

RESEARCH REPORT

Disarmament, Demobilization, and Reintegration Programs

An Assessment



Jonah Schulhofer-Wohl and Nicholas Sambanis



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Jonah Schulhofer-Wohl and Nicholas Sambanis

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Authors: Jonah Schulhofer-Wohl and Nicholas Sambanis

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Preface

Ann Bernes
Director of Department for Policy, Research and Development

Birger Heldt
Director of Research

SINCE THE EARLY 1990S we have witnessed a significant decline in the number of ongoing armed conflicts and at the same time a dramatic increase in the number of Disarmament, Demobilization and Reintegration (DDR) programs. It is clear that DDR has become part and parcel of peace processes and peacekeeping operations. Research on the subject matter is thriving, and is rich with valuable insights and anecdotes. Meanwhile, it remains unclear as to what extent insights derived from case studies are possible to generalize across the spectrum of DDR programs. If we are to learn lessons from previous DDR programs, and if lessons learned studies are to be meaningful, then we have to assume that the insights and anecdotes are not unique, but applicable to many, if not most, of the DDR programs. Thus, the insights would need to form a larger pattern of commonalities across cases. It is therefore important to complement the case studies that are characterized by depth, with the scope of systematic evaluations that incorporate a large number of cases that make it possible to determine whether there are in fact any general patterns.

As the practice of DDR has matured and become prevalent, and as research has accumulated, it has become possible and timely to take stock of achievements and challenges. This thought-provoking report reviews the area and its evolution. It highlights achievements and challenges, is rich with illustrative case examples, and suggests a series of fruitful and practical solutions towards better evaluations of DDR programs. One insight of the authors' is that evaluations of DDR programs need to move beyond its focus on performance (that is, whether all parts of a DDR program were implemented) and instead focus on impact in terms of building peace. This, we

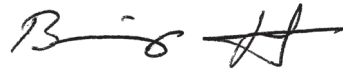
concur, applies also to evaluations of peacekeeping operations in general. A second insight is that we need to look more carefully into the micro-foundations or causal pathways of DDR, in terms of exactly why and how DDR can contribute to peace. This is an important issue since it carries large policy implications for how DDR programs should be designed to have the largest possible impact. A third insight is that DDR programs should be designed to make it easier to carry out systematic evaluations. Overall, the report suggests policy relevant elements of a new research agenda and tools for evaluating DDR programs.

This is an important publication for scholars and practitioners interested in the subject matter. It is yet another example of the output of the international research working groups created and financed by the Academy. These groups have been created to promote research, develop research agendas and offer a forum for exchange of ideas, findings and networking. Overall, the groups attempt to promote systematic, rigorous and broad comparative studies, including large-scale field surveys, which are of policy relevance. The ultimate goal is to improve and inform policy. We are pleased to offer this report to the policy and scholarly communities.

This study has been financed by the Academy. The responsibility for the contents rests with the authors.



Director
Department for Policy,
Research and Development



Director of Research

Introduction

- 1 FOR AS LONG as warfare has existed societies have confronted the problem of what to do with combatants once hostilities cease.¹ Following international wars there is little concern that ex-combatants may threaten the peace, either between the states or domestically, although ex-combatants may pose a problem for public order. But when civil wars end, the presence of armed elements with few alternatives to practicing their violent skill-sets poses a threat to consolidating gains made in peace processes near their conclusion, or to the stability of an already-concluded peace. Disarmament, Demobilization, and Reintegration (DDR) programs have developed as a response by the international community to the perceived risk of a return to violence if former combatants are not rehabilitated and reintegrated into society.
- 2 DDR programs involving the World Bank, the United Nations (UN), and other international actors date to the late 1980s, and have grown rapidly in number and scope. The appendix contains tables listing the presence of DDR programs during or following civil wars for the 1979 to 2006 period. We break them down by whether external assistance was provided to the program. In all, DDR programs were implemented in a total of 51 civil wars that were active during the period 1979 to 2006. If we consider only civil wars that ended from 1994 on (or were ongoing during that time) and for which the DDR process also occurred, we are left with DDR programs related to 38 post-civil war contexts. This indicates a sharp increase in the incidence of new DDR programs from the mid-1990s on.²

- 3 Why are DDR programs increasingly used after civil war? The impetus for at least the initial round of DDR programs in the 1979 to 2006 period came from sovereign government donors to World Bank programs who wanted to know “how do we deal with these people [the combatants]?”³ This practical concern dominated the early debates in designing DDR programs, while a more analytical examination of the goals came later on. DDR programs were almost immediately perceived as good practice and donors were eager to engage in them as policy analyses from the mid-1990s began to articulate a host of ways in which international actors could expect to see their investments in DDR efforts produce good outcomes, such as stability and prosperity in post-conflict countries.⁴ Very quickly, DDR came to be seen as integral to a successful transition to peace and vital to promoting long-term stability, security, and economic development.⁵
- 4 Many untested assumptions went into the elaboration of the potential effects of DDR programs. These assumptions, and the consequent belief that DDR programs are essential in helping to prevent war-recurrence in post-conflict situations, are at the heart of current international aid practices, the policy literature, and most of the academic literature. This makes a complete evaluation of the potential of DDR programs to accomplish their stated goals with respect to peacebuilding both urgent and all the more surprising in its absence to date.
- 5 In this report, we provide an assessment of DDR from a social-scientific standpoint. First, in this introduction, we summarize the research questions that studies on DDR in the policy and academic worlds want to answer. These questions fall into two categories: DDR programs’ effectiveness in achieving their various goals, and how best to implement programs to achieve these goals. Second, we review the policy and academic literatures on DDR by the topics singled out in the introduction. Third, in a methodological review, we ask, how we can evaluate the effects of DDR programs? Among the questions about DDR programs currently being asked in the literature, which questions are hard, if not impossible, to answer? Are the right data being collected and appropriate methods used in impact evaluations of DDR programs? Fourth, we conclude by drawing on our analytical review to provide an agenda for future research. We identify ways that the literature can move forward and draw out the implications of our discussion for the broader literature on peacebuilding interventions.

1.1 Limitations in the Evaluation of DDR Programs

- 6 Despite the widespread use of DDR programs and the strong belief in policy circles that they are effective, no study to date has been able to isolate and measure the impact of DDR programs on peace processes. Typically, however, such studies claim success in a broader sense: if the DDR program is implemented and there is

no return to armed conflict in the country, then a causal connection is drawn between the two. But this approach is problematic, since given the presence of many confounding factors the DDR program is not necessarily connected to the outcome observed.

- 7 A few studies have taken a cross-country comparative perspective to assess the effectiveness of DDR programs. A landmark study by the World Bank (1993) was written too soon after the start of several large DDR programs and so it was not possible to fully evaluate their impact. That study pointed to the need to build program evaluation into each DDR program and identified some of the difficulties encountered in proper evaluation of DDR programs. It noted that there was a lack of adequate information on DDR programs and that existing studies were not able to address the counterfactual of what would have happened if a DDR program had not been used in a given peace process (see World Bank 1993:18-19).
- 8 A common way to assess the impact of DDR programs is to give a before-and-after picture of program participants. Some studies claim success for DDR programs using this approach, where the outcome might be the duration of productive employment for project participants or some other outcome measured at the individual level. It is, however, difficult to link broader policy outcomes—such as war or its absence—to individual level outcomes; and it is even difficult to accurately measure individual level outcomes, let alone keep program participants under observation for long periods in most postwar settings. A World Bank study (1993:xii) reported that five years after the end of the program, almost 40% of those participating in cooperatives had dropped out and only 28% of participants had found employment outside the military and public sector, with 17% remaining unemployed. These statistics do not give us a good sense of the program's impact, since for such an evaluation we would require a comparison to a properly selected control group of non-participants that is observed over the same period.
- 9 An even larger limitation with the policy literature is that many—if not most—of the conclusions about the determinants of DDR program effectiveness are too vague or state rather obvious points. For example, one frequently reads that DDR programs will be effective if there is “commitment by all concerned parties” (World Bank 1993:12), or if “donor countries are partners in the design of DDR programs,” if “the caliber of UN staff working on DDR is high, and “if the NGO community is utilized more by the UN to deliver DDR support.”⁶ Spear's (2002) discussion of the factors that influence the effectiveness of DDR programs includes some of the usual suspects, such as the implementation environment, the capacities and resources of those implementing the programs, and the monitoring and verification of treaty implementation. Along the same lines, Colletta's (1999) review of World Bank-funded DDR programs find that keys to the success of a

DDR program are “political will,” “good assessments of former combatants’ basic needs and socio-economic characteristics,” and “institutional transparency with monitoring.” It is clear—some would say obvious—that if staff are poorly trained, if no resources reach the target population, if program officers do not know the needs of the target population, or if donors back out of supporting the program, any assistance strategy is likely to fail. Beyond this, however, do we have impact evaluations of DDR programs that can make clear policy recommendations for how to organize these programs in such a way as to maximize their chances of success? In most of the literature that we reviewed, we found little evidence of systematic assessments. Rather, most studies make sweeping statements based on limited and rather ambiguous evidence.

- 10 Perhaps the most constructive element of evaluations and technical reports on DDR programs is their conclusions about important technical aspects of these programs, leading to several “lessons learned” that are widely shared in policy studies across different organizations. Some of these appear obvious, as we mentioned above. Careful profiling of the former combatants through socio-economic surveys is thought to allow better targeting of reintegration programs (UN DPKO 1999).⁷ Other lessons are perhaps less obvious, including the following: Demobilization and discharge should be done quickly to avoid long periods of encampment, which increase the risks to security;⁸ cash entitlements are often preferable to in-kind assistance as they are more flexible; participants should be separated into groups and subgroups depending on their desired occupation after reinsertion into society and the reintegration program should target each group separately; and a central coordinating (civilian) agency is often critical for smooth and efficient program implementation.⁹
- 11 The main conclusions that we reach from reviewing this literature are that (a) what we know (or think we know) about DDR programs refers to implementation issues and technical details; (b) many best practices essentially reflect common sense and are not based on solid empirical assessments of a wide array of programs evaluated under similar conditions; and (c) there is a large conceptual gap in understanding the relationship between DDR effectiveness at the individual level and the broader impact of these programs on the risk of war recurrence.

1.2 Refocusing

- 12 A particularly striking aspect of research on DDR is that, in its narrow focus on implementation issues, it often loses sight of the fundamental research questions that should motivate it. Consequently, existing studies of DDR programs often cannot say much about the effect of these programs on peacebuilding after civil war. The field, at its heart, concerns the stability of peace after civil war, and the

links between conflict (or prospective conflict) and economic development. In what follows, we re-focus attention on these issues and on the need to investigate whether DDR programs indeed help to enhance stability and development in a post-conflict environment. Ultimately, this is what practitioners want these programs to do.

- 13 Organizations working in the field of DDR view these programs as fundamentally multi-dimensional, with wide-ranging intended effects, but nevertheless with a primary emphasis on security. The Final Report of the Stockholm Initiative on Disarmament Demobilisation Reintegration (SIDDR), under the auspices of the Ministry of Foreign Affairs of Sweden, reflects this understanding: “The SIDDR ...defends a conception of DDR which aims to stabilise the post conflict situation, while at the same time keeping the long-term peace-building agenda in mind” (SIDDR 2006:14).¹⁰ In this report, we discuss four distinct goals that are commonly attributed to DDR processes:
 - preventing civil war from recurring, mainly through improving economic development;
 - preventing crime and violence;
 - stimulating civic and political participation; and
 - healing trauma caused by the experience of war.
- 14 We disaggregate the potential contributions of DDR to peace into topical areas in this way so that we can expose the various research questions they imply. We also discuss two issues concerning the implementation of DDR programs, and similarly indicate what research questions arise from them: how should elements of these programs be sequenced; and, could programs have adverse effects? Then, in light of fairly inconclusive empirical evidence on the effectiveness of DDR programs to date, in a section on methodology we look at how analyses of these questions might be more precisely conducted in the future and how to achieve more scientifically-valid results.

Literature Review

2.1 War Recurrence and the Conflict-Development Nexus

- 15 THE CHIEF CONCERN in a post-conflict environment is preventing the resumption of hostilities. DDR programs are thought to reduce the risk of a war recurring in a variety of ways, by:
- reducing the availability of weapons;
 - geographically dispersing ex-combatants and disrupting their social networks;
 - providing ex-combatants with economic opportunities unrelated to conflict;
 - building confidence between former warring parties, including restructuring the military; and
 - helping governments realize peace dividends.

The links between these outcomes and a lower risk of war recurrence rest on ideas about the individual-level opportunity costs of war, and bargaining models emphasizing the importance of overcoming commitment problems to end conflict.

- 16 At the micro level, the “R” (Reintegration) in DDR programs is thought to influence the overall risk of war recurrence by enhancing the economic opportunities of former combatants.¹¹ This view is consistent with currently popular economic models of civil war, according to which one would expect the risk of war to be greatest where the economic opportunity costs of war are lower.¹² The “Ds” help in other ways: through “micro-disarmament,” DDR programs can reduce the prevalence of small arms and make a rapid re-mobilization for violence harder.¹³ Similarly, the risk of recurrence can be reduced through DDR program-achieved

demobilization, which severs the ties between former combatants and the command structure.¹⁴ At the macro level, one mechanism through which DDR programs are supposed to contribute to peace is through reductions in military expenditure, following the restructuring and downsizing of the military, which should lead to greater economic growth,¹⁵ and consequently a reduced risk of civil war down the road. Disarmament also serves a symbolic purpose (signifying the end of war) and tests the parties' commitment to the peace process, thus building their confidence in it and each other.¹⁶

- 17 The broader literature on the recurrence of civil wars supports the plausibility of these conjectures concerning the possible role of DDR in peacebuilding. Doyle and Sambanis (2000, 2006) find evidence that multidimensional UN peace operations substantially increase the likelihood that post-conflict peace will be sustained (see also Fortna 2004).¹⁷ Glassmyer and Sambanis (2008) show a correlation between power-sharing agreements and more durable peace settlements (see also Hoddie and Hartzell [2003]). A causal connection is hard to establish, although there are several plausible mechanisms, including the perception that such outcomes are more democratic and the confidence-building effects of power-sharing. Two types of power-sharing are the integration of former warring parties into the institutions of government, and the integration of their forces into the national military, both of which can be facilitated through DDR programs.¹⁸
- 18 Due to the emphasis that many theories of war recurrence place on economic considerations, the potential effect of DDR programs on the economy, and thereby indirectly on the likelihood of a return to war is also of primary importance. On the part of governments, the motivation for initiating DDR programs is often directly linked to the promise of a post-war "peace dividend." Growth can be stimulated by reducing government military expenditures, thereby allowing increased government spending on development initiatives or in other productive areas. If reduced military spending allows governments to cut their budget deficits, this may also stimulate the economy through lower inflation, which in turn will reduce unemployment and encourage investment. Not only might government expenditures shift to productive activities, but the demobilized ex-combatants, if employed, would bring more human capital to bear in these activities as well (World Bank 1993; Colletta et. al. 1996a; Kingma 2002). However, despite the optimism brought by conflicts ending, countries may not see these "savings" materialize to the degree anticipated (Kingma 2002:182).
- 19 Broadly speaking, the literature on war recurrence provides *prima facie* support for the conjecture that DDR has a positive effect on reducing the likelihood of renewed conflict. The difficulty is that the mechanisms through which DDR is posited to have this effect receive either much less support than their prominence

in thinking on DDR would suggest, or are not tested directly by existing studies. DDR literature emphasizes individual opportunity costs, and how short-term income assistance to ex-combatants being discharged and longer-term assistance to improve their prospects of employment mitigate the risk that these individuals will return to bearing arms. However, theoretical reasoning and emerging evidence in empirical studies suggests that opportunity costs do not explain recruitment of individuals into rebel organizations or the incidence of conflict (see end-note 12). A second mechanism, that of DDR assisting inter-group confidence building, fares better. But the DDR literature does not spell out in detail how programs contribute to confidence building other than to raise this possibility with respect to the disarmament and demobilization phases. These issues underscore the need for empirical evaluation of the presumed effects of DDR and attention to evaluating whether the proposed mechanisms leading to those effects do indeed play out.

2.2 Violence and Crime Prevention

- 20 Continued violence following war, even if isolated or at low enough levels not to constitute resumption of the war, or even if wholly apolitical, may pose a threat to stability. In post-conflict settings where government institutions are weakened by war, violence may continue as private firms proliferate to fill the security vacuum left by the government (Colletta et. al. 1996a:v). Violent actions that were part of the war might continue after the war ends, but in the post-conflict period be termed criminal, or disassociated from politics (Clark 1996:29–30; Taylor and Jennings 2004: 7).¹⁹
- 21 Criminal violence after civil war may be more likely if the parties involved in the war attracted individuals motivated more by the opportunity for quick profit through criminal activity and less by their ideological commitment to the political purpose of the war. However, postwar criminal violence need not result solely from the prevalence of such “bad” types of ex-combatants. Anyone might turn to crime in the absence of viable alternatives for generating income. Indeed, ex-combatants might be more prone to such behavior given their greater familiarity with weapons and violence as compared to the average civilian (Bank 1993:72; Collier 1994; Kingma 1997:12). More generally, widespread access to weapons may simply be associated with higher levels of crime (Carbonnier 1998:18; World Bank 1999:§3.7; Gleichman et. al. 2004), especially in the presence of “the culture of violence inherited from war” (World Bank 1999:§1.2). The type of weaponry available may also pose a challenge to the government in its attempts to fight crime and provide security, as “[i]n many cases police and civilians are literally ‘outgunned’ by former combatants and criminals wielding military-style weapons” (Muggah 2005a:241).

- 22 Social opportunities also play an important role in risk factors for crime and violence. Community stigmatization of ex-combatants may pigeon-hole them as deviants, pushing them into lives of crime (Colletta, et. al. 1996a:24). Or, crime and violence may have an expressive function for ex-combatants, who use it as an avenue to convey their “frustrat[ion] at their inability to reintegrate” into society and dissatisfaction with the assistance given them by the government to do so (Spencer 1997:14).
- 23 In theory, DDR programs may help mitigate the risk of postwar violence through their effect on the opportunity-cost mechanism (in the same way that they can help reduce the risk of war recurrence). Reintegration programs may improve the economic opportunities of ex-combatants, whether through job training (increasing their human capital), the provision of start-up capital for small businesses, or simply cash or material transfers. Disarmament is also thought to play an important role. The destruction of weaponry might have a symbolic effect and help push individuals away from war-time mindsets that legitimized violence. Thus, many practitioners insist on public displays of the destruction of weapons, even if governments will not actually destroy all weapons collected through disarmament programs but instead wish to stockpile them or distribute them to the security forces. Laurance and Meek (1996:85) make reference to the “supposed psychological value” that destroying weapons by burning them in a public place had during a 1992–1993 Nicaraguan program. Tuareg rebels participated in a 1996 ceremony in Mail in which 3,000 weapons were burned, marking the official end of the war. The event, dubbed *la Flamme de la Paix*, became a model for other countries involved in post-conflict DDR processes and disarmament exercises (Poulton and ag Youssouf 1998; Bah 2004; Florquin and Pézard 2005).
- 24 If buy-back programs for weapons are implemented, disarmament could also act to reduce the likelihood of violence and crime simply by the economic benefits it provides to ex-combatants with weapons to sell (although this would depend on the prices offered under the buy-back scheme, which would have to be above market prices for this claim to hold). However, the most frequently-made argument about disarmament is that it reduces violence and crime simply by reducing the number of weapons in circulation, particularly in the case of small arms; no further logic is specified.
- 25 Arguments about the ability of DDR programs to reduce postwar crime rest on insights from a sizeable literature in economics and law that uses a model of behavior in which improving individuals’ economic opportunities is associated with reductions in the level of crime.²⁰ If crime is motivated by the paucity of profitable non-expropriative economic activity for ex-combatants, then in theory several components of DDR programs can help reduce post-conflict crime and

violence by helping to economically reintegrate ex-combatants. However, to date a vigorous debate with little consensus exists within economics, sociology, social psychology and criminology on the causes of crime and violence from an empirical standpoint.²¹

- 26 Empirically-based arguments that DDR programs can assist in reducing post-conflict crime and violence are often presented in the negative. That is, numerous accounts point to the involvement of former combatants in post-conflict crime and violent activities, and suggest that failures in DDR programs are to blame for the prevalence of these problems. News reports on post-conflict El Salvador, South Africa, Mozambique, Guatemala, Liberia, Aceh, and Burundi, among others (spanning the early 1990s to date), are typical in this respect.²² The literature on DDR also makes many hypothetical statements concerning the link between a failure to reintegrate ex-combatants and increased risk of crime or violence. For example, the World Bank's 2004 proposal for a DDR program in Burundi noted that "failure to achieve reintegration can lead to crime and insecurity" (World Bank 2004:64). Some reports do conclude that a lack of crime in areas in which ex-combatants resettled during DDR is suggestive of some degree of preventative success on the part of the programs (Colletta et. al. [1996:12, 192-3, 277-8] refer to such outcomes for Ethiopia, Namibia and Uganda).²³
- 27 The implication is that, *should* DDR be conducted properly, crime and violence will be reduced. This, however, is a conjecture that is never proven in impact evaluations of DDR programs. Similar accounts of crime and violence in post-conflict settings without DDR programs are also often used to suggest that, if a DDR program had been in place, this could have led to reductions in crime levels. However, since we observe surges in crime in virtually *all* post-conflict settings, analysts must at least leave open the possibility that DDR programs may not be sufficient to reduce crime and violence after civil war and that some increases, locally or nationally, may be the inevitable by-product of the transition. While proper implementation of DDR programs might help, DDR programs are unlikely to include the mechanisms necessary to contain crime in all postwar societies at the micro and macro level. Anti-crime effects of DDR programs at the micro level (i.e. locally, at the village or community level) may, in fact, depend on other factors that are beyond their scope, of the DDR program, such as the directives issued by national elites to local elites to keep order, the degree to which there are shared beliefs that the transition is stable throughout the country, and so on.
- 28 In sharp contrast to our argument here, DDR evaluations tend to attribute poor implementation of the DDR program to poor security outcomes at the national level, while also taking good security outcomes, where those exist, as evidence of the program's success. An evaluation of the DDR program in Sierra Leone provides

a good example of this: “The reportedly low levels of crime suggests that allowances also meant that ex-combatants had means to support themselves and their families and therefore were less likely to engage in illegal activities” (Tesfamichael et. al. 2004: 82). The argument here is that DDR program activities were the key determinant of the crime rate, but this is a conjecture that is at best simplistic given the fact that the causes of crime are not well understood in the empirical literature. DDR evaluations on the effects on crime must make more modest claims given the presence of many confounding factors that are typically not considered in these studies. For example, in many post-conflict settings there have been changes in the deployment of police and security forces, which may well have a very direct effect on local patterns and levels of crime.²⁴

- 29 Claims concerning the effectiveness of the disarmament components of DDR programs are also not robustly verified, although they may very well be accurate. One might look at the vast literature on gun control in the United States for clues on the connection between violence levels and the prevalence of guns. There are obvious difficulties in extrapolating from the US experience to that of post-war countries, but the US-focused literature suggests that gun laws and voluntary buy-back programs have been ineffective across the board at reducing crime (see Jacobs 2002; Muggah [2005a:244] also comments on the problems of buy-back programs). The literature also suggests that some gun-control laws may even be correlated with increases in crime (see Parker 2001). As Zimring (2001:15) explains: “The evidence that guns increase the death from violence is firm—this is the strong suit of the pro-control forces. The evidence that particular modest changes in legal regulation can make a dent in the gun violence toll is not strong. This is the strong suit of the anti-control partisans and skeptics.”
- 30 Key issues include whether any significant proportion of the total number of guns in circulation can be collected under these programs; and adverse effects including allowing criminals to sell obsolete weapons under the programs. The latter issue would allow purchasing of better weaponry, and disproportionately decreasing the number of guns in the hands of law abiding citizens relative to criminals due to the voluntary nature of the programs (see Parker 2001:717; Zimring 2001; Jacobs 2002; Kopel et. al. 2004). Clearly the disarmament components of DDR programs may differ from voluntary gun buy-back programs, yet these are important caveats that their proponents have not addressed in any detail. Kopel et. al. (2004) examine micro-disarmament programs in Cambodia, Bougainville, Albania, Panama, Guatemala, and Mali, all taking place in forms of post-conflict contexts. They conclude that seldom do these programs reduce crime or violence in the target society, and that often they can increase the vulnerability of law-abiding citizens, particularly if disarmament, although voluntary, has a coercive aspect to it in that

the provision of development programs is tied conditionally to it. Furthermore, where disarmament programs appear to be effective, the results may in fact be more directly linked to other, simultaneously implemented economic development initiatives. Although some of the literature on DDR takes note of the contention that disarmament programs may have a limited effect, it continues to recommend their use in post-conflict situations (see, e.g., Lurance and Meek 1996).²⁵

- 31 Although the potential for DDR programs to reduce crime and violence may certainly exist, the literature to date does not provide robust evidence of DDR programs' effects on crime. Impressionistic accounts concerning crime rates at the national level shed no light on the micro-level processes that the literature on DDR suggests are at work. Even somewhat more detailed reporting on crimes by ex-combatants does not establish the link. The basic problem is one of selecting the correct counterfactual and accounting for alternative factors. The most relevant comparison would be between ex-combatants who went through DDR and those who did not. Thus, the mere fact that some ex-combatants are involved in crime says little about the efficacy of DDR per se – criminal ex-combatants might be individuals who did not participate in it. A second useful comparison would be between the pre- and post-DDR period crime rates. Even if DDR participants were engaged in criminal activity, it could still be the case that the amount of crime committed by individuals in their demographic cohort is actually lower following the DDR process than it ever was before. Finally, DDR may have had a large effect on reducing crime on its own, but countervailing forces such as lack of police presence could cause an increase anyway. We return to these analytical issues in Section 3.

2.3 Civic and Political Participation

- 32 A recurring theme in research on civil wars is the need for social and political institutions to create a self-sustaining peace, not simply the absence of war and violence. By mitigating rather than squelching potential sources of conflict, through “steer[ing] the exercise of power in non-violent directions and [...] conflicts towards non-violent and creative [...] forms of conflict resolution,” (Galtung 1981:151; see also Galtung 1969, 2005) it becomes possible to achieve a stable and long-lasting domestic peace.²⁶ This idea is central to the concept of peacebuilding, conceived as efforts to stimulate self-sustaining peace (Boutrous-Ghali 1992).²⁷ A large body of work cutting across sociology, political science, economics, and social psychology examines the link between individual participation and stable, welfare-enhancing structures. Not only are institutions that provide the opportunity and right to individual participation seen as key,²⁸ but active individual-level par-

ticipation and engagement is important for their continuing good performance (see, e.g., Putnam 1993). This is also the logic behind the emphasis Doyle and Sambanis (2000, 2006) place on evaluating sustained peace defined as a modicum of political openness in addition to the absence of violence.²⁹

- 33 Since encouraging civic and political participation is seen as an integral component of peacebuilding,³⁰ it has naturally become a goal of DDR programs, if not quite as explicitly as preventing war recurrence or reducing post-war violence and crime. Here, DDR programs, particularly elements of their demobilization and reinsertion and reintegration components are important (the latter both for individual ex-combatants and entire localities). DDR programs can influence participation by supporting three mechanisms that operate on different levels: conversion of military groups into civilian political organizations (meso-level); skill-development and resource creation for individual ex-combatants and civilians (micro-level); and legitimization of a new post-war political order (macro-level).
- 34 Incorporating opposing groups into the political system and channeling conflicts through it is an important step towards creating self-sustaining peace in the post-conflict transition. DDR programs contribute to this by helping transform armed groups into entities that can participate non-militarily in the political and social life of the country. The conversion of the FLN rebel group into a political party during the DDR process in Burundi is one such example (IRIN 2009b). As one former commander in the M-19 rebel group in Colombia put it: “Our original idea was that the people would take up arms and head to the mountains as a result of the general dissatisfaction with politics in the country [...] But [...] things had changed in Colombia. [...] the country began to open up politically, which for us came as a great surprise. Opportunities for politics appeared that previously had not existed.”³¹
- 35 Demobilization may play a role in this process by severing the military links between ex-combatants, whether these are fraternal links between members of an armed group with the same status, or the hierarchical links between commanders and fighters. This would reduce the ability of ex-combatants to use the armed group, or, more generally, organized force, to pursue their interests in the post-conflict society. However, there is considerable doubt as to whether demobilization can actually accomplish this severing of ties. Knight and Özerdem (2004:508) point out that how demobilization is conducted may actually reinforce such ties, if, for example, cantonment is involved. SIDDR (2006:24) takes a rather more sanguine view of the entire topic: “No measure or set of measures can guarantee that ex-combatants do not return to violence; whether because of their feeling of discontent or because they are called back by their commanders.”

- 36 Indeed the important element of the transformation to a political party is not necessarily eliminating ties between former combatants, but rather channeling their energies into the political system. The literature on war economies emphasizes that eliminating the unique influence by force of arms that armed groups exercise during conflict can create a severe threat to peace (since groups will attempt to preserve this influence) unless new opportunities for political influence are substituted for it (Torjesen 2006:7; Nilsson 2005:48–51). Potential avenues for a group to influence post-war politics include transforming it into a political party,³² the granting of specific positions or prerogatives in governmental institutions to it or its leaders as a form of power-sharing, and the formation of veterans associations to represent the particular interests of ex-combatants. These types of incorporation push ex-combatants to operate within the political system and engage with it. They help to “ensure the conversion of potential spoilers into stakeholders” (Muggah and Colletta 2009:10). Somewhat counter-intuitively, even failure of a former armed group as a political party can assist political incorporation of ex-combatants, who are therefore better off participating in politics without reference to their identity as members of that group (see Mitton [2009] on the case of the Revolutionary United Front (RUF) in Sierra Leone).
- 37 Groups or their leaders can also be stakeholders in ways that are less constructive from a development perspective, for example by using privileged positions in government to benefit from corrupt practices. Even so, this is still a potentially stabilizing factor because the continued functioning of political institutions is now salient to these actors (Torjesen 2006:15).³³ All in all, the inclusive politics resulting from the political incorporation of former armed groups can reduce the risk of a return to war, and provide the basis for a stable, lasting peace (Porto et. al. 2007:69). Without it, new conflicts could easily arise or old ones be revived (Gleichman et. al. 2004:68).
- 38 DDR programs can also enhance participation through their effects on individual ex-combatants and the broader civilian community. The reinsertion and reintegration components of the programs typically start with the provision of cash, food aid and other basic personal items to create a short-term “transitional safety-net.” They also offer assistance with education, vocational training, employment creation, advice and counseling concerning employment and income-generating projects, funding (credit or grants) for projects, and land distribution. These elements are complemented by “orientation[s]” for ex-combatants “focused on making the ex-combatants understand the responsibilities of an individual in a civil and peaceful society” (Colletta 1996:74) and “community sensitization” for civilians in localities where ex-combatants will resettle to make them aware of and responsive to the challenges ex-combatants face during reintegration (World

Bank 1993; Colletta 1996; Spencer 1997; World Bank 2002; Michaels 2006). The elements directed solely at ex-combatants enhance their human capital and help them improve their economic situation; they also provide civic knowledge. The components relating to the communities (“community sensitization”) and employment/income-generating-related activities help foster ties between ex-combatants and civilians through reintroduction of ex-combatants into local society and social organizations. Taken together, this provides ex-combatants, as well as civilians, with a set of resources likely to increase individual-level political participation. Specifically, individuals with more available free time and more involvement in social, religious, or employment organizations have higher degrees of participation in political activities like voting and engagement with the political process (see Brady et. al. 1995).

39 At their broadest, beyond trying to foster the active engagement of groups and individuals with society and politics, DDR programs aim to change the way ex-combatants and civilians view governance processes. This line of inquiry is under-theorized, so here we sketch out a plausible logic consistent with the intuitions of the extant literature, rather than drawing on that literature explicitly.

40 We view basic perceptions of the (in this case) post-war government as a distinct form of participation in the political system, which we term *passive participation*. The development of a legitimate governing authority following a period of civil war is crucial for political stability without violence (Orr 2002), given that the war was characterized by armed challenges to government and represented a failure of the previous government to provide even basic order.³⁴ A large literature in social psychology examines individual compliance with authority, and in particular non-instrumental explanations of compliance. Tyler (2006a) summarizes the findings of this research program: fair procedures are at the core of individual beliefs about the legitimacy of authority, with procedural justice creating the legitimacy that forms the basis of compliance. The instrumental calculation of the costs of failure to comply with authority in specific instances does not explain compliant or noncompliant behavior. It follows that DDR programs may play a role in fostering stability in a post-war setting by stimulating passive participation, to the extent that they can encourage procedural justice and thereby strengthen belief in the legitimacy of the government. This stability is more than the sum of individual-level beliefs about legitimacy; it is enhanced by a macro-level attribute of the political system, namely the extent to which its legitimacy is widespread across the population (see Tyler 2006b:380).

41 DDR programs might work in a number of ways to enhance governmental legitimacy. As legitimacy derives from procedural justice, or the perceived fairness of not only the actions but the operating mechanisms of government, the *way* in

which policies are selected during a post-conflict period, not merely *which* policies are selected, is significant. DDR programs can contribute to transparency of procedures particularly when it comes to policies towards former combatants and the post-conflict transition more generally. In addition to clarifying how these policies come to be selected (and how they are implemented), DDR programs can increase local participation in post-conflict policy-making by providing forums for citizens and local leaders to voice their opinions on post-conflict policies and have those opinions be heard by policy makers. DDR programs can facilitate exchange of information between authorities, ex-combatants and citizens. This is particularly important given the presence of pervasive mistrust in post-conflict settings. Some ex-combatants might be dissatisfied with the benefits awarded to them during DDR, but if they conclude that the process was procedurally fair, they may be induced to view the government as legitimate and refrain from agitating against it. Additionally, DDR programs can serve to help legitimate the peace process as a whole, by creating transparency as to how that process played out and by assuring local constituencies that their interests are being taken into account, even if specific outcomes are not always in their favor. Initiatives in DDR programs designed to increase responsiveness to local concerns and enhance local participation, sometimes termed “local ownership,” are clearly important in this regard (see, for example, Muggah 2005b).

- 42 Enhancing political participation in a variety of ways in post-conflict settings is important in generating stability and peaceful outcomes over the long-run. By being explicit about the potential of DDR programs to enhance participation, our aim is to set the stage for more careful assessments of these claims.

2.4 Healing Wartime Traumas

- 43 The severe victimization, hardships and losses endured by civilians (and combatants) during civil wars constitute a profound trauma with long-lasting effects.³⁵ Wartime trauma is problematic not only from the standpoint of psychological welfare, but especially because of its consequences for post-war society, economic development, and potentially the risk of violence and war recurrence.³⁶ For example, without treatment, detrimental effects on the psychological and social development of children suffering from war-related mental distress may not be resolved (Kumar 1997: 23). As Neuner and Elbert (2007) summarize, “Mental illness reduces psychological functioning on all levels. Consequently, a major impact on the economic development of the war-affected region, as well as on the continuation of conflict is to be expected” given the “substantial body of epidemiological research, which has consistently shown that mental disorders become common in populations affected by war and conflict.”

- 44 Although recent studies have uncovered a positive relationship between exposure to wartime violence and post-war political participation by both civilians (Bellows and Miguel 2009) and ex-combatants (Blattman 2009), traumatic experiences during conflict may severely undermine inter-personal and communal trust, leading to the erosion of social capital and difficulties in rebuilding it (Maynard 1997; Baingana et. al. 2005), and to increased polarization (Shewfelt 2009). Loss of family can create formidable obstacles to ex-combatant reintegration, since this is typically assisted by support from kin and provision of a home environment.³⁷ War may also lead to mental disorders among combatants and non-combatants alike, particularly Post-Traumatic Stress Disorder (PTSD). War-related mental illness can limit individuals' ability to work (DelVecchio et. al. 2007:5), and there is evidence that the more severely former combatants suffer from PTSD, the less likely it is that they will secure full-time employment (Smith et. al. 2005). More generally, ex-combatants may "find it difficult to take independent initiatives and to cope with the ordinary demands of civilian life" (Ball 1997). Exposure to or participation in violence during war can also produce pathological behavior in the post-conflict period, leading primarily ex-combatants but potentially others to engage in inter-personal violence. The potential for wartime and combat trauma to spill over into life after war is greater if individuals suffer from mental disorders due to exposure to violence.³⁸ A study of northern Uganda found that respondents suffering from depression or PTSD were more likely than others to "identify violent means as a way to achieve peace", indicating a link between war-related trauma and a more pronounced desire for retribution (Vinck et. al. 2007:552).
- 45 A separate category of psychological trauma can also result from the interaction between the nature of individual participation in the war and the post-war political or social order. The outcome of the war may be the precipitating factor, prompting guilt and shame at having fought for or supported a defeated and delegitimized force, or anomie among partisans of the winning side following victory.³⁹ At the social level, changes in roles or social status during the war may result in psychological distress if individuals must return to traditional roles during peace.⁴⁰ Conversely, sustained changes in social roles and hierarchies may cause distress for individuals who had privileged status prior to the war.⁴¹
- 46 DDR programs might ameliorate wartime trauma through several pathways. Disarmament and demobilization can help society make a cognitive break with the past. Symbolic actions at these stages, including destruction of arms and formal demobilization ceremonies, can reinforce the beginning of a new, post-war order. This might facilitate ex-combatants' attempts to distance themselves from wartime abuses they committed or experienced. Civilians may also take these actions as representative of a commitment to changed behavior on the part of

armed groups, in turn encouraging greater acceptance of ex-combatants returning to localities. At a more personal level, civilian victimization, whether through being targeted with violence or being compelled, by force or circumstance, to perpetrate abuse or engage in betrayals,⁴² can also make creating a break with the past salient for the entire population.

- 47 The assistance most explicitly provided to deal with trauma comes through reintegration components of DDR programs. Reintegration can address trauma on the part of ex-combatants, regular civilians, and whole communities by bringing about ultimately cathartic confrontations between perpetrators and victims as ex-combatants resettle.⁴³ A first set of activities is directed specifically towards the ex-combatant population. Job training and education can also help ex-combatants confront the trauma they experienced and heal from it by providing them with a sense of confidence and direction. Psychological services (available during demobilization as well) might also include psychiatric evaluation and care for ex-combatants, or at least basic counseling to help ex-combatants “learn how to cope with everyday civilian life” (Colletta et. al. 1996b:119).⁴⁴ Some of the literature contends that this use of therapeutic techniques is inappropriate in post-conflict settings because of its uniquely “Western” character (see Neuner and Elbert 2007, however, for a cogent critique of this contention).⁴⁵ However, survey evidence demonstrates that potential recipients often express a desire for it (see, e.g., Del Vecchio et. al. [2007] on civilians in Aceh). During reintegration, educational settings can also be a means of addressing trauma, as in a program in Mozambique that used “increased student-teacher communication, creative activities, and drama” to reintegrate child combatants (Kumar 1997:23). Other forms of group therapy can assist ex-combatants in processing war-time trauma. For example, in Namibia a veterans association worked by “assisting veterans to overcome psychological problems through the provision of a forum for sharing experiences” (Colletta et. al. 1996b:189).
- 48 Other reintegration activities target the community and the civilian population at large. Programs can condition development projects in localities on their willingness to accept resettlement of ex-combatants. “Community sensitization” can then push the community to aid ex-combatants in making the transition to their new life through “enhanc[ing] local understandings of challenges facing veterans and their families” (Ball 1997:103). Local healing and cleansing ceremonies can also be used to reincorporate ex-combatants into the community (see Stark [2006] on their use in Sierra Leone).
- 49 The ability of DDR programs or development projects more generally to improve the psychological health of beneficiaries is a complex issue, as indicated by the ways in which programs might operate to heal wartime traumas, sketched out

above. In Section 3, we advocate focusing analyses on discrete aspects of this issue. This allows for better-designed empirical analyses, and creates the possibility of incrementally building up a body of findings on the subject.

- 50 In doing so, it is important, however, not to lose sight of the pervasive effects of wartime trauma on individual behavior. The emphasis in DDR programs is usually on their ability to influence outcomes in distinct areas, such as creating economic opportunities for ex-combatants and civilians, stimulating post-war political participation, or even working to improve the psychological well-being of victims of wartime abuses and ex-combatants. This division may even be further reinforced by the division of labor between the various NGOs and international organizations involved in a DDR program, each one concentrating on its own projects. While this is not problematic, the far-reaching effects of wartime trauma suggest the need to ensure that projects addressing it are not made a lower priority. Although such projects might not have as immediate an impact as the short-term economic assistance that is part of reinsertion packages, or even job opportunities provided through reintegration programs, they are likely a key ingredient in producing sustainable progress on all the peacebuilding outcomes of interest.

2.5 Sequencing

- 51 The vast majority of the literature on DDR deals with how to more effectively implement programs. An ongoing, unresolved debate of particular importance concerns how DDR programs should be temporally sequenced. The primary question is whether the various components of these programs with security goals should be implemented prior to ones with economic development goals. Put differently, is disarmament a precondition for successful demobilization and reintegration? In what follows, we consider the effects of the sequencing of the components of DDR programs on the resumption of conflict. We also examine a logical extension of this line of questioning – the consequences of where DDR falls in the sequence of the entire range of peace process activities.
- 52 As Section 2.1 of this report indicates, current research on the relationship between conflict and development highlights the fundamentally interrelated nature of the two. Just as many studies indicate a link between poverty and violence and between problems of economic development and internal war,⁴⁶ so too does a sizeable literature show the detrimental effects of civil war on societies and economies (see e.g., Murshed 2002; Collier et. al. 2003; Ghobarah et. al. 2003). A reaction to these findings in work on DDR programs has been to attempt to determine in which arena policy makers and practitioners should concentrate their resources: on improving security conditions, thereby increasing chances for economic growth, with the attendant effect of reducing the risk of conflict; or on

improving development conditions, thereby creating the basis for an improvement in security conditions. Making reference to the Democratic Republic of Congo, Gueli and Liebenberg (2007:86) capture this analytical dilemma: “persistent conditions of insecurity prevent sustainable reconstruction and development [but] no amount of diplomatic mediation or military coercion will win the peace if people, especially the youth, have no alternative livelihood to that of the army or militia groups.”

- 53 Clearly, however, establishing security is the preeminent concern in post-conflict situations, even if security in and of itself is not sufficient to guarantee post-conflict development and the sustainable peace that could potentially result from it. Somewhat counter-intuitively, this makes the disarmament and demobilization components of DDR programs the most problematic. Walter (1999) highlights the threat that disarmament poses to the stability of peace after civil wars. Disarming groups become “extremely vulnerable” to attack by their opponents, and are no longer able to use the threat of force to guarantee that their opponents observe the terms of any agreements previously reached. Here, the absence of a guarantee of mutual good faith is at the heart of the matter:

As groups begin to disarm, they create an increasingly tense situation. The fewer arms they have, the more vulnerable they feel. The more vulnerable they feel, the more sensitive they become to possible violations. And the more sensitive they become to violations, the less likely they are to fulfill their side of the bargain (Walter 1999:134).

- 54 The theoretical claim here is that for any agreement to persist, including peace agreements, it must either be enforced externally or have self-enforcing characteristics. As weapons allow either side to punish the other for renegeing on commitments made under the agreement, they have the potential to enhance stability. A counter-claim emphasizes the role weapons can play in conflict escalation. The post-war setting for armed groups is characterized by a high level of uncertainty and lack of trust between them. Under these conditions, there is also a significant possibility that a group may not always be able to take a conciliatory stance towards its opponents, perhaps due to internal politics, especially pressure from hard-line factions. The potential for misunderstandings and increased mistrust this creates can be explosive when combined with easy access to weapons. Even if all groups desire the success of a peace settlement, they may respond to perceived threats, and, given access to weapons, generate a new conflagration.
- 55 Torjesen and MacFarlane (2007) appear to favor the first theoretical claim. They contend that following the civil war in Tajikistan, the DDR process significantly contributed to post-conflict stability by not making disarmament and demobilization a precondition for reintegration efforts and political reform arrangements. Although a disarmament process was initiated, only approximately 36% of per-

sonal weapons were turned over by combatants during registration and disarmament observed by the UN.⁴⁷ It appears that many combatants turned over weapons to their commanders, who submitted only a fraction of these for disarmament. Furthermore, demobilization was not carried out, in that most units from the opposition armed group were incorporated whole into the new security forces. Leaving war-time military structures relatively untouched contributed to “trust in the peace process” and “a sense of security” among the opposition commanders (Torjesen and MacFarlane 2007:316).

56 The example of Tajikistan suggests that while creating security through DDR should be of the utmost importance, the emphasis must remain on the goal of security itself,⁴⁸ which should not be confused simplistically with the disarming and demobilizing of armed groups. This calls into question the conventional wisdom that command and control structures of formerly warring factions must be dismantled, lest their presence facilitate renewed conflict.⁴⁹ Longo and Lust (2009) take on this assumption and demonstrate that by creating a balance of power, the presence of an armed and mobilized opposition group may force incumbents to comply peacefully with transitions they would otherwise seek to reverse. Essentially, having a group with the military capacity to be a “spoiler” undermines the ability of other powerful actors to “spoil” a settlement themselves. To create the security that conditions future peace and development, an emphasis should be placed on ways to build confidence and trust between the formerly warring groups, to bolster the credibility of commitments made during the peace process, and to move forward with the implementation of new political arrangements. Although the economic and humanitarian situation of rank-and-file ex-combatants might be a cause for long-term concern towards the beginning of a DDR program, giving commanders a stake in the peace process can ensure the existence of the security needed to undertake reintegration and the development activities that go along with it.

57 This discussion also suggests that the focus in the literature on determining the correct sequencing misses the point to some extent. The tendency has been for case studies to uncover new evidence suggesting problems with whichever of the two perspectives is currently dominant, and then conclude that the greater attention must be paid to the other. But it may not be the case that one of the two approaches is best under all or even most circumstances. Beginning to lay out the arguments concerning sequencing in detail can help us look for ways to determine which model—security-first or development-first—is likely to produce better results in a given post-conflict situation. In Section 3.1.2 we propose some preliminary indicators of two sequencing-related outcome variables, the analysis of which could advance our understanding of this complex issue.

2.6 Adverse Effects

- 58 With DDR, as with any other kind of intervention, it is important to consider whether the programs implemented, either in the details of their implementation or by their very nature, result in any counterproductive dynamics. Several types of adverse effects are possible. First, it may be too simplistic to assume that armed group behavior during a war had purely negative effects. If this assumption is made, however, it would lead to attempts to dismantle armed groups entirely, even though doing so could risk eliminating any positive effects they had, whether these were in the area of security or service provision, or related to social capital and organization. Second, DDR programs can contribute to macro-level instability due to the threat disarmament and demobilization pose to armed groups that are wary of the behavior of opponents, and to the security of individual ex-combatants faced with surrendering their weapons and abandoning their existing, military social networks. Third, tensions between civilians and ex-combatants can be exacerbated by DDR programs either through relative insecurity on the part of civilians or resentment towards ex-combatants based on targeted benefits. Fourth, and perhaps of most concern, DDR programs can generate entirely perverse incentives that lead to individual and group behavior (whether by civilians or ex-combatants) that contributes to violence, instability, and lack of economic progress both in the short and long term. Muggah (2005c:36), for example, illustrates the consequences of a poorly-designed disarmament program in Haiti in the mid-1990s. By buying-up even damaged and unusable weapons, the program appears to have enriched some armed actors and organized criminals, who were able to take advantage of it by using the funds secured in this way to upgrade their arsenals.
- 59 In post-conflict settings there is a tendency by international organizations involved in the DDR process to assume that all things associated with armed groups are negative. This is certainly reinforced by accounts of the violence and destruction of war, human rights violations during conflict including sexual violence, recruitment of child soldiers, and even the material prosperity of combatants achieved through extortion, pillaging, and the receipt of external assistance. However, not only is negative caricaturing of armed groups potentially unfair, but it risks overlooking the positive impacts they may have had on communities and individuals. DDR programs can benefit by incorporating a full understanding of how armed groups interacted with civilians during the war, allowing them to see to it that development and security gains fostered by the armed groups themselves do not evaporate as a consequence of DDR. One telling example comes from Uganda. Following DDR, law and order at the local level suffered in some areas, as the presence of combatants had contributed to some form of order

(Colletta et. al. 1996b:192). The veterans associations lauded by much of the literature on DDR as aiding in social and economic reintegration are another example of the importance of taking positive aspects of armed groups into account. The ties that develop between comrades-in-arms during war prove useful in individuals' attempts to adjust to the post-conflict environment. Combatants (from the same group) may trust each other while at the same time being very distrustful of civilians or even DDR program staff. The hierarchical ties between commanders and fighters may also be of use in securing discipline from reintegrating ex-combatants. Yet, if all ties between members of an armed group are severed in accordance with the logic of demobilization, DDR programs might lose the ability to use the social capital embedded in these ties to their benefit.

60 Section 2.5, above, explored in detail some of the dangers to stability inherent in disarmament and demobilization. These components of DDR can be especially destabilizing if carried out incompletely (see, e.g., Berdal [1996:28] on partial disarmament). This is the second type of adverse effect that DDR programs may cause: armed group insecurity leading to a generally unstable situation. This suggests that not only should the sequencing of components of DDR programs be approached cautiously, but greater attention should be paid to generating trust between opposing groups within ex-combatant populations, especially between commanders, and trust in the DDR process itself. The typical solution to the security risks to armed groups created by disarmament and demobilization activities is the presence of a third party guarantor overseeing the process. Third parties or the creation of security forces integrating opposing armed groups are also thought to mitigate the individual-level insecurity faced by ex-combatants going through the disarmament process. In practice, UN peace operations have played the third-party role in many peace processes. However, rather than assuming that participants in DDR find the UN (or any other third party) inherently credible, ascertaining contemporaneous perceptions of external guarantors could allow DDR programs to identify and solve potential problems.

61 A recurring theme in literature evaluating DDR programs carried out in the early 1990s is the potential for tension between civilians and ex-combatants. Resettlement of ex-combatants might precipitate fears of abuse on the part of local civilians. Micro-disarmament programs including civilians could exacerbate these fears, especially if communities were induced to surrender weapons as a condition for receiving development aid (see Kopel et. al. [2004] for examples). This might strengthen resistance to resettlement and reintegration of ex-combatants and concern over the legitimacy of the peace process. At one extreme, new hostilities based on a civilian-ex-combatant cleavage could ensue, or at another extreme, armed groups and criminals might have free reign if the basis for civilian resist-

ance was removed. The benefits provided to ex-combatants through DDR programs may also generate civilian resentment due to perceptions that ex-combatants occupy a privileged position because of material benefits provided to them by the programs.⁵⁰ Similar to the consequences of civilian insecurity, resentment could undermine attempts to reintegrate ex-combatants into localities. Components of DDR designed to turn armed group leaders and ex-combatants into stake-holders in continued peace might also undermine social and individual psychological healing from war trauma if they contribute to a perception of impunity of perpetrators of war-time abuses or of rewards for bad behavior. Indeed, such perceptions could very well undermine the legitimacy of the peace process and the post-war government as a whole.

- 62 Perhaps most troubling of all, DDR programs could unwittingly create incentives for groups and individuals to engage in violence or other actions undermining the peace, or in behaviors detrimental to development. In this regard, practitioners constructing DDR programs and scholars analyzing them could profit from greater attention to a large literature in development economics on the effectiveness of external assistance (for an overview, see Easterly [2006] and Collier [2007]). For example, although incorrect, the perception of benefits accruing through the DDR process in Sierra Leone to the RUF, a particularly violent and abusive armed group, prompted other ex-combatants to carry out violence against civilians in Liberia. Their assumption was that the group that was most feared would be the most appeased by the international community when it intervened to support the peace process, so that aid would be redirected towards them (Hoffman 2004).
- 63 Armed group recalcitrance in participating in DDR might similarly be encouraged by the possibility that the desire to move forward with the peace process could lead to additional benefits for or concessions to the group and its members. This type of moral hazard problem is likely more severe in the case of externally-supported DDR programs. In a less deliberate way, DDR programs could distort the economic choices of local actors in ways detrimental to long-term development. For example, if a reintegration program focuses on creating small businesses and fostering entrepreneurship, actors might engage in these activities despite their being unsuited to the local opportunity structure (absent DDR), solely in order to obtain benefits from the DDR program. This would result in the allocation of human capital and time to inefficient economic endeavors.
- 64 Laying out the potential unintended consequences of DDR programs is a necessary step in resolving the first-order questions about their impact. Assuming that the positive claims about the DDR programs relationship to peacebuilding are borne out, the trade-off between these and potential negative effects of the programs would still need to be assessed carefully.

Methodological Review

65 THE DESIGN OF DDR programs varies widely, as do the mechanisms through which they might help in the transition from war to sustainable peace. The range of these mechanisms suggests that evaluating the ability of DDR programs to contribute to peace is complex. In this section, we touch on three principal difficulties involved in studying DDR programs: conceptualization and measurement of the appropriate outcome variables; accounting for DDR program heterogeneity; and achieving identification and external validity in empirical analyses. In our discussion of the last difficulty, we propose ways of overcoming these challenges in order to conduct sound evaluations of the effects of DDR programs.

3.1 Conceptualizing and Measuring Peacebuilding Outcomes

66 Although many studies claim to isolate outcome variables thought relevant to DDR success, few actually specify concrete measures of the goals of DDR and how these supposedly relevant factors map onto and contribute towards them. A first step is to disaggregate “success” into topical areas within which well-defined research questions can be developed and evaluated. We did so in Section 2, above, identifying six areas of research related to DDR:

- war recurrence and the conflict-development nexus;
- violence and crime prevention;
- civic and political participation;
- healing wartime trauma;
- sequencing; and
- adverse effects.

In what follows, we concentrate on how to conceptualize the main questions of interest within each area: we identify a set of outcome variables, and corresponding empirical indicators of them, which can then be studied to evaluate the mechanisms through which DDR is thought to operate. Tables 3.1 and 3.2 summarize these.

3.1.1 *Substantive Outcomes*

- 67 The main substantive claims concerning the impact of DDR programs are that they reduce the risk that a civil war will recur; stimulate economic development; prevent post-war escalation in violence and crime and possibly reduce each of these; bolster political participation and civic engagement; and ameliorate the impact of wartime trauma on post-war society and individuals.
- 68 The emphasis on the potential of DDR to reduce the risk of civil war starting anew is, at its heart, a concern about the onset of violent conflict, and, in particular, the relationship between past wars and the risk of future ones. Peacebuilding success in this sense, then, can be understood as the absence of hostilities between formerly warring groups. But several other issues are intimately connected to the concern that former combatants could instigate new rounds of violence. Could the presence of ex-combatants or of left-over weapons increase the risk of a new civil war, even if the actors are different? Could ex-combatants leave the country and cause or participate in conflicts in neighboring countries?⁵¹ Conceptually, then, several aspects of war recurrence as a outcome variable can be coded for analysis: recurrence of the same conflict, onset of a new war in the same country, participation of ex-combatants in conflicts outside the country, and, perhaps, the country's involvement in an international war.
- 69 To examine the effect of DDR on war recurrence outcomes directly would require a cross-national framework, allowing comparison across all civil war-affected countries, with and without DDR programs, for a certain time period. There are serious drawbacks to such an analysis, particularly as problems of mutual causation and omitted variables are difficult to overcome. For a treatment of these problems and recommendations for solving them as best as possible given the limitations of the data, see Doyle and Sambanis (2006). Given the problems involved in a cross-national analysis, we suggest analyzing the channels through which DDR is posited to act on reducing the risk of war recurrence.
- 70 Many scholars believe that DDR raises individuals' opportunity costs to participating in conflict, thereby lowering the risk of war recurrence. This implies that DDR programs should lower unemployment or underemployment and raise either average levels of household income or increase the income of individuals

from at-risk groups (for example, young men). The association between DDR and a variety of other measures of economic activity would also be consistent with the claim that DDR affects individuals' decision calculus through the opportunity costs mechanism. A straightforward example would be local rates of economic growth. Others include local levels of infrastructure (roads, access to potable water, electricity), educational enrollment, and proxies for the ease of doing business (e.g., average number of days, procedures required for licensing).

- 71 Employment statistics are one of the most commonly used outcome variables to judge the effectiveness of DDR programs. Employment and income statistics can be used with a survey instrument to determine success of program participants in the job market compared to a control group that did not participate in the program, with the latter made up of other ex-combatants or non-combatants who are demographically similar to program participants. However, the comparison to a control group is often not made in policy reports. For example, a World Bank-funded study indicates that about half of program participants in the Sierra Leone DDR program report employment within a month or so after discharge. The study, however, does not give comparable statistics for non-participant ex-combatants (World Bank 2003:11, 63).⁵² An assessment of the Emergency Demobilization and Reintegration Program in Eritrea created following the end of the interstate war with Ethiopia in 2000 provided information about the employment prospects of demobilized soldiers as compared to other members of their communities (World Bank 2009a:35–36). But, as with the Sierra Leone study, it did not report information on the employment outcomes of former soldiers who did not go through the program. Knowing employment prospects in the community certainly allows for some perspective on the potential effectiveness of the DDR program—in this case the average employment rate of demobilized soldiers was 10% higher than others in the same community. However, the comparison to other former soldiers who did not participate is crucial to understanding whether it is the DDR program that is behind the outcome. If there is no difference in the employment outcomes of ex-combatants who participated in DDR and those who did not, then ex-combatants' better employment prospects as compared to civilians might simply be an artifact of some characteristic of former soldiers which means that they are more likely to be employed than civilians.⁵³
- 72 Ideally, ex-combatants would be randomly assigned to participate in DDR, or programs would be randomly assigned over localities. This can be achieved without limiting program participation by randomizing the order in which individuals enter a program or in which programs are rolled out across localities. Since the literature is silent as to whether the opportunity cost mechanism applies primarily to ex-combatants or ex-combatants and civilians, a supplementary survey could sample the entire population within treatment and control areas.

- 73 Another contention of research on DDR programs and war recurrence is that disarmament and demobilization make a return to war more difficult for armed groups by dismantling their command structure and links between commanders and fighters, and by taking weapons off the battlefield and out of the hands of former combatants. The mechanisms linking DDR to the ease of remobilization are not specified in the literature. Rather, two general claims are made. First, disarmament reduces the number of weapons in circulation, making it more difficult for groups to turn to violence. Second, the defining characteristic of demobilization is the “civilianization” of former combatants (Berdal 1996), their transformation back into non-combatants (Clark 1996; UN DPKO 1999:73). This further entails that “structures of armed forces and groups are broken down” (UN IDDRS [2006] §2.10, para. 4; Knight and Özerdem [2004] also reference this goal), which should “reduce the likelihood of remobilization” (UN IDDRS [2006] §4.20, para. 8.7).
- 74 Several indicators can capture aspects of the ease of remobilization argument. Measures of the availability of weapons and ammunition at a general level in the country (prices, estimates of stock), as well as individual reporting in surveys of ownership or access to the same, especially by former commanders, can provide a more detailed picture of any effects of disarmament.
- 75 The social networks of ex-combatants are clearly another indicator of the ease of remobilization, but better conceptualization of how these networks are linked to remobilization is imperative. Nilsson (2008) makes a key contribution by separating essentially omnipresent background factors like dissatisfaction and marginalization of ex-combatants from the presence of actors who can coordinate and employ combatants. Rather than their presence being a sufficient condition for renewed conflict, these “remobilizers” (pp. 30–33) are more likely to succeed in their efforts if they already have some social relationship to former combatants, allowing them to take advantage of that position in existing social networks.⁵⁴ This implies that a fruitful way to analyze the ease of remobilization argument would be to assess whether DDR affects ex-combatants’ ties to one another—their frequency of interaction and proximity of dwellings, their willingness to act on behalf of one another, and their perceptions of personal obligation to each other and to their faction. These indicators could be measured for ex-combatants in general, and could be applied to relationships between former fighters and mid-level commanders, and between mid-level commanders and political and business elites. Empirically separating the horizontal former fighter to former fighter ties from the vertical command-fighter or elite-command ties would be especially useful considering the dearth of evidence on the relative importance of specific mechanisms for remobilization and on the ability of DDR programs to affect these ties.⁵⁵

- 76 The second area of research we outlined in Section 2 concerned the danger of a post-war resurgence in violence and criminal activity. To reduce the risk of this, the international community has focused on disarmament and micro-disarmament initiatives in DDR programs, in addition to the employment and income outcomes mentioned above. While statistics on the numbers and types of weapons collected by the programs are inherently appealing, better indicators of DDR success would center on the outcomes of interest themselves. These could include statistics on crime and violence committed by participants and non-participants.⁵⁶ Note that these may need to cover civilians and ex-combatants alike, depending on the scope of the DDR programs involved. Local crime rates or statistics of victimization from violence, as well as changes in the size of the incarcerated population, are additional ways to get at this question. Since much of the micro-disarmament literature posits a link between weapons circulation and violence and crime, interviews with incarcerated criminals and a sample of law-abiding citizens could help determine the degree to which the availability of weapons influences illegal activity.
- 77 Weapons prices could also be used as an indicator of crime and violence, of the presence of insecurity for the population. Here, comparison of the prices of small arms or small arms ammunition would need to be made across similar areas, some currently involved in DDR programs and others not. However, care would need to be taken to ensure that disarmament components of DDR were not ongoing in these areas, since the idea would be to understand the effect of DDR programs on only the demand for weapons – a proxy for insecurity – and *not* on supply.
- 78 One of the main questions research on the effects of DDR on civic and political participation would need to examine is whether political incorporation of armed groups and individual ex-combatants reduces the likelihood that they will resort to arms in the future. In the case of individuals this is particularly important given seemingly contradictory findings about the effects of war on political participation. Blattman (2009) and Bellows and Miguel (2009) find that exposure to violence increases political engagement, in the case of ex-combatants in the former and civilians in the latter. Shewfelt (2009), however, while finding a similar effect, also exposes an attendant polarization in attitudes.⁵⁷
- 79 One of the mechanisms posited to be at work is that individuals' willingness to work within the political system reduces the risk of conflict. An indicator of this willingness could be participation in voting, with the turnout rate of DDR participants compared to that of non-participants. Also exploiting information on elections, an effect of DDR on individual political participation could be verified or disconfirmed depending on whether variation in voter turnout is correlated with the length of exposure of a locality to DDR programs (assuming that the

roll-out of DDR was randomized). Other possible indicators are the number of ex-combatants contesting elections or lobbying for non-elected political positions, ex-combatants' knowledge of the inner workings of the political system and its procedures, and ex-combatant political party membership—all signals of the value of participation. Ex-combatant membership in other, non-party civic associations could also be used as an indicator of socio-political engagement. As for a longer-term evaluation, given a sufficiently long time period over which DDR is put into place, variation in the physical presence (offices, personnel) or electoral strength of a political party associated with a former armed group could indicate a relationship between DDR and group incorporation into the political system. Depending on the local context, measures of the electoral advantage of incumbent candidates could also indicate the degree to which former armed groups have access to working within the system.

80 A potentially more difficult relationship to ascertain would be that between DDR programs and perceptions of the legitimacy of the post-war government and the peace process. Legitimacy is an often-used term that few can actually define clearly or measure accurately, yet the claim is often made that the sustainability of peace relies on the legitimacy of the post-war bargain (Parsons 1963; Brinkerhoff 2005:5; Barnett and Zürcher 2007:8).⁵⁸ We suggest two types of indicators that could be used to assess potential effects of DDR on legitimacy: individual perceptions of government legitimacy, and individual cooperation with authorities (based on self-reporting or institutional reporting of the degree of public cooperation) As any effect of DDR on legitimacy would likely be due to the program's macro-level characteristics, it would be difficult to isolate the mechanism through which DDR operated, even if a correlation existed with these indicators. In this case, randomization of which localities are selected to receive the programs (if there are not sufficient resources to do the programs across the board), or of the order in which localities are visited by DDR and government officials would allow evaluation of this potential effect. Surveys could then allow a comparison of participant attitudes towards the peace process and perceptions of government legitimacy to those of non-participants.

81 Finally, all of the mechanisms through which DDR is thought to mitigate the deleterious effects of wartime trauma appear to be amenable to evaluation through randomized evaluation (RE) designs. These include participation in DDR helping to produce a cognitive break with the past, the reconciliatory effects of perpetrator-victim interaction during resettlement, the possibility of employment obtained through DDR programs bolstering individuals' sense of purpose, the effects of individual counseling and individual and group therapy, and the potential for "community sensitization" programs to foster good will towards reintegrating

ex-combatants. Outcome variables that could be compared across DDR participants and non-participants include measures of psychological well-being (see, e.g., Ryff and Keyes 1995), hopefulness (e.g., Snyder et. al. 1991), depression (e.g., Beck et. al 1988), and PTSD (e.g., Blake et. al. 1995). Indicators of social reintegration such as post-conflict marriage rates for ex-combatants and rates of divorce for pre- or during-conflict ex-combatant marriages could also reveal the degree to which former combatants are able to function in a peacetime society, and perceptions of acceptance by the community.

3.1.2 Implementing DDR: Evaluating Claims about Sequencing

- 82 In this report we have focused on the effects of DDR programs. Although by-and-large we have eschewed detailed discussion of the impact of program design on DDR effectiveness, we did single out one area of concern within it, namely the sequencing of DDR (see Section 2.5). Given scarce resources, how can policy-makers evaluate contending claims about the order in which DDR interventions should be carried out? One sticking point for evaluation of sequencing is that due to the potential macro-level effects of parts of DDR, it is unlikely that sequencing could be randomized within a single DDR program.
- 83 Setting aside experimental research designs, a possibility is to combine a large comparative cross-national analysis of the sequencing of DDR with a detailed examination, through interviews or elite surveys, of the attitudes of commanders and leading politicians towards the DDR process. As even the most rigorously conducted statistical study would be subject to methodological criticisms, evaluating specific mechanisms referenced by arguments about sequencing would give it credibility. For example, a contention of proponents of security-first logics is that disarmament and demobilization are critical opportunities for the warring parties to build confidence in each other, allowing the peace process to consolidate and move forward. Conversely, arguments for carrying out reintegration programs alongside or prior to disarmament and demobilization focus on the need to create concrete stakes in peace particularly for armed group elites but also the rank-and-file. The claim is that disarmament and demobilization can create conditions of strategic insecurity at the level of the group and economic insecurity for individuals precipitating renewed conflict unless reintegration has created selective incentives for armed groups and ex-combatants to adhere to the peace.
- 84 Empirical analyses could therefore examine two conceptual outcome variables linked to the sequencing debate: confidence-building and stakes in peace. A possible indicator of confidence-building could be the level of trust that principal commanders and politicians linked to the armed groups going through DDR have in their opponents. The stakes argument would examine the level of trust in

relation to politicians' and commanders' commitment to the peace process. The more that commitment is divorced from the level of trust in opponents, the more likely it is that stakes in peace and not confidence-building mechanisms are at work. In an empirical analysis, it might be plausible to measure these indicators over time, and to examine whether trust (or commitment to peace without trust) tracks specific elements of the DDR process.

3.1.3 *Ascertaining the Unintended Consequences of DDR*

- 85 The unforeseen adverse effects of DDR programs become apparent in many studies through anecdotes based on detailed, local histories of DDR. However, going beyond this, the categorization of types of adverse effects allows a body of evidence to develop across programs, localities, countries, and regions, and even the use of findings from related studies in other fields of research.
- 86 We singled out four broad ways in which DDR could have a problematic impact in a post-war setting. First, if DDR fails to take into account the positive effects armed groups may have had on individuals and localities during conflict, it risks erasing corresponding welfare gains from these. Post-conflict, pre-DDR surveys across localities could establish civilian perceptions of armed groups and indicate any potential benefits stemming from the presence of a group. Second, disarmament and demobilization actions by their nature risk creating conditions of insecurity for armed groups and their members, as discussed in Section 2.5 on sequencing. Randomization of DDR programs can be a key asset in evaluating whether such an effect exists at the individual level. If the order in which ex-combatants enter a DDR program is chosen at random, and particularly if participants are not separated according to faction, responses of ex-combatants in the middle of the disarmament/demobilization phase or following it could be compared to those of ex-combatants who had not yet exited their armed group or surrendered their weapons. Third, tensions between ex-combatants and civilians may emerge. Staggering of the implementation of resettlement and reintegration components of DDR across localities, with the order of participation chosen randomly, would also allow better evaluation of whether DDR programs, especially benefits to ex-combatants, play a role in tensions between ex-combatants and civilians. Indicators of tension could be subjective, for example ex-combatants' beliefs about their standing in the community. Indicators could also be based on interpersonal exchanges between former combatants and civilians. For example, a measure of incidence of discrimination against ex-combatants could be examined. So, too, could information about intra-communal disputes, and threats and confrontations between former combatants and civilians.

Table 3.1 Suggested Outcome Variables and Indicators, by DDR Substantive Areas of Research

| Area of Research | Outcome Variable | Indicator |
|-----------------------------------|--|---|
| Conflict-Development Nexus | War recurrence | Presence of civil war between same actors Ex-combatant participation in regional civil wars |
| | Economic opportunities | Unemployment rate Economic growth rate Ease of doing business (e.g., average number of days, procedures required for licensing) Infrastructure (roads, potable water, electricity) Educational enrollment |
| | Potential for/eas of (re-)mobilization | Availability of weapons Ex-combatant networks |
| Violence and Crime Prevention | Crime rate | Police statistics on crime Size of incarcerated population Prevalence of violent behavior |
| | Insecurity | Price of small arms |
| Civic and Political Participation | Political opportunities/ incorporation | Number of candidates contesting elections Degree of incumbent advantage Knowledge of political system rules Political party presence (offices, etc.) |
| | Political engagement | Voter turnout Political party membership Participation in voluntary civic associations (non-leisure) Political contributions (monetary) Knowledge of political system rules |
| | Legitimacy of government | Public opinion Voluntary assistance to/cooperation with government agencies |
| Healing Wartime Trauma | Break with the past | Ex-combatant opinion / Public opinion |
| | Reconciliation | Perpetrator-victim interaction Civilian acceptance of ex-combatants Opposing armed group interaction Ex-combatant acceptance of former enemies |
| | Well-being | Clinical/survey measures of psychological well-being, hopefulness, depression, and PTSD |
| | Social reintegration | Ex-combatant post-conflict marriage rates, divorce rates for pre-/during-conflict marriages Ex-combatant-civilian social ties |

Table 3.2 Suggested Outcome Variables and Indicators, DDR Implementation

| Area of Research | Outcome Variable | Indicator |
|------------------|--|---|
| Sequencing | Inter-group confidence-building | Politician and commander trust in opposing armed group(s) |
| | Stakes in peace | Degree of independence of politician and commander commitment to peace from trust in opponents |
| Adverse Effects | Ex-combatant insecurity | Ex-combatant opinion |
| | Ex-combatant-civilian tensions | Exchange of threats and violence between civilians and ex-combatants Disputes between civilians and ex-combatants Incidence of discrimination against ex-combatants Ex-combatant perceptions of stigmatization |
| | [Positive local role of armed groups; Perverse incentives] | [Context specific] |

3.2 Measuring DDR

- 87 When a DDR program carries out a pre-defined task (reintegration, etc.), the temptation for scholars is to compare that instance of “reintegration” to another and ask if “reintegration” works. We contend, however, that there is in fact a great deal of heterogeneity across what are conventionally understood DDR programs.⁵⁹ Two additional sources of error with respect to evaluations of DDR programs exist: differences between planned activities and services actually delivered under a single DDR program, in addition to differences in the timing of service delivery across space; and difficulties in coding when DDR programs end. In this section we discuss the nature of these challenges.
- 88 Programs differ from one another along a large number of dimensions, including:
- which agencies/organizations are involved in the program generally, and of these, which carry out specific elements of it;
 - whether all phases of DDR are intended to be conducted, and the order in which they occur or overlap;
 - the specific activities carried out within each phase of DDR, and the order of implementation of these activities;
 - the degree of government participation in the administration and funding of the program;
 - the financial resources of the program; and
 - the intended comprehensiveness of the program (what proportion of eligible beneficiaries are targeted for participation).
- 89 The wide disparities between programs carried out in some of the post-conflict contexts in Table A.1 can seem as large as the difference between having and not having a DDR program. The cost of the program from 1991–1995 in Ethiopia following the overthrow of the Derge regime was roughly 70 times larger than the cost of the program for ex-combatants in East Timor following the end of its 24-year war for independence from Indonesia. Yet the difference in the per-person cost of the two ran in the opposite direction: program spending standardized by the number of ex-combatants in the program was roughly three times *larger* in East Timor than in Ethiopia.⁶⁰ Some programs are similar because of their scope – for example the month-long demilitarization project carried out in 1996 by UNTAES in Eastern Slavonia (Croatia) to cut the number of weapons in circulation (Boothby 1998) and the 2001–2005 disarmament program in Papua New Guinea (Spark and Bailey 2005). But programs with such a narrow focus are far removed from the current mainstream of DDR programs, which attempt holistic implementation of projects covering all aspects of DDR.

- 90 In addition to cross-program differences, there is the issue of within-program heterogeneity. Any activities performed under a given program have the potential to differ from what was intended during planning stages, and to differ systematically by region or over time based on differences in organizations responsible for implementation, or based on staffing within a single organization. During the disarmament and demobilization process in Liberia between 1996 and 1997, for example, peacekeeping contingents supervising the disarmament and demobilization process registered ex-combatants and issued them demobilization ID cards. Although certain standards were set for what weapons and quantity of ammunition were necessary to certify an individual's status as an ex-combatant, wide variation in the quality of weapon accepted occurred across sites. Even for the same site, standards became stricter over time (CAII 1997:16). To illustrate the potential for a very large degree of variation in what participation in a DDR program might mean for any individual ex-combatant or civilian, during the MDRP program in Angola, no fewer than 57 NGOs, from various countries, were involved in carrying out 177 separate sub-projects for the reintegration phase of DDR (see World Bank 2009b:28–32).
- 91 Finally, given the comprehensive nature of many DDR programs, which might include straight disarmament and demobilization security elements combined with vocational training, small-business loans, and community reconciliation measures, it becomes hard to define exactly when a DDR program concludes. Trivially, of course, all programs do have a clear end point. But if a DDR program ends and is followed by development assistance programs that effectively fund the same types of activities as the reintegration component of the DDR program, how should this be interpreted? One example is a series of reintegration programs for former soldiers in Bosnia and Herzegovina, which started in 1996 with the international peacekeeping force and has continued up until the present. Being too lenient and always concluding that follow-up projects are all somehow part of a larger DDR plan would confuse the issue. But if these programs are actually funding the same activities, what is meaningful about distinguishing between them.
- 92 Since we are interested in analyzing DDR as a treatment and observing its effects on peacebuilding outcomes, the three issues of measurement raised above pose serious problems for determining program effects in a comparative framework. In particular, each one is a form of measurement error in the explanatory variables capturing DDR programs. We would like to estimate coefficients linking these measures of DDR to peacebuilding outcomes. But as is well known, measurement error (in this case error that is unlikely to be random) would bias parameter estimates, confounding the analysis of program effects.

3.3 Identification and External Validity

- 93 Our basic recommendation concerning the evaluation of DDR is that, as much as possible, randomization should be incorporated into future programs. But note that since randomization in-and-of-itself does not resolve all the problems that we have raised, including the measurement problem, program heterogeneity, etc., the lessons learned from randomized impact evaluations of specific programs should not be overstated.
- 94 The benefit of using randomized evaluations (RE) is that through randomly assigning subjects (whether individuals, localities, etc.) to the treatment policy, the researcher can eliminate potential problems of mutual causation. Since DDR programs occur in settings in which many other development projects are being carried out, observational studies would need to control for a long list of other potentially influential, rival programs. RE design eliminates this problem, allowing better causal inferences to be made.
- 95 Our discussion underscores difficulties that are not limited to observational studies. Program heterogeneity brings up a classic problem with RE. Although we can have confidence that our results are correct for the sample in which the RE was carried out, and in the context that it occurred, we have little guidance about whether those findings carry over directly to other samples, and other settings. Rodrik (2009) provides a detailed explanation of the problems inherent in generalizing from RE findings. Unfortunately, in the case of DDR programs, we also have much information suggesting that context will matter greatly for the specifics of programs and how they play out on the ground.
- 96 The previous sections of this report aim to push scholars and policy makers studying DDR to be explicit about the mechanisms leading from DDR to peacebuilding outcomes of interest, and at a more basic level to be explicit about what are those goals. This emphasis on mechanisms can help improve any evaluations, whether it uses RE or observational methods. For both types of research, mechanisms are especially useful in helping to point out the right counterfactuals that should be examined in order to draw causal inferences.

Conclusion: Building Evidence about the Effects of DDR

- 97 READING THE LITERATURE on DDR programs can be disconcerting in the repetitiveness of the “lessons learned” and the frequency with which these same conclusions are touted as advancing our understanding. When we try to distill what we know about the effects of DDR programs on concrete outcomes of interest, it becomes apparent that our knowledge about the impact of these programs is limited. Partially this is due to the inherently difficult questions that evaluation of DDR programs must address. We would be remiss not to acknowledge this as well as the sincere efforts of scholars and practitioners to do their best to answer these questions.
- 98 It is clear, however, that two issues in the vast majority of studies prevent us from incrementally building up a body of evidence about whether DDR programs contribute to peacebuilding. First, many studies start from the assumption that DDR helps build post-conflict peace. The result is that “success” in terms of the substantive goals of the programs is often not defined. Instead, the main concern of evaluations is identifying and solving obstacles to the implementation of programs. Yet without a clear and specific articulation of the desired impacts of DDR, it becomes difficult to assess whether and to what extent DDR has made a difference on the ground. Second, the omission of a strategy for impact evaluation in program design is pervasive across many types of public and development assistance programs, with DDR no exception. Evaluations are usually post-hoc and are not based on a systematic approach that can compare the effectiveness of the same set of policies across different contexts. This limits cumulative learning about program effects.

- 99 Moving forward, research will be able to advance our understanding of DDR by honing in on specific research questions rather than trying to evaluate DDR's overall "success." This report extracted a total of 17 conceptual outcomes of interest from the literature and proposed more than twice as many potential indicators of these outcomes (see Tables 3.1 and 3.2). The indicators run the gamut from straightforward measures of a return to violence and the health of the economy to assessments of the operation of political system, and to societal and individual recovery. This range highlights the complexity of programs encompassed by the concept of DDR. Future analyses will therefore be better able to ascertain the effectiveness of DDR as a peacebuilding tool by disaggregating the complex package of programs comprising it.
- 100 Separating out the different facets of DDR programs will guide researchers more naturally to the appropriate empirical strategies. The question at hand can structure the research design employed, rather than that design being constrained by the need to deal with an aggregate concept like DDR. This type of problem-driven approach will likely have greater traction in evaluating the impact of DDR. For example, post-conflict crime might be a challenge to peacebuilding success. But a research project that starts by analyzing crime in and of itself may very well be more productive than one that starts out by viewing crime through the lens of peacebuilding, a lens that could remove potentially significant factors from the scope of the analysis.
- 101 An additional implication of this report is that a comparative approach should be central to future research on DDR. We can learn a great deal from studies of individual programs or countries. But serious comparison across countries of relevant aspects of conflicts and the programs designed to address them will provide invaluable insight into the complex interaction between DDR programs and social processes beyond the insights a single case can provide. A comparative approach can be explicit, through statistical analysis or case comparisons. It can also be used implicitly to enrich individual case studies. Findings from studies of a single program or country which focus on isolating the pathways through which programs might operate and which keep broader research questions in mind can be readily applied to other contexts, since this approach helps identify the extent to which such comparisons are valid. As single case studies will inevitably be used to draw conclusions regardless of the caveats that researchers attach to them, consciously building in the potential for comparison will also avoid misinterpretations of the evidence or misapplications of a program to a context that is not in fact analogous to the one for which it was originally developed.
- 102 The recommendations on methodology in Section 3 point to the powerful analytical tools currently available to researchers to evaluate not only DDR but the

larger set of peacebuilding interventions of which it is a part. Indeed, researchers often turn to such tools as methodological fixes to get the bottom line answer concerning a program. Yet this report indicates that answering “*how does it work?*” often provides greater leverage over a question and better recommendations for policy makers than getting the bottom line answer to “does it work?” Observational studies might appear to have a good grasp of programs in comparative perspective, but methodological shortcomings particularly with respect to disentangling mutual causation bring their findings into question. Even if a Randomized Evaluation were conducted to deal with mutual causation and tease out answers, the predicted effects of an identical program carried out in a different setting would be unclear. By being specific about what is the relevant set of counterfactual comparisons and by identifying the mechanisms at work, researchers can generate findings that can better assist policy makers in addressing the complex issues at play whenever peacebuilding efforts are contemplated.

- 103 In this review we have tried to refocus future analysis of DDR programs on specific research questions. Do DDR programs have an impact on four core areas of substantive goals: preventing war recurrence and strengthening linkages between development and peace; reducing levels of post-war crime and violence; increasing civic and political participation; and treating the scars left on individuals and society by internal warfare? How should the security and development components of DDR programs be sequenced? Can DDR programs backfire and cause harm? Each of these questions is a rich area for research. This makes our work in this review in some ways very preliminary—the more each area is explored and the potential mechanisms linking DDR to specific elements of peacebuilding laid bare, the more it becomes apparent how many questions remained unanswered.
- 104 This uncertainty is perhaps the most overlooked yet important conclusion that should be on the minds of policy makers. With limited resources to devote to building post-conflict peace, it is important to take this uncertainty seriously and to promote systematic empirical research. The problem is not only one of how to most effectively allocate resources across a range of interventions. Studies of DDR programs’ substantive impacts must also be carried out to ensure that these programs do not have negative long-term consequences. To enable this, policy makers should insist, above all, that future programs be designed so that their effects on elements of peacebuilding can be evaluated scientifically.

Table A.1: Civil Wars and Externally-Assisted DDR Programs, 1979–2006

The table continues on the next page.

Note: Wars are coded as of December 31, 2006. Peacebuilding outcomes are coded missing if the war was ongoing as of that date, or if observation of the outcome at the cut-off–2-year or 5-year–was not possible as of December 2006; DDR is coded through December 31, 2009.

| | Country | Conflict | War Years | DDR Years |
|----|--------------------------|------------------------------------|--------------|---|
| 1 | Afghanistan ¹ | United Front v. Taliban | 1996–2001 | 2003–Ongoing |
| 2 | Afghanistan | Taliban | 2001–Ongoing | 2003–Ongoing |
| 3 | Angola | UNITA | 1975–1991 | 1991–1992 |
| 4 | Angola | UNITA | 1992–1994 | 1995–1998 |
| 5 | Angola | UNITA | 1997–2002 | 2002–2008 |
| 6 | Bosnia | Rep. Srpska/Croats | 1992–1995 | 1996–Ongoing ² |
| 7 | Burundi | Hutu groups | 1991–Ongoing | 2004–Ongoing |
| 8 | Cambodia | Khmer Rouge; FUNCINPEC; etc. | 1975–1991 | 1992 |
| 9 | Central African Republic | Factional fighting | 1996–1997 | 1997–2000 ³ ; 2004–2007 |
| 10 | Chad | FARF; FROLINAT | 1980–1994 | 1992–1997 |
| 11 | Chad | FARF; FROLINAT | 1994–1997 | 1992–1997 ⁴ ; 1999–2000 ⁵ |
| 12 | Colombia | FARC; ELN, drug cartels, etc. | 1978–Ongoing | 2002–Ongoing ⁶ |
| 13 | Congo – Brazzaville | Cobras v. Ninjas | 1998–1999 | 2000–2009 ⁷ |
| 14 | Congo – Zaire | RCD; etc. | 1998–Ongoing | 2004–Ongoing |
| 15 | Côte d'Ivoire | Forces Nouvelles | 2002–2005 | 2006–Ongoing ⁸ |
| 16 | Croatia | Krajina; Medak; Western Slavonia | 1992–1995 | 1996–1997 ⁹ |
| 17 | Djibouti | FRUD | 1991–1994 | 1994–1996 |
| 18 | El Salvador | FMLN; RAES | 1979–1992 | 1992–1997 ¹⁰ |
| 19 | Ethiopia | Eritrean war of independence | 1974–1991 | 1993–1997 |
| 20 | Ethiopia | Ideological; Tigrean | 1978–1991 | 1991–1995 |
| 21 | Guatemala | Communists, Indigenous | 1978–1994 | 1997–1998 |
| 22 | Guinea-Bissau | Vieira v. Mane mutiny | 1998–1999 | 1999–2006 |
| 23 | Haiti | Cedras v. Aristide | 1991–1995 | 1994–1996 |
| 24 | Indonesia | East Timor | 1975–1999 | 2000–2004 ¹¹ |
| 25 | Indonesia | Aceh | 1999–2005 | 2005–Ongoing |
| 26 | Iraq | US/Coalition occupation; civil war | 2003–Ongoing | 2003–Ongoing ¹² |
| 27 | Lebanon | Aoun; militias; PLO, Israel | 1975–1991 | 1991 ¹³ |

Continued from previous page

| | Country | Conflict | War Years | DDR Years |
|----|------------------|--------------------------------|--------------|----------------------------|
| 28 | Liberia | NPLF; ULIMO; NPF; LPC; LDF | 1992–1997 | 1996–1997 |
| 29 | Liberia | anti-Taylor forces | 1999–2003 | 2003–2009 |
| 30 | Mali | Tuaregs; Maurs | 1990–1995 | 1995–1997 |
| 31 | Mozambique | RENAMO; FRELIMO | 1976–1992 | 1993–1997 |
| 32 | Namibia | SWAPO; SWANU; SWATF | 1973–1989 | 1989–1990 |
| 33 | Nepal | CPN-M/UPF (Maoists) | 1996–Ongoing | 2007–Ongoing ¹⁴ |
| 34 | Nicaragua | Contras & Miskitos | 1981–1990 | 1990–1992 |
| 35 | Papua New Guinea | BRA (Bougainville) | 1988–1998 | 2001–2005 |
| 36 | Philippines | MNLF; MILF | 1971–2006 | 1997–Ongoing |
| 37 | Rwanda | RPF; genocide | 1994–1994 | 1997–Ongoing |
| 38 | Senegal | MFDC (Casamance) | 1989–1999 | 1992 |
| 39 | Sierra Leone | post-Koroma coup violence | 1997–2001 | 1998–2004 ¹⁵ |
| 40 | Somalia | post-Barre war | 1991–Ongoing | 1993–Ongoing ¹⁶ |
| 41 | South Africa | ANC; PAC; Azapo | 1976–1994 | 1995–1997 |
| 42 | Sudan | SPLM; SPLA; NDA; Anya-Anyas II | 1983–2002 | 2006–Ongoing ¹⁷ |
| 43 | Sudan | Darfur | 2003–Ongoing | 2009–Ongoing |
| 44 | Tajikistan | Popular Democratic Army; UTO | 1992–1997 | 1997–2003 |
| 45 | Uganda | NRA; etc. | 1981–1987 | 1992–1995 |
| 46 | Uganda | LRA; West Nile; ADF; etc. | 1995–Ongoing | 2005–Ongoing ¹⁸ |
| 47 | Yugoslavia | Kosovo | 1998–1999 | 1999–2004 |
| 48 | Zimbabwe | ZANU; ZAPU | 1972–1979 | 1980–1985 |
| 49 | Zimbabwe | Ndebele | 1983–1987 | 1980–1985 ¹⁹ |

| Peacebuilding Outcomes | | | |
|------------------------|-------------------|----------------|-------------------|
| 2-year | | 5-year | |
| War Recurrence | Residual Violence | War Recurrence | Residual Violence |
| Yes | Yes | Yes | Yes |
| No | No | No | No |
| No | No | No | No |
| No | No | No | No |
| No | No | No | No |
| - | - | - | - |
| No | No | No | No |
| No | No | No | No |
| - | - | - | - |
| No | Yes | No | Yes |
| No | No | No | No |
| No | No | No | No |
| - | - | - | - |
| No | Yes | No | Yes |
| Yes | Yes | Yes | Yes |
| - | - | - | - |
| No | No | No | No |
| Yes | Yes | Yes | Yes |
| - | - | - | - |
| No | No | No | No |
| Yes | Yes | Yes | Yes |
| No | No | No | No |

Table A.2: Civil Wars and DDR Programs Conducted without External Assistance, Selected Cases

The table continues on the next page.

| | Country | Conflict | War Years | DDR Years |
|---|------------------------------|-------------------------------|--------------|----------------------------|
| 1 | Angola | Cabinda; FLEC | 1994–1997 | 2003–Ongoing ²⁰ |
| 2 | China | PLA | 1946–1949 | 1954–1958 |
| 3 | Colombia | La Violencia | 1948–1966 | 1953–1953 |
| 4 | Colombia | FARC; ELN; drug cartels; etc. | 1978–Ongoing | 1984–2002 |
| 5 | Djibouti | FRUD | 1991–1994 | 1993–1996 |
| 6 | Nicaragua | Contras & Miskitos | 1981–1990 | 1991–1996 |
| 7 | United Kingdom ²¹ | Northern Ireland | 1971–1998 | 1998–Ongoing ²² |

- The DDR process in Afghanistan can be assigned to this war and to ongoing civil war (2001–present), as we do here.
- The World Bank's Emergency Demobilization and Reintegration Program (EDRP) ran from 1996–1999, and the follow-up Pilot Emergency Labor Redeployment Project (PELRP) from 2001–2002. Thus there is a gap for 2000, during which PELRP was supposed to start but did not. The International Organization for Migration's (IOM) Transitional Assistance Programme for Discharged Soldiers (TADS) ran from 2002–2006, followed by the NATO Partnership for Peace Trust Fund (NTF) from 2006–2009.
- Disarmament occurred during the 1997–2000 period under the auspices of the Inter-African Mission to Monitor the Implementation of the Bangui Agreements (MISAB) and then the UN Mission in the Central African Republic (MINURCA). Some reintegration may have occurred. However efforts appear to have been suspended in the summer of 2000. DDR started again with the Central African Republic's (CAR) program under the Multi-Country Demobilization and Reintegration Program (MDRP) in 2004.
- This refers to the same DDR program as that after the 1980 to 1994 civil war in Chad.
- Chad started a pilot reintegration program in January 1999, which ran through 2000. Other sources report a reinsertion program scheduled for 2005–2010, but it appears never to have materialized.
- Most sources date this phase of DDR in Colombia to 2003, but it appears to have started in 2002. International community involvement may not date to the very beginning of this period.
- DDR was interrupted for approximately one year, during 2001.
- Although DDR was originally scheduled to start in 2003, it appears to have stopped and started several times. There is no evidence to suggest that the program actually started in 2003, although there was a United Nations Children's Fund (UNICEF) program to demobilize child soldiers from 2003 to 2004. UN reports indicate that pre-cantonment started on May 22, 2006 and that this is considered the first step in implementing DDR, while the Integrated Regional Information Network (IRIN) reports that the first disarmament of fighters occurred on July 27, 2006.
- The United Nations Transitional Authority in Eastern Slavonia, Baranja and Western Sirmium (UNTAES) oversaw the demilitarization of Serb forces in its area of operations between late May and late June 1996, and ran a weapons buy-back program from October 2, 1996 through August 19, 1997.
- Much of the DDR process was completed in the 1992–1993 period. However, a key reintegration component, the land transfer program, continued until 1997. Its work was almost complete in December 1996, with 250 cases outstanding, having already completed 30,000.
- The National Armed Forces for the Liberation of East Timor (FALINTIL) was demobilized between February and December 2001, but had been cantoned prior to that, in 2000. Reintegration programs ran through at least 2004.
- DDR in Iraq has some similarities to other programs included in this table, but it has certainly not been a sustained effort since 2003. We date it back that early due to a trial firearms amnesty and buy-back programs to carry out micro-disarmament. Starting in the spring of 2009 at the latest, programs for Iraqis in the Anbar awakening militias which included training and reinsertion payments were taking place.

Peacebuilding Outcomes

| 2-year | | 5-year | |
|----------------|-------------------|----------------|-------------------|
| War Recurrence | Residual Violence | War Recurrence | Residual Violence |
| No | No | No | No |
| Yes | Yes | No | Yes |
| No | No | No | No |
| – | – | – | – |
| No | No | No | No |
| No | No | No | No |
| No | No | No | No |

13. Although militia disarmament was completed, with varying degrees of compliance, by April 31, 1991, integration of militia fighters into the Lebanese Army occurred in October 1993.
14. Although Maoist forces have been in cantonment since 2007, progress on DDR was stalled during 2007 and most of 2008.
15. DDR was interrupted for at least six months (starting in January 1999), and for approximately one year, between May 2000 and May 2001.
16. Various programs that can be considered DDR have been going on in Somalia since 1993. The United Nations Operation in Somalia I (UNSOM I), the United Nations Operation in Somalia II (UNSOM II), and the Unified Task Force (UNITAF) carried out disarmament activities between 1993 and 1994; the European Commission (EC) and the Gesellschaft für Technische Zusammenarbeit (GTZ) worked on DDR programs from 1994-2004; the United Nations Educational, Scientific and Cultural Organization (UNESCO) from 1999–Present; the United Nations Development Programme (UNDP) 1993-Present; and two DDR initiatives by Somali governments – one from 2000–2003 in South Somalia only, and a second from 2004–Present. Note that the ongoing programs were ongoing as of 2005.
17. The Interim DDR program for Sudan conducted by the UNDP appears not to have become fully operational until 2006, although it was financed and began to be staffed in 2005.
18. The MDRP DDR program in Uganda ended in 2007, but a follow-up program was created to last from 2008 to 2010 (see World Bank 2008). Note also that although the MDRP started in Uganda in 2005, the Uganda Amnesty Commission, whose work it supports, has been in existence since 2000, so demobilization and reintegration activity during that period may have taken place.
19. This refers to the same DDR program as that after the civil war from 1972 to 1979 in Zimbabwe.
20. Agência AngolaPress reports that demobilization of the Front for the Liberation of the Enclave of Cabinda (FLEC) ended on January 6, 2007. Reintegration appears to have continued past that date; specifics, however, are not readily available. An Angola Peace Monitor news report about ex-combatant dissatisfaction with the reintegration program confirms it was still ongoing as of February 29, 2008. The Agence France-Presse (AFP) also reports in January 2010 that recipients of reintegration aid living in a community built especially for them expect new housing in the future.
21. The Independent International Commission on Decommissioning is joint between the Government of the UK and the Government of Ireland. Both countries have also passed laws granting individuals who handle arms in order to decommission them immunity from prosecution.
22. This refers to the decommissioning process in Northern Ireland, which started in December 1998 with Loyalist Volunteer Force's decommissioning of some of its weapons. As of September 2005 the Irish Republican Army had fulfilled its obligations under the decommissioning agreement, but to date full decommissioning of Loyalist paramilitary groups had not been completed.

1. See, for example, Perez (1986), Shaw (1984), Quandt (1972), Roy (1978), Morrill (1972), and Matthews (1981). These authors write about wide range of contexts: the Roman Empire (Shaw); U.S.-occupied Cuba after the Spanish-American War (Perez); Algeria after successfully winning its war of independence (Quandt); the English Civil War (Roy and Morrill); and Nigerian troops returning home after having served with the British in campaigns in Africa during World War I (Matthews).
2. For the civil war list, we use a version of Doyle and Sambanis (2006) updated through December 31, 2006. For reference we include in Table A.2 several other known instances of civil war-related DDR programs conducted without external assistance, but prior to 1979. Note that only wars during the 1979–2006 period and which are not already in Table A.1 are numbered, to facilitate ease of reference to figures stated in the text.
3. World Bank (1993:2): “The World Bank is increasingly receiving requests by member governments for technical and/or financial assistance for programs to reintegrate demobilized combatants and displaced persons into the economy.”
4. Principal studies from this period include World Bank (1993, 1996), Azam, et. al. (1994), Coelho and Vines (1994), Berdal (1996), Clark (1996), Colletta, et. al. (1996a, 1996b), Ejigu and Gedamu (1996), Laurance and Meek (1996), UN (1996), Kingma (1997), Spencer (1997), Dercon and Ayalew (1998), and Kreimer, et. al. (1998).
5. Berdal and Ucko (2009:2), for example, quoting UNSC (2000), note that “[a] measure of success in the disarmament, demobilization and reintegration (DDR) of combatants came to be recognized—and still is—as perhaps the single most important precondition for post-war stability and, by extension, for more ambitious attempts to facilitate ‘a society’s transition from conflict to normalcy and development,’” i.e., achieving long-term economic development and growth.
6. These are the conclusions of a report by the Praxis Group (2000), drawing on a series of interviews with UN staff, donors, NGOs, academics and others on the topic of DDR program effectiveness.
7. A good assessment of the economy, including an assessment of which sectors can absorb ex-combatants joining the labor force, can help with the design of reintegration programs (Arthy 2003).
8. Delays in demobilization can lead to mutinies by former combatants who lose trust in the process. For a discussion of problems associated with such delays in the cases of the DDR programs in South Africa and Namibia, see Griffiths (1996).

Delays, however, can be handled if sufficient support is given to the program and if peacekeeping assistance is available. In Mozambique, a case generally considered a success in demobilization, all troops were supposed to have been demobilized 120 days after election day, but one year after the signing of the cease-fire agreement in 1992, no troops had been demobilized (see Jett 2000).

9. A recent source that integrates lessons learned from different programs is Meek and Malan (2004). Their conclusions follow much of the policy literature that highlights the need for better coordination at the planning stage, better linkage of the two steps of the process (i.e., linking reintegration better to disarmament and demobilization), improving the articulation of objectives for the DDR program, and managing the distribution of resources so as to reduce inequities between the assistance offered to DDR program participants and the rest of the community.
10. The UN's Integrated DDR Standards also reflect the understanding that DDR programs should promote security as a means of enabling comprehensive peacebuilding: "DDR alone cannot resolve conflict or prevent violence; it can, however, help establish a secure environment so that other elements of a peace-building strategy, including weapons management, security sector reform, elections and rule of law reform, can proceed." (UN IDDRS [2006] 2.10 "The UN Approach to DDR": §3). The UN also conceives of DDR as both part of a multi-dimensional peacebuilding process and multi-dimensional in and of itself: "The aim of the DDR process is to contribute to security and stability in post-conflict situations so that recovery and development can begin. The DDR of ex-combatants is a complex process, with political, military, security, humanitarian and socio-economic dimensions" (UN IDDRS [2006] 2.10: §4).
11. One challenge DDR programs face is that in providing economic reintegration assistance to ex-combatants, and fairly uniform assistance packages (although typically officers receive larger amounts of assistance than enlisted personnel), it may be difficult to completely compensate individuals who profited extensively from the war, who could act as spoilers if they believe that they are not doing well economically under the peace. Although directly addressing this issue appears to be outside the scope of DDR programs, presumably if DDR and other post-conflict assistance programs had fast-acting positive effects at the macro-level, these individuals could end up satisfied (see Carbonnier 1998:47).
12. Collier and Hoeffler (2004) is a widely cited paper promoting this view. See, however, Berman et. al. (2009), who show that in the Philippines and Iraq unemployment is negatively correlated with insurgent attacks on government forces and unrelated to attacks on civilians. Fearon (2007) questions the basis for the opportunity cost argument in a formal model. Chassang and Padró i Miquel (2009) also argue that the opportunity cost argument is based on faulty logic, since if income is high, opportunity costs of violence would be high, but so too would the spoils

of war. These authors consider recent empirical evidence that negative economic shocks increase the risk of war and the claim that this relationship confirms the opportunity cost theory of civil war. Negative economic shocks might increase the risk of war because even though they reduce the present value of spoils from war and depress rebel “wages”, the prospects of future returns from victory after the negative shock has passed are high, thereby encouraging rebellion before the recovery from the shock. Nevertheless, that view also has some logical flaws, as it does not explain why potential rebels are not concerned about their future earnings (after the shock) and the risk that participation in rebellion today poses to realizing those earnings.

13. Micro-disarmament also has economic consequences, as it reduces the reliance on small arms as sources of income. If employment opportunities are limited, former combatants will be more reluctant to surrender their weapons since they can use them for income. See, for example, reports of a market for renting weapons in Mozambique referenced by Pike and Taylor [2000:16].
14. Office of the Secretary of Defense (2002). The role of formal and informal networks of ex-combatants in postwar countries has not been studied extensively. The assumption seems to be that such networks pose a threat to the peace. “Delinking” is often used as a measure of success of DDR programs (see Humphreys and Weinstein 2006). However, the effects of such networks is ambiguous. They may facilitate mobilization in the event of a return to war; or they can contribute to the peace, if they facilitate the social reintegration of former fighters. The question is worthy of further research.
15. See, for example, Kingma (2002).
16. See Gleichman et. al. (2004:17) and Ball and van de Goor (2006:4).
17. See also Walter (2004), who emphasizes the importance of conditions in the immediate post-war period, looking at the breakdown of peace as essentially similar to a new outbreak of civil war.
18. Assessing the effect of military integration agreements (integrating former rebels into the government military) is complicated by the fact that such agreements are often not implemented where they are most needed to provide a self-enforcing mechanism for the implementation of terms of a peace agreement. For a discussion, see Glassmyer and Sambanis (2008).
19. Labeling acts of rebellion “banditry” in order to de-legitimize them was a common technique of early twentieth century Chinese government officials (Billingsley 1988:9–10): “In China, as throughout the rest of the world, the word ‘bandit’ has traditionally been the most useful one for discrediting political enemies, whether of the older kind (popular rebels) or the new (Republicans and Communists). The word suggests strong-armed, recalcitrant, antisocial individuals engaged in a futile personal vendetta against all and sundry, lacking even the would-be

legitimacy of heterodox ideology [...]. To the framers of the law, the police, and all those with a modicum of power, this image provided the ideal means of drawing attention away from any genuine peasant grievances bandits might present, and of defaming or belittling political adversaries. The word ‘banditry,’ that is, could be used to subsume the whole range of stealing...from petty thieving to political revolution—and the effect was to tar all those to whom the term was applied with the same brush.” Reframing of post-war violence as criminal, banditry, may have a similar goal.

20. See Becker (1968) for a foundational article in this line of inquiry.
21. See, for example, Witte (1980), Cornwell and Trumbull (1994), Miron (2001), Cantor and Land (1985), Tyler (2004), and Rosenfeld (2009). One point of agreement that has emerged in the literature is the correlation between the prohibition of drugs and increased violent crime (Dills et. al. 2008).
22. See Constable (1992), Beresford (1994), SAPA (1994), DPA(1997), Star Radio (1998), Jakarta Post (2008), and IRIN (2009a).
23. A rare, more direct test of the effects of DDR appears in Restrepo and Muggah (2009). Their data on homicides, robberies, and assaults in paramilitary groups’ areas of operation suggests that disarmament and demobilization had a significant negative effect on those three categories of crime. On average, for example, homicides fell roughly 13 percent. It is important to note, however, that the ongoing war in Colombia may make these findings less relevant to the concerns of DDR practitioners in post-conflict settings. A declining homicide rate might simply be indicative of portions of the war itself being brought to an end, rather than being a result of DDR. Note, too, that Restrepo and Muggah find that the effect fades considerably over time.
24. See Stanley and Call (1997:119–20), who make this point quite clear in their discussion of police reform in post-conflict El Salvador.
25. This appears to be a case of what Parker (2001:715) calls “the failure to draw appropriate policy conclusions from methodologically sound findings on controversial subjects such as gun control.”
26. This is Galtung’s concept of “positive peace” as “social justice.” See Galtung (1969, 1981, 2005). There is, however, some disagreement as to whether the absence of war is properly understood as a minimal condition and whether the elements of self-sustaining peace are as normatively positive as claimed by proponents. See Boulding (1977).
27. Boutros-Ghali defines peacebuilding as “action to identify and support structures which will tend to strengthen and solidify peace in order to avoid a relapse into conflict” (1992:6).
28. Abstractly, the literatures in economics and political science on the welfare-enhancing effects of markets and democratic institutions are examples.

29. Doyle and Sambanis refer to this as “participatory peace.”
30. According to Boutros-Ghali (1992:116), key peacebuilding activities include: “disarming the previously warring parties and the restoration of order, the custody and possible destruction of weapons, repatriating refugees, advisory and training support for security personnel, monitoring elections, advancing efforts to protect human rights, reforming or strengthening governmental institutions *and promoting formal and informal processes of political participation*” [emphasis added].
31. Antonio Navarro Wolff, quoted in Chernick (1994).
32. Guáqueta (2009) contrasts the example of the political incorporation of the M-19 in Colombia in the early 1990s with the case of the paramilitaries from roughly 2002 on.
33. Torjesen makes reference to the example of Tajikistan, but notes more pessimistically that this type of stake-holding could entrench underdevelopment and instability over the long run (2006:17).
34. Orr observes that “[a]rguably, the single most important factor that determines the success or failure of a post-conflict reconstruction effort is the extent to which a coherent, legitimate government exists – or can be created” (2002:39).
35. We bracket out the discussion of physical trauma and disability due to war injuries.
36. Nilsson (2005:37) links societal and individual trauma to ex-combatants’ risk of becoming engaged in violence. See also Lumsden (1997) on cycles of violence, and, more generally, Miguel et. al. (2009) on exposure to civil war violence leading to future violent behavior by non-combatants.
37. Colletta et. al. (1996b:276) discuss the manifestation of these problems in Uganda: “Lastly, and frequently, veterans would find reintegration and community acceptance easier when they were accepted by the extended family. If the extended family provided food and shelter, nursed the children, and took care of the sick, the community would normally show greater and quicker sympathy with the returnee; however, many veterans lost their entire family, had their houses burned down, and/or their economic base destroyed during the civil war and, thus, had no ‘home’ to which they could return. In these cases, reintegration also proved a formidable psychological challenge.”
38. Fontana and Rosenheck (2005) isolate the effects of “traumatic military exposure [including witnessing and perpetrating violence] and a rejecting and non-supportive homecoming reception” as operating through PTSD. PTSD is associated with post-war antisocial behaviors, although trauma and difficult returns do not appear to affect such behavior independently. Importantly, post-war antisocial behavior is significantly linked to pre-war antisocial behavior. For a recent example, see Smith (2009) and USACHPPM (2009) on a series of homicides at a U.S. Army base in Colorado allegedly perpetrated by three soldiers who were in the process of being discharged.

39. The examples of veterans of the People's Liberation Army of Namibia (PLAN), which fought against South Africa for independence and won and Namibian veterans of the South West African Territorial Force (SWATF), who fought with the South Africans in the counterinsurgency against the Namibian independence movement, are illustrative: "Notwithstanding the fact that PLAN ex-combatants know that they helped bring about independence many have little knowledge of how to give themselves a purpose in life or how to take initiatives toward self-sufficiency. SWATF ex-combatants bear the guilt of having fought for the vanquished foreign oppressor. Often they are ashamed and shy and are ostracized in many communities. (Colletta et. al. [1996b:13])."
40. Colletta et. al. (1996b:280) note that this also happens indirectly, as with wives of ex-combatants in Uganda, some of whom "had married a soldier for the perceived special status. These women resent a return to civilian life as they see their social status diminish or vanish."
41. This applies principally to gender roles and to age- and gender-based hierarchies of authority. See, e.g., Colletta et. al. (1996b:13, 79, 280) on female ex-combatants in Namibia, Ethiopia, and Uganda.
42. See DelVecchio Good et. al. (2007:24) for a rather comprehensive list of types of trauma experienced across a population exposed to civil war, in a study of Aceh, Indonesia. Examples include being forced to injure or betray family and others, being forced to provide food or shelter to armed groups, being forced to fight, being punished for not fighting, varieties of physical deprivation, and psychic traumas like being forced to search for corpses or being prevented from carrying out proper religious burials.
43. The conflict between ex-combatants and civilians is also one of the main obstacles to resettlement and reintegration. Colletta et. al. (1996b:79) observed the "formidable psychological and social challenge" that comes from "[r]esentment between 'victim' and 'culprit'" in Ethiopia.
44. Colletta et. al. (1996b:78) recognize the need for counseling particularly for child combatants but note that this is not always provided in DDR programs (e.g., in Ethiopia).
45. Neuner and Elbert (2007) write: "Ironically, arguments about the cultural difference between countries has [sic] been primarily raised by European or North American 'experts' with the intention of protecting the poor in the developing countries from the West, or more precisely from its educated scientists and clinicians. Upon closer examination this appears to be a colonial perspective."
46. Recent examples that work hard to disentangle alternative explanations within the economic causes of conflict framework include Chassang and Padró i Miquel (2009) and Hegre et. al. (2009).

47. This assumes that each combatant had one weapon. Conceivably the rate of disarmament could be much lower if combatants had more than one weapon.
48. The emphasis on prioritization of security concerns in SIDDR (2006) reflects this.
49. For an example of such an argument, see Spear (2002:141): “Peace requires breaking the command and control structures operating over rebel fighters – thus making it more difficult for them to return to organized armed rebellion – and reforming or integrating new state armies to act in the interest of the entire citizenry.”
50. This is potentially mitigated by perceptions of specific armed groups among the civilian population. If a group is seen as having represented or defended the community, civilians may be more likely to view the ex-combatant DDR benefits as just compensation for patriotic services rendered.
51. Hoffman (2004) explains the motivations of Sierra Leonean *kamajor* militia members who, post-conflict, moved on to fight in Liberia, and their actions there. Debos (2008) discusses the role of Chadian former combatants in civil war in the Central African Republic.
52. According to some estimates, the DDR program in Sierra Leone involved 87% of all ex-combatants (Humphreys and Weinstein 2004:30), although it is not clear whether these individuals went through all stages of DDR. Knowing the nationwide rate of participation in DDR by stage is important as statistics for the program clearly indicate attrition. Approximately 22.7% of ex-combatants who were disarmed did not continue and enter the reintegration component (56,751 of the 72,490 did). See World Bank (2003:9). Other estimates flag the possibility that the DDR participation rate was much lower, possibly as low as 52.6% participation in the disarmament stage and 41.2% in reintegration, based on the estimate of a total of 137,865 ex-combatants (McKay and Mazurana 2004:92). Even assuming the high rate of participation (87%), it would be informative to know the employment outcomes of ex-combatants who did not go through DDR, to confirm whether DDR can be said to help ex-combatants’ chance of employment, although the comparison would be marred by non-random selection into the DDR program.
53. At first glance, if all demobilized soldiers participated in the program, the comparison is no longer possible. However, since the program was implemented in phases, it may have been possible to make these comparisons. The employment outcomes of 5,000 soldiers who went through a pilot program (World Bank 2009a:40), for example, could be compared to those of other soldiers prior to their participation in the program, even if all were eventually beneficiaries of the economic reintegration elements of it. This would be particularly valuable if participants in the pilot program were randomly selected, although the report gives no information about the selection criteria used. Still, the validity of such a comparison could be questioned, given that success of a very limited program might not indicate whether a scaled-up version would produce the same benefits.

54. Darden (2009) demonstrates the importance of the content of pre-existing social networks for mobilizing violent action in his study of the role of nationalist networks in the growth of Ukrainian armed opposition to Soviet occupation during and following World War II. He exploits a natural experiment research design to establish the exogenous origins of the nationalist content of the networks in 19th century schooling patterns, showing that dense social ties alone do not predict mobilization.
55. In their study of DDR in Sierra Leone, Humphreys and Weinstein (2007, 2009) find no significant effect of DDR on ex-combatants' severing of ties with their wartime comrades, in a survey of ex-combatants. The extent of continuing ties is measured using responses to questions about with whom respondents spend time, with whom they would prefer to start a business, and to whom they would turn if faced with a problem. A World Bank (2003) study of DDR outcomes in Sierra Leone does not examine any such indicator.
56. See Colletta et. al. (1996b), who give crime statistics for DDR program participants in Uganda. They also consider divorce rates and landlessness as measures of success/failure of the reintegration of former combatants.
57. Along similar lines, Vinck et. al. (2007) show that mental distress resulting from exposure to wartime violence can cause individuals to seek retributive solutions to conflict.
58. Parsons (1963:57) views legitimacy as "the higher normative defense against the breakdown of a system of social order." Others writing about the link between legitimacy and stability include Huntington (1968), who emphasizes the destabilizing effect of changes in the legitimacy of a regime; Englebert (2002), who shows the influence of legitimacy on the development trajectories of African countries, especially through its effects on stability; and Gurr (1968), who posits that legitimacy can mitigate the effects of instability-causing factors. See also Lipset (1959) for a discussion of the relationship between legitimacy and stability following crises, and Muller (1972) on legitimacy and the potential for anti-government violence.
59. Compilations of case studies of DDR programs often raise the issue of unit heterogeneity—in this context, heterogeneity across the post-conflict situations in which DDR programs operate (see, e.g., Berdal and Ucko 2009).
60. This does not take into account inflation.

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DISARMAMENT, DEMOBILIZATION, AND Reintegration (DDR) programs are a policy instrument that has been increasingly used by the international community to secure the peace in post-conflict contexts. This report provides a social-scientific review of these programs. It summarizes the research questions that policy makers and academics pose about DDR programs' ability to achieve their goals and how program implementation may factor into this. It reviews the policy and academic literatures on DDR and takes stock of where research in this field stands to date. The report then addresses how claims about effects of DDR programs can be evaluated. It highlights the appropriate data and methods and the questions that may be inherently difficult to answer. The report concludes with an agenda for future research and the critical role that policy makers can play.

About the authors: Nicholas Sambanis is Professor of Political Science at Yale University. He has earlier worked as an economist at the World Bank. Jonah Schulhofer-Wohl is a Ph.D. Candidate in the Department of Political Science at Yale University. During 2009 he was a doctoral research fellow at the Orient-Institut Beirut.

Cover: ONUCA Demobilizes Nicaraguan Resistance Forces in Honduras. A Venezuelan soldier stands guard at the camp where the Nicaraguan resistance surrenders their weapons to the United Nations Observer Group in Central America (ONUCA) as part of the overall peace process in Central America. 18 April 1990, El Paraiso, Honduras. Photo courtesy of the United Nations, Department of Public Information (UN Photo/Steen Johansen, NICA 181004).

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