



# Fostering Peace After Civil War: Commitment Problems and Agreement Design

MICHAELA MATTES

*Vanderbilt University*

BURCU SAVUN

*University of Pittsburgh*

Lasting peace after civil war is difficult to establish. One promising way to ensure durable peace is by carefully designing civil war settlements. We use a single theoretical model to integrate existing work on civil war agreement design and to identify additional agreement provisions that should be particularly successful at bringing about enduring peace. We make use of the bargaining model of war which points to commitment problems as a central explanation for civil war. We argue that two types of provisions should mitigate commitment problems: fear-reducing and cost-increasing provisions. Fear-reducing provisions such as third-party guarantees and power-sharing alleviate the belligerents' concerns about opportunism by the other side. Provisions such as the separation of forces make the resumption of hostilities undesirable by increasing the costs of further fighting. Using newly expanded data on civil war agreements between 1945 and 2005, we demonstrate that cost-increasing provisions indeed reduce the chance of civil war recurrence. We also identify political power-sharing as the most promising fear-reducing provision.

---

There is a growing scholarly interest in the determinants of the durability of civil war settlements. To a great extent, this interest reflects the realities of current international politics. Civil wars are more frequent, more deadly, and longer in duration than interstate wars and they prove to be more difficult to settle peacefully (Fearon and Laitin 2003; Walter 2002). The widespread occurrence of civil wars and the difficulties surrounding their resolution make the adoption of more effective policies an important concern for the international community.

This article examines whether civil war agreements can help increase the durability of peace between domestic belligerents. Building on the bargaining model of war, we provide a systematic theoretical account of why and how certain kinds

---

*Authors' note:* The order in which the authors' names appear was determined alphabetically and does not reflect any degree of hierarchy in terms of theoretical or methodological contributions to the project. A previous version of this article was presented at the annual meeting of the Peace Science Society International, Columbia, SC, November 2–4, 2007. The authors thank Qing (Maria) Yang and Mingyan Li for their research assistance and David Bearce, Charli Carpenter, Chuck Gochman, Michael Goodhart, and Ashley Leeds for their helpful comments and suggestions.

of provisions can ensure a more durable peace. Specifically, we argue that provisions that mitigate commitment problems between the domestic opponents should be particularly effective. We identify two types of provisions that help address commitment problems and thus reduce the chance of further warfare: *fear-reducing* and *cost-increasing provisions*. Fear-reducing provisions are designed to lessen the belligerents' insecurity and fear regarding future actions of the opponent by imposing constraints on the opponent's ability to renege on the deal. By raising the costs of further fighting, cost-increasing provisions make it less likely that the belligerents prefer to resume their military campaigns, even if they expect that the other side may renege on the peace deal.

Providing a unified theoretical account of civil war agreement design based on an understanding of civil war as a commitment problem allows us to integrate existing research and identify additional provisions that may prove important for lasting peace. We argue that third-party guarantees and power-sharing can be seen as fear-reducing provisions and suggest that these provisions should reduce the likelihood of further civil war. This is commensurate with the existing literature on civil war agreement design (e.g., Hartzell and Hoddie 2003, 2007; Hartzell, Hoddie, and Rothchild 2001; Hoddie and Hartzell 2005; Walter 1997, 2002). We move beyond the existing civil war literature by identifying additional agreement provisions that should increase the durability of peace. We refer to provisions such as the separation of troops or the withdrawal of foreign forces as cost-increasing. These provisions increase the belligerents' costs of fighting and thus make it less likely that the belligerents prefer to fight rather than implement the peace process. While the effectiveness of cost-increasing provisions has been demonstrated in the context of interstate wars (Fortna 2004a), their ability to prevent the breakdown of peace after civil war has not yet been systematically analyzed.

In order to test our propositions concerning the effect of fear-reducing and cost-increasing provisions on the durability of peace after civil war, we collected and coded all relevant agreements for 46 civil war cases that ended in a settlement between 1945 and 2005. Our analysis suggests strong empirical support for our core theoretical argument: cost-increasing provisions significantly reduce the risk of renewed civil war. Furthermore, we are able to confirm the importance of third-party guarantees in ensuring peace after civil war and we provide some additional insight into the role of different types of power-sharing provisions. We develop an argument for the central role of political power-sharing in reducing further conflict and find empirical support for this hypothesis. Cost-increasing provisions, third-party guarantees, and political power-sharing are thus promising components of civil war agreement design.

We believe that these findings are important from a policy-making perspective. Unlike other factors that have been shown to affect the durability of civil war settlements, such as the issues at stake or the costs of war, the design of agreements is manipulable. Combatants and/or third parties involved in the resolution of a civil war can choose different combinations of agreement provisions. A systematic understanding of which design options are available and how and why different types of provisions mitigate the likelihood of conflict recurrence increases the ability of the adversaries and third parties to prevent further bloodshed.

This article proceeds in six sections. The next section introduces the bargaining theory of war as a theoretical framework for understanding which kinds of provisions should be most successful at preventing further fighting. The third section discusses issues of agreement endogeneity and explains how we address this concern. Section four describes our research design more generally. The fifth section presents the results of our empirical tests. The last section concludes with a brief review of the central argument and findings and formulates a few policy recommendations regarding the design of civil war agreements.

### Bargaining Theory of War and Civil War Agreement Provisions

While negotiated agreements are much less frequent in civil wars than in interstate wars, they nevertheless account for about 25 percent of civil war terminations between 1945 and 1995 (Licklider 1995). Furthermore, a number of studies suggest that negotiated settlements have become significantly more common since the end of the Cold War (e.g., Harbom, Högbladh, and Wallensteen 2006; Hartzell 2006). Parallel to the surge in the number of negotiated civil war settlements, there is an increased scholarly interest in identifying what kinds of agreement provisions are particularly successful at ensuring lasting peace.

We argue that agreement provisions are effective at maintaining peace to the extent that such provisions can address and mitigate the factors leading to the recurrence of war. In order to understand which types of provisions lead to lasting civil peace, we need to base our study of civil war agreement design on a systematic explanation of the causes of civil war. Recent work has emphasized the applicability and explanatory potential of the bargaining model of war in the study of civil wars (e.g., Cetinyan 2002; Fearon 1998; Lake 2003; Walter 2002, 2006). Here we utilize this theoretical framework to explain how different types of civil war agreement provisions can be effective at preventing the resumption of hostilities between domestic enemies.

The bargaining theory of war posits that as war is always costly, conflicting parties should prefer to conclude an *ex ante* negotiated agreement to avoid the *ex post* inefficiency of war. The parties should be able to reach a peaceful bargain that is equal to what would be negotiated at the end of war but without incurring the costs of fighting. However, wars between domestic groups are common.

Scholars have identified commitment problems as an important cause of bargaining failure between domestic groups (e.g., Fearon 1995a,b, 1998; Powell 2004; Walter 1997, 2002). Commitment problems may operate early on in the conflict and prevent the groups from avoiding civil war in the first place. They may also make it difficult to conclude and implement a lasting settlement after civil war. Given that commitment problems may stand in the way of durable peace, a better understanding of the nature of the problem and of the ways in which the problem can be mitigated may provide important guidelines as to which kinds of agreement provisions could prove useful.

Commitment problems occur because neither the government nor the rebels can credibly commit themselves to uphold the negotiated settlement in the future. The government cannot trust the rebels to end their military campaign once they have been granted concessions. Instead of demobilizing, the rebels might press for even greater concessions. Similarly, the rebels cannot trust the government to honor its side of the deal. Once the rebels give up their military campaign, the government, as a result of the consolidation of its power over the course of the peace process, will have a significant bargaining advantage. It might revise the terms of the agreement to its own benefit at the cost of the rebels. Moreover, in cases where the rebels are required to disarm, the government can annihilate its former enemy.

Yet, even if the peace agreement does not foresee immediate disarmament of the rebels, they are still likely to be very vulnerable to defection by the government. The balance of military capabilities in civil wars already tends to favor the government but the government's advantage becomes even more pronounced once the rebels leave their camps and disband their forces. This is particularly the case for civil wars that are fought as insurgencies. As Fearon and Laitin (2003, 80) point out, "If government forces knew who the rebels were and how to find them, they would be fairly easily destroyed or captured." Compliance with a peace agreement forces the rebels to come out of hiding and identify themselves. As a consequence, rebels tend to be particularly vulnerable to

renewed military action by the government. Furthermore, if the government does renege on the deal and attack the rebels, it might be logistically difficult for the rebels to reassemble their forces and resume their military campaign. Unlike the government, the rebels do not have a standing police or military force. This is not to say that defection by the rebels and a surprise attack might not also be very costly for the government. For example, when UNITA failed to demobilize and disarm after the Bicesse Agreement in Angola and returned to war, the government was at a clear disadvantage (Lyons 2005, 156).

Thus, both sides in a civil war have reason to fear the consequences of defection by the opponent. This fear of defection is what makes negotiated settlements very unstable. In such a tense climate, actions by the adversary are easily misinterpreted. In anticipation of a possible defection by the other side, the rebels or the government may decide to defect first, leading to the breakdown of the peace process.

The basic problem that confronts the two parties is that neither group can credibly promise to uphold the deal in the future and both sides, knowing this, may prefer to continue to fight. Scholars have proposed that certain types of civil war agreements may be successful at mitigating commitment problems and have pointed to two types of provisions in particular: third-party security guarantees and agreements that include specific safeguards to render them self-enforcing.

Walter (1997, 2002) provides one of the most extensive examinations of the role of third-party security guarantees in the successful implementation of civil war settlements. Starting from the notion that the settlement of civil wars is marred by commitment problems, Walter asserts that the participants themselves are unable to design an agreement that mitigates their security concerns. The only way these security concerns can be addressed and lasting peace can be established is if a third party is willing to guarantee the deal between the domestic opponents. By providing a guarantee, the third party makes a promise that it will intervene to protect a group that becomes victim of its opponent's opportunism. Under these conditions the belligerents should be significantly less likely to break the agreement.

While Walter's work is ground-breaking, it has also engendered some criticism. In particular, some scholars disagree with the argument that only third-party guarantees can help stabilize peace after civil war and that the opponents themselves are unable to arrive at a successful settlement. Instead, building upon Lijphart's (1977) work on the consociational model of democracy, a number of scholars contend that, by including power-sharing provisions in their agreements, domestic opponents can increase the durability of civil peace even in the absence of third-party guarantees (e.g., Hartzell and Hoddie 2003, 2007; Hartzell, Hoddie, and Rothchild 2001; Sisk 1996). Power-sharing provisions contribute to peace by preventing that either the government or the rebels can control any area of government single-handedly and exclude their adversaries from making decisions in these areas. These provisions are intended to ensure domestic groups that they will not become victims of discrimination and violence in the new state.<sup>1</sup>

We consider both third-party guarantees and power-sharing institutions as examples of what we refer to as fear-reducing provisions. Both third-party guarantees and power-sharing provisions are designed to reduce the belligerents' insecurity and fear about future actions of their adversary. These provisions are

<sup>1</sup> Walter (2002) argues that power-sharing provisions are not credible. We agree with Hartzell and Hoddie (2007, 92–93) that while there is no guarantee that power-sharing always deters cheating, the implementation of these provisions imposes important costs on the groups. First, the belligerents relinquish their ability to govern the new state single-handedly. Second, by agreeing to share power with their enemy, the groups may antagonize their more radical supporters and risk retaliatory action by extremists. If the groups are willing to pay the costs that come with agreeing to share power with their enemies, such provisions signal credible commitment.

supposed to make defection more difficult by imposing either external or internal constraints on the opponents' ability to act against one another.

**Hypothesis 1:** *Civil war agreements that include fear-reducing provisions reduce the risk of future civil war between domestic belligerents.*

It is important to note that the existing literature has tended to employ an aggregate (additive) measure of power-sharing to show that power-sharing arrangements en masse increase the durability of peace. According to Hartzell and Hoddie (2003, 2007), the idea behind an aggregate measure is that different power-sharing provisions reinforce one another. Each additional power-sharing mechanism reduces the belligerents' fears of being taken advantage of. If parties agree on multiple power-sharing provisions, then even if power-sharing on one dimension fails, peace is likely to continue because other forms of power-sharing remain in place. Furthermore, if the two groups have agreed to multiple dimensions of power-sharing this signals a greater commitment to peace and reduces each group's concerns regarding opportunism by the adversary.

While Hartzell and Hoddie (2003, 2007) provide good reasons for employing an additive measure of power-sharing, it is also desirable to have a better understanding of whether, taken individually, certain types of power-sharing arrangements are more effective at fostering peace than others. Each type of power-sharing institution is independent and strong in its own right and has the potential to affect the durability of peace independent of other types of power-sharing provisions. At the same time, it is possible that some dimensions of power-sharing may contribute more to lasting peace than others and this would certainly be relevant information for policymakers trying to design a durable settlement. In order to be able to give more nuanced policy prescriptions and to improve our theoretical understanding of the subject matter, it is important to assess the individual effects of each type of power-sharing arrangement.

Four types of power-sharing arrangements are typically identified: political, territorial, military, and economic. Political power-sharing rules stipulate that the new executive, legislative, and civil service be set up to ensure that the groups share power. Territorial power-sharing provisions either give the rebel group autonomy to control local politics in a particular region or mandate a federal state in which subunits have power relative to the central government. Military power-sharing usually provides for the incorporation of both parties' troops into a new joint defense force and/or the appointment of rebels to high military ranks. Economic power-sharing seeks to establish a more evenhanded distribution of economic resources by stipulating special redistributive policies, such as land reforms.

Walter (2002) argues that political power-sharing that involves a guaranteed share of cabinet posts or specific quotas in a main branch of government as well as military and territorial power-sharing should be important. In her empirical test, she finds that both political and territorial power-sharing make it more likely that the opponents sign a peace deal and that peace is maintained for at least 5 years. However, based on descriptive statistics, she concludes that power-sharing is not enough to ensure successful implementation; third-party guarantees are necessary. Hartzell and Hoddie (2003, 2007) argue in favor of an aggregate measure of power-sharing and state that they "have no expectation that any one of these institutions is generally more valuable or useful" (2007, 168). Nevertheless, they do disaggregate their measure: only territorial power-sharing turns out to be a significant predictor of the durability of peace.

These studies suggest that territorial power-sharing may be particularly promising. This makes sense intuitively given that territorial power-sharing should be a promising way to address, in particular, the concerns of the rebels regarding



defection by the government. Territorial power-sharing institutions allow the rebels to withdraw from the control of the government. If rebels attain control over a particular piece of territory, whether through autonomy or federalism, they are better capable of protecting themselves against the government. At the same time, based on our theoretical argument, it appears that political power-sharing should be even more important. In the end, it is the central government that can undo a promise of autonomy or federalism.<sup>2</sup>

If the rebels are represented at different levels of government their enemies cannot decree or implement policies without their consent. Under these conditions, the rebels' enemies will be unable to pursue any policies, whether military, economic, cultural, or relating to autonomy and federalism, that are detrimental to the rebels. The sharing of decision-making power helps ensure that other kinds of power-sharing are implemented and opens up the possibility for both groups to shape future policies. Furthermore, Lijphart (1999, 33) argues that, in plural societies, excluding groups from politics may be dangerous as the group will feel discriminated against and may lose its allegiance to the regime. The sharing of political power between the antagonists ensures that the will of the group that typically controls the government does not always prevail and hence the rebels become more integrated into the system. The more integrated the rebel group is in the political system, the less incentives it will have to disrupt it.

Based on these arguments, we expect that political power-sharing should be particularly important to ensure lasting peace. Walter's (2002) finding provides some support for the notion that political power-sharing is important. However, there is no evidence to suggest that political power-sharing is more important than other dimensions. We test this proposition using our newly expanded data set.

**Hypothesis 2:** *Civil war agreements that include political power-sharing provisions should be particularly successful at reducing the risk of future civil war between domestic belligerents.*

Building upon the bargaining theory of war and using insights from the interstate war literature, we argue that there is another, less closely studied type of provision that helps prevent renewed conflict. Like fear-reducing provisions, cost-increasing provisions are intended to deal with commitment problems but they address a slightly different aspect of commitment problems. Fear-reducing provisions minimize the chance that one side behaves opportunistically by imposing internal (i.e., power-sharing) or external constraints (i.e., third-party guarantees) on the parties' ability to renege on the peace agreement. Fear-reducing provisions give the parties assurance that they will not be taken advantage of once they have demobilized. Provisions that increase the costs of fighting, on the other hand, make it less likely that a party prefers to go back to war due to fears that its adversary may behave opportunistically in the future. Cost-increasing provisions make it more attractive for the parties to stick to the deal in the short-run and allow the peace agreement to be fully implemented.<sup>3</sup> As Lyons (2005) points out, the phase between reaching a cease-fire and conducting post-conflict elections is critical. During this time, belligerents need to demobilize and

<sup>2</sup> Yugoslav President Milosevic demonstrated this when he revoked Kosovo's autonomy in 1989, leading to the Kosovo war.

<sup>3</sup> Another difference between fear-reducing and cost-increasing provisions is that cost-increasing provisions are designed to increase the costs of fighting for both sides, whereas fear-reducing provisions are practically more of an advantage for the rebel group. Third-party guarantees are usually intended to protect the rebels given that the rebels tend to be at greater risk should the government renege than the government would be should the rebels renege. Power-sharing is also particularly advantageous for rebels who obtain access to the government, a particular region, the military, and/or resources they did not previously possess.

sometimes surrender their arms. This leads to uncertainty and tension that might derail the peace process. We argue that cost-increasing provisions contained in the peace agreement can help maintain peace during this turbulent transition phase by decreasing the parties' incentives to resume their violent strategies.

Fearon (1995b, 1998) argues that commitment problems are less likely to prevent a durable settlement if the costs of fighting are high. The essence of commitment problems is that the parties cannot trust one another to uphold the negotiated agreement in the future and, under these conditions, they may prefer to go back to fighting before they become too vulnerable to defection by the other side. Fear of opportunism by the other side can make the peace process unravel. Essentially, if a party anticipates that the other side may cheat later on, it is cheaper to fight now rather than once its fighting capabilities have been dismantled. However, if the costs of fighting now are high as well, then the belligerents may be more willing to take a risk and continue with the peace process. If fighting is made costly, then it might not be any better to fight now rather than later when the opponent may defect from the agreement.

This suggests that a peace agreement that raises the belligerents' costs of fighting might be able to reduce the risk of renewed civil war. If the peace agreement imposes significant costs on the belligerents right away, then they will be more reluctant to restart their military campaigns, even if they are worried about defection by the other party. Note that in order to be successful, a peace agreement should impose costs on both the government and the rebels. The reason is two-fold: First, neither side would be willing to accept an agreement that raises the costs of fighting for itself but not for its enemy. That would put one party at an intolerable disadvantage. Second, an agreement that imposes costs only on one party could have the adverse effect of worsening the commitment problem: for instance, if only the rebels' costs of fighting were increased, the rebels would feel even more vulnerable to the government's defection and should be even less likely to stick to the deal. A solution to this concern is that the agreement not only increases the costs of fighting for the rebels but also for the government. If the government finds it harder to fight it is less likely to renege on the deal and expose itself to a new civil war. This should, in turn, assure the rebels and facilitate the continued implementation of the peace process. Thus we argue that successful agreements should include mechanisms that increase the costs of fighting for the rebels and the government.<sup>4</sup>

**Hypothesis 3:** *Civil war agreements that include cost-increasing provisions reduce the risk of future civil war between domestic belligerents.*

Cost-increasing provisions include calls for the withdrawal of foreign forces, border seals, the separation of troops, and peacekeeping. Fearon (1995b) identifies external military support for the rebels as a factor that raises the likelihood that a commitment problem will lead to violence. External support contributes to the rebels' ability to fight and thus might make fighting preferable over settling. Conversely, an agreement that limits the rebels' access to external help by stipulating that foreign soldiers are withdrawn and the supply of weapons is cut off should decrease the rebels' expected utility for conflict and make a peaceful

<sup>4</sup> Provisions should affect the costs of fighting but not the probability of winning. While increasing costs makes conflict less likely, any change in the probability of winning is likely to increase the risk of conflict. If one party becomes less likely to win, the other automatically becomes more likely to win and may challenge the agreement. Following traditional conceptualizations of the bargaining model of war, we assume that probability of victory and costs of war are independent, that is, that provisions that increase the costs of fighting do not affect the probability of victory. It is reasonable to assume that cost-increasing provisions do not affect the probability of winning as the belligerents would not agree to such provisions.

resolution more likely.<sup>5</sup> Withdrawing foreign forces and preventing the inflow of foreign soldiers and weaponry from neighboring states impose physical constraints on the rebels—and on the government, if the latter is dependent on outside help. Because each side has to rely on fewer soldiers, this puts additional strain on the fighters and increases their risk of being killed. Furthermore, if borders are effectively sealed and the supply of new weapons is cut off, the parties have to find alternative means of acquiring weapons and possibly even discover new funding sources. The costs of reorganizing the existing armed forces and developing new avenues of arms supply would be significant.

The withdrawal of foreign forces and the prevention of cross-border proliferation were important concerns in reaching a lasting settlement in the Democratic Republic of Congo (DRC). The civil war in the DRC was characterized by the presence of troops from a variety of different countries,<sup>6</sup> some of which also helped fuel the conflict by providing arms to the belligerents (Muchai 2002). Unlike the 1999 Lusaka Agreement, the 2002 Pretoria Agreement was successful at limiting the influence of these foreign actors in the DRC. As mandated by the Pretoria Agreement and negotiated in a number of additional agreements, Rwandan, Ugandan, Angolan, Namibian, and Zimbabwean troops withdrew from the area and the borders were sealed (Grignon 2006). While sporadic fighting continued and Rwandan troops were sighted on Congolese territory in 2004 (Baregu 2006), the situation remained relatively stable.

Of course, the presence of UN peacekeepers in the DRC also helped ensure existing peace. The UN Mission in the Democratic Republic of Congo (MONUC) was originally deployed in 1999 but was hampered by a lack of resources. After the 2002 Pretoria Agreement, MONUC's strength was significantly increased and some of these additional troops were sent to stabilize particularly volatile regions (Grignon 2006).

One reason for why peacekeeping is successful at reducing the risk of further conflict is that it raises the belligerents' costs of fighting. Like troop withdrawal and border seals, peacekeeping imposes physical constraints on the belligerents. Once peacekeepers are present, they are likely to be in the way of an aggressor trying to get at its opponent. If peacekeepers come under attack, they may employ force to defend themselves. The aggressor thus might end up fighting not only its domestic enemy but also the peacekeeping force. Given that peacekeepers tend to carry only light weapons and are often told not to retaliate if attacked, the importance of peacekeeping as a physical constraint may be limited. Nevertheless, the presence of peacekeepers may increase the costs of fighting by an alternative mechanism: international audience costs. If peacekeepers are injured or possibly killed, the international community may react harshly, for example, by restricting foreign aid (Fortna 2004b). Even if no international forces are harmed, reports by neutral peacekeepers that one side has violated the peace deal may have repercussions for the benevolence of outside parties towards the aggressor. Fortna (2008) points out that in many cases not only the government but also the rebels depend on the assistance of third parties and would face significant costs from losing this support. For example, UNITA's loss of support as a result of its violation of the UN supervised peace agreement eventually led to its military defeat (Fortna 2008, 90).

In some civil war situations peacekeeping has been successfully combined with the separation of forces. In Nicaragua, for example, Sandinista forces had to

<sup>5</sup> The literature considers the presence of opportunities a major driving force behind the onset of civil wars (e.g., Collier and Hoeffler 2004; Fearon and Laitin 2003; Salehyan 2007). In this context, the termination of external support by cost-increasing provisions implies a major setback to the rebel group's opportunity to start a war.

<sup>6</sup> Angola, Namibia, Zimbabwe, Libya, and Chad supported the Congolese government and Rwanda, Uganda, and Burundi supported the rebels.



withdraw 20 km from camps set up for the voluntary demobilization of the Contras. While there were some minor violations of the cease-fire, these problems were quickly resolved and peace held (Anonymous 1990).

Like peacekeeping, separating the hostile forces is likely to raise both parties' costs of fighting. Once troops are separated and possibly a neutral zone is created between them, there are logistical costs involved in moving them back to the combat line. If the two sides had to give up existing camps and move their soldiers, a return to fighting means that new camp sites need to be set up, soldiers have to be reassembled, and the supply of weapons and other important logistical items needs to be reestablished.

Not only is there theoretical reason to believe that cost-increasing provisions are important, they are also quite common in civil war agreements. It turns out that third-party guarantees and power-sharing provisions are quite rare compared to more traditional cease-fire provisions such as the separation of forces (Harbom, Högbladh, and Wallensteen 2006). Despite their frequency, these more traditional cease-fire provisions have not received much scholarly attention—at least with respect to civil wars.<sup>7</sup>

In the context of interstate wars, Fortna (2004a) has systematically examined whether cease-fires increase the durability of peace between belligerents. Her work on interstate wars between 1946 and 1997 shows that highly institutionalized cease-fires (i.e., cease-fires that include a high number of safeguards) increase the durability of peace. She finds that, among other mechanisms, provisions that raise the costs of fighting, such as troop withdrawals, demilitarized zones, and peacekeeping tend to be particularly effective. We argue that these provisions, as well as additional cost-increasing provisions that are more applicable in civil wars (i.e., the withdrawal of foreign forces and border seals) should also help ensure peace after civil war.

Civil wars are sufficiently different from interstate wars to warrant a systematic investigation of whether cost-increasing provisions help increase the durability of peace after civil war. When interstate wars terminate, the belligerents are allowed to maintain their armies and withdraw into their own territories. At the end of civil wars, unless the civil war ends in independence of the rebel territory, the two sides need to live together in one state. For this to happen, both sides eventually need to demobilize, leaving them both vulnerable to defection by the other side. Rebels, of course, become particularly vulnerable when they have to leave their safe havens, disband their troops, and possibly disarm. Because peace requires demobilization, commitment problems are likely to be much more severe in civil wars than in interstate wars. Thus it is important to systematically examine whether the remedies prescribed for interstate wars also help in the more intractable civil war scenario.<sup>8</sup>

Using the bargaining model, we have integrated existing research into an overall framework of civil war settlements and have identified two types of provisions, fear-reducing and cost-increasing provisions that should help adversaries achieve their goal of lasting peace. Both fear-reducing and cost-increasing provisions reduce the chance that commitment problems lead to the outbreak of new hostilities. Fear-reducing provisions make it less likely that either side will behave opportunistically. By changing domestic institutions, power-sharing imposes internal constraints on the belligerents and, by threatening military action to enforce the peace agreement, third-party guarantees impose external constraints

<sup>7</sup> Peacekeeping is the obvious exception. There are numerous studies of the efficacy of peacekeeping in civil wars (e.g., Doyle and Sambanis 2000; Fortna 2004b, 2008).

<sup>8</sup> Furthermore, recent results by Lo, Hashimoto, and Reiter (2008) on the effectiveness of cease-fire provisions raise doubts regarding the generalizability of Fortna's (2004a) results. Lo et al. extend the time-frame of Fortna's study by collecting cease-fire agreements between 1914 and 2001. In this sample, Fortna's results no longer hold.

on the parties. Fear-reducing provisions are designed to ensure long-term compliance with the peace deal, while cost-increasing provisions are more about short-term compliance. The peace agreement would be particularly at risk in the early stages of the peace process when fears that the opponent could defect later on may lead a group to prefer to go back to war while it still possesses its fighting capabilities. Cost-increasing provisions make it more likely that the group prefers to stick to the peace deal even if it perceives a risk of defection by the other side.

Although we consider fear-reducing and cost-increasing provisions to be analytically distinct, we acknowledge that they may be difficult to distinguish in practice. Both types of provisions reduce the chance that commitment problems lead to the breakdown of peace by making it difficult for either side to go back to war. The distinction between fear-reducing or cost-increasing provisions is particularly delicate with respect to third-party guarantees. To the extent that such guarantees require the stationing of troops in a civil-war torn country, they are closely related to peacekeeping missions, which we classified as cost-increasing. The reason we consider third-party guarantees to be primarily fear-reducing is because they do not simply increase the costs of fighting but also imply a willingness to intervene actively to protect a group against opportunism by the other side, thus reducing that groups' fear of the consequences of defection by the enemy.<sup>9</sup>

### **Are Agreements Endogenous?**

One concern about assessing the effect of agreements on the durability of peace is that agreements may be endogenous to factors that also affect the durability of peace. It is possible that the parties to a civil war are more likely to consent to an agreement under particular conditions and that these conditions rather than the agreement design explain why no more fighting takes place.

Agreement endogeneity is an important concern that needs to be tackled in order to convincingly show that agreement provisions reduce the chance of renewed conflict. Recent work by Walter (2002), Fortna (2003, 2004a), and Hartzell and Hoddie (2007) illustrates a possible way to deal with endogeneity issues. In order to examine whether third-party guarantees and power-sharing have an independent effect on the decision to negotiate and implement an agreement, Walter conducts analyses in which she examines whether other factors that make the conclusion and implementation of a negotiated settlement more likely to predict when adversaries seek third-party guarantees and power-sharing. She finds that none of these background factors are good predictors of third-party guarantees and power-sharing. Similarly, Fortna finds that cease-fire agreements tend to be more highly institutionalized when situational factors predict a particularly fragile peace. Hartzell and Hoddie's conclusion that longer conflicts are more likely to end with settlements including power-sharing provisions provides further support for the notion that power-sharing provisions appear in harder cases. These tests allow Walter, Hartzell and Hoddie, and Fortna to conclude that third-party guarantees, power-sharing, and highly institutionalized agreements more generally are not epiphenomenal.<sup>10</sup>

<sup>9</sup> Peacekeeping can thus work as a cost-increasing mechanism as well as a fear-reducing one, depending on the nature of the mission. Peacekeeping is also likely to be important due to its information revelation functions. As Fortna (2004b, 2008) points out, peacekeeping may operate in a variety of ways to ensure longer lasting peace.

<sup>10</sup> Fortna (2004a) points out that those skeptical of the independent effects of agreements can still argue that unobservable factors such as the political will of the parties affect both the content of the agreement and the durability of peace. However, to the extent that these factors are unobservable it is not possible to disprove this argument.

In this article, we employ a similar approach. We estimate statistical models in which the presence of fear-reducing and cost-increasing provisions is predicted by factors that have been found to increase or decrease the risk of civil war recurrence, such as whether the issue at stake is identity, the costs in terms of battle deaths of the previous war, and the duration of the previous war (Doyle and Sambanis 2000; Hartzell, Hoddie, and Rothchild 2001; Licklider 1995; Walter 1997). If we find that factors that predict peace also increase the chance that belligerents conclude fear-reducing and cost-increasing provisions, this lends support to the notion that agreements are epiphenomenal. On the other hand, if fear-reducing and cost-increasing provisions tend to be present when background factors predict conflict, or if there is no association between background factors and the presence of agreement provisions, this should lend support to the notion that agreements are functional.

### Research Design

In our analysis of the effect of settlement provisions on the durability of peace after civil wars, we use the Correlates of War (COW) definition of civil war. An intrastate conflict is considered a civil war if: (1) each year the conflict leads to at least 1,000 battle fatalities; (2) the central government is one of the principal actors; (3) all parties demonstrate effective resistance; and (4) the conflict takes place within the recognized boundaries of a state (Small and Singer 1982).

To determine which civil wars ended in negotiated settlements, we build upon the list of negotiated settlements identified by Hartzell and Hoddie (2003). An agreement is considered a negotiated settlement if representatives of opposing sides in a conflict held face-to-face talks (Hartzell and Hoddie 2003; 323). Negotiated settlements include cease-fire agreements as well as more comprehensive peace agreements between domestic belligerents.<sup>11</sup>

Hartzell and Hoddie (2003) identify 38 negotiated civil war settlements between 1945 and 1998. We go beyond Hartzell and Hoddie's list and include civil war settlements signed between 1999 and 2004. To identify settlements signed after 1998, we use Rothchild and Roeder's (2005) list of major settlements in ethnically divided societies and the PRIO/UCDP Peace Agreement Dataset (Högbladh 2006). We added 10 new cases to the list of Hartzell and Hoddie (2003).<sup>12</sup>

As our goal is to code fear-reducing and cost-increasing provisions, we need to obtain the actual text of the agreements. For this purpose, we utilize the Peace Agreements Digital Collections of the United States Institute of Peace (USIP), the International Conflict Research Project (INCORE), and secondary literature on individual countries.<sup>13</sup> We have been unable to locate sufficient information, especially on cost-increasing provisions, regarding two civil wars.<sup>14</sup> Therefore, we have a total of 46 cases of civil wars to evaluate our hypotheses.

<sup>11</sup> Not only are our theoretical expectations for the two types of agreements the same, but Hartzell and Hoddie's (2007) work shows that the effect of agreement design on the durability of peace is similar for cease-fires and peace agreements. Including cease-fires alongside peace agreements also increases the number of observations and allows us to better assess the impact of cost-increasing provisions which tend to be more common in cease-fires. When we run our analysis without cease-fires (Azerbaijan, Chechnya, Croatia, Georgia Abkhaz, Georgia Ossetia, and Moldova), we find that the main results stay the same. The only difference when truces are excluded is that third-party security guarantees barely miss significance ( $p = .102$ ).

<sup>12</sup> The new cases include the settlements signed after the following civil wars: Angola 1998–2001, Liberia 2003, Philippines 2000, Sierra Leone 1998–1999, Sudan 1983–2002, Sudan 2003–2004, Kosovo 1998–1999, Afghanistan 1978–2001, Democratic Republic of Congo 1997–2001, and Burundi 2000–2002.

<sup>13</sup> We would like to thank Johan Brosche and Stina Högbladh of the Uppsala Conflict Data Program (UCDP) for sending us information about several agreements concerning Chad and the Democratic Republic of Congo. We would also like to thank Caroline Hartzell for providing us with information on sources for a number of agreements.

<sup>14</sup> India 1946–1949 and Malaysia 1948–1956.

We operationalize our dependent variable as the number of months that peace continues following the signing of a settlement through December 31, 2005. In our data, 18 civil wars (39 percent) restarted at some point after the signing of the settlement. In order to identify whether and when civil war reerupted we consult the Correlates of War (COW)<sup>15</sup> data set on intrastate wars and the UCDP/PRIO Armed Conflict Dataset.<sup>16</sup> Both data sets identify the parties involved in each civil war. This makes it possible to match the belligerents in one civil war to the belligerents in a later civil war. If civil war recurs between the same domestic groups, we consider peace to have failed. Once the civil war ends and a new agreement is negotiated between the same parties, this starts a new case. Thus, the same two domestic antagonists can produce multiple cases.<sup>17</sup> If no new civil war occurs after the conclusion of an agreement, the case is coded as right-censored at the end of our observation period in 2005.

Each agreement is coded for the presence of fear-reducing and cost-increasing provisions. Fear-reducing provisions are those provisions that help minimize the groups' fears of opportunism by the other side by imposing internal or external constraints on the belligerents' ability to renege on the deal. Both power-sharing institutions and third-party guarantees can be considered fear-reducing.

Similarly to Hartzell and Hoddie (2003, 2007), we code four types of power-sharing provisions: political, territorial, military, and economic. Unlike Hartzell and Hoddie, we include separate variables for each dimension. We are interested in examining whether each dimension has an effect independent of the presence or absence of other power-sharing dimensions and whether one dimension might be more central than others. We hypothesize that, due to its centrality to decision making in other dimensions, political power-sharing should be particularly crucial for ensuring lasting peace.

In order to examine our hypotheses, we employ count variables for each type of power-sharing. Count measures are preferable over dichotomous measures for two reasons. First, they allow us to keep as much information as possible about the variance in the extent of power-sharing in each dimension. Second, and more importantly, the relationship between the number of power-sharing provisions in each dimension and the durability of peace should be linear. For example, if only one type of political power-sharing is put in place this should not provide as much security to the parties as when multiple aspects of political power-sharing are mandated by the agreement. The parties should feel more secure if they not only participate in legislating but are also represented in the cabinet and/or in the civil service, especially the police force.

Hartzell and Hoddie (2003, 2007) argue that the different dimensions of power-sharing may reinforce one another. While there may be such a reinforcing effect, it also makes sense to expect or at least test for the possibility of an independent effect of each dimension of power-sharing. Furthermore, when examining whether there are such independent effects, count variables of the number of provisions in each dimension should be the most appropriate measures. The reinforcing effect of particular provisions within one dimension should be even more pronounced than the reinforcing effect across dimensions.

<sup>15</sup> The Correlates of War dataset on intrastate wars covers civil wars between 1944 and 1997. The most current version is 3.0 (Sarkees 2000).

<sup>16</sup> The UCDP/PRIO Armed Conflict Dataset codes two types of civil violence: minor clashes and civil wars (Gleditsch et al. 2002). The former includes conflicts with 25–999 battle-related deaths in a given year and the latter includes conflicts with at least 1,000 battle-related deaths in a given year. Given that our interest in this study is in whether fear-reducing and cost-increasing provisions can prevent further large-scale violence, we consider only the resumption of civil war as failures.

<sup>17</sup> Because observations stemming from the same state are not independent of one another, we estimate robust standard errors clustered on the states.

We create a count variable for the presence of any of the following political power-sharing provisions: (1) whether the new state conducts elections in the legislature based on the principles of proportional or equal representation; (2) whether each group is guaranteed a number of cabinet and ministerial posts; and (3) whether each group is represented in the civil service (such as the police force). In our dataset, 14 cases (30 percent) have all three political power-sharing provisions in place. Ten cases (22 percent) have two of the provisions, and 10 cases (22 percent) have only one of the political power-sharing provisions present.

Military power-sharing is coded as a count variable based on the following provisions: (1) military forces of the disputing parties are integrated into the defense force of the new state, and (2) representatives of the rebels are appointed to leadership positions. In our data set, seven cases (15 percent) have both military power-sharing provisions present and 22 cases (48 percent) have only one of them in place.

Economic power-sharing is coded as a count variable of the following provisions: (1) resources are to be redistributed in favor of disadvantaged groups, and (2) the agreement specifies particular redistributive policies (e.g., a percentage share of oil revenues). In our data set, three cases (7 percent) have both economic power-sharing provisions in place and 13 cases (28 percent) have one of the economic power-sharing provisions present. Finally, we create a count variable of territorial power-sharing with the following two provisions: (1) the group is allowed to exercise control over local issues in a particular region (autonomy), and (2) all substate units are given powers separate from the central government (federalism). None of the agreements contain both provisions at the same time. Sixteen cases (35 percent) include one of the territorial power-sharing provisions.

Third-party guarantees are commitments of an outside power to deploy troops to protect the antagonists from each other should one of them defect from the agreement. While our conceptual definition of third-party guarantees is commensurate with Walter's (1997, 2002) approach, we do deviate with respect to our operationalization of the concept. To be more specific, our operationalization of third-party guarantees is narrower than Walter's. Walter (2002, 64) includes as third-party guarantees not only promises of third parties to protect the rebels and to enforce the agreement but also promises to monitor and verify the cease-fire. We believe that these are qualitatively different commitments and only actual promises to defend the rebels and/or enforce the agreement fit our notion of third-party guarantees as fear-reducing. Only if the third party stations troops to enforce the agreement can the groups rest assured that they will not fall victim to the other side's opportunism. Simple monitoring of the cease-fire terms should not instill either party with a sense of safety as the third party is not actually there to do anything to protect them.<sup>18</sup> This means that we only code promises of a third-party to intervene should one side renege and peacekeeping missions that have enforcement of the agreement as their goal as third-party guarantees. We identify six cases in which third parties promised to intervene in case of agreement violation and stationed troops on the ground for this purpose.<sup>19</sup> Other third-party guarantees are enforcement peacekeeping missions by international organizations. In order to identify whether an enforcement mission was deployed we used Fortna's (2004b) data. We identify eight cases that

<sup>18</sup> The case of the peacekeeping mission to Rwanda is instructive here. While the Arusha Accords called for an enforcement mission, the UN peacekeeping mission that arrived on the scene had a much more limited mandate: it was supposed to simply monitor the cease-fire. As is well-known, the cease-fire was followed by a genocide that took the lives of hundreds of thousands. During the atrocities, the UN troops were ordered not to intervene to protect Tutsi lives.

<sup>19</sup> Cambodia 1970–1991, Dominican Republic 1965, Lebanon 1958, Moldova 1992, Sudan 1963–1972, and Zimbabwe 1972–1979.



include enforcement missions.<sup>20</sup> This gives us a total of 14 cases of third-party guarantees.

In order to get at the effect of cost-increasing provisions we look at how many of the following mechanisms were present in the settlement effort: separation of forces, border seals, withdrawal of foreign forces, and peacekeeping. Note that while we argue that peacekeeping missions that focus on monitoring or other more traditional tasks do not fit our conceptualization of third-party guarantees, we do believe them to be important components of the peaceful settlement of civil wars. Monitoring missions, traditional peacekeeping, and even multidimensional peacekeeping increase the costs of fighting for the belligerents. The presence of peacekeepers, even if they are under orders not to retaliate, may increase the costs of fighting by imposing international audience costs (Fortna 2004a).

Our measure for cost-increasing provisions is a count variable that ranges from 0 (no cost-increasing provisions present) to 4 (all cost-increasing provisions present). A count variable seems appropriate given that we expect a linear relationship between the number of cost-increasing provisions and the likelihood of civil war recurrence. While a single provision may impose high-enough costs on the domestic belligerents, the more the costs of fighting are increased (i.e., the more provisions are present), the more likely the parties are to remain at peace. Furthermore, we expect a greater number of cost-increasing provisions to be more likely to be associated with peace because if multiple of these provisions are present it is more likely that the rebels' and the government's costs of fighting are balanced. If only one cost-increasing provision is present it may be the case that it is a provision that affects one party more than the other (e.g., the withdrawal of foreign forces) but if multiple provisions are present (e.g., the withdrawal of foreign forces and peacekeeping) then both parties' costs of fighting will be higher. Under these conditions, the likelihood of further conflict should be lower. In our data set, two cases (4 percent) have all four cost indicators present, six cases (13 percent) have three indicators, 15 cases (33 percent) have two of them in place, and 15 cases (33 percent) have only one of the cost-increasing provisions present. Appendix A provides some examples of cost-increasing provisions.

One concern about research that relies primarily on coding the content of agreements is whether the agreement was actually implemented. For instance, cost-increasing provisions need to be implemented in order to have a conflict-reducing effect. However, because they are usually put in place with the signing of the agreement, there is less concern about implementation. With respect to third-party guarantees, we are also not concerned about questions of implementation: all third-party guarantees were backed by a deployment of troops. More problematic are power-sharing provisions. They are usually not set up when the agreement is signed but rather there is a plan to create these institutions in the future. Given this time-inconsistency, there is a greater possibility that power-sharing provisions delineated in the agreement are not actually implemented. Fortunately, Hartzell and Hoddie (2003) originally coded only agreements for which belligerents made an actual effort at implementation. Here we rely on this data for coding power-sharing between 1945 and 1998. Furthermore, for agreements signed after 1990 we consult the UCDP Peace Agreement Dataset. The UCDP data includes information about whether the implementation of the agreement failed. Implementation is coded as having failed if the validity of the agreement is questioned by at least one of the parties (Högbladh 2006).

<sup>20</sup> According to Fortna (2004b), enforcement missions were deployed after the following civil wars: Bosnia 1992–1995, Croatia 1995, Georgia (Abkhaz) 1992–1994, Liberia 1989–1993, Tajikistan 1992–1997, and Sierra Leone 1998–1999. We also coded Afghanistan 1978–2001 and Kosovo 1998–1999, which are outside the timeframe of Fortna's study, as having enforcement missions.

The nature of the previous conflict might also affect the longevity of civil war settlements and, hence, we include three variables in our analysis to control for it: the issue at stake, the costs of the previous war, and the duration of the previous war. These variables are intended to measure the existence and intensity of ongoing security concerns between the domestic groups after the fighting stops. With regards to the issue at stake, some scholars suggest that identity issues (related to ethnic, religious, and racial grievances) are less divisible and hence more intractable than issues about socio-economic and ideological interests (Doyle and Sambanis 2000; Kaufmann 1996; Licklider 1995). In addition, security concerns associated with identity issues are likely to be higher than those associated with economic or ideological issues (Kaufmann 1996). We use Fearon and Laitin's (2003) data set to identify whether the issue at stake in the previous civil war had any ethnicity component. We code the issue variable 2 if the civil war was over ethnic issues, 1 if the war had some ethnic component, and 0 if the war was not about ethnic identity.<sup>21</sup>

Another factor that may affect postwar stability is the costs of the foregoing war (e.g., Doyle and Sambanis 2000; Fortna 2003; Hartzell and Hoddie 2003). Wars with high casualty rates lead to greater security concerns and thus lower levels of trust between the domestic enemies. Lack of trust in turn makes it more likely that one side's fear that the other will renege in the future leads it to renege first. Following Hartzell and Hoddie (2003), we measure the costs of war by dividing the number, in thousands, of battle-related deaths by war duration and then logging the result.<sup>22</sup>

Finally, the duration of the previous war may also affect the endurance of post-settlement peace. There are two opposing arguments regarding this relationship. On the one hand, longer wars provide more information about the intentions and capabilities of the enemy and indicate that the likelihood of total victory is not high. Long wars can also induce war weariness. If this is the case, belligerents should be more willing to stick to a negotiated settlement (Hartzell and Hoddie 2007). On the other hand, if parties have fought for a long time the animosity between them is likely to be greater and they should be less likely to trust one another. Longer wars are also associated with higher costs, which is likely to have a negative effect on the durability of peace. Therefore, longer wars may be associated with less enduring post-settlement peace. We measure the duration of previous war in terms of the logged number of months.<sup>23</sup>

To address the problem of agreement endogeneity, we first estimate a number of statistical models that predict the presence (or number) of fear-reducing and cost-increasing provisions based on whether the conflict is one of identity, based on the costs of the previous civil war, and based on the duration of the foregoing war. We use logit or ordered probit regressions in these analyses.

We then turn our focus to investigating the effect of fear-reducing and cost-increasing provisions. The unit of analysis is a civil war resolved through a negotiated agreement between 1945 and 2004. Given that the dependent variable is the duration of time until either the civil war reerupts between the two parties or the observation is censored, the appropriate statistical technique is an event history model. Scholars can choose among a variety of nonparametric and parametric specifications depending on their assumptions about the hazard rate, that

<sup>21</sup> In our data set, 25 civil wars (54 percent) are over ethnic issues, 12 cases (26 percent) have some ethnic component, and nine cases (20 percent) do not have any ethnic component.

<sup>22</sup> For the negotiated settlement cases between 1945 and 1998 we use Hartzell and Hoddie's (2003) data. For the negotiated settlement that we added we base our estimate of the costs of war on the PRIO data (Gleditsch et al. 2002). In our data set, this variable ranges from -2.5 to 1.82 with a mean of -0.49 and a standard deviation of 1.23.

<sup>23</sup> As with the costs of war, we use the information provided by Hartzell and Hoddie (2003) for cases of negotiated settlements between 1945 and 1998. For our newly added cases we rely on the PRIO data (Gleditsch et al. 2002). In our data set, this variable ranges from 0.48 to 2.61 with a mean of 1.6 and a standard deviation of 0.56.

is, the instantaneous rate of failure at time  $t$  conditional on survival until time  $t$ . Box-Steffensmeier and Jones (2004) argue that the more flexible Cox proportional hazards model is generally preferable over parametric models. The problem with parametric models is that if their assumptions about the shape of the hazard are violated conclusions regarding the effect of the covariates and duration time may be deceptive. Given these concerns and the fact that our baseline hazard indicates nonmonotonicity, we follow Box-Steffensmeier and Jones' recommendation and use a Cox proportional hazards model.

### Findings

Our empirical analysis begins with an assessment of whether fear-reducing and cost-increasing provisions are endogenous to other factors that may affect the durability of peace. We run four separate ordered probit models in which we regress the presence of political, military, and economic power-sharing and cost-increasing provisions on issue type, the costs of the previous civil war, and the duration of the previous war. We also estimate probit models for the effect of these situational variables on third-party guarantees and on territorial power-sharing. As Table 1 shows, with very few exceptions, these tests reveal that the situational variables have no statistically significant effect on whether fear-reducing or cost-increasing provisions are present.<sup>24</sup> This finding suggests that fear-reducing and cost-increasing provisions are not endogenous to situational factors that previous scholarship has found to be important predictors of civil war recurrence.

Our second step is to assess the effects of fear-reducing and cost-increasing provisions on the durability of peace after civil war, controlling for issue type, the costs of the previous war, and the duration of the previous war. We present the findings from the Cox proportional hazards model in Table 2. Variables with hazard ratios greater than 1 decrease the durability of peace whereas variables with hazard ratios smaller than 1 increase the durability of peace. For example, a hazard ratio of 3 would suggest that the risk of war triples as the value of the variable increases, whereas a hazard ratio is 0.5 indicates that the risk of another civil war drops by half.<sup>25</sup>

Drawing on the existing literature on power-sharing and third-party guarantees, Hypothesis 1 predicts a positive relationship between fear-reducing provisions and the durability of peace. Hypothesis 2 suggests that among the power-sharing dimensions, political power-sharing should be particularly important. Our results indicate support for both hypotheses.

Table 2 shows that the presence of third-party security guarantees decreases the likelihood of renewed conflict by 69 percent. This finding is consistent with the literature and our expectations (Walter 1997, 2002). With regard to power-sharing, the results demonstrate that political power-sharing is particularly

<sup>24</sup> None of the situational variables are statistically significant for political or military power-sharing, cost-increasing provisions, or third-party guarantees. Economic power-sharing is more likely if the previous war was longer and territorial power-sharing is more likely when the issue under dispute is identity and if the duration of the previous war was longer.

<sup>25</sup> We tested the proportional hazards assumption by calculating the Grambsch-Therneau and Harrell's rho statistics. Two variables appear to have nonproportional effects on the hazard rate: the costs of the previous civil war and its duration. This is not surprising as these variables are both about the previous war rather than about the postwar situation and it is not necessarily to be expected that their effect remains constant over time. Given the small number of cases, the inclusion of interaction terms between the offending variables as a function of time, which should help correct for nonproportionality, imposes too much strain on the empirical model. Instead, we run the analysis excluding the two problematic variables. The results for power-sharing, third-party guarantees, cost-increasing provisions, and issue are fully consistent with the results depicted in Table 2, both in terms of significance levels and substantive effects. There is no indication that this reduced model violates the proportional hazards assumption, thus confirming the results regarding the effects of our core theoretical variables.

TABLE 1. Results of Endogeneity Test for Agreement Provisions

	<i>Cost-Increasing</i>	<i>Political Power-Sharing</i>	<i>Territorial Power-Sharing</i>	<i>Military Power-Sharing</i>	<i>Economic Power-Sharing</i>	<i>Third Party Guarantees</i>
Ethnic Issue	-0.043 (0.206)	-0.012 (0.203)	0.688** (0.330)	0.248 (0.206)	0.017 (0.245)	-0.124 (0.264)
Costs of Previous War	0.045 (0.163)	0.033 (0.119)	-0.195 (0.170)	-0.001 (0.127)	-0.224 (0.143)	0.201 (0.161)
Duration of Previous War	-0.154 (0.291)	0.161 (0.335)	0.802** (0.395)	0.490 (0.347)	0.683* (0.395)	-0.534 (0.353)
Constant			-2.822*** (0.890)			0.581 (0.724)
Cut 1	-1.272 (0.563)	-0.411 (0.725)		0.781 (0.668)	1.671 (0.786)	
Cut 2	-0.330 (0.590)	0.180 (0.717)		2.207 (0.688)	2.909 (0.782)	
Cut 3	0.611 (0.582)	0.744 (0.733)				
Cut 4	1.393 (0.708)					
N	46	46	46	46	46	46
Log Likelihood	-65.884	-63.118	-24.379	-44.684	-34.628	-26.464

*Note.* Robust standard errors in parentheses are calculated assuming potential nonindependence among wars associated with the same state.  
\* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

TABLE 2. Cox Proportional Hazards Model of Civil War Settlement Stability, 1945–2005

	<i>Hazard Ratios</i> ( <i>Standard Error</i> )	<i>Substantive Effects</i>
Political Power-Sharing Provisions	0.708* (0.141)	29% decrease
Territorial Power-Sharing Provisions	0.323 (0.290)	<i>Right direction but no significant effect</i>
Military Power-Sharing Provisions	1.296 (0.570)	<i>Wrong direction and no significant effect</i>
Economic Power-Sharing Provisions	1.761 (0.821)	<i>Wrong direction and no significant effect</i>
Third-Party Guarantees	0.312* (0.210)	69% decrease
Cost-Increasing Provisions	0.610*** (0.103)	39% decrease
Ethnic Issue	2.966*** (1.225)	197% increase
Costs of Previous War	1.445* (0.313)	45% increase
Duration of Previous War	1.166 (0.970)	<i>No significant effect</i>
<i>N</i> (failures)	46 (18)	
Log Likelihood	–47.504	

*Note.* Robust standard errors in parentheses are calculated assuming potential nonindependence among wars associated with the same state.

\* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

important: each additional dimensions of political power-sharing reduces the risk of settlement failure by about 29 percent. We also find that although the presence of territorial power-sharing provisions decreases the risk of return to war, this effect does not reach conventional levels of significance. Military power-sharing and economic power-sharing are also not significant predictors of the durability of peace.<sup>26</sup>

That political power-sharing has a stronger effect on the durability of peace than other types of power-sharing makes sense theoretically. Political power-sharing enables both groups to have an active role in the formulation and execution of policies at the national level. Being able to participate in political life empowers both groups and hence reduces grievances and fears of exploitation by the opponent group. Political power-sharing is particularly beneficial for the rebels. If the rebels are legally represented at all levels of the state apparatus, the group that used to wield political power single-handedly is constrained in taking any measure—military, economic, social, or cultural—that may be considered detrimental to the rebels' well-being. Holding a position of influence improves the rebels' future prospects. Therefore, it is not surprising to find that the inclusion of political power-sharing provisions increases the durability of civil war settlements.

It is important to note that our findings regarding the effect of political power-sharing diverge somewhat from previous studies. Walter (2002) finds that both political and territorial power-sharing are important, while Hartzell and Hoddie (2007) only find the latter to be statistically significant. These discrepancies in findings are most likely explained by differences in measurement and case selection. We employ count variables for the number of power-sharing provisions within each dimension rather than dummy variables. In terms of case selection, Walter focuses on settlements between 1940 and 1992 and Hartzell and Hoddie consider negotiated agreements between 1945 and 1999. We use Hartzell and Hoddie's (2003) original list of negotiated agreements and add 10

<sup>26</sup> To allow comparison to previous studies, we ran an analysis that uses an aggregate measure of power-sharing as suggested by Hartzell and Hoddie (2003, 2007). We find that the aggregate measure is not statistically significant. However, when we exclude our newly collected cases and specify our model in a way closer to theirs, the aggregate measure does significantly increase the durability of peace. Given the small number of cases civil war scholars work with, such differences in results are not surprising. However, it is noticeable that we are able to confirm the importance of power-sharing, especially political power-sharing.



new cases that occurred between 1999 and 2005. We also extend the observation period of Hartzell and Hoddie's original cases until 2005.<sup>27</sup>

In addition to providing strong support for the role of fear-reducing provisions in ensuring lasting peace, our model also lends strong support to our main Hypothesis 3. Table 2 shows that the inclusion of cost-increasing provisions in civil war settlements significantly decreases the likelihood of civil war recurrence. We find that each additional type of cost-increasing provision reduces the hazard of renewed warfare by about 39 percent. As we predicted, cost-increasing provisions such as peacekeeping, separation of troops, border seals, and the withdrawal of foreign forces provide important mechanisms for dealing with commitment problems and hence reduce the likelihood that the former belligerents renege on the agreement.<sup>28</sup> This finding suggests that some of the provisions that Fortna (2003, 2004a) has identified as important in the context of interstate wars work in civil wars as well. While these more typical cease-fire provisions have not received much attention in earlier work on civil war settlements, they do appear to be important components of civil war agreement design.

The practical importance of a comprehensive cease-fire agreement becomes clear when considering the case of Burundi. While the 2000 Arusha Agreement contained detailed provisions regarding a transitional government and power-sharing, it lacked a comprehensive cease-fire between the government and the major rebel factions. Curtis (2006) suggests that the lack of a comprehensive cease-fire impeded the peace process. When groups were dissatisfied with political aspects of the agreement, they tried to achieve their goals by using force. On the other hand, the agreements concluded in 2002 and 2003, which included provisions for the separation of forces, peacekeeping, and the withdrawal of foreign troops, were much more successful in preventing fighting between the signatories.<sup>29</sup>

Finally, our results show that the variables we included in our model to capture the effect of the nature of the previous conflict generally decrease the durability of peace. Civil wars with an ethnicity component are around 197 percent more likely to recur. This finding lends support to those who argue that identity issues are more intractable and conflict-prone than other issues. The costs of the previous conflict are also negatively related to the durability of peace; the higher the costs of the previous civil war, the higher the risk of renewed conflict. Finally, the relationship between the duration of the previous civil war and the hazard of renewed warfare is not statistically significant. This latter finding is not surprising given the contradictory set of expectations regarding this variable.<sup>30</sup>

<sup>27</sup> It is worth noting that a number of our newly added civil war agreements that include political power-sharing provisions have not failed as of December 2005: Angola 1998–2001, Liberia 2003, Kosovo 1998–1999, Democratic Republic of Congo 1997–2001, and Burundi 2000–2002.

<sup>28</sup> We also considered the individual effects of the various cost-increasing provisions. Due to the low number of cases, we ran four separate models, introducing one provision at a time. Only peacekeeping and separation of forces have a statistically significant effect on reducing the risk of renewed war. This is not surprising as both peacekeeping and separation of forces raise the costs of fighting significantly and do so equally for both sides, whereas the impact of border seals and the withdrawal of foreign troops should be more variable and possibly focused on one side.

<sup>29</sup> By late 2003 all rebel groups with exception of PALIPEHUTU–FNL had signed cease-fire agreements with the government. This effectively terminated the civil war in Burundi but some violence between the government and PALIPEHUTU–FNL continued (Reyntjens 2006). PALIPEHUTU–FNL finally signed a cease-fire in September 2006.

<sup>30</sup> Scholars have argued that settlements concluded during the Cold War may be at greater risk for failure because of the continued supply of weapons by the superpowers (e.g., Hartzell and Hoddie 2003). We ran our analyses including a dummy variable that indicates whether the settlement was reached during or after the Cold War. Like Hartzell and Hoddie (2003, 2007), we find that Cold War is not a significant predictor of the durability of peace. This is likely to be the case due to the fact that, since the end of the Cold War, belligerents have found alternative external suppliers of weapons and soldiers, in particular neighboring states. See Salehyan (2007).

### Conclusion

Why do some civil war settlements produce a more durable peace than others? This study shows that the inclusion of certain types of provisions in civil war settlements has an important effect on whether these settlements create long-lasting peace. Drawing upon the bargaining theory of war, we argue that provisions that address commitment problems between the domestic belligerents are likely to contribute to postsettlement stability and peace. We identify two types of commitment-enhancing provisions: fear-reducing and cost-increasing provisions.

The existing literature informs us that fear-reducing provisions, that is, power-sharing provisions and third-party guarantees, increase the prospect of durable peace. Our article confirms the importance of both of these mechanisms in the implementation of civil war settlements. With respect to power-sharing, the existing research has emphasized the role of aggregate power-sharing institutions. We argue that considering each dimension of power-sharing separately might help provide a more nuanced understanding of whether and how power-sharing institutions contribute to peace. Specifically, we hypothesize that one type of power-sharing, political power-sharing, should be particularly potent at addressing commitment problems and reducing the likelihood of further conflict. We test this proposition using a slightly different methodology, a longer observation period, and a greater number of cases than previous studies. Our results indicate that political power-sharing is indeed the most important type of power-sharing and, in fact, it is the only type of power-sharing found to be statistically significant. This is a potentially important finding because it puts forward specific measures that the belligerents and the international community can take in order to prevent the resumption of civil wars: the introduction of a more representative electoral system, the distribution of cabinet and ministerial portfolios among the contending groups, and the integration of the rebels into the civil service.

We also argue that cost-increasing provisions such as the separation of forces, sealed borders, the withdrawal of foreign troops, and peacekeeping contribute to peace by increasing the two sides' incentives to uphold a deal, once it is signed. The commitment problems at the end of civil wars cause both sides to be "quick on the trigger." A group—most likely the rebels—may prefer to go to war if it anticipates that the other side may behave opportunistically. Because cost-increasing provisions are designed to increase the belligerents' costs of fighting, these provisions help make fighting an unattractive alternative. If a belligerent's expected utility of fighting is lower than its utility of sticking to the agreement and if it appears that the other side will not attack due to its own increased costs of fighting, a long-lasting peace becomes more likely. The idea that cost-increasing provisions increase the prospects of postsettlement stability finds strong support in our analysis. We show that each additional type of cost-increasing provision reduces the hazard of renewed warfare by about 39 percent.

Two sets of policy recommendations follow from these findings. First, our research indicates that the international community should consider prioritizing political power-sharing arrangements in peace treaties. The evidence suggests that high levels of political power-sharing institutions are at least partially responsible for the durable peace we witness in Angola, Mozambique, Nicaragua, and South Africa.

Second, our study emphasizes the importance of including traditional cease-fire provisions, such as the separation of forces, when crafting agreements to terminate hostilities. Even in the absence of third-party guarantees, which may be in short supply, these provisions can increase the durability of peace by mitigating commitment problems. Cost-increasing provisions, political power-sharing

arrangements and third party security guarantees all appear to be promising components of civil war agreement design.

### Appendix A: Examples of Cost-Increasing Provisions

#### *Withdrawal of Foreign Troops*

1999 Peace Agreement between the Government of Sierra Leone and the Revolutionary United Front of Sierra Leone:

Article XVIII: “All mercenaries, in any guise, shall be withdrawn from Sierra Leone immediately upon signing of the present Agreement.”

#### *Sealed Borders*

1993 Peace Agreement (Cotonou) between the Government of Liberia, the National Patriotic Front of Liberia (NPFL) and the United Liberation Movement of Liberia for Democracy (ULIMO):

Article 4, Point 3: “ECOMOG shall create zones or otherwise seal the borders of Liberia-Guinea, Liberia-Sierra Leone and Liberia-Cote d’Ivoire to prevent cross-border attacks, infiltration, or importation of arms.”

#### *Separation of Forces*

1992 Peace Agreement (Chapultepec) between the Government of El Salvador and the Frente Farabundo Martí para La Liberación Nacional (FMLN):

Chapter VII, Article 10: “The separation of forces shall take place in two stages, so that the Salvadoran armed forces (FAES) fall back progressively from their present positions until deployed as they would normally be in peacetime and the FMLN forces are concentrated progressively in designated locations within conflict areas as determined in Annex D.”

#### *Peacekeeping*

1993 Peace Agreement between the Government of the Republic of Rwanda and Rwandese Patriotic Front:

N’sele Cease-fire, Article III.1: “The verification and control of the cease-fire shall be conducted by the neutral military observer group under the supervision of the Secretary-General of OAU.”

### References

- ANONYMOUS. 1990. “ONUCA Mission Deemed a Success.” *UN Chronicle* 27 (3): 4–7.
- BAREGU, MWESIGA. 2006. “Congo in the Great Lakes Conflict.” In *Security Dynamics in Africa’s Great Lakes Region*, ed. Gilbert M. Khadiagala. Boulder: Lynne Rienner.
- BOX-STEFFENSMEIER, JANET, AND BRADFORD JONES. 2004. *Event History Modeling. A Guide for Social Scientists*. Cambridge: Cambridge University Press.
- CETINYAN, RUPEN. 2002. “Ethnic Bargaining in the Shadow of Third-Party Intervention.” *International Organization* 56 (3): 645–677.
- COLLIER, PAUL, AND ANKE HOFFLER. 2004. “Greed and Grievance in Civil War.” *Oxford Economic Papers* 56 (4): 563–595.
- CURTIS, DEVON. 2006. “Transitional Governance in Burundi and the Democratic Republic of the Congo.” In *Interim Governments: Institutional Bridges to Peace and Democracy?*, ed. Karen Guttieri, and Jessica Piombo. Washington, D.C.: United States Institute of Peace.
- DOYLE, MICHAEL W., AND NICHOLAS SAMBANIS. 2000. “International Peacebuilding: A Theoretical and Quantitative Analysis.” *American Political Science Review* 94 (4): 779–802.
- FEARON, JAMES. 1995a. “Rationalist Explanations for War.” *International Organization* 49 (3): 379–414.

- FEARON, JAMES. 1995b. "Ethnic War as a Commitment Problem." Paper presented at the 1995 American Political Science Association annual meeting, New York. Available at <http://www.stanford.edu/~jfearon/>. (Accessed November 11, 2007.)
- FEARON, JAMES. 1998. "Commitment Problems and the Spread of Ethnic Conflict." In *The International Spread of Ethnic Conflict*, ed. David Lake, and Donald Rothchild. Princeton: Princeton University Press.
- FEARON, JAMES, AND DAVID LAITIN. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97 (1): 75–90.
- FORTNA, VIRGINIA PAGE. 2003. "Scraps of Paper? Agreements and the Durability of Peace." *International Organization* 57 (2): 337–372.
- FORTNA, VIRGINIA PAGE. 2004a. *Peace Time: Cease-fire Agreements and the Durability of Peace*. Princeton: Princeton University Press.
- FORTNA, VIRGINIA PAGE. 2004b. "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil Wars." *International Studies Quarterly* 48 (2): 269–292.
- FORTNA, VIRGINIA PAGE. 2008. *Does Peacekeeping Work? Shaping Belligerents' Choices after Civil War*. Princeton: Princeton University Press.
- GLEDITSCH, NILS PETTER, PETER WALLENSTEEN, MIKAEL ERIKSSON, MARGARETA SOLLENBERG, AND HÅVARD STRAND. 2002. "Armed Conflict 1946–2001: A New Dataset." *Journal of Peace Research* 39 (5): 615–637.
- GRIGNON, FRANÇOIS. 2006. "Economic Agendas in the Congolese Peace Process." In *The Democratic Republic of Congo: Economic Dimensions of War and Peace*, ed. Michael Nest, François Grignin, and Emizet F. Kisangani. Boulder: Lynne Rienner.
- HARBOM, LOTTA, STINA HÖGBLADH, AND PETER WALLENSTEEN. 2006. "Armed Conflict and Peace Agreements." *Journal of Peace Research* 43 (5): 617–631.
- HARTZELL, CAROLINE A. 2006. "Structuring the Peace: Negotiated Settlements and the Construction of Conflict Management Institutions." In *Conflict Prevention and Peacebuilding in Post-War Societies: Sustaining the Peace*, ed. T. David Mason, and James D. Meernik. New York: Routledge.
- 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, AND MATTHEW HODDIE. 2007. *Crafting Peace: Power-Sharing Institutions and the Negotiated Settlement of Civil Wars*. University Park, P.A.: The Pennsylvania State University Press.
- 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. 2005. "Power Sharing in Peace Settlements: Initiating the Transition from Civil War." In *Sustainable Peace: Power and Democracy After Civil Wars*, ed. Philip Roeder, and Donald Rothchild. Ithaca: Cornell University Press.
- HÖGBLADH, STINA. 2006. *UCDP Peace Agreement Dataset Codebook Version 1.0*. Uppsala Conflict Data Program. Available at [http://www.pcr.uu.se/publications/UCDP\\_pub/UCDP%20Peace%20Agreement%20Dataset%20Codebook.pdf](http://www.pcr.uu.se/publications/UCDP_pub/UCDP%20Peace%20Agreement%20Dataset%20Codebook.pdf). (Accessed November 11, 2007.)
- KAUFMANN, CHAIM D. 1996. "Possible and Impossible Solutions to Ethnic Civil War." *International Security* 20 (4): 136–175.
- LAKE, DAVID A. 2003. "International Relations Theory and Internal Conflict: Insights from the Interstices." *International Studies Review* 5 (4): 81–89.
- LICKLIDER, ROY. 1995. "The Consequences of Negotiated Settlements in Civil Wars, 1945–1993." *American Political Science Review* 89 (3): 681–687.
- LIJPHART, AREND. 1977. *Democracy in Plural Societies: A Comparative Explanation*. New Haven: Yale University Press.
- LIJPHART, AREND. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*. New Haven: Yale University Press.
- LO, NIGEL, BARRY HASHIMOTO, AND DAN REITER. 2008. "Ensuring Peace: Foreign Imposed Regime Change and Postwar Peace Duration, 1914–2001." *International Organization*. 62 (4): 717–736.
- LYONS, TERENCE. 2005. *Demilitarizing Politics. Elections on the Uncertain Road to Peace*. Boulder: Lynne Rienner.
- MUCHAI, AUGUSTA. 2002. "Arms Proliferation and the Congo War." In *The African Stakes of the Congo War*, ed. John F. Clark. New York: Palgrave Macmillan.
- POWELL, ROBERT. 2004. "The Inefficient Use of Power: Costly Conflict with Complete Information." *American Political Science Review* 98 (2): 231–241.
- REYNTJENS, FILIP. 2006. "Briefing: Burundi: A Peaceful Transition After a Decade of War?" *African Affairs* 105 (418): 117–135.

- ROTHCHILD, DONALD, AND PHILIP G. ROEDER. 2005. "Dilemmas of State-Building in Divided Societies." In *Sustainable Peace: Power and Democracy After Civil Wars*, ed. Philip Roeder, and Donald Rothchild. Ithaca: Cornell University Press.
- SALEHYAN, IDEAN. 2007. "Transnational Rebels: Neighboring States as Sanctuary for Rebel Groups." *World Politics* 59 (2): 217–242.
- SARKEES, MEREDITH REID. 2000. "The Correlates of War Data on War: An Update to 1997." *Conflict Management and Peace Science* 18 (1): 123–144.
- SISK, TIMOTHY D. 1996. *Power Sharing and International Mediation in Ethnic Conflicts*. Washington, D.C.: U.S. Institute of Peace Press.
- SMALL, MELVIN, AND J. DAVID SINGER. 1982. *Resort to Arms: International and Civil Wars, 1816–1980*. Beverly Hills: Sage.
- WALTER, BARBARA F. 1997. "The Critical Barrier to Civil War Settlement." *International Organization* 51 (3): 335–364.
- WALTER, BARBARA F. 2002. *Committing to Peace: The Successful Settlement of Civil Wars*. Princeton: Princeton University Press.
- WALTER, BARBARA F. 2006. "Information, Uncertainty, and the Decision to Secede." *International Organization* 60 (1): 105–135.