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NEGOTIATED SETTLEMENT AND THE DURABILITY OF PEACE:
AGREEMENT DESIGN, IMPLEMENTATION, AND MEDIATED CIVIL WARS

by

Chong Chen

A thesis submitted in partial fulfillment
of the requirements for the degree
of
MASTER OF SCIENCE
in
Political Science

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Logan, Utah
2015

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ABSTRACT

Negotiated Settlement and the Durability of Peace: Agreement Design,
Implementation, and Mediated Civil Wars

by

Chong Chen, Master of Science

Utah State University, 2015

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Department: Political Science

Existing research has shown that negotiated peace agreements are less likely to sustain an enduring peace in the aftermath of civil wars. A large proportion of research concentrates on the effects of either agreement design or agreement implementation on the likelihood of civil war resumption. Generally, existing studies fail to integrate design and implementation as separate parts of an interdependent process. Studies also tend to ignore the implication of preceding agreement design on subsequent implementation. This research develops an integrative framework that engages both the agreement design and implementation stages in the civil war peace process. It also examines the effects of third-party mediation on the durability of peace agreement in the aftermath of civil wars through its influence on the quality of agreement design and implementation. The presence of third-party mediation helps to resolve future uncertainty and fear resulting from the “commitment problem” between war combatants, and thus makes peace agreements more durable. By using compiled data from the UCDP Peace Agreement Dataset, the Civil War Mediation (CWM) dataset, and the Power-Sharing Event Dataset (PSED), this research employs a Cox Proportional Hazards model to test the implication of design and implementation on

the durability of postwar peace. The results suggest that the effect of mediation on peace durability is conditional upon the stages of the peace process. Peace agreements designed and implemented by mediators are more likely to sustain lasting peace. The results also indicate that not all implementation of power-sharing pacts, as promised in the design stage, can produce pacifying effects given the fact that implementing certain types of power-sharing pacts disrupts peace processes.

(56 pages)

PUBLIC ABSTRACT

Negotiated Settlement and the Durability of Peace: Agreement Design,
Implementation and Mediated Civil Wars

by

Chong Chen

Since the end of the Cold War, outright military victories in civil wars have been rare. As a result, the number of peace agreements designed to end civil wars in the post-Cold War era has increased exponentially compared to the entire Cold War period. However, according to some statistics, about a third of those peace agreements failed to secure postwar peace. These failures to get warring parties to live up to their peace agreements not only restarted armed conflict, but they also escalated the violence. Therefore, this project is aimed to explore why some civil war settlements break down within months whereas others produce a lasting peace in the aftermath of civil wars in the post-Cold War era. By using a newly compiled dataset, this thesis examines the conditions under which international mediation can help warring parties design and implement negotiated settlements and their subsequent impact on the durability of post-civil war peace. The statistical results suggest that not all international mediation can produce a pacifying effect on the postwar peace. Only those peace agreements designed and implemented with the help of an international mediator are more likely to sustain longer peace.

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Chong Chen

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INTRODUCTION

Recently, the widespread occurrence of civil wars in Afghanistan, Iraq, Libya and Syria, and the difficulties surrounding their resolution have made the adoption of more effective policies an important concern for the international community ([Mattes and Savun 2009](#), 737). Consequently, an increasing body of scholarly works has examined the onset, duration and outcome of civil wars (see [Aydin and Regan 2012](#); [Collier and Hoeffler 2004](#); [Collier, Hoeffler and Söderbom 2004](#); [Cunningham, Gleditsch and Salehyan 2009](#); [Fearon 2004](#); [Fearon and Laitin 2003](#); [Hultquist 2013](#); [Karl and Sobek 2004](#); [Kathman 2011](#); [Sambanis 2002, 2004](#)). Unlike interstate wars, however, civil wars are more likely to experience a recurrence of conflict ([Mason et al. 2011](#); [Quinn, Mason and Gurses 2007](#)).

Although the number of peace agreements designed to end civil wars in the post-Cold War era has increased exponentially compared to the entire Cold War period ([Badran 2014](#)),¹ almost a third of them have failed to secure peace in the aftermath of the war ([Walter 2009](#), 256). In Rwanda, Sierra Leone, Sri Lanka, and twice in Angola, the failure to get warring parties to live up to their peace agreements not only restarted armed conflict, it also escalated the violence. For example, the breakdown of the 1994 Arusha Accords in Rwanda led to a genocide of some 800,000 people, approximately fifty times more deaths than had occurred in the 1990-1993 civil war ([Stedman 2001](#)). By contrast, the peace agreements in 1992 ending the civil war in El Salvador, and, more recently, the agreement in 2005 ending the civil war between Indonesia government and the Aceh-Sumatra National Liberation Front

¹Throughout this research, I use the “agreement” and “settlement” interchangeably when discussing existing research, though there are differences between them. Generally, settlement and agreement essentially refer to a similar war outcome which involves negotiation and cooperative relationship. Settlement is broader term than agreement in the civil war literature. However, since I use the UCDP agreement dataset in this project, there is only minimal difference between them for empirical analysis.

(ASNLF, also called the Free Aceh movement) still endure. **Why do some civil war settlements break down within months whereas others produce a lasting peace?**

Unfortunately, as [Badran \(2014\)](#) argued, we still know little about *whether, how, when and why* peace agreements can produce their expected effects. Moreover, existing research has rarely addressed the connections between the design and the implementation of civil war settlements and the durability of postwar peace ([Badran 2014](#); [Findley 2013](#); [Jarstad and Nilsson 2008](#)). Breakdown of negotiated settlements may result from flawed design, or incomplete implementation, or a combination of the two, or other factors. I explore whether, and how, negotiated settlements are designed and implemented influences how long peace may endure in the aftermath of civil wars.

In this research, I develop an integrative analytical framework that tries to combine agreement design with its implementation. In addition, I investigate the role of third-party mediation in these two stages to understand variations in postwar peace durability. While the past decade has witnessed the growing presence of mediation in interstate conflict, the emphasis on mediation in ending civil wars has been relatively rare ([Gurses, Rost and McLeod 2008](#), 134). Hence, studies have ignored how mediation can help to secure postwar peace by mitigating the “commitment problem” ([Fearon 1995, 2004](#)). The “commitment problem” is essential to understanding civil war recurrence because during the disarming and demobilizing phase each side knows that it would be better off with a “sucker” outcome: induce your rival to disarm while you covertly retain enough military capability to annihilate them once they are disarmed. Since both sides have this incentive and both sides know “their rival has the same incentive, neither can trust their rival’s commitment to disarm and demobilize under the terms of the settlement” ([Walter 2002](#), 34-37). Most existing studies argue that the careful design of the peace agreement by war combatants themselves (for example, the inclusion of certain power-sharing provisions)

can resolve the “commitment problem” (Fearon 1995). However, I contend that a credible “commitment problem” is inherent in both the design and implementation of agreement stages and cannot be resolved completely by the combatants themselves in either stage. Instead, it can “arise or continue into the implementation phase based on rebels’ fear of government reneging and/or government apprehension to cede power” (DeRouen and Chowdhury 2013, 2). The presence of a third-party mediator can help to overcome this problem by providing “private information” about actor’s strength, resolve, and preferences to the opponent, and thereby reducing fear and uncertainty in the subsequent implementation stage (DeRouen and Chowdhury 2013; Fearon 1995). Consequently, the active involvement of a third-party mediator in both design and implementation can be the most effective pathway to an enduring post-civil war peace.

I propose a 2×2 typology to explain the effects of *self designed agreement* versus *mediated designed agreement* and *self implemented agreement* versus *mediated implemented agreement* on peace durability in the aftermath of civil wars. Based upon Bell’s (2008, 305) definition of a peace agreement and the criteria used in the Uppsala Conflict Data Program (Högbladh 2011), I investigate the design-implementation nexus to see how the “commitment problem” can be resolved and peace can be sustained in the presence of third-party mediation. Generally, by providing a reliable channel of information between disputants, mediation can mitigate these commitment problems. Because the rebels are usually vulnerable in a negotiated settlement, they must ponder the state’s willingness and ability to provide adequate security upon demobilization. After all, the state was not able to fend off the rebellion in the first place (DeRouen and Chowdhury 2013). However, once demobilization has begun, the rebels lose their ability to fight against the state. If the signed agreement cannot be put into practice, once war recurred, the rebels have lost some ability to fight. This concern of the rebels influences their commitment to the peace process in the peace agreement design stage of the process. The presence of mediation can allay suspicion

and mistrust that comes in the implementation stage.

I compile data that encompass every peace agreement signed after the cessation of a civil war in the years between 1989 and 2006 from the UCDP Peace Agreement Dataset ([Harbom, Högladh and Wallensteen 2006](#)), the Civil War Mediation (CWM) dataset ([DeRouen, Bercovitch and Pospieszna 2011](#)) and the Power-Sharing Event Dataset (PSED) ([Ottmann and Vüllers 2014](#)). I employ the Cox Proportional model to test my theoretical framework. I find that the effect of mediation on postwar peace durability is conditional upon the stages of the peace process. Mediated designed peace agreements with mediated implementation are more likely to sustain lasting peace. The results also indicate that not all implementation of power-sharing pacts, as promised in the design stage, can produce pacifying effects given the fact that implementing certain types of power-sharing pacts may disrupt peace settlements.

The rest of this thesis proceeds as follows. I first briefly review previous research on the determinants of the durability of peace in the aftermath of civil wars. Then I lay out my explanatory framework by integrating settlement design and implementation as two interdependent stages of a peace process and state my major hypotheses. I then introduce my research design and methodology employed to test my hypotheses. Finally I report the statistical results and conclude the thesis.

LITERATURE REVIEW

The growing body of scholarly work on civil war settlements has explored “some obstacles that may frustrate postwar peace” (Badran 2014, 195), such as security problems (Hartzell, Hoddie and Rothchild 2001), asymmetric information (Mattes and Savun 2009), distributional problems (Fearon 1998), and governance problems (Lake and Rothchild 2005). In general, each of these approaches addresses a central issue in the recurrence of civil wars, the “commitment problem” (Fearon 1995; Mattes and Savun 2009; Powell 2006). Generally, the literature assumes that “the credible commitment problem leaves the signatories with fear of future uncertainties concerning both their physical security and their abilities to pursue the interests of the constituency they claim to represent” (Joshi and Mason 2011, 390). As a result, most research is essentially about what kinds of power-sharing provisions should be included in the settlements in the design stage and how to implement those provisions. The dominant approach, the “constitutive school” (Arnault 2006), thus relates the duration of peace in the aftermath of civil wars to the substance and design quality of the peace agreement.

By contrast, the “instrumental school” stresses issues that prevent the translation of the words of an agreement from being deeds in the implementation process, such as implementation costs, state capacity, postwar political and economic development, and so on (Arnault 2006; Jarstad and Nilsson 2008). However, existing research often ignores the connections between these two approaches. Sometimes, even a good quality peace agreement may not be implemented and thus leads to the breakdown of the peace agreement. Yet we have seen that some flawed agreements have been successfully implemented and, surprisingly, lasted for a long time. Therefore, the design and implementation of a peace agreement should not be treated separately, and the nexus between them is essential to understanding why some peace agreements

have failed while others have succeeded.

The Promise of Agreement and Postwar Peace

From the “constitutive school” perspective, a “well-designed” settlement that successfully resolves the commitment problem will produce durable peace whereas a “badly designed” settlement will result in delays, setbacks, or even the collapse of the peace process ([Arnault 2006](#)). Proponents of the “constitutive school” argue that certain dimensions of power-sharing provisions designed in negotiated settlements create stronger incentives for protagonists to sustain the peace rather than to resume armed conflict. For example, [Badran \(2014\)](#) created an index to evaluate the overall quality of peace agreement design to see how the design quality affects the durability of peace. He found that agreements carefully designed to deal with all obstacles to cooperation have the strongest pacifying effects. More specifically, [Hoddie and Hartzell \(2003\)](#) found agreements which include provisions for sharing or dividing military power among former combatants have significantly improved the prospects for sustaining peace after civil wars end. This is because, they argued, implementing this kind of peace agreement sent a concrete signal of a genuine commitment to peace as signatories to an agreement prove willing to endure the costs associated with both compromising their original war aims and withstanding potential challenges from within their own groups. [Hartzell and Hoddie \(2003\)](#) also argued that power sharing provisions have cumulative impact on the duration of peace after civil war: the more dimensions of power-sharing provisions (political, economic, military and territorial) among former combatants specified in a peace agreement the higher the likelihood that peace will endure.

However, [DeRouen, Lea and Wallenstein \(2009\)](#) challenged [Hartzell and Hoddie \(2003\)](#) by pointing out that power-sharing provisions that are costlier to the government and more difficult to implement will decrease the life span of the peace agreement.

They examined three forms of power-sharing provisions which include military (e.g., integration of rebels into the army), territorial (e.g., autonomy), and political (e.g., shared government). Their empirical findings indicate that the less costly government concessions of military integration and autonomy increase the durability of peace agreement, while political power-sharing provisions have a negative but insignificant impact on peace duration. [Mattes and Savun \(2009\)](#) examined two types of settlement provisions (i.e., fear-reducing and cost-increasing) that may mitigate commitment problems and found that only political power-sharing arrangements have a significant effect on the durability of peace.

These studies are more concerned with which kind of peace agreement design is better than the other. They do not provide any information about the extent to which these power-sharing provisions are actually implemented. Hence the frequency of inconclusive findings. Consequently, it is not possible to assess whether it is the design quality of a settlement that makes peace more likely to prevail, or whether the implementation of such a settlement increases the peace duration. Therefore, only by controlling for other factors rather than design dimensions can we determine whether design quality leads to the failure or success of a peace agreement. As a result, the “instrumental school” holds that we should look beyond the content of these agreements by investigating whether and how peace agreements are actually put into practice ([Jarstad and Nilsson 2008](#)).

The Practice of Agreement and Postwar Peace

In theory, negotiated settlements can be implemented either by combatants themselves (i.e., self implementation) or mostly with the help of third parties (mediated implementation). Due to the commitment problem in civil wars, many scholars argue that peace agreements are more likely to fail without third party guarantees ([Walter 2002](#)). They hold that power-sharing arrangements in post-civil war society are only

temporary measures to induce rival groups to sign a peace agreement. Instead security guarantees from a third-party can help sustain durable peace in the implementation of these settlements. Civil war combatants' payoffs are structured in a way that their optimal strategy would be to defect (not to cooperate) no matter what their rival does. For this reason, settlements become more likely to sustain peace when third parties provide security guarantees during the disarming and demobilizing phases. The presence of a third party guarantor, such as a UN peacekeeping force, may help to promote peace in the aftermath of civil wars ([Walter 2002, 2004](#)).

For example, Quinn et al. ([2007](#)) found that negotiated settlements supported by peacekeeping forces are less likely to breakdown into renewed civil war than negotiated settlements not supported by peacekeeping forces. Similarly, [Doyle and Sambanis \(2000\)](#) and [Sambanis and Doyle \(2007\)](#) found a positive relationship between UN peacekeeping and peace duration in the aftermath of civil wars. [Fortna \(2004, 2008\)](#), [Hartzell and Hoddie \(2007\)](#), [Findley \(2013\)](#), Quinn et al. ([2007](#)), and [Mattes and Savun \(2009\)](#) also found that third parties appear to have a positive effect on implementation after controlling for variables that may affect the likelihood of civil war recurrence. Furthermore, [Collier, Hoeffler and Söderbom \(2008\)](#) focused on post-conflict risk reduction and found that UN peacekeeping significantly reduces the risk of renewed war. Durable peace after civil war appears to depend upon an external military presence sustaining a gradual economic recovery, with political design playing a somewhat subsidiary role. However, [Beardsley \(2013\)](#) found contrary evidence that UN peacekeeping has, in the long run, less impact on the durability of peace after civil war. [Mukherjee \(2006\)](#) also found that third party enforcement by the UN does not have a significant effect on the hazard ratio of peace spells while democracy and a proportional representation electoral system reduces the likelihood that civil war may recur.

Other studies regarding the implementation process focused on how the postwar

environment, such as economic development and political power arrangement, influence the quality of the agreement implementation and thus the durability of peace (DeRouen, Lea and Wallensteen 2009; Mason et al. 2011). For example, Quinn, Mason and Gurses (2007) found that post-war economic development reduces the probability of civil war recurrence. Walter (2004) argued that a situation of individual hardship or severe dissatisfaction with one's current situation and the absence of any nonviolent means for change increases the probability of recurring civil war. Countries that provide higher levels of economic well-being to their citizenry and create an open political system are less likely to experience multiple civil wars regardless of what happened in a previous conflict. This is consistent with Fearon and Laitin's (2003) conclusion that poverty favors rebel recruitment and political instability.

Likewise, political development in the postwar environment also has an influence on the durability of postwar peace. Joshi and Mason (2011) found that the composition of the governing coalition in post-civil war society structured by the power-sharing arrangement determines the likelihood of civil war recurrence. They also found that the outcome of civil war and third party security guarantors are related to the duration of postwar peace, because increased governing size also increases the rebel's incentive to sustain peace rather than to renew war compared to the potential loss of war resumption. Brancati and Snyder (2013) investigated the effect of political arrangement after civil war on post-conflict stability. They found that holding elections soon after a civil war ends generally increases the likelihood of renewed fighting. Mason et al. (2011) argued that the duration of peace after civil wars is mainly a function of the extent to which the outcome of the previous civil war preserved a condition of "multiple sovereignty", and the extent to which the post-civil war environment created incentives for dissident groups to resort to violence rather than to sustain the peace. Their hazard models suggest that the outcome of previous conflict does affect the duration of the peace and this effect varies across time. The

presence of peacekeeping forces has a substantial positive effect on peace duration. [Hartzell \(2009\)](#) examined two positions regarding the impact of the fate of factions in postwar environment on the duration of peace. One is that peace will be sustained when the organizational structures of all but one of the factions that compete in a war are destroyed or dismantled at the conflict's end. The other is that peace can be best preserved when rival groups agree to share state power at the war's end. Therefore, there is still no consensus regarding the effect of postwar environment on the recurrence of civil wars. Moreover, the "instrumental school" often fails to account for the effects of the prior stage in the peace process on subsequent implementation. Moreover, a potential selection bias problem may rise if analysis focuses only on implementation.

Summary of Critiques

The previous survey indicates that the existing literature on the recurrence of civil war and the duration of peace after civil war has covered almost every stage of the peace process. But there are several weaknesses inherent in the above explanations. First of all, as [Findley \(2013\)](#) argued, peace emerges out of a process that was comprised of battle, negotiation, agreement and implementation. However, existing research generally ignores this interdependent nature of peace agreement and implementation. As a result, we still know little about which stage of the peace process is the most influential. Particularly, we still do not know whether the breakdown of peace is because of flawed designs or the incomplete implementations of such an agreement. Therefore, a complete picture of how peace agreements sustain peace in the post-conflict period should integrate both the agreement design and implementation stages.

Secondly, the role of third party mediation in the peace process has often been obscured to a point where most studies ignore the distinctions between 1) *self designed*

and *mediated designed* agreements in the design stage as well as 2) *self implementation* and *mediated implementation* of peace agreements in the implementation stage. As a matter of fact, many peace agreements are witnessed by, or assisted with, mediator(s). But existing research rarely brings the mediation literature into civil war agreement studies. Thus, they fail to identify how different agreement designs by different actors (mediators or the war combatants) may have a significant influence on the implementation of peace agreements which in turn affects the durability of peace. Most research has stressed that the “commitment problem” is the central problem facing negotiated settlement. I argue that since *self designed* agreements often take place during a military stalemate and with the lack of a credible third party guarantee, they are more likely to break down than *mediated designed* agreements. In addition, considering the reputation of mediator(s), mediated agreements are more likely to be implemented and have more marginal costs for the combatants if not implemented (Beardsley 2006). Hence, they are more likely to sustain the peace in the aftermath of civil wars.

Thirdly, compared to the vast amount of research on the design of a peace agreement, the role of third-party mediation in the implementation phase has been overlooked by most quantitative studies (DeRouen and Chowdhury 2013). Moreover, most findings concerning the implementation are weakened by the lack of appropriate datasets on the practice of agreements. For example, while DeRouen and Chowdhury (2013) claim to examine the effect of mediation on the implementation of peace agreements, they still employ the CWM dataset on agreement design and equate the peace agreement terms on implementation with the actual implementation information. This weakness is inherent in many previous studies. Instead, I will employ the PSED dataset to supplement the Peace Agreement datasets with actual implementation information.

Lastly, existing studies often fail to see that the commitment problem will still

exist during the implementation stages. In other words, the signing of negotiated settlements is only the first step toward peace and only after complete implementation of provisions can the commitment problem be completely resolved and peace be sustained. Thus, only looking at the design of the agreement or the implementation of agreement gives us an incomplete picture of how negotiated settlement addresses the commitment problem and how to bring enduring peace. In the following section, I will discuss how third-party mediation can link the design and implementation stages and help to resolve the commitment problem.

AN EXPLANATORY FRAMEWORK OF PEACE DURABILITY

While existing studies have stressed the role of a third party in the settlement enforcement process, most of them have not seen the nexus between settlement design and implementation advanced by third party mediators. Moreover, the role of third party mediation has been generally underestimated, if not completely ignored. On the other hand, civil war recurrence literature exclusively emphasizes the security guarantor role played by a third party (mostly, UN peacekeeping forces) while ignoring the important role a mediator can play. Thus, it is quite clear that there is a disconnect between the intersecting roles of agreement design, implementation and mediation in the literature. I contend that mediation can serve as the nexus between design and implementation and thus help combatants be more likely to resolve any commitment problems. A carefully designed agreement is not necessarily a sufficient condition for durable peace after a civil war ends. Instead, a complete implementation of such an agreement is also crucial. My main argument is summarized in Table 1.

Table 1: A Typology of Peace Process and Peace Durability

		Design	
		Self Design	Mediated Design
Implementation	Self Implementation	Recurrence	Suboptimal
	Mediated Implementation	Suboptimal	Enduring Peace

Firstly, a peace agreement can be designed either by combatants themselves (i.e., *self designed*) or by a third party mediator (i.e., *mediated designed*). From

the rationalist perspective, the quality of an agreement design depends on how the commitment problem is addressed. According to [Beardsley \(2006\)](#) and [Fearon \(1995\)](#), the involvement of a third party in the bargaining process is more likely to resolve the commitment problem. Since a “good” agreement is supposed to address the credible commitment problem facing combatants that is thought to more likely result in the recurrence of civil wars, the presence of a third party mediator can help mitigate this problem. The mediator can help signal the actor’s strength, resolve, and preferences to the opponent and can help identify a mutually acceptable solution to their disagreement, and make a credible commitment to this position without post-conflict vulnerability ([DeRouen and Chowdhury 2013](#)). The mediator can employ a formative strategy to transmit information on the preferences of adversaries, and thus increase the propensity for both sides to accept a negotiated outcome ([Asal et al. 2007](#)). At the same time, mediation allows the parties to make credible commitments to peace so that each side can have confidence that the other side will live up to its promise during the implementation process ([DeRouen and Chowdhury 2013](#)). In addition, mediators can also help to design more acceptable political or military power-sharing provisions in the negotiation and convey information about the costs and benefits of the implementation of that kind of agreement. In doing so, as [Mattes and Savun \(2009\)](#) and [Hoddie and Hartzell \(2003\)](#) find, mediated settlements are expected to be more likely to sustain peace after a civil war ends.

However, not every peace agreement is the result of third party mediation. Combatants in civil wars can also reach agreements by themselves. Because mediation is costly, combatants may be reluctant to request third party mediation if they can design some strategies to solve their dispute ([Beardsley 2011, 2006](#)). After all, the introduction of a third party mediator may also weaken their autonomy and internationalize the conflict. Thus, many civil wars combatants, especially governments, are worried that rebel groups may take advantage of mediation to acquire international

recognition. In this sense, mediation is less likely to occur, let alone to help design the peace agreement. Therefore, it is still unclear whether a mediated agreement is more likely to make peace more durable after civil wars than a self-designed agreement. Thus, I propose the following hypothesis:

Hypothesis 1: Mediated designed peace agreements are more likely to sustain peace in the aftermath of civil wars than self designed agreements.

Secondly, many mediation studies have indicated that mediation often suffers from the “time inconsistency” problem which means mediation can help end civil war effectively in the short run but cannot sustain enduring peace in the long run (Beardsley 2008, 2011, 2013; Quinn et al. 2013). The literature also addresses which kind of particular strategy, such as facilitation, formulation and manipulation, is most effective in the mediating process in ending civil wars and in sustaining the peace. Given that these strategies are designed to address different concerns in the mediating process they are likely to miss some vital information. Mediators may employ several combined strategies in the same process and the obstacles to success may be intertwined. In this sense, the quality of mediation not only depends on which strategy is specifically employed but also on how and when it is used. Thus, the traditional categorical approach to mediation effectiveness may suffer from some shortcomings. That is why many studies often produce inconclusive results regarding the role of mediation. The quality of mediation, and its impact on the peace process, may consist of mediating strategies or mediating timing. I thus propose the following hypothesis:

Hypothesis 2: The higher the quality of mediation, the more durable the peace is in the aftermath of civil wars.

Thirdly, mediation can also help address the three types of weakness in the implementation process as argued by the instrumental approach, though the role of a mediator in the implementation stages has been somewhat overlooked by recent

quantitative studies (DeRouen and Chowdhury 2013). Often, negotiated settlements are discouraged before or during the implementation stage due to the lack of state capacity to sustain the agreement, leaving them just a “scrap of paper” (Arnault 2006; DeRouen et al. 2010; Fortna 2003). For instance, DeRouen et al. (2010) examined fourteen peace agreements in depth and found that the level of state capacity was highly related to the success of implementation as well as the durability of peace in the aftermath of civil wars. In the context of weak state capacity, mediation can assist in establishing more realistic benchmarks for implementation; and, usually, more detailed procedures to monitor compliance (Arnault 2006). Moreover, mediation is often viewed as a kind of international support that is necessary for weak states to implement an agreement. As Kirschner and Von Stein (2009) find, implementation is more likely as international support increases. This is because international support, such as mediation, often helps mitigate commitment problems, generates audience costs, and provides the contingency of aid on implementation. Quinn et al. (2007) also find that if agreements are supported by peacekeeping forces, they are more likely to foster peace after civil wars. With regard to pressures deriving from the political context, as Arnault (2006) argues, mediation will prod the combatants to reach a joint understanding of the overall political situation to recommit them to protecting the “middle ground” contained in the agreement and to chart a course that enables them to manage dissatisfied constituencies while maintaining the broad terms of the agreement. As for the unmet vital concerns, mediation requires engaging urgently the parties in full-fledged negotiations over potential remedies that can be found to satisfy these concerns. Thus, I advance the following hypothesis:

Hypothesis 3: Peace agreements with mediator(s) involved in the implementation are more likely to sustain peace in the aftermath of civil wars.

From the discussion above, I view mediation as a nexus between the agreement design and implementation stages. Mediators in civil wars can help combatants reach

a mutually acceptable settlement by reducing the credible commitment problems, providing reliable information about both parties' resolve and strengths in designing of a peace agreement. Moreover, they can also provide support in the implementation of a peace agreement. In doing so, mediators can better understand the demands and concerns of both combatants and thus design a specific agreement to address the barriers to enduring peace. In the implementation process, mediators are willing to provide international support to monitor the process due to large international and domestic audience costs. Similarly, compared to a self-designed agreement, mediation also involves international costs for all the actors that create costly commitments. Hence actors are more willing to implement the provisions. The following section will discuss the research design of this project.

RESEARCH DESIGN

The Data

The dataset in this project is mainly drawn from the collection of datasets in the UCDP Project.² However, none of these datasets include comprehensive information about the content and implementation of peace agreements as well as third-party mediation. To better design my research, I therefore use several supplemental data to compile my own observations. The main three data sources are the UCDP Peace Agreement Dataset, the Civil War Mediation (CWM) dataset, and the Power-Sharing Event Dataset (PSED).³ There are 79 peace agreements in the PSED signed between warring parties in civil wars in the post-Cold War era from 1989 to 2006. The PSED dataset provides two formats for analysis. One is the peace agreement in the post-conflict period as the unit of analysis and the other is the government-rebel dyad as the unit of analysis. I use the former in this project since I include a duration model.⁴ Since I employ a time-varying model where variables are measured from the date on which the peace agreement was signed until violence takes place, or the observation period ends, there are multiple observations for most of the 79 peace agreements which gives a total sample of 353 observations. Among the 79 peace agreement, 32 broke down in a five-year period.

A peace agreement is defined as an agreement that “should address the problem of the incompatibility, either by settling all or part of it, or by clearly outlining a process for how the warring parties plan to regulate the incompatibility. All

²Data sets are available at <http://www.pcr.uu.se/research/ucdp/datasets/>. See Appendix C for a full list of civil wars. (last accessed on July 31, 2014).

³Peace Agreement Data can be obtained at <http://www.pcr.uu.se/research/ucdp/datasets/> (last accessed on July 31, 2014). CWM data can be accessed with the replication data via <http://jpr.sagepub.com/content/48/5/663/suppl/DC1>. The PSED data can be found at <http://www.giga-hamburg.de/en/project/power-sharing-in-post-conflict-situations> (last accessed on August 11, 2014)

⁴I also use the second format of the data as a robustness check. But the results are not reported here.

peace agreements, which concern, manage or regulate, the stated incompatibility are brought into the list of peace agreements” (Harbom, Högladh and Wallensteen 2006). According to the UCDP, civil war is defined as a contested incompatibility over either government or territory between the government and (at least one) rebel group, where the use of armed force has resulted in 25 battle-related deaths or more, in at least one year (Harbom, Högladh and Wallensteen 2006). The CWM adopts Bercovitch et al’s definition of mediation as “a process of conflict management where disputants seek the assistance of, or accept an offer of help from, an individual, group, or state, or organization to settle their conflict or resolve their differences without resorting to physical force or invoking the authority of law” (Bercovitch, Kremenjuk and Zartman 2008, 343).

Variables

The dependent variable is the *Durability of the Peace Agreement*, enabling me to examine the effect of negotiated settlement on the duration of peace after the civil war ends. It should be noted that the post-conflict peace duration ends when violence recurs, demonstrating that at least one party has walked away from the treaty or a new treaty has been signed (Walter 2002, 2004). Therefore, I equate the breakdown of a peace agreement with the recurrence of civil war, though in practice some peace agreements are actually replaced with new/supplemental agreements. In my dataset, I exclude these cases. I use the number of days the agreement was in effect (or until its breakdown), or as of January 1, 2011.⁵ In some cases, the exact day the agreement ended is unknown. In such cases, I use the last month of the year.

In this research, I am especially interested in whether my 2×2 typology of the peace process can shed new light on the study of the durability of peace agreement

⁵Since a duration model is used in this research, January 1, 2011 is the cut-off for right-censored purpose. In addition, January 1, 2011 is also the release date of the Peace Agreement dataset. For those ongoing wars in 2006, this is also a five-year observation period. If the exact date is missing, I use the last day of the corresponding month or the last month of the corresponding year.

in civil wars by linking mediation with the agreement design and implementation. I create a dummy variable *Mediated design* to measure whether the agreement is reached with the help of third party mediation and assigned value “1” if so; otherwise I code as “0,” indicating a “self designed agreement”. Likewise, the dummy variable *Mediated implementation* is measured as whether the peace agreement has been put into place assisted by a third party mediator(s). I expect that peace agreements designed by mediation are more likely to be implemented and thus more durable. Thus, by interacting these two binary variables, I obtain four types of peace-processes in my models.

Although I argue that *the quality of mediation* is also essential for the postwar peace durability, there is not a satisfactory way to measure it. Given that the main role of mediation in the design and implementation stages is to help warring parties make credible commitment and honor it when putting the agreement into practice, an indirect way to examine the quality of mediation is to look at whether mediators help warring parties reach substantive power-sharing provisions and the extent to which they are implemented. I theorize the design and implementation stages as being interdependent in nature. Therefore, unlike existing research, I try to measure the mediated design-implementation nexus together rather than separately by examining whether a certain power-sharing provision is promised and whether it has been implemented. As such, I can overcome the shortcomings in previous studies that treat agreement design and implementation as two separate processes. I create four groups of dummy variables to measure whether certain power-sharing pacts promised in the design stage are implemented in the peace process.

First, the variable, *Promise of Political Power-sharing*, is coded as “1” when a rebel group was promised senior or non-senior cabinet positions; otherwise as “0.” *Implementation of Political Power-sharing* takes the value of “1” when there was a change in the senior or non-senior cabinet of the national government involving

rebels; otherwise as “0.” Similarly, *Promise of Military Power-sharing* takes the value of “1” when a rebel group is promised integration into the national army command or a rebel group is promised integration of rebel fighters into the national army, police or a paramilitary force; otherwise as “0.” Likewise, *Implementation of Military Power-sharing* is coded as “1” when a rebel representative had been integrated into the national army command or rebel fighters had been integrated the national army, police or a paramilitary force; otherwise as “0.”

Likewise, the variable, *Promise of Economic Power-sharing*, measures whether a rebel group was promised state-owned companies or a rebel group was promised positions in a resource commission. *Implementation of Economic Power-sharing* is coded as “1” when rebel representatives had taken over state-owned companies or their representatives had taken up positions in a commission regulating certain resources or sectors of the country’s economy. Otherwise, these two are coded as “0.” Finally, *Promise of Territorial Power-sharing* measures whether a law or government decree was promised which introduced devolution or autonomy and it is coded “1” if so. Likewise, *Implementation of Territorial Power-sharing* is coded as “1” if a law or government decree introduced devolution or autonomy had been passed; otherwise as “0.” Data on these variables are from PSED.

In addition, based on previous research on the durability of peace agreements, I also create several control variables. First, Quinn et al. (2007) find that the duration of conflict will affect postwar stability. They argue that the longer the previous civil war lasted, the less likely civil war is to recur because both sides in the civil wars have known the opposition’s resolve and the costs of continued fighting. In this sense, they are less likely to engage in war again. Thus, I create a continuous variable *Conflict Duration* to measure how long the war lasted in days. Following Ottmann and Vüllers (2014), I also include *Conflict Intensity* and assign the value of “1” when the civil conflict dyad between government forces and the rebel group includes at

least one calendar year with more than 1000 battle-related deaths. I expect that more intense conflicts harden the frontlines between the conflict parties, resulting in more protracted post-conflict situations ([Ottmann and Vüllers 2014](#)). Furthermore, I create a dummy variable *Multiple Rebel Signatories* to measure whether a peace agreement was signed by more than one rebel group and take the value of “1” if so. Finally, I control for the *presence of UN peacekeepers* in the peace process to distinguish between the effects from mediation in both stages. The data for this variable are from the replication data of [Ottmann and Vüllers \(2014\)](#). Table [A1](#) in Appendix [A](#) summarizes these variables.

Statistical Models

[Beck, Katz and Tucker \(1998\)](#) and [Box-Steffensmeier and Zorn \(2002\)](#) discuss two approaches to modeling duration data: One is the Cox model and the other is the binary logit model on Time-Series-Cross Sectional data. In this project, I use Cox proportional hazards (PH) model ([Cox 1972](#))⁶ to test the above hypotheses.

Typically, a parametric model based on an exponential distribution can be written as

$$\log h_i(t) = \exp(\alpha + \beta_1 x_{i1} + \beta_2 x_{ik} + \cdots + \beta_k x_{ik}) \quad (1)$$

This is a multiplicative model for the hazard. Here, i is a subscript for observation, and the x ’s are the covariates. The constant α in this model represents a kind of log-baseline hazard, since $\log h_i t = \alpha$ [or $h_i(t) = e^\alpha$] when all of the x ’s are zero. The Cox Model, in contrast, leaves the baseline hazard function $\alpha(t) = \log h_0(t)$ unspecified:

$$\log h_i(t) = \alpha(t) + \beta_1 x_{i1} + \beta_2 x_{ik} + \cdots + \beta_k x_{ik} \quad (2)$$

⁶Since there are no strong theoretical reasons for expecting the hazard rate to take on a specific function, I employ a Cox proportional hazard model instead of a parametric model such as the Weibull.

or, equivalently

$$h_i(t) = h_0(t) \exp(\beta_1 x_{i1} + \beta_2 x_{ik} + \cdots + \beta_k x_{ik}) \quad (3)$$

$$h(t, \mathbf{X}) = h_0(t) e^{\sum_{i=1}^P \beta_i X_i} \quad (4)$$

where vector $\mathbf{X} = (X_1, X_2, \cdots, X_p)$ are explanatory variables.

If two observations i and j differ in their x -values, with the corresponding linear predictors

$$\eta_i = \beta_1 x_{i1} + \beta_2 x_{ik} + \cdots + \beta_k x_{ik} \quad (5)$$

and

$$\eta_j = \beta_1 x_{j1} + \beta_2 x_{jk} + \cdots + \beta_k x_{jk} \quad (6)$$

the hazard ratio for these two observations,

$$\begin{aligned} \frac{h_i(t)}{h_j(t)} &= \frac{h_0(t) e^{\eta_i}}{h_0(t) e^{\eta_j}} \\ &= \frac{e^{\eta_i}}{e^{\eta_j}} \end{aligned} \quad (7)$$

is independent of time t . Consequently, the Cox Model is a *proportional-hazards model*. This assumption is essential for the Cox model and in the later analysis, I test this proportional assumption. In case the assumptions are unmet, as [Box-Steffensmeier and Zorn \(2002\)](#) suggest, I include an interaction term of those time-varying covariates with the logarithm of time.⁷

Given the nature of the repeated measurement in my data, I account for the dependence within correlated observations by clustering the standard errors on peace agreement ([Box-Steffensmeier, De Boef and Joyce 2007](#)). The **Stata 12.0** package is used for analysis of the data in this thesis (See Appendix B for Stata Code).

⁷Note that the global test of the proportional hazards (PH) assumption and the Kaplan-Meier test on each variable suggest that the PH assumption is met.

RESULTS

Coefficient estimates from the Cox proportional hazards model reveal information regarding the hazard rate. As such, positive coefficients imply the hazard is increasing, or “rising,” with change in the covariate, and negatively signed coefficients imply the hazard is decreasing or “falling” with change in the covariate. Hence, positive coefficients imply shorter survival times while negative coefficients imply longer survival times. Or put it differently, a ratio above one indicates an increase in the risk that peace fails, while a value below one decreases the risk that peace fails. Table 2 reports the Cox PH estimating results where I control for one of the four mediation design/implementation combinations. In Model 1, I only include *mediated design* while in Model 2, I only include *mediated implementation*. Model 3 examines the effect of *mediated design* when controlling for the effect of *mediated implementation*, and Model 4 examines the conditional effects of the *mediated design* and *mediated implementation*.

In Table 2, neither *mediated design* nor *mediated implementation* shows significant influence on the postwar peace durability in Models 1-2, though their hazard ratios are below one, suggesting peace agreements whether designed or implemented under the help of mediators tend to sustain longer peace. Given statistical insignificance, however, this inference needs further closer scrutiny. In Model 3, when I control for *mediated design*, the effect of *mediated implementation* is still insignificant. Based upon the results of Models 1-3, it is reasonable to infer whether there is a *conditional effect* between *mediated design* and *mediated implementation*. Therefore, I include an interaction term with *mediated design* and *mediated implementation* in Model 4. As expected, all the three variables are statistically significant in Model 4. As a result, the following discussion is mainly based on Model 4.

As Braumoeller (2004) and Brambor, Clark and Golder (2006) suggested, when

Table 2: Cox PH Results: Mediated-Design and Mediated-Implementation and the Durability of Peace

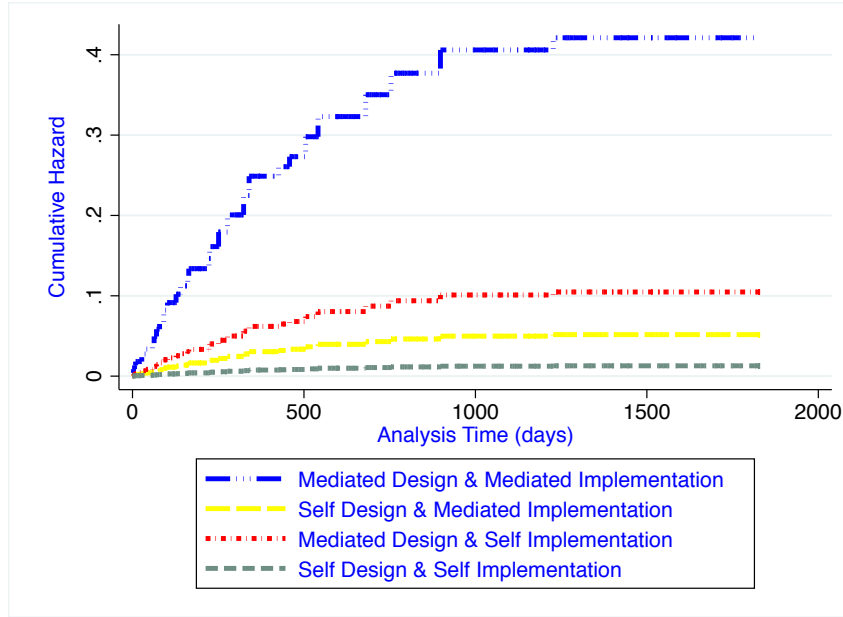
	Model 1	Model 2	Model 3	Model 4
Mediated Design	0.788 (0.352)		0.638 (0.736)	8.155*** (4.938)
Mediated Implementation		0.886 (0.347)	1.272 (1.336)	4.020* (3.238)
Mediated Design \times Mediated Implementation				0.020*** (0.021)
Conflict Duration	0.999* (0.000)	0.999* (0.000)	0.999 (0.000)	0.999* (0.000)
Conflict Intensity	0.577 (0.441)	0.577 (0.456)	0.526 (0.436)	0.280 (0.262)
UN Peacekeeping	1.824 (1.423)	1.723 (1.285)	1.824 (1.397)	2.302 (1.991)
Multiple Rebel Signatories	2.356 (1.229)	2.283 (1.202)	2.497 (1.389)	3.093* (1.814)
Promise of Political Power-sharing	3.348 (2.633)	3.426 (2.771)	3.151 (2.533)	3.211 (2.642)
Promise of Military Power-sharing	0.276*** (0.117)	0.270*** (0.115)	0.273*** (0.117)	0.248*** (0.113)
Promise of Economic Power-sharing	0.117 (0.216)	0.105 (0.202)	0.123 (0.233)	0.150 (0.275)
Promise of Territorial Power-sharing	0.171*** (0.110)	0.163*** (0.106)	0.173*** (0.110)	0.154*** (0.095)
Implementation of Political Power-sharing	0.389 (0.260)	0.393 (0.267)	0.387 (0.253)	0.403 (0.252)
Implementation of Military Power-sharing	5.677* (5.094)	5.845* (5.341)	5.641* (5.122)	6.635** (5.424)
Implementation of Economic Power-sharing	0.211 (0.207)	0.198 (0.207)	0.194 (0.203)	0.137* (0.147)
Implementation of Territorial Power-sharing	0.000*** (0.000)	0.000*** (0.000)	0.000 (.)	0.000*** (0.000)
N	353	353	353	353
No. of subjects	79	79	79	79
No. of failures	32	32	32	32
Log pseudolikelihood	-100.075	-100.166	-100.033	-95.917
Wald χ^2	1026.696	1737.877	49.717	1234.473
Prob > χ^2	0.0000	0.0000	0.0000	0.0000

Note:

(1)*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

(2) Hazard ratios rather than coefficients are reported, with robust standard errors statistics (given in parentheses) clustered on peace agreement. Note that variables on power-sharing refer to pacts that are promised and implemented consistently.

Figure 1: Cumulative Baseline Hazards Rates for 2×2 Typology

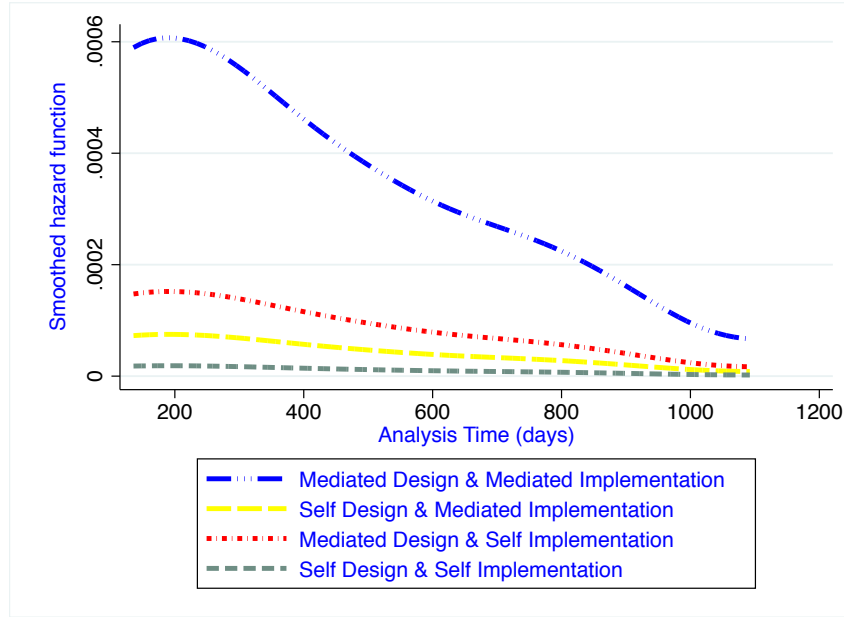


Note: Figure 1 shows the cumulative hazards at mean values of covariates for the 2×2 typology of peace process. The plot is based on Model 4 in Table 2.

the interaction item in a model is statistically significant, the interest of interpretation is no longer the main items because any inference based only on the main item is misleading. Instead, the interaction term should be always more interesting as it can reveal a more complicated mechanism behind the statistical result. More specifically, Model 4 suggests that the effect of *mediated design* on postwar peace durability depends on the effect of *mediated implementation*. In other words, either *mediated design* or *mediated implementation* alone cannot significantly influence the durability of post-civil war peace, but together they are able to produce more pacifying effects as Models 1-4 suggested. The hazard ratio for the interaction item, *Mediated Design* \times *Mediated Implementation* is less than one and significant at the 99% confident level, suggesting that peace agreements designed and implemented by mediators are less likely to break down in five-year period. Therefore, this result confirms the logic presented in Table 1.

To understand my explanatory framework, I plot the *cumulative baseline hazard*

Figure 2: Smoothed Hazards for 2×2 Typology

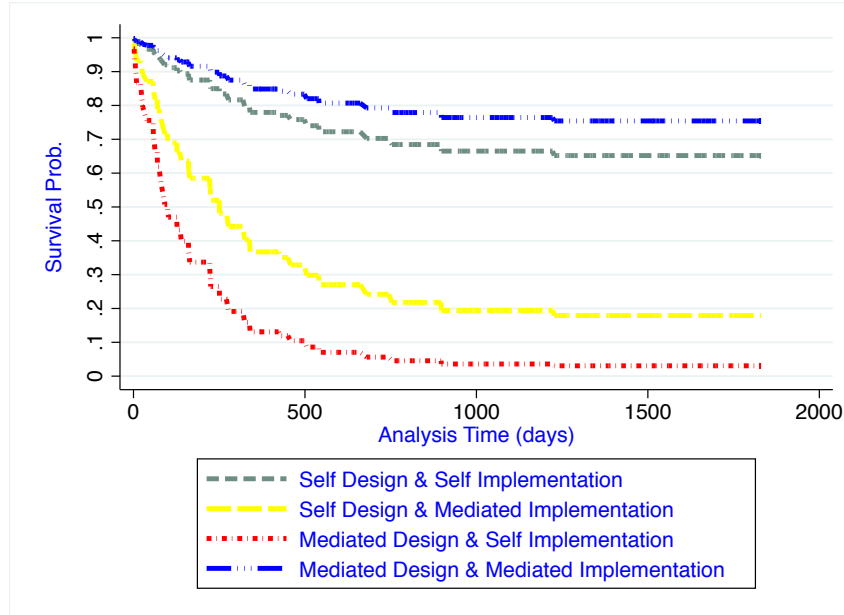


Note: Figure 2 shows the smoothed hazards at mean values of covariates for the 2×2 typology of peace process. The plot is based on Model 4 in Table 2.

plot in Figure 1, the *smoothed hazard plot* in Figure 2, and the *survival function plot* in Figure 3 based on Model 4 in Table 2. Specifically, *mediated design & mediated implementation* can significantly decrease the hazard rate for peace agreement as shown in Figure 2. As further shown in Figure 3, though all four types of peace processes show a decreasing survival probability, the interaction term has the highest survival probability among them. Furthermore, Figure 3 also shows predicted survival probabilities for the 2×2 typology in Table 1 which is highly consistent with my theoretical expectations. Together, these plots suggest that peace agreement designed and implemented by mediators tends to have a higher survival probability and is therefore more likely to sustain a longer peace in the aftermath of civil wars.

Regarding the “promise” and “implementation” of *peace agreement*, the results in Table 2 suggest that during the design stage only including *military power-sharing pacts* and *territorial power-sharing pacts* can significantly reduce the likelihood of the breakdown of peace agreement as their hazard ratios are below one and statistically

Figure 3: Survivor Functions for 2×2 Typology



Note: Figure 3 shows predicted survival probability for the 2×2 typology of peace process when holding other variable at their means. The plot is based on Model 4 in Table 2.

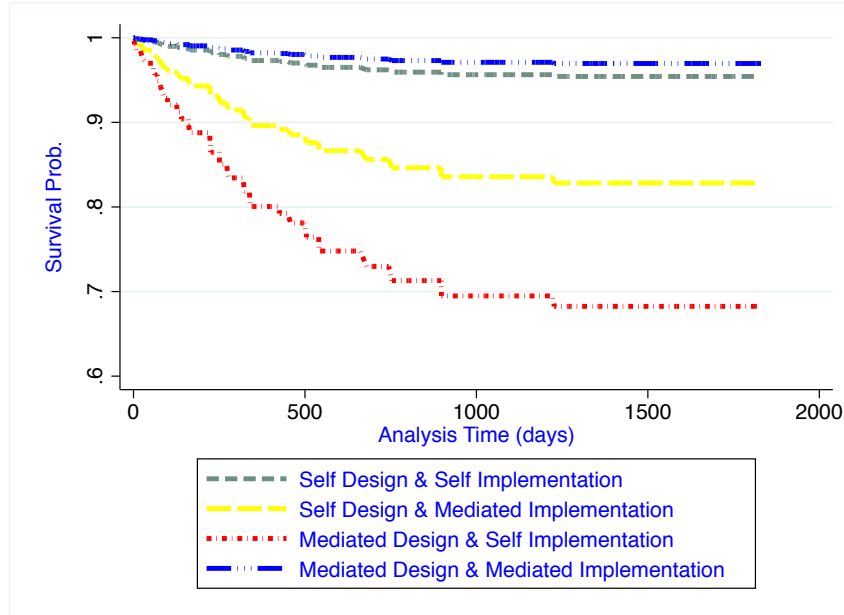
significant. This result is consistent across the four models. However, as Jarstad and Nilsson (2008, 215) point out, the fact that a promised power-sharing pact was implemented does not necessarily mean implementation had a positive influence on the prospects of lasting peace. Implementing certain types of power-sharing pacts could even bring down the peace agreement. For example, *promise of military power-sharing* shows a significantly decreasing risk of peace failing across the four models in Table 2, while *implementation of military power-sharing* suggests a significant increase in the risk of peace failure across the four models in Table 2. Although there is no solid theory yet to explain why peace is more likely to be sustained when promising military power-sharing but is more likely to fail when promised military power-sharing is implemented, we could reasonably infer that certain positions could provide rebels with more resources or opportunities to strengthen themselves and thus to resume fighting against governments. This finding may also support the “supply model” of civil war outbreak as a function of the opportunity to organize rebellion

(Collier and Hoeffler 2004; Fearon and Laitin 2003). Access to military resources is one of the deciding opportunities.

Moreover, *implementation of territorial power-sharing* is highly significant in Table 2, “suggesting that when these power-sharing pacts are being implemented there is virtually no risk at all that peace will fail” (Jarstad and Nilsson 2008, 218). Of these pacts that are promised and implemented, none is followed by armed conflict, which explains these rather extreme hazard rates values. About 49% of the total cases promised a law introducing territorial devolution or autonomy (i.e., *territorial power-sharing*). However, in only 2.55% of the total cases was the promise implemented. This also explain why the coefficient is close to zero. Based on these results, we can infer that *promising territorial power-sharing* is essential for sustaining postwar peace but putting the promise into practice is also extremely difficult. Once the promised territorial power-sharing is implemented, there is a greater chance that civil conflict will not recur. This is consistent to Fearon and Laitin (2011) that the “sons of the soil” thesis is holding up in the postwar peace process. Finally, while *economic power-sharing* is not statistically significant in both the design and implementation stages in Models 1-3, *economic power-sharing* still tends to reduce the risk of peace failing as its hazard ratio indicates in Table 2. However, I find that when control for the effect of mediation in both stages, *implementing economic power-sharing* becomes statistically significant in Model 4.

As for the control variables, I only find that the variable *conflict duration* is statistically significant across the four models, which suggests that once an intensive civil war ended with a signed peace agreement, there is little chance that the peace agreement will break down since both warring parties have suffered from the fighting and the peace committee may sound more credible for them. While *UN peacekeeping* and *multiple rebels* are not statistically significant in all four models, their results tend to suggest that peace agreements are more likely to break down in cases where there

Figure 4: Survivor Function for Indonesia and the Free Aceh Movement



Note: Figure 4 shows predicted survival probability for the 2×2 typology of peace process in the case of Free Aceh Movement when holding other variable at their observed values. The plot is based on Model 4 in Table 2. *Mediated Design & Mediated Implementation* was the observed peace process. Based on the predicted survival probability, we can assume that the peace agreement should have sustained longer peace if it were also designed by mediators.

are multiple actors (both domestic and international) involved.

To better understand the statistical results, I use the example of the Free Aceh Movement in Indonesian for further illustration. In 2005, the Indonesia government and the regional Government of Aceh signed the *Memorandum of Understanding between the Government of the Republic of Indonesia and the Free Aceh Movement* that ended a thirty-year civil war and is still securing peace today. Before they signed the agreement, Finland mediated their conflict and helped them reach a mutual acceptable settlement. On 16 July 2005, the Indonesian Minister of Communication and the Free Aceh Movement (GAM) announced a peace deal to end the thirty-year insurgency. In terms of the quality of agreement design, this agreement provides for the conditions necessary for achieving peace, including the delineation of the relationship between the Central Government of Indonesia and the Government of Aceh. It also elaborates on security arrangements, political participation, economic

revival and promotion of human rights in Aceh. Regarding the implementation, it also establishes a EU-ASEAN monitoring mission to monitor the implementation of the agreement.⁸ In this sense, although the agreement was mediated and designed with the help of Finland, it was included international monitoring, serving the role of *mediated implementation*. On December 27 2005, the leaders of the Free Aceh Movement announced that they had disbanded their military wing.⁹ The action, which took effect immediately, followed from earlier peace talks and the destruction of 840 weapons by international observers. The Free Aceh movement commander Sofyan Daud told reporters, “The Aceh national army is now part of civil society, and will work to make the peace deal a success.”¹⁰ As a sign of how the peace process was progressing the founder of Aceh’s separatist rebel movement, Hasan di Tiro, returned to Indonesia on October 11, 2008 after nearly 30 years in exile.

The *Memorandum of Understanding between the Government of the Republic of Indonesia and the Free Aceh Movement* essentially resolved economic issues by implementing a new law on the government of Aceh. After the tsunami disaster on December 26, 2004, the demand for rebuilding Aceh was very popular. However, the government of Aceh lacked the economic leverage necessary for reconstruction at that moment. Under this context, the negotiation was essentially concerned about how a new peace agreement could make the economy in Aceh work so that the reconstruction process could be started as soon as possible.

Translating this case study into an analytical account, Figure 4 plots the survival function for four different types of peace process, holding other variables at the observed values. *Mediated design* and *mediated implementation* are the actual processes that happened in Indonesia and the other three are hypothetical scenarios. The

⁸The full text of this agreement can be accessed via <http://peacemaker.un.org/indonesia-memorandumaceh2005> (last accessed on September 14, 2014).

⁹<http://news.bbc.co.uk/2/hi/asia-pacific/4561922.stm> (last accessed on September 14, 2014).

¹⁰<http://www.aljazeera.com/news/asia-pacific/2008/10/2008101144652814370.html> (last accessed on September 14, 2014).

predicted survival probability for the *mediated-design & mediated-implementation* is the highest, as opposed to the other three process when holding all other variables the same. This case is consistent with the statistical results in Table 2, which suggests that a peace agreement that has been designed by a mediator and implemented with the help of an international mediator tends to have the most pacifying effects on peace durability after civil wars.

CONCLUSION

In this thesis, I examine the effects of agreement design and implementation on the durability of post-civil war peace through the introduction of third party mediation in both stages. I find that these two stages are interdependent and thus it is more appropriate to integrate them into the same theoretical framework.

Several important findings need to be highlighted here. First, my statistical results show that, mediation can help disputants reach agreement more quickly in the design stage, and to some extent peace agreements designed by a mediator are more likely to secure post-civil war peace, though they are not statistically significant. That said, neither *mediated design* nor *mediated implementation* alone can produce enduring peace in the aftermath of civil wars. Instead, the effect of one depends on the other as I found that there is a strong conditional effect between *mediated design* and *mediated implementation*. This is consistent to my theoretical expectation that peace agreement only designed and implemented by mediators can sustain longer peace. Considering the significant coefficients of *mediated design* & *mediated implementation*, the international community might be cautious when they participate in an agreement negotiation by carefully considering the real-world trade-off between the ability to reach an agreement and the sustainability of that agreement over time by offering additional mediation after the signing of peace agreements. Otherwise, mediation would not produce long-term pacifying effects after civil wars.

Second, by adopting a new measurement of the design-implementation nexus, I find that not all implementations of power-sharing pacts are conducive to lasting peace. Specifically, territorial power-sharing pacts consistently show pacifying effects in contrast to the other three types of power-sharing pacts. Depending on opportunities provided for rebels, taking over certain key positions in national government or a key economic sector could increase the risk of fighting as rebel groups may have increased

their opportunity and capacity to rebel.

However, there are also some weaknesses that need further study. First, the nexus between design and implementation may need more studies since my results show that these power-sharing provisions follow a different logic in both stages. I have not looked at the strategic interaction between mediator and disputants in these two stages, and how the interaction can affect the durability of peace agreement ([Findley 2013](#)). Second, the lack of solid data on agreement implementation still constrains my analysis timeline. Although the PSED dataset provides agreement implementation from 1989-2006 ([Ottmann and Vüllers 2014](#)), it covers only a small proportion of peace agreements signed from 1946 to the present, according to the UCDP Peace agreement dataset. If we have more solid data covering this period, we then are able to compare systematically the post-World War II and post-Cold War periods to see if there are other underlying patterns in civil war agreement studies. Moreover, a majority of civil wars in the post-Cold War period have a historical legacy, such as the colonial experience. We are interested in whether this kind of time-varying covariation will influence the durability of peace agreements, especially on the national attitude and government resolve toward civil war recurrence.

Finally, many civil wars have experienced other forms of third party intervention ([Regan 2002](#)). Unlike mediation, those kinds of interventions have more dampening effects, because foreign interventions are perceived to be essential to continue or end a civil war or prevent its recurrence. Further research should also focus on the relative capability change between the government and rebel groups over time. That being said, sometimes peace agreements are only signed because either the government or rebels just want to buy time to increase their capability to resume the fighting again ([Richmond 1998](#)), which might counter any pacifying efforts from third party mediation. Thus, we might need more discussion on the timing of when a peace agreement breaks down and civil war recurs.

REFERENCES

- Arnault, Jean. 2006. "Good Agreement? Bad Agreement? An Implementation Perspective." *Centre of International Studies, Princeton University, Princeton*, http://id.cdint.org/content/documents/Good_Agreement_Bad_Agreement.pdf.
- Asal, Victor, David Quinn, Jonathan Wilkenfeld and Kathleen Young. 2007. *Mediating International Crises*. New York, NY: Routledge.
- Aydin, Aysegul and Patrick M Regan. 2012. "Networks of Third-party Interveners and Civil War Duration." *European Journal of International Relations* 18(3):573–597.
- Badran, Ramzi. 2014. "Intrastate Peace Agreements and the Durability of Peace." *Conflict Management and Peace Science* 31(2):193–217.
- Beardsley, Kyle. 2008. "Agreement Without Peace? International Mediation and Time Inconsistency problems." *American Journal of Political Science* 52(4):723–740.
- Beardsley, Kyle. 2011. *The Mediation Dilemma*. Ithaca, NY: Cornell University Press.
- Beardsley, Kyle. 2013. "The UN at the Peacemaking–Peacebuilding Nexus." *Conflict Management and Peace Science* 30(4):369–386.
- Beardsley, Kyle C. 2006. *Politics by Means Other Than War: Understanding International Mediation*. San Diego, CA: University of California, San Diego.
- Beck, Nathaniel, Jonathan N Katz and Richard Tucker. 1998. "Taking time seriously: Time-series-cross-section analysis with a binary dependent variable." *American Journal of Political Science* 42(4):1260–1288.
- Bell, Christine. 2008. *On the Law of Peace: Peace Agreements and the Lex Pacificatoria*. New York, NY: Oxford University Press.
- Bercovitch, Jacob, Victor Kremenyuk and I William Zartman. 2008. *The SAGE Handbook of Conflict Resolution*. New York, NY: Sage Press.
- Box-Steffensmeier, Janet M and Christopher Zorn. 2002. "Duration Models for Repeated Events." *Journal of Politics* 64(4):1069–1094.
- Box-Steffensmeier, Janet M, Suzanna De Boef and Kyle A Joyce. 2007. "Event Dependence and Heterogeneity in Duration Models: The Conditional Frailty Model." *Political Analysis* 15(3):237–256.
- Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1):63–82.

- Brancati, Dawn and Jack L Snyder. 2013. "Time to Kill The Impact of Election Timing on Postconflict Stability." *Journal of Conflict Resolution* 57(5):822–853.
- Braumoeller, Bear F. 2004. "Hypothesis Testing and Multiplicative Interaction Terms." *International Organization* 58(4):807–820.
- Collier, Paul and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56(4):563–595.
- Collier, Paul, Anke Hoeffler and Måns Söderbom. 2004. "On the Duration of Civil War." *Journal of Peace Research* 41(3):253–273.
- Collier, Paul, Anke Hoeffler and Måns Söderbom. 2008. "Post-Conflict Risks." *Journal of Peace Research* 45(4):461–478.
- Cox, D. R. 1972. "Regression Models and Life-Tables." *Journal of the Royal Statistical Society* 34(2):187–200.
- Cunningham, David E, Kristian Skrede Gleditsch and Idean Salehyan. 2009. "It Takes Two: A Dyadic Analysis of Civil War Duration and Outcome." *Journal of Conflict Resolution* 53(4):570–597.
- DeRouen, Karl and Ishita Chowdhury. 2013. Mediation and Civil War Peace Agreement Implementation. In *APSA 2013 Annual Meeting Paper*.
- DeRouen, Karl, Jacob Bercovitch and Paulina Pospieszna. 2011. "Introducing the Civil Wars Mediation (CWM) dataset." *Journal of Peace Research* 48(5):663–672.
- DeRouen, Karl, Jenna Lea and Peter Wallensteen. 2009. "The Duration of Civil War Peace Agreements." *Conflict Management and Peace Science* 26(4):367–387.
- DeRouen, Karl, Mark J Ferguson, Samuel Norton, Young Hwan Park, Jenna Lea and Ashley Streat-Bartlett. 2010. "Civil War Peace Agreement Implementation and State Capacity." *Journal of Peace Research* 47(3):333–346.
- Doyle, Michael W and Nicholas Sambanis. 2000. "International Peacebuilding: A Theoretical and Quantitative Analysis." *American Political Science Review* 94(4):779–801.
- Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3):379–414.
- Fearon, James D. 1998. "Bargaining, Enforcement, and International Cooperation." *International Organization* 52(2):269–305.
- Fearon, James D. 2004. "Why Do Some Civil Wars Last So Much Longer Than Others?" *Journal of Peace Research* 41(3):275–301.
- Fearon, James D and David D Laitin. 2003. "Ethnicity, Insurgency, and Civil war." *American Political Science Review* 97(1):75–90.

- Fearon, James D and David D Laitin. 2011. "Sons of the Soil, Migrants, and Civil War." *World Development* 39(2):199–211.
- Findley, Michael G. 2013. "Bargaining and the Interdependent Stages of Civil War Resolution." *Journal of Conflict Resolution* 57(5):905–932.
- Fortna, Virginia Page. 2003. "Scraps of Paper? Agreements and the Durability of Peace." *International Organization* 57(2):337–372.
- Fortna, Virginia Page. 2004. "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War." *International Studies Quarterly* 48(2):269–292.
- Fortna, Virginia Page. 2008. *Does Peacekeeping Work?: Shaping Belligerents' Choices after Civil War*. Princeton, NJ: Princeton University Press.
- Gurses, Mehmet, Nicolas Rost and Patrick McLeod. 2008. "Mediating Civil War Settlements and the Duration of Peace." *International Interactions* 34(2):129–155.
- Harbom, Lotta, Stina Högladh and Peter Wallensteen. 2006. "Armed Conflict and Peace Agreements." *Journal of Peace Research* 43(5):617–631.
- Hartzell, Caroline A. 2009. "Settling Civil Wars Armed Opponents' Fates and the Duration of the Peace." *Conflict Management and Peace Science* 26(4):347–365.
- Hartzell, Caroline A and Matthew Hoddie. 2007. *Crafting Peace: Power-sharing Institutions and the Negotiated Settlement of Civil Wars*. College Park, PA: Penn State University Press.
- Hartzell, Caroline and Matthew Hoddie. 2003. "Institutionalizing Peace: Power Sharing and Post-Civil War Conflict Management." *American Journal of Political Science* 47(2):318–332.
- Hartzell, Caroline, Matthew Hoddie and Donald Rothchild. 2001. "Stabilizing the Peace after Civil War: An Investigation of Some Key Variables." *International Organization* 55(1):183–208.
- Hoddie, Matthew and Caroline Hartzell. 2003. "Civil War Settlements and the Implementation of Military Power-sharing Arrangements." *Journal of Peace Research* 40(3):303–320.
- Högladh, Stina. 2011. "Peace Agreements 1975-2011-Updating the UCDP Peace Agreement Dataset." *States in Armed Conflict*.
- Hultquist, Philip. 2013. "Power Parity and Peace? The Role of Relative Power in Civil War Settlement." *Journal of Peace Research* 50(5):623–634.
- Jarstad, Anna K and Desirée Nilsson. 2008. "From Words to Deeds: The Implementation of Power-sharing Pacts in Peace Accords." *Conflict Management and Peace Science* 25(3):206–223.

- Joshi, Madhav and T David Mason. 2011. "Civil War Settlements, Size of Governing Coalition, and Durability of Peace in Post-Civil War States." *International Interactions* 37(4):388–413.
- Karl, R and David Sobek. 2004. "The Dynamics of Civil War Duration and Outcome." *Journal of Peace Research* 41(3):303–320.
- Kathman, Jacob D. 2011. "Civil War Diffusion and Regional Motivations for Intervention." *Journal of Conflict Resolution* 55(6):847–876.
- Kirschner, Shanna A and Jana Von Stein. 2009. "The Pieces of Peacemaking: Understanding Implementation of Civil War Settlements." *Civil Wars* 11(3):279–301.
- Lake, David A and Donald Rothchild. 2005. Territorial Decentralization and Civil War Settlements. In *Sustainable Peace: Power and Democracy After Civil Wars*, ed. Philip G. Roeder and Donald S. Rothchild. Ithaca, NY: Cornell University Press.
- Mason, David, T, Mehmet Gurses, Patrick T Brandt and Jason Quinn. 2011. "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars." *International Studies Perspectives* 12(2):171–189.
- Mattes, Michaela and Burcu Savun. 2009. "Fostering Peace after Civil War: Commitment Problems and Agreement Design." *International Studies Quarterly* 53(3):737–759.
- Mukherjee, Bumba. 2006. "Does Third-Party Enforcement or Domestic Institutions Promote Enduring Peace After Civil Wars? Policy Lessons From an Empirical Test." *Foreign Policy Analysis* 2(4):405–430.
- Ottmann, Martin and Johannes Vüllers. 2014. "The Power-Sharing Event Dataset (PSED): A New Dataset on the Promises and Practices of Power-sharing in Post-conflict Countries." *Conflict Management and Peace Science* Published online before print July 30, 2014, doi: 10.1177/0738894214542753.
- Powell, Robert. 2006. "War as a Commitment Problem." *International Organization* 60(1):169–203.
- Quinn, David, Jonathan Wilkenfeld, Pelin Eralp, Victor Asal and Theodore Mclauchlin. 2013. "Crisis Managers but not Conflict Resolvers: Mediating Ethnic Intrastate Conflict in Africa." *Conflict Management and Peace Science* 30(4):387–406.
- Quinn, J Michael, T David Mason and Mehmet Gurses. 2007. "Sustaining the Peace: Determinants of civil War Recurrence." *International Interactions* 33(2):167–193.
- Regan, Patrick M. 2002. *Civil Wars and Foreign Powers: Outside Intervention in Intrastate Conflict*. Ann Arbor, MI: University of Michigan Press.

- Richmond, Oliver. 1998. "Devious Objectives and the Disputants' View of International Mediation: A Theoretical Framework." *Journal of Peace Research* 35(6):707–722.
- Sambanis, Nicholas. 2002. "A Review of Recent Advances and Future Directions in the Quantitative Literature on Civil War." *Defence and Peace Economics* 13(3):215–243.
- Sambanis, Nicholas. 2004. "What is Civil War? Conceptual and Empirical Complexities of An Operational Definition." *Journal of Conflict Resolution* 48(6):814–858.
- Sambanis, Nicholas and Michael W Doyle. 2007. "No Easy Choices: Estimating the Effects of United Nations Peacekeeping (response to King and Zeng)." *International Studies Quarterly* 51(1):217–226.
- Stedman, Stephen John. 2001. *Implementing peace agreements in civil wars: Lessons and recommendations for policymakers*. New York, NY: International Peace Academy.
- Walter, Barbara F. 2002. *Committing to Peace: The Successful Settlement of Civil Wars*. Princeton, NJ: Princeton University Press.
- Walter, Barbara F. 2004. "Does Conflict Beget Conflict? Explaining Recurring Civil War." *Journal of Peace Research* 41(3):371–388.
- Walter, Barbara F. 2009. "Bargaining Failures and Civil War." *Annual Review of Political Science* 12:243–261.

APPENDICES

APPENDIX A DESCRIPTIVE STATISTICS

Table A1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Mediated Design	353	.544	.499	0	1
Mediated Implementation	353	.476	.5	0	1
Conflict Duration	353	2024.694	2722.743	99	9641
Conflict Intensity	353	.193	.395	0	1
UN Peacekeeping	353	.142	.349	0	1
Multiple rebel signatories	353	.139	.346	0	1
Promise of Political Power-sharing	353	.297	.458	0	1
Promise of Military Power-sharing	353	.606	.489	0	1
Promise of Economic Power-sharing	353	.173	.379	0	1
Promise of Territorial Power-sharing	353	.49	.501	0	1
Implementation of Political Power-sharing	353	.272	.446	0	1
Implementation of Military Power-sharing	353	.221	.415	0	1
Implementation of Economic Power-sharing	353	.02	.14	0	1
Implementation of Territorial Power-sharing	353	.025	.158	0	1

APPENDIX B STATA CODE FOR REPLICATION RESULTS

The following contains the Stata code for replication results of this thesis.

```

use "Users/chongchen/Dropbox/MAThesis/PSED_agreement_chenchong2015_coxph.dta"
stset _date, _fail(recur=1) _id(psedagID) _origin(timePostStartDate)
/*Descriptive summary*/
sutex2 _med_imp_med_design_inter ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _lminmax

****Table 2, Model 1
stcox _med_design_inter ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
robust _cluster(psedagID)

****Table 2, Model 2
stcox _med_imp ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
robust _cluster(psedagID)

****Table 2, Model 3
stcox _med_design_med_imp ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
robust _cluster(psedagID)

****Table 2, Model 4
stcox _med_imp_med_design_inter ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
robust _cluster(psedagID)

****Figure 1, based on Model 4
stcox _med_imp_med_design_inter ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
nohr _robust _cluster(psedagID) _basesurv(s) _basehc(h) _basec(c)
/*Figure 1*/
stcurve, _cumhaz _at1(med_design=1 _med_imp=1) _l ///
at2(med_design=0 _med_imp=1) _l ///
at3(med_design=1 _med_imp=0) _l ///
at4(med_design=0 _med_imp=0) _l ///
legend(row(3))
/*Figure 2*/
stcurve, _hazard _at1(med_design=1 _med_imp=1) _l ///
at2(med_design=0 _med_imp=1) _l ///
at3(med_design=1 _med_imp=0) _l ///
at4(med_design=0 _med_imp=0) _l ///
kernel(gauss) _legend(row(3))
/*Figure 3*/
stcox _med_imp_med_design_inter ///
durationDY _intDY _unpk0_multireb ///
ps_political _ps_military _ps_economic _ps_territory ///
ppsPROM_IMP_mpsPROM_IMP_epsPROM_IMP_tpsPROM_IMP, _l ///
nohr _robust _cluster(psedagID) _basesurv(surv1)
generate _surv5=surv1*exp((0-.0006865*1170-1.392954*1)) /*no_mediation*/
generate _surv6=surv1*exp((1.391198*1-.0006865*1170-1.392954*1)) /*no_design+implementation*/
generate _surv7=surv1*exp((2.098616*1-.0006865*1170-1.392954*1)) /*design+no_implementation*/
generate _surv8=surv1*exp((1.391198*1+_l2.098616*1-3.906854*1-.0006865*1170-1.392954*1)) /*design+implementation*/
label var _surv5 "Self-Design, & Self-Implementation"
label var _surv6 "Self-Design, & Mediated-Implementation"
label var _surv7 "Mediated-Design, & Self-Implementation"
label var _surv8 "Mediated-Design, & Mediated-Implementation"
line _surv5 _surv6 _surv7 _surv8, _t, _sort _ylab(0, 1, to _l1) _xlab(0, 500, to _l2000) _lcolor(black) _lpattern(dash) _lwidth(thick)
/*Figure 4*/
generate _surv9=surv1*exp((0-.0006865*1246-1.392954*1+_l-1.273266*1-1.870395*1+_l-.9086287*1+_l1.892299*1))
generate _surv10=surv1*exp((1.391198*1-.0006865*1246-1.392954*1+_l-1.273266*1-1.870395*1+_l-.9086287*1+_l1.892299*1))
generate _surv11=surv1*exp((2.098616*1-.0006865*1246-1.392954*1+_l-1.273266*1-1.870395*1+_l-.9086287*1+_l1.892299*1))
generate _surv12=surv1*exp((1.391198*1+_l2.098616*1-3.906854*1-.0006865*1246-1.392954*1+_l-1.273266*1-1.870395*1+_l-.9086287*1+_l1.892299*1)) /*real_process*/

```

```

label_var_surv9 "Self-Design&Self-Implementation"
label_var_surv10 "Self-Design&Mediated-Implementation"
label_var_surv11 "Mediated-Design&Self-Implementation"
label_var_surv12 "Mediated-Design&Mediated-Implementation"
line_surv9_surv10_surv11_surv12_t, sort_ylab(.6,.7,to_1), xlab(0,500,to_2000), lcolor(black), lpattern(dash), lwidth(thick)

```

APPENDIX C CIVIL WAR PEACE AGREEMENTS

The following list contains all peace agreements in this thesis.

location	paname	SideA	SideB	PostEndDate
Haiti	Governor's Island Agreement	Government of Haiti	Forces of Raol Cdras	03/07/1998
Mexico	San Andrs Accords	Government of Mexico	EZLN	16/02/2001
Guatemala	Agreement for a Firm and Lasting Peace	Government of Guatemala	URNG	29/12/2001
El Salvador	Chapultepec Peace Agreement	Government of El Salvador	FMLN	16/01/1997
Colombia	Final Agreement National Government- Popular Liberation Army	Government of Colombia	EPL	15/02/1996
UK	Good Friday Agreement	Government of UK	PIRA	10/04/2003
Macedonia	Ohrid Agreement	Government of Macedonia	UCK	13/08/2006
Croatia	Erdut Agreement	Government of Croatia	Serbian Republic of Krajina	12/11/2000
Serbia (Yugoslavia)	Brioni Agreement	Government of Serbia	Republic of Slovenia	22/05/1992
Serbia (Yugoslavia)	Kosovo Peace Plan	Government of Serbia	UCK	03/06/2004
Bosnia-Herzegovina	Washington Agreement	Government of Bosnia-Herzegovina	Croatian Republic of Bosnia-Herzegovina	01/03/1999
Bosnia-Herzegovina	General Framework Agreement for Peace in Bosnia and Herzegovina (Dayton Agreement)	Government of Bosnia-Herzegovina	Serbian Republic of Bosnia-Herzegovina	21/11/2000
Moldova	Memorandum on the Basis for Normalization of Relations between the Republic of Moldova and Transdnistria	Government of Moldova	PMR	08/05/2002
Georgia	Declaration on measures for a political settlement of the Georgian/Abkhaz conflict	Government of Georgia	Republic of Abkhazia	04/04/1999
Guinea Bissau	Agreement Between the Government of Guinea Bissau and the Self-Proclaimed Military Junta	Government of Guinea-Bissau	Military Junta for the Consolidation of Democracy, Peace and Justice	31/01/1999
Mali	Tamanrasset Accord	Government of Mali	MPA	06/01/1996
Senegal	Accord general de paix entre le gouvernement de la republique du Senegal el le Mouvement des forces democratique de la Casamace (MFDC)	Government of Senegal	MFDC	30/12/2009
Niger	Paris Accord	Government of Niger	FLAA	16/05/1994
Niger	Ouagadougou Accord	Government of Niger	ORA/CRA	09/10/1999
Cte d'Ivoire	Linass-Marcoussis Peace Accords	Government of Cte D'Ivoire	MJP, MPCl, MPIGO	24/01/2003
Cte d'Ivoire	Accra II	Government of Cte D'Ivoire	MJP, MPCl, MPIGO	07/06/2004
Cte d'Ivoire	Accra III	Government of Cte D'Ivoire	MJP, MPCl, MPIGO	09/11/2004
Cte d'Ivoire	Pretoria Agreement on the Peace Process in Cte d'Ivoire	Government of Cte D'Ivoire	FRCl	06/04/2010
Liberia	Banjul III Agreement	Government of Liberia	INPFL	21/12/1990
Liberia	Banjul IV Agreement	Government of Liberia	NPFL, INPFL	31/10/1992
Liberia	Accra Peace Agreement	Government of Liberia	LURD, MODEL	18/08/2008
Sierra Leone	Abidjan Peace Agreement	Government of Sierra Leone	RUF	13/05/1997
Sierra Leone	Lom Peace Agreement	Government of Sierra Leone	RUF	26/05/2000
Sierra Leone	Abuja Ceasefire Agreement	Government of Sierra Leone	RUF	10/11/2005
Chad	El Geneina Agreement	Government of Chad	FNT	31/12/1993
Chad	Abeche Agreement	Government of Chad	FNT	12/10/1999
Chad	Tripoli-1 Agreement	Government of Chad	CNR	22/10/1993
Chad	Bangui-2 Agreement	Government of Chad	CSNPD	11/08/1999
Chad	Dougia Accord	Government of Chad	MDD	15/12/1997
Chad	Reconciliation Agreement	Government of Chad	MDD	03/07/2004
Chad	Donya Agreement	Government of Chad	FARF	07/05/2003
Chad	Tripoli-2 Agreement	Government of Chad	MDJT	27/05/2002
Chad	Yebibou Agreement	Government of Chad	MDJT	18/08/2010
Chad	Tripoli Accord	Government of Chad	FUCD	24/12/2011
Congo	Agreement on Ending Hostilities in the Republic of Congo	Government of Congo (Brazzaville)	Ninjas, Cocoyes, Ntsiloulous	14/06/2002
Democratic Republic of Congo (Zaire)	Lusaka Accord	Government of Democratic Republic of Congo (Kinshasa)	MLC, RCD, RCD-ML	06/08/1999
Democratic Republic of Congo (Zaire)	Inter-Congolese Political Negotiations (The Final Act)	Government of Democratic Republic of Congo (Kinshasa)	MLC, RCD, RCD-ML	02/04/2008
Uganda	Yumbe Peace Agreement	Government of Uganda	UNRF II	24/12/2007
Burundi	Arusha Peace and Reconciliation Agreement for Burundi	Government of Burundi	CNDD, Frolina, Palipehutu	28/08/2005
Burundi	Global Ceasefire agreement between Transitional Government and the Forces pour la defence de la democratie (CNDD-FDD)	Government of Burundi	CNDD-FDD	16/11/2008
Burundi	Comprehensive Ceasefire Agreement between the Government of Burundi and the Palipehutu-FNL	Government of Burundi	Palipehutu-FNL	01/03/2008
Rwanda	Arusha Accords	Government of Rwanda	RPF	31/08/1993
Somalia	Addis Ababa Agreement	Government of Somalia	SSDF, USC/SNA, SPM	05/06/1993
Somalia	Nairobi Declaration on National Reconciliation	Government of Somalia	USC/SNA	23/06/1994
Djibouti	Agreement on Peace and National Reconciliation	Government of Djibouti	FRUD	26/12/1999

Djibouti	General Agreement on Reform and Civil Concord	Government of Djibouti	FRUD-AD	07/02/2005
Angola	Gbadolite Declaration on Angola	Government of Angola	UNITA	24/08/1989
Angola	Bicesse Agreement	Government of Angola	UNITA	17/10/1992
Angola	Lusaka Protocol	Government of Angola	UNITA	23/11/1994
Angola	Memorandum of Understanding on Peace and National Reconciliation	Government of Angola	UNITA	04/04/2007
Angola	Memorandum of Understanding in Cabinda province	Government of Angola	FLEC-R	01/08/2011
Mozambique	Acordo Geral de Paz	Government of Mozambique	Renamo	04/10/1997
South Africa	Interim Constitution	Government of South Africa	ANC	18/11/1998
Comoros	Famboni Declaration	Government of Comoros	MPA/Republic of Anjouan	26/08/2005
Sudan	Comprehensive Peace Agreement	Government of Sudan	SPLM/A	09/01/2010
Sudan	Cairo Agreement	Government of Sudan	NDA	18/06/2010
Sudan	Darfur Peace Agreement	Government of Sudan	SLM/A-Minni Minawi	05/05/2011
Afghanistan	Islamabad Accord	Government of Afghanistan	Harakat-i Inqilab-i Islami-yi Afghanistan, Jabha-yi Nijat-i Milli-yi Afghanistan, Mahaz-i Milli-yi Islami-yi Afghanistan, Ittihad-i Islami Bara-yi Azadi-yi Afghanistan, Harakat-i Islami-yi Afghanistan, Hizb-i Islami-yi Afghanistan, Hizb-i Wahdat	15/04/1993
Afghanistan	Jalalabad Agreement	Government of Afghanistan	Harakat-i Inqilab-i Islami-yi Afghanistan, Jabha-yi Nijat-i Milli-yi Afghanistan, Mahaz-i Milli-yi Islami-yi Afghanistan, Ittihad-i Islami Bara-yi Azadi-yi Afghanistan, Harakat-i Islami-yi Afghanistan, Hizb-i Islami-yi Afghanistan,	31/12/1993
Afghanistan	Mahipar Agreement	Government of Afghanistan	Hizb-i Wahdat	28/09/1996
Tajikistan	Moscow Declaration	Government of Tajikistan	Hizb-i Islami-yi Afghanistan	31/03/1998
India	Bodoland Autonomous Council Act	Government of India	UTO	20/02/1998
India	Memorandum of Settlement	Government of India	ABSU	01/01/1997
Bangladesh	Chittagong Hill Tracts Peace Accord	Government of Bangladesh	ATTF	02/12/2002
Nepal	Comprehensive Peace Agreement	Government of Nepal	JSS/SB	21/11/2011
Cambodia	Final Act of the Paris Conference on Cambodia	Government of Cambodia	CPN-M	30/06/1992
Philippines	General Agreement for Peace between the Government of the Republic of the Philippines and the Rebolusyonaryong Alyansang Makabans-Soldiers of the Filipino People - Young Officers' Union	Government of Philippines	Forces of Honasan, Abenina Zumel	13/10/2000
Philippines	Mindanao Final Agreement	Government of Philippines	MNLF	02/09/2001
Philippines	Agreement on Peace between the government of the Republic of the Philippines and the Moro Islamic Liberation Front	Government of Philippines	MILF	31/01/2002
Indonesia	Cessation of Hostilities Framework Agreement	Government of Indonesia	GAM	19/05/2003
Indonesia	Memorandum of Understanding between the Government of the Republic of Indonesia and the Free Aceh Movement	Government of Indonesia	GAM	15/08/2010
Papua-New Guinea	The Honiara Declaration	Government of Papua New-Guinea	BRA	01/02/1991
Papua-New Guinea	Honiara Commitments to Peace	Government of Papua New-Guinea	BRA	21/11/1994
Papua-New Guinea	Bougainville Peace Agreement	Government of Papua New-Guinea	BRA	30/08/2006