)
O_net3_oil_imp_c1	4.22e-12***	1.58e-12	3.58e-12*	3.46e-14**	1.76e-12
	(1.57e-12)	(1.30e-12)	(1.88e-12)	(1.49e-14)	(1.61e-12)
_cons	-1.624*	4.359***	0.910	0.0514***	5.728***
	(0.862)	(1.034)	(1.559)	(0.0175)	(0.926)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #44

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.L_no_disc_full_on1	-0.0358	-0.231	0.463	0.00343	-0.134
	(0.181)	(0.381)	(0.528)	(0.00541)	(0.364)
1.L_disc_full_on2	0.325**	0.437	0.422	0.0000819	0.355
	(0.131)	(0.346)	(0.433)	(0.00609)	(0.286)
1.L_no_disc_full_on1#1.L_dis~l	-0.511**	-0.876***	-0.969***	-0.00210	-1.125***
	(0.244)	(0.224)	(0.334)	(0.00424)	(0.162)
O_net3_oil_imp_c1	4.08e-12**	1.58e-12	3.64e-12*	3.49e-14**	1.75e-12
	(1.59e-12)	(1.31e-12)	(1.88e-12)	(1.52e-14)	(1.62e-12)
_cons	-1.874**	3.864***	0.656	0.0550***	5.448***
	(0.863)	(1.050)	(1.614)	(0.0174)	(0.943)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #45

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_disc_full_off1	-0.528***	-0.183	0.0719	-0.00128	-0.195
	(0.127)	(0.289)	(0.440)	(0.00653)	(0.236)
1.L_disc_full_off2	0.214*	0.0603	0.407	0.0141**	0.0878
	(0.116)	(0.294)	(0.352)	(0.00672)	(0.234)
1.L_no_disc_full_off1#1.L_di~l	0.0994	-0.0677	0.340	0.000673	-0.172
	(0.189)	(0.180)	(0.256)	(0.00226)	(0.156)
O_net3_oil_imp_c1	4.26e-12***	1.59e-12	3.51e-12*	3.42e-14**	1.79e-12
	(1.43e-12)	(1.30e-12)	(1.91e-12)	(1.47e-14)	(1.61e-12)
_cons	-0.902	4.422***	1.099	0.0444***	5.923***
	(0.860)	(1.025)	(1.579)	(0.0162)	(0.955)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #46

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.L_no_disc_full_all1	-0.184	0.398	1.081**	0.00574	0.771***
	(0.209)	(0.313)	(0.528)	(0.00775)	(0.252)
1.L_disc_full_all2	0.316**	0.0890	0.285	0.0103	0.0883
	(0.152)	(0.317)	(0.352)	(0.00823)	(0.241)
1.L_no_disc_full_all1#1.L_di~l	-0.525**	-0.743***	-0.415	0.000178	-1.008***
	(0.264)	(0.266)	(0.410)	(0.00484)	(0.191)
O_net3_oil_imp_c1	4.07e-12***	1.53e-12	3.50e-12*	3.44e-14**	1.69e-12
	(1.53e-12)	(1.30e-12)	(1.90e-12)	(1.48e-14)	(1.60e-12)
_cons	-1.830**	4.265***	1.006	0.0466***	5.701***
	(0.880)	(1.034)	(1.590)	(0.0180)	(0.927)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #47

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_prod_all1	-0.215	0.0243	0.598*	0.00466	-0.0671
	(0.168)	(0.205)	(0.335)	(0.00511)	(0.182)
1.L_prod_all2	0.332***	0.436**	0.559**	0.00441	0.644***
	(0.117)	(0.202)	(0.261)	(0.00462)	(0.177)
1.L_no_prod_all1#1.L_prod_all2	-0.268	-0.384**	-0.715**	-0.000276	-0.691***
	(0.218)	(0.194)	(0.298)	(0.00410)	(0.162)
O_net3_oil_imp_c1	4.29e-12***	1.58e-12	3.58e-12*	3.43e-14**	1.79e-12
	(1.55e-12)	(1.29e-12)	(1.88e-12)	(1.49e-14)	(1.59e-12)
_cons	-1.549*	4.020***	0.607	0.0516***	5.441***
	(0.855)	(0.999)	(1.554)	(0.0168)	(0.907)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #48

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_prod_full_on1	0.0628	0.00200	0.284	0.00289	0.0422
	(0.185)	(0.368)	(0.615)	(0.00724)	(0.371)
1.L_prod_full_on2	0.349***	0.903*	1.124	0.00209	0.591
	(0.134)	(0.461)	(0.772)	(0.00298)	(0.376)
1.L_no_prod_full_on1#1.L_pro~l	-0.554**	-0.842***	-0.856**	-0.00126	-1.153***
	(0.242)	(0.232)	(0.346)	(0.00435)	(0.168)
O_net3_oil_imp_c1	4.09e-12**	1.56e-12	3.62e-12*	3.51e-14**	1.73e-12
	(1.59e-12)	(1.31e-12)	(1.89e-12)	(1.52e-14)	(1.62e-12)
_cons	-1.925**	3.388***	0.0135	0.0535***	5.184***
	(0.867)	(1.101)	(1.737)	(0.0161)	(0.976)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #49

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_prod_full_off1	-0.494***	0.182	0.557	0.00676	-0.0621
	(0.127)	(0.350)	(0.480)	(0.00687)	(0.306)
1.L_prod_full_off2	0.246**	-0.161	-0.697**	0.00284	0.0342
	(0.113)	(0.261)	(0.349)	(0.00683)	(0.214)
1.L_no_prod_full_off1#1.L_pr~l	0.0801	0.0444	0.572**	0.000340	-0.0613
	(0.187)	(0.188)	(0.253)	(0.00224)	(0.157)
O_net3_oil_imp_c1	4.26e-12***	1.57e-12	3.56e-12*	3.46e-14**	1.77e-12
	(1.44e-12)	(1.30e-12)	(1.89e-12)	(1.49e-14)	(1.61e-12)
_cons	-1.022	4.590***	2.005	0.0529***	5.960***
	(0.856)	(1.002)	(1.596)	(0.0164)	(0.942)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 4 - Table 5.4 - #50

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.L_no_prod_full_all1	0.0173	1.590**	1.958**	0.0103	1.505***
	(0.215)	(0.628)	(0.901)	(0.0128)	(0.457)
1.L_prod_full_all2	0.412***	0.405	0.284	0.0142	0.236
	(0.157)	(0.390)	(0.466)	(0.0125)	(0.300)
1.L_no_prod_full_all1#1.L_pr~l	-0.674**	-0.926***	-0.320	0.00139	-0.916***
	(0.267)	(0.311)	(0.476)	(0.00506)	(0.203)
O_net3_oil_imp_c1	4.09e-12***	1.52e-12	3.53e-12*	3.48e-14**	1.71e-12
	(1.54e-12)	(1.30e-12)	(1.91e-12)	(1.48e-14)	(1.60e-12)
_cons	-1.954**	4.003***	1.081	0.0429**	5.621***
	(0.889)	(1.063)	(1.616)	(0.0199)	(0.945)
N	101333	82756	73033	101333	574157

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #1

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_oil_rents_c1	4.12e-13	-4.66e-12***	-7.27e-12**	-7.03e-14***	-6.80e-12***
	(6.86e-13)	(1.65e-12)	(3.50e-12)	(2.09e-14)	(1.98e-12)
W_oil_rents_c2	-1.60e-12**	-4.40e-12**	-3.55e-12	-1.88e-14	-3.28e-12
	(7.27e-13)	(1.75e-12)	(2.21e-12)	(1.23e-14)	(2.05e-12)
_cons	-4.506***	0.883	1.292	0.0727***	3.191***
	(1.167)	(1.508)	(2.023)	(0.0177)	(1.132)
N	67275	47416	40519	67275	323040

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #2

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_gas_rents_c1	9.00e-13	-6.35e-12**	-8.47e-12	-6.34e-14*	-8.44e-12**
	(1.07e-12)	(3.06e-12)	(5.18e-12)	(3.67e-14)	(3.48e-12)
W_gas_rents_c2	-1.95e-12*	-4.62e-12	-4.63e-12	-2.84e-14*	-2.51e-12
	(1.14e-12)	(3.41e-12)	(3.60e-12)	(1.72e-14)	(3.80e-12)
_cons	-4.472***	0.832	1.346	0.0758***	3.086***
	(1.174)	(1.505)	(1.985)	(0.0179)	(1.122)
N	68368	49411	42431	68368	334369

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #3

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_coal_rents_c1	2.26e-12	-9.11e-13	-1.23e-12	-1.74e-14	-1.18e-12
	(1.51e-12)	(1.83e-12)	(3.23e-12)	(1.16e-14)	(2.05e-12)
W_coal_rents_c2	2.36e-12	2.77e-12	-3.69e-12	-2.35e-15	2.18e-12
	(1.62e-12)	(2.14e-12)	(3.16e-12)	(6.73e-15)	(2.14e-12)
_cons	-4.371***	0.840	1.273	0.0721***	2.973***
	(1.123)	(1.486)	(1.983)	(0.0172)	(1.125)
N	69135	49994	42886	69135	341104

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_miner_rents_c1	2.53e-12	-1.79e-12	-4.30e-12	-2.26e-14*	-2.50e-12
	(1.92e-12)	(2.14e-12)	(4.36e-12)	(1.32e-14)	(2.45e-12)
W_miner_rents_c2	2.09e-12	2.84e-12	-3.98e-12	-4.46e-15	2.28e-12
	(2.13e-12)	(2.68e-12)	(3.68e-12)	(1.07e-14)	(2.59e-12)
_cons	-4.392***	0.816	1.243	0.0716***	2.941***
	(1.123)	(1.489)	(1.978)	(0.0171)	(1.129)
N	69629	50153	43035	69629	342442

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #5

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_wood_rents_c1	2.34e-11***	7.99e-12	1.26e-11	3.98e-14	4.83e-12
	(5.71e-12)	(8.22e-12)	(9.87e-12)	(1.13e-13)	(8.45e-12)
W_wood_rents_c2	1.24e-11**	1.39e-11	1.83e-11	-1.01e-13	1.07e-11
	(5.66e-12)	(1.28e-11)	(1.38e-11)	(1.07e-13)	(1.33e-11)
_cons	-4.081***	0.882	1.996	0.0898***	3.498***
	(1.193)	(1.528)	(1.999)	(0.0186)	(1.116)
N	66009	47083	40354	66009	318662

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #6

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00322	-0.000417	0.00120	0.0000161**	-0.00280
	(0.00244)	(0.00140)	(0.00110)	(0.00000808)	(0.00229)
_cons	-1.876**	4.866***	1.756	0.0614***	6.372***
	(0.910)	(0.937)	(1.451)	(0.0166)	(0.876)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #7

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	rev_b
main					
outside_oil_dep_c1	-0.00377	-0.00752	-0.00475	0.00000998	-0.0124
	(0.00427)	(0.00621)	(0.00880)	(0.0000185)	(0.00916)
1.W_no_oil_rent1	-0.386***	-0.230	-0.175	0.00147	-0.0295
	(0.111)	(0.282)	(0.329)	(0.00255)	(0.273)
1.W_no_oil_rent1#c.outside_o~p	0.00213	0.00595	0.00622	-0.0000119	0.0123
	(0.00524)	(0.00725)	(0.00901)	(0.0000187)	(0.00959)
_cons	-2.409**	3.835***	2.720*	0.0665***	4.353***
	(1.078)	(1.218)	(1.624)	(0.0171)	(1.391)
N	76957	58209	50258	76957	335474

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #8

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.00473	0.0138**	0.0242**	0.000224***	0.0159***
	(0.0161)	(0.00628)	(0.00947)	(0.0000670)	(0.00565)
_cons	-1.866**	4.878***	1.778	0.0617***	6.373***
	(0.909)	(0.936)	(1.453)	(0.0166)	(0.876)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.0222	0.0423*	0.0907**	0.000635***	0.108***
	(0.0217)	(0.0246)	(0.0448)	(0.000198)	(0.0356)
1.W_no_gas_rent1	-0.387***	-0.0281	-0.115	0.00591	0.121
	(0.0984)	(0.236)	(0.295)	(0.00378)	(0.261)
1.W_no_gas_rent1#c.outside_g~p	-0.00521	-0.0574	-0.0787*	-0.000581***	-0.0968***
	(0.0456)	(0.0372)	(0.0459)	(0.000196)	(0.0374)
_cons	-2.382**	3.643***	2.722*	0.0694***	4.101***
	(1.074)	(1.209)	(1.608)	(0.0170)	(1.383)
N	77662	59664	51308	77662	343032

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_coal_dep	-0.0794	0.0448	0.0307	0.000372	0.0500
	(0.0513)	(0.0542)	(0.0695)	(0.000367)	(0.0433)
_cons	-1.824**	4.885***	1.775	0.0614***	6.389***
	(0.919)	(0.935)	(1.452)	(0.0166)	(0.874)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #11

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) rev_b
main					
outside_coal_dep	-0.0780	0.0283	0.0543	0.000228	-0.00433
	(0.0981)	(0.0932)	(0.127)	(0.000498)	(0.0982)
1.W_no_coal_rent1	-0.437***	-0.0635	0.162	0.00237*	0.0329
	(0.0958)	(0.142)	(0.181)	(0.00141)	(0.160)
1.W_no_coal_rent1#c.outside_~d	0.0846	0.0365	0.0264	-0.0000610	0.0676
	(0.101)	(0.0954)	(0.139)	(0.000497)	(0.0990)
_cons	-2.094*	3.713***	2.588	0.0688***	4.126***
	(1.074)	(1.201)	(1.601)	(0.0169)	(1.362)
N	78168	60048	51535	78168	346432

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_miner_dep	0.0179	0.0500***	0.0689***	0.000428***	0.0516***
	(0.0122)	(0.0191)	(0.0238)	(0.000163)	(0.0177)
_cons	-1.848**	4.906***	1.819	0.0619***	6.429***
	(0.904)	(0.935)	(1.453)	(0.0166)	(0.875)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #13

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) rev_b
main					
outside_miner_dep	0.0207	0.0505**	0.00685	-0.000116	-0.0120
	(0.0150)	(0.0214)	(0.0461)	(0.000173)	(0.0458)
1.W_no_miner_rent1	-0.434***	-0.0383	0.0883	-0.000278	0.0843
	(0.110)	(0.160)	(0.231)	(0.00135)	(0.208)
1.W_no_miner_rent1#c.outside~r	-0.0422	0.0256	0.0902	0.000325*	0.1000*
	(0.0389)	(0.0369)	(0.0626)	(0.000192)	(0.0551)
_cons	-2.191**	3.714***	2.682*	0.0691***	4.148***
	(1.082)	(1.203)	(1.602)	(0.0168)	(1.368)
N	78457	60349	51687	78457	347575

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #14

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_wood_dep	0.0256	0.0238	0.0647***	0.000967***	0.0286
	(0.0227)	(0.0247)	(0.0236)	(0.000325)	(0.0214)
_cons	-1.899**	4.862***	1.754	0.0615***	6.374***
	(0.901)	(0.937)	(1.450)	(0.0166)	(0.874)
N	99613	82502	72452	99613	579893

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #15

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	-0.000655	0.0157	0.0506	0.000355	0.0461
	(0.0281)	(0.0343)	(0.0308)	(0.000250)	(0.0334)
1.W_no_wood_rent1	1.448**	1.204***	0.144	0.0215	0.123
	(0.573)	(0.380)	(0.591)	(0.0189)	(0.487)
1.W_no_wood_rent1#c.outside_~d	-6.421**	-10.38***	-2.349	-0.0248	-3.294
	(2.790)	(2.386)	(3.461)	(0.0351)	(2.341)
_cons	-2.390**	3.897***	2.944*	0.0755***	4.260***
	(1.105)	(1.209)	(1.591)	(0.0174)	(1.375)
N	76264	58677	50507	76264	336761

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #16

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents2	0.192*	0.0701	-0.276	-0.00276	0.151
	(0.104)	(0.227)	(0.313)	(0.00365)	(0.212)
_cons	-3.584***	1.761	2.432	0.0809***	3.737***
	(1.200)	(1.383)	(1.915)	(0.0159)	(1.081)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_oil_rents_pop_c2	-0.0000342	-0.0000461	-0.0000246	-0.000000559*	-0.0000451
	(0.0000232)	(0.0000345)	(0.0000203)	(0.000000291)	(0.0000290)
_cons	-3.365***	1.858	2.295	0.0790***	3.896***
	(1.209)	(1.360)	(1.902)	(0.0154)	(1.061)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #18

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents_gdp_c2	-0.981**	-1.583*	-0.735	-0.00402	-1.672**
	(0.424)	(0.839)	(0.981)	(0.0117)	(0.804)
_cons	-3.323***	1.827	2.242	0.0785***	3.871***
	(1.216)	(1.355)	(1.899)	(0.0154)	(1.057)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #19

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents_cap_c2	-3.42e-14**	-3.96e-14**	-1.99e-14	-1.36e-16**	-3.54e-14**
	(1.36e-14)	(1.82e-14)	(1.61e-14)	(6.40e-17)	(1.58e-14)
_cons	-3.321***	1.814	2.256	0.0785***	3.846***
	(1.218)	(1.357)	(1.898)	(0.0154)	(1.058)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #20

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_oil_rents_dev_c2	4.56e-09	1.95e-09	-4.27e-10	-4.95e-11	2.80e-09
	(4.15e-09)	(5.46e-09)	(6.33e-09)	(5.19e-11)	(5.79e-09)
_cons	-3.416***	1.801	2.246	0.0789***	3.839***
	(1.199)	(1.357)	(1.902)	(0.0154)	(1.062)
N	76937	54464	46008	76937	373368

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #21

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_gas_rents2	0.245***	0.0379	-0.156	-0.00282	-0.0336
	(0.0923)	(0.170)	(0.229)	(0.00273)	(0.153)
_cons	-3.668***	1.779	2.417	0.0836***	3.799***
	(1.177)	(1.373)	(1.927)	(0.0155)	(1.067)
N	77636	54985	46863	77636	375833

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #22

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_gas_rents_pop_c2	-0.000284***	-0.000516***	-0.000652***	-0.000000108	-0.000419***
	(0.000105)	(0.000169)	(0.000235)	(0.000000470)	(0.000149)
_cons	-3.428***	1.761	2.253	0.0812***	3.736***
	(1.238)	(1.357)	(1.906)	(0.0152)	(1.057)
N	77636	54985	46863	77636	375833

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #23

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_gas_rents_gdp_c2	-0.984	1.303	-0.877	0.0155	1.742
	(1.014)	(1.546)	(2.961)	(0.0117)	(1.467)
_cons	-3.473***	1.829	2.286	0.0813***	3.793***
	(1.212)	(1.355)	(1.904)	(0.0152)	(1.055)
N	77636	54985	46863	77636	375833

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #24

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_gas_rents_cap_c2	-5.61e-14	-4.69e-14	-1.35e-13**	-1.91e-17	-2.94e-14
	(4.05e-14)	(3.79e-14)	(6.75e-14)	(1.79e-16)	(3.14e-14)
_cons	-3.462***	1.766	2.217	0.0811***	3.748***
	(1.218)	(1.356)	(1.901)	(0.0152)	(1.055)
N	77636	54985	46863	77636	375833

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #25

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_gas_rents_dev_c2	4.16e-09	4.82e-08*	5.00e-08	1.63e-10	5.16e-08*
	(1.00e-08)	(2.69e-08)	(3.65e-08)	(2.36e-10)	(2.98e-08)
_cons	-3.497***	1.825	2.315	0.0811***	3.783***
	(1.184)	(1.359)	(1.912)	(0.0152)	(1.058)
N	77636	54985	46863	77636	375833

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #26

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_coal_rents2	0.400***	0.200*	0.263*	-0.000109	0.104
	(0.0853)	(0.114)	(0.151)	(0.00116)	(0.108)
_cons	-3.413***	1.605	2.073	0.0804***	3.699***
	(1.169)	(1.354)	(1.885)	(0.0153)	(1.064)
N	78158	55442	47291	78158	380551

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #27

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_coal_rents_pop_c2	-0.000349	0.00123	-0.00206	-0.00000177	0.000709
	(0.00133)	(0.00162)	(0.00267)	(0.00000758)	(0.00155)
_cons	-3.493***	1.759	2.240	0.0803***	3.787***
	(1.200)	(1.351)	(1.909)	(0.0153)	(1.061)
N	78158	55442	47291	78158	380551

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #28

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_coal_rents_gdp_c2	9.439	14.71**	5.200	-0.0317	14.92**
	(7.850)	(6.864)	(11.31)	(0.0904)	(7.100)
_cons	-3.472***	1.725	2.235	0.0804***	3.747***
	(1.197)	(1.349)	(1.907)	(0.0152)	(1.059)
N	78158	55442	47291	78158	380551

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #29

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_coal_rents_cap_c2	-2.54e-14	1.93e-13	-1.46e-13	4.20e-16	1.35e-13
	(2.43e-13)	(2.36e-13)	(3.55e-13)	(1.27e-15)	(2.39e-13)
_cons	-3.492***	1.774	2.233	0.0803***	3.799***
	(1.199)	(1.351)	(1.909)	(0.0153)	(1.061)
N	78158	55442	47291	78158	380551

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #30

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_coal_rents_dev_c2	1.74e-08***	1.29e-08*	-2.46e-09	-4.03e-11	1.36e-08*
	(6.70e-09)	(6.88e-09)	(1.21e-08)	(9.41e-11)	(6.97e-09)
_cons	-3.419***	1.736	2.250	0.0804***	3.766***
	(1.213)	(1.349)	(1.908)	(0.0152)	(1.059)
N	78158	55442	47291	78158	380551

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #31

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_miner_rents2	0.320***	-0.0860	0.0420	0.000376	-0.0500
	(0.103)	(0.154)	(0.200)	(0.00124)	(0.142)
_cons	-3.565***	1.796	2.220	0.0798***	3.807***
	(1.206)	(1.356)	(1.913)	(0.0152)	(1.064)
N	78448	55487	47326	78448	380904

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #32

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_miner_rents_pop_c2	-0.000661	-0.000982	-0.00263*	-0.00000208	-0.000287
	(0.000669)	(0.000697)	(0.00136)	(0.00000184)	(0.000421)
_cons	-3.528***	1.685	2.224	0.0801***	3.752***
	(1.198)	(1.356)	(1.915)	(0.0152)	(1.065)
N	78448	55487	47326	78448	380904

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #33

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_miner_rents_gdp_c2	0.135	2.520*	-0.547	-0.00988	3.930***
	(1.476)	(1.497)	(2.492)	(0.0301)	(1.115)
_cons	-3.494***	1.707	2.261	0.0802***	3.719***
	(1.198)	(1.352)	(1.914)	(0.0152)	(1.059)
N	78448	55487	47326	78448	380904

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #34

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_miner_rents_cap_c2	-1.90e-14	-2.82e-14	-1.39e-13*	-2.66e-16	7.96e-15
	(8.51e-14)	(5.89e-14)	(7.76e-14)	(3.12e-16)	(4.30e-14)
_cons	-3.503***	1.715	2.224	0.0801***	3.766***
	(1.198)	(1.354)	(1.909)	(0.0152)	(1.064)
N	78448	55487	47326	78448	380904

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #35

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_miner_rents_dev_c2	2.30e-08**	1.29e-08	-1.98e-08	-1.65e-11	1.08e-08
	(1.13e-08)	(1.75e-08)	(2.40e-08)	(1.16e-10)	(1.72e-08)
_cons	-3.436***	1.748	2.225	0.0801***	3.782***
	(1.210)	(1.353)	(1.907)	(0.0152)	(1.064)
N	78448	55487	47326	78448	380904

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #36

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_wood_rents2	-0.789	-2.318*	-2.475	-0.0225	-2.301*
	(0.503)	(1.350)	(1.581)	(0.0172)	(1.341)
_cons	-2.793**	4.107**	4.914**	0.110***	6.353***
	(1.325)	(1.920)	(2.444)	(0.0232)	(1.700)
N	76241	53664	45462	76241	366407

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #37

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
W_wood_rents_pop_c2	-0.00150*	-0.000752	-0.00419*	-0.0000223**	-0.000312
	(0.000904)	(0.00139)	(0.00222)	(0.0000113)	(0.00127)
_cons	-3.613***	1.800	2.497	0.0878***	4.060***
	(1.243)	(1.371)	(1.855)	(0.0155)	(1.053)
N	76241	53664	45462	76241	366407

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #38

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_wood_rents_gdp_c2	-3.705***	0.105	-3.266	-0.0453**	-0.532
	(1.113)	(1.557)	(2.989)	(0.0197)	(1.449)
_cons	-3.587***	1.790	2.472	0.0876***	4.056***
	(1.197)	(1.371)	(1.855)	(0.0155)	(1.054)
N	76241	53664	45462	76241	366407

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #39

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_wood_rents_cap_c2	-1.33e-13	3.36e-14	-1.31e-13	-1.91e-17	2.41e-14
	(1.05e-13)	(3.87e-14)	(1.45e-13)	(4.97e-16)	(4.12e-14)
_cons	-3.636***	1.813	2.360	0.0871***	4.071***
	(1.222)	(1.373)	(1.854)	(0.0155)	(1.057)
N	76241	53664	45462	76241	366407

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #40

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
W_wood_rents_dev_c2	1.16e-08	1.04e-08	4.69e-09	-2.29e-10	1.25e-08
	(9.07e-09)	(1.78e-08)	(2.08e-08)	(1.50e-10)	(1.82e-08)
_cons	-3.500***	1.754	2.427	0.0882***	4.007***
	(1.262)	(1.369)	(1.857)	(0.0155)	(1.056)
N	76241	53664	45462	76241	366407

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #41

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.W_no_oil_rent1	0.0365	0.493	0.417	0.000268	0.227
	(0.171)	(0.311)	(0.364)	(0.00436)	(0.244)
1.W_oil_rents2	0.170	-0.00745	-0.435	-0.00545	0.221
	(0.127)	(0.253)	(0.369)	(0.00461)	(0.242)
1.W_no_oil_rent1#1.W_oil_ren~2	-0.530**	-0.763**	-0.206	0.00280	-0.764***
	(0.243)	(0.303)	(0.388)	(0.00400)	(0.214)
_cons	-4.532***	0.863	1.877	0.0768***	2.905**
	(1.111)	(1.526)	(2.077)	(0.0190)	(1.138)
N	67275	47416	40519	67275	323040

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #42

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00125	-0.00152	0.00102	-0.0000293*	-0.00568
	(0.00334)	(0.00317)	(0.00165)	(0.0000167)	(0.00619)
1.W_oil_rents2	0.220*	0.0902	-0.239	-0.00343	0.182
	(0.116)	(0.233)	(0.323)	(0.00378)	(0.219)
1.W_oil_rents2#c.outside_oil~c	-0.00849	-0.00289	-0.00397	0.0000296	-0.00491
	(0.00634)	(0.00430)	(0.00326)	(0.0000183)	(0.00715)
_cons	-3.499***	1.757	2.384	0.0858***	3.757***
	(1.197)	(1.385)	(1.915)	(0.0166)	(1.084)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #43

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.W_no_oil_rent1	-0.242**	0.0860	0.290	0.00202	-0.154
	(0.111)	(0.282)	(0.314)	(0.00277)	(0.239)
W_oil_rents_c2	-1.47e-12**	-4.95e-12***	-4.68e-12**	-2.19e-14	-4.41e-12**
	(7.35e-13)	(1.74e-12)	(2.22e-12)	(1.46e-14)	(2.02e-12)
1.W_no_oil_rent1#c.W_oil_ren~2	-5.91e-12	-1.19e-11*	-3.87e-12	8.79e-15	-1.02e-11
	(5.15e-12)	(7.20e-12)	(7.96e-12)	(1.19e-14)	(7.96e-12)
_cons	-4.372***	1.056	1.636	0.0717***	3.334***
	(1.139)	(1.523)	(2.027)	(0.0178)	(1.136)
N	67275	47416	40519	67275	323040

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #44

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00573	-0.00196	-0.0000119	-0.0000108	-0.00718*
	(0.00367)	(0.00214)	(0.00153)	(0.00000899)	(0.00418)
W_oil_rents_c2	-4.46e-13	-2.70e-12	-4.25e-12*	-1.73e-14	-2.34e-12
	(8.21e-13)	(1.67e-12)	(2.36e-12)	(1.27e-14)	(1.92e-12)
c.outside_oil_dep_c1#c.W_oil~s	-5.46e-14	-1.35e-13	-7.34e-14	9.39e-17*	-1.17e-13
	(8.22e-14)	(1.17e-13)	(1.08e-13)	(5.11e-17)	(1.29e-13)
_cons	-3.356***	1.931	2.360	0.0832***	3.996***
	(1.215)	(1.367)	(1.901)	(0.0160)	(1.070)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #45

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00705*	-0.00307	-0.000741	-0.00000897	-0.00850**
	(0.00385)	(0.00258)	(0.00171)	(0.00000819)	(0.00416)
W_oil_rents_pop_c2	-0.0000360	-0.0000472	-0.0000251	-0.000000644**	-0.0000450
	(0.0000247)	(0.0000363)	(0.0000207)	(0.000000317)	(0.0000299)
c.outside_oil_dep_c1#c.W_oil~s	0.000000421	0.000000314	0.000000503	6.14e-09	9.19e-08
	(0.00000146)	(0.00000153)	(0.000000628)	(7.68e-09)	(0.00000159)
_cons	-3.252***	1.860	2.283	0.0833***	3.941***
	(1.191)	(1.360)	(1.902)	(0.0160)	(1.065)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #46

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00876*	-0.00372	-0.00120	-0.0000177*	-0.00983**
	(0.00459)	(0.00314)	(0.00204)	(0.0000102)	(0.00495)
W_oil_rents_gdp_c2	-1.088***	-1.731**	-0.868	-0.00936	-1.734**
	(0.420)	(0.841)	(0.965)	(0.0116)	(0.790)
c.outside_oil_dep_c1#c.W_oil~s	0.0214	0.0147	0.0125***	0.000345	0.0180
	(0.0146)	(0.00906)	(0.00476)	(0.000228)	(0.0136)
_cons	-3.229***	1.813	2.211	0.0826***	3.913***
	(1.196)	(1.355)	(1.897)	(0.0159)	(1.061)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #47

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_oil_dep_c1	-0.00859*	-0.00359	-0.00137	-0.0000156*	-0.00891**
	(0.00442)	(0.00300)	(0.00219)	(0.00000889)	(0.00424)
W_oil_rents_cap_c2	-3.83e-14***	-4.34e-14**	-2.17e-14	-2.11e-16***	-3.71e-14**
	(1.37e-14)	(1.89e-14)	(1.62e-14)	(7.50e-17)	(1.62e-14)
c.outside_oil_dep_c1#c.W_oil~s	8.64e-16	5.07e-16	5.52e-16**	6.75e-18	2.94e-16***
	(6.68e-16)	(4.89e-16)	(2.53e-16)	(4.22e-18)	(1.10e-16)
_cons	-3.217***	1.803	2.233	0.0828***	3.888***
	(1.198)	(1.358)	(1.898)	(0.0159)	(1.062)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #48

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_oil_dep_c1	-0.00586	-0.00281	-0.000214	-0.0000129	-0.00857*
	(0.00376)	(0.00252)	(0.00159)	(0.00000877)	(0.00444)
W_oil_rents_dev_c2	5.73e-09	3.10e-09	1.40e-09	-7.12e-11	3.63e-09
	(4.75e-09)	(6.12e-09)	(7.23e-09)	(6.08e-11)	(6.34e-09)
c.outside_oil_dep_c1#c.W_oil~s	-1.71e-10	-1.42e-10	-3.16e-10	1.15e-12*	-4.63e-11
	(3.15e-10)	(3.00e-10)	(4.98e-10)	(6.04e-13)	(2.64e-10)
_cons	-3.318***	1.814	2.258	0.0833***	3.884***
	(1.184)	(1.361)	(1.910)	(0.0159)	(1.065)
N	73939	54283	46008	73939	371471

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #49

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_gas_rent1	0.189	0.530	0.490	0.00806	0.327
	(0.157)	(0.326)	(0.363)	(0.00523)	(0.236)
1.W_gas_rents2	0.352***	0.240	0.0888	-0.00357	0.243
	(0.128)	(0.243)	(0.272)	(0.00332)	(0.203)
1.W_no_gas_rent1#1.W_gas_ren~2	-0.652***	-0.692**	-0.654*	-0.000556	-0.785***
	(0.247)	(0.297)	(0.393)	(0.00404)	(0.218)
_cons	-4.647***	0.355	1.092	0.0757***	2.606**
	(1.128)	(1.532)	(2.064)	(0.0188)	(1.139)
N	68368	49411	42431	68368	334369

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #50

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.0480	0.00419	0.00923	0.0000721	0.00645
	(0.0614)	(0.00844)	(0.0109)	(0.0000654)	(0.00904)
1.W_gas_rents2	0.243**	0.0318	-0.168	-0.00375	-0.0301
	(0.0977)	(0.171)	(0.230)	(0.00285)	(0.153)
1.W_gas_rents2#c.outside_gas~p	-0.0262	0.0139	0.0211*	0.000124	-0.00678
	(0.0690)	(0.0126)	(0.0112)	(0.000101)	(0.0249)
_cons	-3.502***	1.795	2.434	0.0890***	3.804***
	(1.214)	(1.373)	(1.926)	(0.0161)	(1.068)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #51

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_gas_rent1	-0.200**	0.138	0.134	0.00765**	-0.0831
	(0.101)	(0.259)	(0.314)	(0.00366)	(0.211)
W_gas_rents_c2	-1.77e-12	-5.80e-12*	-6.67e-12*	-2.35e-14	-4.85e-12
	(1.22e-12)	(3.41e-12)	(3.65e-12)	(2.08e-14)	(3.82e-12)
1.W_no_gas_rent1#c.W_gas_ren~2	-4.74e-12	-7.28e-12	-5.19e-12	-3.04e-15	-3.82e-13
	(4.65e-12)	(9.20e-12)	(8.05e-12)	(1.81e-14)	(8.49e-12)
_cons	-4.277***	0.858	1.477	0.0734***	3.119***
	(1.141)	(1.498)	(1.976)	(0.0177)	(1.120)
N	68368	49411	42431	68368	334369

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #52

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_gas_dep	-0.0520*	0.0132**	0.0208**	0.000179**	0.0108
	(0.0295)	(0.00672)	(0.00985)	(0.0000707)	(0.00732)
W_gas_rents_c2	4.72e-13	-3.34e-12	-7.09e-12*	-2.11e-14	-1.78e-12
	(1.23e-12)	(3.26e-12)	(3.99e-12)	(1.83e-14)	(3.52e-12)
c.outside_gas_dep#c.W_gas_re~2	-1.92e-12**	-2.74e-12*	-1.07e-12	-5.61e-16	-3.05e-12*
	(9.66e-13)	(1.50e-12)	(1.14e-12)	(4.46e-16)	(1.77e-12)
_cons	-3.411**	1.885	2.393	0.0863***	3.840***
	(1.332)	(1.378)	(1.913)	(0.0158)	(1.059)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #53

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.0581*	0.0118*	0.0187**	0.000144**	0.00887
	(0.0312)	(0.00671)	(0.00932)	(0.0000598)	(0.00810)
W_gas_rents_pop_c2	-0.000242**	-0.000495***	-0.000660***	-0.000000318	-0.000390***
	(0.0000979)	(0.000161)	(0.000237)	(0.000000516)	(0.000140)
c.outside_gas_dep#c.W_gas_re~o	-0.0000528	-0.0000671	0.00000785	4.21e-08	-0.0000829
	(0.0000959)	(0.000104)	(0.00000580)	(4.70e-08)	(0.000115)
_cons	-3.274**	1.789	2.273	0.0857***	3.749***
	(1.273)	(1.362)	(1.907)	(0.0157)	(1.060)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #54

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_gas_dep	-0.0707**	0.00967	0.0150	0.000130**	0.00389
	(0.0312)	(0.00690)	(0.00931)	(0.0000546)	(0.0109)
W_gas_rents_gdp_c2	-0.951	1.347	-1.052	0.00813	1.800
	(0.915)	(1.736)	(2.949)	(0.0139)	(1.580)
c.outside_gas_dep#c.W_gas_re~d	0.251	-0.0634	0.251***	0.00170	-0.0693
	(0.250)	(0.216)	(0.0874)	(0.00168)	(0.166)
_cons	-3.306***	1.851	2.319	0.0858***	3.799***
	(1.221)	(1.356)	(1.905)	(0.0157)	(1.056)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #55

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_gas_dep	-0.0692**	0.00956	0.0176*	0.000138**	0.00444
	(0.0310)	(0.00701)	(0.00935)	(0.0000584)	(0.0107)
W_gas_rents_cap_c2	-5.90e-14*	-5.09e-14	-1.40e-13**	-1.58e-16	-3.00e-14
	(3.35e-14)	(3.77e-14)	(6.76e-14)	(2.09e-16)	(3.21e-14)
c.outside_gas_dep#c.W_gas_re~a	8.07e-15	1.26e-15	3.41e-15**	2.01e-17	-5.66e-16
	(6.32e-15)	(3.43e-15)	(1.34e-15)	(2.19e-17)	(4.77e-15)
_cons	-3.293***	1.789	2.242	0.0857***	3.755***
	(1.228)	(1.356)	(1.903)	(0.0157)	(1.056)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #56

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_gas_dep	-0.0570*	0.0120*	0.0197**	0.000166**	0.00853
	(0.0304)	(0.00679)	(0.00952)	(0.0000674)	(0.00834)
W_gas_rents_dev_c2	1.55e-08	6.03e-08**	5.20e-08	1.36e-10	6.51e-08**
	(9.87e-09)	(2.54e-08)	(3.51e-08)	(2.44e-10)	(2.80e-08)
c.outside_gas_dep#c.W_gas_re~e	-8.90e-09	-1.31e-08*	-2.84e-09	-5.79e-12	-1.38e-08
	(5.71e-09)	(7.67e-09)	(5.52e-09)	(7.94e-12)	(8.98e-09)
_cons	-3.414***	1.837	2.340	0.0857***	3.790***
	(1.261)	(1.371)	(1.916)	(0.0157)	(1.061)
N	74622	54804	46863	74622	373927

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #57

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
1.W_no_coal_rent1	-0.399***	-0.116	0.0938	0.000594	-0.0536
	(0.117)	(0.190)	(0.215)	(0.00127)	(0.168)
1.W_coal_rents2	0.0199	-0.0461	0.245	-0.00148	-0.0562
	(0.136)	(0.201)	(0.233)	(0.00189)	(0.183)
1.W_no_coal_rent1#1.W_coal_r~2	0.179	0.226	0.0255	0.00208	0.109
	(0.189)	(0.265)	(0.316)	(0.00214)	(0.228)
_cons	-4.052***	0.861	1.125	0.0733***	3.020***
	(1.085)	(1.518)	(1.981)	(0.0175)	(1.119)
N	69135	49994	42886	69135	341104

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #58

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_coal_dep	-0.106	0.0533	0.0319	0.000129	0.00893
	(0.0783)	(0.0662)	(0.114)	(0.000352)	(0.0690)
1.W_coal_rents2	0.431***	0.237**	0.311**	-0.0000896	0.0983
	(0.0965)	(0.120)	(0.159)	(0.00124)	(0.112)
1.W_coal_rents2#c.outside_co~p	-0.0910	-0.106	-0.145	-0.000316	0.0132
	(0.132)	(0.108)	(0.144)	(0.000399)	(0.0874)
_cons	-3.271***	1.611	2.046	0.0848***	3.711***
	(1.194)	(1.355)	(1.879)	(0.0159)	(1.066)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #59

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_coal_rent1	-0.348***	-0.0371	-0.00879	0.00132	-0.0103
	(0.0949)	(0.148)	(0.174)	(0.00103)	(0.137)
W_coal_rents_c2	2.27e-12	2.59e-12	-9.69e-12*	-1.35e-14	1.67e-12
	(2.03e-12)	(2.53e-12)	(5.25e-12)	(1.19e-14)	(2.57e-12)
1.W_no_coal_rent1#c.W_coal_r~c	-8.19e-13	5.15e-13	1.38e-11***	2.13e-14	2.28e-12
	(2.63e-12)	(2.42e-12)	(5.26e-12)	(1.42e-14)	(2.70e-12)
_cons	-4.062***	0.859	1.313	0.0722***	2.993***
	(1.089)	(1.484)	(1.987)	(0.0173)	(1.122)
N	69135	49994	42886	69135	341104

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #60

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_coal_dep	-0.145**	0.00274	-0.0270	-0.0000376	0.0104
	(0.0663)	(0.0711)	(0.102)	(0.000263)	(0.0605)
W_coal_rents_c2	3.31e-12**	1.31e-12	-6.26e-12**	1.30e-15	7.23e-13
	(1.50e-12)	(2.20e-12)	(3.13e-12)	(7.48e-15)	(2.14e-12)
c.outside_coal_dep#c.W_coal_~_	4.52e-13	3.96e-13	1.50e-12**	-3.62e-16	4.84e-13
	(3.90e-13)	(3.32e-13)	(5.86e-13)	(2.85e-15)	(3.16e-13)
_cons	-3.266***	1.777	2.223	0.0845***	3.811***
	(1.212)	(1.352)	(1.908)	(0.0158)	(1.064)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #61

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_coal_dep	-0.138**	0.0105	-0.0202	-0.0000646	0.0136
	(0.0653)	(0.0704)	(0.105)	(0.000271)	(0.0603)
W_coal_rents_pop_c2	-0.000457	0.00124	-0.00197	-0.00000368	0.000460
	(0.00150)	(0.00182)	(0.00327)	(0.00000913)	(0.00176)
c.outside_coal_dep#c.W_coal_~_	0.000501	-0.0000207	-0.0000544	0.00000162	0.000256
	(0.000747)	(0.000599)	(0.00193)	(0.00000221)	(0.000475)
_cons	-3.317***	1.774	2.234	0.0845***	3.801***
	(1.204)	(1.351)	(1.909)	(0.0158)	(1.063)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #62

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_coal_dep	-0.146**	0.00560	-0.0248	-0.0000754	0.0120
	(0.0647)	(0.0701)	(0.105)	(0.000269)	(0.0597)
W_coal_rents_gdp_c2	8.690	14.39*	5.935	-0.0443	14.55*
	(8.926)	(7.885)	(12.24)	(0.106)	(8.056)
c.outside_coal_dep#c.W_coal_~_	2.898	0.452	-1.504	0.0145	0.489
	(4.235)	(3.132)	(5.580)	(0.0219)	(3.275)
_cons	-3.295***	1.737	2.227	0.0845***	3.757***
	(1.208)	(1.351)	(1.908)	(0.0158)	(1.062)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #63

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_coal_dep	-0.142**	0.00525	-0.0294	-0.0000682	0.0113
	(0.0663)	(0.0714)	(0.105)	(0.000268)	(0.0607)
W_coal_rents_cap_c2	-1.12e-13	1.44e-13	-2.31e-13	-2.85e-17	5.95e-14
	(3.02e-13)	(2.76e-13)	(4.71e-13)	(1.59e-15)	(2.78e-13)
c.outside_coal_dep#c.W_coal_~_	1.26e-13	4.02e-14	8.75e-14	2.98e-16	6.04e-14
	(9.77e-14)	(6.56e-14)	(1.52e-13)	(4.07e-16)	(6.07e-14)
_cons	-3.317***	1.785	2.222	0.0845***	3.809***
	(1.208)	(1.352)	(1.911)	(0.0158)	(1.064)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #64

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_coal_dep	-0.149**	0.00179	-0.0288	-0.0000587	0.00983
	(0.0648)	(0.0705)	(0.103)	(0.000265)	(0.0598)
W_coal_rents_dev_c2	1.53e-08*	1.12e-08	-3.41e-09	-4.78e-11	1.19e-08
	(8.01e-09)	(8.18e-09)	(1.34e-08)	(1.08e-10)	(8.12e-09)
c.outside_coal_dep#c.W_coal_~_	3.62e-09	2.13e-09	2.05e-09	1.10e-11	1.93e-09
	(2.68e-09)	(2.37e-09)	(4.35e-09)	(2.33e-11)	(2.52e-09)
_cons	-3.242***	1.739	2.241	0.0845***	3.775***
	(1.227)	(1.351)	(1.909)	(0.0158)	(1.062)
N	75144	55261	47291	75144	378645

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #65

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_miner_rent1	-0.537***	-0.212	0.0981	0.00126	-0.102
	(0.186)	(0.268)	(0.352)	(0.00169)	(0.226)
1.W_miner_rents2	0.0974	-0.134	0.173	0.00187	-0.0586
	(0.124)	(0.192)	(0.238)	(0.00143)	(0.174)
1.W_no_miner_rent1#1.W_miner~s	0.160	0.288	0.0479	-0.00171	0.164
	(0.228)	(0.281)	(0.339)	(0.00190)	(0.244)
_cons	-4.118***	0.867	1.221	0.0705***	2.963***
	(1.129)	(1.492)	(1.996)	(0.0171)	(1.130)
N	69629	50153	43035	69629	342442

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #66

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_miner_dep	-0.00771	0.0455	0.0150	0.0000120	0.0382
	(0.0453)	(0.0328)	(0.0649)	(0.000241)	(0.0346)
1.W_miner_rents2	0.305***	-0.108	0.0208	-0.000000529	-0.0790
	(0.113)	(0.159)	(0.205)	(0.00129)	(0.146)
1.W_miner_rents2#c.outside_m~d	0.00766	-0.00178	0.0187	0.000236	0.00888
	(0.0470)	(0.0301)	(0.0643)	(0.000249)	(0.0318)
_cons	-3.373***	1.870	2.271	0.0843***	3.886***
	(1.194)	(1.360)	(1.920)	(0.0157)	(1.067)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #67

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_miner_rent1	-0.442***	-0.00654	0.121	-0.0000633	0.00715
	(0.107)	(0.171)	(0.234)	(0.00103)	(0.144)
W_miner_rents_c2	2.27e-12	2.37e-12	-4.49e-12	-9.58e-15	1.37e-12
	(2.21e-12)	(2.80e-12)	(3.58e-12)	(1.29e-14)	(2.73e-12)
1.W_no_miner_rent1#c.W_miner~s	-2.68e-13	4.84e-12	-3.71e-11	2.30e-14*	1.09e-11***
	(5.97e-12)	(4.15e-12)	(6.09e-11)	(1.36e-14)	(3.63e-12)
_cons	-4.088***	0.830	1.264	0.0718***	2.981***
	(1.123)	(1.487)	(1.972)	(0.0172)	(1.127)
N	69629	50153	43035	69629	342442

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #68

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_miner_dep	-0.000383	0.0428**	0.0303	0.000223	0.0440**
	(0.0155)	(0.0200)	(0.0295)	(0.000164)	(0.0189)
W_miner_rents_c2	2.95e-12	4.07e-13	-7.32e-12*	9.22e-16	-3.69e-13
	(2.13e-12)	(3.26e-12)	(3.88e-12)	(1.21e-14)	(3.13e-12)
c.outside_miner_dep#c.W_mine~t	7.81e-14	1.52e-13	6.03e-13***	-7.60e-16	3.04e-13
	(2.60e-13)	(3.15e-13)	(1.64e-13)	(8.93e-16)	(2.70e-13)
_cons	-3.284***	1.793	2.259	0.0844***	3.820***
	(1.186)	(1.356)	(1.912)	(0.0157)	(1.068)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #69

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_miner_dep	0.00121	0.0476**	0.0321	0.000245	0.0502***
	(0.0161)	(0.0206)	(0.0301)	(0.000165)	(0.0191)
W_miner_rents_pop_c2	-0.000611	-0.000914	-0.00284*	-0.00000155	-0.000153
	(0.000763)	(0.000761)	(0.00149)	(0.00000220)	(0.000420)
c.outside_miner_dep#c.W_mine~t	-0.0000217	-0.000117	0.000106	-0.000000683	-0.000222
	(0.000225)	(0.000291)	(0.000438)	(0.000000463)	(0.000247)
_cons	-3.348***	1.730	2.270	0.0843***	3.786***
	(1.183)	(1.362)	(1.925)	(0.0157)	(1.069)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #70

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_miner_dep	0.00332	0.0441**	0.0339	0.000278*	0.0484**
	(0.0168)	(0.0209)	(0.0305)	(0.000166)	(0.0195)
W_miner_rents_gdp_c2	0.397	2.513*	-0.478	0.00311	4.124***
	(1.617)	(1.511)	(2.544)	(0.0386)	(1.123)
c.outside_miner_dep#c.W_mine~t	-0.370	-0.141	-0.383	-0.00948	-0.456
	(0.822)	(0.629)	(1.211)	(0.00674)	(0.488)
_cons	-3.327***	1.763	2.300	0.0842***	3.762***
	(1.183)	(1.355)	(1.920)	(0.0157)	(1.063)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #71

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
outside_miner_dep	0.00480	0.0475**	0.0362	0.000247	0.0504***
	(0.0161)	(0.0203)	(0.0300)	(0.000163)	(0.0190)
W_miner_rents_cap_c2	1.16e-15	-1.36e-14	-1.24e-13*	-1.65e-16	2.64e-14
	(8.35e-14)	(5.90e-14)	(7.07e-14)	(3.26e-16)	(4.09e-14)
c.outside_miner_dep#c.W_mine~t	-3.27e-14	-2.42e-14	-3.62e-14	-1.22e-16	-3.50e-14
	(3.94e-14)	(3.35e-14)	(6.61e-14)	(8.04e-17)	(2.92e-14)
_cons	-3.344***	1.754	2.242	0.0843***	3.798***
	(1.183)	(1.358)	(1.917)	(0.0157)	(1.067)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #72

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_miner_dep	-0.000647	0.0425**	0.0290	0.000215	0.0434**
	(0.0157)	(0.0200)	(0.0297)	(0.000163)	(0.0189)
W_miner_rents_dev_c2	2.10e-08	9.76e-09	-3.09e-08	-2.41e-11	4.66e-09
	(1.39e-08)	(2.08e-08)	(2.41e-08)	(1.19e-10)	(1.98e-08)
c.outside_miner_dep#c.W_mine~t	3.39e-10	6.66e-10	3.95e-09***	-7.46e-13	1.84e-09
	(2.19e-09)	(2.37e-09)	(1.25e-09)	(6.13e-12)	(2.08e-09)
_cons	-3.266***	1.800	2.275	0.0844***	3.830***
	(1.194)	(1.356)	(1.913)	(0.0157)	(1.067)
N	75411	55306	47326	75411	378997

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #73

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_wood_rent1	-0.229	-0.718	-0.368**	0.00759*	-0.808
	(0.784)	(0.923)	(0.185)	(0.00452)	(0.916)
1.W_wood_rents2	-0.844*	-2.247*	-2.451	-0.0246	-2.275*
	(0.507)	(1.298)	(1.541)	(0.0193)	(1.314)
1.W_no_wood_rent1#1.W_wood_r~2	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
_cons	-3.798***	3.273	4.581*	0.114***	5.876***
	(1.236)	(1.997)	(2.520)	(0.0266)	(1.716)
N	66009	47083	40354	66009	318656

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #74

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	-0.158	0.484	0.207	-0.00859	-0.207
	(0.408)	(0.676)	(0.812)	(0.00882)	(0.302)
1.W_wood_rents2	-0.827*	-2.192*	-2.445	-0.0303	-2.376*
	(0.479)	(1.309)	(1.558)	(0.0236)	(1.342)
1.W_wood_rents2#c.outside_wo~p	0.164	-0.452	-0.129	0.00944	0.220
	(0.410)	(0.675)	(0.811)	(0.00881)	(0.300)
_cons	-2.624**	3.983**	4.880**	0.122***	6.438***
	(1.287)	(1.893)	(2.432)	(0.0285)	(1.706)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #75

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
1.W_no_wood_rent1	1.805***	4.037**	14.45***	0.0174	1.853***
	(0.575)	(1.903)	(0.622)	(0.0123)	(0.418)
W_wood_rents_c2	1.26e-11**	1.47e-11	1.98e-11	-1.02e-13	1.11e-11
	(4.98e-12)	(1.26e-11)	(1.35e-11)	(1.06e-13)	(1.31e-11)
1.W_no_wood_rent1#c.W_wood_r~c	-0.000000991***	-0.00000275*	-0.00000151***	-1.49e-12	-0.00000113**
	(0.000000359)	(0.00000153)	(6.93e-08)	(1.45e-12)	(0.000000459)
_cons	-4.390***	0.907	2.027	0.0903***	3.498***
	(1.147)	(1.525)	(1.984)	(0.0185)	(1.116)
N	66009	47083	40354	66009	318662

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #76

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	0.00378	0.0256	0.0752***	0.000931***	0.00396
	(0.0282)	(0.0272)	(0.0273)	(0.000325)	(0.0318)
W_wood_rents_c2	1.75e-11***	1.09e-11	6.17e-12	-1.22e-13	5.19e-12
	(4.86e-12)	(1.06e-11)	(1.51e-11)	(9.86e-14)	(1.13e-11)
c.outside_wood_dep#c.W_wood_~_	1.80e-12*	1.63e-12	8.03e-13	-1.26e-14	2.33e-12**
	(9.79e-13)	(1.21e-12)	(1.41e-12)	(1.68e-14)	(9.24e-13)
_cons	-3.140***	1.711	2.405	0.0937***	4.021***
	(1.213)	(1.374)	(1.872)	(0.0164)	(1.055)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #77

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	-0.000187	0.0405	0.111***	0.00106***	0.0195
	(0.0345)	(0.0412)	(0.0407)	(0.000363)	(0.0346)
W_wood_rents_pop_c2	-0.00140	-0.000666	-0.00386*	-0.0000230*	-0.000181
	(0.000952)	(0.00138)	(0.00216)	(0.0000122)	(0.00128)
c.outside_wood_dep#c.W_wood_~_	0.0000381	-0.000206	-0.000832	-0.00000470	-0.000239
	(0.000530)	(0.000678)	(0.000681)	(0.00000404)	(0.000581)
_cons	-3.458***	1.793	2.441	0.0930***	4.054***
	(1.218)	(1.373)	(1.871)	(0.0161)	(1.056)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #78

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	0.0168	0.0524**	0.0997***	0.000733***	0.0250
	(0.0387)	(0.0252)	(0.0262)	(0.000281)	(0.0315)
W_wood_rents_gdp_c2	-2.866**	0.470	-2.851	-0.0514**	-0.242
	(1.211)	(1.584)	(2.951)	(0.0243)	(1.471)
c.outside_wood_dep#c.W_wood_~_	-1.269	-1.492	-1.389	0.00918	-0.794
	(1.411)	(1.108)	(1.011)	(0.0118)	(1.081)
_cons	-3.496***	1.709	2.382	0.0929***	4.023***
	(1.180)	(1.371)	(1.869)	(0.0161)	(1.052)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #79

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	0.0264	0.0563*	0.109***	0.000967***	0.0341
	(0.0385)	(0.0310)	(0.0285)	(0.000331)	(0.0316)
W_wood_rents_cap_c2	-7.05e-14	4.86e-14	-9.16e-14	-1.31e-16	5.02e-14
	(9.68e-14)	(3.76e-14)	(1.45e-13)	(5.33e-16)	(3.84e-14)
c.outside_wood_dep#c.W_wood_~_	-1.18e-13	-9.34e-14	-1.14e-13	-2.58e-16	-1.38e-13*
	(8.29e-14)	(6.67e-14)	(7.83e-14)	(2.89e-16)	(8.17e-14)
_cons	-3.546***	1.732	2.266	0.0919***	3.988***
	(1.203)	(1.377)	(1.872)	(0.0161)	(1.053)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 5 - Table 5.5 - #80

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
outside_wood_dep	0.0141	0.0381	0.0870***	0.000893***	0.0169
	(0.0290)	(0.0234)	(0.0263)	(0.000301)	(0.0288)
W_wood_rents_dev_c2	1.53e-08	1.34e-08	7.62e-09	-2.10e-10	1.46e-08
	(9.57e-09)	(1.76e-08)	(2.08e-08)	(1.66e-10)	(1.79e-08)
c.outside_wood_dep#c.W_wood_~_	-9.73e-09	-9.45e-09**	-2.11e-08	-2.49e-11	-5.52e-09
	(8.03e-09)	(4.56e-09)	(1.60e-08)	(3.42e-11)	(4.31e-09)
_cons	-3.388***	1.758	2.376	0.0934***	4.021***
	(1.233)	(1.370)	(1.862)	(0.0162)	(1.056)
N	73327	53500	45462	73327	364557

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #1

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
O_in_degree_c1	0.00745*	0.000666	-0.00148	0.000103
	(0.00440)	(0.00433)	(0.00585)	(0.0000634)
outside_oil_dep_c1	-0.00850	0.0102***	0.00885*	0.0000159
	(0.00632)	(0.00352)	(0.00512)	(0.0000234)
c.O_in_degree_c1#c.outside_o~p	-0.0000183	-0.000510***	-0.000408	-0.000000571
	(0.000210)	(0.000193)	(0.000275)	(0.000000648)
O_net3_oil_imp_c1	3.27e-12**	2.66e-12**	4.26e-12**	1.90e-14
	(1.41e-12)	(1.28e-12)	(2.04e-12)	(1.31e-14)
_cons	-1.844**	3.866***	1.666	0.0708***
	(0.919)	(0.998)	(1.460)	(0.0165)
N	97061	79572	68640	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
O_closeness_c1	1.188**	-0.799	-0.719	0.00697
	(0.569)	(0.570)	(0.643)	(0.00717)
outside_oil_dep_c1	0.0356*	0.0230	0.0564**	0.000237**
	(0.0200)	(0.0197)	(0.0243)	(0.0000980)
c.O_closeness_c1#c.outside_o~p	-0.0725**	-0.0399	-0.0961**	-0.000403**
	(0.0343)	(0.0343)	(0.0430)	(0.000170)
O_net3_oil_imp_c1	5.39e-12***	1.88e-12	4.40e-12**	3.63e-14**
	(1.45e-12)	(1.40e-12)	(2.08e-12)	(1.43e-14)
_cons	-2.567**	4.578***	2.325	0.0682***
	(1.005)	(1.061)	(1.546)	(0.0163)
N	97061	79572	68640	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
O_closeness_nosym_c1	-0.115	0.501	0.422	0.0118
	(0.499)	(0.533)	(0.623)	(0.00725)
outside_oil_dep_c1	-0.0301	0.0245	0.0562*	0.000413***
	(0.0317)	(0.0238)	(0.0303)	(0.000137)
c.O_closeness_nosym_c1#c.out~o	0.0420	-0.0467	-0.103*	-0.000766***
	(0.0548)	(0.0434)	(0.0565)	(0.000256)
O_net3_oil_imp_c1	4.77e-12***	1.39e-12	3.11e-12*	2.94e-14**
	(1.30e-12)	(1.26e-12)	(1.87e-12)	(1.45e-14)
_cons	-1.841*	3.666***	1.544	0.0672***
	(0.941)	(1.021)	(1.473)	(0.0173)
N	97061	79572	68640	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
O_in_degree_c1	0.00769	0.00263	-0.000419	0.0000603***
	(0.00471)	(0.00447)	(0.00597)	(0.0000145)
outside_oil_dep_c1	-0.0210**	0.0136***	0.0117**	0.00000126
	(0.00897)	(0.00371)	(0.00499)	(0.00000221)
c.O_in_degree_c1#c.outside_o~p	0.000163	-0.000835***	-0.000594**	-5.40e-08
	(0.000246)	(0.000211)	(0.000280)	(6.86e-08)
O_net3_oil_imp_c1	6.43e-12***	3.94e-12**	5.46e-12**	1.15e-14
	(2.03e-12)	(1.56e-12)	(2.17e-12)	(1.01e-14)
_cons	-0.860	5.658***	4.884***	0.0245***
	(0.719)	(0.859)	(1.441)	(0.00577)
N	758216	555855	462376	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
O_closeness_c1	2.946***	-1.193**	-1.330**	0.00223**
	(0.754)	(0.540)	(0.656)	(0.00113)
outside_oil_dep_c1	0.0279	0.0283	0.0643***	0.0000448**
	(0.0262)	(0.0208)	(0.0215)	(0.0000183)
c.O_closeness_c1#c.outside_o~p	-0.0743*	-0.0547	-0.111***	-0.0000743**
	(0.0425)	(0.0358)	(0.0383)	(0.0000317)
O_net3_oil_imp_c1	7.51e-12***	2.69e-12	5.40e-12**	1.83e-14*
	(2.09e-12)	(1.67e-12)	(2.18e-12)	(1.04e-14)
_cons	-2.341***	6.690***	6.014***	0.0244***
	(0.877)	(0.950)	(1.488)	(0.00559)
N	758216	555855	462376	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
O_closeness_nosym_c1	0.425	1.095**	1.186**	0.00343***
	(0.448)	(0.487)	(0.577)	(0.000892)
outside_oil_dep_c1	-0.0678*	0.0676***	0.0883***	0.0000762***
	(0.0382)	(0.0249)	(0.0299)	(0.0000186)
c.O_closeness_nosym_c1#c.out~o	0.0933	-0.132***	-0.164***	-0.000139***
	(0.0633)	(0.0460)	(0.0565)	(0.0000347)
O_net3_oil_imp_c1	7.99e-12***	2.11e-12	4.01e-12*	1.71e-14
	(2.10e-12)	(1.53e-12)	(2.05e-12)	(1.04e-14)
_cons	-1.065	5.204***	4.367***	0.0241***
	(0.753)	(0.891)	(1.463)	(0.00583)
N	758216	555855	462376	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #1

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
O_in_degree_exp_c2	0.00194	-0.0107***	-0.00721**	0.0000653*	-0.00950***
	(0.00153)	(0.00234)	(0.00297)	(0.0000365)	(0.00227)
_cons	-2.184**	4.582***	2.475*	0.0719***	6.246***
	(0.955)	(0.998)	(1.453)	(0.0164)	(0.864)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #2

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_reserves_exp_c2	1.06e-10***	1.38e-10***	3.79e-11	-5.09e-12	1.35e-10***
	(2.54e-11)	(3.36e-11)	(3.20e-11)	(4.37e-12)	(2.93e-11)
_cons	-0.875	4.860***	2.634	0.0737***	5.970***
	(0.989)	(1.072)	(1.628)	(0.0214)	(0.945)
N	60892	46009	38147	60892	294619

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #3

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_oil_prod_exp_c2	1.45e-08***	-1.99e-09	-3.34e-09	5.97e-12	-3.92e-09
	(3.42e-09)	(5.52e-09)	(8.46e-09)	(7.89e-11)	(6.02e-09)
_cons	-0.636	4.938***	2.757*	0.0719***	6.110***
	(0.960)	(1.095)	(1.597)	(0.0218)	(0.951)
N	60892	46009	38147	60892	294619

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #4

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_prod_exp_c2	5.51e-08***	2.65e-08*	-1.44e-08	-4.54e-10*	3.00e-08*
	(9.75e-09)	(1.53e-08)	(3.27e-08)	(2.56e-10)	(1.73e-08)
_cons	-2.250***	4.204***	2.409*	0.0758***	5.739***
	(0.868)	(0.971)	(1.423)	(0.0172)	(0.891)
N	91361	73309	62563	91361	483743

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #5

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_oil_val_prod_exp_c2	1.18e-10***	8.14e-11**	4.29e-12	-8.35e-13*	9.01e-11**
	(1.91e-11)	(3.22e-11)	(6.56e-11)	(4.76e-13)	(4.09e-11)
_cons	-2.237**	4.224***	2.307	0.0748***	5.771***
	(0.873)	(0.960)	(1.414)	(0.0171)	(0.878)
N	91361	73309	62563	91361	483743

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #6

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
P_oil_dep_total_exp_c2	0.00552***	0.00273	-0.00962*	-0.000162***	0.00313
	(0.00153)	(0.00175)	(0.00502)	(0.0000338)	(0.00206)
_cons	-2.175**	4.148***	2.554*	0.0794***	5.762***
	(0.888)	(0.979)	(1.440)	(0.0176)	(0.881)
N	88217	70957	60611	88217	479702

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #7

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
majpow_exp2	0.288***	0.110	0.167	0.00217	0.187*
	(0.0895)	(0.127)	(0.166)	(0.00170)	(0.113)
_cons	-2.344**	4.092***	2.065	0.0731***	5.752***
	(0.958)	(0.980)	(1.415)	(0.0163)	(0.860)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #8

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
majpow_count_exp_c2	0.0739***	0.0000591	0.0265	-0.000442	0.0267
	(0.0204)	(0.0375)	(0.0504)	(0.000516)	(0.0354)
_cons	-2.430**	4.170***	2.186	0.0753***	5.878***
	(0.946)	(0.979)	(1.426)	(0.0165)	(0.853)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
majpow_exp2	0.269**	-0.000588	0.134	0.00571**	0.109
	(0.107)	(0.145)	(0.170)	(0.00257)	(0.126)
O_in_degree_exp_c2	0.00143	-0.0144***	-0.00844*	0.000110***	-0.0128***
	(0.00248)	(0.00330)	(0.00479)	(0.0000421)	(0.00319)
c.majpow_exp2#c.O_in_degree_~2	0.000727	0.00463*	0.00144	-0.0000688**	0.00407
	(0.00250)	(0.00266)	(0.00424)	(0.0000325)	(0.00271)
_cons	-2.423**	4.472***	2.321	0.0713***	6.149***
	(0.954)	(0.993)	(1.426)	(0.0164)	(0.867)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r	(5) All_Obs
main					
majpow_count_exp_c2	0.150***	0.0511	0.132**	0.000262**	0.0511
	(0.0247)	(0.0402)	(0.0519)	(0.000118)	(0.0402)
O_in_degree_exp_c2	0.0112***	-0.00869***	-0.00309	0.0000306***	-0.00869***
	(0.00190)	(0.00304)	(0.00372)	(0.00000817)	(0.00304)
c.majpow_count_exp_c2#c.O_in~e	-0.00165***	-0.000415	-0.00138	-0.00000347*	-0.000415
	(0.000478)	(0.000648)	(0.000919)	(0.00000190)	(0.000648)
_cons	-1.152	6.207***	5.340***	0.0256***	6.207***
	(0.760)	(0.871)	(1.460)	(0.00552)	(0.871)
N	763536	560595	464741	763536	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #11

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
R_prod_agg_total_c2	1.76e-10***	-1.44e-10**	-4.00e-11	2.22e-12**	-4.87e-11
	(5.37e-11)	(6.56e-11)	(9.20e-11)	(1.06e-12)	(6.35e-11)
_cons	-2.187**	4.305***	2.229	0.0716***	5.942***
	(0.962)	(0.987)	(1.418)	(0.0165)	(0.852)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #12

	(1)	(2)	(3)	(4)	(5)
	no_fixed	init	rev_b	rev_r	All_Obs
main					
H_reserve_agg_total_c2	0.000596***	0.000389**	0.000546***	0.00000134	0.000551***
	(0.000161)	(0.000159)	(0.000195)	(0.00000179)	(0.000155)
_cons	-2.219**	3.967***	1.885	0.0740***	5.603***
	(0.975)	(0.975)	(1.406)	(0.0165)	(0.860)
N	100211	82341	70984	100211	560595

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2: Robustness Regression Outputs

8.8.2.1: Regional Effects

Stage 2 - Table 5.2 - #1

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00395	-0.00194	-0.0000113*
	(0.00270)	(0.00262)	(0.00000639)
O_net3_oil_imp_c1	4.55e-12***	4.81e-12**	1.79e-14*
	(1.42e-12)	(2.39e-12)	(9.60e-15)
2.rlregion	0.596***	0.734***	0.00773***
	(0.170)	(0.255)	(0.00258)
3.rlregion	-0.218	-0.133	0.00199
	(0.183)	(0.256)	(0.00164)
4.rlregion	0.768***	0.800***	0.00489**
	(0.179)	(0.265)	(0.00228)
5.rlregion	0.373*	0.439	0.00425**
	(0.208)	(0.277)	(0.00199)
_cons	-0.880	-2.885**	0.0383***
	(0.997)	(1.267)	(0.00885)
N	99613	99613	99613

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #2

	(1) init	(2) rev_b	(3) rev_r
main			
H_no_oil_reserves1	-0.451***	-0.597***	-0.00583***
	(0.0964)	(0.120)	(0.00149)
O_net3_oil_imp_c1	6.11e-12	9.27e-13	-8.17e-14
	(6.87e-12)	(6.67e-12)	(5.48e-14)
2.rlregion	0.577***	0.852***	0.0120***
	(0.184)	(0.227)	(0.00281)
3.rlregion	-0.183	0.160	0.00506***
	(0.195)	(0.242)	(0.00180)
4.rlregion	0.637***	0.825***	0.00541*
	(0.202)	(0.258)	(0.00288)
5.rlregion	0.399*	0.670**	0.00703***
	(0.225)	(0.261)	(0.00220)
_cons	0.921	-0.532	0.0410***
	(0.979)	(1.492)	(0.0112)
N	70388	70388	70388

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #3

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
H_no_oil_prod1	-0.161	-0.0603	-0.000119
	(0.106)	(0.141)	(0.00149)
O_net3_oil_imp_c1	6.45e-12	3.31e-13	-5.30e-14
	(7.77e-12)	(7.89e-12)	(5.39e-14)
2.rlregion	0.695***	1.025***	0.0133***
	(0.180)	(0.225)	(0.00285)
3.rlregion	-0.170	0.114	0.00433**
	(0.205)	(0.253)	(0.00183)
4.rlregion	0.689***	0.902***	0.00586**
	(0.205)	(0.258)	(0.00292)
5.rlregion	0.440*	0.703***	0.00677***
	(0.226)	(0.265)	(0.00225)
_cons	0.149	-1.750	0.0286***
	(1.000)	(1.469)	(0.0105)
N	70388	70388	70388

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #4

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00212	-0.00360	-0.000161**
	(0.00610)	(0.00760)	(0.0000693)
1.H_no_oil_reserves1	-0.460***	-0.620***	-0.00697***
	(0.102)	(0.124)	(0.00165)
1.H_no_oil_reserves1#c.outsi~l	-0.000324	0.00358	0.000202***
	(0.00667)	(0.00798)	(0.0000715)
O_net3_oil_imp_c1	9.16e-12	4.01e-12	-3.83e-14
	(6.90e-12)	(6.72e-12)	(5.79e-14)
2.rlregion	0.565***	0.845***	0.0121***
	(0.182)	(0.227)	(0.00284)
3.rlregion	-0.206	0.129	0.00475***
	(0.194)	(0.242)	(0.00183)
4.rlregion	0.624***	0.815***	0.00518*
	(0.201)	(0.260)	(0.00295)
5.rlregion	0.366	0.626**	0.00657***
	(0.225)	(0.261)	(0.00222)
_cons	0.912	-0.610	0.0420***
	(0.968)	(1.480)	(0.0113)
N	69074	69074	69074

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #5

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00772	-0.0101	-0.0000529**
	(0.00596)	(0.00766)	(0.0000234)
1.H_no_oil_prod1	-0.185	-0.0986	-0.000757
	(0.115)	(0.148)	(0.00171)
1.H_no_oil_prod1#c.outside_o~p	0.00575	0.00963	0.0000757*
	(0.00672)	(0.00838)	(0.0000409)
O_net3_oil_imp_c1	1.09e-11	5.01e-12	-3.08e-14
	(7.87e-12)	(8.13e-12)	(5.56e-14)
2.rlregion	0.680***	1.016***	0.0135***
	(0.179)	(0.226)	(0.00288)
3.rlregion	-0.197	0.0841	0.00427**
	(0.203)	(0.252)	(0.00187)
4.rlregion	0.675***	0.891***	0.00587**
	(0.205)	(0.261)	(0.00299)
5.rlregion	0.406*	0.659**	0.00655***
	(0.226)	(0.266)	(0.00226)
_cons	0.121	-1.888	0.0287***
	(0.988)	(1.447)	(0.0107)
N	69074	69074	69074

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #6

	(1) init	(2) rev_b	(3) rev_r
main			
R_no_oil_prod1	-0.251**	-0.00615	0.000123
	(0.114)	(0.192)	(0.00138)
O_net3_oil_imp_c1	3.98e-12***	4.44e-12*	1.65e-14*
	(1.52e-12)	(2.50e-12)	(9.67e-15)
2.rlregion	0.589***	0.740***	0.00734***
	(0.170)	(0.251)	(0.00244)
3.rlregion	-0.0712	-0.101	0.00195
	(0.184)	(0.288)	(0.00168)
4.rlregion	0.782***	0.814***	0.00482**
	(0.178)	(0.263)	(0.00217)
5.rlregion	0.441**	0.476*	0.00424**
	(0.207)	(0.283)	(0.00198)
_cons	-0.652	-2.723**	0.0382***
	(1.010)	(1.301)	(0.00859)
N	102752	102752	102752

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #7

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.0106**	-0.00822	-0.0000397***
	(0.00512)	(0.00602)	(0.0000149)
1.R_no_oil_prod1	-0.295**	-0.0380	-0.0000991
	(0.118)	(0.201)	(0.00149)
1.R_no_oil_prod1#c.outside_o~p	0.0110**	0.00833	0.0000371**
	(0.00536)	(0.00656)	(0.0000183)
O_net3_oil_imp_c1	5.11e-12***	5.33e-12**	2.05e-14**
	(1.41e-12)	(2.46e-12)	(9.71e-15)
2.rlregion	0.568***	0.728***	0.00773***
	(0.168)	(0.252)	(0.00254)
3.rlregion	-0.103	-0.134	0.00197
	(0.183)	(0.288)	(0.00176)
4.rlregion	0.759***	0.797***	0.00491**
	(0.178)	(0.266)	(0.00227)
5.rlregion	0.393*	0.427	0.00419**
	(0.206)	(0.281)	(0.00203)
_cons	-0.706	-2.879**	0.0384***
	(1.001)	(1.279)	(0.00888)
N	99602	99602	99602

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #8

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
W_no_oil_rent1	-0.186	-0.102	-0.000334
	(0.119)	(0.204)	(0.00122)
O_net3_oil_imp_c1	4.91e-12***	5.38e-12***	1.94e-14**
	(1.21e-12)	(2.02e-12)	(9.49e-15)
2.rlregion	0.433**	0.346	0.00319
	(0.182)	(0.287)	(0.00281)
3.rlregion	-0.120	-0.268	0.000234
	(0.196)	(0.338)	(0.00206)
4.rlregion	0.360**	0.182	-0.000226
	(0.182)	(0.289)	(0.00226)
5.rlregion	0.437**	0.455	0.00348
	(0.206)	(0.318)	(0.00232)
_cons	-1.580	-2.315*	0.0525***
	(1.198)	(1.373)	(0.0111)
N	76957	76957	76957

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #9

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00975*	-0.00748	-0.0000403**
	(0.00507)	(0.00612)	(0.0000189)
1.W_no_oil_rent1	-0.163	-0.0774	-0.000368
	(0.139)	(0.237)	(0.00135)
1.W_no_oil_rent1#c.outside_o~p	0.00537	0.00371	0.0000282
	(0.00658)	(0.00790)	(0.0000211)
O_net3_oil_imp_c1	5.65e-12***	5.94e-12***	2.25e-14**
	(1.25e-12)	(2.09e-12)	(9.50e-15)
2.rlregion	0.412**	0.335	0.00312
	(0.181)	(0.284)	(0.00280)
3.rlregion	-0.156	-0.294	0.000123
	(0.194)	(0.341)	(0.00207)
4.rlregion	0.351*	0.178	-0.000244
	(0.180)	(0.288)	(0.00225)
5.rlregion	0.432**	0.456	0.00352
	(0.204)	(0.314)	(0.00232)
_cons	-1.517	-2.273	0.0530***
	(1.213)	(1.395)	(0.0112)
N	76957	76957	76957

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #10

	(1) init	(2) rev_b	(3) rev_r
main			
P_no_deposits1	-0.165	0.0927	0.000401
	(0.127)	(0.212)	(0.00135)
O_net3_oil_imp_c1	4.19e-12***	4.67e-12*	1.76e-14*
	(1.43e-12)	(2.39e-12)	(9.89e-15)
2.rlregion	0.593***	0.742***	0.00779***
	(0.170)	(0.253)	(0.00256)
3.rlregion	-0.146	-0.178	0.00188
	(0.191)	(0.295)	(0.00182)
4.rlregion	0.774***	0.796***	0.00487**
	(0.179)	(0.263)	(0.00229)
5.rlregion	0.402*	0.411	0.00412**
	(0.212)	(0.290)	(0.00207)
_cons	-0.823	-2.937**	0.0381***
	(0.997)	(1.241)	(0.00887)
N	99613	99613	99613

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #11

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00882*	-0.00549	-0.0000337**
	(0.00456)	(0.00431)	(0.0000154)
1.P_no_deposits1	-0.201	0.0759	0.000263
	(0.133)	(0.224)	(0.00144)
1.P_no_deposits1#c.outside_o~p	0.00911*	0.00519	0.0000292
	(0.00488)	(0.00548)	(0.0000178)
O_net3_oil_imp_c1	4.92e-12***	5.12e-12**	2.03e-14**
	(1.42e-12)	(2.43e-12)	(9.81e-15)
2.rlregion	0.581***	0.737***	0.00775***
	(0.169)	(0.252)	(0.00256)
3.rlregion	-0.153	-0.182	0.00183
	(0.190)	(0.294)	(0.00183)
4.rlregion	0.766***	0.792***	0.00486**
	(0.178)	(0.263)	(0.00229)
5.rlregion	0.389*	0.405	0.00412**
	(0.211)	(0.289)	(0.00206)
_cons	-0.803	-2.935**	0.0382***
	(1.002)	(1.251)	(0.00887)
N	99613	99613	99613

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #12

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.0115**	-0.0100	-0.0000508***
	(0.00544)	(0.00679)	(0.0000187)
1.L_no_disc_onshore1	-0.0935	0.206	0.00137
	(0.116)	(0.197)	(0.00142)
1.L_no_disc_onshore1#c.outsi~l	0.00829	0.00637	0.0000427**
	(0.00611)	(0.00767)	(0.0000214)
O_net3_oil_imp_c1	5.07e-12***	5.76e-12**	2.42e-14***
	(1.53e-12)	(2.46e-12)	(9.16e-15)
2.rlregion	0.587***	0.763***	0.00809***
	(0.161)	(0.261)	(0.00244)
3.rlregion	-0.172	-0.234	0.00166
	(0.178)	(0.291)	(0.00168)
4.rlregion	0.766***	0.833***	0.00527**
	(0.169)	(0.271)	(0.00213)
5.rlregion	0.381*	0.375	0.00397**
	(0.195)	(0.287)	(0.00191)
_cons	-0.830	-2.961**	0.0389***
	(0.978)	(1.348)	(0.00862)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #13

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.0130**	-0.0120	-0.0000678***
	(0.00616)	(0.00847)	(0.0000201)
1.L_no_prod_onshore1	-0.226**	-0.0198	0.000453
	(0.106)	(0.174)	(0.00131)
1.L_no_prod_onshore1#c.outsi~l	0.0107	0.00977	0.0000642***
	(0.00657)	(0.00892)	(0.0000227)
O_net3_oil_imp_c1	5.18e-12***	5.89e-12**	2.50e-14***
	(1.53e-12)	(2.50e-12)	(9.19e-15)
2.rlregion	0.571***	0.726***	0.00795***
	(0.159)	(0.259)	(0.00244)
3.rlregion	-0.118	-0.145	0.00189
	(0.176)	(0.284)	(0.00167)
4.rlregion	0.763***	0.819***	0.00526**
	(0.168)	(0.271)	(0.00213)
5.rlregion	0.385**	0.401	0.00401**
	(0.193)	(0.283)	(0.00190)
_cons	-0.719	-2.822**	0.0391***
	(0.978)	(1.355)	(0.00867)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #14

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.0158**	-0.0157*	-0.000152***
	(0.00712)	(0.00936)	(0.0000552)
1.L_no_disc_offshore1	-0.449***	-0.349**	-0.00281**
	(0.0956)	(0.142)	(0.00132)
1.L_no_disc_offshore1#c.outs~i	0.0138*	0.0146	0.000154***
	(0.00735)	(0.00955)	(0.0000567)
O_net3_oil_imp_c1	5.33e-12***	6.03e-12***	2.86e-14***
	(1.36e-12)	(2.33e-12)	(9.20e-15)
2.rlregion	0.536***	0.687***	0.00755***
	(0.155)	(0.261)	(0.00246)
3.rlregion	-0.165	-0.110	0.00219
	(0.172)	(0.267)	(0.00159)
4.rlregion	0.679***	0.755***	0.00488**
	(0.164)	(0.278)	(0.00214)
5.rlregion	0.372**	0.402	0.00404**
	(0.190)	(0.281)	(0.00190)
_cons	-0.317	-2.407*	0.0421***
	(0.965)	(1.368)	(0.00896)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #15

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.00868	-0.0111	-0.000121*
	(0.00810)	(0.0114)	(0.0000663)
1.L_no_prod_offshore1	-0.222**	-0.205	-0.00164
	(0.0985)	(0.131)	(0.00137)
1.L_no_prod_offshore1#c.outs~i	0.00364	0.00836	0.000116*
	(0.00850)	(0.0118)	(0.0000677)
O_net3_oil_imp_c1	4.31e-12***	5.29e-12**	2.31e-14**
	(1.58e-12)	(2.60e-12)	(9.40e-15)
2.rlregion	0.554***	0.695***	0.00754***
	(0.157)	(0.259)	(0.00246)
3.rlregion	-0.198	-0.139	0.00200
	(0.174)	(0.266)	(0.00158)
4.rlregion	0.739***	0.794***	0.00507**
	(0.166)	(0.271)	(0.00213)
5.rlregion	0.381*	0.406	0.00393**
	(0.196)	(0.283)	(0.00189)
_cons	-0.603	-2.606*	0.0407***
	(0.973)	(1.359)	(0.00912)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #16

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.0126**	-0.0102	-0.0000514***
	(0.00541)	(0.00660)	(0.0000180)
1.L_no_disc_all1	-0.119	0.238	0.00130
	(0.121)	(0.213)	(0.00156)
1.L_no_disc_all1#c.outside_o~p	0.0100*	0.00640	0.0000438**
	(0.00597)	(0.00755)	(0.0000211)
O_net3_oil_imp_c1	5.16e-12***	5.75e-12**	2.38e-14***
	(1.52e-12)	(2.46e-12)	(9.10e-15)
2.rlregion	0.584***	0.758***	0.00799***
	(0.160)	(0.259)	(0.00244)
3.rlregion	-0.165	-0.252	0.00166
	(0.179)	(0.298)	(0.00170)
4.rlregion	0.764***	0.828***	0.00519**
	(0.169)	(0.270)	(0.00214)
5.rlregion	0.384*	0.355	0.00384**
	(0.197)	(0.291)	(0.00195)
_cons	-0.816	-2.989**	0.0387***
	(0.978)	(1.347)	(0.00863)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #17

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.00884*	-0.00681	-0.0000329**
	(0.00492)	(0.00525)	(0.0000144)
1.L_no_disc_full_on1	-0.0965	0.213	0.00114
	(0.129)	(0.232)	(0.00145)
1.L_no_disc_full_on1#c.outsi~l	0.00548	0.00298	0.0000259
	(0.00610)	(0.00699)	(0.0000174)
O_net3_oil_imp_c1	4.85e-12***	5.52e-12**	2.25e-14**
	(1.53e-12)	(2.42e-12)	(9.17e-15)
2.rlregion	0.587***	0.768***	0.00806***
	(0.161)	(0.258)	(0.00243)
3.rlregion	-0.162	-0.246	0.00168
	(0.183)	(0.309)	(0.00170)
4.rlregion	0.769***	0.823***	0.00522**
	(0.169)	(0.269)	(0.00214)
5.rlregion	0.388**	0.366	0.00390**
	(0.197)	(0.293)	(0.00193)
_cons	-0.836	-2.942**	0.0390***
	(0.979)	(1.340)	(0.00863)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #18

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.0125*	-0.0115	-0.0000432*
	(0.00655)	(0.00836)	(0.0000227)
1.L_no_disc_full_off1	-0.393***	-0.324**	-0.00167
	(0.0982)	(0.152)	(0.00125)
1.L_no_disc_full_off1#c.outs~i	0.0105	0.0107	0.0000423*
	(0.00684)	(0.00854)	(0.0000250)
O_net3_oil_imp_c1	5.17e-12***	5.80e-12**	2.12e-14**
	(1.39e-12)	(2.32e-12)	(8.96e-15)
2.rlregion	0.584***	0.721***	0.00781***
	(0.158)	(0.263)	(0.00248)
3.rlregion	-0.141	-0.0906	0.00225
	(0.175)	(0.270)	(0.00160)
4.rlregion	0.673***	0.741***	0.00498**
	(0.164)	(0.272)	(0.00213)
5.rlregion	0.370*	0.399	0.00411**
	(0.194)	(0.284)	(0.00191)
_cons	-0.574	-2.588*	0.0408***
	(0.967)	(1.370)	(0.00896)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #19

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00965*	-0.00723	-0.0000356**
	(0.00495)	(0.00509)	(0.0000143)
1.L_no_disc_full_all1	-0.303**	-0.123	-0.000573
	(0.128)	(0.236)	(0.00150)
1.L_no_disc_full_all1#c.outs~i	0.00878	0.00647	0.0000357**
	(0.00554)	(0.00600)	(0.0000172)
O_net3_oil_imp_c1	4.93e-12***	5.52e-12**	2.13e-14**
	(1.51e-12)	(2.40e-12)	(9.12e-15)
2.rlregion	0.571***	0.723***	0.00781***
	(0.160)	(0.258)	(0.00244)
3.rlregion	-0.0808	-0.0935	0.00218
	(0.182)	(0.309)	(0.00172)
4.rlregion	0.758***	0.815***	0.00518**
	(0.168)	(0.268)	(0.00214)
5.rlregion	0.424**	0.423	0.00407**
	(0.198)	(0.298)	(0.00196)
_cons	-0.774	-2.795**	0.0393***
	(0.979)	(1.366)	(0.00866)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #20

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.0135**	-0.0114	-0.0000634***
	(0.00576)	(0.00717)	(0.0000199)
1.L_no_prod_all1	-0.229**	0.00562	0.000341
	(0.109)	(0.182)	(0.00138)
1.L_no_prod_all1#c.outside_o~p	0.0116*	0.00939	0.0000602***
	(0.00615)	(0.00774)	(0.0000228)
O_net3_oil_imp_c1	5.24e-12***	5.85e-12**	2.43e-14***
	(1.51e-12)	(2.46e-12)	(9.15e-15)
2.rlregion	0.574***	0.734***	0.00792***
	(0.159)	(0.260)	(0.00244)
3.rlregion	-0.119	-0.156	0.00191
	(0.176)	(0.288)	(0.00168)
4.rlregion	0.764***	0.818***	0.00520**
	(0.168)	(0.270)	(0.00214)
5.rlregion	0.390**	0.395	0.00394**
	(0.194)	(0.285)	(0.00192)
_cons	-0.710	-2.853**	0.0390***
	(0.978)	(1.355)	(0.00868)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #21

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00815*	-0.00521	-0.0000299**
	(0.00474)	(0.00457)	(0.0000144)
1.L_no_prod_full_on1	0.00897	0.326	0.00164
	(0.130)	(0.237)	(0.00147)
1.L_no_prod_full_on1#c.outsi~l	0.00332	-0.00105	0.0000200
	(0.00630)	(0.00726)	(0.0000175)
O_net3_oil_imp_c1	4.81e-12***	5.43e-12**	2.27e-14**
	(1.53e-12)	(2.41e-12)	(9.18e-15)
2.rlregion	0.601***	0.792***	0.00816***
	(0.162)	(0.258)	(0.00243)
3.rlregion	-0.209	-0.293	0.00153
	(0.182)	(0.309)	(0.00170)
4.rlregion	0.770***	0.820***	0.00521**
	(0.168)	(0.268)	(0.00214)
5.rlregion	0.375*	0.366	0.00390**
	(0.197)	(0.290)	(0.00192)
_cons	-0.885	-2.993**	0.0388***
	(0.978)	(1.335)	(0.00862)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #22

	(1) init	(2) rev_b	(3) rev_r
main			
outside_oil_dep_c1	-0.00373	-0.00526	-0.0000399
	(0.00396)	(0.00539)	(0.0000258)
1.L_no_prod_full_off1	-0.322***	-0.248	-0.00111
	(0.100)	(0.153)	(0.00124)
1.L_no_prod_full_off1#c.outs~i	-0.00107	0.00334	0.0000370
	(0.00518)	(0.00606)	(0.0000273)
O_net3_oil_imp_c1	4.51e-12***	5.34e-12**	2.12e-14**
	(1.37e-12)	(2.29e-12)	(9.00e-15)
2.rlregion	0.603***	0.736***	0.00784***
	(0.159)	(0.264)	(0.00248)
3.rlregion	-0.118	-0.0809	0.00221
	(0.178)	(0.274)	(0.00160)
4.rlregion	0.700***	0.767***	0.00507**
	(0.164)	(0.270)	(0.00213)
5.rlregion	0.400**	0.418	0.00408**
	(0.197)	(0.287)	(0.00191)
_cons	-0.621	-2.641*	0.0401***
	(0.966)	(1.359)	(0.00890)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #23

	(1)	(2)	(3)
	init	rev_b	rev_r
main			
outside_oil_dep_c1	-0.00910*	-0.00570	-0.0000332**
	(0.00480)	(0.00447)	(0.0000143)
1.L_no_prod_full_all1	-0.165	0.0106	-0.0000867
	(0.135)	(0.254)	(0.00156)
1.L_no_prod_full_all1#c.outs~i	0.00688	0.00292	0.0000308*
	(0.00584)	(0.00640)	(0.0000175)
O_net3_oil_imp_c1	4.88e-12***	5.40e-12**	2.14e-14**
	(1.52e-12)	(2.40e-12)	(9.13e-15)
2.rlregion	0.582***	0.737***	0.00786***
	(0.160)	(0.257)	(0.00244)
3.rlregion	-0.138	-0.146	0.00205
	(0.182)	(0.312)	(0.00171)
4.rlregion	0.765***	0.821***	0.00519**
	(0.168)	(0.268)	(0.00214)
5.rlregion	0.399**	0.404	0.00401**
	(0.198)	(0.297)	(0.00196)
_cons	-0.826	-2.836**	0.0392***
	(0.979)	(1.360)	(0.00865)
N	98308	98308	98308

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #1

	(1)
	init
init	
O_in_degree_c1	0.00452
	(0.00432)
outside_oil_dep_c1	-0.00478
	(0.00524)
c.O_in_degree_c1#c.outside_o~p	-0.0000897
	(0.000189)
O_net3_oil_imp_c1	3.85e-12***
	(1.38e-12)
2.rlregion	0.531***
	(0.168)
3.rlregion	-0.222
	(0.176)
4.rlregion	0.683***
	(0.176)
5.rlregion	0.416**
	(0.201)
_cons	-1.220
	(1.027)
N	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	0.851
	(0.564)
outside_oil_dep_c1	0.0326*
	(0.0194)
c.O_closeness_c1#c.outside_o~p	-0.0652**
	(0.0331)
O_net3_oil_imp_c1	5.22e-12***
	(1.45e-12)
2.rlregion	0.526***
	(0.168)
3.rlregion	-0.203
	(0.176)
4.rlregion	0.701***
	(0.172)
5.rlregion	0.407**
	(0.203)
_cons	-1.680
	(1.084)
N	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	-0.135
	(0.494)
outside_oil_dep_c1	-0.0171
	(0.0297)
c.O_closeness_nosym_c1#c.out~o	0.0207
	(0.0517)
O_net3_oil_imp_c1	4.55e-12***
	(1.29e-12)
2.rlregion	0.518***
	(0.170)
3.rlregion	-0.229
	(0.178)
4.rlregion	0.698***
	(0.175)
5.rlregion	0.409**
	(0.204)
_cons	-1.177
	(1.064)
N	97061

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	0.00585
	(0.00487)
outside_oil_dep_c1	-0.0130*
	(0.00709)
c.O_in_degree_c1#c.outside_o~p	0.0000268
	(0.000213)
O_net3_oil_imp_c1	6.94e-12***
	(1.95e-12)
2.rlregion	1.029***
	(0.165)
3.rlregion	0.173
	(0.172)
4.rlregion	0.921***
	(0.173)
5.rlregion	0.535***
	(0.193)
_cons	-0.910
	(0.767)
N	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	2.772***
	(0.818)
outside_oil_dep_c1	0.0184
	(0.0245)
c.O_closeness_c1#c.outside_o~p	-0.0520
	(0.0399)
O_net3_oil_imp_c1	6.76e-12***
	(2.00e-12)
2.rlregion	1.066***
	(0.164)
3.rlregion	0.341**
	(0.173)
4.rlregion	1.009***
	(0.166)
5.rlregion	0.621***
	(0.197)
_cons	-2.272**
	(0.919)
N	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	0.501
	(0.505)
outside_oil_dep_c1	-0.0490
	(0.0348)
c.O_closeness_nosym_c1#c.out~o	0.0664
	(0.0586)
O_net3_oil_imp_c1	7.76e-12***
	(2.01e-12)
2.rlregion	1.026***
	(0.167)
3.rlregion	0.167
	(0.173)
4.rlregion	0.936***
	(0.172)
5.rlregion	0.522***
	(0.196)
_cons	-1.130
	(0.821)
N	758216

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #1

	(1)
	init
init	
O_in_degree_exp_c2	0.000724
	(0.00151)
2.rlregion	0.543***
	(0.173)
3.rlregion	-0.180
	(0.182)
4.rlregion	0.745***
	(0.177)
5.rlregion	0.443**
	(0.206)
_cons	-1.437
	(1.067)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #2

	(1)
	init
init	
H_oil_reserves_exp_c2	8.96e-11***
	(2.63e-11)
2.rlregion	0.495**
	(0.192)
3.rlregion	-0.315
	(0.215)
4.rlregion	0.590***
	(0.208)
5.rlregion	0.490**
	(0.232)
_cons	-0.219
	(1.119)
N	60892

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #3

	(1)
	init
init	
H_oil_prod_exp_c2	1.16e-08***
	(3.45e-09)
2.rlregion	0.473**
	(0.187)
3.rlregion	-0.303
	(0.214)
4.rlregion	0.565***
	(0.208)
5.rlregion	0.459**
	(0.223)
_cons	-0.0751
	(1.080)
N	60892

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #4

	(1)
	init
init	
R_oil_prod_exp_c2	5.36e-08***
	(1.08e-08)
2.rlregion	0.529***
	(0.170)
3.rlregion	-0.174
	(0.183)
4.rlregion	0.756***
	(0.173)
5.rlregion	0.485**
	(0.204)
_cons	-1.545
	(1.007)
N	91361

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #5

	(1)
	init
init	
R_oil_val_prod_exp_c2	1.18e-10***
	(2.06e-11)
2.rlregion	0.543***
	(0.171)
3.rlregion	-0.192
	(0.183)
4.rlregion	0.747***
	(0.174)
5.rlregion	0.481**
	(0.205)
_cons	-1.557
	(1.010)
N	91361

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #6

	(1)
	init
init	
P_oil_dep_total_exp_c2	0.00505***
	(0.00181)
2.rlregion	0.571***
	(0.173)
3.rlregion	-0.208
	(0.185)
4.rlregion	0.731***
	(0.174)
5.rlregion	0.476**
	(0.207)
_cons	-1.541
	(1.030)
N	88217

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #7

	(1)
	init
init	
majpow_exp2	0.145
	(0.0950)
2.rlregion	0.521***
	(0.173)
3.rlregion	-0.139
	(0.187)
4.rlregion	0.752***
	(0.177)
5.rlregion	0.471**
	(0.208)
_cons	-1.453
	(1.073)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #8

	(1)
	init
init	
majpow_count_exp_c2	0.0503**
	(0.0228)
2.rlregion	0.517***
	(0.172)
3.rlregion	-0.122
	(0.187)
4.rlregion	0.765***
	(0.177)
5.rlregion	0.486**
	(0.208)
_cons	-1.524
	(1.066)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #9

	(1)
	init
init	
majpow_exp2	0.0627
	(0.122)
O_in_degree_exp_c2	-0.00145
	(0.00262)
c.majpow_exp2#c.O_in_degree_~2	0.00326
	(0.00262)
2.rlregion	0.531***
	(0.173)
3.rlregion	-0.127
	(0.188)
4.rlregion	0.766***
	(0.176)
5.rlregion	0.481**
	(0.211)
_cons	-1.484
	(1.066)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #10

	(1)
	init
init	
majpow_count_exp_c2	0.0529
	(0.0328)
O_in_degree_exp_c2	0.00102
	(0.00208)
c.majpow_count_exp_c2#c.O_in~e	-0.0000533
	(0.000501)
2.rlregion	0.519***
	(0.174)
3.rlregion	-0.103
	(0.186)
4.rlregion	0.771***
	(0.177)
5.rlregion	0.501**
	(0.209)
_cons	-1.543
	(1.067)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #11

	(1)
	init
init	
R_prod_agg_total_c2	1.13e-10**
	(5.35e-11)
2.rlregion	0.539***
	(0.171)
3.rlregion	-0.139
	(0.179)
4.rlregion	0.729***
	(0.174)
5.rlregion	0.474**
	(0.199)
_cons	-1.450
	(1.075)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #12

	(1)
	init
init	
H_reserve_agg_total_c2	0.000389**
	(0.000166)
2.rlregion	0.524***
	(0.175)
3.rlregion	-0.165
	(0.183)
4.rlregion	0.734***
	(0.178)
5.rlregion	0.447**
	(0.203)
_cons	-1.463
	(1.080)
N	100211

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2.2: Only Originator

Stage 2 - Table 5.2 - #1

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00305	0.000101	0.000876	0.00000951
	(0.00264)	(0.00121)	(0.00120)	(0.00000772)
O_net3_oil_imp_c1	5.65e-12***	1.40e-12	2.89e-12	2.75e-14*
	(1.52e-12)	(1.35e-12)	(1.86e-12)	(1.50e-14)
_cons	-3.599***	2.289*	0.768	0.0575***
	(0.987)	(1.283)	(1.470)	(0.0153)
N	99433	79225	70823	99433

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #2

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
H_no_oil_reserves1	-0.631***	-0.330**	-0.580***	-0.00816***
	(0.0987)	(0.146)	(0.194)	(0.00225)
O_net3_oil_imp_c1	1.13e-11	4.85e-12	6.37e-12	1.15e-13
	(7.61e-12)	(7.16e-12)	(7.69e-12)	(1.14e-13)
_cons	-1.329	3.243**	1.792	0.0592***
	(1.087)	(1.342)	(1.589)	(0.0189)
N	70230	54745	47983	70230

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #3

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
H_no_oil_prod1	-0.329***	-0.160	0.236	0.00489
	(0.112)	(0.182)	(0.257)	(0.00318)
O_net3_oil_imp_c1	1.21e-11	4.74e-12	5.07e-12	6.79e-14
	(8.96e-12)	(7.20e-12)	(7.96e-12)	(1.12e-13)
_cons	-2.223**	3.075**	1.383	0.0552***
	(1.064)	(1.356)	(1.598)	(0.0188)
N	70230	54745	47983	70230

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00174	0.0126	0.00106	-0.0000837
	(0.00661)	(0.0135)	(0.0143)	(0.0000664)
1.H_no_oil_reserves1	-0.647***	-0.272*	-0.568***	-0.00860***
	(0.105)	(0.159)	(0.206)	(0.00241)
1.H_no_oil_reserves1#c.outsi~l	0.000627	-0.0114	0.000725	0.000143**
	(0.00715)	(0.0131)	(0.0140)	(0.0000689)
O_net3_oil_imp_c1	1.39e-11*	2.13e-12	5.98e-12	1.30e-13
	(7.76e-12)	(7.90e-12)	(8.08e-12)	(1.16e-13)
_cons	-1.307	3.080**	1.633	0.0565***
	(1.069)	(1.345)	(1.602)	(0.0190)
N	68917	53682	47003	68917

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #5

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00454	-0.000849	-0.00599	-0.00000705
	(0.00550)	(0.00215)	(0.00921)	(0.0000263)
1.H_no_oil_prod1	-0.350***	-0.194	0.172	0.00384
	(0.121)	(0.184)	(0.256)	(0.00335)
1.H_no_oil_prod1#c.outside_o~p	0.00317	0.00591**	0.0121	0.000109***
	(0.00660)	(0.00260)	(0.00925)	(0.0000381)
O_net3_oil_imp_c1	1.55e-11*	5.00e-12	6.39e-12	7.02e-14
	(8.98e-12)	(7.32e-12)	(8.16e-12)	(1.14e-13)
_cons	-2.256**	2.975**	1.233	0.0526***
	(1.041)	(1.356)	(1.608)	(0.0189)
N	68917	53682	47003	68917

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #6

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
R_no_oil_prod1	-0.440***	-0.351	-0.227	0.000894
	(0.113)	(0.246)	(0.407)	(0.00366)
O_net3_oil_imp_c1	5.22e-12***	1.40e-12	2.92e-12	2.84e-14*
	(1.56e-12)	(1.34e-12)	(1.87e-12)	(1.49e-14)
_cons	-3.327***	2.502*	1.083	0.0579***
	(0.977)	(1.288)	(1.491)	(0.0152)
N	102570	81972	73204	102570

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #7

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.00635	-0.00253	-0.00318	-0.0000126
	(0.00490)	(0.00278)	(0.00375)	(0.0000197)
1.R_no_oil_prod1	-0.486***	-0.373	-0.261	0.000542
	(0.118)	(0.245)	(0.410)	(0.00375)
1.R_no_oil_prod1#c.outside_o~p	0.00756	0.00414	0.00625	0.0000299
	(0.00512)	(0.00298)	(0.00391)	(0.0000207)
O_net3_oil_imp_c1	5.89e-12***	1.57e-12	3.14e-12*	2.89e-14*
	(1.49e-12)	(1.36e-12)	(1.88e-12)	(1.50e-14)
_cons	-3.360***	2.371*	0.828	0.0574***
	(0.963)	(1.285)	(1.491)	(0.0154)
N	99422	79225	70823	99422

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #8

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
W_no_oil_rent1	-0.350***	-0.137	-0.164	0.000728
	(0.106)	(0.244)	(0.325)	(0.00254)
O_net3_oil_imp_c1	5.35e-12***	7.32e-13	2.20e-12	1.09e-14
	(1.32e-12)	(1.42e-12)	(2.06e-12)	(1.53e-14)
_cons	-3.299***	2.359	2.534	0.0686***
	(1.079)	(1.491)	(1.670)	(0.0158)
N	76870	55665	48675	76870

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00676	-0.000405	-0.00713	-0.000000561
	(0.00515)	(0.00551)	(0.0111)	(0.0000183)
1.W_no_oil_rent1	-0.365***	-0.136	-0.273	0.000761
	(0.117)	(0.252)	(0.346)	(0.00265)
1.W_no_oil_rent1#c.outside_o~p	0.00554	0.0000817	0.00876	-0.00000167
	(0.00597)	(0.00620)	(0.0112)	(0.0000188)
O_net3_oil_imp_c1	5.85e-12***	7.52e-13	2.55e-12	1.09e-14
	(1.37e-12)	(1.46e-12)	(2.16e-12)	(1.56e-14)
_cons	-3.279***	2.360	2.585	0.0686***
	(1.095)	(1.491)	(1.676)	(0.0159)
N	76870	55665	48675	76870

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
P_no_deposits1	-0.338***	-0.338	-0.0205	0.00125
	(0.124)	(0.246)	(0.287)	(0.00231)
O_net3_oil_imp_c1	5.33e-12***	1.40e-12	2.94e-12	2.82e-14*
	(1.51e-12)	(1.34e-12)	(1.85e-12)	(1.51e-14)
_cons	-3.516***	2.293*	0.765	0.0575***
	(0.957)	(1.283)	(1.470)	(0.0153)
N	99433	79225	70823	99433

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #11

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00627	-0.00110	-0.000898	0.00000580
	(0.00460)	(0.00177)	(0.00172)	(0.0000197)
1.P_no_deposits1	-0.373***	-0.359	-0.0595	0.00119
	(0.130)	(0.248)	(0.287)	(0.00234)
1.P_no_deposits1#c.outside_o~p	0.00725	0.00249	0.00377*	0.00000507
	(0.00488)	(0.00217)	(0.00215)	(0.0000201)
O_net3_oil_imp_c1	5.81e-12***	1.46e-12	2.99e-12	2.80e-14*
	(1.51e-12)	(1.35e-12)	(1.86e-12)	(1.50e-14)
_cons	-3.511***	2.311*	0.788	0.0575***
	(0.967)	(1.283)	(1.471)	(0.0153)
N	99433	79225	70823	99433

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00738	0.0000204	-0.00241	0.0000189
	(0.00538)	(0.00526)	(0.00757)	(0.0000195)
1.L_no_disc_onshore1	-0.297**	-0.181	0.0273	0.00339
	(0.116)	(0.316)	(0.431)	(0.00372)
1.L_no_disc_onshore1#c.outsi~l	0.00556	-0.000649	0.00306	-0.0000105
	(0.00610)	(0.00560)	(0.00768)	(0.0000205)
O_net3_oil_imp_c1	5.75e-12***	1.93e-12	3.71e-12*	3.01e-14**
	(1.63e-12)	(1.36e-12)	(1.96e-12)	(1.49e-14)
_cons	-3.480***	1.975	0.449	0.0537***
	(0.994)	(1.331)	(1.562)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #13

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00809	-0.000225	-0.00605	0.00000442
	(0.00601)	(0.00544)	(0.00986)	(0.0000190)
1.L_no_prod_onshore1	-0.370***	-0.359*	-0.158	0.00413
	(0.109)	(0.216)	(0.280)	(0.00326)
1.L_no_prod_onshore1#c.outsi~l	0.00691	-0.000240	0.00686	0.00000626
	(0.00648)	(0.00574)	(0.00991)	(0.0000199)
O_net3_oil_imp_c1	5.80e-12***	1.96e-12	3.92e-12*	3.09e-14**
	(1.62e-12)	(1.37e-12)	(2.00e-12)	(1.49e-14)
_cons	-3.384***	2.003	0.484	0.0535***
	(0.993)	(1.332)	(1.564)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #14

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0145**	-0.00963	-0.0105	-0.0000133
	(0.00721)	(0.0101)	(0.0131)	(0.0000682)
1.L_no_disc_offshore1	-0.626***	-0.198	-0.190	-0.00607*
	(0.105)	(0.196)	(0.383)	(0.00351)
1.L_no_disc_offshore1#c.outs~i	0.0140*	0.00951	0.0113	0.0000257
	(0.00738)	(0.0101)	(0.0131)	(0.0000683)
O_net3_oil_imp_c1	6.12e-12***	2.40e-12*	4.15e-12**	3.34e-14**
	(1.47e-12)	(1.45e-12)	(2.08e-12)	(1.46e-14)
_cons	-2.733***	2.040	0.509	0.0554***
	(1.006)	(1.326)	(1.579)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #15

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00389	-0.00426	-0.00614	-0.0000228
	(0.00751)	(0.0101)	(0.0140)	(0.0000736)
1.L_no_prod_offshore1	-0.363***	-0.0598	-0.0550	-0.00340
	(0.107)	(0.149)	(0.216)	(0.00241)
1.L_no_prod_offshore1#c.outs~i	0.0000719	0.00384	0.00672	0.0000354
	(0.00795)	(0.0101)	(0.0140)	(0.0000739)
O_net3_oil_imp_c1	4.73e-12***	1.99e-12	3.77e-12*	2.53e-14*
	(1.72e-12)	(1.45e-12)	(2.07e-12)	(1.46e-14)
_cons	-3.111***	2.010	0.478	0.0565***
	(0.994)	(1.323)	(1.584)	(0.0157)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #16

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00921*	-0.000813	-0.00126	0.0000217
	(0.00549)	(0.00585)	(0.00709)	(0.0000211)
1.L_no_disc_all1	-0.334***	0.0402	0.637	0.00513
	(0.121)	(0.229)	(0.482)	(0.00517)
1.L_no_disc_all1#c.outside_o~p	0.00832	0.000261	0.00156	-0.0000144
	(0.00599)	(0.00609)	(0.00719)	(0.0000222)
O_net3_oil_imp_c1	5.93e-12***	1.97e-12	3.62e-12*	2.97e-14**
	(1.61e-12)	(1.37e-12)	(1.95e-12)	(1.49e-14)
_cons	-3.464***	1.961	0.398	0.0534***
	(0.998)	(1.332)	(1.564)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00531	-0.00192	-0.00228	0.000000432
	(0.00455)	(0.00232)	(0.00255)	(0.0000168)
1.L_no_disc_full_on1	-0.335***	-0.379	-0.0189	0.00106
	(0.124)	(0.362)	(0.498)	(0.00455)
1.L_no_disc_full_on1#c.outsi~l	0.00337	0.00282	0.00518*	0.0000140
	(0.00578)	(0.00272)	(0.00285)	(0.0000177)
O_net3_oil_imp_c1	5.58e-12***	2.03e-12	3.71e-12*	3.14e-14**
	(1.62e-12)	(1.34e-12)	(1.91e-12)	(1.50e-14)
_cons	-3.518***	2.009	0.468	0.0540***
	(0.987)	(1.332)	(1.559)	(0.0150)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #18

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0121*	-0.00859	-0.00851	-0.0000164
	(0.00678)	(0.00744)	(0.00926)	(0.0000288)
1.L_no_disc_full_off1	-0.613***	-0.177	0.245	-0.00129
	(0.112)	(0.287)	(0.479)	(0.00570)
1.L_no_disc_full_off1#c.outs~i	0.0122*	0.00985	0.0110	0.0000314
	(0.00692)	(0.00744)	(0.00925)	(0.0000292)
O_net3_oil_imp_c1	6.00e-12***	2.36e-12*	3.99e-12**	3.24e-14**
	(1.48e-12)	(1.40e-12)	(2.00e-12)	(1.49e-14)
_cons	-2.930***	2.039	0.461	0.0543***
	(1.001)	(1.327)	(1.573)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #19

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00673	-0.00219	-0.00210	0.00000344
	(0.00484)	(0.00247)	(0.00246)	(0.0000176)
1.L_no_disc_full_all1	-0.533***	0.00379	0.708	0.00346
	(0.125)	(0.279)	(0.612)	(0.00640)
1.L_no_disc_full_all1#c.outs~i	0.00722	0.00316	0.00473*	0.00000955
	(0.00520)	(0.00279)	(0.00270)	(0.0000185)
O_net3_oil_imp_c1	5.72e-12***	2.04e-12	3.66e-12*	3.09e-14**
	(1.59e-12)	(1.35e-12)	(1.91e-12)	(1.50e-14)
_cons	-3.497***	1.980	0.417	0.0537***
	(0.984)	(1.331)	(1.557)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #20

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00905	-0.000219	-0.00190	0.0000106
	(0.00570)	(0.00524)	(0.00753)	(0.0000213)
1.L_no_prod_all1	-0.386***	-0.0986	0.173	0.00396
	(0.113)	(0.217)	(0.355)	(0.00391)
1.L_no_prod_all1#c.outside_o~p	0.00821	-0.000363	0.00244	-0.000000941
	(0.00615)	(0.00552)	(0.00762)	(0.0000224)
O_net3_oil_imp_c1	5.91e-12***	1.95e-12	3.66e-12*	3.03e-14**
	(1.61e-12)	(1.37e-12)	(1.96e-12)	(1.49e-14)
_cons	-3.369***	1.980	0.417	0.0532***
	(0.997)	(1.330)	(1.578)	(0.0152)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #21

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00451	-0.00130	-0.00116	0.00000408
	(0.00428)	(0.00196)	(0.00189)	(0.0000172)
1.L_no_prod_full_on1	-0.261**	-0.137	-0.126	0.00190
	(0.126)	(0.305)	(0.538)	(0.00666)
1.L_no_prod_full_on1#c.outsi~l	0.00139	0.00171	0.00361	0.00000875
	(0.00595)	(0.00251)	(0.00232)	(0.0000183)
O_net3_oil_imp_c1	5.53e-12***	1.99e-12	3.65e-12*	3.11e-14**
	(1.62e-12)	(1.34e-12)	(1.91e-12)	(1.50e-14)
_cons	-3.542***	1.981	0.465	0.0540***
	(0.990)	(1.330)	(1.558)	(0.0150)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #22

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00279	-0.00137	-0.00272	-0.0000175
	(0.00414)	(0.00206)	(0.00287)	(0.0000292)
1.L_no_prod_full_off1	-0.555***	0.245	0.814	0.00466
	(0.113)	(0.371)	(0.514)	(0.00589)
1.L_no_prod_full_off1#c.outs~i	0.000679	0.00158	0.00521*	0.0000328
	(0.00500)	(0.00240)	(0.00299)	(0.0000295)
O_net3_oil_imp_c1	5.33e-12***	1.99e-12	3.69e-12*	3.19e-14**
	(1.45e-12)	(1.34e-12)	(1.91e-12)	(1.49e-14)
_cons	-3.012***	1.951	0.365	0.0534***
	(0.980)	(1.328)	(1.565)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #23

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00617	-0.00173	-0.00133	0.00000637
	(0.00466)	(0.00220)	(0.00202)	(0.0000183)
1.L_no_prod_full_all1	-0.454***	0.796	1.584*	0.00815
	(0.129)	(0.487)	(0.824)	(0.0114)
1.L_no_prod_full_all1#c.outs~i	0.00601	0.00214	0.00314	0.00000481
	(0.00527)	(0.00259)	(0.00235)	(0.0000198)
O_net3_oil_imp_c1	5.69e-12***	2.02e-12	3.65e-12*	3.08e-14**
	(1.60e-12)	(1.34e-12)	(1.91e-12)	(1.50e-14)
_cons	-3.528***	1.945	0.434	0.0535***
	(0.988)	(1.328)	(1.540)	(0.0151)
N	98146	76590	69029	98146

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #1

	(1)
	init
init	
O_in_degree_c1	0.00169
	(0.00448)
outside_oil_dep_c1	0.00959**
	(0.00394)
c.O_in_degree_c1#c.outside_o~p	-0.000436**
	(0.000206)
O_net3_oil_imp_c1	2.35e-12*
	(1.32e-12)
_cons	2.199*
	(1.267)
N	76769

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	-0.858
	(0.595)
outside_oil_dep_c1	0.0118
	(0.0195)
c.O_closeness_c1#c.outside_o~p	-0.0194
	(0.0335)
O_net3_oil_imp_c1	1.60e-12
	(1.41e-12)
_cons	2.950**
	(1.311)
N	76769

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	0.275
	(0.580)
outside_oil_dep_c1	0.0108
	(0.0237)
c.O_closeness_nosym_c1#c.out~o	-0.0201
	(0.0430)
O_net3_oil_imp_c1	1.40e-12
	(1.27e-12)
_cons	2.122*
	(1.278)
N	76769

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	0.00104
	(0.00462)
outside_oil_dep_c1	0.0118***
	(0.00410)
c.O_in_degree_c1#c.outside_o~p	-0.000572***
	(0.000220)
O_net3_oil_imp_c1	3.25e-12**
	(1.57e-12)
_cons	4.399***
	(1.077)
N	536749

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	-1.537***
	(0.565)
outside_oil_dep_c1	0.0161
	(0.0184)
c.O_closeness_c1#c.outside_o~p	-0.0266
	(0.0318)
O_net3_oil_imp_c1	2.09e-12
	(1.68e-12)
_cons	5.624***
	(1.150)
N	536749

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	0.588
	(0.527)
outside_oil_dep_c1	0.0297
	(0.0232)
c.O_closeness_nosym_c1#c.out~o	-0.0556
	(0.0427)
O_net3_oil_imp_c1	1.87e-12
	(1.55e-12)
_cons	4.157***
	(1.098)
N	536749

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #1

	(1)
	init
init	
O_in_degree_exp_c2	-0.00768***
	(0.00233)
_cons	2.815**
	(1.260)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #2

	(1)
	init
init	
H_oil_reserves_exp_c2	8.02e-11**
	(4.01e-11)
_cons	3.197**
	(1.323)
N	44544

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #3

	(1)
	init
init	
H_oil_prod_exp_c2	-2.08e-09
	(6.11e-09)
_cons	3.276**
	(1.352)
N	44544

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #4

	(1)
	init
init	
R_oil_prod_exp_c2	2.53e-08
	(1.88e-08)
_cons	2.466**
	(1.249)
N	70918

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #5

	(1)
	init
init	
R_oil_val_prod_exp_c2	1.06e-10***
	(3.56e-11)
_cons	2.444**
	(1.226)
N	70918

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #6

	(1)
	init
init	
P_oil_dep_total_exp_c2	-0.000322
	(0.00236)
_cons	2.664**
	(1.255)
N	68667

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #7

	(1)
	init
init	
majpow_exp2	0.0743
	(0.135)
_cons	2.490**
	(1.264)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #8

	(1)
	init
init	
majpow_count_exp_c2	-0.0378
	(0.0379)
_cons	2.545**
	(1.256)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #9

	(1)
	init
init	
majpow_exp2	0.00473
	(0.152)
O_in_degree_exp_c2	-0.0102***
	(0.00348)
c.majpow_exp2#c.O_in_degree_~2	0.00313
	(0.00303)
_cons	2.755**
	(1.261)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #10

	(1)
	init
init	
majpow_count_exp_c2	-0.0566
	(0.0440)
O_in_degree_exp_c2	-0.00949***
	(0.00320)
c.majpow_count_exp_c2#c.O_in~e	0.000737
	(0.000656)
_cons	2.829**
	(1.257)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #11

	(1)
	init
init	
R_prod_agg_total_c2	-1.10e-10
	(7.04e-11)
_cons	2.634**
	(1.262)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #12

	(1)
	init
init	
H_reserve_agg_total_c2	0.000364**
	(0.000171)
_cons	2.348*
	(1.255)
N	79516

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2.3: All On-going Dropped

Stage 2 - Table 5.2 - #1

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00438	-0.000466	0.000899	0.0000106
	(0.00282)	(0.00142)	(0.00121)	(0.00000758)
O_net3_oil_imp_c1	4.97e-12***	8.93e-13	3.20e-12*	2.32e-14**
	(1.51e-12)	(1.44e-12)	(1.77e-12)	(1.16e-14)
_cons	-1.591*	4.900***	1.913	0.0509***
	(0.899)	(0.983)	(1.411)	(0.0151)
N	99030	81925	71928	99030

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #2

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
H_no_oil_reserves1	-0.650***	-0.311**	-0.397**	-0.00575***
	(0.0942)	(0.145)	(0.191)	(0.00204)
O_net3_oil_imp_c1	4.27e-12	-1.58e-12	4.72e-13	3.12e-14
	(6.75e-12)	(6.63e-12)	(8.27e-12)	(7.48e-14)
_cons	0.756	6.019***	2.833*	0.0519***
	(0.882)	(1.009)	(1.533)	(0.0188)
N	69967	57376	48373	69967

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #3

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
H_no_oil_prod1	-0.368***	-0.185	0.0324	0.00363
	(0.104)	(0.161)	(0.228)	(0.00258)
O_net3_oil_imp_c1	4.23e-12	-1.64e-12	-3.20e-13	-2.98e-15
	(8.09e-12)	(6.71e-12)	(8.43e-12)	(7.39e-14)
_cons	-0.216	5.874***	2.592*	0.0491***
	(0.892)	(1.025)	(1.543)	(0.0186)
N	69967	57376	48373	69967

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #4

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00297	0.00666	0.00977	-0.0000458
	(0.00668)	(0.00958)	(0.0141)	(0.0000666)
1.H_no_oil_reserves1	-0.669***	-0.273*	-0.358*	-0.00622***
	(0.0999)	(0.153)	(0.203)	(0.00221)
1.H_no_oil_reserves1#c.outsi~l	0.00127	-0.00596	-0.00743	0.000114*
	(0.00719)	(0.00941)	(0.0138)	(0.0000688)
O_net3_oil_imp_c1	7.65e-12	-2.86e-12	-1.74e-12	3.42e-14
	(6.91e-12)	(6.91e-12)	(8.26e-12)	(7.71e-14)
_cons	0.773	5.885***	2.672*	0.0508***
	(0.878)	(1.012)	(1.543)	(0.0190)
N	68654	56293	47393	68654

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #5

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.00733	-0.00337	-0.00171	0.00000274
	(0.00634)	(0.00468)	(0.00337)	(0.0000250)
1.H_no_oil_prod1	-0.403***	-0.231	-0.0157	0.00257
	(0.113)	(0.163)	(0.225)	(0.00270)
1.H_no_oil_prod1#c.outside_o~p	0.00634	0.00744	0.00897**	0.000113***
	(0.00700)	(0.00485)	(0.00372)	(0.0000364)
O_net3_oil_imp_c1	8.90e-12	-7.51e-13	-4.92e-14	-7.72e-15
	(8.27e-12)	(6.89e-12)	(8.45e-12)	(7.52e-14)
_cons	-0.249	5.781***	2.469	0.0480**
	(0.884)	(1.025)	(1.548)	(0.0188)
N	68654	56293	47393	68654

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #6

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
R_no_oil_prod1	-0.489***	-0.376*	-0.442	-0.00207
	(0.108)	(0.222)	(0.303)	(0.00245)
O_net3_oil_imp_c1	4.36e-12***	8.54e-13	3.26e-12*	2.47e-14**
	(1.55e-12)	(1.43e-12)	(1.77e-12)	(1.16e-14)
_cons	-1.341	5.089***	2.203	0.0518***
	(0.883)	(0.984)	(1.407)	(0.0149)
N	102164	84691	74310	102164

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #7

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0104*	-0.00658	-0.00476	-0.0000142
	(0.00541)	(0.00514)	(0.00458)	(0.0000192)
1.R_no_oil_prod1	-0.546***	-0.424*	-0.491	-0.00249
	(0.112)	(0.225)	(0.301)	(0.00251)
1.R_no_oil_prod1#c.outside_o~p	0.0117**	0.00837	0.00827*	0.0000342*
	(0.00561)	(0.00520)	(0.00478)	(0.0000200)
O_net3_oil_imp_c1	5.45e-12***	1.26e-12	3.56e-12**	2.51e-14**
	(1.47e-12)	(1.46e-12)	(1.78e-12)	(1.17e-14)
_cons	-1.384	5.001***	2.018	0.0514***
	(0.875)	(0.990)	(1.415)	(0.0151)
N	99019	81925	71928	99019

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #8

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
W_no_oil_rent1	-0.388***	-0.191	0.117	0.000855
	(0.105)	(0.261)	(0.279)	(0.00235)
O_net3_oil_imp_c1	4.97e-12***	8.13e-13	2.78e-12	9.91e-15
	(1.30e-12)	(1.42e-12)	(1.91e-12)	(1.31e-14)
_cons	-1.886*	3.731***	2.148	0.0464***
	(1.074)	(1.272)	(1.662)	(0.0137)
N	76599	57865	49941	76599

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #9

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0105*	-0.0106	-0.00517	0.00000727
	(0.00546)	(0.00694)	(0.00924)	(0.0000176)
1.W_no_oil_rent1	-0.414***	-0.275	0.0255	0.000919
	(0.116)	(0.295)	(0.302)	(0.00245)
1.W_no_oil_rent1#c.outside_o~p	0.00890	0.00913	0.00738	-0.00000478
	(0.00627)	(0.00790)	(0.00940)	(0.0000179)
O_net3_oil_imp_c1	5.76e-12***	1.32e-12	3.03e-12	9.52e-15
	(1.35e-12)	(1.49e-12)	(1.99e-12)	(1.33e-14)
_cons	-1.821*	3.782***	2.194	0.0463***
	(1.092)	(1.276)	(1.664)	(0.0137)
N	76599	57865	49941	76599

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #10

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
P_no_deposits1	-0.394***	-0.458*	-0.167	0.000937
	(0.121)	(0.244)	(0.280)	(0.00178)
O_net3_oil_imp_c1	4.52e-12***	8.65e-13	3.26e-12*	2.39e-14**
	(1.48e-12)	(1.43e-12)	(1.76e-12)	(1.17e-14)
_cons	-1.570*	4.911***	1.911	0.0509***
	(0.875)	(0.983)	(1.411)	(0.0151)
N	99030	81925	71928	99030

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #11

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00973*	-0.00386	-0.00124	0.00000656
	(0.00500)	(0.00313)	(0.00187)	(0.0000202)
1.P_no_deposits1	-0.442***	-0.494**	-0.209	0.000865
	(0.126)	(0.245)	(0.282)	(0.00182)
1.P_no_deposits1#c.outside_o~p	0.0109**	0.00577*	0.00443*	0.00000558
	(0.00522)	(0.00329)	(0.00235)	(0.0000207)
O_net3_oil_imp_c1	5.30e-12***	1.07e-12	3.32e-12*	2.37e-14**
	(1.49e-12)	(1.44e-12)	(1.77e-12)	(1.17e-14)
_cons	-1.533*	4.938***	1.937	0.0509***
	(0.882)	(0.985)	(1.411)	(0.0151)
N	99030	81925	71928	99030

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #12

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0112**	-0.00661	-0.00264	0.0000204
	(0.00568)	(0.00668)	(0.00732)	(0.0000184)
1.L_no_disc_onshore1	-0.382***	-0.588**	0.0352	0.00223
	(0.110)	(0.293)	(0.367)	(0.00269)
1.L_no_disc_onshore1#c.outsi~l	0.00928	0.00608	0.00308	-0.0000117
	(0.00624)	(0.00682)	(0.00749)	(0.0000192)
O_net3_oil_imp_c1	5.32e-12***	1.79e-12	4.25e-12**	2.58e-14**
	(1.62e-12)	(1.48e-12)	(1.87e-12)	(1.15e-14)
_cons	-1.481*	4.484***	1.381	0.0465***
	(0.870)	(1.041)	(1.513)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #13

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.0121*	-0.00889	-0.00909	0.00000824
	(0.00647)	(0.00755)	(0.0104)	(0.0000179)
1.L_no_prod_onshore1	-0.463***	-0.587***	-0.241	0.00214
	(0.103)	(0.205)	(0.243)	(0.00266)
1.L_no_prod_onshore1#c.outsi~l	0.0109	0.00857	0.00985	0.00000263
	(0.00685)	(0.00763)	(0.0105)	(0.0000187)
O_net3_oil_imp_c1	5.39e-12***	1.93e-12	4.61e-12**	2.65e-14**
	(1.62e-12)	(1.49e-12)	(1.91e-12)	(1.15e-14)
_cons	-1.373	4.507***	1.438	0.0464***
	(0.866)	(1.045)	(1.516)	(0.0146)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #14

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.0166**	-0.0129	-0.0122	-0.0000489
	(0.00717)	(0.00970)	(0.0130)	(0.0000564)
1.L_no_disc_offshore1	-0.599***	-0.299	-0.416	-0.00809***
	(0.0993)	(0.191)	(0.283)	(0.00236)
1.L_no_disc_offshore1#c.outs~i	0.0148**	0.0121	0.0129	0.0000633
	(0.00741)	(0.00972)	(0.0130)	(0.0000565)
O_net3_oil_imp_c1	5.63e-12***	2.11e-12	4.80e-12**	3.14e-14***
	(1.46e-12)	(1.52e-12)	(1.97e-12)	(1.18e-14)
_cons	-0.735	4.504***	1.496	0.0487***
	(0.869)	(1.033)	(1.510)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #15

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.00776	-0.00813	-0.00573	-0.0000318
	(0.00779)	(0.0103)	(0.0140)	(0.0000621)
1.L_no_prod_offshore1	-0.340***	0.0576	0.0138	-0.00368*
	(0.102)	(0.138)	(0.186)	(0.00201)
1.L_no_prod_offshore1#c.outs~i	0.00243	0.00687	0.00603	0.0000451
	(0.00822)	(0.0103)	(0.0140)	(0.0000625)
O_net3_oil_imp_c1	4.31e-12**	2.02e-12	4.45e-12**	2.09e-14*
	(1.70e-12)	(1.50e-12)	(1.98e-12)	(1.19e-14)
_cons	-1.158	4.387***	1.379	0.0494***
	(0.869)	(1.033)	(1.520)	(0.0151)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #16

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.0128**	-0.00659	-0.00241	0.0000174
	(0.00571)	(0.00661)	(0.00708)	(0.0000181)
1.L_no_disc_all1	-0.404***	-0.154	0.217	0.000605
	(0.115)	(0.235)	(0.311)	(0.00264)
1.L_no_disc_all1#c.outside_o~p	0.0117*	0.00602	0.00278	-0.00000806
	(0.00615)	(0.00671)	(0.00723)	(0.0000188)
O_net3_oil_imp_c1	5.48e-12***	1.79e-12	4.23e-12**	2.60e-14**
	(1.61e-12)	(1.47e-12)	(1.86e-12)	(1.15e-14)
_cons	-1.467*	4.445***	1.365	0.0466***
	(0.871)	(1.040)	(1.514)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #17

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00888*	-0.00513	-0.00224	0.00000324
	(0.00515)	(0.00403)	(0.00262)	(0.0000175)
1.L_no_disc_full_on1	-0.414***	-0.680*	-0.122	0.000784
	(0.118)	(0.388)	(0.441)	(0.00310)
1.L_no_disc_full_on1#c.outsi~l	0.00726	0.00643	0.00495*	0.0000106
	(0.00599)	(0.00420)	(0.00293)	(0.0000181)
O_net3_oil_imp_c1	5.13e-12***	1.73e-12	4.24e-12**	2.69e-14**
	(1.62e-12)	(1.45e-12)	(1.84e-12)	(1.15e-14)
_cons	-1.540*	4.478***	1.407	0.0467***
	(0.870)	(1.037)	(1.512)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #18

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.0136**	-0.0108	-0.0105	-0.0000311
	(0.00670)	(0.00784)	(0.00988)	(0.0000273)
1.L_no_disc_full_off1	-0.557***	-0.330	-0.392	-0.00623**
	(0.105)	(0.258)	(0.321)	(0.00283)
1.L_no_disc_full_off1#c.outs~i	0.0121*	0.0113	0.0132	0.0000492*
	(0.00697)	(0.00787)	(0.00990)	(0.0000279)
O_net3_oil_imp_c1	5.47e-12***	2.01e-12	4.71e-12**	2.94e-14**
	(1.48e-12)	(1.49e-12)	(1.91e-12)	(1.16e-14)
_cons	-0.976	4.488***	1.484	0.0477***
	(0.872)	(1.034)	(1.509)	(0.0146)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #19

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.0101*	-0.00543	-0.00236	0.00000290
	(0.00524)	(0.00411)	(0.00269)	(0.0000174)
1.L_no_disc_full_all1	-0.605***	-0.00882	0.138	-0.000868
	(0.118)	(0.307)	(0.386)	(0.00293)
1.L_no_disc_full_all1#c.outs~i	0.0107*	0.00670	0.00507*	0.0000114
	(0.00552)	(0.00424)	(0.00297)	(0.0000180)
O_net3_oil_imp_c1	5.27e-12***	1.73e-12	4.24e-12**	2.70e-14**
	(1.59e-12)	(1.45e-12)	(1.83e-12)	(1.15e-14)
_cons	-1.530*	4.428***	1.385	0.0468***
	(0.866)	(1.037)	(1.512)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #20

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.0132**	-0.00762	-0.00466	0.00000917
	(0.00603)	(0.00690)	(0.00809)	(0.0000185)
1.L_no_prod_all1	-0.472***	-0.240	-0.0860	0.000457
	(0.106)	(0.214)	(0.233)	(0.00244)
1.L_no_prod_all1#c.outside_o~p	0.0123*	0.00711	0.00525	0.00000183
	(0.00639)	(0.00699)	(0.00821)	(0.0000194)
O_net3_oil_imp_c1	5.52e-12***	1.85e-12	4.36e-12**	2.65e-14**
	(1.60e-12)	(1.48e-12)	(1.88e-12)	(1.15e-14)
_cons	-1.355	4.473***	1.404	0.0466***
	(0.868)	(1.042)	(1.516)	(0.0146)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #21

	(1)	(2)	(3)	(4)
	no_fixed	init	rev_b	rev_r
main				
outside_oil_dep_c1	-0.00777	-0.00405	-0.00153	0.00000525
	(0.00487)	(0.00337)	(0.00214)	(0.0000178)
1.L_no_prod_full_on1	-0.334***	-0.428	-0.206	-0.00192
	(0.120)	(0.317)	(0.459)	(0.00430)
1.L_no_prod_full_on1#c.outsi~l	0.00491	0.00494	0.00395	0.00000800
	(0.00606)	(0.00360)	(0.00250)	(0.0000184)
O_net3_oil_imp_c1	5.05e-12***	1.65e-12	4.20e-12**	2.68e-14**
	(1.63e-12)	(1.45e-12)	(1.83e-12)	(1.15e-14)
_cons	-1.563*	4.440***	1.403	0.0468***
	(0.873)	(1.036)	(1.511)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #22

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00415	-0.00167	-0.00253	-0.0000281
	(0.00438)	(0.00216)	(0.00293)	(0.0000292)
1.L_no_prod_full_off1	-0.484***	0.278	0.386	0.000914
	(0.106)	(0.367)	(0.440)	(0.00389)
1.L_no_prod_full_off1#c.outs~i	-0.000139	0.000159	0.00478	0.0000461
	(0.00542)	(0.00323)	(0.00306)	(0.0000296)
O_net3_oil_imp_c1	4.77e-12***	1.52e-12	4.23e-12**	2.85e-14**
	(1.46e-12)	(1.44e-12)	(1.84e-12)	(1.16e-14)
_cons	-1.092	4.381***	1.349	0.0467***
	(0.864)	(1.033)	(1.507)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 2 - Table 5.2 - #23

	(1) no_fixed	(2) init	(3) rev_b	(4) rev_r
main				
outside_oil_dep_c1	-0.00931*	-0.00457	-0.00188	0.00000401
	(0.00505)	(0.00367)	(0.00239)	(0.0000178)
1.L_no_prod_full_all1	-0.511***	1.191**	0.913	-0.00112
	(0.121)	(0.539)	(0.601)	(0.00553)
1.L_no_prod_full_all1#c.outs~i	0.00913	0.00507	0.00413	0.00000984
	(0.00555)	(0.00382)	(0.00265)	(0.0000187)
O_net3_oil_imp_c1	5.21e-12***	1.68e-12	4.21e-12**	2.69e-14**
	(1.60e-12)	(1.45e-12)	(1.83e-12)	(1.15e-14)
_cons	-1.561*	4.397***	1.359	0.0468***
	(0.870)	(1.032)	(1.510)	(0.0145)
N	97902	79734	69098	97902

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #1

	(1)
	init
init	
O_in_degree_c1	0.000501
	(0.00456)
outside_oil_dep_c1	0.00974***
	(0.00350)
c.O_in_degree_c1#c.outside_o~p	-0.000488**
	(0.000194)
O_net3_oil_imp_c1	2.33e-12*
	(1.41e-12)
_cons	4.014***
	(1.041)
N	79007

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	-0.852
	(0.592)
outside_oil_dep_c1	0.0227
	(0.0197)
c.O_closeness_c1#c.outside_o~p	-0.0394
	(0.0342)
O_net3_oil_imp_c1	1.57e-12
	(1.51e-12)
_cons	4.768***
	(1.113)
N	79007

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	0.462
	(0.541)
outside_oil_dep_c1	0.0236
	(0.0238)
c.O_closeness_nosym_c1#c.out~o	-0.0450
	(0.0435)
O_net3_oil_imp_c1	1.10e-12
	(1.39e-12)
_cons	3.828***
	(1.060)
N	79007

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	0.00292
	(0.00470)
outside_oil_dep_c1	0.0131***
	(0.00373)
c.O_in_degree_c1#c.outside_o~p	-0.000822***
	(0.000214)
O_net3_oil_imp_c1	3.67e-12**
	(1.68e-12)
_cons	5.894***
	(0.907)
N	555068

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	-1.188**
	(0.562)
outside_oil_dep_c1	0.0268
	(0.0212)
c.O_closeness_c1#c.outside_o~p	-0.0525
	(0.0363)
O_net3_oil_imp_c1	2.45e-12
	(1.76e-12)
_cons	6.924***
	(1.001)
N	555068

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	1.109**
	(0.499)
outside_oil_dep_c1	0.0701***
	(0.0250)
c.O_closeness_nosym_c1#c.out~o	-0.137***
	(0.0462)
O_net3_oil_imp_c1	1.91e-12
	(1.64e-12)
_cons	5.436***
	(0.933)
N	555068

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #1

	(1)
	init
init	
O_in_degree_exp_c2	-0.0113***
	(0.00249)
_cons	4.759***
	(1.048)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #2

	(1)
	init
init	
H_oil_reserves_exp_c2	1.34e-10***
	(3.38e-11)
_cons	5.110***
	(1.106)
N	45667

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #3

	(1)
	init
init	
H_oil_prod_exp_c2	-2.25e-09
	(5.75e-09)
_cons	5.197***
	(1.126)
N	45667

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #4

	(1)
	init
init	
R_oil_prod_exp_c2	2.72e-08*
	(1.59e-08)
_cons	4.264***
	(1.016)
N	72808

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #5

	(1)
	init
init	
R_oil_val_prod_exp_c2	8.16e-11**
	(3.19e-11)
_cons	4.288***
	(1.004)
N	72808

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #6

	(1)
	init
init	
P_oil_dep_total_exp_c2	0.00307
	(0.00187)
_cons	4.209***
	(1.027)
N	70461

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #7

	(1)
	init
init	
majpow_exp2	0.0948
	(0.128)
_cons	4.216***
	(1.024)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #8

	(1)
	init
init	
majpow_count_exp_c2	0.00620
	(0.0392)
_cons	4.284***
	(1.021)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #9

	(1)
	init
init	
majpow_exp2	-0.0517
	(0.148)
O_in_degree_exp_c2	-0.0159***
	(0.00356)
c.majpow_exp2#c.O_in_degree_~2	0.00574**
	(0.00281)
_cons	4.652***
	(1.045)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #10

	(1)
	init
init	
majpow_count_exp_c2	-0.000606
	(0.0463)
O_in_degree_exp_c2	-0.0128***
	(0.00346)
c.majpow_count_exp_c2#c.O_in~e	0.000528
	(0.000631)
_cons	4.758***
	(1.047)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #11

	(1)
	init
init	
R_prod_agg_total_c2	-1.48e-10**
	(6.95e-11)
_cons	4.439***
	(1.032)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 7 - Table 5.7 - #12

	(1)
	init
init	
H_reserve_agg_total_c2	0.000397**
	(0.000164)
_cons	4.079***
	(1.016)
N	81771

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2.4: Stage 6 - NO USA

```
Stage 6 - Table 5.6 - #1
--------------------------------------------
                                      (1)   
                                     init   
--------------------------------------------
init                                        
O_in_degree_c1                   -0.00163   
                                (0.00453)   

outside_oil_dep_c1                 0.0102***
                                (0.00342)   

c.O_in_degree_c1#c.outside_o~p -0.000520***
                               (0.000190)   

O_net3_oil_imp_c1                4.31e-12***
                               (1.56e-12)   

_cons                               3.069***
                                  (1.153)   
--------------------------------------------
N                                   73480   
--------------------------------------------
Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01
```

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	-0.830
	(0.548)
outside_oil_dep_c1	0.0267
	(0.0210)
c.O_closeness_c1#c.outside_o~p	-0.0470
	(0.0365)
O_net3_oil_imp_c1	4.01e-12**
	(1.58e-12)
_cons	3.642***
	(1.163)
N	73480

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	0.489
	(0.544)
outside_oil_dep_c1	0.0259
	(0.0239)
c.O_closeness_nosym_c1#c.out~o	-0.0500
	(0.0436)
O_net3_oil_imp_c1	2.95e-12**
	(1.37e-12)
_cons	2.986***
	(1.133)
N	73480

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	0.00152
	(0.00455)
outside_oil_dep_c1	0.0139***
	(0.00362)
c.O_in_degree_c1#c.outside_o~p	-0.000868***
	(0.000208)
O_net3_oil_imp_c1	5.43e-12***
	(1.71e-12)
_cons	4.191***
	(1.087)
N	550026

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	-1.200**
	(0.505)
outside_oil_dep_c1	0.0331
	(0.0216)
c.O_closeness_c1#c.outside_o~p	-0.0640*
	(0.0370)
O_net3_oil_imp_c1	5.12e-12***
	(1.74e-12)
_cons	4.995***
	(1.082)
N	550026

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	1.123**
	(0.497)
outside_oil_dep_c1	0.0727***
	(0.0247)
c.O_closeness_nosym_c1#c.out~o	-0.142***
	(0.0455)
O_net3_oil_imp_c1	3.58e-12**
	(1.48e-12)
_cons	3.815***
	(1.060)
N	550026

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2.5: Stage 6 - PRE_1990

Stage 6 - Table 5.6 - #1

	(1)
	init
init	
O_in_degree_c1	-0.00414
	(0.0102)
outside_oil_dep_c1	-0.00345
	(0.00646)
c.O_in_degree_c1#c.outside_o~p	0.000379
	(0.000365)
O_net3_oil_imp_c1	-1.22e-14
	(8.93e-12)
_cons	4.771***
	(1.300)
N	31989

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	-1.385
	(1.014)
outside_oil_dep_c1	-0.000441
	(0.0258)
c.O_closeness_c1#c.outside_o~p	0.00723
	(0.0451)
O_net3_oil_imp_c1	-4.85e-13
	(9.28e-12)
_cons	5.993***
	(1.598)
N	31989

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	0.218
	(0.790)
outside_oil_dep_c1	0.0456
	(0.0474)
c.O_closeness_nosym_c1#c.out~o	-0.0757
	(0.0851)
O_net3_oil_imp_c1	3.89e-12
	(8.56e-12)
_cons	4.546***
	(1.321)
N	31989

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	-0.00266
	(0.0101)
outside_oil_dep_c1	0.00230
	(0.00657)
c.O_in_degree_c1#c.outside_o~p	0.0000359
	(0.000374)
O_net3_oil_imp_c1	2.74e-12
	(9.53e-12)
_cons	5.527***
	(1.156)
N	214050

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	-3.662***
	(1.122)
outside_oil_dep_c1	-0.0112
	(0.0247)
c.O_closeness_c1#c.outside_o~p	0.0265
	(0.0435)
O_net3_oil_imp_c1	-3.27e-12
	(9.54e-12)
_cons	8.886***
	(1.525)
N	214050

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	1.019
	(0.701)
outside_oil_dep_c1	0.0781*
	(0.0410)
c.O_closeness_nosym_c1#c.out~o	-0.135*
	(0.0739)
O_net3_oil_imp_c1	4.95e-12
	(9.34e-12)
_cons	4.932***
	(1.190)
N	214050

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

8.8.2.6: Stage 6 - POST_1990

Stage 6 - Table 5.6 - #1

	(1) init
init	
O_in_degree_c1	0.00793
	(0.00757)
outside_oil_dep_c1	0.0140**
	(0.00638)
c.O_in_degree_c1#c.outside_o~p	-0.000860**
	(0.000352)
O_net3_oil_imp_c1	2.58e-12
	(1.69e-12)
_cons	1.595
	(1.796)
N	30666

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #2

	(1)
	init
init	
O_closeness_c1	1.674
	(1.521)
outside_oil_dep_c1	0.0447
	(0.0500)
c.O_closeness_c1#c.outside_o~p	-0.0887
	(0.0889)
O_net3_oil_imp_c1	2.39e-12
	(2.11e-12)
_cons	0.789
	(2.027)
N	30666

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #3

	(1)
	init
init	
O_closeness_nosym_c1	1.051
	(1.179)
outside_oil_dep_c1	-0.0162
	(0.0610)
c.O_closeness_nosym_c1#c.out~o	0.0204
	(0.112)
O_net3_oil_imp_c1	9.11e-13
	(1.48e-12)
_cons	1.160
	(1.897)
N	30666

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #4

	(1)
	init
init	
O_in_degree_c1	0.00587
	(0.00724)
outside_oil_dep_c1	0.0140**
	(0.00601)
c.O_in_degree_c1#c.outside_o~p	-0.000916***
	(0.000281)
O_net3_oil_imp_c1	3.05e-12*
	(1.72e-12)
_cons	4.353***
	(1.575)
N	196745

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #5

	(1)
	init
init	
O_closeness_c1	2.560*
	(1.529)
outside_oil_dep_c1	0.0522
	(0.0530)
c.O_closeness_c1#c.outside_o~p	-0.109
	(0.0911)
O_net3_oil_imp_c1	3.03e-12
	(2.20e-12)
_cons	2.741
	(1.918)
N	196745

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01

Stage 6 - Table 5.6 - #6

	(1)
	init
init	
O_closeness_nosym_c1	2.336**
	(1.068)
outside_oil_dep_c1	0.0580
	(0.0625)
c.O_closeness_nosym_c1#c.out~o	-0.127
	(0.117)
O_net3_oil_imp_c1	1.53e-12
	(1.67e-12)
_cons	3.046*
	(1.679)
N	196745

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01