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Do Early Elections Matter? An Empirical Investigation into the Long-Term Effects on Political Violence

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A research report submitted in partial fulfilment of the requirements for the degree of Master of Arts in the field of e-Science

in the

University of the Witwatersrand, Johannesburg

04 July 2025

Declaration

I, Stuart Morrison (1675595), declare that this report is my own, unaided work. It is being submitted for the degree of Master of Arts in the field of e-Science at the University of the Witwatersrand, Johannesburg. It has not been submitted for any degree or examination at any other university.



Stuart Morrison (1675595)

04 July 2025

Abstract

The study aimed to examine the long-term effects of early elections on political violence. Quantitative methods, namely energy balancing and marginal effects analysis, were used to explore the question of whether early elections have long-term effects on the propensity for political violence. The study used a global dataset of post-conflict states comparing the effects on political violence between those that held an election and those that did not across three time periods. We found that states which had an early election tended to have a lower propensity for political violence than those which did not in the medium term. While in the longer term (+10 years) the effect of early elections decreases. Theoretically, the findings suggest that while there is a greater risk of conflict recurrence with early elections, they should not be dismissed as a peace mechanism. Rather policy should prioritise mitigating these risks, allowing for greater long-term stability.

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Chapter 1

Introduction

The end of the Cold War and the collapse of the Soviet Union signified an important shift in global conflict trends. According to Wallensteen and Sollenberg (1996), the number of armed conflicts significantly decreased by the mid-1990s. This was particularly true for civil conflicts, which characterised the Cold War period. While the shift meant a turning point towards greater world peace, it also created new challenges for states emerging from civil war. Specifically, states transitioning out of such conflict were vulnerable to risks such as falling back into civil war, genocide, or terrorism. Collier et al. (2003) argue that post-conflict states are more prone to falling back into conflict because of what they coined the 'Conflict Trap'. The theory suggests that the severe destructiveness of civil war stunts economic development. This, in turn, increases the likelihood of civil conflict, starting the cycle all over again.

A key approach to addressing the issue of the 'Conflict trap' was to establish democratic institutions in the early stages of the post-conflict state reconstruction and peacebuilding process (Acemoglu and Robinson 2012; Barnes 2001; Gheciu and Welsh 2009). The underlying logic posited that democratic institutions would help facilitate peace and stability. Allowing for quicker economic and political recovery. Elections became the primary institution to facilitate peace and stability for two key reasons (Lindberg 2004; Diamond 2006). Firstly, it provides a mechanism for opponents and former armies to compete for political power through peaceful means. Secondly, elections establish legitimacy for a democratic system, which can help prevent further conflict and promote developmental efforts. As such, post-conflict transition policies emphasised holding elections as early in the post-conflict period as possible. Their timing and role in post-conflict states lead to these elections being called "early elections". This mechanism was so popular that by the early 2000s, the

number of early elections held in transitional states had doubled from the previous decade (Flores and Nooruddin 2012).

From a policy perspective, elections were an integral part of the transitional process. However, debates emerged within academia regarding their effectiveness as a peace and stability mechanism. Scholars such as Brancati and Snyder (2013) found that the earlier the election, after the civil conflict, the higher the chances of conflict recurrence. On the other hand, scholars such as Lyons (2002) found that holding earlier elections can be useful in helping to facilitate the end of a conflict. These debates led to a greater understanding of transitional states and democracy in post-conflict societies. However, despite this, many debates focused on the short-term implications. As such, a key gap remains both within the literature and policy. Namely, what are the long-term implications of early elections, specifically as it concerns political violence?

As such, the following research report used cross-national data and empirical methods to investigate the long-term effects of early elections in states that had a civil conflict. This report aims to develop the literature on the topic of early elections and promote a deeper understanding of democratic institutions in post-conflict societies.

More specifically, the study seeks to further clarify the relationship between early elections and political violence. Existing literature on the topic has explored the role that various democratic institutions play in promoting peace and stability. While these studies have provided key insights into the democratisation process, they primarily focus on the transitional period. As such, this study considers the temporal element by exploring whether early elections affect, peace and stability of a state in the long term.

Furthermore, most studies use either economic development, level of democracy or conflict recurrence as a measure for stability and peace. While these have provided key insights into post-conflict societies and their transitional periods, no study has considered how early elections affect the level of political violence as a proxy for peace and stability. As such, this study seeks to address this gap by explicitly measuring the effect of early elections on political violence as the main predictor. By

doing so, the study seeks to better understand the relationship between early elections and political violence. On the other hand, by doing so, the study expands the quantitative methodologies that are used to study political violence.

To these ends, the report sought to answer the following research question:

- What effects do early elections have on the likelihood for political violence in the long-term?

And more specifically:

- Do those that hold early elections have a lower propensity to political violence than those that did not hold an early election?

To determine the type of effect that early elections have on political violence, it compares states that held early elections within the first four years of the conflict ending, with those that did not hold early elections. The focus of the study is to estimate the difference in probability of subsequent political violence between countries that did and did not have an early election. By doing so it will provide insights into whether there is some sort of difference in effect between the two groups and whether this mechanism plays a contributing factor in the long-term. This will help expand our understanding of elections and political violence in post-conflict states.

To achieve this aim, a dataset of 52 observations was created that contained data on post conflict elections and political violence from 1990 to 2021. The study uses statistical analysis to try to estimate the comparative effects of early elections on political violence in the long-term. The study used aggregated and official research data from credible international organisations and academic databases. An ethics waiver was granted from the School of Social Science Ethic Committee (ethics waiver number: WINTR2022/11/05).

The following research report consists of five chapters including this introductory one. Following this, Chapter 2 provides a theoretical background to this study, positioning the study within the literature around early elections. Chapter 3 discusses the overall research design, methodology and data that was used in the investigation. Chapter 4 presents the results of the study. Additionally it discusses the various implications the results have with regard to the research questions, the implications for the literature and policy. The report concludes in Chapter 5 by summarising the findings of the study and discussing points of further research.

Chapter 2

Theoretical Background

The study positions itself within three key bodies of literature. Namely, the early elections in post-conflict societies, the impact of political violence in post-conflict states, and quantitative methods used to study elections and political violence. The following chapter will critically discuss the literature on the aforementioned topics, focusing on the gaps in which the study seeks to address.

2.1 Early elections as a peacebuilding and democratisation mechanism

Contemporary literature on civil conflict has largely emphasised the importance of elections, as they were seen as a silver bullet for fragile and post-conflict societies. Paris argues (2004) that many of the post-Cold War peacebuilding policies were underpinned by the central ideals of liberal democratisation. This model was seen to protect fundamental freedoms, foster economic development, and limit state power (Paris 2004). As such, states that had been destroyed by the impacts of war were seen to benefit immensely from such liberal democratisation.

However, debates emerged surrounding how this democratisation process should take place, specifically as it relates to elections. On the one hand, there is a body of literature which focuses on the role that elections play in establishing and consolidating democracy. On the other hand, there is a body of literature which focuses on when early elections should be held. The former refers to the actual sequence of events and institutions, exploring discussions about which order democratisation should take place (whether elections come first or other democratic institutions).

The latter focused on the timing of the election, specifically when the appropriate time should be to hold an election.

While elections are a core part of post-conflict transitional processes, there have been various debates within the literature surrounding how effective such a mechanism is for facilitating peace and consolidating democracy. Some scholars take what is referred to as a sequencing/prioritisation approach. This school of thought argues that elections and other forms of democratisation should only take place once the state can maintain peace and order. The approach has gained in popularity with growing evidence that democratisation in fragile environments increases the risk of conflict recurrence.

A key component of this view is that key institutions should be established to ensure a greater rule of law, which is necessary for democratisation. Carothers highlights the core logic of such an approach: "Pursuing a sequential path promises to rationalize and defang democratic change by putting the potentially volatile, unpredictable actions of newly empowered masses and emergent elected leaders into a sturdy cage built of laws and institutions." (Carothers 2007, 13). Through institutions and laws, legitimacy and stability are created to ensure that democratisation takes place in a way which ensures peace.

The theory of sequentialism and its institutionalist underpinnings can link back to Samuel Huntington, one of the key proponents for institutional theories. He argues that institutions are vital for democratic societies because they are important to maintaining a good balance between economic development and political stability (Huntington 1968). Applying this to post-conflict contexts, it's argued that for states to fully benefit from democratisation, they should first establish governance institutions to help facilitate this. Since then, various scholars have expanded on this core idea, exploring which frameworks are most effective to ensure that elections are successful.

Scholars such as Barnett (2006) and Paris (1997) highlight the risks that could come with trying to rush the democratisation process before there are adequate institutions. They argue that such delays prevent the election process from being undermined and disrupting the fragile peace. Their arguments follow more closely with Huntington's more controversial point, that in some cases, political stability can come before democratisation, even if this means a more authoritarian state.

Barnett (2006) provides a critique of liberal scholars arguing that some of these institutions emerge with time, such as strengthening civil society, economic development and elections. Rather, Barnett proposes a "republican" approach to peacebuilding, which he believes: "promotes the foundations for post-conflict stability by establishing the process for creating a legitimate state that is restrained in its ability to exercise arbitrary power and can minimise conflict among factions" (Barnett 2006, 96). His approach is not to say that elections are not important, but rather, policymakers should not simply assume elections to be a key institution to establish at the outset. Instead, there should be a more nuanced approach to what the state needs to fulfil its two primary functions of legitimacy and capacity (Barnett 2006). For example, South Africa went through a period of deliberation and negotiation before elections were held. The process allowed for a more staggered approach, which ultimately helped in the long run.

Similarly, Paris (1997) argues that the over-prioritisation of the economy and ballot box limits the peacebuilding of a state. He suggests that peacebuilding policies take a more strategic approach, especially as it concerns the international community. This approach emphasises a gradual and controlled democratisation process that avoids the fallacy of assuming just holding elections is enough to foster peace and establish a democratic system (Paris 1997). Furthermore, he argues for electoral systems that promote political moderation and prioritise more equitable economic policies. As such, Paris (1997) highlights the importance of promoting institutions that will address the underlying causes of conflict sustainably, rather than just liberalising the economy.

The gradualist school of thought, on the other hand, critiques the idea of sequencing. It argues that while democracy does not automatically bring about peace, positioning democratisation and peacebuilding as two completely dichotomous concepts can exacerbate the risks associated with these concepts (Carothers 2007; Mross 2024). The logic follows that by prioritising peacebuilding, it runs the risk of establishing an autocratic regime, which will undermine the democratisation process. Therefore, there needs to be a dual focus on both peace and democratisation. One way to do this is by implementing strategies that promote both simultaneously.

Lyons (2003) argues that elections in post-conflict states, particularly those with a negotiated settlement, mark a crucial turning point for both the peace process

and democratisation. Before elections, it is crucial to establish interim institutions that build trust, facilitate demobilisation, and negotiate peace terms. These institutions include setting up a transitional government, deploying peacekeeping missions, and ensuring international support to oversee the electoral process. Similarly, Walter (1997) emphasises the importance of demobilising actors involved in the civil conflict. This would include disarmament processes for all parties and greater peacekeeping support from the international community. In this way, Walter (1997) aligns with Lyons' argument about the need for trust-building and institutional support. As such, for gradualists, they emphasise looking at institutions that would democratise and promote peace simultaneously.

However, one of the limitations with the literature on sequencing and gradualism is that neither school of thought considers the specific role that elections play during the transitional period. It is seen as one of the functions of the wider post-conflict strategy, but very little explores the concept as a key variable within the transition. The study thus builds on the arguments made by the gradualist school of thought as it considers early elections as not just a democracy building mechanism but also as part of the peace process.

2.2 Timing of early elections

Another key discourse around early elections concerns the timing of the early elections and the effects on post-conflict society. Within this thematic area, scholars are quite divided on how elections and violence relate. Specifically, when it comes to the timing of elections. Scholars generally agree that elections are important; however disagree on how long after a conflict, the first post-conflict elections should be held (Reilly 2016). The perspectives around this issue can be categorised into two schools of thought. Firstly, some scholars argue that holding elections as soon as possible is better for society, as early elections can help mitigate violence. On the other hand, there are those who argue that prematurely holding elections can cause a recurrence of violence, undermining peacebuilding processes.

For scholars in the former school of thought, their argument is premised on the idea that the far-reaching destructiveness of civil conflict leaves communities vulnerable

to factors that undermine peace (Diamond 2006; Lindberg 2004). This includes violent crime, terrorism or a recurrence of conflict. As such, it is important to establish mechanisms that will promote peace and stability as soon as possible. Elections from this perspective are the best mechanism to use for several reasons. Namely, they help facilitate the transition of enemies in the previous conflict to political opponents. Furthermore, they also make the state more attractive to international aid and peacekeeping missions, which can help create a stable environment for the country to develop.

Scholars such as Lindberg (2004) argue that holding elections incentivise former combatants to use peaceful means of competing for power as the rules for winning change. Elections shift the power into the hands of the people, meaning the political elite needs to appease the wider public as opposed to those who have the monopoly over violence. Diamond (2006) builds on this idea by arguing that there needs to be a distinction between national and sub-national elections when discussing early elections. He posits that holding sub-national elections first will help mitigate violence better than national elections. This is because it helps incorporate former combatants into the local governance process while also helping to rebuild people's trust in the institutions and each other (Diamond 2006). By doing so, it helps give time for national democratic systems to be established while also developing the entire democratic system more 'naturally' from the ground up.

Alternatively, some scholars argue that early elections are harmful to post-conflict societies because they can cause a recurrence of violence and, in some instances, full conflict. The crux of this argument is that early elections rush a process which takes time, and because the state is already fragile and vulnerable, rushing the process can lead to further violence. Flores and Nooruddin (2012) find that even though elections do help in reducing the likelihood of conflict. States that do not have an institutional legacy of elections are more prone to early elections triggering violence and conflict. Brancati and Snyder (2013) support this argument and highlight some of the key factors that reduce the likelihood of conflict recurrence post-early election.

The literature on this school of thought also challenges the premise that early elections are the best initial mechanism for establishing peace as it is seen as a reductionist understanding of democracy. Scholars such as Mansfield and Snyder (2009;

2007) argue that there are several mechanisms that contribute to making an electoral system work. As such, by not having a number of these key institutions, it can turn the election into a system that promotes and facilitates violence. Thus, scholars from this school of thought view the relationship between early elections and violence as one that is correlated.

Across the literature on early elections, there are two key gaps which this research project seeks to address. Firstly, there is the issue of time. In much of the literature reviewed, there has been a tendency to focus on the short-term outcomes, specifically as it concerns violence. For example, Brancati and Snyder (2013) focus on how early elections affect the short-term risk of conflict recurrence. Without really considering the longer-term implications of early elections on political violence. This limits the literature's ability to fully understand the role of early elections and the longer-term consequences of such mechanisms. Secondly, in the studies which consider the longer-term context, the focus is on economic development. This assumes that mechanisms such as early elections no longer have an effect in the longer term on political violence. However, such considerations have not been fully explored. This again has limited the understanding of democratic processes on political violence, especially in contexts that faced extreme violence (in the form of conflict). As such, this research project sought to address these two gaps by directly exploring the relationship between early elections and political violence in the long term.

2.3 Violence and post-conflict societies

Political violence at its core, is quite a vague and often elusive concept. While most scholars would agree with the general premise that it is the use of violence for political reasons or outcomes, scholars struggle to agree on the context around the "use" of such violence and what is considered a "political outcome or justification". These debates have largely been informed by the context within which the scholarship is taking place. For example, in the 70s and 80s, when liberation and decolonisation movements were prominent, the core debate was around its role as a driver for social and political change or a disruptor that threatens young democracies (Mars 1975; Weber 1978; Zack 2002; Cook 2003). However, in the post-9/11 era much of the literature focused on debates around the use of political violence by terror

and rebel groups as well as how to prevent political violence. The way in which political violence is conceptualised shifts and changes depending on the grander happenings of that time. This allows scholars to better understand the wider trends and shifts of political violence more generally while ensuring its grounded in various theories.

Furthermore, due to the complexity of the wider concept of political violence, many scholars have opted to focus in on a single form of political violence. For example, Mansfield and Snyder (2002), and Cook and Savun (2016), explore the implications of civil conflict on democracies. Whereas scholars such as Fjelde and Hoglund (2016) and Birch, Daxecker and Hoglund (2020) explore the causes and implications of electoral violence. By doing so scholars are able to avoid over generalisation and getting caught in debates surrounding the broader phenomenon around political violence.

While in some instances its more useful to explore a specific theme or type of political violence, the study follows the former group of scholarship, focusing on a more general definition of political violence. The reason for this is twofold. Firstly, many datasets which currently track or measure political violence (both actually and perceived) use more general definitions of political violence as a way to better capture the various complexities of this phenomenon. As discussed in Chapter 3, the dependent variable for this study uses WGI data and thus makes sense to follow this logic.

Additionally, since there is not much work that has been done on the long-term effects of Early Elections, specifically on political violence, it makes to first take a more general approach, with future research focusing on more specific elements of political violence. Another key element of the literature on political violence is how it relates to peace and democratisation processes. Specifically, literature on political violence and democracy are quite often seen as the exact opposite to each other.

On the one hand, political violence represents chaos, disorder and destruction, while democracy tends to represent order, peace and development. From both a theoretical and empirical perspective, there are a number of studies which support the idea that, because democracy enjoys greater political stability, it is favourable in states which emerge from conflict. However, more recently, there is a growing body of literature that critiques this notion. For example, scholars such as Hegre

et al. (2001), Vreeland (2008) and von Holdt (2014) argue that democracy and political violence are not mutually exclusive. Hegre et al. (2001) and Vreeland (2008) argue that democracies are no more or less prone to civil conflict than other regime types. While their core arguments tend to differ, with Hegre et al. (2001) arguing that semi-autocracies have a greater risk of civil conflict, and Vreeland (2008) challenges this argument. They, nevertheless, show that democracies do not inherently mitigate political violence such as civil conflict.

Furthermore, von Holdt (2014) establishes a theoretical framework for understanding what he refers to as "violent democracies". Using South Africa as an example, he argues that in some cases, democracy enables certain forms of political violence, thus highlighting how such forms of violence can exist and even thrive in democracies.

One key gap within this literature concerns how the various democratisation mechanisms influence or affect political violence, which would help expand the discourse beyond simply whether democracy is mutually exclusive to political violence and focuses more on what the effects of such a relationship would be. By early elections as merely a single event, this study seeks to better understand how a primary mechanism within the democratisation process, early elections, affects this phenomenon in the long term.

2.4 Quantitative approaches to understanding early elections and political violence

Scholarship on elections and political violence, especially civil conflicts, has utilised quantitative methodologies for quite some time. These methods have ranged from simpler models, such as OLS regressions, to more complex models, such as survival analysis models. The improvement in data accessibility and quality has also contributed to the ability of scholars to include more complex models. As such, scholarship around elections and political violence can be organised according to its quantitative methodologies. Namely, those that use regression analysis, namely logistic and multinomial and those that use more complex models such as survival analysis and matching methods.

Scholars such as Mansfield and Snyder (2008), Fearon and Laitin (2003), and Fortna (2004), use regression methods to better understand various components of democratisation and post-civil conflict dynamics. Mansfield and Snyder (2008) use logistic regression to test whether democratic transitions are more at risk of falling into civil conflict than stable mature democracies. Similarly, Fortna (2004) uses logistic regression to explore what factors influence the UN's decision to conduct a peacekeeping mission.

As such logistic regression has been a vital tool to understand the non-linear relationships that exist around civil conflict and democracy. One of the model advantages is that it assumes an S-shape curve relationship. This allows scholars to better test which independent variables are more influential than other factors, which is extremely useful in studies which are exploratory. For example, by using such regression methods, Fortna (2004) can see which variables increase the odds of a specific outcome happening. This is useful as it allows the author to better understand under which conditions a peacekeeping mission is more likely to occur, which in turn provides greater understanding towards the role of peacekeeping in post-conflict societies.

Furthermore, logistic regression can handle a range of different data types, such as binary dependent variables and categorical predictor variables. Standard OLS struggles with such data types and often requires scholars to reshape the data, but at the cost of losing some of that information. Thus, logistic regression is useful in ensuring such data is not lost through transformation. Literature such as the Mansfield and Snyder article benefits from this as they are able to include categorical regime types such as "democratic, autocratic, or anocratic" (Mansfield and Snyder 2008, 7).

In this way, logistic regression has a range of benefits in the way it's able to measure the likelihood of an outcome when considering certain predictor variables and incorporates a few different data types that do not meet the assumptions of linear regression. However, while there are benefits to using regression analysis in causal studies, it struggles when it comes to treating time as a variable.

Time is difficult to include in logistic regression models, especially due to autocorrelation and multicollinearity. Scholars have used several methods to try and address

these issues or at the very least reduce the effect they will have on the model. However, as Brown & Langer (2009) highlight these methods do not fully address the issue of highly correlated predictors or residuals. Using dummy variables and lag effects can reduce the effect to some extent but in many cases, they still violate the assumptions of regression models (Brown and Langer 2009). This can skew the result by significantly overestimating the effect of certain predictors. To address this, many scholars have begun turning to more complex models, with the most popular being survival analysis.

Survival analysis models, also known as "hazard models" or "duration models" account for the potential correlation between time and an event. It does this largely by treating time as a relative concept i.e. distinguishing between the starting point of the event and the occurrence of the event. It also considers instances in which an event does not occur (Stevenson 2007). By doing so, it addresses several of the key issues associated with handling time. As such, it has become increasingly popular in the field of political science and more specifically in understanding post-conflict elections and political violence.

Scholars such as Brancati and Snyder (2011), Flores and Nooruddin (2012), Wilson (2019) have used various survival models to account for the temporal element of elections and transitional states. The most common type of survival model is the Cox Proportional Hazards Model, as its flexibility allows for various revisions to accommodate a wider range of research questions and designs. Brancati and Snyder (2011) use this model to better understand the effect of early elections on the recurrence of war. They do this by exploring the factors that influence a post-conflict state's decision to hold an early election.

Flores and Nooruddin (2012) use a Parametric Survival model, which, unlike the Cox model, does not assume the hazard ratios between different groups is the same over time. They use this method to better understand when the most appropriate time to hold post-conflict elections is (Flores and Nooruddin 2012). Similarly, Wilson (2019) also uses a Parametric Survival model to explore the temporal relationship with autocratic to democratic regime change. He argues that legislative institutions have not been prioritised enough and shows, using this model, the effect that these institutions have in driving or limiting democratic regime change.

Survival models are much broader and more flexible than logistic regression models, which allows them to consider time more proactively as a variable. The benefits of this can be seen with Flores and Nooruddin (2012). Using a survival model, they can account for the time-to-event element as they show that there is an underlying factor that influences the distribution of the time to event observation. In their case they argue states with previous democratic and or election experience are able to hold elections earlier as opposed to those which did not have that experience (Flores and Nooruddin 2012). This model better fits the research question and allows them to better understand this relationship.

Furthermore, such models allow for greater comparative value taking the temporal element into account, which is best highlighted in Brancati and Snyder (2011) paper. By not assuming a specific distribution for the time-event, the model is better able to control for temporal elements which may influence the outcome. This better clarifies the relationship between the predictors and the dependent variable, by minimising the likelihood that the relationship is dependent on time. Doing allows for scholars such as Brancati and Snyder to unpack a lot of the nuances around post-conflict elections without being limited by the temporal elements.

While there are benefits to using regression models or survival analysis as discussed above, there are also several key issues which limit their use when studying the long-term impact of early elections and political violence. Firstly, regression and survival models do not account for confounding variables. For example, there are only several states that held early elections after experiencing a civil war, and this has the risk of introducing selection bias into the study. Secondly, survival models are often complex and require the researcher to make various assumptions, which increases the likelihood of misinterpretation. Thirdly, using such methods limits the study's comparative element. One of the key focuses of the study is comparing the long-term effects of early elections to those that did not, which cannot be fully captured by logistic regression or survival analysis.

This study seeks to address this gap in the literature by making the case for using weighting. This method addresses some of the key gaps mentioned above when using some of the more popular methods. In particular, the method allows the study to avoid bias in the results. There is a limited number of observations that the study uses, which will inevitably introduce various bias issues. Furthermore,

the number of states which held early elections to those that did not is uneven, making it difficult to study the comparative effects. By weighting the results, it will correct for this imbalance and allow the study to better explore the long-term comparative effects of early elections on political violence.

In sum, the study positions itself in a relatively new methodology, with the basis of gaining greater insights into improving how early elections and political violence are studied. This chapter explored the underlying theoretical framework which guided the study in both its conceptualisation and methodology. By exploring the relevant literature, the chapter was able to identify several key gaps, which are addressed through this study. Furthermore, the chapter helps position the study within the wider context of work scholars have done before it and how it builds onto this scholarship.

Chapter 3

Methodology

To understand the effect of early elections on the propensity for political violence over time, this research project used quantitative and statistical methods. The following chapter provides an in-depth discussion on the specifics of the research methodology employed to ensure robust results. This chapter will begin by explaining the research design, namely the methods that the study took to explore the causal relationship between early elections and political violence. This will be followed by a discussion concerning the data, specifically looking at how the sample was selected and how the data was prepared. The final two sections of the chapter will focus on the specific variables used in the study, discussing the independent, dependent and covariates, as well as exploring some of the issues around reliability and validity.

3.1 Research Design

To explore the long-term effects that early elections have on political violence, the study employed two key statistical methods: energy balance [1] and G-computation. Energy balancing was used to improve the comparability of the two election categories by adjusting the distribution of observed covariates so that their shape is more similar.

As mentioned in Chapter 2, a key challenge is the lack of randomisation. Specifically, the imbalance in the number of states which had an early election versus those that did not. To address this issue, energy balancing assigns weights to observations in both the early election and non-early election groups, based on the

[1] Appendix B presents a more detailed explanation of the balancing technique.

distance between the two groups. This method improves the distributional balance of the data, reducing biases associated with small sample sizes and non-random treatment assignment. Ensuring that the statistical estimates are more comparable on a "like to like" basis.

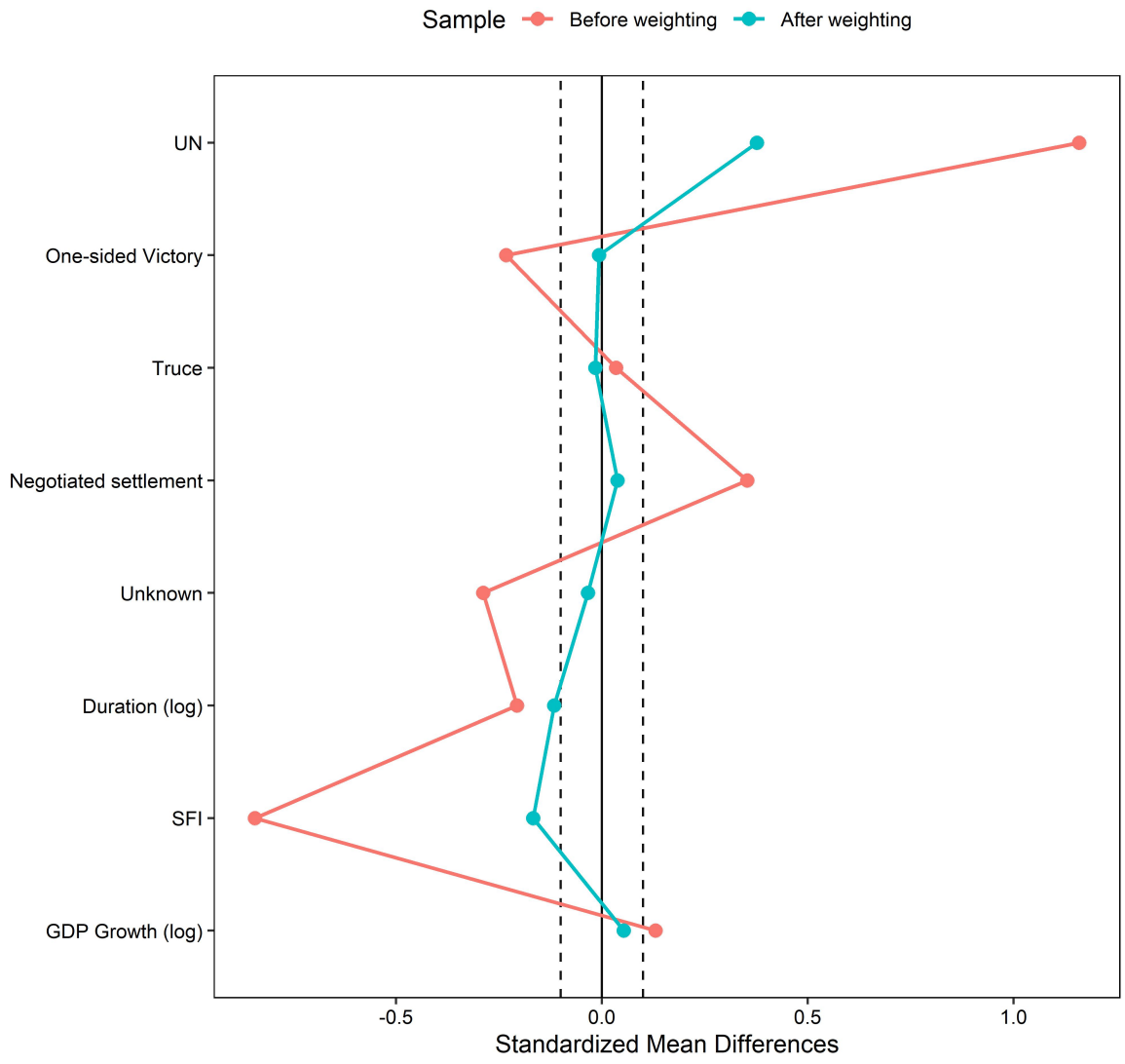
Figure 3.1 below depicts the pre- and post-balancing for each of the variables used in the study. The figure only presents the balancing of the fifth-year dataset. The other two datasets are depicted in Appendix B1 and B2. The plot in Figure 3.1 shows an adjusted and unadjusted line represented by blue and red, respectively. The solid line represents the 'ideal' balance across the two groups, as numerically represented by 0. The two dotted lines represent the threshold values for what is 'acceptably' balanced. Standard practice is to set the threshold between -0.1 and 0.1. The graphic shows how the method adjusts the data points, improving the balance considerably. For example, the UN and State Fragility (SFI) covariates are the most 'unbalanced'; however after the balancing is applied, the variables are much more balanced.

G-computation was then used to compare the effects of the two different treatments on the outcome variable. This method uses statistical models to estimate the average effect under different 'what if' scenarios. In this case, the two scenarios or treatments were:

1. "What is the average effect on political violence if all the states in the sample held early elections?"
2. "What is the average effect on political violence if all states in the sample did not hold early elections?"

This method is appropriate for this study because the effect of early elections can be more accurately measured while avoiding overly complex methodologies to account for the small sample size. As Greifer (2024) argues, this method provides one workflow for the most robust results. G-computation also allows for greater flexibility than standard regression models allow. This is helpful in observational studies, which may have unaccounted cofounding variables. Appendix A provides a more detailed discussion on how the estimates were calculated.

FIGURE 3.1: Love plot depicting the pre- and post- balancing results



The results are then presented using "marginal effects" which provides clarity regarding the impact on political violence by emphasising the confidence intervals. [2] By highlighting confidence intervals, the analysis not only explores the range of potential effects of early elections but also provides a more nuanced and interpretable understanding of the data (Imbens 2021; Greifer 2024b). Thus, it is an appropriate

[2]For clarity, the OLS regression models which were used to create the model are provided in Appendix C: C1 and C2.

way of representing and conveying the results.

Furthermore, as Greifer and Stuart (2023) highlight, the coefficients from the model should not be interpreted as the effects may be highly confounded due to the weighting process. As such, using marginal effects is more appropriate because it ensures the results are as accurate and the interpretation is not misleading or incorrect.

3.2 Data

3.2.1 Sample

The study sample includes a total of 52 countries from around the world. In order to select the cases for the study, a strict criterion was followed, which was inspired by several other studies, including Brancati and Snyder (2011; 2013), Doyle and Sambanis (2006) and Flores and Nooruddin (2012). However, the challenge with civil war datasets is that they often differ in terms of how they are defined and divided into sub-categories. When it comes to civil conflict datasets, most datasets are most broadly defined by the number of fatalities that they have. Typically, datasets use either 25 battle-related fatalities as the minimum number for an organised conflict to be considered as a civil war, 1000 battle-related fatalities as the minimum or both. For example, datasets like the Correlates of War (Dixon and Sarkees 2016) define a civil war as both. According to their codebook, a civil conflict is one that has at least 25 battle-related fatalities throughout the conflict. Additionally, the dataset includes the additional criterion of 1000 battle-related deaths per year for it to be considered a civil conflict (Dixon and Sarkees 2016). On the other hand, datasets such as PRIO consider a civil conflict as anything that has 1000 battle-related fatalities across the entire conflict. Such differences mean different datasets will have different countries included and different years in which the conflict ends. In the case of this dataset, it took a broader approach by defining civil conflict as having 25 battle-related fatalities or more per year. This is the most appropriate approach for the study because it ensures that there is some consistency in terms of this dataset and what the wider literature considers a civil conflict. Furthermore, by doing so, it does not exclude countries which were considered civil conflicts but have low fatalities, which reduces the bias of the sample.

Another key consideration for what is defined as a civil conflict is the issue of which actors are involved. Armed conflict datasets generally consider something as a civil conflict when at least one of the actors involved is a recognised state (Pettersson 2023; Davies, Pettersson, and Öberg 2023; Gleditsch et al. 2002; Eck 2012). Other datasets characterise different civil conflict types based on the actors involved as not to exclude non-state actor conflicts. For example, UCDP distinguishes between its different types of armed conflict based on the actors involved, differentiating between "state-based conflict", "non-state conflict", and "one-sided conflict" (Therese Pettersson 2023). Similar to the previous consideration, this study includes both state-based and non-state-based actors. However, despite this, most non-state conflicts did not meet the 25 battle-related criteria and were dropped from the study anyway.

Another consideration is what to do with civil conflicts that where other states were involved in the conflict. Known as international civil wars, such conflicts involve several international actors who play a more active role in the conflict, other than providing aid or arms. Literature often differentiates between civil conflicts that are between internal actors and those which include other states, such as the Korean civil war (Brancati and Snyder 2013; Doyle and Sambanis 2006). Such studies tend to exclude international civil conflicts because they change the dynamics of the conflict. This can limit the accuracy of the results, as these conflicts typically border on interstate conflicts. In alignment with such studies, the investigation also excludes countries which had an internationalised civil conflict. By doing so, it ensures more specificity in the study and robustness of the results.

The final consideration the study made when deciding on an approach towards its sample selection is the civil conflict end date. The study looks at states that ended their civil conflict between 1990 and 2011. The reasoning behind why the study looks at countries from 1990 has both a theoretical argument and a more technical one. The end of the Cold War saw the highest number of civil conflicts ending than prior periods, thus shifting the focus and prioritisation of post-conflict development. On a more technical note, this criterion mitigates issues around missing data. A big challenge when it comes to studies looking at political violence is the lack of historical data. While some datasets, such as the UCDP/PRIO Armed Conflict dataset, look at forms of political violence since 1946, they focus on larger-scale conflicts, which excludes several other forms of political violence. This limitation

would have negatively affected the quality of the results by introducing missing data points.

Additionally, the study looks at the effects of early elections across three different periods, namely 5, 8 and 11 years after the conflict. As such, countries which ended a civil conflict after 2011 were not considered because no data exists after 2022 for a few variables, like GDP per capita annual growth. Based on these considerations, the study only focuses on civil conflicts that ended between 1990 and 2011.

Using the criteria above, the study compared different datasets to confirm that the cases in question were indeed considered civil conflicts by experts within the literature. Furthermore, this was done to ensure that the criteria themselves did not have any limitations that would undermine the overall quality of the study. The datasets that were compared included the Brancati and Snyder dataset (2011; 2013), Flores and Nooruddin dataset (2012), Correlates of War dataset (Dixon and Sarkees 2016) and the UCDP/PRIO Armed Conflict Dataset (GLEDITSCH et al. 2002; Davies, Pettersson, and Öberg 2023; Therese Pettersson 2023). For a case to be selected, it had to fulfil the study criteria and appear in at least two of the datasets. For instance, if a case met all the criteria in the study but did not appear in at least two of the datasets, it was excluded. As the study could not verify whether the case was generally considered by the literature to be a civil conflict. By doing so, the study was able to do its best in ensuring that unintended biases were not introduced.

Overall, the sample included 25 African countries, 15 Asian countries, 5 Latin American countries, 6 European countries and 1 Oceanic country.[3]

3.2.2 Data Preparation and Structure

The primary software used in the study to wrangle and prepare the data, perform statistical modelling, and visualise the data was the statistical programming language R [4]. Using various packages[5], the data was 'cleaned' and 'merged' to create

[3]For a full list of countries used in the study, see Appendix D.

[4]R Version 4.3.0

[5]The following packages were used throughout the study: dplyr package (Wickham, François, Henry, Müller & Vaughan, 2023), ggplot2 package (Wickham, 2023), tidyr package (Wickham, Vaughan & Girlich 2023), WeightIt package (Greifer, 2023), cobalt package (Greifer, 2023), marginaleffects package (Arel-Bundock, Greifer & Bacher, 2023), stargazer package (Hlavac, 2022), ggpubr package (Kassambara, 2023), GGally package (Schloerke & Cook, 2023), kableExtra package (Zhu, 2023).

the three data frames that were used in the analysis. During the initial 'cleaning' phases, the case selection process was conducted using the above method. As such all cases that did not apply to the study were dropped and the remaining 53 countries were merged with the other variables. The other variables used in this study were also cleaned using the initial 53 countries as the base. Countries which were not relevant to the study were dropped. The merging of the different variables into 3 clean data frames was done using the ISO country codes. Each data frame represents a different time period and included a mixture of the initial condition variables such as the Early Election variable and the Duration of the Conflict variable and time specific conditions such as the GDP per Capita Annual Growth variable and State Fragility Matrix variable.

The study explores the long-term effects of early elections, specifically in terms of the fifth year after the conflict has ended, the eight year and the eleventh year. Most studies which look at the effects over time either use a time series data structure-which has multiple observations measured sequentially at different time periods for each country- and panel data-which is a mixture of a time series data structure with more than one variable. However, the study used a different approach instead of joining the data from the three time periods into one dataset, it kept the datasets separate. This meant the study built and used three different datasets each representing a different time period.

The reason this approach was used as opposed to the conventional temporal data structures, was largely due to the pre-processing method used. The weightIt package has two different functions for balancing the covariates, the weightit() function, which measures standard non-temporal datasets which only have one row per state and the weighitMSM() function, which is used for datasets which have multiple rows per country, as is the case with time series and panel data. The issue is that the weighitMSM() function is only useful if the independent variable values change over time. The independent variable in this study, however, does not change across the three time periods, as such the function was not appropriate to use as it would have overly complicated the weighting process without there being a strong justification to do so. As such to circumvent this issue the study kept the three datasets as is and ran each model three times, one for each dataset representing a different time period.

3.3 Variables

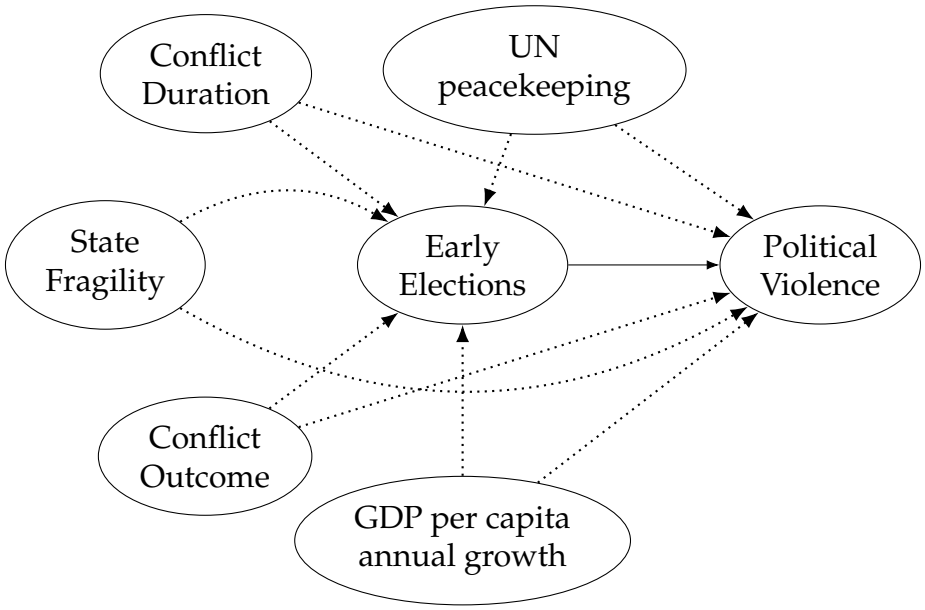
3.3.1 Independent Variable

The study aims to explore the long-term effects of early elections on political violence as depicted in Figure 3.2. Early elections can be defined as the occurrence of an election (national or subnational) which takes place within a four-year period after the end of the conflict. The reason for using this period is because of the role that elections within the recovery or transitional period play. An early election is not simply the first election that takes place after a conflict, but can also play a key role in reducing or preventing a recurrence of violence. While there is no fully agreed upon period for which a state is considered to be in transition, the first four years after the official end of the conflict is often treated as the threshold for an early election. This is because these four years are the most pivotal as states tend to be most vulnerable and at risk of falling back into violence (Flores and Nooruddin 2012; Ottaway 2011). For example, Burundi had a civil conflict which started in 1993 and ended in 2002 with the signing of the Arusha agreement. Part of this agreement was to hold general elections to help end the civil conflict (Topangu 2005). These elections were held in 2005, three years after the signing of the agreement and marked another key step in the peace process. Scholars have highlighted that the elections, while important for the democratisation process, mainly served as a mechanism to promote peace and reconciliation (Topangu 2005). In this sense, early elections serve two key roles simultaneously: promoting peace and democracy.

3.3.2 Dependent variable

The dependent variable, being the likelihood of political violence, is denoted as the likelihood or risk of violence by state or non-state actors to achieve some political goal (Raleigh et al. 2010). Measuring the propensity is quite difficult, as simply using the number of political violence events does not always capture the complexities around political violence. One key issue is the idea of political violence events and perceived threat of political violence. For some studies the events themselves are important as the insight are based on whether political violence events occurred or did not. For example Flores and Nooruddin (2012) used events data

FIGURE 3.2: Causal diagram describing logic of study



from the Uppsala Conflict Data Project's (UCDP) to measure whether early elections influence the recurrence of political violence in the short term. However some scholars are interested in the perceived threat of political violence (fear). Scholars such as von Borzyskowski, Daxecker, and Kuhn (2021) sought to study how the effects of electoral fear campaigns influence Africans support for democracy. In this case the interest is not on whether an actual event happened but rather whether the perceived fear of it happening. In their example they used Afrobarometer data. However in many instances these two concepts are closely related and by only focusing on one or the other, paints only half the picture. As such some scholars sought to use measures that best capture the complexity of both these issues. One of the more commonly used measures is the Political Stability and Absence of Violence/Terrorism variable from the World Governance Indicators. Scholars such as Asongu, Kossele and Nnanna (2021) argue that using such a variable as a proxy for political violence is useful because it does not only consider the events themselves but the 'likelihood' as well. This allows a greater scope of research to be done on political violence.

This indicator measures the level of political stability in a country on an annual basis. The scores range from roughly -2.5 to +2.5, with lower scores meaning worse stability (Kaufmann and Kraay 2024). However because this study is not concerned

about the absence of political violence, the study inversed the scores, so that the higher the score the greater the level of political violence. While this is a fairly new practice, an increasing number of scholars have begun to inverse the measure as a more intuitive way of interpreting the results. For example Dirks and Schmidt (2023) inversed the scores to study the relationship between political instability and economic growth. While their focus was on advanced economies, their reasoning for using this measures largely lies in the fact that it considers various sub-indicators allowing for more of the complexity. Furthermore because the index is straight forward to design it provides a greater level of complexity in terms of the concept without adding too much noise. As such by inversing this variable instead of using another measure means the study is able to capture the complexity while still having a measure that is intuitive for the research question. Overall the inversed Political violence index goes from roughly -2.5 to +2.5 where the higher score represents a greater likelihood of political violence (Dirks and Schmidt 2023; Assfaw, Tenaw and Hawitibo 2025).

The one limitation with using this variable is that it does not have the best historical data available, specifically it only measures the propensity of political violence from 1996 onwards and for the first four rounds of data they were only released every second year. This means that within the data there are a number of NA's especially for the years from 1996 to 2001. This is a problem as it further decreases the statistical power of the results of a dataset that is already quite small. This issue is addressed by using the next available year for the observation. For example, five years after the civil conflict in South Africa is 1999, however the WGI does not have data for this year, as such the study uses the political violence score for 2000 instead. By doing so it ensures that cases are not dropped when running the regressions due to the missing data, and it reduces the bias which would come with using something like the mean.

3.3.3 Covariates

To ensure that the relationship between early elections and political violence is clarified the study includes five key covariates. The study takes more of an intentional approach to the variables it includes in the models. While there are a number of different factors that can be controlled for, the study selected the ones that were

most relevant to the relationship in question and those that were considered in the literature. As such the five covariates includes the conflict outcome, state fragility, whether there was a UN intervention, the duration of the conflict and GDP per capita annual growth.

The conflict outcome variable is a multicategory variable that measures how the conflict ended, specifically whether the conflict ended in victory by one side, a peace settlement, truce/ ceasefire or unconfirmed. One-sided victory in this context can be defined as a definitive defeat or complete elimination of the opposing side. A peace settlement on the other hand are instances where the conflict ended through the signing of a peace agreement. A truce/ceasefire is defined as an agreement to end the use of force or violence between the opposing sides. This is differentiated from peace agreements because even though peace agreements often follow a truce it is not always the case and elections can be a tool through which peace is negotiated. The unconfirmed category are countries where the outcome of the conflict is unclear, as there is evidence of sporadic, low-level fighting between the different sides.

This variable will need to be controlled for because it not only affects early elections, but it also can affect the propensity for political violence. In terms of the latter, scholars such as Brancati and Snyder (2011; 2013), and Flores and Nooruddin (2012) highlight how conflicts that end in settlement tend to have a greater likelihood of relapse into violence as opposed to conflicts that end in victory which sees a lesser likelihood of this. As such controlling for the conflict outcome is important because it could be the effects of settlements which lead to a greater propensity of political violence in the long term and not the election. Furthermore, the outcome also has an impact on the timing of the election as settlements tend to have elections earlier. This is because either they are seeking support through aid or because the international community has intervened (Brancati and Snyder 2011).

The study primarily used data from Bracanti and Snyder (2013) with data from UCDP Conflict Termination Dataset (Kreutz 2010) and UCDP Peace Agreement Dataset (Therése Pettersson, Högbladh, and Öberg 2019) to verify data from Bracanti and Snyder as well as fill in any gaps. The NA's were dropped from the sample as the study did not see them as being relevant and would have been dropped by the regression models regardless.

In terms of state fragility, it can be defined as the capability of the state to perform its key functions as outlined by the literature (Marshall 2008; Ferreira 2016). This includes includes monopoly over the use of force, provide essential and public services, create, implement, and manage policies and ensure the continued socio-economic development of the state (Marshall 2008). Summed up these various characteristics can be understood as measuring the effectiveness and legitimacy of the state. This an important variable to control for because many studies have shown that the level of fragility post-conflict has implications for both the level of political violence and elections (Fearon and Laitin 2003). For example Flores and Nooruddin (2012) found that states which have lower state fragility tend to have more effective institutions which help mitigate the risk of political violence and thus recover faster (Flores and Nooruddin 2012). Furthermore, the devastation of the conflict also matters. Civil wars are incredibly destructive and often leave the state incapacitated. Not having key institutions can undermine the role of elections as a peacekeeping mechanism as such controlling for state fragility can serve as a proxy to manage the destruction of the conflict and the level of democracy post-conflict (Dunning 2011; Flores and Nooruddin 2012; Marshall 2008).

One of the challenges with this variable is finding data which captures these two core elements of state fragility-that of legitimacy and state effectiveness. Additionally, because scholarship has only begun quantifying this concept in the past few years, most of the data sets only have data from the 2010s onwards. The State Fragility Index and Matrix developed by the Centre for Systemic Peace (Marshall and Cole 2008), addresses these two challenges. Their dataset measures states on four different indices which capture the different security, political, economic and social elements of a state both in terms of its effectiveness and legitimacy. The dataset also goes back to 1995, which is useful as it allows the study to get data on countries in the late 1990s and early 2000s. The dataset is a continues scale which ranges from a score of 0 (representing no fragility) to high 20s (representing extreme fragility).

In terms of the UN intervention variable, this represents the different types of interventions that are within the UN's mandate such as peacekeeping, policing and observation. Several studies have shown that the UN can influence not only whether an early election takes place or not but also affects the likelihood of post-conflict

political violence (Doyle and Sambanis 2000; Fearon and Laitin 2003). For example scholars such as Brancati and Snyder (2011) highlight this in their paper on early elections and show that UN peacekeeping missions have a greater influence than other non-UN missions. As such it makes sense to only include UN missions because non-UN peacekeeping missions do not make much difference. However, unlike with studies which focus only on military peacekeeping missions I will be looking at UN policing missions too. Bara (2020) finds that peacekeeping missions that involved policing tended to have lower rates of other political violence as they are more equipped to dealing with lower intensity violence is a more sustainable way. As such this study defines UN Intervention both in terms of its military peacekeeping but also the policing and observation missions. Controlling for this variable will be helpful in isolating the impact of early elections on political violence to ensure that the effect of early elections is best clarified.

To quantify this variable, the study uses data from Doyle and Sambanis (2006), who first analysed the effects of peacekeeping missions. Since the study is largely only interested in those that had some form of UN intervention and those that did not, the study recoded the different categories of peacekeeping missions to a dichotomous variable with 0 representing no UN intervention and 1 representing a UN intervention. There were no NA's in this data for the sample countries selected.

Duration of conflict, as its name suggests refers to the length of a conflict. While its often overlooked variable, it has been found to be quite influential to how the state manages to rebuild after the conflict has ended, especially when it comes to civil conflicts (Flores and Nooruddin 2012). Such conflicts are often very destructive both in terms of loss of life, infrastructure and ability for the state to function, but also as it pertains to inter-social dynamics. Scholars such as Walter (2004) and Hegre (2004) make the argument that longer conflicts are more fragile in the first few years after the conflict has ended due to the fact that the conflict has a greater impact on these factors. Furthermore, the post-conflict stability of the state is also more difficult because it will take longer to reconstruct the state. As such this variable is important to control for as longer conflicts often have a higher likelihood of political violence.

To measure this the study uses data from both the Correlates of War (Dixon and Sarkees 2016) and Brancati and Snyder (2011), which both measure the duration of

the conflict. The most commonly used unit of measurement in the literature is the number of months. Following with this the study also used this unit of measurement.

The final covariates that the study used is the annual percentage growth rate of GDP per capita. This variable is useful for the study because it helps control for the economic factors which may influence the relationship between early elections and political violence. Scholars have pointed out that such variables can be used to capture a number of key variables such as the countries approach to development, its policy choices, and development of institutions (Hegre and Sambanis 2006; Sambanis 2004; Flores and Nooruddin 2012; Collier et al. 2003). Miguel et al. (2004) found that the relationship between GDP growth and likelihood of civil conflict is strongly significant. As such controlling for GDP per capita annual growth will help further clarify the relationship of interest. The study used data from the World Bank, which has a repository of economic data from different countries. The data used had some NA's for which such cases were dropped.

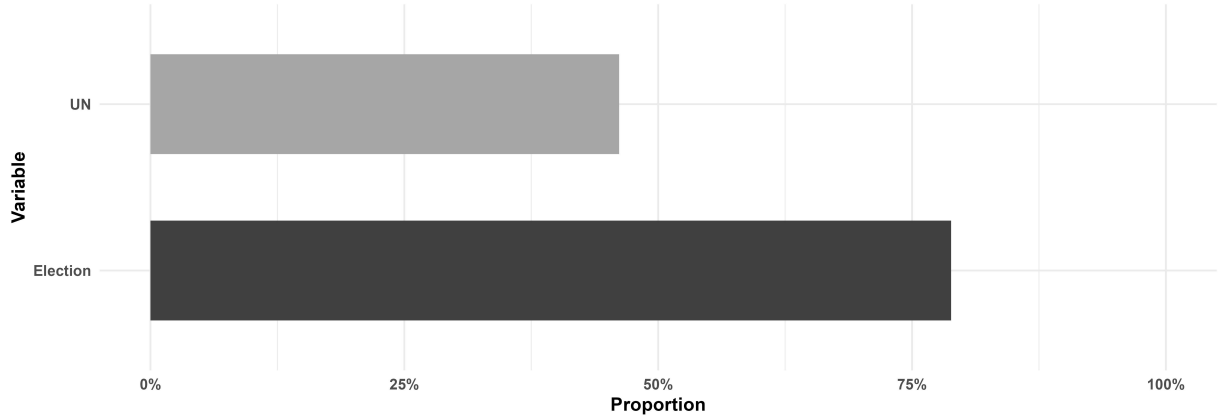
3.4 Univariate and Bivariate Distributions

There are 52 observations within each of the three data sets which depicts various conditions across an eleven-year period. These conditions can be divided into two key groups, initial conditions and time-variant conditions. The former refers to the variables that do not change over the three time periods, mainly because they relate to the civil conflict. Variables such as the Early elections variable, Duration of Conflict variable, UN intervention variable and the Conflict outcome variable are all initial conditions within the data set. The latter conditions, on the other hand, are those that change over the three time periods and includes the Political violence variable, State Fragility Index (SFI) variable, and GDP per capita annual growth variable.

Most of the initial conditions are discrete data with the early elections and un intervention variables being binary variables and the outcome of conflict variable being multicategory data. The duration of conflict variable is the only one which is continuous, denoting the number of years of the conflict.

Figure 3.3 depicts a bar plot of two categorical initial conditions that were used in the study. The "Elections" variable represents the proportion of states in the sample that held an early election. In the data set, if the state did not have an election in the first four years after the conflict has ended it was represented as a 0 and if the state did have an election it was represented as a 1. The distribution of observations in the independent variable shows that the data used is quite uneven within these two categories. More specifically figure 3.3 highlights how just under 80 percent of countries in the data set did have an early election this means that only around 20 percent did not. The study uses propensity score weighting techniques to address this bias within the data set.

FIGURE 3.3: Bar graph representing the Proportions of the Election and UN variables

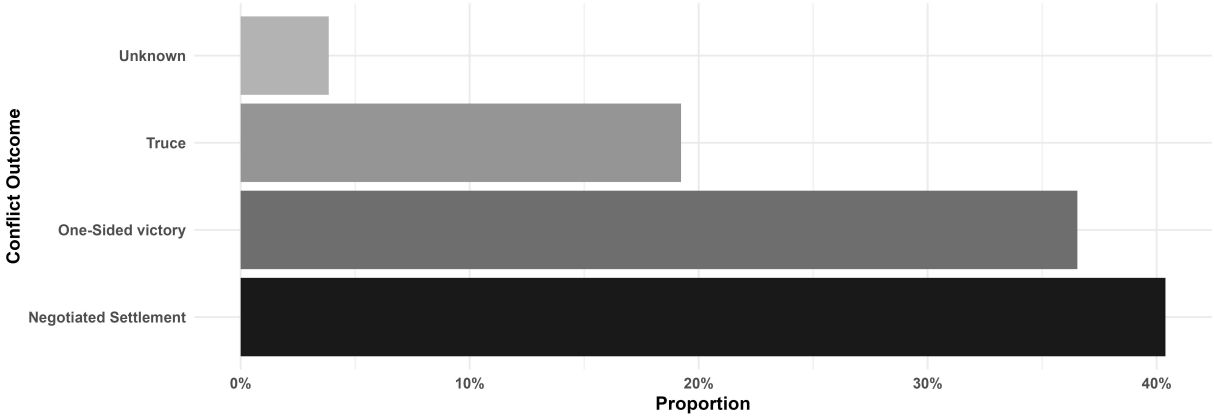


The "UN" variable also only has two responses with "0" representing states that did not have a UN intervention and "1" representing states that did have a UN intervention. Unlike the independent variable however, this covariate is much more evenly balanced, with around 46 percent of the states in the sample having a UN intervention while 54 percent of the states did not. Interestingly almost all the countries which did not have an early election also did not have a UN intervention, except for Papua New Guinea, which did have a UN intervention despite not having an early election.

Figure 3.4 represents the third initial condition, "Conflict Outcome", is a multicategory initial condition. It has a total of four categories with a number representing

each category. Namely "1" represents a One-sided victory, "2" represents a Truce, "3" represents the Negotiated settlement outcome and "9" represents a conflict where it is unclear how the conflict has ended. This variable has an interesting distribution as most conflicts in the data either had a one-sided victory or a negotiated settlement.

FIGURE 3.4: Bar graph representing the Proportions of the Conflict Outcome variable



The final initial condition is the Duration of Conflict covariate. This variable is a continuous variable which shows how long the civil conflict lasted for in years. Depicted in the scatter plot matrices in Figures 3.5, 3.6 and 3.7. The variable's mean is 11.5 (rounded), which indicates that the average number of years which a state was at war in the data set is around 11 years. The median on the other hand is 9.8 (rounded), which means most states would fall on either side of the nine-year mark. However, the difference between the mean and median is quite big which indicates that the data is not as normally distributed. In addition, the difference between the minimum and maximum values is quite large, which means there is quite a bit of variability in the data, while the large difference between the median and percentiles indicates there is skewness in the data which will influence the model assumptions. To address this issue, the study used a logarithm transformation which improved the distribution significantly.

Figures 3.5, 3.6 and 3.7, depict both the univariate and bivariate distributions for the continuous time-variant conditions. The numbers in some of the panels represents

the correlation coefficients, while the scatter plots include a smooth line to highlight the linearity.

Firstly, considering the dependent variable, political violence across the three figures. The majority of the sample is concentrated around the lower to mid political violence score as depicted by the bar graph. This means that most countries in the sample, they have a political violence score between -0.5 and 1. This indicates that many of the cases across the three time periods tend to have lower political violence scores, with some outliers. Interestingly in the eleventh year (Figure 3.7) the number of states within this range increase quite significantly, with the fifth and eighth years having the data points more spread out. Taking a closer look at the minimum and maximum scores, the country in the eighth- and eleventh-year data sets with the highest political violence score is Iraq with 2.77 and 3.18 respectively. However, in the fifth year the country with the highest score is Sudan which indicates there was an improvement in Sudan's score while in Iraq the likelihood of political violence increased. In terms of the countries which had the smallest political violence score across the three time periods, Moldova and the United Kingdom had the smallest likelihoods of violence in the fifth and eight years respectively while Croatia had the smallest likelihood in the eleventh year.

Considering the time-variant covariates, the scatter plot matrices also show some useful insights concerning the univariate distribution and relationship between the different covariates. Firstly, looking at the State Fragility variable, the bar graphs depict a distribution that is largely concentrated around the higher end of the state fragility index score. The score ranges from 0 to 24, putting the median in the 10 to 15 score range in all three period. This is expected as post-conflict states tend to be more fragile. Interestingly while the median remains quite high it does decrease over the years. The correlation between state fragility and the other covariates is quite weak which indicates there is low risk of multicollinearity. There are some outliers which seem to have some influence on the sample. Specifically, the United Kingdom data point stands out, however this is largely because it has a fragility score of zero, which explains why it stands out as an outlier.

Secondly in terms of the Annual Growth in GDP per Capita variable, the scatter plot matrix shows both the original distribution of the sample, and the log transformed

one. While the untransformed data across the three figures does not necessarily indicate an abnormal distribution, the GDP variable has some skewness with a tail to the right. This means some countries will have drastically higher GDP's than others and can have some impact on the results. A box cox transformation was conducted to confirm that the variable should be transformed and that the log transformation would be most appropriate for the data. Looking at the transformed bar graph it has less of a drastic tail while keeping the general shape of the distribution. Comparing the transformed variable across the three time periods, the median GDP growth increases over the 11 years. The fifth year has a lower GDP growth, but this improves gradually in the other two periods. This is partly expected because in many cases there is very low economic activity in post-conflict societies especially in the first few years. The fifth and eight time periods highlights this as the median growth rate is only around 2 per cent, however this increases in the eleventh year with a median of over 3 percent.

In terms of the bivariate relationships, the scatter plot matrix reveals some interesting insights between the various covariates and the outcome variable. The relationship between political violence and state fragility (represented as sfi) is quite strongly correlated, which is expected given that the two variables tend to go hand in hand within the literature. This is represented in the three scatter plots by the close distribution of the data points from the red (which represents the median). The relationship between political violence and state fragility is positive with the general trend being that as political violence score increases so does state fragility. This means that states which have a higher state fragility score tend to be more susceptible to political violence. Supporting theirs which argue that reducing the states fragility, also reduced the likelihood of political violence.

However, the relationship between political violence and the other covariates is less straight forward. For example, the duration of conflict variable, does not seem to have a strong relationship with the outcome variable. Considering the correlation coefficient across the three time periods, it shows that there is not much correlation between the duration of a conflict and political violence. There seems to be some correlation in the eighth and eleventh years. However, the correlation coefficients are so small that there does not seem to be a consistent trend. Similarly, in terms of the scatter plots the relationship points to more of a negative one. The plots show a lot of inconsistency with the line not being straight and the ellipse shape

FIGURE 3.5: Scatter plot depicting the Fifth-year summary statistics and correlation coefficients

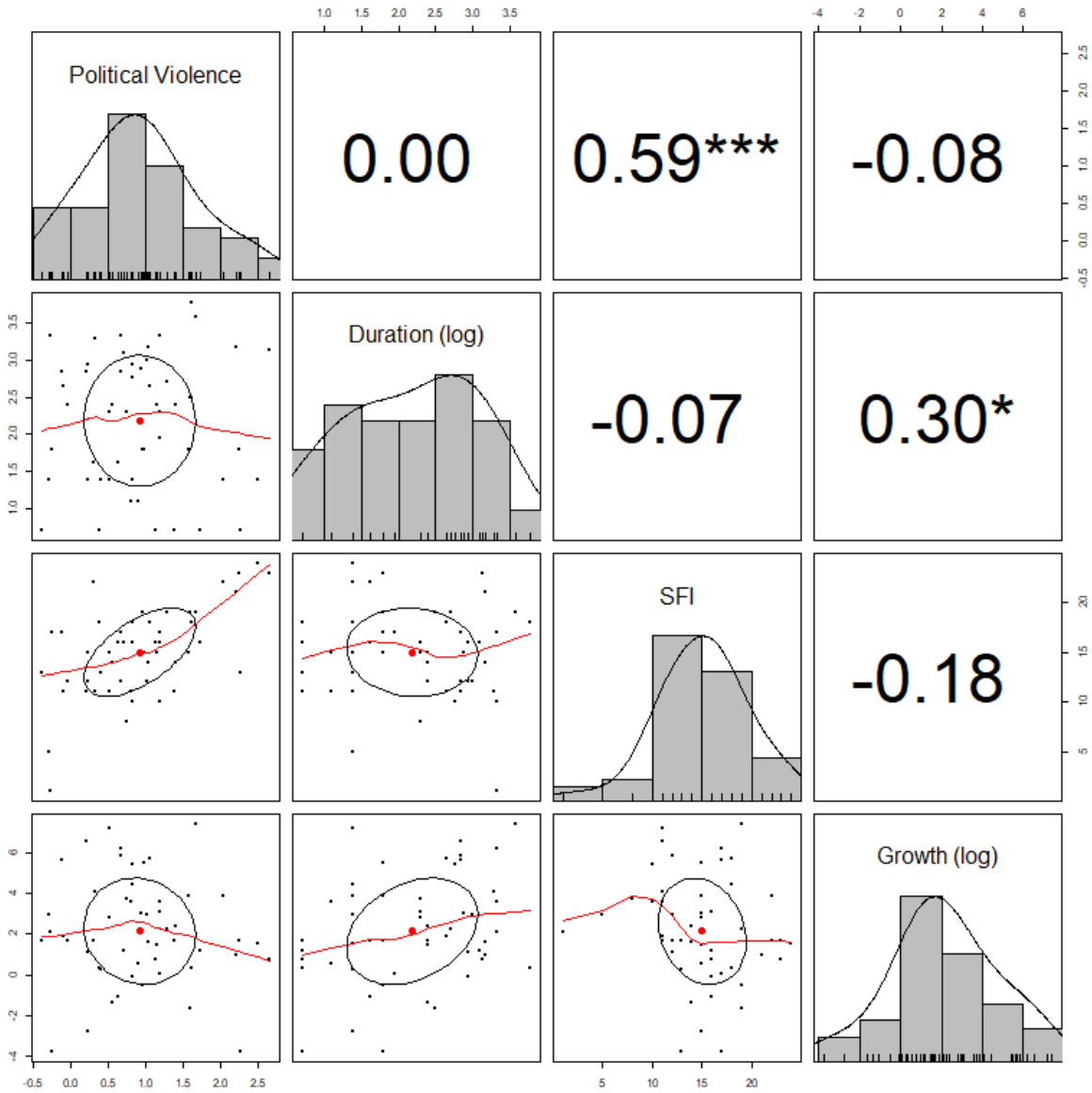


FIGURE 3.6: Scatter plot depicting the Eighth-year summary statistics and correlation coefficients

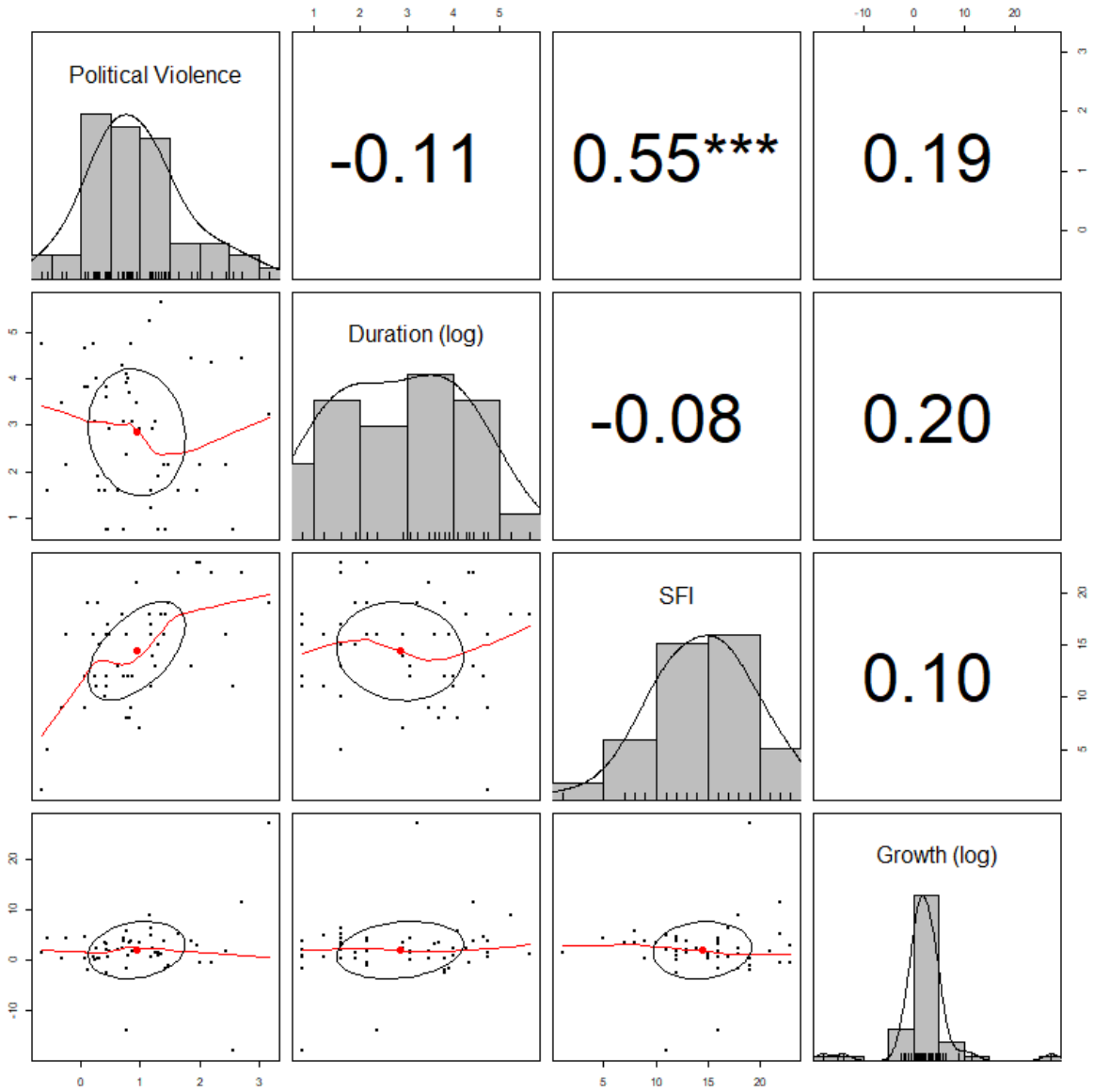
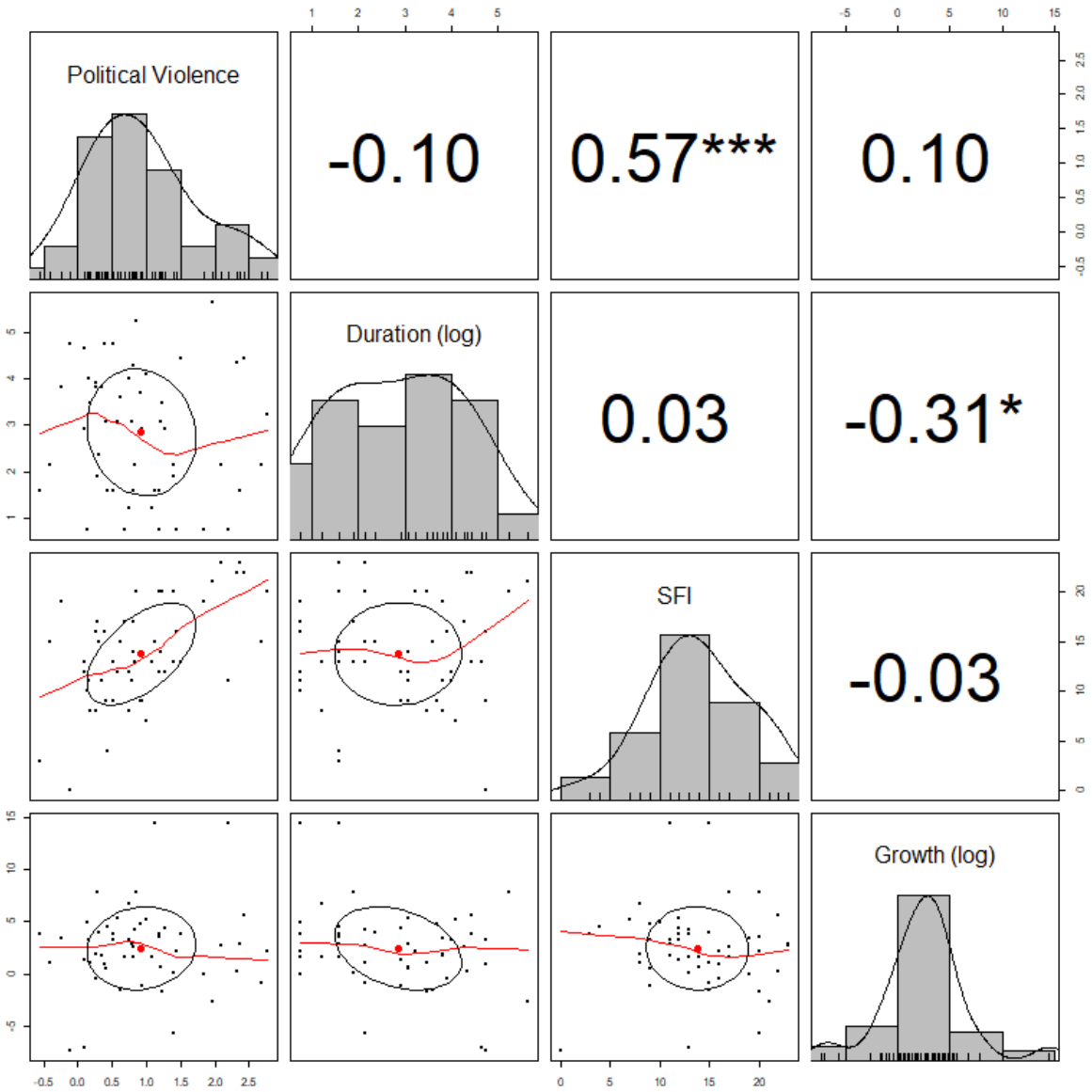


FIGURE 3.7: Scatter plot depicting the Eleventh-year summary statistics and correlation coefficients



being round. This means that the duration of the conflict does not have much of a predictable effect on political violence after the conflict has ended. This challenges some of the scholars which argue that which argue that the duration of the conflict has an effect on the post-conflict environment. Even when looking at the relationship with state fragility, it does not seem too consistent. While there are strong theoretical arguments to include this variable as a covariate it is still quite interesting that there is not a strong correlation in terms of the sample, especially in the fifth year period.

In terms of the relationship between GDP per capita annual growth and political violence, the correlation coefficient is also quite weak, with the strongest correlation being in the eighth year. Interestingly the relationship between political violence and GDP growth is slightly positive except in the fifth year. This means that as growth rate increases there is a likelihood that political violence will increase too. However, the weak correlation means it is difficult to make a generalisation about the relationship. Furthermore, the fifth-year scatter plot indicates that there might be a nonlinear relationship between GDP growth and the outcome. This nonlinear relationship might point to a threshold effect in which the effect of GDP growth on political violence only becomes clear at a certain growth threshold. However, as the focus is not on the economic implications of GDP, this is beyond the scope of the study.

Overall, the project will conduct a comparative study which will compare states that have early elections, states that have elections at a later stage and states that do not have elections, to understand whether elections affect the propensity for political violence in post-conflict societies in the long term. The chapter above, discussed the methodology and research design that was used for the study. It began by providing a broad overview of the core research design, explaining the approach that the study will take to best answer the research question. This was followed by a discussion around the data that was used, and the variables used in the models. The final section before concluding looked at the descriptive data. Chapter 4 will unpack the main results from the study as well as discuss the implications of these results.

Chapter 4

Main Results and Discussion

The following chapter presents the main results and findings of the study. The main research question that the study seeks to explore is "What effect do early elections have on the long-term propensity for political violence?". To address this question, this chapter is organised into two main sections.

The first section focuses on presenting and describing the key results obtained from the analysis. This includes a detailed examination of the quantitative findings, providing insights into the relationship between early elections and political violence over the long term. Attention is given to the effects that the treatment variable has on the outcome.

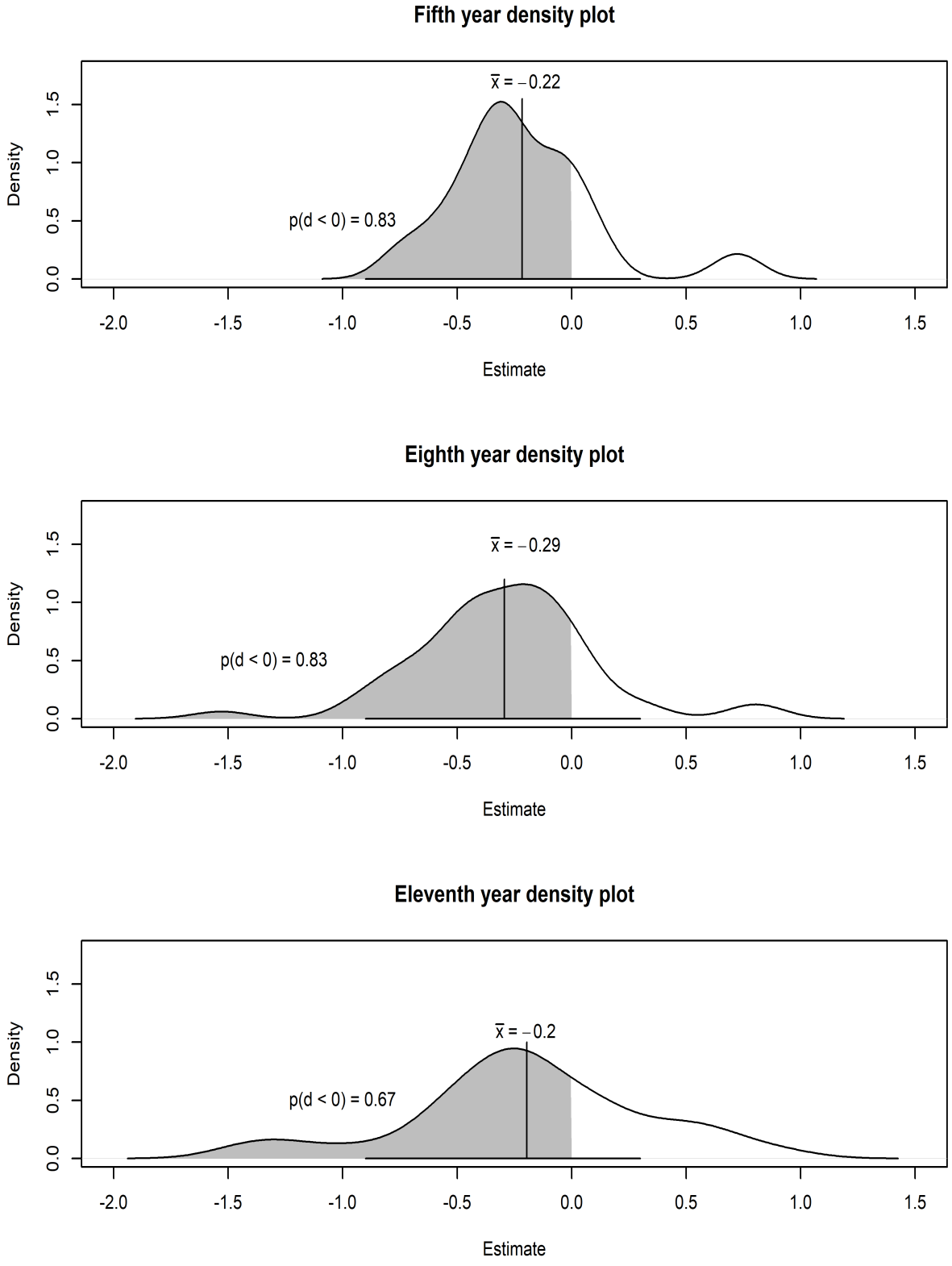
The second section focuses on the interpretation and discussion of the findings. Here, the findings are discussed and explored in three main contexts. Namely their contribution to answering the research questions, their relevance in addressing the gaps identified by the literature and the implications the results have on policy.

4.1 Main Results

Figure 4.1 depicts the main results for the ATE estimations in the form of density plots to better display the distribution of the simulated effects that early elections have on political violence[1]. More specifically the estimates represent the likelihood of political violence increasing or decreasing if an observation had to theoretically change from not having an election to having one. The $\bar{x}$ indicates the sample mean in each of the time periods. The p(d > 0) and shaded area highlights the proportion

[1] As discussed in chapter 3 the measure for political violence was inversed. Meaning the higher the estimate the higher the level of political violence

FIGURE 4.1: Density Plot depicting the effect of Early Elections on Political Violence



of observations that are greater than zero, representing the direction of the relationship. The solid horizontal line represents the 80 percent confidence interval with it leaning more towards the negative.

The density plot in the fifth year has a much higher peak than the other two plots with its peak falling in the negative estimates. Most of the estimates are distributed under zero means that the relationship between early elections and political violence is negative. This suggests that as early elections decrease the likelihood of political violence in the short-term increases. The shaded area at the tail end shows that the relationship between early elections and political violence is negative. This is because the number of estimates that fall above 0 is quite small, which indicates the likelihood of political violence having a positive relationship is quite unlikely.

The density plot in the eighth year is a bit more spread out. Compared to the peak in the fifth-year plot, the former only has a density of roughly 1 as opposed to the latter at 1.5. This suggests that the overall effect that early elections have on political violence diminishes in the eighth year. The proportion of estimates that lies above zero, as represented by the shaded area, is the same as in the fifth year which indicates that while the effect is not as strong, early elections still has a negative effect on the likelihood of political violence.

However, while the first two density plots indicate that early elections have an impact on political violence, the third density plot has a much wider distribution, with the data points more spread out. Furthermore, the mean of the sample is much closer to zero in the eighth year than the other two density plots. Taken together this suggests that the relationship between early elections and political violence is not as strong in the long term. The proportion of observations greater than zero is also much larger than in the previous two density plots which indicates that while the relationship is largely negative, there is more uncertainty making it difficult to fully conclude that early elections in the long term decreases the likelihood of political violence.

Overall, one can infer that over the five- and eight-year periods, the estimates suggest there is more than a four out-of-five chance that early elections reduce the level of political violence. Indicating that early elections does decrease the likelihood of political violence in the long term.

However, while these findings point to early elections having an effect on political violence, a key concern is whether or not these results are reliant on the weighting method or not. To get a better sense of the main results, the study conducted an unweighted regression and density plot to see how the results differ. Appendix **??** depicts the unweighted density plots across the three time periods. The unweighted results do not differ too much to the weighted results. The difference of means between the two models is relatively small, indicating that the results are not reliant on the weighting methods. However, even though the two sets of results are quite similar, the weighted results are still preferred. This is because they address issues of confounding variables and non-random assignment. Additionally, the unweighted results provide a useful robustness check, ensuring the methods were utilised correctly.

4.2 Discussion

4.2.1 Implications of results on the research question

The primary goal of the study was to answer the question "What effects do early elections have on the likelihood of political violence in the long term?" To do this the study used marginal effects to test components of this question:

1. What is the relationship between early elections and the likelihood of political violence?

2. Do those who hold early elections have a lower propensity to political violence than those who do not hold an early election?

In terms of the first question, it explores whether a relationship between early elections and political violence in the long term is present. The models depicted in Figure 4.1, show that there tends to be a negative relationship between early elections and the likelihood of political violence, i.e. in the medium-term early elections have quite a strong effect on reducing the medium to longer-term likelihood of political violence. The results show that in most instances holding an election within the first 4 years after the conflict ends affects political violence in the longer term. However

as mentioned above, this effect becomes much weaker in the eleventh year, which can be expected as other variables start to play a greater role such as institutional quality, monopoly of violence, and economic factors.

The second component of the research question looks at the comparison between states that had an early election and those that did not. This points more to the effect that early elections have on the propensity for political violence in comparison to the effect that states which did not have an early election have on the propensity for political violence. The results show that when comparing the two groups to each other, states that had early elections tended to have less of a likelihood. In terms of the research question, this means early elections decrease the overall propensity for political violence in the long term.

To further illustrate the findings and its implications on the research question, it is helpful to consider revisit the examples used in Chapter 3, specifically Burundi and Sudan. Using these cases as an illustration for the results is useful as the two examples cover the same time periods in this study, specifically between 2007 and 2010. Furthermore, they each represent the two key election characteristics that this study is concerned with. In terms of Sudan, as mentioned above, their first post-conflict election took place after the peace process and served as a mechanism for democratisation. As such they were quantified as 0 to represent not having an early election. On the other hand, Burundi, which did have an early election as their post-conflict election was used as a key part of the peace process. Based on the results there is a greater likelihood that Sudan will have a higher political violence score than Burundi, as early elections tend to have a lower likelihood of political violence in the medium to long term.

4.2.2 Implication of the results for the literature

Outside the implications that the study has on the research question, there are also implications that the results have on the gaps identified in Chapter 2. Specifically, there are three broad implications that the results have on the literature. Namely, its findings as it relates to the long-term impacts of elections on political violence directly, the role of political violence as an indicator for the success or failure of an early election and the use of propensity scoring to study early elections and political violence.

The body of literature on early elections is quite extensive both from a research perspective and policy perspective. A key gap was the fact that there is no or very little discourse on the long-term impact that early elections have on political violence. The results find that there is a lower likelihood of political violence as compared to states which did not have an early election. What then, does this mean for the literature?

The first thematic area explored in Chapter 2 focuses on early elections and the post conflict environment. One of the core arguments that scholars make is that elections are a means through which political competition and transfers of power can be done peacefully. This argument is extended to societies coming out of conflict as there these states are vulnerable to a recurrence of the conflict and deepening social divisions. Elections thus play several roles, as they not only help consolidate democratic institutions within the state but also help ensure that violence is reduced and, in some cases, prevented entirely. The study confirms this argument especially in the context of post-conflict societies. Specifically, elections which took place within the first four years after the conflict has ended tend to reduce the likelihood of political violence in the short to medium. This means that they contribute to the peaceful transfer of power and provide longer term stability which post-conflict states can leverage to prioritise other processes such as economic development. These findings are significant because it contributes to the scholarship in its empirical methodologies. Furthermore, it provides evidence to argue that elections are a vehicle for long term stability and peacebuilding.

The second thematic area focuses on the relationship between early elections and post-conflict societies. The literature within this area tend to focus on two key components, how early elections impacts the recurrence of conflict and how it impacts economic development. One key link between these two sub-themes is the issue of timing. Specifically looking at when is the most beneficial time to hold elections after a conflict has ended. Brancati and Snyder (2013) make the argument that holding elections too early can intensify the conflict between political rivals and lead to a recurrence of the conflict. Flores and Nooruddin (2012) make the argument that elections held shortly after a conflict can undermine development efforts. However, in much of the literature on this topic they rarely engage on how early elections may impact the long-term sustainability and health of the democracy. These findings address this gap by exploring directly how this key part of peace processes impacts

political violence, which is often understood as the antithesis of democratic values. The study shows that early elections tend to be most influential in terms of reducing political violence in the longer term. This implies that early elections should not just be seen within the context of democratic consolidation but also as a mechanism central to the peacebuilding process.

The final thematic areas which this study is concerned with is the literature on the quantitative methodologies used to study early elections and political violence. In Chapter 2 the study highlighted three gaps which this study sought to address. Namely that most models struggle to account for cofounding variables, there is a higher risk of misinterpretation, and it is not as effective when studying the comparative effects of a variable. The question is then raised how well does propensity score weighting address these limitations?

Firstly, this method, somewhat addresses the concerns with the confounding variables. Namely by mimicking a randomised control trial, allowing the study to compare the effects that the independent variable has on the dependent variable against a set of covariates. By doing this it considers the role of confounding variables without needing to create complex models. However, one of the limitations with this method is that it is less effective when using hypothesis testing, as the scoring method can introduce some multicollinearity issues. As such this method is most effective in studies which are more interested in other statistical indicators such as standard errors and confidence intervals.

Secondly, the propensity scoring method is more effective in comparative studies. This is because the models make it easier to split the treatment variable into different outcomes. In turn, it makes it easier to compare the effects of each outcome more closely. This is effective in a study such as this one because it creates comparable conditions to study different treatment effects and how it has an effect on the outcome variable. However, one drawback from using such a method is that it often requires the use of other methods too to fully explore the different effects. This can increase the risk of more mistakes in the analysis and interpretation of the results. Fortunately, a number of statistical software's such as R and Python, have packages which make this process easier, however it can still be a concern.

Overall, the study contributes to literature on quantitative methodologies used to study early elections and political violence by highlighting how propensity score

weighting can be used to explore studies which are focused on the effects. Furthermore, such methodologies are useful in instances in which there is a limited number of observations such as this one.

4.2.3 Policy implications

While elections during the transition period from conflict to peace is complex, the results highlight the importance of having elections over not having them during this period. This raises an important question around how can policymakers mitigate some of the risks associated with early elections? This question is not only important for the implications it has on policies surrounding peace processes but also impacts the role that the international community plays.

The first factor to consider is the wider peace process strategy. In many instances early elections are treated as a 'tick-box' exercise, rather than part of a longer-term process. As the research above highlights, early elections often support the longer-term effects of other variables. This means that early elections require more intentional planning, involving both local and international stakeholders. One way to avoid elections becoming a tick-box exercise is by ensuring that other mechanisms are introduced to support the success of early elections. Brancati and Snyder (2011) emphasise that priority should not only be given to holding elections but should focus on other key components of the peace process such as strengthening electoral integrity and demilitarisation. For instances by driving demilitarisation efforts of fighting parties, no one group can use the elections as a justification to continue fighting or as a way to undermine the election process. This was seen in Liberia, after their civil conflict ended in 2003. The two fighting groups were the Liberians United for Reconciliation and Democracy (LURD) and the Movement for Democracy in Liberia (MODEL). In 2003, they agreed to a ceasefire and subsequently negotiated the demobilisation of arms and military personnel on both sides (Hazen 2013). This ensured that in 2005 when the election took place, there were no reports of widespread violence and ensured a stable transition of power to democratic system. As such when it comes to early elections it's important that there is a comprehensive wider peace strategy that does not see early elections as a simple tick-box exercise. Instead, the peacebuilding strategy should ensure a means to support and ensure the full long-term effects of early elections.

Secondly election timing and sequencing is a key consideration to make. Early elections lead to less propensity for political violence in the longer term. However, it is also important to consider the timing of when to hold an early the election and the way in which the election takes place. While studies have shown how having elections too soon can have adverse impacts on the peace process, there is still much debate surrounding how the election should take place. Especially as it concerns which electoral system is most effective. Fjelde and Höglund (2016) argue that post-conflict elections should utilise proportional representation systems as opposed to majoritarian as it better mitigates a reoccurrence of conflict. However,,, other scholars suggest that this is also dependent on the outcome of the conflict, as majoritarian systems can work where the conflict had an outright victor (Horowitz 2003; Kiger 2019). As such, it is important to consider the key context within which the conflict took place. There is usually no universal answer to both the timing and sequence of the election. However, a key rule of thumb is to ensure adequate time to negotiate an effective peace transition strategy as well as develop systems that promote inclusive political participation.

Thirdly, the international community needs to be careful when helping to facilitate elections. This is because they are often rushed to appease Western countries and not addressing the key issues which will lead to sustained peace (Brancati and Snyder 2011; Flores and Nooruddin 2012). In some instances, pressure from different international interest's force elections to take place too soon which inevitably undermines the peace process and can lead to the opposite result. For example, after the civil war ended in Bosnia, the country very quickly had an election. Policymakers had hoped that it would ensure the sustainability of the Daytona Agreement and promote plurality within the deeply divided society (Human Rights Watch 1996; Chandler 2000). However, by rushing the process to get an election, it further institutionalised ethnic divisions within Bosnia and Herzegovina and undermine the ability ensure long term peace. This indicates that while elections are important to the peace process, this process needs to be localised and prioritise the context-specific needs of the country. Furthermore, highlighting the importance of seeing early elections not only as a one-time-event, but as a mechanism with long term implications.

The results show that early elections are more likely to reduce future political violence than not having early elections. However, the results come with caveats

around reducing the short-term impact early elections can have on conflict recurrence. Specifically, as it concerns not simply treating early elections as tick-box exercise but more so as a part of the wider peace-keeping strategy.

In conclusion, this chapter presented and analysed the results exploring the impact that early elections have on political violence. It found that early elections do have an impact on political violence in the long term. Despite the decrease in influence that early elections have in the longer term (after the 10-year period) however, they on average have a lower likelihood of political violence than states that did not have an early election. Furthermore, the study discussed what the implications of these findings are within the literature as well as for policy.

Chapter 5

Conclusion

In the post-Cold War period, elections have often been regarded as a cornerstone of peacebuilding and democratisation processes in states emerging from conflict. This belief aligns with liberal theories, which posit that elections promote peace, reestablish state legitimacy, and initiate the democratisation process. Over the long term, these processes are theorised to support economic development and the protection of civil rights. However, after decades of implementation, scholars have raised significant concerns about the over-reliance on elections in transitional periods, particularly in conflict-affected societies. Building on critiques from researchers such as Reilly (2002, 2016), Flores and Nooruddin (2012), Brancati and Snyder (2013), and Fjelde, Knutsen, and Nygård (2021), this study sought to explore one of the critical gaps in this literature: the long-term impact of early elections on political violence.

This research addresses two key questions: (1) What effect do early elections have on the likelihood of political violence in the long term? and (2) Do states that hold early elections have a lower propensity for political violence than those that do not? To answer these questions, a quantitative methodology was employed, using propensity score weighting to balance observed confounders and marginal effects to explore the relationships between the key variables. This robust approach ensured that the findings were not only statistically sound but also meaningful for both academic and policy discussions.

The findings indicate that early elections can have a significant long-term effect on political violence. States that hold early elections tend to exhibit a lower propensity for political violence compared to those that delay elections or fail to hold them.

These results suggest that while early elections are not a panacea, they can be a critical component of peace-building strategies, particularly when implemented alongside broader reforms and institutional strengthening.

This study makes several important contributions to the literature on post-conflict democratisation and political violence. First, it extends the understanding of the long-term effects of early elections, emphasising their potential to reduce political violence when managed effectively. Second, it underscores the importance of considering election timing as a strategic tool rather than a procedural obligation. By using propensity score weighting, this research also demonstrates the value of advanced quantitative methods in analysing complex causal relationships, providing a methodological blueprint for future studies.

The findings also have significant policy implications. Policymakers and international organisations often prioritise early elections as a visible marker of progress in post-conflict transitions. However, this study highlights the need for a more nuanced approach. Early elections are most effective when accompanied by efforts to address root causes of conflict, such as economic disparities, governance weaknesses, and social grievances. Moreover, international actors must resist the temptation to view elections as an endpoint; instead, they should ensure sustained support for post-election stabilisation and institution-building.

This research also emphasises the need for flexible, context-sensitive strategies. A one-size-fits-all approach to post-conflict elections is inadequate. Policymakers should carefully assess the specific circumstances of each transitional state, including the nature of the conflict, the strength of existing institutions, and the level of societal trust. Tailoring election strategies to these unique contexts can significantly enhance their effectiveness in fostering long-term peace and stability.

While this study contributes to key debates, it also highlights several areas for further exploration. One important avenue for future research is the impact of delaying elections on long-term political violence. While this study focused on early elections, understanding whether and how delayed elections can contribute to or mitigate violence remains a critical gap in the literature.

Another area to consider for future research is exploring some of the countries within the sample further. Due to the diversity of the countries used, there are going to be variables that influence certain countries while others not as much. More

specifically it would be interesting to consider how some of these individual level variables might have influenced the long term effect of early elections within a specific country. This could include factors such level of maturity, quality of elections or democracy. Conducting case study overviews to consider some of these factors, while above the scope of this study, would be interesting to explore.

Additionally, while this research briefly touched on policy implications, there is considerable scope to deepen this analysis. For example, how can international organisations better balance the need for immediate stabilisation with long-term democratic development? What role can regional actors play in ensuring the success of post-conflict elections? Addressing these questions will be vital for translating research insights into actionable policy recommendations.

Finally, future research should explore the interplay between early elections and other factors, such as international intervention, economic recovery, and societal cohesion. By examining these intersections, scholars can develop a more holistic understanding of the conditions under which early elections succeed or fail.

Elections are often heralded as the foundation of democracy, a necessary step toward peace and stability in post-conflict societies. However, as this study has shown, their role is far from straightforward. Early elections can be a powerful tool for reducing political violence and fostering long-term stability, but their success depends on a nuanced understanding of the context in which they are held.

The findings of this research highlight the importance of tailoring electoral strategies to the unique needs of post-conflict societies. Elections should not be seen as a quick fix but as part of a broader, integrated strategy for peacebuilding and democratisation. This requires addressing underlying drivers of conflict, strengthening institutions, and ensuring sustained international support.

Appendix A

Computing the marginal effects

To compute the independent variable effects using g-computation, the paper uses multivariate linear regression models and marginal and conditional effects. The reason both methods are used as opposed to simply just the regression results is twofold. Firstly, since the dependent variable uses continuous data, the most appropriate model to use is the multivariate linear regression model. However, as Greifer (2024a; 2024b) highlights because the propensity score weighting process introduces weights to the covariates, the coefficients of the covariates should not be interpreted as there is a high probability they are confounded and interpreting such results could lead to mistaken interpretations of the covariate effects. As such using marginal and conditional effects the results are more accurately presented and fallacies which occur due to the misinterpretation of coefficients such as the Table 2 fallacy can be avoided.

Secondly, using the marginal and conditional effects will allow the study to better understand both the effects across the entire population and the in-group effects across the early elections and non-early election groups. Marginal effects are used to measure the average effect on political violence across the two groups. Essentially this is useful in looking at the population effect of early elections, which will be helpful in better understanding what the general effects on political violence are. It does this by computing the average change in effect on political violence if the countries in the dataset go from holding an early election to not holding one. By doing so it will help clarify what effect the change on average across the entire population will be. Conditional effects on the other hand measures the average outcome within each group. This is useful for the study because it clarifies the effect that each group has on political violence, that being those that held early elections and those that did not. It does this by computing the average change in effect on

political violence within each group, which will provide insights into how the effect differs across each group i.e. what the effect will be on political violence if countries in the dataset which held an early election changed to not having an early election and vice versa. The paper uses both the 'weightit' package by Noah Greifer and the 'marginaleffects' package by Vincent Arel-Bundock to estimate the effect.

Appendix B

Weighting the results: Energy balancing

B.1 Appendix B: Energy balancing

Appendix B1 and B2 depicts the unbalanced and balanced results of the Eighth- and Eleventh-year datasets. Energy balancing is a weighting method that ensures the treated and control groups have similar covariate distributions. It does this by trying to minimise the 'distance' between the treated and control groups data points so that the shape of the distribution is more similar. The energy distance in this context is the difference between probability distributions, i.e. how far the data points are spread. Weights are thus assigned based on the size of the distance, which not only ensures that the means are balanced by addresses issues that affect the shape of the distribution such as variance and skewness.

FIGURE B1: Love plot depicting the pre- and post- balancing results for the Eighth year

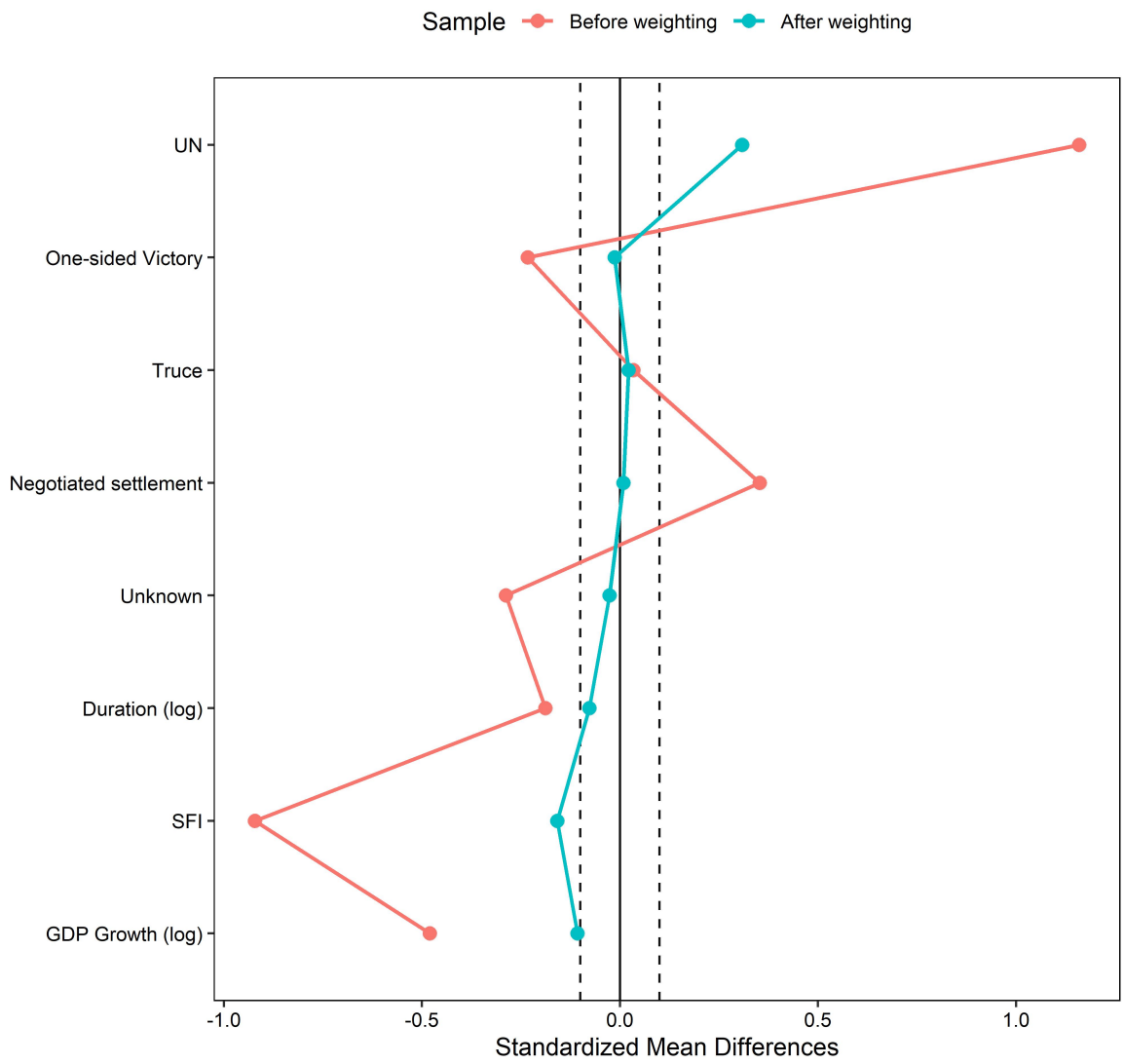
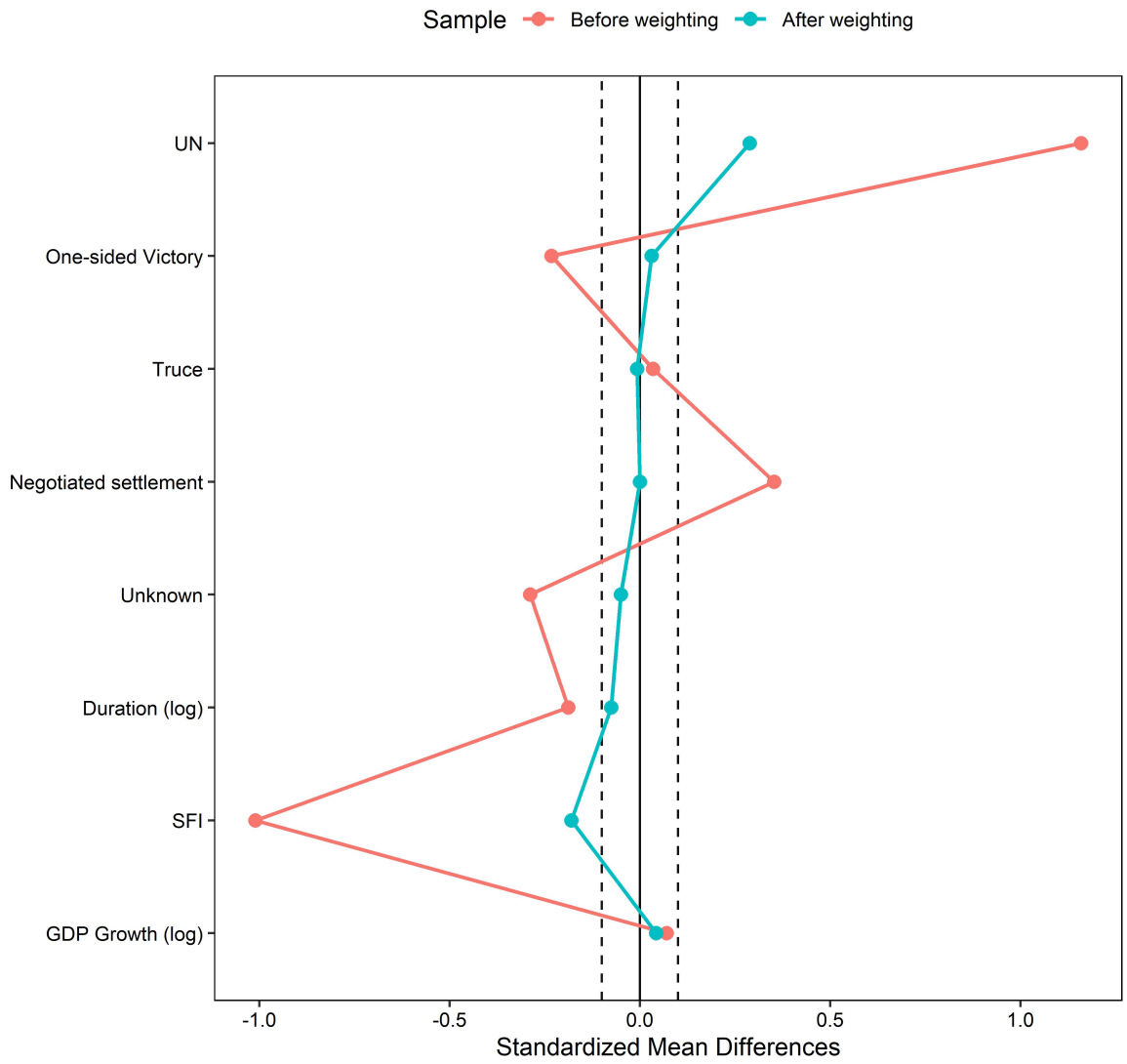


FIGURE B2: Love plot depicting the pre- and post- balancing results for the Eleventh year



Appendix C

Regression results

TABLE C1: Unbalanced Regression Results

	Political Violence		
	Fifth year	Eighth year	Eleventh year
Early Elections	0.596	0.004	0.600
	(1.138)	(1.168)	(1.188)
UN	-0.388	0.037	0.455
	(0.738)	(0.761)	(0.827)
Conflict Outcome	-0.079	-0.093	-0.054
	(0.088)	(0.098)	(0.096)
Duration	0.058	-0.051	-0.105
	(0.264)	(0.175)	(0.172)
SFI	0.134***	0.082*	0.142**
	(0.041)	(0.047)	(0.056)
GDP Growth	0.007	0.055**	-0.101
	(0.088)	(0.027)	(0.104)
Election*UN	0.102	-0.353	-0.799
	(0.765)	(0.792)	(0.855)
Election*Conflict Outcome	0.109	-0.014	-0.012
	(0.113)	(0.124)	(0.123)
Election*Duration	-0.027	0.013	0.082
	(0.286)	(0.191)	(0.191)
Election*SFI	-0.062	0.002	-0.063
	(0.049)	(0.053)	(0.061)
Election*Growth	-0.011	-0.061*	0.123
	(0.097)	(0.035)	(0.108)
Constant	-0.829	0.189	-0.458
	(1.020)	(1.065)	(1.093)
Observations	52	52	52
R^2	0.478	0.484	0.449
Adjusted R^2	0.335	0.342	0.297
Residual Std. Error (df = 40)	0.605	0.661	0.667
F Statistic (df = 11; 40)	3.336***	3.412***	2.961***

Note: *p<0.1, **p<0.05, ***p<0.01.

TABLE C2: Balanced Regression Results

	Political Violence		
	Fifth year	Eighth year	Eleventh year
Early Elections	0.021	-0.506	-0.473
	(0.880)	(0.721)	(0.850)
UN	-0.331*	-0.009	0.240
	(0.181)	(0.079)	(0.229)
Conflict Outcome	-0.069***	-0.071***	-0.031
	(0.026)	(0.020)	(0.048)
SFI	0.117***	0.057***	0.095**
	(0.020)	(0.017)	(0.044)
Duration	-0.006	-0.109	-0.179
	(0.124)	(0.075)	(0.119)
GDP Growth	0.028	0.061***	-0.036
	(0.033)	(0.012)	(0.084)
Election*UN	-0.164	-0.400*	-0.691**
	(0.246)	(0.229)	(0.308)
Election*Conflict	0.122	-0.002	0.015
	(0.075)	(0.063)	(0.081)
Election*SFI	-0.045	0.011	-0.024
	(0.033)	(0.035)	(0.049)
Election*Duration	0.128	0.130	0.255*
	(0.186)	(0.118)	(0.150)
Election*Growth	-0.023	-0.060*	0.067
	(0.059)	(0.032)	(0.087)
Intercept	-0.487	0.637*	0.255
	(0.472)	(0.375)	(0.670)
Deviance (Null)	21.602	25.042	23.865
df.null	51	51	51
Log Likelihood	-57.058	-62.292	-62.522
AIC	140.115	150.584	151.044
BIC	165.481	175.950	176.411
Deviance	13.524	16.540	16.688
DF Residual	40	40	40
Observations	52	52	52

Note: *** p < 0.01, ** p < 0.05, * p < 0.1.

Appendix D

List of countries used in study

TABLE C1: List of countries used in the study

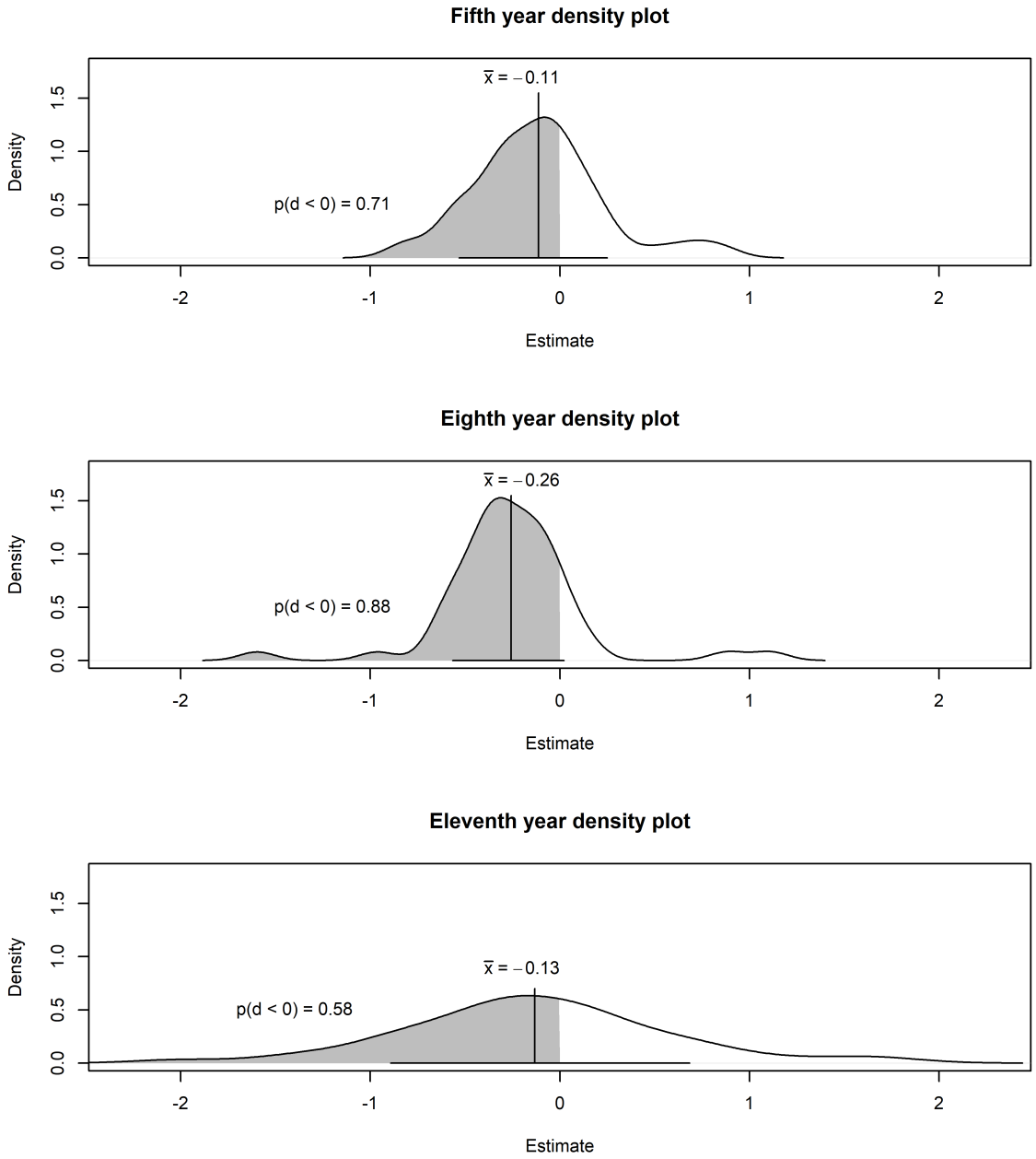
Country Name	Region	Dates	Election
Afghanistan	Asia	2006-2012	Yes
Liberia	Africa	2008-2014	Yes
Mali	Africa	2000-2006	Yes
Moldova	Europe	1997-2003	Yes
Morocco	Africa	1996-2002	Yes
Mozambique	Africa	1997-2003	Yes
Myanmar	Asia	2000-2006	No
Nepal	Asia	2011-2017	Yes
Nicaragua	Latin America/Caribbean	1995-2001	Yes
Pakistan	Asia	2004-2010	Yes
Papua New Guinea	Oceania	2003-2009	No
Peru	Latin America/Caribbean	2004-2010	Yes
Russia	Europe	2008-2014	No
Rwanda	Africa	1998-2004	No
Azerbaijan	Asia	1999-2005	Yes
Senegal	Africa	2004-2010	Yes
Sierra Leone	Africa	2006-2012	Yes
Somalia	Africa	1996-2002	No
South Africa	Africa	1999-2005	Yes
Sri Lanka	Asia	2014-2020	Yes
Bangladesh	Asia	2002-2008	Yes
Sudan	Africa	2007-2013	No

Country Name	Region	Dates	Election
Tajikistan	Asia	2002-2008	Yes
Turkey	Asia	2004-2010	Yes
Uganda	Africa	2016-2021	No
United Kingdom	Europe	2003-2009	Yes
Yemen	Asia	1999-2005	Yes
Bosnia	Europe	2000-2006	Yes
Central African Republic	Africa	2002-2008	Yes
Chad	Africa	2015-2021	Yes
Congo (Republic)	Africa	2004-2010	Yes
Democratic Republic of Congo	Africa	2006-2012	No
Croatia	Europe	2000-2006	Yes
Djibouti	Africa	1999-2005	Yes
Egypt	Africa	2002-2008	Yes
El Salvador	Latin America/Caribbean	1997-2003	Yes
Eritrea	Africa	1996-2002	No
Ethiopia	Africa	1996-2002	Yes
Georgia	Asia	1999-2005	Yes
Guatemala	Latin America/Caribbean	2000-2007	Yes
Guinea-Bissau	Africa	2004-2010	Yes
Haiti	Latin America/Caribbean	2000-2006	Yes
India	Asia	1998-2004	Yes
Angola	Africa	2007-2013	Yes
Indonesia	Asia	2007-2013	Yes
Iraq	Asia	2001-2007	No
Kenya	Africa	1998-2004	No
Lebanon	Asia	1998-2002	Yes
Burundi	Africa	2007-2013	Yes
Algeria	Africa	2007-2013	Yes
Libya	Africa	2016-2021	Yes
Philippines	Asia	2011-2017	Yes

Appendix E

Unbalanced Density Plots

FIGURE E1: Density Plot depicting the results for the unweighted data across the three time periods



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