The Price of Conflict

A study of Oil Companies in Nigeria

Balder Düring and Bendik Aarbu

Supervisor: Evelina Gavrilova-Zoutman

Master Thesis in Economics and Business Administration

Major: Financial Economics

NORWEGIAN SCHOOL OF ECONOMICS

Acknowledgements

This thesis finalises our master's degree in Economics and Business Administration with a major in Financial Economics at the Norwegian School of Economics (NHH). The process of writing this thesis has been both challenging and educational, providing the opportunity to apply knowledge of five years at NHH to a subject of interest.

We would like to thank our supervisor Evelina Gavrilova–Zoutman for invaluable guidance, discussions, and support throughout the semester. Furthermore, we would like to thank family and friends for the support they have provided throughout the years.

Norwegian School of Economics

Bergen, December 2022

Balder Düring   Bendik Aarbu

Abstract

In this thesis, we use an event study methodology to investigate whether oil producers holding concessions in Nigeria have benefitted from conflict and regulatory shocks assumed to inflict changes in the business environment. Using a sample of 28 companies and 52 events in Nigeria from 2001 to 2017, we find that events decreasing the intensity of conflict led to positive abnormal returns on average. No average reaction is detected for events rising the intensity of conflict. Further, we find evidence of average positive abnormal returns in response to events lowering barriers to entry, governmental bargaining power and transparency. We find no average abnormal returns for events causing higher barriers to entry, rising governmental bargaining power, or increased transparency.

Contents

1. Introduction

Since Nigeria struck oil in 1956, the country has emerged as one of the largest global exporters (OPEC, 2022). Oil exports accounted for ~80 % of government revenue from 1986 to 2009 and have played a crucial role in Nigeria's economy, society and politics (De Wit & Crookes, 2013). The black gold has however been a perpetual source of conflict, uncertainty and civil unrest in Nigeria, and has in many ways turned into a curse rather than a blessing. Mismanagement of the petroleum industry and widespread corruption in Nigeria have resulted in exploitation, human displacement, pollution and unjust distribution of resources (Mohammed, 2021). This has in turn fuelled violent rebel groups and caused militarisation of oil-abundant regions, especially the Niger Delta. (Perry et al., 2010). Oil - a resource with potential to lead the Nigerian people to the path of wealth and growth has instead developed into the culprit of conflict and poverty. Constant unrest has left Nigeria with weak institutions, low transparency, poor property rights, and a business environment facilitating corporate crime and unethical behaviour (Azoro, 2021).

Our thesis is an attempt to provide evidence that under certain circumstances, companies might thrive on conflict and regulatory shocks. We focus on Nigeria from 2001 to 2017 and one of the sectors most related to conflict - oil production, to investigate investors' reactions to changes in conflict intensity, entry barriers, governmental bargaining power and transparency.

Conflict is on the rise globally, and in 2016, more countries experienced violent conflict than at any point in almost 30 years (UN, 2020). The majority of conflicts take place in countries rich in natural resources (ACLED, 2022), making it relevant to assess how companies operating in such environments are affected by unrest, and question the role they play in causing and sustaining conflict. Nigeria stands out as a compelling case study for our thesis, as the country has endured a typical "resource war" with rebel groups fighting corporations and authorities over oil exploitation, while simultaneously being troubled by religiously motivated conflicts. Furthermore, Nigeria's history of turmoil provides us with frequent events over a prolonged period of time, allowing us to investigate multiple and varied events providing substance to our analysis.

The purpose of our thesis is twofold. First, we investigate how events increasing or decreasing the intensity of conflict impact stock returns for oil companies operating in Nigeria. Most literature on the topic of conflict and stock returns investigates how conflict have an adverse effect on company value (Abadie & Gardeazabal, 2003) (Schneider & Troger, 2006). However, our thesis draws inspiration from literature arguing that conflict facilitates a business environment in which incumbent firms can benefit, notably in countries similar to Nigeria in terms of resource abundance and economic environment under consideration (Guidolin & La Ferrara, 2007) (DellaVigna & La Ferrara (2010). As a result, we predict positive abnormal returns in response to conflict-increasing events and negative abnormal returns in response to conflict decreasing events. Second, we want to investigate *why* oil companies in Nigeria might profit from conflict and regulatory shocks. As argued by Guidiolin & La Ferrara (2007), conflict could facilitate a business environment characterised by high entry barriers, low transparency and weak governmental bargaining power, which incumbent firms could benefit from. We examine how these factors have affected oil companies in Nigeria, predicting that higher barriers to entry, less transparency, and lower governmental bargaining power led to positive abnormal returns, and vice versa.

Our thesis seeks to contribute to the empirical work done on the relationship between conflict dynamics and financial impact, especially concerning the small but growing sample of studies examining how and why some industries and companies might thrive in unstable and conflict-laden business environments.

We conduct an event study in order to assess investors' reactions to events, examining whether we detect average abnormal returns consistent with our predictions[1]. We selected the companies in our examination based on two criteria: they had concessions in Nigeria for at least a year during our investigative period[2], and they were listed on a stock exchange while holding a concession. The events included are selected on three criteria: events related to conflict must increase or decrease conflict intensity, the event was significant enough to attract media attention, and the event was unexpected.

Turning to our results, we find that oil companies in Nigeria, on average, had significantly positive abnormal returns in response to conflict de-escalating events, contrary to our first

---

[1] *Abnormal return is the deviation between actual and expected return. Positive abnormal return to an event imply that investors believe the event will lead to increased future cash flow, and thus want to buy shares. Negative abnormal return indicate the opposite.*
[2] *2001 - 2017*

prediction. A possible explanation is that a stable and predictable business environment reducing operational risk was perceived as predominantly positive for the companies, a finding supported by e.g. Abadie & Gardeazabal (2003). We find no significant average reaction to conflict escalating events. Moving on to event-inflicted changes in the business environment, we find that events reducing barriers to entry, on average, resulted in significantly positive abnormal returns, while events increasing entry barriers left no significant average effect on abnormal returns. There is a natural correlation between events decreasing (increasing) barriers to entry and decreasing (increasing) conflict intensity, possibly explaining these findings. Events decreasing governmental bargaining power and transparency had, on average, a significantly positive effect on abnormal returns. The positive reactions are in line with our expectations and could be explained by the hypothesis promoted by Guidiolin & La Ferrara (2007): that weak governmental bargaining power allows companies to negotiate favourable deals, while low transparency facilitates corruption and surplus extraction at the expense of unknowing citizens. Our results showed no significant reaction to events increasing governmental bargaining power and transparency.

This paper sheds light on the dark side of Nigeria's oil production, and finds support in the theory of resource curse when investigating whether conflict-related events have created a business environment facilitating unethical behaviour. We find no evidence that investors perceived escalation of conflict as overall positive for future earnings. However, in light of the resource curse, we argue that turmoil in Nigeria has facilitated a business environment fostering weak governmental bargaining power and low transparency, which incumbent firms have exploited and profited from. With conflict on the rise globally, it is important to draw attention to our findings as it questions the role and motives of oil companies operating in unstable business environments, like Nigeria.

In the next section we present literature review, followed by a background section to form the narrative for the thesis. Section 4 presents the conceptual framework, before data selection and methodology is explained in section 5 and 6. Section 7 contains our results and discussion, while robustness checks and limitations are presented in section 8 and 9. Lastly, section 10 concludes.

2. Literature Review

Researching the impact of conflict on economies, financial markets and companies has been an extensive and important topic for years, with several links between stock returns and conflict already identified in existing literature. This section seeks to present the academic work most relevant to our thesis, discuss their research and findings, and pinpoint how our paper relates and contributes to the topic of conflict dynamics through the lens of financial markets.

Schneider & Troger (2006) examines three separate conflicts: the first U.S. – Iraqi war, the Israel – Palestine conflict and the civil war in Ex-Yugoslavia, and their impact on financial markets (CAC, Dow Jones and FTSE, respectively). The paper offers support to the rational expectation that violent conflict inflicts negative abnormal returns on stock markets. Abadie & Gardeazabal (2003) study the terrorist conflict in the Basque country during the late 1960s and show that firms in the Basque region outperformed non-Basque stocks as truce became credible and conflict eased, while enduring negative abnormal returns at the end of the ceasefire.

Our thesis relates to these studies as they all investigate how conflict affects financial markets and listed companies over time, seeking to establish a relationship between conflict and stock returns. Moreover, we draw inspiration from Abadie & Gardeazabal (2003) concerning their analysis of how geographical proximity to conflict could be of importance when assessing how companies are affected. We extend the literature as we narrow our analysis to one specific sector, while Schneider & Troger (2006) and Abadie & Gardeazabal (2003) investigate a broader index of financial markets and companies, respectively. The most evident difference between these studies and ours lies in the economic environment under consideration. Schneider & Troger (2006) and Abadie & Gardeazabal (2003) focus on western industrialised markets, while we extend the literature by targeting a developing African economy, namely Nigeria.

The majority of studies on the topic of conflict and financial markets argue that the economic consequences of conflict are substantial. Nevertheless, a minority of analyses points out the occasional optimistic reactions markets and companies have to conflict, which is what our paper seeks to examine. On that note, our thesis draws inspiration from two closely related papers: Guidolin & La Ferrara (2007) and DellaVigna & La Ferrara (2010), which investigate the hypothesis of companies benefiting from conflict.

Guidolin & La Ferrara (2007) uses an event study methodology to find that diamond mining firms holding concessions in Angola experienced negative abnormal returns when the Angolan civil war ended in 2002. The study aims to explain the results by identifying three possible explanations for why peace may have been detrimental for returns: i) unestablished mining companies faced lower barriers to entry, rising competition for incumbent firms, ii) the governmental bargaining power increased, reducing the prospect of negotiating favourable deals, and iii) higher transparency reduced the possibilities of unofficial dealings. DellaVigna & La Ferrara (2010) also utilises an event study methodology, seeking to detect arms dealers involved in illegal trade based on abnormal returns in the stock market. By identifying events that suddenly changed the intensity of conflict in countries under arms embargo, the paper finds that arms dealers headquartered in "high-corruption" countries enjoyed positive abnormal returns in response to increased conflict intensity.

Overall, our paper relates to these studies as all focus on one specific sector, while we likewise base our research on companies operating in countries with troubled and unstable business environments. Regarding methodology, we also utilise an event study approach in order to detect possible unethical behaviour, drawing inspiration from both implementation and detection methods. Furthermore, our paper examines the relationship between the intensity of conflict and stock returns - similar to DellaVigna & La Ferrara (2010). Most importantly, we relate to Guidolin & La Ferrara (2007) as we try to explain our findings with the same three event-caused consequences on the business environment. Looking to examine how changes in barriers to entry, governmental bargaining power and transparency affect oil companies in Nigeria, we extend the work of Guidolin & La Ferrara (2007) by *quantifying* the effects of these factors, for a different industry and region – although both in a resource-abundant yet troubled African country. We further contribute to existing literature by investigating a larger sample of events, and by including regulatory shocks as an event-type of interest.

Our thesis seeks to contribute to the literature on conflict dynamics and financial impact, especially concerning the small but growing sample of studies examining why and how some industries and companies might thrive due to conflict.

3. Background

With proven reserves of over 37 million barrels of crude oil, Nigeria is the second largest oil producer in Africa, the sixth largest global exporter and the tenth largest holder of reserves worldwide (OPEC, 2022). Oil production has historically[3] accounted for ~90 % of Nigeria's export value and ~80 % of government revenue, and has undeniably played a significant role in Nigeria's economy, society, and politics (Akpan, 2009).

The vast majority of Nigeria's oil reserves and production are located in the south of the country, primarily in the Niger Delta and off the coast in the Gulf of Guinea (Oilmap, 2022). The Niger Delta is home to around 45 million people, indigenous tribes and biodiverse ecosystems (Niger Delta Budget Monitoring Group, 2022). Nevertheless, widespread corruption and mismanagement of the petroleum industry have resulted in exploitation, human displacement and local pollution in the area since Nigeria first struck oil in 1956 (UN, 2022). Communities in the Niger Delta suffer the worst of consequences from oil production, and have seen little of the revenue and benefits that government officials and oil majors have reaped from the reserves beneath their soil (Omofonmwan & Odia, 2009).

Consequently, rebel groups such as Movement for the Emancipation of Niger Delta (MEND) have surfaced in an effort from the population to fight their cause against the government and oil producers' exploitation, resorting to terrorist attacks, theft and sabotage of oil infrastructure (ACLED, 2020). Over the years, it is estimated that about 20% of Nigeria's total oil production capacity has been halted because of such militant activities (EIA, 2007). Simultaneously, Nigeria has been plagued by religious disputes mainly involving Boko Haram, further contributing to the turmoil that has unfolded in Nigeria over the last decades (ACLED, 2022).

The Nigerian government has historically been characterised by weak institutional capabilities, fuelled by civil unrest and failed attempts to stabilise the country (De Wit & Crookes, 2013). Presidential elections have been identified by empty promises of fighting corruption, stricter regulations and fair distribution of resources - yet to materialise (Perry et al., 2010). It is estimated that mismanagement and dodgy practices by ministers, parastatals, and multinationals have cost Nigeria $35 billion from 2002 to 2012 - more than a year's worth of government spending (Allison, 2012). It is crucial to understand how Nigeria, a country rich in natural resources, has ended up with a business environment characterised by

---

[3] *1986 to 2009*

corruption, mismanagement, and weak institutions. In light of this, we argue that the theory of resource curse could facilitate a narrative for our analysis.

3.1 The Resource Curse

Countries rich in natural resources have an extraordinary chance to amass wealth and stability, facilitating investment and growth (Matti, 2010). Oil might be the most prominent resource of them all - seen from a historical perspective, and one could expect oil-rich nations to thrive (The Economist, 2017). Nigeria possesses the tenth largest proven oil reserves in the world, however, similar to many other resource-rich countries, Nigeria's oil has been more of a curse than a blessing. First coined by Richard Auty in 1993, the resource curse is a phenomenon where resource-abundant countries fail to utilise their windfall wealth to boost their economies and living standards, and instead face corruption and poverty (Auty, 1993). Empirical work on the topic finds that resource-abundant nations, in general, are less developed and end up with less growth and stability than countries without natural resources (Bjorvatn et al., 2008). Countries affected by this paradox of plenty tend to fall victim to more civil war and violent unrest than their "less fortunate" neighbours, with Nigeria standing out as a textbook example (IMF, 2003). The country is stuck in a vicious circle, where an interconnectedness between poor governance and institutions, oil exploitation and conflict have led to a wealth of sorrow.

Nigerian authorities have been unsuccessful in establishing a firm and trustworthy regulatory framework for extracting its resources since oil was discovered in 1956 (UN, 2022). Lack of jurisdiction, transparency and regulations led to fierce competition for exploration and production rights, with an environment plagued by corruption and corporate crime. Exploitation has created tensions between ethnic groups, authorities and foreign corporations, causing militarisation of entire oil-abundant regions – particularly in the Niger Delta (Frynal, 1999). The Nigerian government has failed to control these outbreaks of instability and conflict, signalling a weak government with low bargaining power. Grim examples of multinationals convicted of corruption, pollution and suppression of local communities illustrate the severity of the situation (Guardian, 2011).

There are however examples of the Nigerian government trying to regain regulatory control and power, arguably in an attempt to break the curse. In 1971, Nigeria nationalised its oil industry by founding the Nigerian National Oil Company (NNOC), and in 1978 the government established the Land Use Act, declaring all natural resources the legal property of the Nigerian government (NNPC, 2022). As a result, large parts of Nigeria's oil concessions

were granted to national companies and subsidiaries of NNOC (Amana & Amana, 2013). However, due to widespread corruption and low transparency, the national companies were, and are, in large part owned by government officials and elitist members of society (Osundina, 2016). Increased governmental control thus led to financial favours being distributed unequally and inefficiently, concentrating power and profit in the hands of a few (Olujobi, 2021). Nigerian citizens have never enjoyed much of the benefits, deprived of the socioeconomic gains that should have commenced from new regulations (Argungu, 2022). Resources with the potential to lead the Nigerian people to wealth and growth have instead developed into the culprit of conflict and poverty. The cycle continues as corruption, secrecy and exploitation repeatedly fuels civil unrest, fortifying the curse. The resource curse facilitates a narrative for our thesis, as it explains how oil companies in Nigeria might exploit a troubled economic and political environment to partake in unethical and illicit behaviour.

4. Conceptual Framework

This section introduces the conceptual framework that underlies the research in our thesis and presents our predictions. We further aim to justify the predictions and briefly explain how we have classified events as either increasing or decreasing the intensity of conflict, barriers to entry, governmental bargaining power and transparency.

4.1 Predictions

The resource curse in Nigeria facilitates a business environment that oil companies can take advantage of. Conflict and uncertainty hinders development of property rights, democracy and fair distribution of resources, paving the way for exploitation. (MacLachlan, 2018) (Strand et al., 2012). We argue that this enables oil companies to be involved in unethical activities contributing to increased profits, just as DellaVigna & La Ferrara (2010) detected for arms dealers operating in conflict-laden business environments similar to Nigeria. This brings us to our first prediction.

Prediction 1
Events increasing (decreasing) the intensity of conflict lead to positive (negative) abnormal returns

As argued by Guidiolin & La Ferrara (2007), prolonged conflict and uncertainty could facilitate a business environment characterised by (i) high entry barriers, (ii) weak governmental bargaining power and (iii) low transparency, which incumbent oil companies could exploit. We have chosen to focus on the same three event-caused factors to investigate why oil companies in Nigeria might profit from conflict and regulatory shocks.

A business environment riddled by conflict, unrest and unpredictability could scare new companies from investing and commence operations in Nigeria. Oil production is a highly capital-intensive business, and failed attempts to establish production is synonymous with large losses. Further, potential newcomers likely lack experience operating in unstable and risky business environments (Guidiolin & La Ferrara, 2007). Such factors could be defined as barriers to entry, and are according to economic theory assumed to benefit incumbent firms due to lower competition (Islami et al., 2019), e.g. by acquiring concessions at cheap. This leads us to prediction 2:

Prediction 2

Events increasing (decreasing) barriers to entry lead to positive (negative) abnormal returns

Years of civil unrest, costly handling of conflict and misuse of funds has led to a Nigerian government with weak institutional capabilities and in constant need of patronage. Fragile authorities desperate for quick and easy revenue may have shifted the bargaining power in favour of oil producers, allowing companies to negotiate favourable deals and permissions at a discount (Guidolin & La Ferrara, 2007). This leads us to prediction 3:

Prediction 3

Events decreasing (increasing) governmental bargaining power lead to positive (negative) abnormal returns

Conflict and unrest across Nigeria may have shifted focus away from transparency in official dealings, underpinned by the high levels of corruption detected in Nigeria over the last decades (United Nations Office on Drugs and Crime, 2019). Lack of transparency in the Nigerian business environment, particularly in the resource sector, could allow politicians and well-connected companies to collude in corruption and illicit dealings, extracting surplus at the expense of the unknowing public (Guidolin & La Ferrara, 2007). Hence, our fourth prediction reads as follows:

Prediction 4

Events decreasing (increasing) transparency lead to positive (negative) abnormal returns

4.2 Event Classifications

In order to investigate our predictions, we have classified the events into four different groups based on their perceived effect on the business environment. Events have been labelled as either increasing, decreasing or not affecting the intensity of conflict, barriers to entry, governmental bargaining power, and transparency[4]. Some events might be attributed to several factors, while others to none[5]. Assigning these factors to events is not entirely objective, and we have primarily resorted to a qualitative approach in our classification.

---

[4] *A full overview of the event classification is found in Table A2 in the Appendix*
[5] *Some events are only attributed to increasing or decreasing conflict intensity, not the other three factors*

Starting with events assumed to affect the intensity of conflict, we have stuck to an overall perception that violent events increase conflict intensity while peaceful events slow it. Violent events are typically attacks and clashes involving rebel or religious groups such as MEND or Boko Haram, while peaceful events could be ceasefires or peace-agreements. Events like arrests of rebel leaders could justify a de-escalating classification despite their occasionally violent character, as they could be assumed to lower the intensity of conflict. Regulatory shocks are assessed qualitatively, where events sparking civil unrest, e.g. violent elections, have been classified as conflict escalating, and vice versa.

Events affecting barriers to entry are those assumed to influence the willingness of foreign firms to commence operations in Nigeria. Violent, conflict escalating events have primarily been classified as increasing the entry barrier factor. Such events could be assumed to increase risk and uncertainty, and thus scare non-established players from entering Nigeria. Conflict de-escalating events like ceasefires or treaties with rebel opposition has generally been classified as barriers to entry decreasing, as they facilitate stability and thus promote investment. We have also assessed whether the events have happened in proximity to oil fields and installations, and its relation to the oil industry. Events far from oil fields and of unrelated character are considered less likely to affect oil companies considering an entry to Nigeria. Certain regulatory shocks are also considered to affect barriers to entry, e.g. implementation of regulations, changes in parastatals or presidential elections, where those characterized by hostility towards the oil industry has been classified as barrier to entry increasing, and vice versa.

Events affecting governmental bargaining power are typically incidents changing the leverage of authorities to negotiate deals, implement regulations or otherwise stand up to oil majors. As Nigeria is highly dependent on oil revenue, events affecting the attractiveness of operating and investing in the country are perceived to influence governmental bargaining power. Events like direct attacks on oil installations are assumed to reduce the governmental bargaining power. The 2008 attack on Shell's Bonga Field Facility, located 120 kilometres off the Nigerian coast, is such an event. Widely considered out of reach for militias, the attack raised fears of a new campaign against offshore installations, likely decreasing the bargaining power of Nigerian authorities when auctioning concessions offshore (Reuters, 2008). Changes in the political landscape could also influence governmental bargaining power. Elections or reforms characterized by promises of increased governmental control over oil production, or peace-

negotiations with rebel groups, are assumed to have increased the bargaining power of the government (Argungu, 2022).

Events characterised by changes in the regulatory landscape usually fall under the classification of affecting transparency in official dealings. New reforms or regulatory changes are examples of such events, e.g. the establishment of the National Oil Spill Detection and Response Agency (NOSDRA). This event is assumed to have increased transparency in official dealings, as it effectively reduced the oil producers' leeway to hide spills. Vice versa, incidents undermining governance, events exposing corrupt officials, or regulations indirectly empowering oil companies are typically events of transparency reducing character.

A visual overview over the event classification is presented in Figure 1 below.

Distribution of Event Types
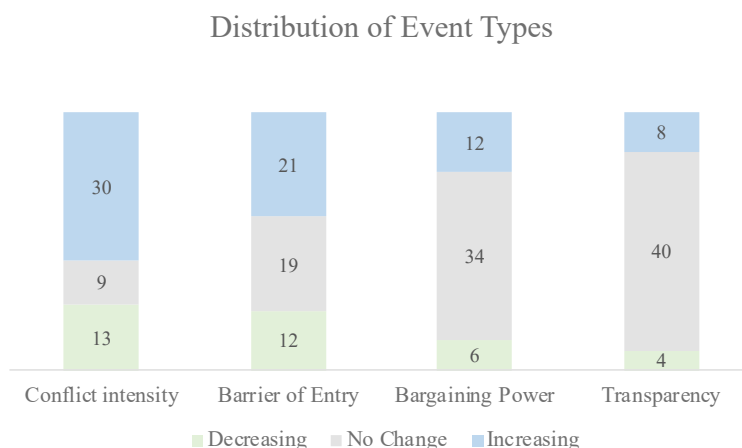
Figure 1: Distribution of event classifications. Illustrates the number of events assumed to affect each factor

As touched upon in the background section, we observe a clear distinction between the motives of conflicts in Nigeria, where most of our events can be classified as either oil-related or non-oil-related. The vast majority of Nigeria's oil-related conflicts are located around the Niger Delta in proximity to oil fields and installations (Gavin, 2022). Events in the rest of Nigeria are usually of religious character (UN, 2022).

It is important to note that while unethical activities enabled by conflict usually are kept secret from the public, there are countless examples of multinational corporations benefiting from weak institutions, especially in African countries (Hugo, 2012). As we assume well-informed[6] rational investors, we expect them to understand whether an event improves conditions for oil companies, which should be reflected in the stock price.

---

[6] *When an investor is well-informed, we expect the investor to be aware of unethical activities conducted by the companies even if the general public is not.*

5. Data selection

This section will present how we selected the companies and events in our study and elaborate on the reasoning behind our selection. The timeline of focus in our thesis spans from 2001 to 2017.

5.1 Company Selection

We have selected oil producers based on two overall criteria: The companies have 1) held oil concessions in Nigeria for at least a year, and 2) been listed on an exchange during the period of holding concession and continuously traded for at least one year.

To assemble an ample selection of companies, we gathered data on all companies holding concessions in Nigeria from 2001 to 2017, along with their respective entry and exit date. The sample of listed oil producers in Nigeria was limited prior to 2001, justifying our investigation window starting in 2001. The collection constitutes a diversified set of companies, 214 in total, ranging from small companies solely operating in Nigeria to large multinationals with worldwide presence.

Moving on to the second overall criteria, we have used Compustat[7] to identify the relevant companies that have traded on an exchange for at least a year from 2001 to 2017 while holding concessions. We gathered data on the closing price for every day over each company's relevant concession period. Unlisted companies are of no use in our study as we investigate abnormal stock returns in response to events. As all companies in our final selection had interest in Nigeria at some point within the timeframe of investigation, it is reasonable to assume they were affected by conflicts and regulatory shocks in Nigeria. We are left with 28 companies fulfilling both criteria, listed in Table A1 in the Appendix.

It should be noted that the number of companies present in Nigeria simultaneously is never 28, as companies have entered and exited Nigeria at different times over our investigative period.

---

[7] *Compustat provides standardized global market data for active and inactive publicly traded companies (WRDS, 2022)*

Table 1 displays summary statistics for the daily returns of the companies in the final sample. We observe that the lowest daily return for the companies in our scope is -68.3%, while the highest return is 63.5%. This indicates that some companies in our sample have been highly sensitive to events, either internal or external.

Variable	Observations	Mean	SD	Min	Max
Returns	76 818	-.0002	.0328	-.6828	.6349

Table 1: Summary statistics for the daily returns of the 28 companies in the final sample

5.2 Event Selection

In the process of selecting events, we have combined a qualitative reading of Nigerian history, combined with quantitative data on conflict from the ACLED and LexisNexis databases[8]. We have included events directly related to conflict, such as larger deadly clashes or local rebellions, as well as regulatory shocks indirectly related to conflict, such as changes in the political landscape or local powers, ceasefires or new regulations. We have emphasised an overall qualitative approach in order to include events deemed most likely to be of importance to investors.

The event selection is based on three overall criteria: 1) events related to conflict must increase or decrease conflict intensity [9], 2) the event is momentous enough to attract media and investor attention, and 3) the event was unanticipated. Lastly, we only focus on events that have occurred during the timeline of focus in our thesis, from 2001 to 2017.

We have included events both escalating and de-escalating the intensity of conflict, enabling a two-way investigation of reactions. In the process of selecting events related to conflict we have conducted an overall reading of Nigerian history from 2001 to 2017, combined with quantitative data from ACLED. For conflict escalating events, we have primarily excluded those below a benchmark of 50 deaths throughout the event window in the ACLED database. However, other conflict escalating events like sabotage of oil infrastructure and

---

[8] *The Armed Conflict Location & Event Data Project (ACLED) collects information on all reported political violence and protest events around the world (ACLED, 2022)*
LexisNexis provides full-text news, business- and legal publications back to 1977 (LexisNexis, 2022)
[9]*A few events are unrelated to conflict and have no pronounced effect on conflict intensity. These have been classified in a third, conflict-neutral category*

kidnappings, although with less than 50 casualties, have also been included in the selection based on a qualitative assessment of the severity. Conflict de-escalating events from ACLED are detected by filtering on keywords such as "peace", "agreement" and "ceasefire". We detected 75 events fulfilling the first criteria.

To determine whether the event has attracted media and investor attention, we have used the LexisNexis database to gather data on media coverage surrounding events. We have mapped the number of articles related to each event on the same and following day, providing an estimate of the significance perceived by the media and thus investors. This ensures that investors had information about the events we investigate and could react accordingly. We ended up with 67 events satisfying both the first and second criteria.

We have used the timeframe between events as a proxy to determine whether an event is unanticipated. Events occurring in rapid succession are likely to be perceived as less surprising by investors, which could deter reactions to events. We thus operate with a minimum period between events of 21 days. When two or more events have been separated by less than 21 days, we have kept the event perceived as the most influential or the one occurring first – if the events are assumed to be of equal importance. The final selection of events fulfilling all criteria consists of 52 events.

A complete overview of the events can be found in table A2 in the appendix.

6. Methodology

This section presents the methodology used to test our predictions. We first present the underlying event study framework before elaborating on our research design and approach.

6.1 Event Study

This thesis utilises an event study methodology to estimate how conflict and regulatory shocks affect oil companies with concessions in Nigeria. Assuming well-informed, rational investors we are able to detect whether an event is considered positive or negative for a company by investigating its abnormal return.

We draw inspiration from MacKinlay's event study framework, opting for a Fama-French three-factor model to predict the expected returns over the estimation window (MacKinlay, 1997). We obtain the abnormal returns over the event window by calculating how expected returns deviate from actual returns for every company-event pair in our selection. The three-day cumulative abnormal returns (CAR) are subsequently calculated by accumulating abnormal returns for the day before, including, and after the event. If the CAR is statistically significant, one could argue that investors have responded abnormally to an event. As our data includes several companies and multiple events, we calculate the average CAR for all event types[10]. This lets us draw inference on the average effect of an event type.

Our estimation window counts 120 days, starting 140 days before the event. For estimation windows longer than 100 days, the sensitivity of results to varying estimation window lengths is minimal (Armitage, 1995). Our event window starts ten days before the event and spans until ten days after the event, constituting an event window of 21 days. This restricts the possibility of impact from confounding events. To avoid disturbance from possible information leakage and rumours surrounding the event, we include a 10-day buffer between the estimation window and the event window (Hinz et al., 2015).

t_{-140} t_{-20} t_{-10} t_0 t_{10}

Estimation window   *Event window*

---
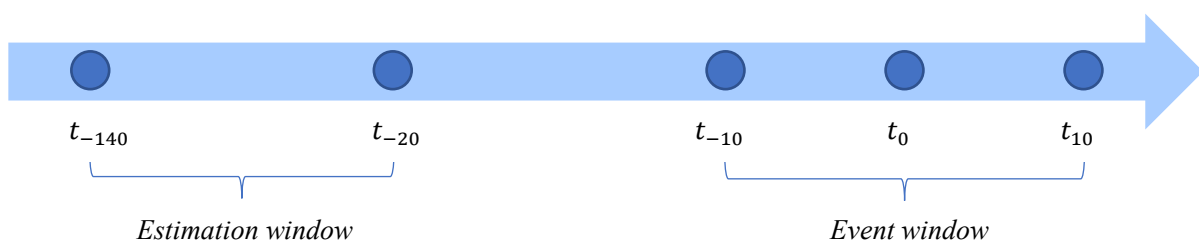
[10] An *event type is e.g. all events assumed to increase the intensity of conflict.*

To predict the expected returns, we regress a company's excess return over the 120-day estimation window on the Fama-French three-factor model (MacKinlay, 1997), given by equation 1:

$$R_{it} - R_{ft} = \alpha_{it} + \beta_1(R_{Mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \epsilon_{it}$$

Equation 1

Where:

α_{it} is the intercept
R_{it} is the total returns of stock i at time t
R_{ft} is the risk–free rate of return at time t
$R_{it} - R_{ft}$ is the expected excess return
R_{Mt} is the total market portfolio return at time t
$R_{Mt} - R_{ft}$ is the excess return on the market portfolio
SMB_t is the size premium
HML_t is the value premium
$\beta_{1,2,3}$ measures the factor coefficients
ϵ_{it} is the error term for company i at time t

The estimates obtained from this regression are subsequently used to predict the expected returns over the 21 days event window.

We have opted for the Fama-French three-factor model as it is perceived as more precise in capturing variation in excess returns than the traditional CAPM model due to its additional controlling factors, SMB and HML (Sattar, 2017). In addition, the Fama-French model lets us control for regional economic differences in a seamless way. In order to compute precise estimates for expected returns, we have used Fama-French factors specific to three different regions, namely Asia Pacific ex. Japan, North America and Europe. The choice of regional allocation for the companies in our selection is based on their country of headquarter. For companies with headquarters in regions other than the predetermined, we have allocated them to the region in closest proximity.

By comparing the expected return for the event window to the actual return over the event period, we can examine how an isolated event has affected a company through its abnormal return, given by equation 2.

$$AR_{it} = R_{it} - [R_{it}|X_t] + \epsilon_{it}$$
$$AR_{it} = \epsilon_{it}$$

Equation 2

Where:

AR_{it} is the abnormal return for company i at time t
R_{it} is the total returns of stock i at time t
$[R_{it}|X_t]$ is the expected return given the FF3 market model parameter estimate
ϵ_{it} is the error term for company i at time t

Equation 2 assumes that expected returns are equal to actual returns. Hence, the potential abnormal return is represented by the error term epsilon. Positive abnormal returns to an event imply that investors believe the event will lead to increased future cash flow, and thus want to buy shares. Negative abnormal returns indicate the opposite.

We further calculate the cumulative abnormal return (CAR) by aggregating the abnormal returns over the event date (MacKinlay, 1997). To account for potential information leakage, we include the day prior to the event in the CAR calculation. We also include the day after the event to capture effects from events occurring after the closing of stock markets. The model is given by equation 3:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it}$$

Equation 3

Where:

$CAR_i(t_1, t_2)$ is the cumulative abnormal return for company i from t_1 to t_2
AR_{it} is the abnormal return for company i at time t
t_1 is the first day of the event window
t_2 is the last day of the event window

Turning our attention to the first prediction, we have separately calculated the average CAR for all events assumed to increase conflict intensity, and for all events assumed to decrease conflict intensity. The second, third and fourth predictions follow the same methodology, however for events assumed to increase (decrease) the barrier of entry, bargaining power and transparency, respectively.

As our data consists of multiple observations of multiple events, we are also interested in the cumulative average abnormal return (CAAR) per event. The CAAR enables us to observe the common effect of an event on several companies, facilitating a measurement of how one event, on average, impacts stock prices for all the affected companies. The model is given by equation 4:

$$CAAR = \frac{1}{N} \sum_{i=1}^{N} CAR_i\,(t_1, t_2)$$

Equation 4

Where:

$CAAR$ is the cumulative average abnormal return for each event
N is the number of company–event pairs for each event
$CAR(t_1, t_2)$ is the cumulative abnormal return for company i from t_1 to t_2 for an event
t_1 to t_2 is the first and last day of the event window

To detect if there is a statistical difference between days with events and days with no events, we estimate the cumulative abnormal return for every day over our investigative period. This lets us draw inference from our results. The given regression model estimates the CAR for company i on date t, and is presented in equation 5:

$$e_{i,t}^{-1,1} = \alpha + \beta_1 \cdot D_i + \epsilon_{i,t}$$

Equation 5

Where:

$e_{i,t}^{-1,1}$ is the three-day cumulative abnormal return for company i on date t
α is the average effect on stock returns in absence of events
β_1 is the average effect on stock returns of an event increasing or decreasing either intensity of conflict, barriers to entry, bargaining power or transparency
ϵ_{it} is the error term for company i at time t

Our dependent variable is the three-day cumulative abnormal return for every company on every day in the period, and D_i is a dummy taking the value 1 if an event is increasing the conflict intensity, -1 if an event is decreasing conflict intensity, and 0 otherwise. The dummy is coded as a factor variable in the regression to explicitly display each event type's influence. This model is similarly used when estimating the effect of events increasing or decreasing barriers to entry, bargaining power and transparency, with the dummy D_i assigned to the value 1 if an event is perceived to increase said factor, -1 if the event is assumed to decrease the factor, and 0 otherwise.

The standard errors are robust to heteroskedasticity and clustered by company, allowing for arbitrary correlation of returns for each company across dates. We stick to a 5% significance level. A rejection of the null solidifies a statistically significant average CAR, indicating that an event type, in fact, has significantly affected stock returns of oil companies operating in Nigeria.

Lastly, we have winsorized the returns in order to avoid unwanted influence from extreme outliers. All values below the 0.05th and above the 99.95th percentile are assigned to the 0.05th and 99.95th percentile, respectively.

7. Results and Discussion

This section will present and discuss empirical results from the event study. First, we will present an overview of our findings, display descriptive statistics, and evaluate the overall trends observed. Thereafter, we will turn our attention to the first prediction and examine how events assumed to increase or decrease conflict intensity have affected the companies in our scope. Following, we move over to the second, third and fourth predictions, presenting a collection of more specified analyses focusing on how event-caused changes in the business environment have affected oil companies in Nigeria. In particular, we examine the impact of events assumed to increase or decrease ii) barriers to entry, iii) governmental bargaining power, and vi) transparency. We will visualise and elaborate on our findings, while a discussion offering possible interpretations and explanations will follow. The full regression summary for events assumed to affect conflict intensity, barriers to entry, bargaining power and transparency can be found in Table A5 in the Appendix.

7.1 Results from the Event Study

Figure 2 on the next page presents an overview of every company-event pair from 2001 to 2017 and their respective CAR[11] over the three-day event window. The final results are compiled from 28 companies, 52 events, and 966 company-event pairs.

Out of the 52 events, 17 resulted in a CAAR[12] significantly different from zero, using a 95% confidence interval. In total, there are 32 events classified as conflict escalating, 14 as de-escalating, while six of the events are considered to have no effect on the conflict intensity.

---

[11] *CAR is the cumulative abnormal return for each company-event pair*
[12] *CAAR is the cumulative average abnormal return for each event*
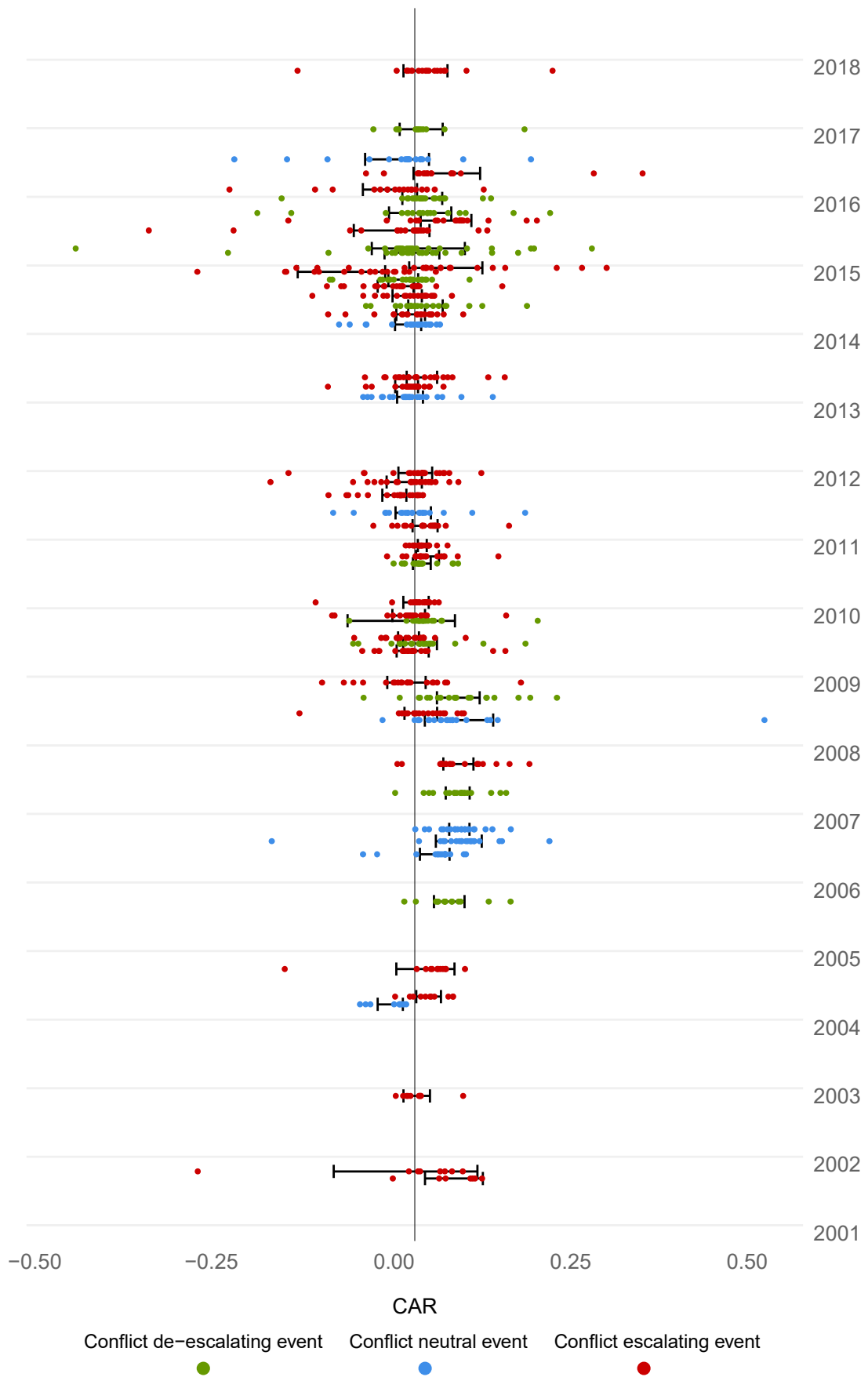
Figure 2: Cumulative abnormal returns from company-event pairs

Notes: The figure plots the three-day CAR for each company for each event, illustrated by a dot. Each event displays a 95% confidence interval in black for the CAAR. The vertical line is an intercept at a CAR of 0. The plot shows us the difference in stock market reaction for all companies when exposed to the same event.

We define *symmetric events* as those with equal signs with respect to changes in conflict intensity and CAAR. For instance, if an event assumed to increase the intensity of conflict results in positive abnormal returns, it is classified as symmetric. Symmetric events are thus consistent with prediction 1. From Figure 3 below, we observe that only 19 of the 43 events affecting conflict intensity are symmetric, an early indication that the general results are not in line with our predictions.

We also notice that a majority of the conflict de-escalating events are asymmetric, underpinning an environment with positive returns in response to events reducing the intensity of conflict.

Distribution of symmetric and asymmetric events
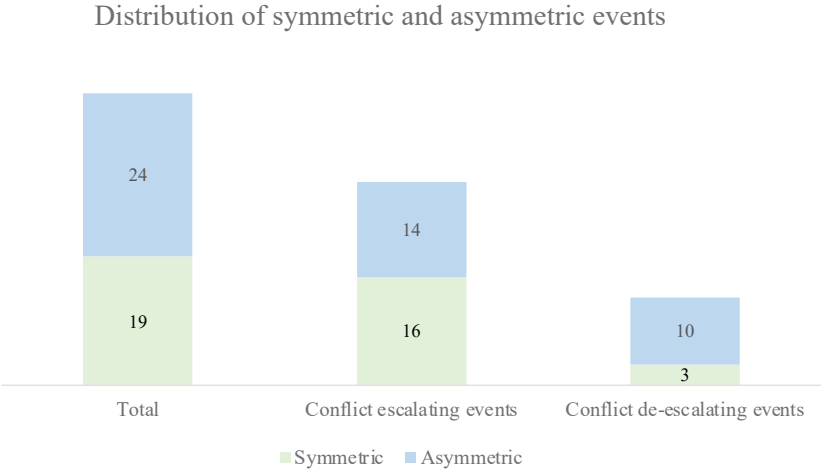
Figure 3: Distribution of event returns

Notes: Events causing no change in conflict intensity is excluded. Events with equal signs in respect to changes in the conflict environment and CAAR are defined as symmetric. Events with opposite signs in respect to changes in the conflict environment and CAAR are defined as asymmetric.

To explain the trends observed in Figure 2 on the previous page, it is useful to have a closer look at the different sources of conflict Nigeria has endured during our investigative period. As touched upon in the conceptual framework, we observe that generally, the events either have an oil-related or non-oil-related character. Events of oil-related character are located in proximity to oil fields and installations, around the Niger Delta and off the coast in the Gulf of Guinea. Events in these areas mainly revolve around rebel groups in opposition to oil majors and exploitation (Gavin, 2022). Some oil-related events involve terrorist attacks, sabotage and theft directly aimed at the oil installations. Others revolve around peace agreements and amnesty for rebel groups, or governmental measures directed at the oil sector. Non-oil-related events are usually of religious character, with Boko Haram present in the vast majority of conflicts. Such conflicts seldom involve oil corporations directly.

As an overall trend in our investigation, we observe more extreme CAARs for events from 2004 to 2009 than for the rest of our investigative period. Most of the events from 2004 to 2009 have a significantly positive CAAR. Interestingly, this trend in CAARs correlates with the period in which rebel groups fighting oil exploitation in the Niger Delta were most active. Consequently, events in this specified period of time have primarily been oil-related. Hence, a viable reason for the observed trend is that oil producers had a greater reaction to events revolving around oil exploitation than to other events. To substantiate the observations, we have run a regression investigating whether the abnormal returns to oil-related events are more significant than other events. The results from the regression are presented in Table A4 in the appendix.

The regression does, in fact, find that events related to oil production are associated with positive abnormal returns that are significantly different from zero at the 1% level, in opposition to non-oil related events which do not have a significant effect on CAAR. This could explain the trend with more extreme abnormal returns from 2004 to 2009, and supports the rational assumption that oil producers are more impacted by events directly affecting operations and safety. There is also a possibility of other unobservable factors explaining the trend of positive CAARs from 2004 to 2009. In the robustness section we control for one such factor, the oil price, which was highly volatile during the same period. However, our results were robust when controlling for changes in the oil price.

The remainder of our investigative period is constituted of events with a more varied character and is also without any clear observable trends for the confidence intervals in the plot. Events from 2010 and onwards primarily revolved around religious disputes, mainly related to the insurgency of Boko Haram in 2009, and not involving oil companies directly (UN, 2022). Although we observe some significant CAARs during this period, no obvious patterns are observed. The results from the regression indicate that events in this period are, on average, of lower significance for the oil companies in Nigeria than those directly affecting oil producers and exploitation. This corresponds well to what one could expect: that unrelated, peripheral events affect oil companies to a lesser degree.

We further move on to our first prediction, investigating the average CAR for events assumed to decrease or increase conflict intensity. This lets us draw inference from the plot in Figure 2.

7.2 Conflict Intensity
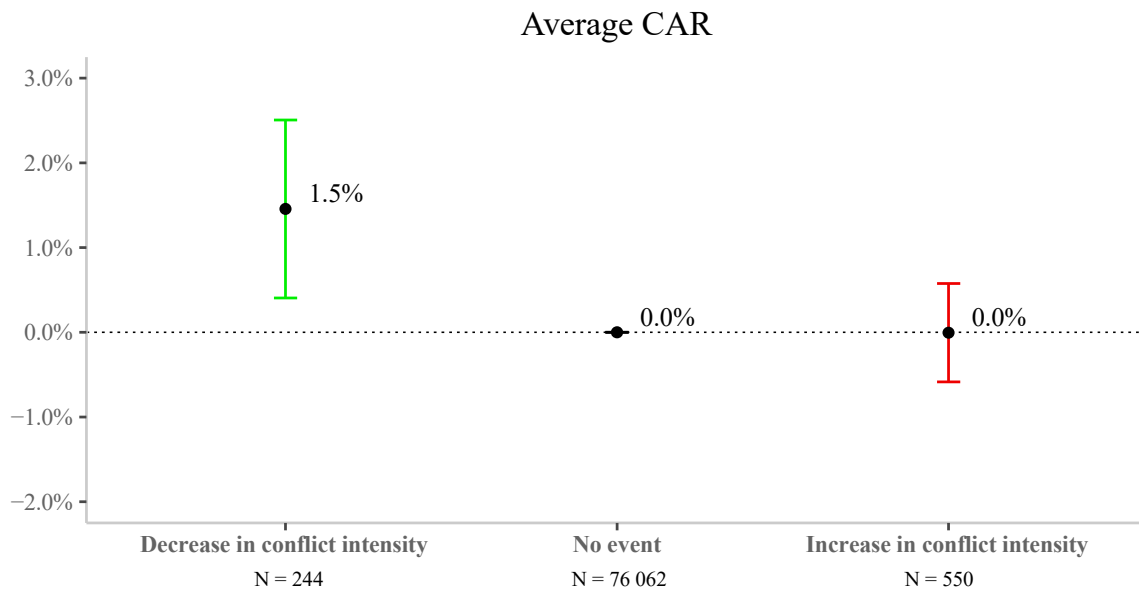
Average CAR

Figure 1: Average cumulative abnormal returns for events decreasing and increasing conflict intensity

Notes: The figure plots the average estimated CAR for all company-event pairs, for all events decreasing or increasing conflict intensity, as well as the average effect on three-day CAR in the absence of events. The confidence intervals are 95% confidence intervals for the mean of the three-day CAR. The figure also displays the number of observations for each event type. An observation is a trading day for one company from 2001 to 2017.

The event study indicates that oil companies in Nigeria experienced, on average, a significant positive abnormal return of 1.5% for conflict de-escalating events. This implies that oil companies in Nigeria could expect to benefit from events decreasing conflict intensity. The result contradicts our first prediction and the literature most relevant to our study, e.g. Guidolin & La Ferrara (2007) finding that mining companies in Angola experienced negative returns in response to de-escalation of conflict. However, empirical work on conflict and stock returns is somewhat contrasting, with e.g. Abadie & Gardeazabal (2003) finding results similar to ours, although in a different economic environment under consideration. Our findings further indicate that events increasing conflict intensity have, on average, no significant effect on abnormal returns. This suggests that oil producers in Nigeria could expect to be unaffected by events escalating conflict intensity. This observation is neither in line with our prediction nor relevant literature, e.g. DellaVigna & La Ferrara (2010) finding that arm traders experienced positive abnormal returns in response to conflict escalating events. The average CARs

observed are significantly different from each other at a 5% level[13], confirming that there has indeed been a differing response to conflict increasing and conflict decreasing events.

The following part will discuss potential reasons why we observe results opposing our predictions. For events decreasing conflict intensity, we observe a positive average CAR for the companies in our scope. A viable reason could be that investors perceived a reduction in conflict as positive for the stability and predictability of the business environment, reducing operational risk and promoting investment (Abadie & Gardeazabal, 2003). De-escalating events such as peace agreements between authorities and rebel groups may have put oil majors in less distress over direct attacks, sabotage and production halts, positive for investor sentiment. These factors may overall have outweighed and counteracted possible (and predicted) negative effects of decreasing conflict intensity, as touched upon by Guidolin & La Ferrara (2007)[14].

Moreover, some of the conflict de-escalating events in our selection are regulatory shocks such as elections or implementation of regulations. Due to extensive historical lobbying and evidence of electoral fraud from oil majors in Nigeria, one could argue that oil companies were in a position to strongly influence the outcome of such events in their favour (Manby, 1999). Well-informed investors could thus have reacted positively to certain events publicly assumed to be damaging for oil companies. For instance, when Umaru Yar'Adua was elected president in 2007, he was initially perceived as a president looking to facilitate a fairer distribution of resources for communities in the Niger Delta and fight corruption. However, as later investigations revealed, Yar'Adua was fraudulent and assisted oil majors in exploiting resources and suppressing local communities (Jiduwah, 2010). One could speculate that lobbying or electoral fraud made investors aware of Yar'Adua's willingness towards the oil producers' interests in advance, as we observe a positive CAAR to this event. Oil companies' influence on authorities could hence explain the positive abnormal returns in response to certain de-escalating events.

For events increasing conflict intensity, we observe no effect on average CAR for the companies in our scope. A possible reason for this is that investors experienced conflict fatigue[15] due to the extent and longevity of some Nigerian conflicts. Unrest in the Niger Delta

---

[13] *We have used a Welch two-sample t-test to validate the statistical difference between results. The results can be found in Table A6 in the Appendix*
[14] *Such as lower barrier to entry, more transparency, and greater governmental bargaining power*
[15] *Conflict fatigue is a state where conflict is perceived as the norm, and individuals exhibit less interest and surprise when new attacks and battles occur (Talant, 2022)*

from 2004 – 2010 and Boko Haram's continuous holy war initiated in 2009, are examples of remarkably eventful conflicts constituted by frequent attacks and battles (ACLED, 2022). Investors might have perceived the repeating nature of these conflict escalating events as the norm, and further escalation could already be accounted for. Although events in our examination are chosen on the basis of them affecting conflict intensity, investors might not have perceived continuous events related to the same conflict as decisive for future profits, as they would not change an already substantial level of conflict intensity.

A second viable explanation for why events increasing conflict intensity inflict no effect on oil companies could come from faulty and poor media coverage of conflict escalating events. Although one of the criteria in the event selection section ensures that the event attracts media and investor attention, the quality of reporting could be dubious. First, it is reasonable to believe that media outlets likewise investors suffered from conflict fatigue, reducing the emphasis on conflict escalating events. Second, Nigerian authorities have historically been known for their low transparency and illicit dealings, with incentives to hide adverse information from the public (Okereke, 2020). Hence, secrecy and restraint from authorities could lead to poor and unreliable media coverage of events deemed damaging for Nigeria's reputation, which could be a reason why we on average observe no significant abnormal returns to conflict increasing events.

A third possible reason for our results on conflict increasing events may be that investors in some cases failed to immediately assess the severity and impact of escalating conflict on oil producers, both directly and indirectly[16]. Prolonged and delayed reactions to events which in retrospect have been deemed influential, could lead to abnormal returns being distributed over an extended period. Our three-day event window might in such cases have been too short to pick up the full effect of the event. This concern will however be partially addressed in the robustness section, testing for a three-day event window spanning from the day of the event until three days after (0,3).

In short, we observe a significantly positive reaction to events decreasing conflict intensity, contradictory to our prediction. A likely reason is that reduced uncertainty and operational risk were perceived as beneficial for the oil companies, or that oil firms have exploited their influence on authorities to benefit from seemingly de-escalating events. On the other hand, we

---

[16] *It is difficult to know how a conflict will unfold. It is however easier to comprehend how the business environment will be when the conflict is over, as one knows how the environment was before the conflict started.*

observe no significant average reaction to events escalating the intensity of conflict, somewhat contradictory to our prediction. Explanations for this could be that investors have suffered from conflict fatigue or had accounted for a volatile business environment in advance. Second, it is possible that media coverage of noteworthy events has been poor due to secrecy or dubious quality and reach. Thirdly, investors might have failed to realise events' full-scale influence on oil companies during the event window including the day before and after the event.

7.3 Event-inflicted Changes in the Business Environment

In this section, we turn to our second, third and fourth predictions, focusing on how events influencing 2) barriers to entry, 3) governmental bargaining power, and 4) transparency affects oil companies in Nigeria. By focusing on these three factors, we seek to explain why companies react as they do to certain events and quantify how different implications of conflict affect companies. First, we want to examine the impact of events assumed to change the barriers to entry in Nigeria.

7.3.1 Barriers to Entry
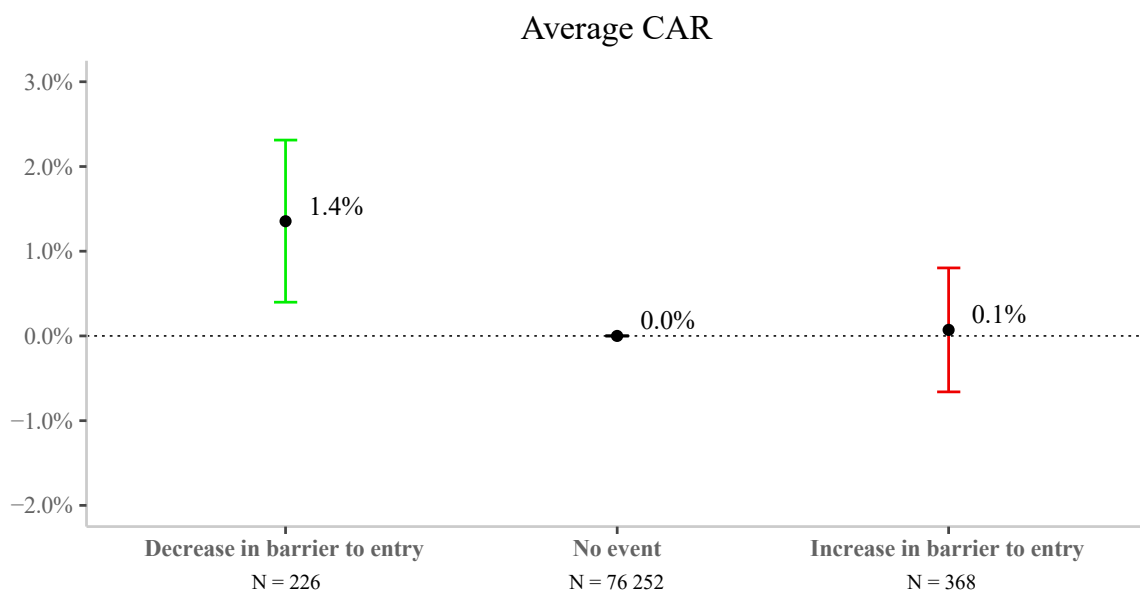
Figure 2: Average cumulative abnormal returns for events decreasing and increasing barriers to entry

Notes: The figure plots the average estimated CAR for all company-event pairs, for all events decreasing or increasing barriers to entry, as well as the average effect on three-day CAR in the absence of events. The confidence intervals are 95% confidence intervals for the mean of the three-day CAR. The figure also displays the number of observations for each event type. An observation is a trading day for one company from 2001 to 2017.

For events perceived to decrease barriers to entry, we notice a significantly positive average CAR of 1.4%, contradictory to our second prediction. This indicates that oil producers in Nigeria, on average, could expect to benefit from events decreasing barriers to entry. Further, our results show no significant reaction to events assumed to increase barriers to entry, also contradicting our second prediction. This implies that oil companies in Nigeria, on average, could expect to be unaffected by events increasing barriers to entry. We observe that events causing entry barriers to decrease result in a 1.3 percentage points higher average CAR than events increasing barriers to entry, a statistically significant difference of means[17]. This suggests that the investors, on average, have reacted significantly different to the two outcomes.

Starting with events assumed to decrease barriers to entry, we observe a significant positive average reaction. Barrier to entry decreasing events primarily involve treaties, ceasefires, loosened regulations or crackdowns on rebel opposition. It can be argued that the direct effect on incumbent firms from barrier decreasing events – mainly a more stable and secure business environment, was of greater magnitude for investors than the indirect effect of less competition due to lower barriers to entry. A relevant observation is that events decreasing barriers to entry are naturally correlated with events de-escalating conflict intensity. Hence, the reasoning for positive average CARs is in line with the argumentation for why events declining conflict intensity affected firms positively.

Turning our attention to events perceived to increase barriers to entry, we observe no significant average effect on the incumbent oil companies. This could result from ambiguous factors counteracting each other. On the one hand, events increasing barriers to entry are assumed to have made it more challenging and less attractive for new companies to enter Nigeria. Oil production is a highly capital-intensive business, and failed attempts to establish production could lead to large losses for investors. Moreover, newcomers likely lack capabilities and experience in operating in high-risk environments (Guidolin & La Ferarra, 2007). As a result, incumbent firms could reap the benefits of less competition, e.g. by acquiring concessions at a discount. This should, in theory, lead to positive abnormal returns for incumbent firms (Islami et al., 2010).

On the other hand, events increasing barriers to entry could also be expected to have affected incumbent companies negatively, as they often involve direct attacks on oil installations

---

[17] *Results of Welch two sample t-test can be found in Table A7 in the Appendix*

leading to production halts, expensive repairs and higher security costs (Abadie & Gardeazabal, 2003). For instance, Shell was estimated to lose up to $25m daily after their Nigerian offshore FPSO at the Bonga Field was forced to shut down after an attack by MEND (Green, 2008). These counteracting effects might have cancelled each other out for events increasing barriers to entry. We also note that events increasing barriers to entry are naturally correlated with events escalating the intensity of conflict. Hence, the reasoning for no observable effect on average CARs are in line with the argumentation in the prior section for why we see no average reaction to events raising conflict intensity.

To sum up, we observe a significantly positive average reaction to events decreasing barriers to entry, contradictory to our prediction and economic theory. We have previously argued that oil companies in Nigeria seem to have valued a stable business environment, which may have outweighed the harmful effects of increased competition. Events increasing barriers to entry caused no significant average CAR, in opposition to our prediction. There may have been an advantage of less competition, however events like direct attacks on infrastructure and production are likely to have counteracted this effect. We observe a natural correlation between events increasing (decreasing) barriers to entry and rising (reducing) conflict intensity. It is therefore difficult to assess and isolate the influence of events changing barriers to entry.

7.3.2 Bargaining Power

Average CAR

Figure 3: Average cumulative abnormal returns for events decreasing and increasing bargaining power

Notes: The figure plots the average estimated CAR for all company-event pairs, for all events decreasing or increasing bargaining power, as well as the average effect on three-day CAR in the absence of events. The confidence intervals are 95% confidence intervals for the mean of the three-day CAR. The figure also displays the number of observations for each event type. An observation is a trading day for one company from 2001 to 2017.

For events decreasing the governmental bargaining power, we observe a positive average CAR of 2.7%, statistically different from zero. This result is consistent with our third prediction, and indicates that oil companies in Nigeria, on average, could expect to benefit from events leading to loss of governmental bargaining power. We notice no significant reaction to events increasing bargaining power of the government, contradicting prediction 3. This suggests that oil companies in Nigeria, on average, could expect to be unaffected by events rising governmental bargaining power. Events decreasing governmental bargaining power obtain a 2.0 percentage points higher average CAR than events increasing bargaining power, a statistically significant difference in means[18]. This implies that on average, the companies in our scope have reacted significantly different to the two event outcomes.

As the Nigerian government is highly dependent on oil revenue[19] it has been crucial to sustain oil production at high levels in order to fund their expenses (De Wit & Crookes, 2013). However, conflicts that limit the government's ability to provide secure and predictable

---

[18] *A Welch two-sample t-test reveals that the means are statistically different. See Table A8 in the Appendix*

[19] *Oil production has historically (1986 – 2009) accounted for ~90% of Nigeria's export value and approximately ~80% of government revenue over the same period (OPEC, 2022)*

conditions for the oil companies are assumed to reduce the attractiveness of operating in Nigeria. Oil majors are likely aware of this, and may exploit their power when negotiating permits or lobbying elections and regulations. Authorities might thus be forced to agree on less preferable terms to facilitate investments and continued production, which can materialise as underpriced concessions, eased environmental requirements or reduced taxes (DellaVigna & La Ferrara, 2007). This could explain the positive average CAR in response to events decreasing governmental bargaining power. Moreover, the oil industry is one of the primary sources of corruption[20] amongst government officials in Nigeria (Allison, 2012). Politicians have extensive influence on the industry, while the vast cash generation in oil production makes room for embezzlement. As authoritarian power deteriorates, it may be easier for oil producers to acquire benefits through corruption and negotiate lower bribes.

By the same reasoning, an increase in governmental bargaining power could be expected as negative for oil companies, reducing their upper hand in negotiations (Guidolin & La Ferrara, 2007). This is however not in line with our observations, as we observe no significant average CAR to events increasing the bargaining power of the government. A possible explanation is that oil majors historically have been proactive and secured long-lasting, favourable deals in periods with low governmental bargaining power (Onyi-Ogelle, 2016). Further, a majority of the concessions and contracts awarded in Nigeria have been joint ventures with the national NNPC[21]. Long-term contractual agreements with the government could thus be perceived as likely to be upheld regardless of changes in the political landscape (Ifesinachi, 2014). As a result, events increasing bargaining power might be of less relevance to oil majors.

In short, we observe a significantly positive average CAR in response to events decreasing governmental bargaining power, in line with prediction 3. As Nigeria is highly dependent on oil revenue, oil companies might leverage their position to negotiate favourable deals, assumed beneficial for future cash flow. Further, we see no significant reaction to events increasing governmental bargaining power, contradictory to prediction 3. This result may be explained by the assumption that oil producers have been proactive and secured long-lasting deals in periods of constrained governmental bargaining power, leaving them less affected by events increasing bargaining power.

---

[20] *A report by Nigeria's anti-corruption agency found that mismanagement and dodgy practices by ministers, parastatals, and multinational oil companies cost Nigeria $35 billion over the years from 2002 to 2012 (Allison, 2012)*
[21] *Nigerian National Petroleum Company is an oil company with responsibility for upstream and downstream development on behalf of the Nigerian Government (NNPC, 2022)*
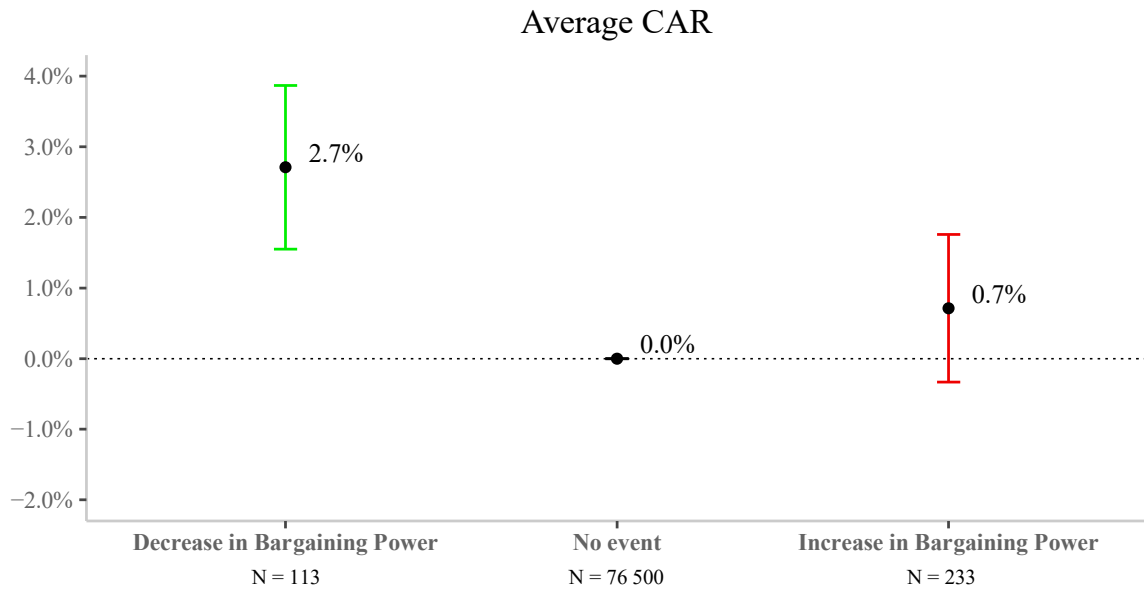
7.3.3 Transparency
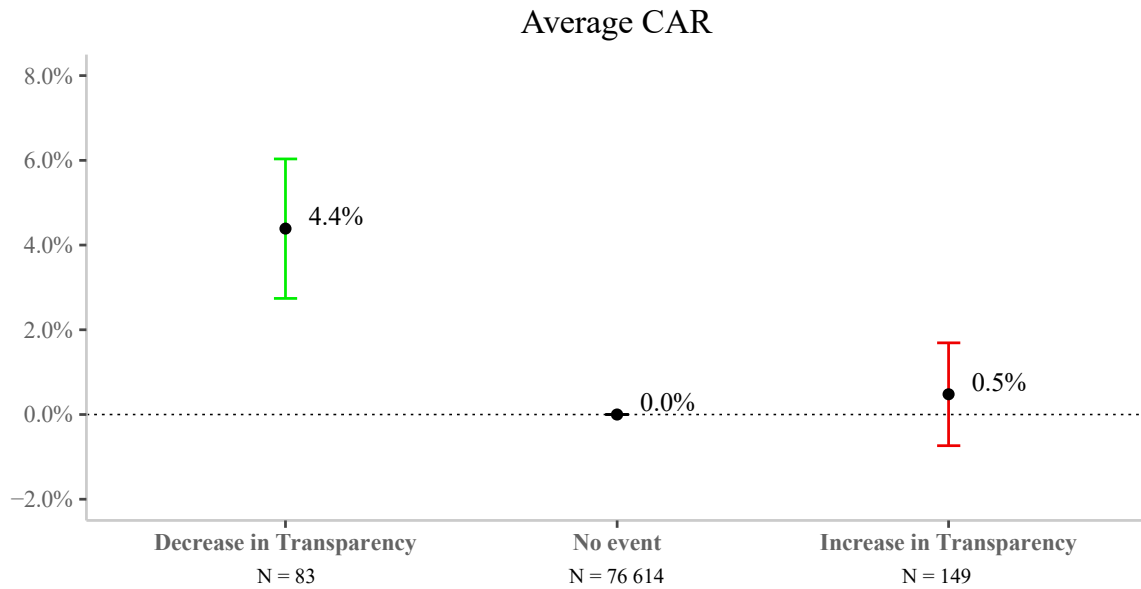
Figure 4: Average cumulative abnormal returns for events decreasing and increasing transparency

Notes: The figure plots the average estimated CAR for all company-event pairs, for all events decreasing and increasing transparency, as well as the average effect on three-day CAR in the absence of events. The confidence intervals are 95% confidence intervals for the mean of the three-day CAR. The figure also displays the number of observations for each event type. An observation is a trading day for one of company from 2001 to 2017.

We observe a significantly positive CAR of 4.4% for events decreasing transparency, in line with our fourth prediction. This indicates that oil companies in Nigeria, on average, could expect to benefit from events decreasing transparency. Events increasing transparency corresponds to an average CAR of 0.5%, however not significantly different from zero. Contrary to our fourth prediction, the results indicate that transparency increasing events have, on average, no effect on oil companies in Nigeria. Events decreasing transparency in Nigeria constitute a 3.9 percentage points higher average CAR than events increasing transparency, with significantly different means[22]. This indicates that companies, on average, have reacted significantly different to the two event outcomes.

Events decreasing transparency could facilitate a business environment enabling both companies and government officials to partake in corruption and hide illicit dealings from the public (Guidolin & La Ferrara, 2007). Such dealings could involve corruption in acquiring permits, tax avoidance or unfair distribution of profits, assumed to be beneficial for incumbent firms (Martin & Subramanian, 2003). The extensive degree of corruption in

---

[22] *Tested with a Welch Two-sample T-test. See* Table A9 in the Appendix.

Nigeria makes it an integral part of the business environment, and several international oil majors like Chevron, Eni and Shell have been convicted of corruption in the country[23] (Achinike, 2021). Oil companies are likely wary of events that might affect their opportunities to partake in illicit dealings and, as important, events reducing the likelihood of being exposed and convicted for such actions[24]. Such events are typically of transparency reducing character, constituting a viable explanation for the positive average CAR observed in response to events decreasing transparency.

However, the abovementioned reasoning supports an expectation that events increasing transparency should result in negative abnormal returns, which is different from what our analysis has uncovered. Events assumed to increase transparency showed no significant effect on average CAR. A potential explanation is that some of these events also affected other factors likely perceived to be beneficial for the oil companies. As an example, the establishment of the National Oil Spill Detection Response Agency (NOSDRA) in 2006 is considered a transparency increasing event, as it tracks and publicize oil spills in Nigeria (NOSDRA, 2021). The introduction of NOSDRA hence reduced the possibility for oil producers to hide spills. However, it is likely that this simultaneously reduced the immediate threat from rebel groups attacking oil installations, as an integral motive behind the rebellions was to reduce pollution of the local communities and environment. As such, investors might have expected that the risk of sabotage and attacks on oil production would diminish with the introduction of NOSDRA, which may have counteracted the expected negative effect of less transparency.

To sum up, we observe a significantly positive average CAR in response to events decreasing transparency, in line with our predictions. Low transparency facilitated a business environment enabling companies to benefit from unethical behaviour and partake in corruption, hidden from the public. We further observe no significant average response to events increasing transparency. Such events may have reduced the immediate threat of rebel group attacks, possibly counteracting the expected negative effect of less transparency.

---

[23] *Shell admitted it fed conflict, poverty and corruption in Nigeria. Chevron paid military troops after attacking villages surrounding Chevron oil rigs (Achinike, 2021).*
[24] *Fines for illicit dealings can be huge, illustrated by Nigerian authorities filing a $1.1 billion lawsuit against Shell and Eni for an alleged corrupt granting of oilfield rights in 2011 (Reuters, 2018).*

8. Robustness

This section will present robustness checks assessing whether our results hold under different conditions. First, we investigate how our data selection, hereunder event classification and event selection, has influenced the results. In order to test this, we conduct two separate tests: 1) reclassifying events where the effect on bargaining power and transparency could be unclear, and 2) re-selecting and removing overlapping events. Second, we want to determine whether our research design has significantly impacted the final results. Hereunder, we run the event studies with different estimation, event and CAR windows[25]. Lastly, we conduct a test controlling for the daily change in oil price, as this may have impacted CAR for the companies in our scope.

8.1 Event Classification and Data Selection

As both the classification of events and selection of data are primarily based on a qualitative assessment, our subjective perception could considerably influence our main findings. Consequently, we have tested the robustness of our event classification and data selection. The results of these tests can be found in Table A10 and Table A12 in the Appendix.

8.1.1 Event Classification

We first conduct a test with a reclassification of events where the effect on bargaining power and transparency could be ambiguous. The results and a list of reclassified events are presented in Table A10 and Table A11 respectively, in the Appendix. We have altered the classification of eight events. The effect on bargaining power has been adjusted for all of them, while the effect on transparency has been adjusted for three of them. Four of the eight reclassified events have a CAAR above |3%| and could thus have a significant impact on the results depending on how they are classified. The effect on conflict intensity and barrier to entry have not been reclassified for any events, as we find them less ambiguous.

Repeating the event study with these new classifications, we see that events decreasing bargaining power and transparency still result in significantly positive average CARs, although the magnitude is somewhat reduced. However, events increasing transparency are now associated with a significantly positive average CAR. This supports the initial findings for events decreasing bargaining power and transparency, while the results related to events

---

[25] *CAR window is the days included when calculating the cumulative abnormal return surrounding an event*

increasing transparency appear less robust. As we have not reclassified any effects on conflict intensity or barriers to entry, the results for these event types are consequently not changed nor included.

The results from the above-mentioned robustness test are the cumulative effect of changes to all events simultaneously. If we had reclassified one event at a time and ran a new regression each time, the results could have been different. For instance, we only have four events decreasing transparency, making this result especially prone to classification. Altering the effect on transparency for one of the most influential of the eight reclassified events, when Umaru Yar'Adua became president, from -1 to 0, the average CAR for events decreasing transparency changes from 4.4% to 0.5%. The robustness of findings related to transparency is thus limited.

8.1.2 Data Selection

The robustness of the analysis is also prone to the qualitative selection made in cases where multiple events have been separated by less than 21 days. In our initial analysis, we have kept the event perceived as most influential, or the one occurring first[26]. To avoid the problem with potential confounding events or misinterpretation of which events are most relevant, we have run a robustness test excluding all events happening in the same 21-day period. This resulted in 42 events, compared to 52 in the initial analysis. The result of this test can be found in Table A12 in the Appendix.

We observe that events decreasing conflict intensity and barriers to entry no longer result in a significantly positive average CAR, while events increasing barriers to entry now show a significantly positive average CAR. Results for events affecting bargaining power are mainly unchanged. These findings imply that results related to events affecting conflict intensity and barriers to entry lack robustness, as the removal of just ten events caused a noticeable change in the estimated effect. An unwanted and coincidental side effect of excluding all events happening in the same 21-day period is that we lose all transparency decreasing events and three of the transparency increasing events, leaving us with only five events affecting transparency. The limited number of transparency-changing events in itself makes the results related to transparency less robust. This is confirmed by the robustness test, as transparency

---

[26] *If the events are perceived equally influential*

increasing events now result in a significantly positive average CAR, as opposed to no significant effect in our initial analysis.

The last aspect we have assessed related to the data selection is the potential presence of survivorship bias[27]. Of the 28 companies in our study, 13 of them were either delisted, acquired, went bankrupt or exited Nigeria during the investigative period from 2001 to 2017. In addition, the companies in our scope have entered Nigeria at different times, the majority after 2006. In comparison, 43% of US private sector companies established in 2006 survived until 2017, according to the US Bureau of Labour Statistics (BLS, 2022). In light of this, the ~54% survival rate of companies in our data does not appear to be markedly out of the normal and suggests that survivorship bias should be of less concern in this study.

Overall, the robustness tests related to data selection indicate that the results for events affecting conflict intensity, barriers to entry, and transparency are prone to changes in the data sample. Our original findings related to these aspects should therefore be interpreted with caution. However, results for bargaining power are relatively unaffected and suggest that these results are reasonably robust to changes in the data selection.

8.2 Research Design

In this section we present the robustness checks conducted to test the research design. We assess the robustness related to our choice of estimation, event and CAR window. The results can be found in Table A13, Table A14 and Table A15 in the Appendix, respectively.

8.2.1 Estimation Window

First, we expand the length of the estimation window from 120 to 200 days. The increased sample of returns should provide greater accuracy for the forecast and also minimise the effect of other events included in the estimation window (Benninga, 2008). The results in Table A13 show that the new estimated effects are similar to our original findings, with only minor coefficient variations. Hence, the initial results appear robust to the choice of estimation window.

---

[27] *Survivorship bias is the error of only including existing entities in a sample, while overlooking the entities that have not survived through the sample period (Garcia & Gould, 1993)*

8.2.2 Event Window

Second, we want to test the robustness of the event window. Prolonged event windows increase the possibility of including unobserved confounding events, making it difficult to isolate the impact of the event in focus (Brown & Warner, 1980). We consequently shorten the event window from 21 to 11 days, resulting in an event window ranging from five days before the event to five days after the event. From the results in Table A14, we observe that a shortening of the event window causes no change in significance and minor revisions to the coefficients. Thus, the initial results appear robust to the choice of event window.

8.2.3 CAR Window

Lastly, we want to test whether our findings are affected by different CAR windows[28]. According to searches in LexisNexis, media coverage of events in Nigeria has been limited, especially in the first half of our research period (LexisNexis, 2022). This could imply that reactions to certain events have been delayed more than one day. We thus control for a CAR window ranging from the day of the event to three days after. The results in Table A15 show that a CAR window of (0,3) only changes the significance of events decreasing conflict intensity, making the average CAR no longer significantly positive. Further, the magnitude of events decreasing bargaining power and transparency are now higher. One should thus be aware that the original result for events decreasing conflict intensity may lack robustness.

Overall, the robustness tests related to research design indicate that the results are robust to changes in the estimation and event window. However, events decreasing conflict intensity are affected by the choice of CAR window, and the original findings related to this aspect should therefore be interpreted with caution. Results for events affecting entry barriers, bargaining power and transparency are relatively unaffected and suggest that these results are reasonably robust to the methodical approach employed.

---

[28] *CAR window is the days included when calculating the cumulative abnormal return surrounding an event*

8.3 Oil Price Control

The last robustness test we conduct is controlling for changes in the oil price. The results can be found in Table A16 in the Appendix. The reason behind this robustness test is that stock prices for oil companies tend to correlate with the oil price, illustrated by an average correlation between the S&P Energy Index and WTI oil of 0.6 (Norland, 2016). The oil price was highly volatile during certain periods of investigation, rising from 40$ per barrel in 2005 to 140$ in 2008 before plummeting to 43$ a year later[29]. Consequently, fluctuations in the oil price could be a potential driver to why we see a trend of high CAARs from 2005 to 2009, and should thus be controlled for.

We conduct the control by including explanatory variables for the change in oil price from day *t-1* to *t*, as well as to the 2nd and 3rd power, in the Fama-French estimation regression. We include the oil price change to the 2nd and 3rd power as explanatory variables to control for potential non-linear relationships between the oil price and stock prices of oil companies. The test shows no change in significance for the variables we investigate, and only minor adjustments to the coefficients. We have identified potential reasons why this result is reasonable.

Both the oil price and stock markets are highly correlated with both expectations to, and the actual state of, the world economy (Rasmussen & Roitman, 2011). Thus, oil price fluctuations usually correlate with stock market indexes. As we already control for changes to the market index in the initial Fama-French regression used to predict expected returns, much of the variation is already explained.

Furthermore, surveys and 10-K filings suggest that around 90% of oil and gas companies use hedging as part of their operations (JD Supra, 2022). One should thus expect the oil companies in our study to own a diversified portfolio of futures and other derivatives to hedge their production, making daily spot price fluctuations less important.

---

[29] *A graph of crude oil prices from 2001-2017 can be found in Table A17 in the Appendix*

9. Limitations

As discussed throughout this paper, one of the main limitations of this study is the qualitative assessment carried out in the data collection phase.

First, we have limited our analysis to include only the most significant and unexpected events during the different conflicts in Nigeria. This selection has been based on both a qualitative and quantitative assessment, as described in the data selection section. As Nigeria has experienced a vast number of notable events and conflicts during the timeframe of consideration, it has been challenging to select the events perceived as most influential by investors. We might have missed noteworthy events, or included events of irrelevance for the oil companies. This could lead to generations of false-positive and false-negatives in the event study, which the reader should be aware of (Hackshaw, 2008).

Second, a majority of the oil companies with concessions in Nigeria have never been listed on a stock exchange (OilMap, 2022). We detected 214 companies holding a concession in the relevant period from 2001 to 2017, while only 28 were listed on an exchange for at least a year during the same period. Moreover, there have never been more than 23 companies present simultaneously at any given date in our analysis. We are thus left with a relatively small sample of companies to investigate compared to the total number of oil companies present in Nigeria during our investigative period. This makes it harder to assess the total impact from events on the oil industry in Nigeria. Further, a small sample size makes the possibility of false positives and over-estimating magnitudes prevalent (Hackshaw, 2008).

Another caveat in our paper is that most of the companies included in our study also have operations in countries other than Nigeria, making it difficult to isolate the stock reactions to Nigerian events. For instance, nine of the 28 companies in our selection are among the 30 largest oil and gas companies in the world, e.g. Chevron, Shell and Equinor, and have operations in multiple countries (BrandFinance, 2022). As their cash flow and assets in Nigeria likely constitute a fraction of their total, stock reactions to Nigerian events might be limited. This might skew the average CARs we observe towards zero.

Lastly, one could argue that the introduction of high-frequency trading (HFT) after 2010 could somewhat distort our investigation of event returns. HFT utilises computerised trading strategies, trying to exploit volatility in stock markets in milliseconds (Jones, 2013). This smooths out the variance in markets, which could make it challenging to obtain results from

event studies (Caivano, 2015). We do however not observe lower variance in our event study post-2010, as seen in Figure 2, alleviating our main concerns related to HFT.

10. Conclusion

Since Nigeria struck oil in 1956, the country has been struggling with mismanagement, exploitation and unrest, falling prey to the resource curse. We argue that this has created a business environment facilitating unethical behaviour. Using an event study methodology, our thesis has attempted to provide evidence that under certain circumstances, oil companies in Nigeria might have profited from conflict and regulatory shocks.

First, this thesis has examined how oil companies in Nigeria have reacted to events perceived to decrease or increase the intensity of conflict. We find that the companies, on average, exhibited a positive CAR in response to events decreasing the intensity of conflict, while we find no significant average reaction to events increasing the intensity of conflict. Second, we have investigated how oil companies in Nigeria have reacted to certain event-inflicted changes in the business environment, namely barriers to entry, governmental bargaining power, and transparency. We find evidence of an average increase in CAR in response to events lowering barriers to entry, governmental bargaining power and transparency. Events raising these factors did however not affect average CAR.

We argue that overall, investors have valued de-escalation of conflict intensity, as it promotes stability predictability and reduces operational risk. However, in light of the resource curse, we also argue that mismanagement and unrest in Nigeria have created a business environment facilitating for exploitation. In particular, oil companies in Nigeria appear to have benefited from low governmental bargaining power and transparency, enabling them to negotiate favourable deals, partake in corruption and extract surplus at the expense of citizens.

The results from the event study are tested for alternative event selections and classifications, as well as different estimation-, event-, and CAR windows. Finally, we have tested for influence from fluctuations in the oil price. Robustness checks reveal that our results are prone to varying selection and classification methods for events and somewhat to the methodical design. This underlines the importance of thoroughly rationalising and evaluating the chosen approach to data selection and research design, and substantiates the need for further research on conflict and stock returns. The event study is however robust to impact from fluctuations in the oil price.

Illegal and unethical activities have played a substantial role in the development of many resource-rich nations around the world (Ross, 2015). Our thesis complements previous literature on conflict dynamics through the lens of financial markets, and provides evidence that oil companies in Nigeria appear to have benefitted from de-escalation of conflict. However, we also find evidence that under certain circumstances, they could profit from conflict-induced changes in the business environment. With conflict on the rise globally, our findings draw attention to the role and motives of oil companies operating in unstable business environments, like Nigeria.

References

Abadie, A., & Gardeazabal, J. (2003). The economic costs of conflict: A case study of the Basque Country. *American economic review, 93(1)*, pp. 113-132.

Achinike, C. (2021). Nigeria: Anti-Corruption Overview In The Oil And Gas Industry. *Mondaq.* Retrieved from: https://www.mondaq.com/nigeria/white-collar-crime-anti-corruption-fraud/1130238/anti-corruption-overview-in-the-oil-and-gas-industry

ACLED (2022). About ACLED. *The Armed Conflict & Event Project.* Retrieved from: https://acleddata.com/about-acled/

Akpan, E.O. (2009) Oil Price Shocks and Nigeria's Macroeconomy. *Paper presented at CSAE Conference on Economic Development in Africa, St. Catherine's College, Oxford, 22-24 March.*

Amana, A., Amana, S. (2013) State Objectives And Petroleum Development Contracts. *World Affairs: The Journal of International Issues. Vol. 17, No.2 Summer 2013, pp 80-107 (28 pages).*

Aniche, E. (2015). Oil Joint Venture Partnerships and Nigerian Economy. *University of Nigeria Journal of Political Economy, 7: 1-24.*

Argungu, M. (2022). 2023 Presidency: Why Niger Delta, Why Goodluck Jonathan? *The Guardian*. Retrieved from: https://guardian.ng/opinion/2023-presidency-why-niger-delta-why-goodluck-jonathan/

Armitage, S. (1995). Event study methods and evidence on their performance. *Journal of economic surveys, 9(1), 25–52.*

Azoro, C., (2021). Weak Institutions and Poor Governance in Nigeria: A Socio-Legal Perspective. *African Journal of Law, Political Research and Administration, Volume 4, Issue 2, 2021 (pp. 61-70).*

Baker, D. (2005). Nigeria: Chevron Paid Troops After Alleged Killing. *CorpWatch.* Retrieved from: https://www.corpwatch.org/article/nigeria-chevron-paid-troops-after-alleged-killing

BBC (2015). Nigeria's Goodluck Jonathan, profile of a defeated president. *BBC* Retrieved from: https://www.bbc.com/news/world-africa-12192152

Benninga, S. (2008). Financial modeling (3 ed.). *Boston, MA: MIT Press.*

BLS (2022). Survival of private sector establishments by opening year. U.*S. BUREAU OF LABOR STATISTICS.* Retrieved from: https://www.bls.gov/bdm/us_age_naics_11_table7.txt

BrandFinance (2022). Oil & Gas 50 2022. *BrandFinance.* Retrieved from: https://brandirectory.com/rankings/oil-and-gas/table

Brown, S., Warner, J. (1980) Using Daily Stock Returns: The Case of Event Studies *Journal of Financial Economics 14 (1985) 3-31. North-Holland*

Caivano, V. (2015). The Impact of High-Frequency Trading on Volaitlity. Evidence from the Italian Market. *SSRN Electronic Journal, 2015*.

De Wit, M. & Crookes, D. (2013). Oil Shock Vulnerabilities & Impacts: Nigeria Case Study. *United Kingdom Department for International Development*.

DellaVigna, S., & La Ferrara, E. (2010). Detecting illegal arms trade. *American Economic Journal: Economic Policy*, 2(4), 26-57.

Dube, A., Kaplan, E., & Naidu, S. (2011). Coups, corporations, and classified information. *The Quarterly journal of economics*, 126(3), 1375-1409.

Dun & Bradstreet (2022). Oil And Gas Extraction Industry Insights From D&B Hoovers. *Dun & Bradstreet.* Retrieved from: https://www.dnb.com/business-directory/industry analysis.oil_and_gas_extraction.html?fbclid=IwAR0bG4eseTO6QspnLwudf5XKg46 rE1wqc9dc3QLIeYlMqJWM2HlHbabZGM

Ekeghe, N. (2022). Replacing Oil as Mainstay of Nigerian Economy. *This Day*. Retrieved from: https://www.thisdaylive.com/index.php/2022/08/31/replacing-oil-as-mainstay-of-nigerian-economy/

FN-Sambandet (2021). Nigeria – Boko Haram. *United Nations Association Norway*. Retrieved from: https://www.fn.no/Konflikter/nigeria-boko-haram

Frynas, J. (2000). Oil in Nigera: Conflict and Litigation Between Oil Companies and Village Communities. *LIT/Transaction, Hamburg*. Retrieved from: https://www.researchgate.net/publication/270049923_Oil_in_Nigeria_Conflict_and_ Litigation_between_Oil_Companies_and_Village_Communities

Garcia, C. & Gould, F., (1993). Survivorship Bias. *Journal of Portfolio Management; London Vol. 19, Iss*.

Gavin, M. (2022). Nigeria Security Tracker. *Council on Foreign Relations*. Retrieved from: https://www.cfr.org/nigeria/nigeria-security-tracker/p29483

Green, M. (2008) Nigeria's oil militants take their fight beyond the delta. *Financial Times.* Retrieved from: https://www.ft.com/content/b23066a6-4799-11dd-93ca-000077b07658

Guidolin, M., & La Ferrara, E. (2007). Diamonds are forever, wars are not: Is conflict bad for private firms? *American Economic Review*, 97(5), 1978-1993.

Hackshaw, A. (2008). Small studies: strengths and limitations. *Eur Respir J 2008; 32: 1141–1143.* Retrieved from: https://erj.ersjournals.com/content/erj/32/5/1141.full.pdf

Harvard Divinity School (2022). Movement for the Emancipation of Niger Delta. *Religion and Public Life, Havrvard Divinity School.*

Hinz, O., Nofer, M., Schiereck, D., & Trillig, J. (2015). The influence of data theft on the share prices and systematic risk of consumer electronics companies. *Information & Management, 52(3), 337–347.*

JD Supra (2022). Oil & Gas Companies Continued To Hedge Before Price Spikes. *JD Supra.* Retrieved from: https://www.jdsupra.com/legalnews/oil-gas-companies-continued-to-hedge-3468285/

Jiduwah, C. (2010) Umaru Musa Yar'adua Took the Piss. *Sahara Reporters.* Retrieved from: https://saharareporters.com/2010/02/07/umaru-musa-yar'adua-took-piss

Jones, C. (2013). What Do We Know About High-Frequency Trading? *Columbia Business School Research Paper No. 13-11*

LexisNexis (2022). Search results "Nigeria". *LexisNexis. Retrieved from: https://advance-lexis-com.ezproxy.nhh.no/search/?pdmfid=1516831&crid=b87a3a82-a253-4bb5-bdb6-4152d46f19c1&pdsearchtype=SearchBox&pdtypeofsearch=searchboxclick&pdstartin=&pdsearchterms=nigeria&pdtimeline=Previous+2+years+%7C+p2y&pdpsf=&pdquerytemplateid=&pdsf=&ecomp=3bJgkgk&prid=e63fca9d-e663-4720-8c15-f9de368fb79d*

LexisNexis (2022) About LexisNexis. *LexisNexis.* Retrieved from: https://www.lexisnexis.com/en-us/about-us/about-us.page

Lusha (2022). Oil energy Companies. *Lusha.* Retrieved from: https://www.lusha.com/company-search/oil-energy/68/?fbclid=IwAR2mmufsw0zbpUS2l5x02O8UYkA3cFntQjoIhtcd4OwiMWNejvsamXSsAhA

MacKinlay, A. (1997, March). Event Studies in Economics and Finance. *Journal of Economic Litterature, 35*(1), 13-39.

MacLahlan K. (2018). Corruption and Conflict: Hand in Glove. *Nato Review.*

Manby, B. (1999). The Role and Responsibility of Oil Multinationals in Nigeria. *Journal of International Affairs, Vol 53, No.1, pp. 281-301, 1999.*

Matti, S. (2010). Resources and rent seeking in the Democratic Republic of the Congo. *Third World Quarterly, 31(3)*, pp. 401-413.

Mohammed, K. (2021). A wealth of sorrow: why Nigeria's abundant oil reserves are really a curse. *The Guardian.* Retrieved from: https://www.theguardian.com/global-development/2021/nov/09/a-wealth-of-sorrow-why-nigerias-abundant-oil-reserves-are-really-a-curse

Niger Delta Budget Monitoring Group (2022). History of The Niger Delta Region. *Niger Delta Budget Monitoring Group.* Retrieved from: https://www.nigerdeltabudget.org/the-niger-delta/

Nigerian Exchange Group (2022). Delisted Companies. *Nigerian Exchange Group.* Retrieved from: https://ngxgroup.com/exchange/data/delisted-

companies/?fbclid=IwAR0tq2eqXcfa-4inA35_0YjX0OI3CGr8Sm6v6lqMCYm_-jQNRkbgr4DZW0s

Nigerian Exchange Group (2022). Listed Companies. *Nigerian Exchange Group.* Retrieved from: https://ngxgroup.com/exchange/data/delisted-companies/?fbclid=IwAR0tq2eqXcfa-4inA35_0YjX0OI3CGr8Sm6v6lqMCYm_-jQNRkbgr4DZW0s

NNPC (2022). Who We Are. *Nigerian National Petroleum Corporation.* Retrieved from: https://www.nnpcgroup.com/who-we-are

Nordhaug, L. (2006) Norsk olje- og gassindustri i Vest-Afrika: En oversikt. *Fremtiden i vår hender.* Retrieved from: https://www.framtiden.no/aktuelle-rapporter/489-norsk-olje-og-gassindustri-i-vest-afrika/file.html?fbclid=IwAR1PGu44JUZKsP_HSRLKNxNi87TiNrxri33yDdl_eAiclNzOa0czsSXkJh0

Norland, E. (2016). Economics of Oil-Equity Correlations. *CME Group.* Retrieved from: https://www.cmegroup.com/education/files/why-are-equities-moving-in-tandem-with-oil.pdf

NOSDRA (2021) Nigerian Oil Spill Monitor, *NOSDRA,* retrieved from: https://nosdra.oilspillmonitor.ng

OilMapng (2022) Oil & Gas players. *OilMapNG.* Retrieved from: http://www.oilmapng.com/players_page.php

Okereke, I., (2020). How state officials violate Nigeria's Freedom of Information Act. *Premium Times.* Retrieved from: https://www.premiumtimesng.com/news/headlines/386053-how-state-officials-violate-nigerias-freedom-of-information-act.html

Olujobi, O. (2021). Nigeria´s upstream petroleum industry anti-corruption legal framework: The necessity for overhauling and enrichment. *Journal of Money Laundering Control. Emerald Insight.*

Omofonmwan, S., Odia, L. (2009) Oil Exploitation and Conflict in the Niger-Delta Region of Nigeria - *Journal of Human Ecology. Volume 26, 2009 – Issue 1.*

Onyi-Ogelle, H. (2016) Contractual Arrangements in the Nigeria's Oil Industry. *Faculty of Law, Nnamdi Azikiwe University Awka, Anambra State, Nigeria, 2016*

OPEC (2022). Nigeria Facts and Figures. *Organziation of the Petroleum Exporting Countries* https://www.opec.org/opec_web/en/about_us/167.htm

Oyeniyi Osundina (2016) The Story of Nigeria´s Petroleum Industry. *Novum Pro Verlag.*

Perry, G.; Ogunkola, O.; Olivera, M. & Fowowe, B. (2010). Oil and Institutions "tale of two cities": Nigeria and Colombia. *La Fundación para la Educación Superior y el Desarrollo (Fedesarrollo): Colombia.*

Rasmussen, T., Roitman, A. (2011). Oil Shocks in a Global Perspective: Are they Really that Bad? *International Monetary Fund.* Retrieved from: https://www.imf.org/external/pubs/ft/wp/2011/wp11194.pdf

Reuters (2018). Nigeria files $1.1 billion London lawsuit against Shell, Eni over oil deal. *Reuters*. Retrieved from: https://www.reuters.com/article/us-shell-nigeria-eni-oil-idUSKBN1OC1TB

Ross, M. (2015) What Have We Learned about the Resource Curse? *The Annual Review of Political Science*

Sattar, M. (2017). CAPM Vs Fama-French Three-Factor Model: An Evaluation of Effectiveness in Explaining Excess Return in Dhaka Stock Exchange. *International Journal of Business and Management, Vol 12, No. 5; 2017.*

Schneider, G., & Troeger, V. (2006). War and the world economy: Stock market reactions to international conflicts. *Journal of conflict resolution, 50(5)*, pp. 623-645.

Scott, M. (2009). Marginalized, negative or trivial? Coverage of Africa in the UK press. *Media, Culture & Society. Sage Publications, Vol. 31, 2009, 533-557*

Strand, H., Gates, S., Nygård, H. & Hegre, H. (2012). Development Consequences of Armed Conflict. *World Development Vol. 40, No.9, pp-1713-1722.*

Talant, B., (2022). War Fatigue in the West. *The Interpreter.* Retrieved from: https://www.lowyinstitute.org/the-interpreter/war-fatigue-west

Tattersall, N. (2008) Nigeria attack stops Shell´s Bonga Offshore Oil. *Reuters* https://www.reuters.com/article/us-nigeria-shell-attack-idUSL1961289220080619

The Economist (2017). The world´s most valuable resource is no longer oil but data. *The Economist.* Retrieved from: https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data

Transparency International (2022). Corruptions Perceptions Index 2010. *Transparency International.* Retrieved from: https://www.transparency.org/en/cpi/2010

UN (2020). A New Era of Conflict and Violence. *United Nations.* Retrieved from: https://www.un.org/en/un75/new-era-conflict-and-violence

UNEP (2022). Ogoniland´s oil history. *UN Environment Programme.* Retrieved from: https://www.unep.org/explore-topics/disasters-conflicts/where-we-work/nigeria/ogonilands-oil-history

United Nations Office on Drugs and Crime (2019). Corruption In Nigeria: Patterns and Trends. *United Nations Office on Drugs and Crime* Retrieved from: https://www.unodc.org/documents/data-and-analysis/statistics/corruption/nigeria/Corruption_in_Nigeria_2019_standard_res_11MB.pdf

Worldbank (2022). Oil rents (% of GDP) – Nigeria. *The World Bank.* Retrieved from: https://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS?locations=NG

54

Worldbank (2022). Fuel exports (% of merchandise exports) – Nigeria. *The World Bank.* Retrieved from: https://data.worldbank.org/indicator/TX.VAL.FUEL.ZS.UN?end=2018&locations=NG&start=2002

World Economic Forum (2016). The Oil Industry Has a Trust Problem – Can it Put That Right?. *World Economic Forum.* Retrieved from: https://www.weforum.org/agenda/2016/04/the-oil-industry-has-a-trust-problem-can-the-industry-put-that-right/

WRDS (2022). About WRDS. *Wharton Research Data Services*. Retrieved from: https://wrds-www.wharton.upenn.edu/pages/about/

Appendix

A1. Oil Companies in The Sample

Company name	Number of observations	Country	First observation[1]	Last observation[2]
ADDAX PETROLEUM CORP	919	Switzerland	09-02-2006	05-10-2009
AFREN PLC	2,639	Great Britain	17-03-2005	14-07-2015
BG GROUP PLC	2,611	Great Britain	03-01-2006	12-02-2016
CHEVRON CORP	4,276	USA	02-01-2001	29-12-2017
CONOCOPHILLIPS	4,276	USA	02-01-2001	29-12-2017
CONOIL PLC	4,006	Nigeria	08-01-2001	29-12-2017
ENI SPA	4,370	Italy	02-01-2001	29-12-2017
EQUATOR EXPLORATION LTD	702	Great Britain	01-04-2005	30-06-2008
EQUINOR ASA	4,237	Norway	08-01-2001	29-12-2017
ERHC ENERGY INC	3,294	USA	01-12-2004	29-12-2017
ERIN ENERGY CORP	1,949	USA	07-04-2010	29-12-2017
EXXON MOBIL CORP	4,276	USA	02-01-2001	29-12-2017
HARDY OIL & GAS PLC	1,010	Great Britain	03-01-2006	31-12-2009
HERITAGE OIL PLC	1,595	Jersey	08-04-2008	26-06-2014
JACKA RESOURCES LTD	1,825	Australia	03-01-2011	29-12-2017
NEXEN INC	3,301	Canada	02-01-2001	28-02-2013
OANDO PLC	3,570	Nigeria	26-09-2003	29-12-2017

Company name	Number of observations	Country	First observation[1]	Last observation[2]
OIL & NATURAL GAS CORP LTD	3,326	India	03-01-2005	29-12-2017
PANORO ENERGY ASA	1,974	Norway	08-06-2010	29-12-2017
PETROCHINA CO LTD	3,077	China	03-01-2006	29-12-2017
PETROLEO BRASILEIRO SA- PETR	4,323	Brazil	02-01-2001	29-12-2017
SHELL PLC	3,216	Great Britain	20-07-2005	29-12-2017
SIRIUS PETROLEUM PLC	2,802	Great Britain	10-12-2004	29-12-2017
SYNTROLEUM CORP	755	USA	02-01-2004	29-12-2006
TECHNIPFMC PLC	249	Great Britain	17-01-2017	29-12-2017
TOTALENERGIES SE	4,387	France	02-01-2001	29-12-2017
TRANSATLANTIC PETROLEUM LTD	1,086	USA	16-02-2001	20-06-2005
TRANSNATIONAL CORP	2,795	Nigeria	08-01-2007	29-12-2017

[1] First trading day holding concession in Nigeria

[2] Last trading day holding concession in Nigeria

Table A1: List of all companies included in the event study

A2. Full Event List

Date	Actor	Note	Conflict intensity	Barrier to entry	Bargaining power	Transparency	Oil.related
07.09.2001	Christians vs. Muslims	Six days of religious riots between Christians and Muslims in Jos . Approximately 1000 deaths reported over the course of six days.	Increase	Increase	No effect	No effect	No
15.10.2001	Christians vs. Muslims	200 are dead when Muslim and Christian militias battle in the streets of Kano.	Increase	Increase	No effect	No effect	No
21.11.2002	Christians vs. Muslims	At least 216 people killed after Muslims riots against Nigeria hosting Miss World	Increase	Increase	No effect	No effect	No
23.03.2004	Government	Money Laundering Prohibition Act passed by Senate	No effect	No effect	No effect	Increase	No
03.05.2004	Christians vs. Muslims	Christian groups attack Muslims in Yelwa. Estimates of over 700 people killed. 200- 300 Muslim women and children were abducted. Tens of thousands of people fled to other places.	Increase	Increase	No effect	No effect	No
27.09.2004	NDPVF	Leader of NDPVF, Asari, declared "all-out-war" with the Nigerian state and the oil corporations.	Increase	Increase	Decrease	No effect	Yes
21.09.2005	NDPVF	Leader of NDPVF, Mujahid Asari, arrested	Decrease	Decrease	Increase	No effect	Yes
31.05.2006	Government	Advance Fee Fraud and Other Related Offences Act 2006 introduced	No effect	No effect	No effect	Increase	No
09.08.2006	Government	President Olesegun Obasanjo revealed to have 200m shares in oil company Transcorp	No effect	No effect	Decrease	Decrease	Yes
11.10.2006	Government	National Oil Spill Detection and Response Agency (NOSDRA) enacted to monitor oil spills	No effect	No effect	No effect	Increase	Yes
23.04.2007	Government	Umaru Yar´Adua elected president. Backed by MEND and other rebel groups	Decrease	Decrease	No effect	Decrease	No
24.09.2007	MEND	MEND officially declared war and would be commencing "attacks on installations and abduction of foreign workers".	Increase	Increase	Decrease	No effect	Yes
15.05.2008	Government	Farida Waziri appointed new head of EFCC, viewed as corrupt and backed by corrupt officials	No effect	No effect	No effect	Decrease	No

Date	Actor	Note	Conflict intensity	Barrier to entry	Bargaining power	Transparency	Oil.related
20.06.2008	MEND	Attack on Shell´s largest oil platform, shutting down 10% of Nigeria´s oil production. The platform was widely assumed to be outside the reach of militias	Increase	Increase	Decrease	No effect	Yes
11.09.2008	MEND	MEND declaring ceasefire	Decrease	Decrease	Increase	No effect	Yes
01.12.2008	Christians vs. Muslims	Military forces in Jos attempt to restore order by using 'excessive force.' 761 dead over two days of violence	Increase	Increase	No effect	No effect	No
18.05.2009	MEND	MEND and Ijaw leaders accuse Nigerian military of indiscriminate bombing leading to deaths of thousands.	Increase	Increase	No effect	No effect	Yes
26.06.2009	Government	Government announced it would grant amnesty and unconditional pardon to militias in Niger Delta against surrender of weapons in return for training and rehabilitation by the government	Decrease	Decrease	Increase	No effect	Yes
27.07.2009	Boko Haram	Boko Haram kills more than 800 in five days – starting Boko Haram insurgency against government of Nigeria	Increase	Increase	No effect	No effect	No
26.10.2009	MEND	MEND announces unilateral truce and accepts government proposal for reintegration – "indefinite ceasefire".	Decrease	Decrease	Increase	No effect	Yes
23.11.2009	Government	Yar'Adua gets serious heart condition, has to step down as president. Goodluck Jonathan becomes new president	Increase	No effect	Increase	Increase	No
01.02.2010	MEND	MEND ended truce and threatened an "all out onslaught" against oil industry.	Increase	Increase	No effect	No effect	Yes
27.08.2010	MEND	High ranking MEND commander Soboma George killed by own soldiers	Decrease	Decrease	Increase	No effect	Yes
04.10.2010	MEND	Henry Okah, one of the leaders in MEND arrested after Dual car bombs in capital Abuja killed 12 people.	Increase	Increase	No effect	No effect	Yes
01.12.2010		Nigerian military raided three camps run by rebels in the southern Delta State. More than 100 people dead.	Increase	No effect	No effect	No effect	Yes
16.03.2011	MEND	Bombing of oil platform operated by Agip	Increase	Increase	No effect	No effect	Yes

Date	Actor	Note	Conflict intensity	Barrier to entry	Bargaining power	Transparency	Oil.related
24.05.2011	Government	Freedom of Information Act introduced. Act to make public records and information more freely available.	No effect	No effect	No effect	Increase	No
26.08.2011	Boko Haram	Car bomb attacked UN building in capital Abuja, killing 21 and wounding 60	Increase	No effect	No effect	No effect	No
04.11.2011	Boko Haram	A car bomb is detonated in Damaturu. 63 people dead.	Increase	No effect	No effect	No effect	No
22.12.2011	Boko Haram	More than 50 Boko Haram militants killed in battle in the town of Damaturu.	Increase	Increase	No effect	No effect	No
30.01.2013	Government	Dutch court ruled that Shell can be held accountable for the pollution in the Niger Delta	No effect	No effect	No effect	Increase	Yes
26.03.2013	MEND	Henry Okah sentenced to prison for 24 years. MEND threatens with violence	Increase	Decrease	Increase	No effect	Yes
15.05.2013	Boko Haram	State emergency called in Borno, Nigerian government forces launched offensive after this	Increase	Increase	No effect	No effect	No
20.02.2014	Government	Central Bank governor Sanusi Lamido suspended after revealing that NNPC failed to remit $48.9 billion of government revenue to the central bank	No effect	No effect	No effect	Decrease	Yes
15.04.2014	Boko Haram	Boko Haram abducted 276 teenage girls	Increase	Increase	Decrease	No effect	No
30.05.2014	MEND	MEND declearing ceasefire	Decrease	Decrease	Increase	No effect	Yes
23.07.2014	Boko Haram	A suicide attack near Muhammadu Buhari´s motorcade killed 50 . Boko Haram widely suspected.	Increase	No effect	No effect	No effect	No
12.09.2014	Boko Haram	Boko Haram launches a 'massive' attack on Konduga. 200 Boko Haram soldiers killed.	Increase	Increase	No effect	No effect	No
17.10.2014	Boko Haram	Agreement: The government of Nigeria claims to have reached a ceasefire agreement which would allow for the release of the Chibok girls.	Decrease	Decrease	Increase	No effect	No
28.11.2014	Boko Haram	200 people killed and 270+ wounded when two bombs detonated and gunmen attacked the mosque of one of Nigeria's top Islamic leaders. The mosque is attached to the Emir of Kano, Nigeria's second most senior Muslim cleric, who	Increase	Increase	No effect	No effect	No

Date	Actor	Note	Conflict intensity	Barrier to entry	Bargaining power	Transparency	Oil.related
		urged civilians fight Boko Haram.					
19.12.2014	Boko Haram	Boko Haram launches an assault on a Damboa mosque. 80 Boko Haram soldiers dead.	Increase	No effect	No effect	No effect	No
09.03.2015	Boko Haram	Leader Abubakar Shekau pledged allegiance to ISIL. Nigerian Army said it was a sign of weakness	Decrease	Decrease	Increase	No effect	No
01.04.2015	Government	Muhammadu Buhari elected President, Jonathan Goodluck resigned. Buhari thought of as more pro towards democratic process, anti-corruption and also a stronger stance in the Muslim north to combat Boko Haram – campaigning in part on ending Boko Haram insurgency.	Decrease	No effect	Increase	Increase	No
06.07.2015	Boko Haram	Explosions at a Jos mosque cause at least 44 deaths. Boko Haram suspected. Total of six suicide bombers.	Increase	Increase	No effect	No effect	No
28.08.2015	Boko Haram	Boko Haram attacks Baanu village. At least 56 people killed.	Increase	No effect	No effect	No effect	No
07.10.2015	Boko Haram	100 Boko Haram fighters are gunned down in Goniri. 7 soldiers also killed.	Decrease	No effect	No effect	No effect	No
24.12.2015	Boko Haram	President Muhammadu Buhari claimed that Boko Haram was "technically defeated"	Decrease	Decrease	Increase	No effect	No
09.02.2016	Boko Haram	Two female suicide bombers detonated bombs at the Internally Displaced Persons (IDP) camp in Dikwa. Killing 60 and injuring another 78.	Increase	No effect	No effect	No effect	No
05.05.2016	NDA	Several attacks against oil installations from 04.05-06.05 – starting a furry of attacks	Increase	Increase	No effect	No effect	Yes
19.07.2016	Government	Nigeria applies to join Open Government Partnership - a global coalition in the fight against corruption.	No effect	No effect	No effect	Increase	No
26.12.2016	Boko Haram	President Buhari said Boko Haram had been ousted from their last stronghold, effectively reducing Boko Haram to insurgent force.	Decrease	Decrease	No effect	No effect	No
03.11.2017	NDA	NDA withdraw from Pan Niger-Delta Forum (PANDEF) and end	Increase	Increase	Decrease	No effect	Yes

Date	Actor	Note	Conflict intensity	Barrier to entry	Bargaining power	Transparency	Oil.related
		ceasefire agreement with the government					

Notes: The table displays a list of all events in the event study.

Table A2: Event list

A3. Normality Test of Data

	Shapiro-Wilk normality test
W	0,926
p-value	2,2e^-16
Alternative hypothesis	Data is normally distributed

Notes: The table displays the results of a Shapiro-Wilk test of normality

Table A3: Normality test of data

A4. Regression for Oil Related Events

	Dependent variable:
	3-day cumulative abnormal return (CAR)
Not oil related	-0.00001
	(0.00004)
Oil related	0.018***
	(0.003)
SE clustered by company	Yes
Observations	77,115
Adjusted R^2	0.027

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day t, and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day t, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A4: Table of regression for oil related events

A5. Regression for Main Findings

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.015**			
	(0.006)			
No event	-0.000			
	(0.000)			
Increase in conflict intensity	-0.00004			
	(0.004)			
Decrease in barrier to entry		0.014***		
		(0.004)		
No event		-0.000		
		(0.000)		
Increase in barrier to entry		0.001		
		(0.004)		
Decrease in bargaining power			0.027***	
			(0.007)	
No event			0.000	
			(0.000)	
Increase in bargaining power			0.007	
			(0.006)	
Decrease in transparency				0.043***
				(0.008)
No event				0.00003
				(0.00003)
Increase in transparency				0.004
				(0.006)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,918	76,718	76,470	77,115
Adjusted R^2	0.012	0.013	0.046	0.030

Notes: An observation is a trading day for one of day 28 companies from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, barrier to entry, bargaining power and transparency takes the value 1 if an event increases the factor on day t, and 0 otherwise. The variable Decrease in conflict intensity, barrier to entry, bargaining power and transparency takes the value 1 if an event decreases the factor on day t, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A5: Table of regression for main results

A6. T-test to Test Difference in Means for Conflict Intensity

	t
Test statistic	-2,39
df	399
p-value	0,0172
Alternative hypothesis	True difference in means is not equal to 0

Notes: Paired t-test for events increasing conflict intensity and events decreasing conflict intensity. Can reject H0 of equal means.

Table A6: T-test difference in means conflict intensity

A7. T-test to Test Difference in Means for Barriers to Entry

	t
Test statistic	-2,10
df	469
p-value	0,036
Alternative hypothesis	True difference in means is not equal to 0

Notes: Paired t-test for events increasing barriers to entry and events decreasing barriers to entry. Can reject H0 of equal means.

Table A7: T-test difference in means barriers to entry

A8. T-test to Test Difference in Means for Bargaining Power

	t
Test statistic	-2,53
df	280
p-value	0,012
Alternative hypothesis	True difference in means is not equal to 0

Notes: Paired t-test for events increasing bargaining power and events decreasing bargaining power. Can reject H0 of equal means.

Table A8: T-test difference in means bargaining power

A9. T-test to Test Difference in Means for Transparency

	t
Test statistic	-3,79
df	169
p-value	0,0001
Alternative hypothesis	True difference in means is not equal to 0

Notes: Paired t-test for events increasing transparency and events decreasing transparency. Can reject H0 of equal means.

Table A9: T-test difference in means transparency

A10. Robustness Test for Classification of Events

	Dependent variable:	
	3-day cumulative abnormal return (CAR)	
	(1)	(2)
Decrease in bargaining power	0.021***	
	(0.003)	
No event	0.000	
	(0.000)	
Increase in bargaining power	0.009*	
	(0.005)	
Decrease in transparency		0.026**
		(0.013)
No event		0.00004
		(0.00003)
Increase in transparency		0.014***
		(0.005)
SE clustered by company	Yes	Yes
Observations	76,590	77,115
Adjusted R^2	0.043	0.011

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in bargaining power and -transparency takes the value 1 if an event increases the respective factor on day *t*, and 0 otherwise. The variable Decrease in bargaining power and -transparency takes the value 1 if an event decreases the respective factor on day *t*, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A10: Robustness test for classification of events

A11. Changed Events for Robustness Test in A8

Date	Actor	BP Original[1]	BP New[1]	Transparency Original	Transparency New	3 day CAR	Note
09.08.2006	Government	-1	0	-1	1	0.065	President Olesegun Obasanjo revealed to have 200m shares in oil company Transcorp
11.10.2006	Government	0	-1	1	1	0.064	National Oil Spill Detection and Response Agency (NOSDRA) enacted to monitor oil spills
21.04.2007	Government	0	1	-1	0	0.060	Umaru Yar´Adua elected president. Backed by MEND and other rebel groups
23.11.2009	Government	1	-1	1	0	-0.009	Yar´Adua gets serious heart condition, has to step down as president. Goodluck Jonathan becomes new president
30.01.2010	MEND	0	-1	0	0	0.002	MEND ended truce and threatened an "all out onslaught" against oil industry.
16.03.2011	MEND	0	-1	0	0	0.017	Bombing of oil platform operated by Agip
30.01.2013	Government	0	1	1	1	-0.007	Dutch court ruled that Shell can be held accountable for the pollution in the Niger Delta
19.07.2016	Government	0	1	0	1	-0.033	Nigeria applies to join Open Government Partnership - a global coaliation in the fight against corruption.

[1]BP = Bargaining Power

Table A11: List of events changed for robustness test of event classification

A12. Robustness Test for Overlapping Events

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.011			
	(0.007)			
No event	-0.000			
	(0.000)			
Increase in conflict intensity	0.001			
	(0.003)			
Decrease in barrier to entry		0.009*		
		(0.005)		
No event		0.000**		
		(0.000)		
Increase in barrier to entry		0.010***		
		(0.003)		
Decrease in bargaining power			0.023***	
			(0.004)	
No event			-0.000	
			(0.000)	
Increase in bargaining power			0.008	
			(0.006)	
Increase in transparency				0.022***
				(0.007)
No event				0.000
				(0.000)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,897	76,717	76,601	76,992
Adjusted R^2	0.008	0.021	0.045	0.069

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day t, and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day t, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A12: Robustness test for conflicting events

A13. Robustness Test for Estimation Window

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.013**			
	(0.005)			
No event	-0.000			
	(0.000)			
Increase in conflict intensity	0.002			
	(0.004)			
Decrease in barrier to entry		0.012***		
		(0.004)		
No event		-0.000		
		(0.000)		
Increase in barrier to entry		0.003		
		(0.004)		
Decrease in bargaining power			0.029***	
			(0.007)	
No event			-0.000	
			(0.000)	
Increase in bargaining power			0.005	
			(0.006)	
Decrease in transparency				0.040***
				(0.007)
No event				0.00004
				(0.00003)
Increase in transparency				0.001
				(0.005)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,845	76,658	76,435	77,104
Adjusted R²	0.011	0.013	0.051	0.029

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day t, and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day t, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A13: Robustness test for 200-day estimation window

A14. Robustness Test for Event Window

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.014**			
	(0.006)			
No event	0.000			
	(0.000)			
Increase in conflict intensity	0.0002			
	(0.004)			
Decrease in barrier to entry		0.013***		
		(0.004)		
No event		0.000		
		(0.000)		
Increase in barrier to entry		0.001		
		(0.004)		
Decrease in bargaining power			0.028***	
			(0.007)	
No event			-0.000	
			(0.000)	
Increase in bargaining power			0.007	
			(0.006)	
Decrease in transparency				0.042***
				(0.007)
No event				0.00003
				(0.00003)
Increase in transparency				0.005
				(0.005)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,669	76,470	76,222	76,868
Adjusted R^2	0.011	0.013	0.051	0.030

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day *t,* and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day *t,* and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A14: Robustness test for 11 day estimation window

A15. Robustness Test for CAR Window

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.013			
	(0.008)			
No event	-0.000			
	(0.000)			
Increase in conflict intensity	0.002			
	(0.005)			
Decrease in barrier to entry		0.012**		
		(0.005)		
No event		-0.000		
		(0.000)		
Increase in barrier to entry		0.003		
		(0.004)		
Decrease in bargaining power			0.038***	
			(0.006)	
No event			-0.000*	
			(0.000)	
Increase in bargaining power			0.002	
			(0.008)	
Decrease in transparency				0.062***
				(0.008)
No event				0.00004
				(0.00004)
Increase in transparency				0.008
				(0.008)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,918	76,718	76,470	77,115
Adjusted R^2	0.007	0.011	0.061	0.047

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day t, and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day t, and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency.
Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A15: Robustness test for CAR(0,3) window

A16. Robustness Test for Oil Price

	Dependent variable:			
	3-day cumulative abnormal return (CAR)			
	(1)	(2)	(3)	(4)
Decrease in conflict intensity	0.015***			
	(0.006)			
No event	0.000			
	(0.000)			
Increase in conflict intensity	0.003			
	(0.003)			
Decrease in barrier to entry		0.014***		
		(0.004)		
No event		-0.000		
		(0.000)		
Increase in barrier to entry		0.005		
		(0.003)		
Decrease in bargaining power			0.027***	
			(0.007)	
No event			0.000	
			(0.000)	
Increase in bargaining power			0.008	
			(0.006)	
Decrease in transparency				0.045***
				(0.008)
No event				0.00005*
				(0.00003)
Increase in transparency				0.005
				(0.006)
SE clustered by company	Yes	Yes	Yes	Yes
Observations	76,835	76,676	76,456	77,115
Adjusted R^2	0.014	0.018	0.047	0.035

Notes: An observation is a trading day for one company from 2001 to 2017. The dependent variable is the three-day cumulative abnormal return. The variable Increase in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event increases the factor on day *t,* and 0 otherwise. The variable Decrease in conflict intensity, -barrier to entry, -bargaining power and -transparency takes the value 1 if an event decreases the factor on day *t,* and 0 otherwise. The variable No Event is the constant and indicate the average effect on three-day abnormal returns in the absence of events. Panel A looks at the effect of events affecting conflict intensity, panel B the effect of events affecting barriers to entry, panel C the effect of events affecting bargaining power and panel D the effect of events affecting transparency. Robust standard errors clustered by company in the parentheses.
*** Significant at the 1 percent level
** Significant at the 5 percent level
* Significant at the 10 percent level

Table A16: Robustness test for oil price

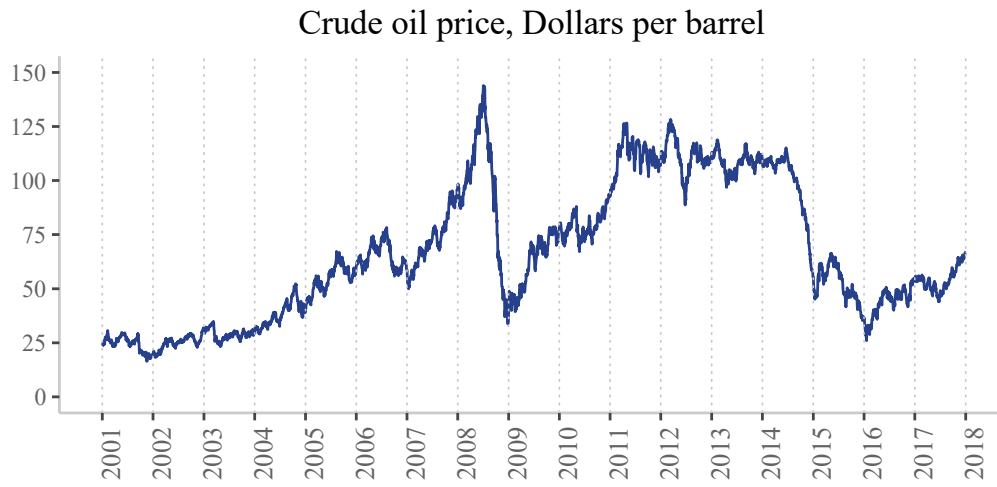## A17. Graph of Oil Price from 2001 – 2017

Crude oil price, Dollars per barrel

Figure A17: Graph of crude oil price from 2001 to 2017