

Democracy Under The Gun: Understanding Post-Conflict Economic Recovery

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Abstract

Increasingly, scholars studying civil conflicts believe that the pace of post-conflict economic recovery is crucial to a return to peaceful politics. But why do some countries' economies recover more quickly than others'? We argue that the inability of politicians to commit credibly to post-conflict peace inhibits investment and hence slows recovery. In turn, the ability of political actors to eschew further violence credibly depends on post-conflict political institutions. We test this framework with duration analysis of an original dataset of economic recovery, with two key results. First, we find that post-conflict democratization retards recovery. Second, outright military victory sets the stage for a longer peace than negotiated settlements. This research deepens our understanding of the bases of economic recovery and conflict recidivism in post-conflict countries, and points to future research that can augment this knowledge further still.

Since World War II, domestic armed conflict has eclipsed interstate conflict as the most deadly form of political violence. By one count, civil conflicts killed nearly 20 million people since 1945 (World Bank 2006). As if this loss of human life were not sufficiently tragic, civil conflict inflicts irreparable harm to the lives of those left behind, partly by impoverishing them.¹ Sadly, civil conflict also inhibits financiers from investing in potentially lucrative and socially beneficial re-building projects for fear of physical damage to new investments or their expropriation by armed actors (Artadi and Sala-i-Martin 2003; Blomberg and Hess 2002; Collier 1999; Gupta et al 2004; Imai and Weinstein 2000; Kang and Meernik 2005; Koubi 2005; Mohammed 1999; Murdoch and Sandler 2002). Nor do the negative economic consequences of civil conflict necessarily end with the conflict itself. On the contrary, Ghobarah et al (2003) find that human suffering *intensifies* after the shooting stops (see also Lacina and Gleditsch 2005; Lacina 2006). Investment needed to re-build the economy often continues to decline at the conclusion of a conflict, slowing efforts to re-build the country's physical infrastructure (Collier 1999; Gupta et al 2004; Imai and Weinstein 2000; Mohammed 1999).

This continuing economic deterioration makes possible a grim cycle of violence and poverty, as discussed by Paul Collier and his World Bank research team (2003). In the "poverty-conflict trap," a country experiences an initial civil conflict, entering a downward economic spiral that intensifies with the conclusion of the conflict. Since economic collapse itself can trigger a new civil conflict, the country faces a heightened risk of further political violence, and the vicious cycle renews itself. Collier et al (2003: 83) show that the risk of further conflict for countries emerging from civil war (*i.e.*, in the first year of post-conflict peace) is almost twice as high as it was on the eve of that conflict! One explanation for this is the negative effect of civil war on economic development, which Collier et al conclude itself increases both the probability

of future conflict and its duration when it does occur (2003: 84). A rapid post-conflict economic recovery represents the best chance of escaping the poverty-conflict trap (Collier et al 2003: 152-153; Bigombe, Collier, and Sambanis 2000). However, leaders have a disturbingly short time frame to support recovery; according to our data, if a country does not recover economically in its *first* post-conflict year, a relapse into violent conflict becomes dramatically more likely.²

Here, we focus our efforts on understanding this critical initial reconstruction of post-conflict economies by asking the following question – *why do some countries' economies recover from domestic armed conflicts sooner than others?*

We contend that rational economic actors – who already doubt political commitments to protecting their investments – balk at investing their resources in post-conflict countries due to the difficulties formerly warring parties encounter in creating a credible commitment to the peace. Until now, peace scholars have attended carefully to how the nature of the conflict's resolution (*i.e.*, whether by outright military victory or negotiated peace settlement, and to what extent guaranteed by third parties) affects the credibility of the post-conflict peace (e.g., Atlas and Licklider 1999; Hoddie, Hartzell and Rotchild 2001; Licklider 1995). Without disputing this account, we contend that the ability of political actors to eschew further violence credibly depends on the political-institutional environment at the conclusion of the conflict. Though mature democracy can support credible signaling on the part of political leaders, we argue that the difficulties of rapid democratization in post-conflict environments (Paris 2004) will weaken investors' confidence in the post-conflict peace, slowing investment and economic recovery. We test these arguments by employing duration analysis techniques on a newly-created dataset of economic recovery from civil conflict. Our central finding is that countries that undergo

extensive democratization in the immediate post-conflict period recover more slowly than countries that do not.

This paper proceeds as follows. We begin by presenting our theoretical framework linking post-conflict political institutions to prospects for economic recovery. We then describe our research design for testing these hypotheses and present results from an event history analysis of a new dataset on post-conflict economic recovery. Our conclusion discusses the implications of these results for future research on post-conflict reconstruction.

Credible Commitments, Democracy, and Post-Conflict Reconstruction

A substantial literature in political economy offers strong theoretical and empirical support for the proposition that individuals will under-invest in physical and human capital when they fear for the security of their investments (Clague et al 1999; Keefer and Knack 1997; Olson et al 2000). The state fails to establish a secure institutional environment when it fails to protect citizens' investments from predation by third parties or places capricious restrictions on citizens' investments. Because many investments are irreversible, firms might choose not to invest for fear of expropriation or future policy changes that imperil their investments (Aizenman 1997, 1998, 2003; Aizenman and Marion 1999; Dixit and Pindyck 1993; Grabel 2000; Stasavage 2002). Governments therefore must be able to commit credibly to maintaining policy stability before private actors will invest in technology and physical and human capital. Politicians, however, are unable to make such credible commitments on their own, because they face a time-consistency problem (Kydland and Prescott 1977). Once investors make irreversible investments, governments are free to change the very policies that attracted the original investment. Since investors understand this risk, they resist making irreversible investments, causing a far lower level of investment than if the government had been able to overcome its commitment problem.

We contend that this credible commitment problem changes in the post-conflict period, because of what Barry Posen (1993) has termed a “domestic security dilemma.” At the conclusion of a civil conflict, a country’s internal politics more closely resemble anarchy than hierarchy and we can therefore apply the logic of the security dilemma to politicians’ expectations of each other. Even when a newly minted post-conflict government or former combatant group sincerely desires to honor its commitment to disarmament, it will fear that its enemies will renege on their own commitments and retain their arms to re-initiate conflict with a significant advantage. However, any attempts to guard against this possibility will themselves be regarded by its enemies as proof of an intention to defect. Thus, all promises to the peace are non-credible, as Fearon (1995) theorized in regard to international crises.

Economic actors’ primary concern therefore shifts from politicians’ inability to commit credibly to protecting private property to the inability of former warring groups to commit credibly to honoring their commitments to peace. Even though the post-conflict period likely offers potentially lucrative re-building opportunities, the potential for a return of violent conflict makes their expected returns far more volatile, fomenting under-investment and slowed economic recovery.³

What steps can the state make to commit credibly to the peace? To date, peace scholars have answered this question by focusing on how the conclusion of a conflict affects the credibility of the peace. Hoddie, Hartzell and Rothchild (2001) argue that negotiated settlements are inherently precarious. Similarly, Licklider (1995) and Atlas and Licklider (1999) contend that outright military victory of one side or the other in civil conflict greatly reduces the risk of recidivism. An outright military victory ameliorates the credible commitment problem because the new government can be confident that former combatants are unable to re-initiate violent

conflict. In short, a violent rather than a negotiated end to civil conflict “purchases” greater security from civil conflict in the future. In turn, negotiated settlements reveal that actors at least were able to come to the negotiating table and agree to terms, lending greater credibility than if the conflict had simply faded over time.

Without disputing this focus, we propose that post-conflict political institutional transitions fundamentally shape the kinds of commitments politicians make. Peace scholars have suggested that democratic leaders more credibly commit to bargaining positions than their non-democratic counterparts. Fearon (1994) suggests that, in international crises, democratic leaders suffer steeper audience costs (*i.e.*, sanctions from the public for breaking their word) if they renege on a public commitment. Because democratic leaders can more efficiently increase the costs of reneging, their public commitments carry more weight (Schelling 1966; Fearon 1997). Schultz (1998) centers on the role of opposition parties, arguing that they constrain the executive from bluffing during crisis bargaining; the leader will accept only agreements that the opposition will approve or they will call her bluff. Thus, when the opposition backs the executive’s position, it lends credibility to her commitment.

Scholars investigating foreign direct investment (FDI) also have examined the ability of democratic executives to make credible commitments. As already discussed, investment irreversibilities imply that multi-national corporations (MNCs) will fear dedicating their resources to a country and then having its government expropriate its investment or more heavily tax its profits. Jensen (2003) argues that the greater number of veto actors in democratic political systems makes it more difficult for their leaders to reverse policies in that manner. He finds that democratic governments do attract higher levels of FDI in a robust series of statistical tests and interprets his findings in terms of democracy’s negative effect on the overall level of

expropriation risk. Similarly, Li (2006) argues that democracies can offer MNCs less attractive tax incentives because they are generally stronger at committing to protecting private property and can more credibly commit to maintaining incentives for the long-term.

Applying this discussion to the post-conflict environment suggests that former adversaries will more readily believe the assurances of democratic leaders that they will respect the peace and not engage in retribution. This should lead to higher investment in the post-conflict period and to faster economic growth. Therefore, we hypothesize:

H1 (Democracy): *Ceteris paribus*, democratic countries will recover more quickly than non-democracies.

H1 links formal (e.g., legislative checks on the executive) and informal (e.g., responsiveness to public opinion) institutions to the greater credibility of democratic leaders' public commitments. This logic, however, implies that leaders of new democracies may not have the luxury of long-established institutions to make credible commitments. Clague et al (1996), make just such a claim. They propose that, in a new democracy, a political leader more likely oversteps formal commitments to protect property rights because her time horizons are far shorter than in more established democracies. In turn, newly established *de jure* checks on the executive more often will fail to constrain the latter's attempts because they require a lengthy maturation process to fulfill that function effectively. Economic actors will thus doubt whether new democratic leaders will comply with their commitments.

Similarly, peace scholars have noted the relative institutional weakness of new democracies and its consequences for making credible commitments to peace in the international arena. Mansfield and Snyder (1995; 2002) focus on the inability of still developing formal institutions to constrain democratic executives from making credible commitments to refrain

from attacking other countries. They contend that during democratization, embryonic political institutions (e.g., political parties, free media) will fail to constrain political leaders from engaging in nationalist rhetoric, making the initiation of interstate war far more likely than in more mature democracies. They conclude, “the practices of many newly democratizing states are only loose approximations of those that characterize mature democracies” (2002: 301).

If new democratic political institutions generally encounter obstacles in publicly and credibly committing to peace, then countries that rapidly democratize at the conclusion of civil conflicts – when the baseline probability of reverting to violent political competition is especially high – are caught in an especially difficult conundrum. A growing number of scholars have recognized this possibility (Ball 1996; Walter 1997, 1999; Paris 2004). These authors do support the eventual implementation of democratic reforms in post-conflict countries, for both normative and instrumental reasons. However, the authors differentiate the benefits of mature democracy from the dangers of immature democracy in the immediate post-conflict period. Paris (2004) reasons that rapid post-conflict democratization involves two closely related risks. First, echoing Clague, et al (1996), the new democracy will inevitably lack the institutional strength to limit political competition to peaceful means. Elections likely exacerbate societal conflict, opening a window for potential autocrats to hijack the electoral process (161-166). Second, these countries will largely lack the kind of civil society that restrains citizens and leaders alike from resorting to arms to pursue political goals (160-161). Echoing Mansfield and Snyder’s (1995, 2002) approach to international peace commitments, leaders will be tempted to engage in bellicose rhetoric against their former enemies because the press and public opinion more generally will not constrain them from doing so.

In research on the success of negotiated settlements of civil conflicts, both Walter (1999) and Ball (1996) stress that democratic political institutions cannot provide a basis for a credible peace in the short-term, though they favor the long-term implementation of democracy. In the short-term, Walter (1999) argues that new democratic political institutions are too frail to guarantee former combatants that the government will respect the peace. Similarly, Ball (1996) reasons that countries emerging from civil conflict too often lack any experience with democratic political processes, so that elections often exacerbate rather than soften political antagonisms, making a return to violence more likely (Ball 1996: 31-32).

Together, these scholars suggest that the constraints on democratic leaders placed by veto actors and the electorate are far weaker in new democracies. If correct, this discussion implies that the stress placed on new democratic systems and the lack of credible constraints on newly elected leaders will inhibit investment and hinder economic growth, leading us to hypothesize that:

H2 (Democratization): *Ceteris paribus*, new democracies will recover more slowly than other countries.

The argument thus far suggests that new democracies recover far more slowly than established democracies. However, this discussion offers little guidance as to other comparative statics. For example, will new non-democracies find it as difficult to forge credible commitments relative to more established non-democracies? In terms of economic recovery, would we prefer a new democracy or an established non-democracy? There are two responses to these questions, each yielding the same empirical implication. The first, which reflects the perspective of Huntington (1968), states that the principal defining characteristic of a post-conflict regime is its stability, not its regime type. According to this view, any new regime encounters difficulties in

making credible commitments. Clague, et al (1996) promote a second version of this logic, arguing that long-standing non-democracies will make more credible commitments to protecting property rights than new non-democracies precisely because of their stability; in older non-democratic political systems, economic actors will trust that the regime will continue to survive and hence will protect property rights to maximize future income from taxes. This discussion suggests that:

H3 (Instability): *Ceteris paribus, the speed of economic recovery decreases when the post-conflict regime type is new.*

We accept that, all else equal, recovery may be aided by regime stability. However, we adhere to a strong version of H2 and argue that democratization results in worse outcomes than mature democracy *and* other forms of instability. The credibility of democratic politicians' commitments derives from the formal and informal institutional infrastructure of democracies. Such institutions require time to coalesce, particularly when political participation has recently consisted mainly of violence between the state and combatant groups. In contrast, inasmuch as an established autocrat can make a credible commitment to the peace, her ability to do so is not premised on a complex array of institutions. All else equal, a new autocrat may suffer in comparison to a more established autocrat, but will exceed the performance of a new democrat. We leave the formal comparison of these perspectives to statistical testing.

A Duration Model of Post-Conflict Economic Recovery

The formal empirical testing of this theoretical framework necessitates a carefully designed research strategy with demanding conceptual and empirical requirements. We begin by identifying countries emerging from civil conflicts, turning to the Uppsala Conflict Data Project's (UCDP) data on domestic armed conflicts from 1946 to 2003, inclusive (Strand 2004).⁴

When multiple civil conflicts existed simultaneously within the same country, we combine them into a single conflict episode, which begins with the onset of the first conflict and ends with the conclusion of the last remaining conflict.⁵

Dependent Variable: What Is Recovery?

With this definition in hand, we now must define when a country has recovered economically from a conflict episode, demarcating the end of the immediate post-conflict period and the beginning of the transition to long-term economic recovery. Conceptually, we propose that a country has achieved these goals when it reaches and maintains a level of per capita economic activity that equals or exceeds pre-conflict levels.⁶ The achievement of this goal indicates minimally that economic actors have re-established patterns of consumption and investment to an extent that, in terms of total economic activity on a per capita basis, the economy has returned to its pre-conflict state.⁷

This conceptualization of recovery involves choosing the appropriate threshold to be regained for a country to be considered “recovered.” One possibility is to use the level of GDP per capita in the year before the onset of conflict. But if conflict resulted in part due to an economic downturn or if an economic downturn accompanied the road to conflict, this would imply that such a threshold would capture a local minimum and therefore be too low. An alternative is to use the highest level of GDP per capita obtained by the country in the five-year period preceding the conflict. This approach has two advantages. First, it averts the concern of setting the bar for recovery too low. Second, it captures better the “true potential” of the economy, which accounts at least in part for the idea of the counterfactual level of development possible for the country. In the results presented below, we use this alternative higher threshold for coding recovery, but all our results are robust to using the year prior to conflict as the

threshold.⁸ The per capita GDP data required to code economic recovery are in constant figures with 1995 as the base year and were obtained from the World Bank's *World Development Indicators CD-ROM* (2004).

As Collier et al (2003) have argued, some states are unable to escape from the poverty-conflict trap. A country may fail to recover for one of two reasons. The first is conflict recidivism. If another conflict episode commences before recovery from the previous conflict episode has been achieved, the country is coded as failing to recover and experiencing a second event – conflict recurrence. The second is more mechanical: some states are still in the process of recovering when our data end, leading their on-going recovery episodes to be right-censored.

/INSERT TABLE 1 ABOUT HERE/

In summary, for each year after the conclusion of armed conflict, we examine whether the country re-attained per capita GDP threshold described above or re-initiated a violent civil conflict. When one of these events occurs, we consider the recovery period concluded. If neither occurs, we examine the succeeding year. Table 1 summarizes the empirical record using these definitions.⁹ In total, there are 164 conflict episodes in our dataset. Of those, 20 (12%) have missing data and 20 (12%) are ongoing conflicts. Of the remaining cases, 24 are right-censored, 65 recover, and 35 relapse into civil conflict. The data support a pernicious version of the poverty-conflict trap and dramatically emphasize the importance of short-term economic recovery. Post-conflict governments face a disturbingly short time frame in which to foster economic recovery. During the first year after conflicts end, 45 cases recover (28% of all cases), while only 17 cases relapse into conflict (10% of all cases). From the second to the eighth year after conflicts conclude, the empirical portrait shifts. During that period, the odds of recovery and relapse are exactly equal; eighteen cases (11%) recover, but eighteen (11%) relapse.

Explanatory Variables: Credible Commitments

Having defined our sample and dependent variable, we now turn to coding our explanatory variables of primary interest. Since much of the logic underlying H1, H2 and H3, emphasizes the importance of competition and participation in the democratic process, we choose the Polity measure of regime type, rather than measures of civil and political rights (Jagers and Gurr 1995; Marshall and Jagers 2004). We use the combined Polity indicator, which we re-scale from 1 (consistent non-democracy) to 21 (consistent democracy).¹⁰

H1, H2, and H3 compare the relative advantages of democracy, democratization, and instability and thus imply an interaction effect between the pre- and post-conflict regime types. We choose to code this interaction as follows. First, we follow Jagers and Gurr (1995) in using the Polity measure to code three regime types: democracy (scores of 17 to 21 on the Polity scale), autocracy (scores of 1 to 7 on the Polity scale), and mixed regimes (scores of 7 to 17 on the Polity scale). In this empirical specification, there are nine potential political institutional transition types that a country may attempt: three infer regime-type stability (autocracy to autocracy, mixed to mixed, democracy to democracy), three infer moves towards democracy (autocracy to mixed, autocracy to democracy, mixed to democracy), and three infer moves towards autocracy (democracy to mixed, democracy to autocracy, mixed to autocracy). We use the country's regime type in the year before conflict erupted to code its pre-conflict regime type; likewise, the country's score in the year after conflict ceased is the basis for our coding of its post-conflict regime type. Overall, this coding scheme allows a flexible comparison of the impact of various political institutional transition types on the speed of recovery (e.g, democratization versus regime instability more generally).¹¹

As we discussed earlier, the nature of political transition is just one factor – albeit a critical one – affecting the credibility of the post-conflict peace. Peace scholars have attended carefully to the role of conflict termination in conflict recidivism (Atlas and Licklider 1999; DeRouen and Sobek 2004; Hoddie, Hartzell and Rothchild 2001; Hoddie and Hartzell 2005; Licklider 1993, 1995; Walter 2002, 2004). A new dataset from PRIO codes the nature of termination for all conflicts in the Uppsala data base (Kreutz and Mack 2005). This data set distinguishes between five termination types on the basis of whether the warring sides had resolved the underlying conflict and the explicitness of the agreement with respect to disarmament and demobilization. We create two mutually exclusive dummy variables for whether the conflict ended in unilateral victory or in a peace agreement. Thus, the reference category is comprised of those conflicts that ended in ceasefires or where the level of violence tapered out without explicit resolution of the underlying grievances.¹²

Control Variables

We enter a number of controls into our empirical models in order to conduct more robust tests of our theoretical framework. We group these into two categories. The first set of controls for political economic attributes of the country, while the second controls for characteristics of the conflict. We begin with political economic attributes of the country. A country's post-conflict ability to recover might depend primarily on its economic potential. Economic actors may more likely invest, whatever the level of risk, in more lucrative economies. We thus control for pre-conflict per capita GDP using the World Bank's *World Development Indicators*' (2004) measure of GDP per capita in constant 1995 US dollars.

A country's pace of economic recovery may also depend on the amount of development aid it receives. Increased aid should speed economic recovery. Our measure of official

development assistance (ODA) to the developing world comes from the OECD, and is measured in constant US dollars. We expect a diminishing marginal return to aid, and therefore include a logarithmic transformation of the raw aid figures in our model. Collier and Hoeffler (2000) have argued that this effect is conditional on its timing and, specifically, that aid is most effective when given in the latter half of the decade following the cessation of violence. To probe these hypothesized aid-timing effects, we create three time category variables. The first captures the first three years of the recovery episode; the second captures the next three; and the last captures years 7 and over. Next, we interact the level of aid with these time categories, creating a set of variables that capture the time trend of aid during the recovery process.

We also control for the security of property rights in the post-conflict environment by including Clague et al's (1999) measure of contract-intensive money (CIM), which they characterize as a measure of "the security of contract and property rights" and show is positively associated with investment and growth in per capita GDP. Specifically, we control for the average annual increase in contract-intensive money during the recovery period, reasoning that increases in the protection of contract and property rights that lead to the growth of money in the formal economy should lead to faster recovery and therefore lower risk of conflict recidivism.

The characteristics of the preceding conflict should also matter for post-conflict prospects. If the credible commitment story were either logically flawed or substantively unimportant, it might be because recovery is driven solely by the size of the recovery challenge. Though some conflicts certainly kill massive numbers of civilians, destroy factories, and disrupt agriculture, others only moderately damage the economy. Thus, the size of the recovery challenge varies substantially in our dataset. Therefore, we use data on GDP per capita from the

World Bank's *World Development Indicators* (2004) to calculate economic "damage," or the percentage of the pre-conflict GDP lost by the end of the conflict.

Second, in addition to the raw economic destructiveness of civil conflicts, we also attend to their duration. The longer a conflict episode lasts, the longer the economy and populace suffer, which should make subsequent recovery harder to achieve. However, the relationship between conflict duration and recovery might be non-linear. While a conflict that lasts a year is expected to do more long-term damage than one that lasts a week, ten years of persistent conflict might well allow economic actors to resume activity even while the conflict continues. We use data from the PRIO dataset to measure the length of the conflict episode and include a quadratic term as well to account for this possible inversion of effect.

Third, we also consider a conflict's origins. Whereas control-of-center conflicts are fought for leadership of the national government, territorial conflicts typically involve demands for secession or autonomy. We expect that the underlying grievances surrounding territorially-based conflicts less easily lend themselves to credible post-conflict commitments to peace. Territorial conflicts are characterized by a more continuous issue space; as a result, the issues more likely lack clear reference points to which political actors can agree and commit. In contrast, former combatants will likely find it more difficult to modify the resolution of control-of-center conflicts without a fundamental re-ordering of political institutions. The Uppsala Armed Conflict Data base distinguishes between these two types of conflict. We create a dichotomous indicator variable where conflicts over territory are coded 1 and conflicts over government control are coded 0.

Models and Results

We now turn to our choice of empirical model. As previously discussed, for each year following the conclusion of conflict, we code whether a country recovers economically or re-initiates civil conflict; otherwise, the country remains in a recovery period. This coding matches our focus on the speed of post-conflict recovery. The focus on the timing of recovery and recurrence suggests event history analysis in place of conventional regression analysis or logistic regression. Such analysis more closely approximates the underlying dynamic process generating our observation of recovery and recurrence and allows us to model how time-invariant (e.g., conflict termination type) and time-varying covariates (e.g., foreign aid) influence this underlying probability of a country's successful or unsuccessful conclusion to its recovery period.

In the language of duration analysis, countries in a post-conflict environment face a multi-state competing risks problem, since any recovery episode can end in either macroeconomic recovery or conflict recurrence. If a state experiences neither outcome, we treat it as right-censored. A competing risks analysis is well suited to this empirical problem. We can imagine that, at the conclusion of conflict, competing risks analysis starts two stopwatches, each timing its own event (i.e., recovery and recurrence). We can thus model the effect of our covariates on each event separately. To account for multiple recovery episodes within a single country, we follow Beck, Katz, and Tucker's suggestion (1998: 1272) and include in the specification a variable that counts the number of previous recovery episodes. Examining the baseline hazard suggests the use of the log-normal distribution for the duration portion of our model.¹³ This choice means that positive coefficients indicate that increases in the independent variable increase the time to the event. Therefore, in the recovery model, since the goal is to

facilitate quick recovery, negative coefficients – or at least smaller positive ones – are normatively better. In models of conflict recurrence, we normatively prefer a long peace and therefore larger coefficients. We report our results in Table 2.¹⁴

/INSERT TABLE 2 ABOUT HERE/

Do our statistical results support the causal story we have posited? We turn first to our predictions regarding the role of political institutions in short-term macroeconomic recovery. The results here support the proposition that political institutions matter for economic recovery and recurrence. In both the recovery and recurrence equation, the nine regime transition coefficients are jointly coefficient at $p=0.000$. Two of the coefficients in the recovery equation and four in the recurrence equation are statistically different from zero at $p=0.10$. We may safely conclude that political institutions do play an important role in post-conflict recovery and recidivism.

However, the evaluation of H1, H2, and H3 demands a more robust set of tests than comparing each or all of the coefficients to 0. More specifically, we must compare the size of the political institutional coefficients reported in Table 2. If the evidence favors the stronger version of H1 and H2, then we will expect democratic stability to be associated with faster recovery times than both other kinds of regime stability *and* all regime transitions. Meanwhile, we will expect democratization to be associated with slower recovery times than democratic stability *and* other types of regime transitions. If the Huntingtonian stability story in H3 is favored, then we should expect regime stability to be associated with faster recovery times than regime instability, whereas there will be few differences within regime stability or regime instability.

/INSERT FIGURE 1 ABOUT HERE/

Figure 1 begins this key portion of our analysis, depicting the results of Table 2 by ranking the effect of each of the political institutional transition types on recovery and

recurrence, starting with more favorable outcomes on the left and moving towards less favorable outcomes. All else equal, democratic stability is associated with the fastest recovery time, of about 2 years, whereas moves towards democracy are associated with the two slowest recovery times. An authoritarian regime that partially democratizes (becoming a mixed regime) needs about 7.6 years to recover, all else equal; an authoritarian regime that fully democratizes, all else equal, requires over 60 years to do so, with a coefficient over twice the size of the autocratic-to-anocratic transition. Conversely, transitions from anocracy to democracy are associated with the second-fastest recovery time. In combination, these two findings suggest that democratic stability or small shifts towards democracy result in faster economic recovery, whereas larger shifts towards democracy from (*i.e.*, from autocracy) and shifts to intermediate regimes present special problems.

However, not all changes in political institutions slow recovery so dramatically. As already noted, mixed regimes that democratize are correlated with the second-fastest recovery times, of about 2.4 years. Mixed regimes that instead move towards autocracy also recover relatively quickly, taking about 2.1 years. Each of these is faster than if the anocracy had remained in place at the conclusion of the conflict. However, Table 2 and Figure 1 offer some support for H3. Countries that begin a civil war as a democracy or autocracy, all else equal, recover more quickly when they retain their pre-conflict political characteristics, rather than shifting regimes.

However interesting these comparisons, we still have not tested whether these observed differences in recovery times are statistically significant. We therefore conduct Wald tests comparing the size of each transition type's coefficient to the others'.¹⁵ When we do so, we find tentative evidence in favor of H1 and H2. As we have already seen, there is some evidence in

favor of H3; in general we can conclude at $p=0.12$ that regime stability is good for economic recovery. Nevertheless, the results also indicate that democratic stability results in faster recovery times than authoritarian stability ($p=0.02$), and to a lesser degree, than mixed-regime stability ($p=0.09$). H3 does not anticipate this differentiation of the various forms of regime stability, whereas H1 and H2 do.

Further evidence supporting this trend is also available. Post-conflict democracy's effect on recovery depends strongly on the pre-conflict regime ($p=0.00$). There is strong statistical evidence, for example, that, in terms of macroeconomic recovery, post-conflict democracy performs far better when it is inherited from the pre-conflict period, as opposed to constructed out of the remains of an authoritarian regime ($p=0.00$). The same holds for post-conflict anocracy. The performance of mixed regimes does depend on the nature of the pre-conflict regime ($p=0.01$). More specifically, post-conflict mixed regimes recover more quickly when preceded by another mixed regime, as opposed to an authoritarian regime ($p=0.003$). In summary, our statistical results offer strong evidence that, though political institutional stability offers greater hope for recovery more generally, the *kind* of regime stability and regime instability matters quite importantly for post-conflict recovery – and in ways anticipated by our theoretical framework.

Before discussing the results from the conflict recurrence model, it's worth examining in more detail the causal mechanism posited by the argument. Specifically, we argued that credible commitments to the peace increase productive economic investments which in turn hasten economic recovery. We know from separate analyses that investment increases recovery time (see note 7 above) and from Table 2 that our indicators of credible commitment are linked to

faster economic recovery. But, thus far, we have not offered any direct evidence that credible commitments affect investment. Table 3 remedies this situation.

/INSERT TABLE 3 ABOUT HERE/

Each cell in Table 3 is the average increase in either FDI inflows or gross domestic saving over the recovery episode. Negative values mean that the country experiences an overall decrease in either FDI or domestic savings; positive values mean that they experience an overall increase. While small-sample sizes make the difference-of-means tests less than perfectly conclusive, they all point in the direction consistent with our theory. Outright victories have larger increases in FDI inflows and gross domestic savings than any other type of conflict termination, and than negotiated settlements specifically. Similarly, power-sharing agreements result in better FDI performance (though still a slight decline overall) and much more rapid increases in gross domestic saving. At least domestically power-sharing agreements are clearly seen as a good sign for peace prospects. Likewise, Table 3 demonstrates fairly conclusively that political transitions scare investors relative to regime stability, just as the theory posits. States without regime transitions have better luck attracting FDI and generating domestic savings. States that have political transitions, regardless of direction, suffer in terms of attracting FDI, but note that states that experience ‘autocratization’ still have, on average, positive increases in gross domestic savings, while those experience democratization have a decline in domestic savings too. This bolsters our confidence in the causal mechanism we posit.

So, what of conflict recurrence? Table 2, column 2 reports the results from the model of conflict recurrence and the second panel of Figure 1 depicts them graphically. In general, these results indicate that moving away from democracy is the best political-institutional guarantor against short-term recidivism. The coefficients for democratic transitions to autocracy and

democratic transitions to anocratic are both statistically significant from 0 and much larger than the other coefficients, including for stable democracy.¹⁶ Once again, new democracies rising from the ashes of authoritarian regimes rank last in terms of recurrence time; all else equal, they enjoy only 1.9 years of peace until conflict recurrence. Furthermore, and again reflecting our results for recovery, authoritarian regimes that partially democratize also suffer in the post-conflict period, with the second-shortest recovery time (3.1 years). Post-conflict democratization, it would appear, risks leaving precious little time for politicians to engineer macroeconomic recovery before the specter of political violence returns. Neither do our results provide much support for H3 since, as we have seen, pre-conflict anocracies and democracies both enjoy more time until conflict recurrence when they convert to a different regime type.

Again using Wald tests, transitions from authoritarian to democratic governance are statistically speaking worse than every other kind of regime transition type and every form of regime stability at $p=0.000$. Transitions from anocracy to democracy are: worse than every form of regime stability at $p=0.001$; better than transitions from authoritarian to democratic governance at $p=0.000$; and worse than every other form of regime transition at $p=0.05$, with the exception of transitions from democratic to anocratic governance ($p=0.12$). Among transition types that do not involve democratization, there are no statistically significant differences in recovery. Again, the democratization story is supported more strongly here; transitions to democracy from autocracy seem especially pernicious for post-war recovery in comparison to regime stability and other forms of regime change.

Our results for termination type provide further support for the credible commitment story. Conflicts that end in military victories, all else equal, experience a significantly longer period of time until the recurrence of conflict. However, they do not significantly alter time to

recovery. Meanwhile, peace agreements seemingly have no effect on either recovery or recurrence, again compared to the residual categories of ceasefires or informal cessation of violence. But how do military victories compare to peace agreements? We conduct Wald tests on whether the two indicator variables are statistically different from each other. In the recovery equation, the difference between outright military victories and peace agreements is not statistically significant ($p=0.38$). However, the difference between the two conflict resolution types is significant for time to conflict recurrence ($p=0.04$).¹⁷ These results suggest that, though outright military victory does not speed economic recovery directly, it moderates the urgency of the poverty-conflict trap by extending the time until the country will revert to conflict, all else equal.

This last result raises a potential concern.¹⁸ If political-institutional transition types and the modes of conflict termination are highly correlated – for instance, if democratic transitions are more likely to accompany negotiated settlements and autocratic transitions are more likely to follow outright military victories – then our findings for institutional transitions will be spurious. To gain some leverage against this concern, Table 4 considers the rate of success by transition and termination type.

/INSERT TABLE 4 ABOUT HERE/

Table 4 shows the number of cases, rate of successful recovery, and rate of conflict recurrence by political-transition type, termination type, and the existence of political power-sharing agreements.¹⁹ As suspected, negotiated settlements are extremely rare when a country experiences democratic back-sliding but are far more frequent when there is no major political transition or when there is democratization.

As our results in Table 2 suggest, however, our results are robust to controlling for this correlation. Even among the set of cases in which the conflict ended in outright victory (the best case scenario for post-conflict peace), new democracies have the worst rate of recovery and the highest rate of recidivism. And within the set of cases that had a negotiated settlement, success was much higher if the regime stayed stable than if there was democratization. Finally, if we only focus on negotiated settlements that had some political-power-sharing agreement built in, the pattern is the same.

In terms of our control variables, we attend first to the political economic characteristics of the country in question. The statistically significant negatively-signed effect of increased CIM is consistent with our expectation that increases in capital in the formal economy reduce the time till recovery. Pre-conflict wealth, on the other hand, seems to have little independent effect on conflict recovery or recurrence.

In contrast, our findings on the effect of international aid suggest a strong role in the post-conflict period, though not as Collier and Hoeffler (2000) would expect. Aid in the first three years of conflict reduces time to economic recovery, though this effect is only marginally significant ($p=0.09$). Aid in the next three years shifts actually increases time to recovery, though our estimate of this effect is extremely imprecise. Finally, aid given in year 7 and beyond of a recovery episode *increases* time to recovery; this effect is highly significant. One consequence of this conditional impact of aid is that studies omitting aid timing from their models are likely to generate misleading results. When we estimate a model that assumes that aid has a time invariant effect on recovery, it suggests that aid has no effect on recovery or the recurrence of conflict.^{20 21}

There is strong evidence that conflict attributes affect the pace of post-conflict economic recovery. Our findings support the proposition that conflicts fought over control of the central

government delay conflict recurrence because of the difficulty former combatant groups encounter in changing the resolution of such conflicts. The coefficient on our dummy variable for conflicts fought over territory is negatively signed and statistically significant ($p=0.05$).

The extent of the damage inflicted on the economy matters for economic recovery and recurrence. More destructive conflicts prolong the time until recovery. This is probably just confirmation of the simple hypothesis that states that have incurred greater losses take longer to do so. However, the fact that economic destructiveness is also positively correlated with conflict recurrence suggests another interpretation – that these states experience an extended transition period during which both recovery and recidivism are likely outcomes. The fact that the coefficient for our economic damage variable is roughly one-half the size of the coefficient for the same variable in the recovery model also suggests that this extended transition period is more likely to end in conflict than in recovery.

Finally, the duration of conflict has little effect on recovery, though there is strong evidence that it has a non-linear effect on conflict recurrence. The duration variable is positively signed, indicating that longer conflicts lead to a longer period of time to recurrence, but the squared term's negative sign indicates a quadratic effect; after a certain point, adding years to a war actually decreases time to recurrence. However, the effect of conflict duration stays positive over the entire range in our dataset (1-31 years) and the inflection point of 20 years indicates that only after a very long war does the effect of duration begin to decrease.

Conclusions and Implications for Future Research

This paper investigates one component of the complex relationship between civil conflict and economics by studying short-term economic recovery from conflict. We conclude here by summarizing our approach and results and considering their academic and policy implications.

We begin by stressing the difficulty and importance of post-conflict economic recovery. In the immediate aftermath of violent conflict, policymakers must rapidly implement policies that will support economic reconstruction. Simultaneously, they must build new political institutions or rehabilitate frayed ones. They do so in an environment where threats to the newfound peace continue to exist, causing civilians, potential international donors, and former combatants to doubt any assurances by the government that it will pursue peace. In short, the years immediately following the conclusion of hostilities constitute a critical and dangerous transition in a country's political, social, and economic life. As such, this period deserves sustained scrutiny to understand its unique dynamics. For if short-term recovery fails, the threat of violent relapse only grows. Our analysis, consistent with Collier and his World Bank team's (2003), indicates that countries that do not recover economically within one year face dramatically lower odds of avoiding further violent conflict.

More rigorous event history analysis further supports this view of the recovery process. If recovery – which, by our empirical definition, demands only that countries have minimally re-established broad patterns of economic activity – were purely a technical economic matter, our model would have ascribed statistical importance only to economic variables. Furthermore, if the dynamics of economic recovery were indistinguishable from those of long-term economic performance, our measure of the security of property rights would have held much of the predictive power over the speed of recovery. But this is not the case. Our analysis supports the view that post-conflict political transitions play an important role in this regard. Specifically, major changes in regime from autocracy to democracy retard economic recovery. These findings are robust to different specifications of political institutional transitions. Furthermore, transitions to mixed regimes (that is, anocracies) have a largely negative effect on post-conflict recovery.²²

Our analysis also uncovers four other statistical regularities regarding post-conflict economic recovery that may be of interest to peace researchers. First, we find that outright military victory leads to a longer peace when compared to peace agreements, further supporting the credible commitment story. Second, international aid speeds time to recovery, especially when that aid is funneled to recovering countries early after the conclusion of hostilities (*i.e.*, within three years).²³ Third, we find that countries recovering from conflicts fought over territorial concerns more quickly experience a recurrence of violence than countries recovering from conflicts fought over control of the central government. Finally, more destructive conflicts prolong time until recovery, but also prolong time until conflict recidivism, implying that such countries likely experience an extended transition period during which recidivism and recovery are both likely outcomes.

We believe that our theoretical and empirical approach to recovery offers new insights into the political economy of civil conflict. Nevertheless, in doing so, we raise new questions for future research that will clarify outstanding questions. We call attention to three specific areas. First, we urge future researchers to develop a subtler understanding of the factors at play in post-conflict democratization. A fruitful avenue would be to understand the role of different formal components of democracy in the post-conflict period. What are the dynamics of elections in the immediate post-conflict period and how can they play a more positive role in including previously excluded parties? Do specific electoral or party systems better manage post-conflict tensions? How can an independent judiciary that protects the rule-of-law be built during this period?

Second, we point authors towards a consideration of more medium and long-term consolidation of gains made during post-conflict recovery. After the initial goals of post-conflict

recovery have been attained, policymakers must pursue policies that will place the economy on sound footing for long-term economic development (Bigombe, Collier, and Sambanis 2000; Collier et al 2003; Kang and Meernik 2005). This may require structural economic and political reforms that may reignite violent tensions. Understanding the dynamic of this next transitional period provides another link in the chain from conflict to long-term stability.

In line with this recommendation, we also urge scholars to consider the origins of civil conflicts and their relationship to post-conflict challenges. The countries that ultimately enter our dataset almost certainly form a non-random sample, which raises the potential for bias in our results. Mature democracies rarely suffer serious civil conflict. New democracies built at the conclusions of civil conflicts tend to be the result of especially violent civil conflicts. Not all conflicts end in outright military victories. We suggest that scholars treat such problems not as statistical “bugs” to be “fixed,” but as theoretical challenges to be investigated. Research on domestic civil conflict should move toward developing a more integrated framework of analysis that links all the stages of conflict from onset to recovery. Each of these topics has typically been studied in isolation, an important first stage of a research program. Nevertheless, the time is propitious for the construction of a more unified theory of civil conflicts.

We conclude with a word on the policy implications of this research, particularly the role of democracy. We do not share the sentiment that our findings support the imposition of authoritarian leadership in the wake of civil conflicts. In the long-run, the maturation of legitimate, democratic political institutions provides the most effective bulwark against civil conflict. The imposition of an authoritarian leadership during the aftermath of a civil conflict merely sacrifices long-term peace and prosperity for short-term stability. We view that tradeoff with great suspicion.

Instead, we advocate a managed transition to democracy that delicately balances the dangerous short-term context with long-term goals. We agree with Paris (2004) and Ball (1996) that this likely involves delaying elections significantly. Ball (1996) argues that an extended period of caretaker governments can help bridge the gap between the conclusion of hostilities to the inauguration of the first legitimately democracy government. During this period, foreign governments and multilateral institutions should focus efforts on building some the prerequisites of a successful democracy. Aid, for example, can be directed to building a free and responsible media, civic organizations, and political parties. Foreign governments may also be able to help new democrats design electoral mechanisms that require politicians to gain support outside her region or ethnic group in order to win office to make reconciliation more likely (Paris 2004).

During this period, interim governments likely will shift responsibilities for security guarantees to third parties due to the short-term credibility gap as described here and in Walter (1997, 1999). Foreign peacekeepers may thus play an important role in directly separating former combatant groups and supervising disarmament. Foreign aid can also serve to enhance the credibility of the peace through rehabilitating areas more severely struck by conflict and focusing national expenditures on social spending (Collier et al 2003). Finally, confidence-building efforts should be emphasized during this period

This discussion, though perhaps useful as a general guide to post-conflict countries, must be prudently tailored to the political, social, and economic realities of specific post-conflict countries. The road to stability will depend on the ethnic, economic, and regional dynamics of the conflict. The implications for policy are clear: re-building a conflict-torn society requires that we understand the roots of its conflict, its conduct, and its final outcome.

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Table 1. Summary of Cases

<i>Category/Duration</i>	<i>Number</i>	<i>% of all cases</i>	<i>% of recoveries/relapses</i>
Total cases	164	100%	
Cases with missing data	20	12%	
Ongoing conflicts	20	12%	
Censored cases	24	15%	
Cases of Recovery			
Year 1	45	27%	69%
Year 2	6	4%	9%
Year 3	4	2%	6%
Year 4	3	2%	5%
Year 5	2	1%	3%
Year 6	1	1%	2%
Year 7	1	1%	2%
Year 8	1	1%	2%
Year 10	1	1%	2%
Year 19	1	1%	2%
Total recovered	65	40%	100%
Cases of Relapse			
Year 1	17	10%	49%
Year 2	8	5%	23%

Year 3	4	2%	11%
Year 4	3	2%	9%
Year 5	0	0%	0%
Year 6	0	0%	0%
Year 7	2	1%	6%
Year 8	1	1%	3%
Total Relapsed	35	21%	100%

Table 2. Log-Normal Competing Risks Estimates of Recovery and Recurrence

	Recovery		Recurrence	
	<i>Estimate</i>	z^p	<i>Estimate</i>	z^p
Authoritarian stable	1.16	1.34 ^{0.18}	1.26	1.25 ^{0.21}
Authoritarian transition to anocratic	2.03	2.19 ^{0.03}	1.14	1.17 ^{0.24}
Authoritarian transition to democratic	4.16	4.03 ^{0.00}	0.62	0.49 ^{0.63}
Anocratic transition to authoritarian	0.76	0.88 ^{0.38}	1.58	1.52 ^{0.13}
Anocratic stable	1.05	1.12 ^{0.26}	1.64	1.51 ^{0.13}
Anocratic transition to democratic	0.87	0.87 ^{0.38}	2.02	1.64 ^{0.10}
Democratic transition to authoritarian	1.07	1.15 ^{0.25}	4.87	4.84 ^{0.00}
Democratic transition to anocratic	1.39	1.59 ^{0.11}	4.22	3.79 ^{0.00}
Democratic stable	0.73	0.87 ^{0.39}	1.69	1.68 ^{0.09}
Pre-conflict GDP per capita (High)	0.03	0.30 ^{0.76}	-0.04	-0.36 ^{0.72}
Aid: 1 to years	-0.10	-1.26 ^{0.21}	-0.15	-1.26 ^{0.21}
Aid: 2 to 6 years	0.10	1.15 ^{0.25}	-0.06	-0.45 ^{0.66}
Aid: 7 years +	0.33	2.51 ^{0.01}	0.14	0.86 ^{0.38}
Secessionist conflict	0.30	1.44 ^{0.15}	-0.45	-2.04 ^{0.04}
Conflict duration	-0.02	-0.40 ^{0.69}	0.12	2.05 ^{0.04}
Conflict duration (squared)	0.0002	0.12 ^{0.91}	-0.003	-1.80 ^{0.07}
Economic damage	0.02	2.63 ^{0.01}	0.01	1.88 ^{0.06}
Termination: victory	0.03	0.12 ^{0.90}	1.01	3.97 ^{0.00}
Termination: peace agreement	0.23	0.84 ^{0.40}	0.30	0.92 ^{0.36}
Recovery number	0.08	0.71 ^{0.48}	0.15	1.64 ^{0.10}

Δ Contract intensive money (CIM)	-8.38	-2.38 ^{0.02}	1.62	0.41 ^{0.69}
<hr/>				
No. of Observations	307		307	
No. of Recovery Episodes	100		100	
No. of Countries	67		67	

Notes: Z-statistics calculated using robust standard errors which were corrected for clustering by country are reported in parentheses with p-values superscripted.

Table 3. Credible Commitments and Investments

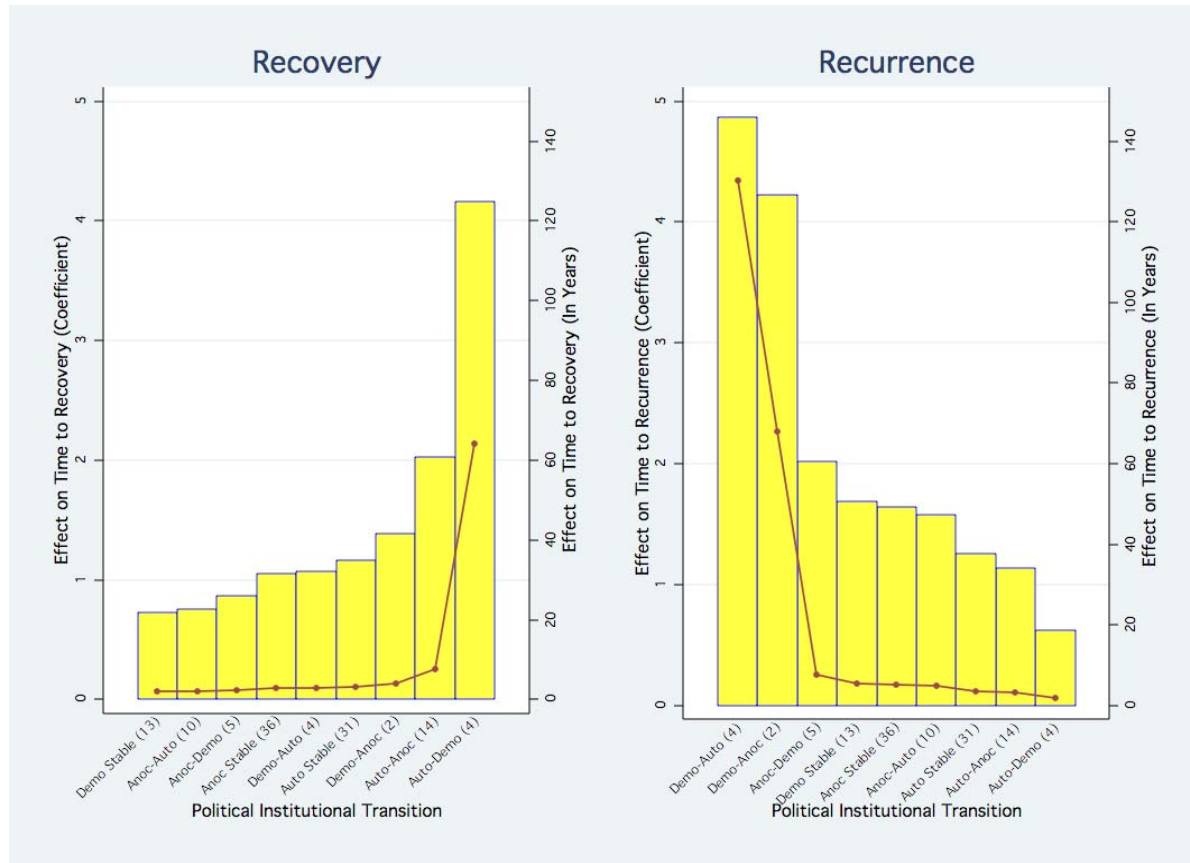
	Increase in FDI inflows			Increase in Domestic Savings		
	<i>No</i>	<i>Yes</i>	<i>p-value</i>	<i>No</i>	<i>Yes</i>	<i>p-value</i>
Outright Victories	-0.17	0.03	0.16	0.4	0.74	0.17
Negotiated Settlements	0.04	-0.63	0.44	0.5	0.68	0.22
Power-sharing Agreements	-0.49	-0.07	0.14	0.84	3.5	0.05
<i>Political-Institutional Transitions</i>						
Autocratization	0.02	-0.93	0.05	0.44	0.09	0.31
Regime Stability	-0.86	0.31	0.01	-0.33	0.75	0.06
Democratization	0.11	-0.82	0.03	0.63	-0.64	0.06

Note: p-values are from one-tailed difference-of-means tests.

Table 4: Political Transition and Other Types of Credible Commitment

	Termination Type		Political Power-
	<i>Outright Victory</i>	<i>Negotiated Settlement</i>	Sharing Agreement
Autocratization	n = 7	n = 1	
<i>Successful Recovery</i>	57.1 %	0%	
<i>Conflict Recurrence</i>	14.3%	0%	
Regime Stability	n = 36	n = 11	n = 10
<i>Successful Recovery</i>	63.9%	45.5%	40%
<i>Conflict Recurrence</i>	16.7%	36.4%	20%
Democratization	n = 9	n = 9	n = 5
<i>Successful Recovery</i>	11.1%	22.2%	20%
<i>Conflict Recurrence</i>	44.4%	33.3%	40%

Figure 1. The Effect of Political Institutional Transitions on Recovery and Recurrence



Notes: Bars represent size of coefficients for political institutional transition; connected line shows corresponding effect on recovery and recurrence in years. Transitions are ranked from left to right in *descending normative* order (i.e., from shortest time to longest time for recovery and longest time to shortest time for recurrence). The number of cases for each type of political transition is shown in parentheses along the horizontal axes.

Endnotes

¹ Empirically speaking, countries experiencing civil conflict exhibit a broader range of economic performance than one might expect. For a skeptic's view of the effect of civil conflict on economic performance, see Haber, Razo, and Maurer (2003), Chapters 1 and 2.

² Definitions of economic recovery and conflict relapse are discussed in detail below.

³ The relationship between investment and growth has long been investigated by economists. De Long and Summers (1991) find a strong link between equipment investment and economic growth. In his empirical study of economic growth, Barro (1997: 35) concludes that policy changes likely have a strong effect on investment, which in turn sparks economic growth; our logic regarding credible commitment, investment and recovery echoes his.

⁴ Our final data set covers 1960 to 2002 since that is the temporal coverage of the World Bank's *World Development Indicators* (2004), our source for economic data.

⁵ The UCDP Conflict Termination data set assembled by Joakim Kreutz also uses the 'conflict episode' as the unit of analysis.

⁶ A potential critique of this approach is that it ignores the "opportunity costs" of conflict. That is, in the absence of conflict, if the country had maintained its normal growth rate, its GDP per capita would have increased as well, which suggests that some counter-factual level should be the threshold for recovery. While we recognize this critique's validity, we believe our definition's advantages outweigh its potential disadvantages. Most importantly, our approach does not require us to speculate about the country's counter-factual growth rate, which is particularly important because high levels of growth-rate volatility in the developing world make speculations about future growth paths tenuous at best (Pritchett 2000).

⁷ An important assumption of this framework is that post-conflict economic recovery is a function of increased economic investment during the recovery period. We tested this assumption by including measures of FDI inflows, gross domestic saving, and contract-intensive money in a model of economic recovery. Increases in all three reduce time till recovery and these effects are statistically significant. Full results from this analysis are available in the web appendix.

⁸ We have also utilized a more stringent measure of recovery, which required countries to have post-conflict levels of GDP per capita equal to or higher than their pre-conflict levels for three consecutive years. Results utilizing this measure are consistent with those reported in the text; see the web appendix.

⁹ A complete listing of all conflict episodes, recovery episodes, and our coding of their outcomes, is provided in the web appendix, as are summary statistics for all variables used in the analysis.

¹⁰ For important critical evaluations of the Polity Index's utility, see Treier and Jackman (2008) and Vreeland (forthcoming).

¹¹ Normally, we might code these hypotheses with a multiplicative interaction term of the pre- and post-conflict Polity indicators. However, we argue that this strategy imposes two restrictions on the data unsupported by theory. First, it implies that anocracies are superior to autocratic regimes. Second, the continuous measure codes a move up the scale as the exact opposite of a decrease of the same number of points. Such a coding would make it impossible to decipher whether democratization is indeed "different." With these concerns in mind, we did estimate this multiplicative interactive model; the results support our claims and are available in the web appendix.

¹² Roy Licklider has suggested that recent conflicts might experience a new termination type, which he terms ‘forced settlement’ (personal communication).

¹³ The hazard rate peaks slightly 4 years after the conflict’s end, and then falls away steadily, which suggests that most successful economic recoveries occur within 4 years (see web appendix). Statistically, the non-monotonic shape of the hazard function suggests the use of the lognormal distribution for the duration portion of our model (Box-Steffensmeier and Jones 2004). We also estimated Cox non-parametric equations for each of the models presented here. The log-normal distribution generates the lowest Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) scores. However, our results hold when we use the Cox model. See web appendix.

¹⁴ We also controlled for the country’s level of trade openness and the percentage of its terrain covered in mountains, which we obtain from Fearon and Laitin (2003). We find that trade has no association with recovery or recurrence and so do not include it in the results reported here. The geography control has no effect on recovery, but reduces time to recurrence – an effect that is highly statistically significant. This finding is consistent with past scholarship on the effect of geography on the duration of civil conflict (Fearon and Laitin 2003). However, we do not include these findings here because the mountainous terrain measure results in a loss of 21.6% of the total sample. See the web appendix for these results.

¹⁵ A full set of these Wald tests is reported in the web appendix.

¹⁶ We would add one caveat to this discussion. In our data, the countries that underwent full democratic transitions were those that had the most bloody (*i.e.*, highest levels of battle deaths) conflicts. When one controls for the number of battle deaths in the models in Table 2, the results in the recovery equation are unaltered, but, in the recurrence equation, democratic transitions are

significantly linked to longer periods of post-conflict peace. We attend to this finding in the conclusion. Including the battle deaths variable results in the loss of over 10% of our sample, and so we prefer the results from the models that exclude it. Results with it included are available in the web appendix.

¹⁷ While these results are suggestive of outright military victories, we caution that a fuller evaluation of the effect of termination type on recovery would need to account for possible problems of non-random assignment. If some unobserved factors correlated with termination type are also correlated with timing of recovery and/or relapse, then the rests discussed above might be spurious.

¹⁸ We thank an anonymous reviewer for raising this point.

¹⁹ Data on political power-sharing agreements in negotiated settlements are from Hartzell & Hoddie (2007: Table 3).

²⁰ Results are available in the web appendix.

²¹ We place multiple caveats on this finding. First, countries still in recovery after six years (i.e., neither recovered nor relapsed) are likely to be countries recovery from extremely intense conflicts. Second, the focus of our study diverges from that of Collier and Hoeffler (2000); whereas their work emphasizes longer-term post-conflict economic growth patterns we concentrate explicitly on the more shorter-term dynamics. These results do not imply that donors should restrict aid to countries still struggling to recover years after a conflict episode.

²² While this result would appear to confirm fears about the ‘incoherent’ nature of these regimes (Hegre, et al 2001), we urge readers to pay particular attention to the concerns raised by Vreeland (forthcoming) about the ‘anocracy’ category.

²³ Our findings on aid could result from non-random selection if aid donors funnel aid to countries in which they believe a stronger commitment to the peace exists. In other research, we explore this possibility more fully.