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Sustaining the Peace: Determinants of Civil War Recurrence*

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Over half of all civil wars that began and ended between 1944 and 1997 were followed by at least one if not more episodes of civil war. We present a model to explain which characteristics of a civil war and the post-war environment make civil war more or less likely to recur. We test this model with data on civil wars that began and ended between 1944 and 1997. Findings suggest that civil wars are less likely to recur following rebel victories and peace agreements supported by peacekeeping forces. Post-war economic development also reduces the probability of civil war recurrence, and the longer the peace can be sustained, the less likely civil war is to recur. These effects hold regardless of whether the previous war was ethnically based or not, and whether it was secessionist or revolutionary.

Sustaining the Peace: Determinants of Civil War Recurrence

The last half of the twentieth century has been characterized as an “age of revolution”, and rightly so. Regardless of which data set one chooses to employ, it is undeniable that civil war – including revolutions, secessionist wars, and ethnic revolts of various sorts – has superseded interstate war as the most frequent and destructive form of armed conflict in the international system. Fearon and Laitin (2003: 75) report that there were only 25 interstate wars between 1945 and 1999, whereas five times as many civil wars (127) occurred during the same period, resulting in five times as many deaths (16.2 million versus 3.3 million). What is less widely recognized is that the number of civil wars that occurred during this era is substantially greater than the number of nations that experienced civil war. The 108 civil wars the *Correlates of War* lists as occurring between 1944 and 1997 took place in only 54 nations. Only 26 of those nations experienced one and only one civil war.¹ Ten nations had two civil wars, twelve had three, four had four, and two nations experienced five civil wars (Sarkees 2000). The 124 civil wars listed in Doyle and Sambanis (2000) occurred in just 69 nations. Only 36 of those nations had one and only one civil war, while eighteen had two separate conflicts, nine nations had three, five nations had four, and one nation had five. Clearly, then, nations that have experienced one civil war are more likely to experience another one than most other nations are to experience their first one; civil wars are not independent events. While recent research has focused on the attributes of a nation that make it susceptible to the initial onset of civil war, the more relevant question may be what characteristics of the post-civil war environment make a nation more or less likely to experience a recurrence of civil war. That is the subject of this study.

Elements of both structure and agency influence the probability of civil war recurrence. In terms of structure, we argue that the outcome of the prior civil war – i.e., whether it ended in a government

victory, a rebel victory, or a negotiated settlement – affects the probability of civil war recurrence in that each of these three outcomes has different effects on the extent to which a condition of “dual sovereignty” (Tilly 1978) persists after the civil war ends. With respect to agency, we identify a set of conditions in the post-conflict environment that affect former combatants’ estimate of the costs and benefits of resuming the conflict versus sustaining the peace. From this framework, we derive a series of hypotheses that relate characteristics of the previous civil war and risk factors in the post-civil war environment to the probability of civil war recurrence. We use Doyle and Sambanis’ (2000) data on 124 civil wars that occurred between 1944 and 1997 to estimate a logistic regression model that measures the relative impact of these risk factors on the probability of a civil war recurring.

Civil War Outcomes and Sustaining the Peace

Several recent studies have identified risk factors that make nations susceptible to civil war in general. Collier and Hoeffler (1998, 2000) and Fearon and Laitin (2003) model the outbreak of civil war as a matter of choice based on the expected payoffs from rebellion compared to its anticipated costs. In both models, state strength is a deterrent to rebellion because, first, it raises the direct costs of rebellion. Second, strong states raise the opportunity costs of rebellion by providing their citizens with greater opportunities for economic gain through conventional (i.e., non-rebellious) activities. Collier and Hoeffler (2000) add the element of greed to the calculus of revolt: rebels in nations with lootable commodities such as diamonds or drugs can “do well by war” if they can capture revenue flows from these commodities to sustain the insurgency, even when the prospects for victory are not promising. Fearon and Laitin (2003) also found a strong effect for the opportunity for rebellion, as measured by the availability of terrain that provides sanctuary for rebel forces. While both found that increases in GDP per capita reduce the probability of rebellion (by increasing the opportunity

costs), neither found a significant relationship between democracy and rebellion or ethnic fractionalization and rebellion. According to them, democracy does not inoculate a nation against civil war, and ethnic divisions do not make civil war inevitable.

While much work has been done on identifying the risk factors which make a country initially susceptible to civil war, what has not been adequately addressed is why countries that experience one civil war are so much more likely to experience another. There is a substantial body of literature that suggest that post-war peace is fundamentally linked to how the initial civil war ended and the attributes of the post-conflict environment. As Collier (2000:2) notes, a previous civil war can increase the risks of future violence in a state to the extent that it preserves or worsens many of the old grievances and helps create new ones:

First, unless the country was very unlucky, it presumably had risk factors which made it atypically prone to conflict and these are likely to have persisted. Secondly, the conflict is likely to have caused some of these underlying factors, such as per capita income, to deteriorate. Third, the conflict will have changed the consequences of a given set of pre-conflict risk factors: some risk factors have different affects post-conflict than pre-conflict. Fourth, it will have generated grievances which themselves temporarily increase the risk of conflict.

Moreover, the weakened post-war state will be less able to police its territory with the effectiveness necessary to prevent or deter predatory violence.

How civil wars end can affect the level of risk and probability of civil war recurrence in the post-conflict environment. Several studies have explored the predictors of civil war outcomes: i.e., whether the government wins, the rebels win, or the conflict ends in a negotiated settlement. Mason and Fett (1996) identified characteristics of the civil war environment that influence whether the

conflict will end in a negotiated settlement or a military victory. Mason, Weingarten, and Fett (1999) extended that analysis to model whether the civil war ends in a rebel victory, a government victory, or a negotiated settlement. Regan has examined the impact of varying forms of third party intervention on the termination of civil wars (1996) and the duration of civil wars (2002), as well as the conditions under which external actors have an incentive to intervene (Regan 1998; see also Carment and Rowlands 1998).

Wagner argues that civil wars that end in a negotiated settlements are more likely to lead to renewed violence than those that end in a decisive victory by either side because settlements allow both sides to retain the organizational capacity to resume combat in the future (Wagner 1993: 255). A decisive victory results in the compulsory disarming or dissolution of the defeated side's forces, precluding their resumption of armed conflict for some time. Licklider (1995) found empirical support for this proposition: negotiated settlements do break down into renewed conflict more often than military victories.

What factors can help sustain the peace following a negotiated settlement? Hartzell has shown that the more dimensions of power-sharing that are incorporated into the terms of the agreement – including military, political, economic, and territorial power-sharing – the more likely the settlement is to last (Hartzell 1999) and the longer it is likely to last (Hartzell and Hoddie 2003; Hartzell, Hoddie, and Rothchild 2001). Institutionalizing power-sharing dismantles the condition of dual sovereignty, which reduces the probability of civil war recurrence. Walter (1999) contends that peace settlements are more likely to endure when third parties provide credible commitments to enforce the settlement terms. The absence of such commitments confronts former combatants with a prisoner's dilemma: both sides will benefit if they cooperate, but each will benefit more by cheating while their rival continues to abide by the agreement. Resolving this dilemma requires third

party intervention – peacekeeping forces – to police compliance with the settlement and assure both sides they can demobilize without fear of their rival using the truce to achieve through deception what they could not achieve on the battlefield (Walter 1999, 2002). Findings by Fortna (2004) and Doyle and Sambanis (2000) support the hypothesis that negotiated settlements are more likely to hold for a longer time when they are supported by peacekeeping operations.

Walter (2004) has explored the conditions that make civil war more likely to resume in a country. Her explanation focuses primarily on micro-level motivations (and tests this with macro-level data): civil wars will not recur where higher levels of economic well being and a democratic polity prevail because these conditions raise the opportunity costs of participation in rebellion and thereby undermine rebel leaders' ability to recruit enough followers to mount a viable challenge to the incumbent regime. In the absence of micro motives, she argues, none of the attributes of the previous war will contribute to the occurrence of subsequent war (Walter 2004: 372). However, she does not specify how the effects of micro motives on the probability of civil war recurring are different from their effects in nations that have not experienced civil war. The same logic for how they affect the probability of a civil recurring also applies to how they affect the initial civil war onset in a nation that has never experienced a civil war. While we too expect the levels of economic well being and democracy to affect the probability of civil war recurrence, we contend that the previous civil war does condition the post-civil war environment in ways that make a nation more susceptible to a relapse into civil war, even for a given level of economic well being and democracy.

Finally, we are concerned with the factors that predict whether or not a nation can sustain the peace after a civil war, not with factors that predict the duration of the peace. In the following section we present a theoretical framework that highlights the features of the post-civil war

environment that influence whether a nation that has experienced a civil war is likely to sustain the peace or witness a resumption of armed conflict.

Sustaining the Peace and the Post-Conflict Environment

The initiation – and recurrence – of a civil war requires two general pre-conditions. First, what Charles Tilly (1978) has termed a condition of *dual sovereignty* must emerge, leading potential combatants to the conclusion that civil war is both necessary and feasible. *Dual sovereignty* involves:

the appearance of contenders or coalitions of contenders, advancing exclusive alternative claims to the control over the government ...; commitment to those claims by a significant segment of the subject population ...; the incapacity or unwillingness of the government or its agents to suppress the challenger coalition ... (Tilly 1978: 200).

Second, one or both of the potential combatants must conclude that resuming armed conflict is preferred to sustain the peace. This implies that, for that actor, the expected payoffs of eventual victory exceed the benefits of sustaining the peace, even when the benefits of victory are discounted by the probability of winning and the accrued costs that will have to be absorbed in order to achieve victory (Mason and Fett 1996).

The concept of dual sovereignty depicts the critical structural conditions that make the resumption of civil war feasible for one or both protagonists. Any factors that preserve or intensify the condition of dual sovereignty in the post-conflict environment should make the recurrence of civil war more likely. This is implicit in Wagner's contention that renewed violence is more likely following civil wars than end in a negotiated settlement than in a military victory because both the rebels and the government retain their organizational capacity to mobilize for war. Similarly,

Hartzell's analysis of the sustainability of peace agreements implies that dual sovereignty must be managed through enforceable power-sharing arrangements; power-sharing institutions amount to the dismantling of dual sovereignty (see Hartzell, Hoddie, and Rothchild 2001). Walter's (2002) argument that third party guarantees are necessary for the protagonist to disarm and demobilize suggests that those guarantees allow both sides to cooperate in dismantling the condition of dual sovereignty.

The question of agency in the recurrence of civil wars involves the decision calculus by which potential combatants choose between sustaining the peace or resuming war. Mason and Fett (1996) depict this choice as the difference in the expected utility from resuming conflict versus accepting the status quo. This model has been used to identify factors that predict whether a civil war will end in a military victory or a negotiated settlement (Mason and Fett 1996), whether such conflicts will end in a government victory, a rebel victory or a negotiated settlement (Mason, Weingarten and Fett 1999), as well as how long civil war will last (DeRouen and Sobek 2004). We use it here to identify factors that would make a civil war more or less likely to recur in a nation that has already experienced at least one civil war.

The payoff from resuming conflict can be depicted as follows:

$$EU_C = P_V(U_V) + (1 - P_V)(U_D) - \sum_{t_i=0}^{t_V} C_{t_i} \quad (1)$$

where EU_C is the expected utility of resuming the conflict, U_V is the expected payoff from eventual victory, P_V is the probability of achieving victory, U_D is the expected cost from defeat, $(1 - P_V)$ is the probability of defeat, C is the rate at which the costs of conflict accrue from the present ($t = 0$) to that time in the future when victory is achieved (t_V). For a resumption of civil war to be preferred, the expected utility of resuming the war, EU_C , must be greater than the expected utility of sustaining the peace, EU_S . The payoffs from sustaining the peace are :

$$EU_s = U_s + \sum_{t_i=0}^{t_r} C_{t_i} - \sum_{t_i=0}^{t_s} C_{t_i} \quad (2)$$

where EU_s is the expected utility from a negotiated settlement, U_s is the payoff from the terms of the settlement. By agreeing to a settlement, the parties save the costs of achieving victory ($\sum_{t_i=t_s}^{t_r} C_{t_i}$); their utility from abiding by the terms of a settlement is augmented by the costs they save from not resuming the war and fighting on to eventual victory. The only costs they have to absorb are those that accrue until the point in time when the settlement is achieved and the fighting stops (t_s ; $t_s < t_r$).

This model suggests that any factor that (a) decreases the probability of victory (P_v), (b) decreases the payoffs from victory (U_v), (c) increases the rate at which the costs of conflict are absorbed (C_{it}), (d) increases the duration of the war, or (e) increases the payoffs from maintaining the status quo should increase that actor's incentive to sustain the peace rather than resume conflict. One difference between initial onset and recurrence of civil war is that the experience of the previous war enables protagonists in the post-civil war environment to estimate more realistically the expected costs and benefits of resuming armed conflict.

In summary, we expect a recurrence of civil war if (1) a condition of dual sovereignty persists after the initial war and (2) for at least one of the former protagonists the expected utility of resuming war is greater than the expected utility of sustaining peace. From this framework we can derive a series of hypotheses regarding factors that influence the probability of civil war recurrence.

Structures of Conflict

Our model predicts that the persistence of dual sovereignty into the post-conflict environment is the primary structural precondition for the resumption of civil war. Only under persisting conditions of dual sovereignty will combatants have to make a decision to resume conflict or sustain the peace. Given this, the probability of civil war recurrence should vary with the outcome of the original civil war because whether it ended in a government victory, a rebel victory, or a negotiated

settlement affects the extent to which dual sovereignty persists in the post-civil war environment. As noted earlier, previous studies have found that negotiated settlements break down into renewed violence more often than conflicts that end in a military victory by either the government or the rebels (Licklider 1995; Walter 1997; Hartzell and Hoddie 2003). Military victory ends the condition of dual sovereignty by disrupting or destroying the organizational capacity of the defeated side's forces, making it more difficult for that party to mobilize the human and materials resources necessary to renew the war effort (Wagner 1993). By contrast, negotiated settlements often preserve elements of dual sovereignty and thereby leave the nation more susceptible to a resumption of armed conflict.

H1: *A civil war that ends in a negotiated settlement is more likely to experience a recurrence of civil war than one that ends in either a government victory or a rebel victory.*

The risks of renewed war following a settlement can be reduced by the introduction of peacekeeping forces. Fortna (2004) and Doyle and Sambanis (2000) have shown that the introduction of peacekeeping forces reduces the probability of civil war recurring and increases the duration of the peace following a civil war. Negotiated settlements are more likely to hold in the presence of a third-party mediator who can police the demobilization of the two armies and provide both sides with security guarantees against their rival violating the agreement to launch a surprise attack (Walter 2002; Fortna 2004). In short, peacekeepers make it possible to dismantle the condition of dual sovereignty and thereby enhance the prospects of sustaining the peace.

H2: *A negotiated settlement is less likely to breakdown into a recurrence of civil war when multinational peacekeepers are introduced to police the settlement.*

Comparing the two military outcomes, a condition of dual sovereignty is more likely to survive under a government victory than a rebel victory. The defeat of an armed rebellion by the incumbent

regime often represents little more than a lull in the conflict, not a decisive defeat of the rebels. The members of a rebel organization on the verge of defeat (but not a government on the verge of collapse) can avoid annihilation on the battlefield by blending into the civilian population and awaiting that time in the future when they can muster sufficient strength to revive the conflict. The fact that a civil war broke out in the first place indicates a condition of contested sovereignty of sufficient severity to induce thousands of civilians to support an armed challenge to the incumbent regime. Government victory in and of itself does nothing to resolve the grievances that fueled support for the rebels in the first war. Once the rebels have rebuilt their organizational capacity to the point that they can mobilize enough supporters from this pool to renew and sustain the conflict, they are likely to do so. Thus, any battlefield defeat short of annihilation is not likely to preempt the rebels' capacity to revive their armed challenge at some time in the future. Attempts to exterminate the remaining rebel forces and their civilian support base can exacerbate the problem by creating a security dilemma whereby rebels and their supporters would be better off resuming the fight than conceding (see Mason and Krane 1989).

H3: *A civil war that ends in a rebel victory is less likely to be followed by a recurrence of civil war than one that ends in a government victory or a negotiated settlement.*

By comparison, a rebel victory is less likely to be followed by a recurrence of civil war than either a government victory or negotiated settlement because rebel victory is more likely to eliminate the condition of dual sovereignty. Officials of the defeated government do not have the option of hiding among the civilian population. When rebel victory becomes imminent, exile is the only viable option for officials of that government and its military if they wish to avoid annihilation.

Costs and Benefits of Resuming the War

While the persistence of dual sovereignty creates the structural preconditions for renewed civil war, one or both of the former protagonists must also conclude that renewed civil war is preferred to sustaining the peace. The decision calculus by which government and rebels choose between resuming the conflict or sustaining the peace implies that any factor which 1) increases the costs of resuming conflict, 2) reduces the expected payoffs of victory (relative to the payoffs from peace), 3) extends the time required to achieve military victory, or 4) decreases the estimated probability of achieving victory should make the parties less likely to resume the conflict and more willing to sustain the peace.

Costs of Conflict

Fighting a civil war consumes and destroys human and material resources. In contrast to interstate war, both rebels and government in a civil war draw on the same population and the same economy to sustain their military operations. Therefore, the expected utility model (Eq. 1) predicts that the decision to resume war will be affected by the level of resources consumed by the previous conflict.

H4: *The higher the casualties in the previous war the lower the probability of civil war recurrence.*

We expect high casualty rates in the previous war to be negatively associated with conflict recurrence for several reasons. First, with each death, the size of the population from which both the government and the rebels draw recruits is diminished. Second, high casualty rates create a recruitment dilemma for both the government and the rebels: as the demand for replacements increases due to battle deaths, potential recruits are less willing to enlist with either side because of

the higher probability of becoming a casualty themselves. Third, high casualty rates should reduce one or both sides' estimate of the probability of achieving victory.

The rival hypothesis is that high casualty rates may increase the likelihood of civil war recurrence by hardening the hatreds and distrust between former protagonists and, thereby, making their reintegration into a single society more difficult. Walter (2004: 373) suggests that "wars that inflict high costs on combatants and supporters could exacerbate animosity between them and create a strong desire for retribution even if the war ends." By this logic, high casualty rates generate a level of distrust that hardens conflicting identities, preserving the basis for dual sovereignty.

Some studies have found that the size of the government's army affects the outcome of a civil war (Mason, Weingarten, and Fett 1999) and the probability of civil war occurring in the first place. In the absence of reliable measures of rebel force strength, the size of the government's army serves as a proxy for the military balance in the field: the larger the government's army, the more costly armed rebellion is likely to be and the lower the rebels' estimate of the probability of victory. Similar effects should hold for civil war recurrence:

H5: *The larger the government's army, the lower the probability of civil war recurrence.*

The duration of the previous conflict affects the protagonists' choice between resuming war or preserving the peace by affecting their estimate of the length of time required to achieve victory. The longer their estimate of the time required to win (t_v), the more the benefits of victory will have to be discounted to present value. Moreover, the duration of the war combines with the rate at which costs are absorbed in their estimate of the accrued costs required to achieve victory ($\sum_{t_i=t_g}^{t_v} C_{t_i}$). The larger this estimate is, the lower will be their net payoff from victory and, therefore, the lower their incentive to resume conflict.

H6: *The longer the duration of the previous war, the less likely it is to be followed by civil war recurrence.*

There is also evidence that the duration of the war affects the outcome, with victory by either side becoming less likely the longer the war lasts (Mason and Fett 1996; Mason, Weingarten and Fett 1999; DeRouen and Sobek 2004). Therefore, the duration of the previous conflict should be negatively related to both sides' estimate of the probability of victory, should they resume the war.

Payoffs of Victory: Ethnic Divisions

While the payoffs from victory (U_V) are not easily be reduced to a simple metric, we expect the payoffs from victory do vary according to whether the conflict is ethnic or ideologically (class) based, and whether it is revolutionary or secessionist in its goals. Ethnic civil wars differ from ideologically-based civil wars in that the stakes (i.e., the payoffs of victory) are more nearly indivisible. Therefore, ethnic civil wars are less likely to be brought to an end through a negotiated settlement (Licklider 1995; Mason and Fett 1996). Chaim Kaufman (1996) presents the rationale as follows:

The key difference is the flexibility of individual loyalties, which are quite fluid in ideological conflicts, but almost completely rigid in ethnic wars. ... War hardens ethnic identity to the point that cross-ethnic political appeals become futile.... Ethnic wars also generate intense security dilemmas, both because the escalation of each side's mobilization rhetoric presents a real threat to the other, and even more because intermingled population settlement patterns create defensive vulnerabilities and offensive opportunities.

For these reasons, we expect ethnic civil wars to be more likely to recur than civil wars that are ideologically based:

H7: *The recurrence of civil war is more likely when the issues at stake in the previous were derived from ethnic divisions in society.*

If the government and rebels are divided along ethnic lines, dismantling the condition of dual sovereignty will be more difficult in the aftermath of the initial war because ethnicity endures as a source of identity and social cleavage. Ethnicity also lowers the costs of re-mobilizing for renewed conflict because ethnic markers make it easier for aspiring rebels to identify potential supporters. Similarly, the post-conflict environment of ethnically based civil wars is likely to produce renewed security dilemmas for groups targeted for repression on the basis of ethnic markers.

Another way to conceptualize the payoffs of victory in the previous conflict is whether the goal of the rebels was revolution or secession. In a revolution, the rebels seek to overthrow the incumbent regime and take its place. In a secessionist revolt, the rebels seek not to replace the incumbent regime but to gain independence from it; they seek to create a second sovereign nation out a portion of the territory of the existing one. Our model suggests the following hypothesis:

H8: *The recurrence of civil war is more likely to follow secessionist conflicts than revolutionary conflicts.*

First, secessionist wars are almost always ethnically based: they are fought by regionally concentrated ethnic groups. The same logic that suggests ethnic civil wars are more likely to recur than non-ethnic revolutions would also imply that secessionist wars are more likely to recur than revolutionary conflicts. This tendency is reinforced by the fact that secessionist groups are concentrated in territorial enclaves, which enhances their capacity for mobilization and their security from the state's armed forces. Ethnoregional concentration preserves the basis for dual sovereignty and a resumption of civil war. Unlike a secessionist revolt, the two parties in a revolution cannot retreat to separate territories and maintain their own independent capacity to defend themselves

against a resumption of hostilities. Supporters of the government and the rebels are often intermingled geographically and indistinguishable by ethnic markers. The termination of a revolution – whether through negotiated settlement or victory by one side or the other – is more likely to result in the dismantling of the conditions of dual sovereignty than is the case with a secessionist revolt.

Structures of Peace

Sustaining the peace requires the establishment of political institutions that ameliorate the conditions of dual sovereignty and reintegrate former enemies into a single polity, one that affords former combatants a fair opportunity to pursue their interests and redress their grievances through peaceful means. It also requires the rehabilitation of the economy so that the grievances that fueled support for the initial war are diminished and the opportunity costs of participation in political violence are raised to the point that sustaining the peace becomes more attractive than resuming the war.

Post-Conflict Democracy

The domestic corollary of the democratic peace proposition holds that democracies are less likely to experience civil war because the institutions and processes of democracy defuse revolutionary violence by diverting popular discontent into electoral competition and nonviolent protest (Hegre *et al.* 2001). We would expect a similar relationship to hold for civil war recurrence:

H9: *A democratic post-conflict environment should be negatively associated with the probability of civil war recurrence.*

When dissident groups can seek redress of their grievances through electoral means and other forms of nonviolent collective action, state officials have an electoral incentive to accommodate their demands. Elected leaders are also less likely to repress dissident groups because of the possible

electoral consequences. Hence, opposition movements are not compelled by state repression to choose between withdrawing from politics in order to escape repression or shifting to violent tactics of their own in order to combat it. By contrast, weak authoritarian regimes (anocracies) lack both the institutional capacity to accommodate opposition grievances and the coercive capacity to repress opposition movements preemptively. When organized opposition does emerge, anocracies attempt to repress it but fail, often converting nonviolent opposition into revolutionary movements (Mason and Krane 1989; Mason 2004).

Economic Well-Being

In the high-risk environment following a civil war the willingness of citizens to support a resumption of armed conflict will depend to some degree on the level of economic well-being afforded them by the post-war environment. Fearon and Laitin (2003), Collier and Hoeffler (1998), Sambanis (2004) and others have demonstrated a strong negative relationship between the level of economic development and a nation's susceptibility to civil war. We expect the same relationships to hold for civil war recurrence

H10: *Civil war recurrence will be less likely the higher the level of socioeconomic well being in the post-conflict environment.*

In the post-civil war environment economic development may be more critical to sustaining the peace than in a nation that has not experienced a civil war. Fearon and Latin (2003) show that nations that experienced civil war were already characterized by relatively low levels of economic development before the war. The war itself destroyed some portion of the nation's human capital and economic infrastructure. It also disrupted normal economic production and commerce, leaving the post-civil war environment even weaker economically and, therefore, more susceptible to the

recurrence of civil war than it would be to an initial civil war onset, had it not already experienced a civil war.

Methods and Data

To test these hypotheses we estimated a logistic regression model with the dependent variable being a dichotomous measure of whether a nation that had a civil war experienced another one at a later date. The data were taken from the Doyle and Sambanis (2000) data set on 124 civil wars that began between 1944 and 1997. For each of the 116 of these conflicts that ended before 1997, we coded the dependent variable *morewar* as “0” unless another conflict occurred in that nation after end date of the given conflict, in which case the conflict was assigned a score of “1” for *morewar*.² Missing data reduced the number of conflicts to 113.

Each conflict was coded as to whether it ended in a rebel victory, a government victory or a negotiated settlement. We used Sambanis and Doyle’s outcome codes, except for fourteen cases that were updated in Sambanis (2004) to correct errors in the original outcome codes.³ In the logit model, government victory is the excluded category for two reasons. First, of the two military outcomes, rebel victory is the less ambiguous: distinguishing a government victory from a stalemate or simply a lull in the conflict is problematic in many cases, whereas identifying a case as rebel victory simply requires that there be an observable change in government as a result of the conflict. By using government victories as the excluded category, we minimize problems created by ambiguities in coding the outcomes. Second, the negotiated settlement outcome should be specified in the model because we are interested in whether peacekeeping operations make such outcomes less likely to breakdown into renewed conflict. To model the effect of peacekeeping operations on the stability of the post-war environment, we used a dichotomized version of Doyle and Sambanis *peaceop* variable, which measures whether any IGO (not just the UN) introduced a peacekeeping force of a

minimum size.⁴ Because peacekeeping operations were introduced predominantly in conflicts that ended in a negotiated settlement, we combined the peacekeeping variable with the negotiated settlement variable to create two new civil war outcome categories: *negotiated settlement with peacekeeping* and *negotiated settlement without peacekeeping*. This gave us four dichotomous outcome variables: *government victory*, *rebel victory*, *negotiated settlement with peacekeeping* and *negotiated settlement without peacekeeping*.⁵

The two stakes variables – whether the conflict was ethnically based or not and whether it was secessionist or not – are highly correlated: all secessionist wars are ethnically based. Therefore, we combined these two variables to develop a three-fold typology of “conflict type”: *ethnic secessionist war*, *ethnic revolution*, and *ideological revolution* (the excluded category in the logit model).

The characteristics of the previous conflict that should affect the protagonists’ estimates of the costs and benefits of resuming civil war include the duration of the war (logged), size of the government’s army as a proportion of the population, and casualties (logged). We also added a control variable, *years post*, which is a counter for the number of years between the year a civil war ended and the year the next war started (or 1997 if there was no new war). Adding this variable is a way of controlling for the time-bound opportunity for civil war recurrence: a civil war that ended in 1991 is less likely to recur than one that ended in 1981 simply because the latter has ten more years in which a civil war *can* recur. Finally, we included a set of variables that measure the economic and political characteristics of the post-war environment: infant mortality rate, GDP per capita (from Fearon and Laitin 2003), the Polity score 2 years after the war ended.

Findings

We estimated a logistic regression model (Table 1) with *morewar* as the dependent variable. Robust standard errors were used, with clustering on country in order to account for the lack of

independence between cases. The model correctly predicts the recurrence/non-recurrence of civil war in 96 of the 113 conflicts for which we had complete data. It correctly predicts 35 of the 46 instances of civil war recurrence (76%) and 61 out of 67 instances of no civil war recurrence (91%).

[Table 1 here]

The findings on the civil war outcome variables provide support for the two basic premises of the theoretical framework: first, how the previous war ended does affect the probability of renewed civil war and, second, peacekeeping forces do sustain the peace following a truce or settlement. Wars that end in rebel victories and wars that end with negotiated settlements supported by peacekeeping operations are less likely to experience a resumption of civil war than civil wars that end in government victory (the omitted category): for those two outcomes, the coefficient is negative and significantly different from zero for a two-tailed test. Agreements that are not supported by peacekeeping forces are not any more likely to recur than those that end in government victory, but they are more likely to relapse into renewed civil war than rebel victories or agreements with peacekeeping forces.

Not only do these findings support the theory presented earlier; they also point to the need to refine the conventional wisdom that settlements are less stable than military victories by either side. Our findings imply that simply comparing settlements with military victories may be masking some important differences in both settlements and victories. First, all military victories are not alike. The significant finding (two-tailed test) for the effect of rebel victories does lend support to the argument that rebel victories do end the condition of dual sovereignty more decisively than government victories. Second, not all negotiated settlements are alike. Settlements supported by peacekeeping forces are not only more stable than those not supported with peacekeepers; the negative coefficient indicates that this civil war outcome is even more stable than government victories. This finding

which casts some doubt on Luttwak's "give war a chance" thesis that it is better to let civil wars burn themselves out in victory by one side or the other rather than preserve the conditions for renewed war by brokering a peace agreement and supporting it with peacekeepers. .

Neither of the two conflict type variables (secessionist wars and ethnic revolution) that are proxies for the stakes of the conflict are significantly related to the probability of civil war recurrence. Secessionist conflicts and ethnically based revolutions are no more or less likely than ideological revolutions (the excluded category) to experience a resumption of armed conflict. This conflicts with our expectations expressed in H7 and H8. However, previous studies also found little or no support for the notion that ethnic cleavages increase the probability of civil war onset (Fearon and Laitin 2003; Collier and Hoeffler 1998) or the duration of civil wars (Fearon 2004; Walter 2004).

Two of the costs variables – fatalities and duration – do affect the likelihood of a civil war recurring. The other – the size of the government army – appears to have no significant effect on the probability of civil war recurrence. The findings on duration suggest a war weariness effect: the longer the previous civil war lasted, the less likely civil war is to recur in that nation. This would also suggest that wars of long duration compel former combatants to revise downward their estimates of their chances of ever winning; in this manner, the longer the duration of the previous war, the less incentive they have to resume armed combat in search of military victory.

Contrary to our expectations, the deadliness of the previous conflict makes a nation more likely to experience a relapse into civil war. Our expected utility model (Eq. 1) implies that the fatality rate should be negatively related to the probability of civil war recurrence. Instead, we see that the more deadly a civil war, the more likely that nation is to experience another civil war. Walter (2004) found a similar effect. This supports the dual sovereignty argument: the greater the human costs that

the protagonists suffered in the previous war, the less likely they are to be able to live together in a new post-war environment and the more likely they are to resume combat if they sense threat from their former enemy.

Of the characteristics of the post-conflict environment that affect the probability of civil war recurrence, measures of economic development have by far the greatest dampening effect on the probability of civil war recurrence. We found no relationship between the level of democracy two years after the conflict ended and the likelihood of civil war recurring.⁶ However, given the fact that the data set includes only those nations that experienced a civil war, this set of nations as a group is likely to be less democratic, on average, than the universe of nations for this time period. There is probably less variance on the democracy score among this subset of civil war nations than among the population of nations as a whole. For these reasons, it is not surprising that we found no strong relationship between the level of democracy in civil war states and the probability of civil war recurrence.

All three measures of economic development support the proposition that economic development does inoculate a nation against a relapse of civil war by making the opportunity costs of conflict higher relative to the payoffs from sustaining the peace. GDP per capita, a measure of the general level of economic development, does reduce the probability of civil war recurrence. Likewise, infant mortality, a measure of the degree of economic inequality and the level of economic well-being for the population in general, also reduces the probability of civil war: the lower the infant mortality rate (i.e., the higher the standard of living of the population), the less likely the civil war is to recur. These findings conform with previous findings that the level of economic development in a nation is negatively related to the probability of an initial civil war onset (Fearon and Laitin 2003; Collier and Hoeffler 1998). Our finding suggests that this effect extends

to civil war recurrence as well. Economic well-being raises the opportunity costs of conflict, so that people are less willing to risk both the costs to themselves individually and the destruction of the nation's economic infrastructure as a whole. Finally, population (a conventional control variable in civil war onset models) is negatively related to the recurrence of civil war, which is contrary to what Fearon and Laitin (2003) found and contrary to the expectation that larger populations give rebels a larger pool of recruits from which build their force.

The final variable is a measure of the time from the end of the last war until the recurrence of the next war. This measure controls for when in the time frame of the data (1945-1997) the conflict ended and, therefore, how many years were left in which a nation was eligible to experience renewed civil war. What the coefficient for this variable indicates is that the probability of civil war recurrence declines simply as a function of time. The longer the peace can be sustained after a civil war, the less likely civil war is to recur, *ceteris paribus*. This finding, combined with the findings on the stability of settlements supported by peacekeeping, suggests that the international community does have at its disposal the tools to prevent civil war recurrence. We will return to this point later.

To estimate the magnitude of the effect of each variable on the probability of civil war recurrence, we calculated the marginal effects of these variables. Table 2 converts the logit estimates from Table 1 into predicted probabilities. The marginal effects of the dichotomous predictors (rebel victory, agreement with peacekeeping) were calculated as the difference in predicted probabilities of civil war recurrence when these variables were set equal "0" and "1", with the other (continuous) variables set to their means. The marginal effects of continuous variables (fatalities, duration, GDP per capita, infant mortality, population, and years since the last war ended) were calculated as the difference in predicted probabilities when each of these variables was set equal to its minimum and

maximum values while the dichotomous variables were set equal to “0” and the other continuous variables were set to their means.

[Table 2 here]

These results indicate that each of these factors has a substantial impact on the likelihood of civil war recurrence. The probability of civil war recurrence decreases by .57 if it ends in a rebel victory compared to a government victory and by .46 if it ends in a peace agreement supported by peacekeepers as opposed to a government victory. The predicted probabilities indicate that civil wars ending in rebel victories are one-tenth as likely to experience a recurrence as civil wars that end in government victories (.06 versus .63), while civil wars ending in agreements supported with peacekeeping operations are almost four times less likely to experience renewed war as wars ending in government victory (.17 versus .63).

The marginal effects of cost variables are likewise substantial. Civil wars with high numbers of fatalities (logged) are more than twice as likely to experience renewed conflict as those with low (logged) casualties (.86 versus .35). As the casualties rise from the minimum to the maximum, the probability of civil war recurrence increases by .51. The war weariness effect generated by the duration of the previous civil war appears to be a profoundly large one: the longest civil war is almost twenty times less likely than the shortest one to be followed by another conflict (.05 versus .99). The difference in probability of civil war recurrence following the shortest conflict versus the longest is .94.

Finally, the marginal effects of economic development indicators are rather substantial as well. The nation with the highest GDP per capita is less than one-fourth as likely to experience a recurrence of civil war as the most impoverished nation (.17 versus .74). The probability of civil war recurrence in the nation with the highest GDP per capita is lower than that of the poorest nation in

the sample by .57 (.17-.74). Similarly, the nation with the highest infant mortality rate is five times more likely to experience a relapse in civil war as the nation with the lowest infant mortality rate (.97 versus .19). Lowering the infant mortality rate to the lowest value in the sample reduces the risk of renewed civil war by .78 from the nation with the highest infant mortality rate in the sample. The nation with the longest sustained peace was only one-sixteenth as likely to experience civil war recurrence as the nation with the shortest peace between wars. The number of years since the last war ended decreases the probability of war recurrence by .77. Finally, civil war countries with a large population are almost one-fourth as likely to experience a subsequent war as those with small populations: the difference in the probability of civil war recurrence between the nations with the largest and the smallest populations is -.62.

Discussion and Conclusions

We began by highlighting a critical issue in the study of civil wars: most nations that experience civil wars are likely to experience additional conflicts. The theory we developed to explain this phenomenon focused on the structural conditions in the post-war environment – specifically, the extent to which the termination of the original civil war dismantled the conditions of dual sovereignty – and the incentives for the former combatants to resume armed conflict rather than accept the status quo.

The findings present a picture in which the critical factors for sustaining the peace in the post-war environment do involve measures to dismantle the condition of dual sovereignty. They also suggest that the international community has at its disposal policy tools to fashion intervention strategies that can substantially reduce the probability of civil war recurrence. First, the findings on civil war outcomes confirm our expectations that rebel victories are less likely to breakdown into renewed conflict than government victories. More importantly, our findings suggest that the

conventional wisdom that negotiated settlements are more likely to breakdown into renewed conflict needs to be qualified: supporting settlements with international peacekeeping operations does establish a peace that is more durable than the peace that follows government victory. Combining that with previous findings that the longer a civil war lasts, the less likely either side is to win, we can infer that once a civil war has settled into a mutually hurting stalemate, third party intervention to broker a settlement agreement and enforce it with peacekeeping forces will not only end the war sooner but establish a peace that is more likely to last than if the war is simply allowed to “burn itself out”, as Luttwak’s (1999) “give war a chance” thesis contends. What is critical is for the international community to act decisively soon after the war has ended because our findings also indicate that this is the time when the nation is most vulnerable to a relapse into armed conflict. Our findings imply that the longer the peace can be sustained, the less likely it is to break down, *ceteris paribus*. Thus, if peacekeepers can deter a resumption of armed conflict immediately after the war ends and police the implementation of demobilization, they can buy the nation the time needed for the effects of economic development to take over and further reduce the likelihood of a relapse into conflict. Furthermore, international investment in post-civil war economic development does appear to inoculate a nation against civil war recurrence. Given the fact that such a substantial decrease in the probability of civil war recurrence prevails between the highest and lowest level of post-war GDP per capita – and the range on GDP per capita is not very large among civil war nations; none of them are wealthy – the size of the investment required to sustain the peace is arguably a rather small price for the international community to pay in order to sustain the peace.

One final point is that our findings on war stakes suggest that the effects discussed above and the remedial actions they imply to sustain the peace hold regardless of whether the civil war is ethnically based or not, and whether it is revolutionary or secessionist. Thus, while the specifics of

post-civil war reconstruction and reconciliation programs – including the design of political institutions – do have to be tailored to the social, cultural and economic contours of the nation, our findings suggest that the basic framework for sustaining the peace is the same: mediate a peace agreement, enforce it with peacekeepers, and then consolidate it with economic development.

Endnotes

¹ These figures include the civil wars listed in the “intra-state war” file as well as four conflicts in the “extra-state wars” file that were secessionist conflicts (as opposed to anti-colonial revolts).

² Cases in which a different war started in a nation before a first war ended were not coded as recurrences. We also did not code whether the second war was the “same war” or a “different war”, based on whether the combatants in the second war were the same as those in the first. Making this determination in many cases is extremely difficult and information is inconsistent across cases. Clarifying this distinction remains a subject of future research in this project. For now, determining which factors predict the recurrence of civil war, regardless of who the combatants are, is a legitimate research question with profound policy implications in and of itself.

³ We used Doyle and Sambanis (2000) codes for rebel victory and government victory except for the cases listed below, which arguably are errors in coding the outcome. Sambanis changed the outcome codes for most of these conflicts in his 2004 version of the data set, and the codes we use do match his new codes in almost every case. Doyle and Sambanis have codes for “truce” and “treaty”, which we combined into a single “settlement” outcome. For the following cases we changed the outcome code to agree with Sambanis (2004) version of the

- 1) Romania: changed from government victory to rebel victory; Sambanis (2004) dropped the conflict from the list, but acknowledged that press reports of “A popular uprising that resulted in the downfall of Romania's Nicolae Ceausescu” were accurate.
- 2) Liberia (1989-92): changed from settlement with peacekeepers to rebel victory on the grounds that the incumbent regime of Samuel Doe was overthrown in 1990; the negotiated settlement came later, between rebel factions. Sambanis (2004) notes: “Due to the change in

government and “issues” (at least changes in the side on which the major parties are fighting – i.e. state or rebels), we code the end of the first war in 11/1990.

- 3) Rwanda: changed from negotiated settlement with peacekeeping forces to rebel victory. Sambanis (2004) also codes it as rebel victory.
- 4) Congo-Brazzaville (1992-96): changed from settlement without peacekeeping to rebel victory; Sambanis (2004) apparently agrees, noting, “The termination year should be when Denis Sassou-Nguesso sizes power (October 1997): although violence continued, this is a new regime and should be coded as a new civil war”;
- 5) Algeria (1962-63): change from rebel victory to government victory; COW codes it as government victory. The rebel victory was in 1962 against the French. Sambanis (2004) acknowledges that “The event we code is separate. Onset must be coded as starting in 1962 (at the end of the Algerian revolution and after official date of independence). Termination in 1963.” Since the same government was in power in 1963, a conflict terminated in that year should be coded as a government victory.
- 6) China-Taiwan (1947): change from rebel victory to government victory. Sambanis (2004) agrees: “We agree with the COW2 coding”.
- 7) Congo/Zaire (1996-97): change from government victory to rebel victory. Sambanis (2004) apparently agrees, noting, “Full scale war erupted in October 1996. Kabila President after rebels captured the capital on 17 May 1997”.
- 8) Dominican Republic: change from negotiated settlement without peacekeepers to negotiated settlement with peacekeepers. Fortna (2004) codes it as a non-UN peacekeeping operation. On 23 May, OAS established an Inter-American Peace Force in the Dominican Republic (IAPF) and as of 26 June 1965, IAPF was composed of 1,700 troops from six Latin

American countries and 12,400 from the United States.

- 9) Ethiopia-Ogaden: change from rebel victory to government victory. Somali rebels did not overthrow the government of Ethiopia or secede from it. Sambanis (2004) appears to agree, noting, “An agreement to end hostilities was signed on April 3, 1988, under which both sides agreed to withdraw troops from the border, exchange prisoners, end hostile propaganda and acts of destabilization against each other and deal with the more difficult question of defining the border at a later date. With the agreement came an end to Somali support for the WSLF, hence by 1989 its demise as an effective guerilla organization”.
- 10) Iran (1981-82): change from rebel victory to government victory. Kurdish rebels did not overthrow the government of Iran or secede from it. Sambanis (2004) notes that the last Kurdish border strongholds in Iran fell in July 1984 (after that date, Kurdish guerillas operated from Iraq).
- 11) Kenya: change from ongoing to government victory. The conflict has an end date of 1992 in both Sambanis and Doyle and Sambanis (2004). The government is still in power; therefore, it should be coded as a government victory;
- 12) Peru: change from ongoing to government victory; Sambanis (2004) notes that “only 100 or 200 hundred Shining Path guerillas still operate in Peru. The potential for the Shining Path to regroup represents the biggest threat to Peruvian internal security, but, thus far the group has only conducted scattered car bombings since its demise. The largest was in March 2002, when 10 were killed in a bombing in Lima. Thus, we cannot code this war as continuing since 1996 and until the present.” If the end date is 1996, logically it must be coded as a government victory because the end of the conflict did not result in regime change or a peace agreement with Shining Path.

13) Philippines (New People's Army): change from negotiated settlement/no peacekeeping to government victory. COW2 codes it as ending in 1992 with a government victory. Sambanis (2004) also codes it as ending in 1992. No source we could identify (including Sambanis 2004) mentions any settlement agreement. If it is listed as ending and the government is still in power, it should be coded government victory.

14) Sri Lanka (JVPII): change from truce with peacekeepers to government victory. COW2 codes it as stalemate. PRIO web site notes, "the conflict ended in 1990 with what must be termed an unconditional military victory by the government."

⁴ The variable *peaceop* is coded as a 5-point scale by Doyle and Sambanis, with "0" indicating no intervention, "1" indicating mediation only, "2" indicating an observer mission, "3" indicating "traditional peacekeeping operations", and "4" indicating "peace enforcement". We dichotomized the variable with "3" and "4" indicating the presence of peacekeeping forces of sufficient strength to enforce any agreement and all other values being recoded to "0", the absence of peacekeeping forces. This is a conventionally employed break point. See Fortna (2004) for instance.

⁵ There were six cases of peacekeeping operations introduced following a military victory, five of them rebel victories and one government victory. We created another dummy variable for these cases: peacekeeping with no settlement. It was not significant in any of the models. Tests confirm that it could be dropped from the model without affecting the parameter estimates. We also estimated the model with the peacekeeping and agreement variables entered separately. The likelihood ratio test confirms that these two variables can be dropped from the model that includes our measures of agreement with and without peacekeeping operations.

⁶ We tried five and ten years as well, but those time spans all too often spanned the onset of renewed conflict.

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Table 1. Logistic Regression of Civil War Recurrence

Category	Variable Name	Coefficient (Robust s. e.)
Outcome	Rebel Victory	-1.282* (.7886)
	Agreement w/PKO	-2.074* (1.102)
	Agreement w/out PKO	-.708 (.933)
Stakes of Conflict	Secession	.201 (.731)
	Ethnic Revolution	-1.085 (.883)
Costs of Conflict	Fatalities (ln)	.285* (.166)
	Army Size (% of population)	-.260 (.174)
	Duration (ln)	-1.219*** (.324)
Post Civil War Environment	Democracy (2yr. post)	-.036 (.023)
	GDP/capita	-.324** (.145)
	Infant Mortality	.019*** (.008)
	Population (ln)	-.409* (.215)
Time Controls	Years since last war end	-.089*** (.032)
(Constant)		7.907 (4.407)
Observations	113	
Log pseudo-likelihood = -45.11665		
Wald chi ² (13 d.f.) = 32.91		
Prob>chi ² = 0.002		

Robust standard errors in parenthesis.

* significant at 10%; ** significant at 5%; *** significant at 1% (two-tailed).

Predicted:	Actual Recurrence		
	Yes	No	
Yes	35	6	41
No	11	61	72
	46 (76.1%)	67 (91.0%)	113 (85.0%)

Table 2. The Probability of Civil War Recurrence

Variable	Pr(recurrence)
Rebel Victory	
No	.63
Yes	.06
<i>Change in probability</i>	<i>-.57</i>
Agreement w/PKO	
No	.63
Yes	.17
<i>Change in probability</i>	<i>-.46</i>
Fatalities (logged)	
Minimum	.35
Maximum	.86
<i>Change in probability</i>	<i>.51</i>
War Duration (logged)	
Minimum	.99
Maximum	.05
<i>Change in probability</i>	<i>-.94</i>
GDP per capita	
Minimum	.74
Maximum	.17
<i>Change in probability</i>	<i>-.57</i>
Infant Mortality Rate	
Minimum	.19
Maximum	.97
<i>Change in probability</i>	<i>.78</i>
Years Since the Last War Ended	
Minimum	.82
Maximum	.05
<i>Change in Probability</i>	<i>-.77</i>
Population (logged)	
Minimum	.85
Maximum	.23
<i>Change in Probability</i>	<i>-.62</i>