

Post-conflict Recovery in Africa: The Micro Level

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Development in Africa is inseparable from warfare. In the mid-1990s alone, a third of sub-Saharan African countries had an active civil war; many lasted a decade or more. Mass violence has afflicted nearly every African nation since Independence. These conflicts are epic events in each nation's history, destroying life, skills, wealth, and infrastructure, and potentially damaging a society's social bonds and institutions.

We have only a rough understanding of the macroeconomic consequences of internal war worldwide: output falls dramatically then recovers slowly but steadily over time.¹ One of the greatest barriers to understanding macro-level impacts and recovery is the dearth of micro-foundations. The majority of unanswered questions are empirical: what factors of production fall and by how much? How fast does each recover? What is the distribution of gains and losses? What role is there for public policy and programs?

We are especially far from a satisfactory body of micro-empirical evidence. Until about ten years ago, most of our micro-knowledge came from public health: epidemiologists measured mortality, morbidity and disease; psychologists measured the incidence and determinants of post-traumatic stress disorder (PTSD). In the 1990s a handful of labor economists studied the labor market impacts of military service, but limited their attention to American and European veterans. In the past decade, however, economists and political scientists have attacked these questions with increasing

¹ Surveys of the macro literature include Blattman and Miguel (2010), Collier and Hoeffler (2007), and Humphreys (2003).

vigor and rigor.² The majority new evidence comes from Africa, partly because Africa has had more war, and partly (one speculates) because African states have been less able to deter meddling researchers from data collection.

Two events drove this surge of micro-investigation. First, for development economists, wars became impossible to ignore. As the twentieth century closed, conflict afflicted more and more countries. By some accounts, conflict represented the central impediment to African development. Second, as wars ended in the early years of the new century, governments and researchers could safely collect micro data. In a few especially valuable instances, enterprising researchers followed up representative samples of pre-war national household surveys to create a pre- and post-war panel.³ Combined with data on the location and severity of war violence, these panels could be used to create differences-in-differences estimates of the micro-level impacts of war. In most war-torn nations, unfortunately, pre-war data were destroyed or (more often) never existed in the first place. Thus another approach has been to collect cross-sectional data after war, using plausibly exogenous variation in violence to assess the lasting effects.⁴ Nearly all our micro-evidence on war comes from one of these two (largely reduced-form) empirical strategies. Structural modeling and estimation of war impacts remains unfortunately rare.⁵

This piecemeal and opportunistic approach means the existing evidence is fragmentary and incomplete. How to organize the evidence in a meaningful way and chart a path forward? Growth theory offers a useful frame. Growth accounting is usually employed at the macro level, decomposing growth into its contributing factors: labor, human capital, physical capital, and that elusive residual, “technology”. Viewed through this lens, the gaps in our knowledge become clear.

Most of the new micro-evidence on war measures the effects of war on capital, human and physical, and the consequent impacts on labor market performance and poverty. Human and physical capital are more straightforward to measure at the micro-level than more ethereal factors like technology change or social networks, especially with the data and empirical strategies just described. As with macro-level accounting, however, our understanding of the all-important residual factors—social organization, innovation, culture, and so forth—remains weak.

Let us take these factors one by one. First, consider physical capital. When livestock are killed, houses burned, or resources plundered, the nation’s capital stock depletes. The damage depends largely on the nature and extent of the war. In a nation like Ethiopia—where the civil war was limited to a small peripheral region, and where the center was captured quickly—fewer farms,

² Surveys include Blattman and Miguel (2010) and Justino (2007, 2008); New papers are commonly published at <http://www.hicn.org>.

³ e.g. Akresh, Bundervoet and Verwimp (forthcoming).

⁴ e.g. Miguel and Roland (2005), Bellows and Miguel (2006), Shemyakina (2006), Humphreys and Weinstein (2007), and Blattman and Annan (forthcoming).

⁵ Brück (2001) is one exception.

businesses, and infrastructure were destroyed. Not so in Liberia, where a series of wars consumed the nation, and warlords and ostensible peacekeepers looted every asset imaginable.

Neoclassical growth theory tells us that nations should return to steady state incomes and growth paths after such capital shocks. Evidence from Japan, Germany and Vietnam suggest that, within one to two decades, a nation's capital stock returns to pre-war levels. Yet we have little micro-level evidence on the speed of recovery in Africa. To the extent that African businesses and households are more credit constrained, recovery may be slower than in the more developed states.

More important may be the political and institutional environment after war. In neoclassical models, capital returns to the pre-war equilibrium path so long as the factors that determine that equilibrium remain unchanged. If a nation emerges from war more politically stable, or better governed, than before, then capital will not only rebound, but could exceed its previous levels and growth in the new investment climate. Good examples from Africa include Uganda after 1986, or Rwanda after 1994, where rebel forces achieved decisive victories, established new eras of political stability, and embraced market reforms. On the other hand, weak regimes supported by foreign powers, or warring factions held in an unsteady equilibrium solely through peacekeeping forces and power-sharing agreements, could diminish the investment climate and lower equilibrium capital per worker.

The micro-empirical literature on human capital is richer than that of physical capital. When warfare kills or maims the adult population, it destroys a labor force and a vast stock of human capital. Mortality studies suggest that internal wars kill many more people through indirect rather than direct means—that is, through sickness and hunger rather than battle deaths or murders. Mortality levels are often hotly disputed, largely due to disagreements over the appropriate counterfactual mortality rate, but the unbalanced effect on civilian death is widely recognized.

More seldom measured is the human capital lost. In principle, if life is lost faster than capital is destroyed, capital per worker (and incomes) could rise as a result of war. This argument has been applied, with some controversy, to the AIDS crisis in Africa. While plausible, it is hard to find clear examples of war presenting this unintended gift. One reason could be that, when life is lost, so is human capital. Moreover, the destruction of families takes a toll on related factors, such as social networks and social capital; extended families are the principal mechanism of insurance in rural Africa, and the death of workers and the disruption of social networks and support is likely to have adverse effects on recovery. Hence the numerator of the capital-per-worker ratio may fall as fast as (or faster than) the denominator. Here we have little economic evidence, however, save a number of public health, psychological and 'child protection' studies that suggest the loss of a primary caregiver is a strong correlate of lower lifetime health.

Among survivors, a large body of evidence suggests that war, like disasters, interrupts schooling, either because populations are displaced, education systems collapse, or (especially in the case of combatants) youth are pulled out of school. These educational effects are typically lowest among women, older adolescents, and the poor, all of whom in the absence of war are less likely to have attended school—perhaps a sadder statement on their opportunities in peacetime than war.

Education appears to recover more slowly than physical capital for a number of reasons. A labor force killed or maimed will need to wait a generation to fully recover its size and skill level. For those who saw schooling interrupted, skills may be reacquired, but the pace of education has obvious physical and logistical limits, and so is difficult to accelerate. Moreover, those deterred from school often do not return, meaning that the rate of recovery for a whole cohort may be zero. Where schooling is fee-based, any wealth loss from war further reduces the probability of return to schooling. Finally, war may have destroyed school infrastructure, or teachers may not want to serve in poor and war-torn areas. As a consequence of these factors, rates of return to school, and the speed of recovery, appear to be tied to the length of war, the scale of destruction in the school system, opportunities for (and cost of) remedial or vocational education, and post-war returns to schooling.

War harms physical health as well. Injuries may disable youth in their working prime. A growing body of evidence suggests even longer term impacts through child stunting. War and displacement reduce child nutrition, which in turn is linked to lower lifetime physical and cognitive functioning, and with it lower productivity. The depth of the shock depends on the, but physical limits on recovery imply the rate of convergence to pre-war health could be slower than that of physical capital. These rates of recovery should be sped by the quality of health care services during and after war, including the availability of food relief. Rapid recovery of health systems could mean rapid recovery of health-related human capital, since people start from a low base. As a consequence, such services are among the first and highest priority provided by emergency aid.

Mental health gets less attention in the economics literature than education and physical health, but deserves special consideration in any discussion of war. War trauma is closely linked with painful and sometimes debilitating emotional distress, such as PTSD. While epidemiological studies commonly find high rates of PTSD among war-affected populations—especially veterans and the direct victims of violence—debilitating emotional distress appears to be the exception rather than the norm. Victims and perpetrators display surprising resilience, especially when they return to supportive families and friends after war. Moderate to serious symptoms of distress (including depression, anxiety, or hallucinations) arise in large numbers of victims and perpetrators, but typically it is a minority of those exposed to violence.⁶

Moreover, however painful these effects (and however important to treat for humanitarian reasons), symptoms of emotional distress do not necessarily impede education or work, except among those with the most severe symptoms. Magnitudes vary with degree of exposure and context (and difficulty of cross-cultural measurement), but it seems likely that education and physical health are more important determinants of post-conflict economic recovery than mental health.

This is not to say that education and physical health deserve more attention from policymakers after war. Post-conflict interventions ought to aim where their marginal impact is greatest. The size of war's impact, and the consequent growth effects, are just one variable in this decision. We also need to consider the effectiveness of the policy tools at hand; depression and PTSD are among the

⁶ See Masten (2001) or Annan and Patel (2009) for reviews.

most straightforwardly treated disorders, and so aid programs may be particularly effective here. Also, the existing skills and institutions for dealing with psychological disorder are extremely poor in Africa, as there is an almost total absence of trained professionals and programs. Hence the marginal impact of mental health programs could be very high.

In truth, we do not know. The point is not that mental health deserves attention, but that when considering post-conflict policy priorities, the effectiveness of available programs and the existing stock of interventions ought to guide decisions as much as the growth effects of a particular factor.

A growing number of post-conflict program evaluations will help answer such questions and link research to concrete policy. Dozens of experimental and observational evaluations are underway in locations as diverse as Nepal, Sri Lanka, Afghanistan, Liberia, and Sudan. They range from ex-combatant reintegration to peace radio programming to job creation. This is a promising new avenue that in the coming three to five years could challenge or confirm the cautious conclusions above.

Together, this loss of factors—physical capital, education, and physical and mental health—imply that households become poorer and are less able to generate income. The same reduced form studies that demonstrate factor losses also find increases in household poverty after war.

The aggregate effect on national income and growth depends on the proportion of the population affected. Unfortunately the data and empirical strategies employed make it difficult to identify partial from general equilibrium effects. We thus have little evidence on whether war's impacts are increasing or constant in scale. There are strong theoretical reasons to fear that the adverse impacts are increasing in scale, not least because of the damage to the social fabric. In principle, the experimental projects discussed above could attempt to isolate the general and partial equilibrium effects, especially when large, nation-wide reconstruction programs are studied. Such a finding requires a specific and careful design, and no attempts appear to be underway.

Another major gap in our knowledge is the effect of conflict on institutions and innovation at the micro-level. Theories of growth—neoclassical and endogenous—identify technology, institutions and social organization as the fundamental determinants of development. As noted above, the steady state to which a post-conflict society returns is largely a function of these elusive factors. Any micro-level impacts to these factors could contribute to a long term decline in both income and growth rates.

It is tempting to assume that war always and everywhere diminishes social and institutional strength. There are clear instances of war doing just this: polarizing ethnic tensions in Sudan or Nigeria, or prompting looting and capital flight in 1990s Sierra Leone and Liberia. Nevertheless, war can sometimes have the opposite effect. At the macro-level, Latin America's and (especially) Europe's state stability and strength are commonly attributed to centuries of internal and external warfare. Political scientists have drawn modern parallels to African states like Uganda and Rwanda, whose institutions appear to have emerged stronger from conflict.

At the micro-level, there is also evidence that war and violence can have unexpectedly positive social and political effects. In a widening number of studies from around the world, experiences of

war violence are highly correlated with greater levels of social capital and higher levels of peaceful political engagement. One possibility is that individuals are activated by violence and injustice rather than destroyed by it; war establishes a taste for peace and good governance.⁷

These findings even extend to ex-combatants themselves. While some veterans are socially excluded, aggressive, or face difficulty gaining social acceptance, survey and qualitative evidence suggests they are widely accepted and function at par with (or more successfully than) others in their community. While the 'tastes' explanation may apply, other explanations are that ex-combatants may have gained valuable leadership and organizational experience or (perhaps more likely) wish to signal their reintegration into society by engaging productively and peacefully in their communities.

The effects of war and violence on trust, cooperation, social organization and politics is one of the most interesting and important frontiers of research. We lack theories of behavior that explain the emerging stylized facts, and so the further study of war could challenge (and improve) basic theories of economic and political behavior.

Overall the trend in the study of warfare has been towards more and better data, more rigor and structure in methods, more integration of quantitative work with case and qualitative work, and more links to formal theory. The field will only benefit if these trends continue. The multitude of post-conflict field experiments underway is also exciting. One worry is that these experiments, conducted on select samples with limited replication, and implemented where the opportunity arises rather than theory demands, will have limited external validity and speak to the less important questions. The big questions and unknowns remain the speed of relative recovery of human and physical capital in alternative social and institutional environments, and the institutional and social conditions (micro and macro) that give rise to recovery and continued growth.

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⁷ See Blattman (2009) for one example and a review of evidence.

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