perspective paper
ARMED CONFLICT
Anke Hoeffler

COPENHAGEN
CONSENSUS 2012
solving the world's challenges

Copenhagen Consensus 2012 Perspective Paper on

'An Economic analysis of the challenge of Armed Conflicts'

by J. Paul Dunne

Anke Hoeffler

Centre for the Study of African Economies

Department of Economics, University of Oxford

April 2012

1. Introduction

In his challenge paper Paul Dunne demonstrates that the cost of armed conflict are not restricted to the fatalities of armed conflict, but include deaths and disabilities due to the consequences of war, the economic losses to the country experiencing civil war and to their neighbours. He builds on the previous Copenhagen Consensus attempts to quantify the costs of armed conflict (Collier and Hoeffler, 2004a; Collier, Chauvet and Hegre, 2008) and the cost are estimated by assessing the economic and social impact the armed conflict has had on the society[1].

My perspective paper has two main sections. In Section 2 I discuss alternative calculations of the health burden. My calculations suggest that the costs of war in terms of loss of life, injury, disability and disease are possibly much higher than calculated by Dunne, they could be as high as $79bn.

The third section provides a discussion of the proposed solutions. How effective are these solutions? What works and what does not? Dunne proposes a number of solutions, such as early warning systems, development aid and peace keeping operations. Based on the costs of such interventions he calculates the cost-benefit ratios and concludes that all of the proposed solutions would be highly cost effective. While I agree with his main conclusion I highlight the uncertainties when evaluating the proposed solutions. I argue that although some interventions are frequently advocated we know very little about their success. Partly because we base our assessment on the implicit assumption that interventions are motivated by the desire to prevent or lessen conflicts. This implicit assumption may not be correct.

2. Cost of Armed Conflict

Like the previous Copenhagen Consensus Challenge papers Dunne uses a counterfactual approach to estimate the economic costs of armed conflict: it is based on a comparison between the path the economy takes during and after the conflict, with the likely path the economy would have taken in the absence of conflict. The economic costs are the sum of the

---

[1] Armed conflict is understood to be large scale, internal to a country where an organised opposition movement is able to inflict fatalities on the government. Only conflicts with more than 1,000 battle related deaths per year are considered. For the purpose of this perspective paper I will use 'conflict' and 'civil war' interchangeably.

cost to the war economy, the spillover cost affecting neighbouring economies and the legacy effect of war.

In addition to these economic costs, the social cost in terms of health costs of civil wars are considered. The concept of Disability-Adjusted Life Years (DALYs) is used to measure the health costs. One DALY can be thought of as one lost year of "healthy" life. The average civil war is estimated to cost half a million DALYs per year. These DALYs are then priced and discounted to derive an estimate in US dollars. Two possible prices for a lost year of healthy life are considered, $1,000 and $5,000 and two discount rates of 3 and 6 per cent.

Wars kill but numbers are hard to come by. In the literature there is a wide discrepancy between the number of deaths reported for various wars. One distinction in the number of war deaths is whether people were killed through direct violence or indirectly through the consequences of war such as malnutrition, increased risk of communicable diseases and increased crime. Typically the literature distinguishes between 'battle deaths' and 'total war deaths', which includes deaths due to direct and indirect causes.

The calculation of DALYs for the Copenhagen Consensus is based on an estimate by Ghobarah, Huth and Russett (2003). They suggest that armed conflicts cause the loss of 8.44 million DALYs per year. Their estimate includes deaths and disability resulting from 23 major diseases, not only from injuries inflicted by fighting. Collier and Hoeffler (2004a) assume that there were on average 17 ongoing civil wars (based on Collier *et al* 2003) and thus suggest that on average civil wars cost 500,000 DALYs per year. Assuming that the average war lasts for seven years, that the effects of war decrease over time (following the pattern of the economic costs of war), that the effects of the war are zero in the 21st year after the start of the war and a discount rate of five per cent, they calculate a net present value of 5 million DALYs per war. Using a price of $1,000 per DALY the costs are thus $5bn. Dunne uses a discount rate of 3 or 6 per cent and a price of $1,000 or $5,000. Thus, the costs are estimated to lie between $4.7bn and $27.8bn.

My alternative calculation would put these costs substantially higher. The World Health Organisation (WHO) puts the number of DALYs lost due to war and civil conflict at 12.1 million in 2004 (most recent figures). Using the UCDP/PRIO Armed Conflict Dataset (Gleditsch *et al* 2002) yields an average number of wars per year of 8.4, thus there are 1.4 million DALYs lost per war and year. Following the Collier, Chauvet and Hegre (2008) and Dunne calculation, the net present value is between $13.2bn and $77.9bn. The upper bound

of the calculation would thus be higher than the total costs of war as suggested by Dunne ($58.6 bn).

However, although this appears plausible it appears that the calculations are not using the same data definitions. Let's assume that the aim is to assessment of the health costs of civil wars. First, we require a definition of civil war. While the definition of Gleditsch *et al* 2002 has become the standard in quantitative social sciences the estimates of the corresponding DALYs by the WHO do not appear to match this classification. The WHO categorization appears to be wider, it includes all wars and civil conflict. Gleditsch and Lancina (2005) provide estimates of battle deaths that do correspond to the Gleditsch *et al* 2002 definition but they do not provide an estimate of DALYs. The estimates by Murray *et al* (2002) suggest that the battle deaths are almost equally split between military and civilian fatalities. Second, the health costs of wars are not only due to injury inflicted in battle but are consequences of the war, such as malnutrition and a higher incidence of communicable diseases. Lacina and Gleditsch (2005) also provide some estimates for total war deaths, which includes battle deaths, and deaths due to increased one-sided violence, diseases and crime. Their estimates of total war deaths have very large confidence intervals. On the whole their estimates appear to be conservative. For example Coghlan *et al* (2006) use International Rescue Committee household survey to estimate the number of deaths due to the war in the Democratic Republic of the Congo: they put the total death toll at about 3.9 million and suggest that the Congolese war has been the deadliest since the end of World War II. Their total death toll differs markedly from the Lacina and Gleditsch (2005) who put the total at 2.5 million.[2]

A relatively small percentage of total war deaths are due to direct violence. For African wars Lacina and Gleditsch (2005) suggest that battle deaths make up between three and 29 per cent. In other words more people are killed by the consequences of war rather than in fighting. This ratio varies considerably across the different civil wars.

Estimating the number of war deaths is very difficult. The use of household surveys enables researchers to estimate excess mortality rates. The recent study by Degomme and Guha-Sapir (2010) calculates the number of excess deaths for the conflict in Darfur. Using 63 mortality

---

[2] Lacina and Gleditsch (2005) only provide data or four years of the war but the corresponding Coghlan *et al* (2006) estimate for this period is 3.3 million.

surveys gathered from 2004 to 2008 they estimate the overall number of excess deaths at 300,000.[3] They find that about 20 per cent of excess deaths were the direct result of violence.

Why is it important to derive plausible estimates of the number of (civilian) deaths or DALYs? If we want to provide meaningful policy advice for interventions it has to be based on evidence. Without information it is impossible to design adequate programmes to address the health burden that civil wars impose on the population (Checci, 2010).

A further dynamic health cost that civil wars impose have not been considered by any of the Copenhagen Consensus papers on armed conflict is the impact of war on the global eradication of certain communicable diseases. Global vaccination programmes have successfully eradicated smallpox (1979) and rinderpest (2010). Civil war countries are pivotal in the global effort of eradicating disease as the following three examples of polio, Guinea-worm disease and measles show[4].

Polio

Since the inception of the global eradication plan in 1988 polio cases have decreased by over 99 per cent. At the start of the programme polio was endemic in 125 countries, today only three countries remain polio-endemic: Afghanistan, Nigeria and Pakistan. Afghanistan is at war and the others have considerable levels of violence. As long as polio remains endemic in these three countries, neighbouring countries are at risk. For example the continuation of cases in northern Nigeria poses the risk of renewed spread of the virus to other West-African states. In the past, polio virus has spread from northern Nigeria to Niger, then on into Burkina Faso and Mali. Given the current security situation in Mali this is of particular concern.

Guinea-worm disease

Dracunculiasis (guinea-worm disease) is a crippling parasitic disease. It is transmitted exclusively when people who have little or no access to safe-drinking water supply swallow water contaminated with parasite-infected fleas. Dracunculiasis is rarely fatal but infected people become non-functional for months. A global eradication strategy was developed in 1981 and now only four African countries are endemic: Chad, Ethiopia, Mali and South

---

[3] This number does not include deaths among the refugees living in Chad.
[4] The discussion is based on information from WHO.
Polio: http://www.who.int/mediacentre/factsheets/fs114/en/index.html
Guinea worm disease: http://www.who.int/mediacentre/factsheets/fs359/en/
Measles: http://www.who.int/mediacentre/factsheets/fs286/en/

Sudan. Most cases (97%) occur in newly independent South Sudan. The WHO regards insecurity as the major constraint in the eradication of the disease. In the past 'periods of tranquillity' have been negotiated to distribute filters, treat infected patients and apply larvicide.[5] Although guinea-worm disease is almost eradicated, the security situation in South Sudan raises concern over the final push in the global eradication campaign.

Measles

Measles is a highly infectious disease and one of the leading causes of death among young children. The fourth Millennium Development Goal (MDG 4) aims to reduce the under-five mortality rate by two-thirds between 1990 and 2015. The global Measles & Rubella Initiative contributed 23 per cent of the overall decline in under-five deaths between 1990 and 2008 and is driving progress towards meeting MDG4. Routine measles vaccination coverage has been selected as an indicator of progress towards achieving MDG 4. Although measles outbreaks occur worldwide, more than 95 per cent of measles deaths occur in low-income countries. The reduction of measles is thus of particular importance to low income countries, however none of the low-income countries afflicted by violence has achieved a single one of the eight MDGs[6]. Thus, security concerns are pivotal in the global effort to reduce measles.

To summarize, we still do not have a clear understanding of the health burden of civil wars. Partly, this is a problem of definitions. Social scientists and public health experts use different concepts of large scale violence. Social scientists also concentrate on the estimate of deaths while public health researchers use the concept of DALYs. The loss of a 'healthy' year of life is a more dynamic measure of the health burden of war which indicates the impact of war long after the shooting stops. Health surveys give more precise estimates of excess mortality rates during and after war, but due to the security situation these household surveys are difficult to carry out. Good information of the health burden is essential in the design of appropriate health interventions.

3. Proposed Solutions

---

[5] The Carter Center leads the global effort of eradicating Guinea worm disease
http://www.cartercenter.org/health/guinea_worm/mini_site/index.html
[6] World Bank's World Development Report 2011.

Dunne proposes a number of solutions to prevent and shorten conflicts but he does not discuss their effectiveness. Some of the proposed solutions have been assessed in large n-studies and I provide a brief overview of the effectiveness of aid, peace keeping, arms control and early warning systems.

Development Aid

Dunne regards aid as an effective instrument to prevent and shorten wars. The mechanisms through which aid can achieve this are not discussed in detail. Aid could potentially reduce the risk of conflict directly. Development aid increases the government budget and since aid is fungible these additional funds can be used to increase military expenditure (Collier and Hoeffler, 2007) and thus deter rebellion or suppress it. Another possible channel is that potential rebel groups can be 'bought off'. However, there is no empirical evidence that aid decreases the risk of conflict (Collier and Hoeffler, 2002; de Ree and Nillesen, 2009). What about indirect channels? Aid could potentially decrease the risk of conflict by increasing growth and income. However, although there is a large literature on the economic impact of aid on growth (e.g. Burnside and Dollar, 2000; Dalgaard, Hansen and Tarp, 2004) I concur with Rajan and Subramanian (2008) that there is there is no robust positive relationship between aid and growth in cross-country regressions. They also find no evidence that aid works better in better policy or geographical environments nor that certain types of aid work better than others. Thus, aid is unlikely to affect the risk of conflict through growth.

Does aid affect the duration of conflict? Most of the aid goes to the government although there is some discussion that food aid is appropriated by rebel forces. De Ree and Nillesen (2009) provide some evidence that aid shortens the duration of civil wars. They suggest that aid strengthens the government by 'leaking' into the military budget. While this appears plausible they do not examine whether aid results in a military victory of the government.

Another line of inquiry is whether aid can help to stabilize post-conflict countries and reduce the high rate of recurrence. Collier and Hoeffler (2004) and Hoeffler, Ijaz and von Billerbeck (2011) focus their analysis on whether aid can enhance the peace dividend. In contrast to the general literature on aid and growth (which finds essentially no links), Hoeffler, Ijaz and von Billerbeck (2011) find that aid has a positive effect on growth in post-war economies. However, the effect is moderate: an extra one per cent of aid increases growth by 0.05 - 0.1 per cent. Importantly, they show that these results do not hold in violent post-war situations, aid in violent post-war situations has no growth enhancing effect. Toft (2010) shows post-

conflict growth is independent of the type of settlement that brought the conflict to an end. Hoeffler, Ijaz and von Billerbeck (2011) examine whether certain types of aid are particularly beneficial to growth in post-war countries. After an armed conflict countries face particular needs, for example physical infrastructure reconstruction and rehabilitation and a health burden. However, they find no statistical evidence that a particular type of aid is more beneficial than another.

UN Peacekeeping

There is now considerable evidence that UN peacekeeping operations (UNPKOs) are effective in maintaining peace. Collier, Hoeffler and Söderbom (2008) use a duration model and conclude that UNPKOs extend the peace. Fortna and Howard (2008) provide an overview of the peacekeeping literature and conclude that there is robust evidence on the positive effects of peace keeping. One concern in this literature is the possible endogeneity of UNPKOs. If peacekeepers are only sent to less difficult situations, the statistical results would suffer from endogeneity bias. However, Fortna (2008) argues that the UN sends peacekeepers to the more difficult situations. There is no evidence that UNPKOs lead to democratization (Fortna and Howard, 2008) nor that they affect growth directly (Hoeffler, Ijaz and von Billerbeck, 2011). Interestingly, Fortna (2008) suggests that the success of UNPKOs is mainly due to non-military mechanisms. The decision of the belligerents to keep the peace is the result of altered incentives, alleviation of fear and mistrust, the prevention of accidental escalation into war and the reshaping of the political procedures.

Arms Trade and Arms Embargoes

The discussion of the international arms trade and its regulations is timely. In July 2012 the UN members are planning to negotiate an international Arms Trade Treaty. Currently the international arms trade is difficult to define, measure and control. If an Arms Trade Treaty can be concluded the challenge is to ensure that states have the capacity to control arms transfers. There are a number of regional and national regulations that restrict the arms trade to countries in conflict or to states with a poor human rights record. Examples are the EU Code of Conduct on Arms Exports and the US Arms Export Control Act (AECA). Some of these arms trade restrictions appear to be motivated by the self-interest of the manufacturing country rather than concerns for the conflict situation in destination countries. Many arms manufacturers want to prevent the spread of technology. For the discussion of civil war the transfer of small arms and light weapons (SALW) is of most interest. Bourne (2012)

discusses how SALW are traded and how they reach conflict zones. He argues that about 90 per cent of all conflict countries have managed to obtain SALW from the global market. The SALW are typically obtained within the region; imported by one country but diverted to a different end-user through unauthorized re-export.

How much does it cost to monitor the export controls on SALW? The US's post-export checks are regarded as the most effective and known as the 'Blue Lantern' program . It includes the checks of foreign consignees and end-users. The operational budget for 2010, was just under $2 million (this excludes some salaries). For 2007 SIPRI (2008, ch.1) estimates the monitoring costs at approximately $3 million. Considering that the total US arms trade with developing countries is about $21.3 billion (Grimmett, 2011) there is scope to improve and finance the monitoring program. The value of the global arms exports to developing countries is estimated at $40.4 billion (Grimmett, 2011) and scaling up the controls may be a very effective way of reducing the flow of SALW to conflict countries.

Are arms embargoes effective? UN Security Council arms embargoes are the only global, legally binding prohibition on arms transfers. Since 1990 the UN have imposed 28 arms embargoes (Holtom and Bromley, 2010). However, there have also been various national and regional embargoes and there is a small emerging literature on the effectiveness of arms embargoes. One of the key issues is what is meant by 'effectiveness'. The objectives of embargoes can be wide ranging, for example regime change, end of a civil war or end of the support of terrorism. Objectives cannot be directly observed and there may be a difference between the aim and the result of the embargo. Brzoska (2008) examines the effectiveness of embargoes and concludes that although they change import patterns it is less clear that targeted countries changed policies. Multilateral embargoes (for example EU) appear to be more effective than unilateral (US) embargoes. Embargoes take time to work, import restrictions only 'bite' once stockpiles of arms and ammunition are depleted. Based on 74 embargo cases Brzoska (2008) suggests that embargoes of five years duration are more likely to be effective. The study by Fruchart *et al* (2007) suggests that embargoes have a higher effectiveness in the presence of UNPKO.

Interventions in Ongoing Civil Wars

There is an implicit assumption that interventions will manage the conflict, interventions are assumed to shorten the war or make the conflict less violent. In comparison to the intellectual attention that civil war onset has received, the duration of war has been relatively under-

studied. Regan (1996) defines interventions as military, diplomatic or economic and has generated a data set which has been used by a number of researchers (e.g. Collier, Hoeffler and Söderbom, 2008). Military interventions include UNPKOs as well as interventions by neighbours and major powers. Economic interventions include economic assistance as well as sanctions. Regan (2010) provides an overview of the intervention literature and concludes that external interventions increase the expected duration of a civil war[7]. Thus, based on the implicit assumption that interventions should limit conflicts, we conclude that they are not effective in conflict management. However, there are other reasons why external interventions take place, such as strategic considerations. The goals of interventions are often multifaceted and it is thus difficult to assess the effectiveness of interventions. One area that is poorly understood is whether interventions result in a particular form of conflict termination. This is an important question because there is evidence that military victories result in longer lasting peace. Negotiated settlements are more likely to break down and civil war reoccurs (Tuft, 2010).

Interventions before a Civil War

The question whether interventions can prevent wars has received very little attention. The relatively recent effort in developing early warning systems has not yet been systematically analysed. The central questions are whether 'early warning' results in 'early action' and whether this prevents civil wars. Nyheim (2009) and Wulf and Debiel (2009) provide overviews on early warning and response mechanisms. An example of a regional warning and response system is the Continental Early Warning System (CEWS) in Africa which was initiated in 2002. It is intended to contain crisis situations and prevent them from further escalation into large scale violent conflict. The system was generated by African Union (AU) and is part of an integrated conflict preventions mechanism: intelligence is gathered and analysed in a specialist centre, the AU can send additional fact finding missions, the Peace and Security Council can then decide to intervene[8]. The African Peace Facility Fund and the African Standby Force are used to implement the interventions. Recent missions include: Burundi (2003), Darfur (2004-06), Somalia (2007/08) and Comoros (2008). Some of the interventions seem to have been under-resourced and a lot of outside funding (for example from the US) appears to be *ad hoc*.

---

[7] This is in contrast to the findings by dee Ree and Nillesen (2009), but this may be due to the fact that they concentrate on the effect of aid, not like Regan (2010) who considers 'economic' interventions which he defines as convention-breaking, i.e. usual assistance through aid is not considered.
[8] Peace enforcement missions require a UN Security Council mandate.

While it is too early to assess the effectiveness of AU interventions statistically, Regan's (2010) large n-study assesses the success of interventions before civil wars. To my knowledge this is the only paper of this kind. Regan (2010) builds on Goldstone *et al* (2010) and determines countries and periods with a high risk of civil war. Regan (2012) then analyses whether interventions were successful in preventing conflict. He concludes that military interventions increase the likelihood of civil war, economic interventions have no effect on the likelihood of war and diplomatic interventions decrease the likelihood of a war.

4. Conclusions

Worldwide more people die in traffic accidents than in armed conflict. Considering the death statistics, the challenge of 'armed conflict' appears to be a comparably minor one. However, as Dunne and previous Copenhagen Consensus authors have suggested the cost of war is much larger than the loss of life: it is the sum of economic and health losses to the country, their neighbours and legacy effects due to an increased risk of war. In this perspective paper I suggest that the number of healthy years lost may have previously been underestimated and the health burden of war may be considerably higher than previously assumed. However, the discussion highlights that the estimation of the health burden of war is particularly difficult. Part of the problem is that definitions vary across public health and social science research. Household surveys can provide more accurate figures of excess mortality but they are of course dangerous and difficult to carry out in conflict zones. One issue that has not received attention within the Cophenhagen Consensus is that civil wars provide a major obstacle in the global fight against communicable disease. Global eradication programs often hinge on a very small number of countries at war. Thus, wars impose considerable dynamic global health costs which could potentially be estimated. In general, the Copenhagen Consensus debates in 2004 and 2008, have not put sufficient emphasis on the links between the challenges. The global challenges have been reviewed in isolation but civil wars impact on hunger, disease, education, population growth, water and sanitation and biodiversity. It would be great to see a debate of the links between the challenges.

In the last section I discuss the effectiveness of some of the proposed solutions. Based on large n-studies we are fairly confident that UNPKOs keep the peace and that aid increases the peace dividend. There is a much smaller literature on arms embargoes. They can be effective and seem to be more so in the presence of UNPKOs. There is comparatively little work on

interventions during conflict. Interventions seem to prolong war; it appears to be very difficult to stop a war once it has started. Interventions to prevent wars starting in the first place may be more promising. However, there is hardly any work on the effectiveness of interventions before a conflict and it is too early to provide a quantitative assessment of early warning and response efforts. The discussion of the proposed solution also shows that some interventions are more effective if they are combined with other interventions. However, we know very little about optimal policy design. Fragile countries require a combination of economic and security assistance. Studies either concentrate on the development or the security aspects, they pay insufficient attention of the relationship between development and security. This is an important area of future research.

References

Brzoska, M. 2008. Measuring the Effectiveness of Arms Embargoes . *Peace Economics, Peace Science and Public Policy* 14(2):1-32.

Bourne, M. 2012. Small arms and light weapons spread and conflict. In: Small Arms, Crime and Conflict: Global Governance and the Threat of Armed Violence (Green, O. and N. Marsh, eds), Routledge: London and New York.

Checchi F. 2010. Estimating the number of civilian deaths from armed conflicts. *The Lancet* Jan 23;375(9711):255-7.

Coghlan, B., R. J. Brennan, P. Ngoy, D. Dofara, B. Otto, M. Clements and T. Stewart. 2006. Mortality in the Democratic Republic of the Congo: a nationwide survey. *The Lancet* 367: 44-51.

Collier , P., L. Chauvet and H. Hegre. 2008. The Challenge of Conflicts, Copenhagen Consensus 2008 Challenge Paper.

Collier, P. and A. Hoeffler. 2002. Aid, Policy and Peace: Reducing the risks of civil conflict. *Defence and Peace Economics* 13(6) 435-450.

Collier, P. and A. Hoeffler. 2004a. Conflicts, in B. Lomborg (ed.) Global Crises: Global Solutions, Cambridge University Press: 129-156.

Collier, P. and A. Hoeffler. 2004b. Greed and grievance in civil war. *Oxford Economic Papers* 56(4): 563-595.

Collier, P. and A. Hoeffler. 2004c. Aid, Policy and Growth in Post-Conflict Countries. *The European Economic Review* 48: 1125-1145.

Collier, P., A. Hoeffler and M. Söderbom. 2008. Post-Conflict Risks, *Journal of Peace Research* 45(4): 461-478.

Collier, P. and A. Hoeffler. 2007. Unintended Consequences: Does Aid Promote Arms Races? *Oxford Bulletin of Economics and Statistics* 69: 1-28.

Dalgaard, C.-J., H. Hansen, and F. Tarp. 2004. On the Empirics of Foreign Aid and Growth, *The Economic Journal* 114(496):191–216.

De Ree, J. and E. Nillesen. 2009. Aiding violence or peace? The impact of foreign aid on the risk of civil conflict in sub-Saharan Africa. *Journal of Development Economics* 88: 301-313.

Degomme, O. and D. Guha-Sapir. 2010. Patterns of mortality rates in the Darfur conflict. *The Lancet* 375 (9711), 23–29 January 2010: 294–300.

Fruchart, D., P. Holtom, S.T. Wezeman, D.Strandow and P. Wallensteen. 2007. United Nations Arms Embargoes: Their Impact on Arms Flows and Target Behaviour. Sipri Report.

Gleditsch, N.P., P. Wallensteen, M. Eriksson, M. Sollenberg and H. Strand. 2002. Armed Conflict 1946–2001: A New Dataset. *Journal of Peace Research* 39(5):615–637.

Goborah, H.A., P. Huth and B. Russett. 2003. Civil Wars Kill and Maim People – Long after the Shooting Stops. *American Political Science Review* 97: 189-202.

Grimmett, R. F. 2011. Conventional Arms Transfers to Developing Nations, 2003-2010. CRS Report for Congress, http://www.fas.org/sgp/crs/weapons/R42017.pdf accessed 28 April 2012

Hoeffler, A., S.S. Ijaz and S. von Billerbeck. 2011. Post-conflict Recovery and Peace Building, Background Paper for the World Development Report 2011.

Holtom, P. and M. Bromley. 2010. The International Arms Trade: Difficult to Define, Measure and Control. Arms Control Association. http://www.armscontrol.org/print/4306 accessed 28 April 2012

Fortna, V.P. 2008. Does Peacekeeping Work? Shaping Belligerents' Choices After Civil War. Princeton. NJ: Princeton University Press.

Fortna, V. P. and Howard, L. M. 2008. Pitfalls and Prospects in the Peacekeeping Literature. *Annual Review of Political Science* 11:283–301.

Lacina, B. and N.P. Gleditsch. 2005. Monitoring Trends in Global Combat: A New Dataset of Battle Deaths.‖ European Journal of Population: 21(2–3): 145–166. The data are available at http://www.prio.no/CSCW/Datasets/Armed-Conflict/Battle-Deaths/

Murdoch, J. and T. Sandler. 2002. Civil Wars and Economic Growth: A Regional Comparison. Defence and Peace Economics 13(6):451-464

Murray, C.J.L, G. King, A.D. Lopez, N. Tomijima and E.G. Krug. 2002. Armed Conflict as a public health problem. British Medical Journal 324:346-349.

Nyheim, D. 2009. Preventing Violence, War and State Collapse: The Future of Conflict Early Warning and Response. OECD.

Regan, P.M. 1996. Conditions of Successful Third-Party Intervention in Intrastate Conflicts. The Journal of Conflict Resolution 40(2): 336-359.

Regan, P. M. 2010. Interventions into Civil Wars: A Retrospective Survey with Prospective Ideas, *Civil Wars* 12(4): 456-476.

Regan, P.M. 2012. Interventions Before Civil Wars. Department of Political Science. University of Binghamton, mimeo.

Toft, M.D. 2010. Ending Civil Wars: A Case for Rebel Victory. *International Security* 34(4): 7–36.

Walter, B. 2011. Conflict Relapse and the Sustainability of Post-Conflict Peace. Background Paper for the World Development Report 2011.

The World Bank. 2011. The World Development Report 2011: Conflict, Security, and Development. Washington D.C.: The World Bank.

Wulf, H. and T. Debiel. 2009. Conflict Early Warning and Response Mechanism: Tools for Enhancing the Effectiveness of Regional Organisations? A Comparative Study of the AU, ECOWAS, IGAD, ASEAN/ARF AND PIF. Crisis States Working Papers Series No.2, Working Paper no. 49, London School of Economics and Political Science.