

On the Return on Investment of Security Sector Assistance and Peacebuilding Assistance

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Abstract

Although a general consensus has built around the notion that third-party assistance mediates and reduces conflict in recipient countries, a more recent strand of literature has begun to suggest that the type and / or source of this assistance might matter. In this study, we explore effects of two specific forms of aid designed to reduce violence and conflict: security sector assistance (akin to military assistance); and peacebuilding assistance. In the first stage of our analyses, we test the impact of each form of aid on political violence across a sample of fragile and conflict-affected states. In the second stage, we test the indirect impact of aid on GDP via its intermediate effect on violence. We use coarsened exact matching to overcome the typical endogeneities associated with aid allocation and structural equation models to estimate our two-step outcomes. While peacebuilding assistance shows the anticipated downward impact on the intensity of violence, security sector assistance is shown to lead to increased intensity. Our second-stage results confirm the anticipated negative relationship between the extent of violence and GDP. Post-estimation analyses suggest an expenditure of \$120k-150k in peacebuilding assistance, which corresponds to a mean increase in GDP of \$9,240 per life saved. Given the total (economic) harm linked to violence, we note that this likely highly underestimates the total benefits of peacebuilding assistance.

Key words: Peacebuilding, military assistance, foreign aid, return on investment, cost effectiveness

JEL Classification Codes: F35, H56, O11

Introduction

In the most basic terms, conflict can be viewed as a negative-sum game¹. Although structural incentives may reward non-cooperative behaviour, the struggle itself destroys a portion of what is being fought over in the first place. It is therefore easy to see why the possibility of a negative peace (i.e. the absence of violence) would yield societal returns. It is also easy to see in theory that the international community as a whole stands to gain from internal (positive and negative) peace of its members. In recent years, a reasonably clear consensus has developed around the role of third-party aid in promoting peace in the face of a range of violent threats,² yet this may belie an underpinning concern that different types of aid might deliver different peace-related outcomes; conditional and unconditional aid,³ for example, may deliver different outcomes, as may “inclusive” and “exclusive” forms of aid⁴.

In this respect, we note that there are two fundamental strategies employed by external actors to bring about peace.⁵ We use the terms to refer to security sector assistance and peacebuilding assistance, where the latter comprises aid broadly geared towards “ending or preventing violent conflict and supporting sustainable peace”.⁶ In this report, we aim to determine the relative impacts of each of these pro-peace assistance strategies in reducing violence in the first instance; and subsequently, to estimate a return on investment via the relationship between violence and reduced GDP.

To do so, we determine a sample of fragile and conflict-affect countries that are the recipients of either (or both) forms of assistance. Noting the potential endogeneities that could arise

¹ Fearon, J. (1995): “Rationalist Explanations for War.” *International Organization* **49**(3): 379-414

² Azam, J. and Thelen, V. (2008): “The Roles of Foreign Aid and Education in the War on Terror” *Public Choice* **135**(3): 375-397; Böhnke, J. and Zürcher, C. (2013): “Aid, Minds and Hearts: The Impact of Aid in Conflict Zones.” *Conflict Management and Peace Science* **30**(5): 411-432; Nielsen, R., Findley, M., Davis, Z., Candland, T. and Nielson, D. (2011): “Foreign Aid Shocks as a Cause of Violent Armed Conflict” *American Journal of Political Science* **55**(2): 219-232; Berman, E., Shapiro, J. and Felner, J. (2011): “Can Hearts and Minds Be Bought? The Economics of Counterinsurgency in Iraq.” *Journal of Political Economy* **119**(4): 766-819; Young, J. and Findlay, M. (2011): “Can Peace Be Purchased? A Sectoral Level Analysis of Aid’s Influence on Transnational Terror.” *Public Choice* **149**(3-4): 365-381; Gutting, R. and Steinwand, M. (2017): “Donor Fragmentation, Aid Shocks and Violent Political Conflict.” *Journal of Conflict Resolution* **61**(3):

³ Kishi, R. and Raleigh, C. (2017): “Chinese Official Finance and State Repression in Africa.” *ACLED Working Paper Available online*: < <https://www.acleddata.com/wp-content/uploads/2017/04/Chinese-Aid-Repression.pdf>>; Savun, B. and Tirone, D. (2011): “Foreign Aid, Democratization and Civil Conflict: How Does Democracy Aid Affect Civil Conflict?” *American Journal of Political Science* **55**(2): 233-246

⁴ Karell, D., & Schutte, S. (2018). Aid, exclusion, and the local dynamics of insurgency in Afghanistan. *Journal of Peace Research*, *55*(6), 711-725.

⁵ In general, we note that an alternative strategy would be to directly compare “military” and “civilian” forms of assistance. However, the necessary data to conduct such analyses is not publicly available.

⁶ International Dialogue on Peacebuilding and Statebuilding (2010). *Peacebuilding and Statebuilding*

Priorities and Challenges: A Synthesis of Findings from Seven Multi-Stakeholder Consultations, p. 21. See also: Cameron, Drew B., Annette N. Brown, Anjini Mishra, Mario Picon, Hisham Esper, Flor Calvo, and Katia Peterson (2015). *Evidence for peacebuilding: An evidence gap map*. New Delhi: International Initiative for Impact Evaluation (3ie).

from the allocation of aid (specifically, that only the most violent countries will receive specific forms of aid) and the subsequent biases such as endogeneities could introduce into our estimations, we first balance the sample on historical levels of violence using coarsened exact matching (CEM). In this process, we “match” countries with similar exposure to conflict in recent years (both in terms of intensity of violence and conflict type) but that differ in the combinations of aid they receive. Subsequently, we use structural equation modelling (SEM) to understand both the direct impact of both forms of aid on conflict intensity, proxied by battle deaths; as well as the indirect effect of aid on GDP, as mediated by the impact of battle deaths on GDP.

In the first instance, we show a marked difference of outcome across the two kinds of aid. As priors would suggest, peacebuilding expenditure is shown to significantly reduce the intensity of violence. By contrast, however, security sector assistance not only fails to reduce violence, but is actually shown to increase its intensity. Although this may contradict prior expectations, it is not theoretically implausible, due to the increased investment in the security sector. Future research in this area may wish to consider the nature of such increases in violence and the impact of such investments on the internal dynamics of the conflict. In the second stage, we show that peacebuilding aid leads to an indirect increase in GDP, via its impact on reducing violence, but show no evidence for a direct effect. Taken together, the average effects developed in these analyses suggest that an expenditure on peacebuilding of between US \$120,000 and US \$150,000 spent on peacebuilding will save one additional life. In turn, each additional life saved is sufficient to add almost US \$10,000 to a country’s GDP. By contrast, an additional US \$1,000,000 spent on security sector assistance is associated with an increase in battle deaths of between 2 and 5, with associated negative impacts on GDP.

The rest of this report is structured as follows: in the next stage, we discuss both the general literature on the relationships between aid and violence reduction; and the return on investment analyses that have been attempted. In Section 3, we discuss the data, pulled together from multiple sources, that we use in our analysis. In Section 4, we discuss our empirical methodology. In Section 5, we describe the results that develop from this methodology. In Section 6, we conclude.

Literature Review

The evaluation literature on both peacekeeping and peacebuilding programs has blossomed in recent years, mirroring the general trend in randomized and quasi-experimental evaluation literature.

There is a growing body of literature that peacekeeping expenditures by the UN and other regional security bodies can have a positive economic impact in insecure environments. The effects here may be provoked both through injections of currency into a local economy⁷, as

⁷ One of the first such studies was Michael Carnahan, William Durch, and Scott Gilmore, “Economic Impact of Peacekeeping [EIP]: Final Report” New York: Peace Dividend Trust for the Peacekeeping Best Practices Section, UN Department of Peacekeeping Operations, March 2006, www.un.org/Depts/dpko/lessons/

well as through violence reduction⁸. For instance, the deployment of blue helmets in South Sudan has been shown to have stimulated agricultural production in that country⁹.

By contrast, most studies of the effects of military spending are conducted at the macro level, with the country-year usually chosen as the unit of analysis, and trend towards identifying a negative effect on economic performance. Early studies in this area found little evidence for military spending affecting economic performance whether positively or negatively (though most coefficients were negative)¹⁰. There seemed no definitive empirical answer to the question of whether such spending would have a beneficent Keynesian effect on economies with sub-full-employment rates¹¹; or whether some combination of negative spillovers from vested interests in the military industrial complex¹², opportunity costs to government expenditures on health care and education¹³, and increased political willingness to use destructive force over productive, democratic processes would imply a net negative economic return to military spending. Some recent studies have shown that, despite wide variation in findings due to statistical approaches chosen¹⁴, there is probably a large and persistently negative effect of military spending on economic growth, and that it is stronger in OECD countries¹⁵.

The evaluation literature on peacebuilding interventions is dizzyingly diverse for a number of reasons. For one, the types of threats to peace that they seek to address vary equally widely;

⁸ Hegre, Håvard, Hultman, Lisa, and Nygård, Håvard Mogleiv (2015) Evaluating the Conflict Reducing Effects of UN Peace-Keeping Operations. Available at: http://cega.berkeley.edu/assets/miscellaneous_files/122_-_Hegre_Hultman_Nygard_-_PKO_prediction_2015_-_ABCA.pdf. Hegre, Håvard, Hultman, Lisa, and Nygård, Håvard Mogleiv (2015). James Cockayne, Christoph Mikulaschek, and Chris Perry (2010). "The United Nations Security Council and Civil War: First Insights from a New Dataset." New York: International Peace Institute, September; Gilligan, Mihael J. and Ernest J. Sergenti (2007). "Do UN Interventions Cause Peace? Using Matching to Improve Causal Inference." *Quarterly Journal of Political Science*: Vol. 3: No. 2, pp 89-122. <http://dx.doi.org/10.1561/100.00007051>

⁹ Raul Caruso, Roberto Ricciuti, Ilaria Petrarca and Prabin Khadka. "The economic impact of peacekeeping. Evidence from South Sudan." *Defence and Peace Economics* (2016)

¹⁰ Smith, R.P. (2000) Defence expenditure and economic growth. pp 15-24 in N.P. Gleditsch, G. Lindgren, N. Mouhleb, S. Smit, and I. de Soysa, eds. *Making Peace Pay: A Bibliography on Disarmament and Conversion*. Claremont, CA: Regina Books; Dunne, J.P. (1996) Economic effects of military expenditure in developing countries: A survey. Chapter 23

in N.P. Gleditsch, ed. *The Peace Dividend*. Amsterdam: Elsevier.

¹¹ Malizard, Julien (). "Does military expenditure crowd-out private investment? A disaggregated perspective for the case of France." *Economic Modelling* 46: 44-52.

¹² Dunne, JP and Tian, N. (2016) "Military expenditure and economic growth 1960-2014." *Economics of Peace and Security Journal*, 11(2) 50-6, October.

¹³ Caruso, Raul (2010). Butter, Guns, and Ice-cream: Theory and evidence from Sub-Saharan Africa." *Defence and Peace Economics* 21(3): 269-283.

¹⁴ Emmanouilidis, Kyriakos and Christos Karpetsis (2018). "The Defense-Growth Nexus: A Review of Time Series Methods and Empirical Results." *Defence and Peace Economics*, January. DOI: 10.1080/10242694.2018.1428261

¹⁵ Giorgio d'Agostino & J. Paul Dunne & Luca Pieroni, 2017. "Does Military Spending Matter for Long-run Growth?," *Defence and Peace Economics*, Taylor & Francis Journals, vol. 28(4), pages 429-436, July.

just as in medicine, the diagnosis arrived at will bear enormously on the treatment prescribed. For another, and stemming from the first, the thematic categories such interventions are myriad, and can include deepening political engagement, security sector reform, justice sector reform, economic development programs, and social services provision¹⁶. As such, their outcomes vary greatly from program to program. For instance, some studies have looked at treatments for inter-personal violence ranging from village saving and loan associations¹⁷ and other economic empowerment programs¹⁸, to police interventions¹⁹. Others have examined support for, or participation in, violent extremist groups as a function of community-driven development programs²⁰, government service provision²¹, education provision²², and employment programs²³. Others seek to gauge the effectiveness of training programs in promoting the use of non-violent dispute resolution techniques²⁴ and social capital²⁵; or that of anti-violence campaigning in discouraging collective violence²⁶; or that of

¹⁶ Cameron, Drew B., Annette N. Brown, Anjini Mishra, Mario Picon, Hisham Esper, Flor Calvo, and Katia Peterson (2015). *Evidence for peacebuilding: An evidence gap map*. New Delhi: International Initiative for Impact Evaluation (3ie), pp. 5-6.

¹⁷ Annan, Jeannie, Tom Bundervoet, Juliette Seban, and Jaime Costigan. 2013. "A Randomized Impact Evaluation of Village Savings and Loans Associations and Family-Based Interventions in Burundi." New York: International Rescue Committee; IRC. 2012. "Getting down to business: Women's economic and social empowerment in Burundi." New York: International Rescue Committee.

¹⁸ Gupta, Jhumka, Kathryn L Falb, Heidi Lehmann, Denise Kpebo, Ziming Xuan, Mazedha Hossain, Cathy Zimmerman, Charlotte Watts, and Jeannie Annan. 2014. "Gender Norms and Economic Empowerment Intervention to Reduce Intimate Partner Violence Against Women in Rural Côte d'Ivoire: A Randomized Controlled Pilot Study." LOGiCA Study Series No.2. Washington, D.C.: World Bank.

¹⁹ Higginson, Angela, Lorraine Mazerolle, Michelle Sydes, Jacqueline Davis, and Kerrie Mengersen. 2015. "Policing interventions for targeting interpersonal violence in developing countries: A systematic review." London, UK: 3ie.

²⁰ Beath, Andrew, Fotini Christia, and Ruben Enikolopov. 2011. "Winning Hearts and Minds? Evidence from a Field Experiment in Afghanistan." In MIT Political Science Department Research Papers. Cambridge, MA: Massachusetts Institute of Technology; Barron, Patrick, Macartan Humphreys, Laura Paler, and Jeremy Weinstein. 2009. "Community-Based Reintegration in Aceh: Assessing the Impacts of BRA-KDP." In Indonesian Social Development Papers. Washington, D.C.: World Bank.

²¹ Berman, Eli, Jacob Shapiro, and Joseph Felter. 2011. "Can Hearts and Minds Be Bought? The Economics of Counterinsurgency in Iraq." Review of. *Journal of Political Economy* 119 (4):766-819.

²² Berrebi, Claude. 2007. "Evidence about the Link Between Education, Poverty and Terrorism among Palestinians." Review of. *Peace Economics, Peace Science and Public Policy* 13 (1). McDougal, Topher L., Beza Tesfaye, Andy Blum, Beth Maclin and Jon Kurtz (forthcoming). "The Effects of Education and Civic Engagement on Youth Support for Violent Extremism in Somalia" Washington, D.C.: Mercy Corps.

²³ Blattman, Christopher, and Jeannie Annan. 2014. "Can Employment Reduce Lawlessness and Rebellion? A Field Experiment with High-Risk Men in a Fragile State." Review of. *NBER Working Papers* (w21289).

²⁴ Blattman, Christopher, Alexandra Hartman, and Robert Blair. 2014. "How to Promote Order and Property Rights under Weak Rule of Law? An Experiment in Changing Dispute Resolution Behavior through Community Education." Review of. *American Political Science Review* 108 (1):100-20. doi: <https://doi.org/10.1017/S0003055413000543>.

²⁵ Avdeenko, Alexandra, and Michael J. Gilligan. 2014. "International interventions to build social capital: evidence from a field experiment in Sudan." World Bank Policy Research Working Papers WPS6772.

²⁶ Collier, Paul, and Pedro C. Vicente. 2014. "Votes and Violence: Evidence from a Field Experiment in Nigeria." Review of. *Economic Journal* 124 (574):F327-F55. doi: 10.1111/eoj.12109.

community transportation infrastructure construction programs on homicide rates²⁷. Most of these evaluations find positive associations between such programs and “peacebuilding” outcomes, though the outcomes may occupy very different positions within larger theories of change, and manifest themselves at very different spatial and organizational scales. This has prompted some groups to begin more systematic reviews of peacebuilding program effectiveness²⁸ and even cost-effectiveness²⁹, though such work is nascent.

However, still scarce is some sense of the rate of return on investment to peacebuilding and military assistance more generally – particularly through the causal pathway that is invoked as justification for both: namely, reduction in violence. Such comparative data might inform international assistance strategies, perhaps carving out more space for peacebuilding programs in general, which in 2015 only accounted for 2.4% of total US foreign assistance (while development and military assistance accounted respectively for roughly 66.2% and 31.4% of the \$26.3B spent on foreign assistance by the US in that year).

Data

Our interest in this analysis is on the impact of receipt of various forms and combinations of counter-violence aid. Specifically, we note that receipt of peacebuilding aid and security sector assistance are quite specific to the context of the recipient country. In this regard, we focus, only, on countries we deem to be “fragile”. We base our definition of fragility on a country’s score in the Fragile States Index (FSI),³⁰ and include all states with an average score of 80 or higher across the data available from the FSI.³¹ This generates a list of 74 countries we consider fragile for the purposes of this research. We match this data to the aid data that underpins this research (see below), which begins in 2000 and runs, reliably, until 2015, giving a maximum sample $n \times T = 1,184$.

Subsequently, we pull together a diverse array of data sources to match into this maximum sample. We collect our outcome GDP data from the World Bank. In a first step, we exclude all country-year observations where GDP data is missing.³² To this data, we add:

²⁷ Cerdá, Magdalena, Jeffrey D. Morenoff, Ben B. Hansen, Kimberly J. Tessari Hicks, Luis F. Duque, Alexandra Restrepo, and Ana V. Diez-Roux. 2012. "Reducing Violence by Transforming Neighborhoods: A Natural Experiment in Medellín, Colombia." *Review of American Journal of Epidemiology* 175 (10):1045–53. doi: 10.1093/aje/kwr428.

²⁸ Cameron et al. (2015).

²⁹ Frontier Design Group, for instance, has constructed a basic cost-effectiveness library of peacebuilding programs (see: <http://fdg-llc.com/research-library/#toggle-id-2>). The International Rescue Committee has a large initiative related to cost analysis and gauging cost efficiency of its programs across thematic interventions and geographic regions (see: <https://www.rescue.org/report/cost-analysis-methodology-irc>).

³⁰ Fragile States Index (2017): *Available online*: <<http://fundforpeace.org/fsi/>>

³¹ Under the FSI’s own definitions, states with a score of 90 or over should be considered “very fragile”.

³² Although *prima facie* highly undesirable, the only country structurally excluded from our analysis in this process is Syria, which would likely be an outlier in our analysis, anyway.

- **[predictors]** total US foreign assistance with OECD-DAC purpose names³³;
- **[control]** military expenditures, military expenditures as a percentage of GDP, and military expenditures as a percentage of total government spending as compiled by SIPRI³⁴;
- **[control]** OECD-DAC data on total Overseas Development Assistance (ODA), Overseas Development Flows (ODF), Other Official Flows (OOF), and private flows of capital from OECD nations.

There are two basic families of assistance, channelled through through various U.S. government agencies, as defined by the United States Agency for International Development (USAID): military and economic³⁵. Military assistance is defined by USAID as: “Foreign aid for programs primarily for the benefit of recipient government armed forces, or aid which subsidizes or substantially enhances military capability. Military assistance excludes humanitarian and non-military development programs funded by the U.S. Department of Defense; these programs are categorized as 'Economic Assistance'.” We employ the designation “security sector assistance” rather than “military assistance”, however, because this form of aid includes support to local law enforcement and anti-terrorism programs primarily managed by the U.S. Department of State, in addition to traditional Foreign Military Financing (FMF).³⁶ All other forms of foreign assistance is designated as economic aid. The creation of a third category of “peacebuilding” assistance requires carving out likely candidates from security sector assistance and economic aid. We define US peacebuilding assistance as any that fall into the following OECD-DAC purpose categories:

- Civilian peace-building, conflict prevention and resolution;
- Reintegration and SALW control;
- Participation in international peacekeeping operations;
- Child soldiers (Prevention and demobilisation);
- Democratic participation and civil society;
- Human rights;
- Removal of land mines and explosive remnants of war; and
- Refugees in donor countries (non-sector allocable).³⁷

³³ U.S. Agency for International Development (USAID) (2017). Foreign Aid Explorer: The official record of U.S. foreign aid. Available at: <https://explorer.usaid.gov/data.html> and downloaded on 6 July 2017. We choose to use expenditures rather than obligations.

³⁴ As detailed in Perlo-Freeman, S. and Skons, E. (2016). “Snakes and ladders: The development and multiple reconstructions of the Stockholm International Peace Research Institute’s military expenditure data.” *Economics of Peace and Security Journal* 11(2) 5-13, October.

³⁶ It is important to note that military aid reported through USAID’s foreign assistance database is only a fraction of the actual amount spent on U.S. military support and activities overseas. As most of the U.S. Department of Defense’ roughly \$600 billion budget is classified, we are limited to relying only on what is reported as military aid as part of the annual roughly \$50 billion foreign assistance budget.

³⁷ We considered, but ultimately decided against, using the category “Reconstruction relief and rehabilitation”, since it conflates post-war and post-natural disaster expenditures. For a complete list of possible categories, see Annex I: OECD-DAC Purpose Categories.

A disbursement was then defined as “security sector assistance” if its USAID-assigned binary aid category was “Military” and it had not previously been defined as “peacebuilding aid”. Likewise, a disbursement was defined as “development aid” if its USAID-assigned binary aid category was “Economic” AND the it had not previously been defined as “peacebuilding aid”.

We derive conflict intensity data from the UCDP/PRIO Armed Conflict Dataset.³⁸ From this dataset, we derive the number of battle deaths per year in each country and the type of conflict that was on-going at the time. This produces a database of a country-year violence intensity variable and dummy variables on the type(s) of conflict on-going at a given snapshot in time, which we match to the underpinning economic data.

Finally, noting the importance of a range of macro-economic indicators in determining GDP, we include the basics from the Keynesian definition of GDP. We thus derive consumption, government spending and net exports from the World Bank’s data series. All macro indicators, including GDP, are presented in current US dollar values. As is typical, we take the log of each variable.³⁹

We note, however, a general unreliability in this data, with somewhere in the region of 200 missing observations in each series (and furthermore, we note that the missing observations do not, necessarily overlap). Given the importance of including these series, we engage a basic data interpolation process, based on the expectedly strong correlations between GDP and the macro-indicators in question. First, we regress the available observations on GDP using OLS and country fixed-effects, using the following equation:

$$Indicator_{jit} = \alpha + \beta_1 GDP_{it} + v_i + \epsilon_{it} \quad \text{Eq. 1}$$

where: *Indicator_j* refers to consumption, government expenditure or net exports of country *i* at time *t*. α is a constant, GDP_{it} is the GDP of country *i* at time *t*; v_i is a country fixed effect; and ϵ_{it} the idiosyncratic error of the equation. We then use the outcomes of this regression to predict the missing values in each macro indicator series, which we interpolate into the missing observations in each indicator. This gives a baseline sample: $n \times T = 1013$.

Methodology

Our workhouse methodology takes place in two steps. In the first, we conduct coarsened exact matching.⁴⁰ The purpose of this matching is to overcome a potential bias in our

³⁸ Allansson, M., Melander, E. and T. Themnér (2017): “Organized Violence, 1989 – 2016.” Journal of Peace Research **54**(4); Gleditsch, N., Wallensteen, P., Eriksson, M, Sollenberg, M. and Strand, H. (2002): “Armed Conflict 1946-2001: A New Dataset” Journal of Peace Research **39**(5).

³⁹ Unlike the other macro-indicators, net exports can be negative (as well as positive), making it impossible to take the natural logarithm. We therefore take the natural log of each variable and subtract these log transformed indicators from each other to determine the variable in question.

⁴⁰ See: Iacus, S., King, G. and Porro, G. (2012): “Causal Inference Without Balance Checking: Coarsened Exact Matching” Political Analysis **20**(1): 1-24 for a discussion of this methodology; and Blackwell, M., Iacus, S., King, G. and Porro, G. (2009): “CEM: Coarsened Exact Matching in Stata.” The Stata Journal **9**: 524-546 for its implementation in Stata.

statistical analysis – that a country’s conflict situation is just as likely to determine its receipt of various forms of aid as those forms of aid are to determine conflict intensity. For example, it may be that only countries experiencing (certain levels of) conflict receive particular packages of aid. Specifically, countries with the worst experience of conflict are likely to receive the largest amounts of assistance. In this case, basic linear statistical analyses are likely to suggest positive correlations between security sector assistance / peacebuilding assistance and violence, regardless of the true causality of this relationship. In turn, models that do not account for this reverse causality run the risk of artificially finding that conflict-sensitive assistance has impacts counter to its aims. Coarsened exact matching (CEM) is designed to balance the “treatment” (that is, countries that receive high amounts of conflict-sensitive assistance) and “control” (countries that receive low amounts) samples on conflict history. This approach implies that, with the correct weighting of the matched countries, the average experience of conflict (in terms of scale and type) is approximate in both treatment and control samples.

In basic terms, CEM takes a variable (or variables) of interest, temporarily “coarsens” it (that is, transforms the raw data into a series of “bins”, similar to groupings in a histogram), then matches exactly on those coarsened variables across “treatment” and “control” groups. We define these groups in terms of the bundles of assistance received. Initially, we define four groups: Group 1 - high security sector assistance (S) and high peacebuilding assistance (P); Group 2 - high S and low P; Group 3 - low S and high P; and Group 4 low S and low P. Analyses of construction of these groups, however, find a remarkably low number of observations in Groups 2 and 3 and multiple years where there are no observations in at least one of these groups. In general, in our sample, if a country receives a large amount of security sector assistance, it is also likely to receive a large amount of peacebuilding assistance and vice versa. We therefore define treatment and control groups based on the joint proportion of security sector and peacebuilding assistance received. Due to large differences in the scale of expenditure (with security sector assistance larger by a factor of three), there is a risk that group definitions would be dominated by the receipt of one form of aid. We therefore take the proportion of each form of assistance received by each country in a given year, to create two by-year series. For a given year, a country is then defined as being in the “treatment” group for a given year if its sum from these two series is greater than the median of the combined series, and “control” if it is below the median.

We use CEM to match across these treatment-year and control-year designations. Within each year, we match on the coarsened number of fatalities in each of the previous five years, as well as across UCDP/PRIO’s conflict-type definitions and lagged receipt of both forms of assistance. This ensures that, at time t , the treatment and control samples should be balanced on historical conflict exposure, and historical receipt of aid, allowing isolation of the impact of current assistance receipts. We adopt a “loose” matching process. That is, instead of creating treatment-control country pairs,⁴¹ we generate weights that reflect the relative importance of each country-year in the sample. We then use these weights to balance the treatment and control samples. Due to the nature of this matching process, certain countries

⁴¹ Although such approaches also deliver methodological benefits, we note the high potential in CEM that a given country in the treatment group could have multiple equally good matches in the control group. The choice of match in constructing the dataset, in turn, could (partially) determine outcomes.

in both treatment or control groups are unmatched. In our case, this arises as a small number of countries in our treatment sample (specifically, Iraq and Afghanistan) have experienced battle deaths far beyond any country in the control sample⁴². This results in a final analytical sample $n \times T = 949$.⁴³ We present summary statistics, by treatment and control groups, for this sample in Table 1.

Table 1. Basic Summary Statistics

VARIABLES	(1) N	(2) mean	(3) Sd	(4) min	(5) max
Govspend	840	14,038	25,419	76.30	156,220
Usmilaid	1,136	0.102	0.641	0	8.715
Uspeaceaid	1,136	0.00863	0.0478	0	1.382
Gdp	1,081	4.847e+10	1.113e+11	4.374e+08	9.881e+11
Deaths	1,136	534.7	3,695	0	69,089
Imports	841	1.250e+10	2.317e+10	8.598e+07	2.129e+11
Exports	841	1.150e+10	2.432e+10	3.853e+07	2.130e+11
Consumption	942	75.11	20.52	6.971	228.4

In the second stage, we wish to model two relationships to generate an approximate return on investment. The first stage is to understand the impact of each type of assistance on the number of battle deaths experienced in a country-year. The second is to understand the indirect relationship of this assistance, via its (theorised) role in reducing battle deaths, on a country's GDP. We thus hypothesise that conflict-sensitive aid assistance potentially impacts GDP through two channels. The first is the direct channel, through its contribution to a country's GDP; the second is the indirect channel, via its role in reducing violence (which itself is predicated on the well-founded notion that violence reduces output). The presence of the direct effect – which is a function of the spending itself, rather than (necessarily) the success of the interventions funded – is insufficient to determine a meaningful return to investment. Thus, our focus is on what we deem the “indirect effect”. We are interested in two outcomes: the first is the impact of security sector assistance and peacebuilding assistance on the number of battle deaths in a country-year; and subsequently, the impact of these expected reductions in battle deaths on GDP. We model this relationship as a structural equation:

$$Deaths_{it} = \alpha + \beta_1 S_{it} + \beta_2 Type_{it} + \beta_3 X_{it} + v_i + \epsilon_{it} \quad (2) \quad \text{Eq. 2}$$

⁴² Although we have no reason to believe that these omissions would structurally alter our findings, it is worth noting the caveat these omissions place on our results. Specifically, as Iraq and Afghanistan are by some distance the largest recipients of either form of assistance in our database, it is possible (if not likely) that more general findings do not apply in situations where the scale of receipt is so high. In turn, any direct inference of our results for either of these countries must be understood in the context of this caveat.

⁴³ In addition to Afghanistan and Iraq, we lose the following country years: Angola (2002); Cambodia (2011); Republic of Congo (2001, 2002); DRC (2013); Eritrea (2001-2005); Mali (2014, 2015); Pakistan (2011-2015); Sri Lanka (2009-2014); and Yemen (2015)

$$Deaths_{it} = \gamma + \delta_1 P_{it} + \delta_2 Type_{it} + \delta_3 X_{it} + v_i + \vartheta_{it} \quad (3) \quad \text{Eq. 3}$$

$$GDP_{it} = \rho + \sigma_1 GDP_{it-1} + \sigma_2 Deaths_{it} + \sigma_3 S_{it} + \sigma_4 P_{it} + \sigma_5 X_{it} + v_i + \mu_{it} \quad \text{Eq. 4}$$

where: *Deaths* is the number of battle deaths in country *i* in year *t*; α , γ , and ρ are regression constants; β_j , δ_j , and σ_j are regression coefficients for variables *j*; S_{it} and P_{it} are levels of security sector assistance and peacebuilding assistance in country *i* at time *t*; X_{it} are a range of location-time specific control variables; v_{it} are country fixed-effects; and ϵ_{it} , ϑ_{it} , and μ_{it} are the regression error terms.

We hypothesise, first, that both *S* and *P* should lead to reductions in the number of battle deaths in a country-year; and subsequently, that these reductions in battle deaths will lead to increases in GDP. Consequently, the return on investment from each kind of assistance is determined by the impact it has on reducing battle deaths and the associated impact this reduction in battle deaths has on raising GDP.⁴⁴ In these analyses, we control for conflict type⁴⁵, receipt of other forms of assistance and time-invariant country-level unobservables. In addition, in Equation (4), we account for consumption, government expenditure and net exports, as per the Keynesian model of GDP and the lag of GDP, in order to ensure key omitted variables do not drive our results.

Results

The main results from our analyses are shown in Tables 2 and 3. In Table 2, we present the outcomes of the first component of the analysis, where we look for the relationship between aid receipts and battle deaths. In Table 3, we present the outcomes of the second component, where we look at the relationship between violence and GDP (and consequently, at the indirect relationship between differing forms of assistance and GDP). Each of these tables has eight columns, which correspond to the inclusion of an increased number of control variables for each analysis. Broadly speaking, results are robust across all specifications.

[Table 2 ABOUT HERE]

[Table 3 ABOUT HERE]

In Table 2, three main trends become clear. First of all, security sector assistance is positively and significantly associated with the number of battle deaths. Given the balancing of our sample, this implies that security sector assistance actually increases the intensity of violence in recipient countries. *Prima facie*, this finding may defy prior expectations yet, in many ways, is also intuitive. Increases in security sector assistance implies increased capacity for governments to spend on armed forces, which in turn could easily lead to increases in battle

⁴⁴ In this approach, we consider the return on investment only in these terms. We do not attempt to directly model the direct value of lives saved. In reality, this means that the return on investment figures we list are significantly lower than in reality. By a similar token, other economic variables, such as net trade, are not specifically considered in terms of outcome variables in this set of analyses. Analyses available from the authors show, however, little relationship between battle deaths and pairwise trade relationships between recipient countries and the US.

⁴⁵ See: Section 3.13 of the [UCDP Codebook](#).

deaths. The scales of these coefficients imply that the effect is rather small but it is still striking, all the same. That a one standard deviation increase in security sector assistance leads to somewhere between 175 and 300 additional battle deaths per year may sound quite extreme but a standard deviation of S is \$71.7m. Put another way, this implies that an increase in S by \$1m leads to an increase of between 2.46 and 4.10 battle deaths.

The second trend that becomes apparent is that peacebuilding assistance is a negative driver of the intensity of conflict. That is, the number of battle deaths goes down as peacebuilding assistance goes up. The precise form of this impact, however, is also of interest, as it appears to operate through lags of this spending. When the lag of P is omitted, P itself is a negative and significant driver of battle deaths, however this effect disappears when we include a one period lag of P . This implies, jointly, that P delivers impacts with an effectiveness lag but that it is an important strategy in reducing violence. These results imply that a one standard deviation increase in P will, after a one period lag, reduce battle deaths by between 60 and 75. In this case, the standard deviation of P is \$8.96m, implying that an increase in P of \$1m leads to a reduction of between 6.78 and 8.32 battle deaths, implying a peace aid expenditure of between \$120,000 and \$150,000 per life saved.⁴⁶

The third trend is that there are grounds to believe that a lag of S , as well as contemporaneous S , is a positive and significant driver of battle deaths. The scale and significance of this effect, however, drops remarkably when we account for conflict type and disappears entirely in our strongest model specifications, implying caution should be urged in drawing firm conclusions from this finding. At the same time, given the robustness of the contemporaneous impact of S on battle deaths, such direct interpretation of the lags is not, necessarily, required.⁴⁷

⁴⁶ We repeat our analyses including a squared term of S and M , in addition to the level, in order to test for potential increasing (decreasing) returns to scale. These analyses suggest that the squared term of neither P nor M is a significant determinant of battle deaths. More so, we also note no material impact from their inclusion on the signs, scales or significance of the main coefficients. In this regard, we conclude that even very small levels of P will, on average, successfully reduce violence. Results from these analyses are not presented in this document for parsimony but are available from the authors on request.

⁴⁷ Another takeaway of note is that other forms of aid (in other words, not S or P) appears to be positively and significantly associated with the level of violence. Although we do not seek to draw strong inference from this finding (specifically because our methodology is not geared towards isolating this relationship), we note that it is grounded in prior literature. See: Strandow, Daniel, Findlay, Michael and Young, Joseph (2016): "Foreign Aid and the Intensity of Violent Armed Conflict." [Working Paper No.26](#). AidData. Strandow, Daniel, Powell, Josh, Findlay, Michael and Tanner, Jeff (2011): "The Localised Geography of Foreign Aid: A New Dataset and Application to Violent Armed Conflict." [World Development](#) **39**(11): 995-1009; de Ree, Joppe and Nillesen, Eleonora (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**(2): 301-313

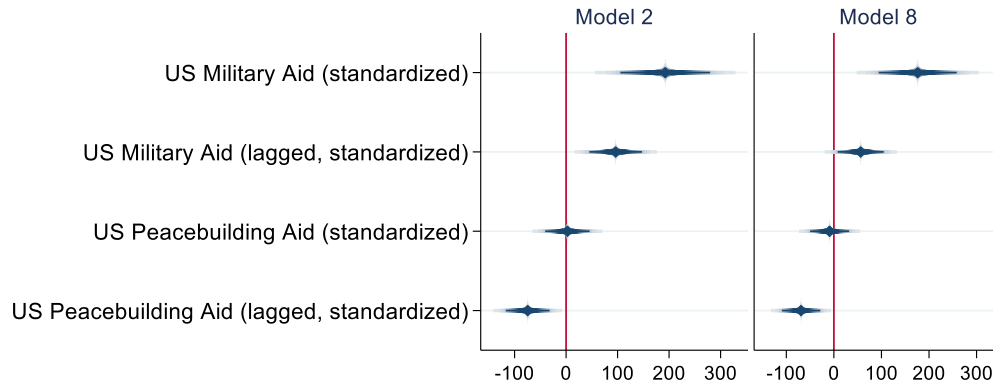


Figure 1. The effect sizes of standard deviation changes for US military and peacebuilding aid on deaths are remarkably stable across different specifications. Based on [].

In [], we look at the subsequent relationship between battle deaths and GDP. The major trend we see is that, once we account for past GDP, the number of battle deaths has a small negative but significant impact on GDP. The scale of this coefficient implies that a reduction in battle deaths of 1 leads to an according increase in GDP of 0.00002%. Given a mean GDP in our sample of \$46.2bn, on average GDP increases by some \$9,240 for each life saved through peacebuilding assistance.

In Table 4, we show what these results mean in the context of actual peacebuilding assistance spending in eight countries of interest: Cameroon, Iraq, Kenya, Lebanon, Mali, Niger, Nigeria and Philippines. To derive these results, we take the average treatment effects discussed above,⁴⁸ the implications of these effects in financial terms (both the peacebuilding assistance outlay per life saved and the average increase in GDP from one life), and the net peacebuilding assistance expenditure in each country. Therefore, we divide the net expenditure by the cost per life saved to determine the total number of lives saved, then multiply lives saved by the average impact on GDP.

⁴⁸ These results should be taken with two caveats: first, they are average effects (that is, the average of the relationship across all countries). In other words, the relationship could be very different for each of the eight countries listed. Due to short time-series, however, it is impossible to recalibrate these analyses at the country level. Second, in the case of Iraq, we apply these results to a country that was omitted from the sample by the CEM. As noted, the inclusion of one additional country shouldn't alter the general relationship. However, Iraq is one of two extreme outliers in terms of both violence and receipt of assistance. It is, therefore, unclear if these general results can so directly be applied in this particular case.

Table 4. Lives saved and increases in GDP as a result of US peacebuilding assistance. Note: “high” estimate uses figure of \$120,000 per life saved. Low estimate uses \$150,000.

	(1)	(2)	(3)	(4)	(5)
COUNTRY	Spend (\$b)	Lives High	Lives Low	GDP High (\$)	GDP Low (\$)
Niger	0.0047747	40	32	369,600	295,680
Mali	0.04804	400	320	3,696,000	2,956,800
Cameroon	0.0043275	36	29	332,640	267,960
Nigeria	0.0485166	404	232	3,732,960	2,984,520
Philippines	0.1714859	1,429	1,143	13,203,960	10,561,320
Kenya	0.1052667	877	701	8,103,480	6,477,240
Lebanon	0.1213092	1,011	809	9,341,640	7,475,160
Iraq	2.820946	23,508	18,806	217,213,920	173,767,440

In some cases, such as Niger and Cameroon, where spending on peacebuilding assistance is quite low (around \$4m), the number of lives saved and the corresponding impact on GDP is rather low. In other cases, however, even with relatively modest spending, such as in Philippines, which received about \$170,000,000 over the fifteen years of our sample, over 1,000 lives have been saved, with large associated impacts on GDP in the same period. We also note, however, that the value of a life saved is significantly greater than its effect on GDP.

Conclusion

The results generated in this report paint five clear conclusions. First of all, we have very good grounds to believe that peacebuilding assistance successfully reduces violence (although this must be tempered by noting the important role GDP appears to play in this relationship). Second, security sector assistance has the (apparently counter-productive) outcome of increasing conflict intensity. Although this outcome has an intuitive interpretation, it stands to defy priors and, often, the purpose of providing such assistance. What our analysis cannot do, however, is to identify the perpetrator(s) of, or causal mechanisms behind, this additional violence. Future research could interest itself in this question, though a range of caveats must be introduced. First, intuition implies that violence should increase by the recipient of such

aid (such as by government forces), however most conflicts are not “ideal type”,⁴⁹ and violence by one party is unlikely to go unchecked by other parties in the conflict⁵⁰. Accordingly, any analyses that seek to understand and isolate the sources of such increased violence must account for the micro-dynamics⁵¹ and network effects⁵² that could bear on such understanding.

Second, battle deaths are a negative and significant driver of GDP. Although this finding itself should not be surprising as it is well established in the literature,⁵³ it provides an important reminder that the returns on peacebuilding investments are greater, again, than the number of lives saved. Fourth, while these results provide the grounds for optimism (at least in terms of the impact of peacebuilding aid), the relative cost of peacebuilding aid is high compared to the relatively modest impact of those saved lives on GDP. Our results imply an increase in a country’s GDP by \$10,000, on average, for each life saved but a cost of over \$100,000 for each life saved through peacebuilding assistance. This, in turn, suggests that whilst such interventions can have large impacts (see the calculated impacts for Lebanon and Philippines in Table 4, for example), these outcomes are predicated on relatively large outlays. In countries where investment in peacebuilding has been very small, impact is much more modest. In this regard, we note that it is important to remember that the (economic) benefits of lives saved exist in many more domains than simply on its short-term impact on GDP. These may include general welfare costs⁵⁴, legacy costs to future economic performance through healthcare⁵⁵ and education, as well as costs to the global economy from a reduction in trade, among others.

Finally, whilst we note the general relationship between peacebuilding expenditure and reductions in violence, we note that this research (or any other macro-level research, for that matter) cannot provide evidence on which particular forms of peacebuilding have proven to

⁴⁹ See: Wood, R. (2010). "Rebel Capability and Strategic Violence against Civilians." Journal of Peace Research **47**(5): 601-614

⁵⁰ See: Lyall, J. (2009). "Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya" Journal of Conflict Resolution **53**(3): 331-362

⁵¹ See: Kalyvas, Stathis (2006). "The Logic of Violence in Civil War." Cambridge University Press, New York

⁵² See: Metternich, N., Dorff, C., Gallop, M., Weschle, S. and Ward, M. (2013). "Anti-Government Networks in Civil Conflicts: How Network Structures Affect Conflictual Behaviour". American Journal of Political Science **57**(4): 892-911; Ferguson, N. (2017): "Just the Two of Us? Civil Conflicts, Pro-State Militants and the Violence Premium" Terrorism and Political Violence **29**(2): 296-322

⁵³ See: Abadie, A., & Gardeazabal, J. (2003). "The Economic Costs of Conflict: A Case Study of the Basque Country." American Economic Review **93**(1): 113-132. Also: Brauer, Jurgen and J. Paul Dunne (2012). *Peace Economics: A Macroeconomic Primer for Violence-Afflicted States*. Washington, D.C.: United States Institute of Peace.

⁵⁴ Hess, G. (2003). *The Economic Welfare Cost of Conflict: An Empirical Assessment* CESifo Working Papers. Munich: Center for Economic Studies and Ifo Institute for Economic Research.

⁵⁵ Stiglitz, Joseph, Bilmes, Linda (2008) *The Three Trillion Dollar War: The True Cost of the Iraq Conflict*. London: Penguin.

be most effective. In this regard, programme-level case studies, and meta-analyses of these case-studies are required to complement more aggregate measures.

More generally, these results fit within a broader literature that has sought to understand the relationship between third-party assistance and (political) violence in recipient countries. Although in general, the relationship has been shown to be positive (that is, higher receipt of aid leads to reductions in violence), analyses have become more nuanced and different forms of aid, it has been suggest, may have different impacts. Our results feed, broadly, into these debates and suggest the need for further research on the differential impacts of different counter-violence strategies.

[Table 2. SEM Analysis, Component 1: The Relationship Between Aid and Violence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Battle Deaths	deaths	deaths	deaths	deaths	deaths	deaths	deaths	deaths
sec-assistance	292.3*** (6.73)	192.6*** (3.64)	192.6*** (3.64)	192.6*** (3.64)	192.6*** (3.64)	187.6*** (3.75)	176.2*** (3.52)	176.2*** (3.52)
pb-assistance	-41.42* (-2.03)	2.576 (0.10)	2.576 (0.10)	2.576 (0.10)	2.576 (0.10)	1.813 (0.07)	54.95 (1.86)	54.95 (1.86)
l.sec-assistance		96.31** (3.10)	96.31** (3.10)	96.31** (3.10)	96.31** (3.10)	60.78* (2.05)	-8.242 (-0.33)	-8.242 (-0.33)
l.pb-assistance		-74.53** (-2.88)	-74.53** (-2.88)	-74.53** (-2.88)	-74.53** (-2.88)	-60.73* (-2.48)	-69.20** (-2.81)	-69.20** (-2.81)
type3						532.4*** (8.40)	532.6*** (8.44)	532.6*** (8.44)
type4						978.5*** (8.70)	771.6*** (8.40)	771.6*** (8.40)
Nonmilaid							463.9** (2.95)	463.9** (2.95)
Observations	949	949	949	949	949	949	949	949

T-Statistics in Parenthesis

*** p<0.01, ** p<0.05, * p<0.1

[Table 3. SEM Analysis, Component 2: The Relationship Between Violence and GDP

GDP	(1) Gdp	(2) gdp	(3) gdp	(4) gdp	(5) gdp	(6) gdp	(7) gdp	(8) gdp
deaths	-0.00000 (-0.74)	-0.00000 (-0.74)	-0.00002*** (-5.80)	-0.00002*** (-5.40)	-0.00002*** (-5.61)	-0.00002*** (-5.25)	-0.00002*** (-5.38)	-0.00002*** (-5.08)
l.gdp			0.962*** (178.65)	0.963*** (178.34)	0.962*** (177.05)	0.962*** (174.28)	0.959*** (161.84)	0.908*** (102.74)
l.deaths				0.00000 (0.90)	0.00000 (0.81)	0.00000 (0.93)	0.00000 (0.94)	0.00001* (2.01)
sec-assistance					0.0074 (1.77)	0.0076 (1.80)	0.0069 (1.63)	0.0052 (1.28)
pb-assistance					0.0016 (0.85)	0.0016 (0.84)	0.0006 (0.30)	0.0031 (1.54)
type3						-0.0073 (-1.11)	-0.0074 (-1.13)	-0.0081 (-1.28)
type4						-0.0043 (-0.44)	-0.0048 (-0.50)	-0.0040 (-0.43)
nonmilaid							0.0367 (1.62)	---
consumption								-0.278** (-2.95)
govspend								0.0463*** (6.90)
x-m								0.0181** (2.87)
Observations	949	949	949	949	949	949	949	

T-Statistics in Parenthesis
 *** p<0.01, ** p<0.05, * p<0.1

Annex I: OECD-DAC Purpose Categories

Action relating to debt	Basic drinking water supply	Communications policy and administrative management
Advanced technical and managerial training	Basic drinking water supply and basic sanitation	Construction policy and administrative management
Agrarian reform	Basic health care	Cottage industries and handicraft
Agricultural alternative development	Basic health infrastructure	Culture and recreation
Agricultural co-operatives	Basic life skills for youth and adults	Decentralisation and support to subnational government
Agricultural development	Basic metal industries	
Agricultural education/training	Basic nutrition	Democratic participation and civil society
Agricultural extension	Basic sanitation	Disaster prevention and preparedness
Agricultural financial services	Bio-diversity	Early childhood education
Agricultural inputs	Biofuel-fired power plants	Education and training in transport and storage
Agricultural land resources	Biosphere protection	Education and training in water supply and sanitation
Agricultural policy and administrative management	Business support services and institutions	Education facilities and training
Agricultural research	Cement/lime/plaster	Education policy and administrative management
Agricultural services	Chemicals	Education/training in banking and financial services
Agricultural water resources	Child soldiers (Prevention and demobilisation)	Educational research
Agro-industries	Civilian peace-building, conflict prevention and resolution	
Air transport	Coal	
Anti-corruption organisations and institutions	Coal-fired electric power plants	

Elections	Financial policy and administrative management	General budget support-related aid
Electric power transmission and distribution	Fishery development	Geothermal energy
Emergency food aid	Fishery education/training	Health education
Employment policy and administrative management	Fishery research	Health personnel development
Energy conservation and demand-side efficiency	Fishery services	Health policy and administrative management
Energy education/training	Fishing policy and administrative management	Higher education
Energy generation, non-renewable sources - unspecified	Flood prevention/control	Housing policy and administrative management
Energy generation, renewable sources - multiple technologies	Food aid/Food security programmes	Human rights
Energy manufacturing	Food crop production	Hydro-electric power plants
Energy policy and administrative management	Forest industries	Import support (capital goods)
Energy research	Forestry development	Import support (commodities)
Engineering	Forestry education/training	Industrial crops/export crops
Environmental education/ training	Forestry policy and administrative management	Industrial development
Environmental policy and administrative management	Forestry research	Industrial minerals
Environmental research	Forestry services	Industrial policy and administrative management
Family planning	Formal sector financial intermediaries	Infectious disease control
Fertilizer minerals	Fossil fuel electric power plants with carbon capture and st	Informal/semi-formal financial intermediaries
Fertilizer plants	Fuelwood/charcoal	Information and communication technology (ICT)
	Gas distribution	

Legal and judicial development	Natural gas-fired electric power plants	Radio/television/print media
Legislatures and political parties	Non-agricultural alternative development	Rail transport
Livestock	Non-ferrous metal industries	Reconstruction relief and rehabilitation
Livestock/veterinary services	Nonferrous metals	Refugees in donor countries (non-sector allocable)
Low-cost housing	Nuclear energy electric power plants	Regional trade agreements (RTAs)
Malaria control	Oil and gas	Reintegration and SALW control
Material relief assistance and services	Operating Expenses	Relief co-ordination; protection and support services
Media and free flow of information	Participation in international peacekeeping operations	Relief of multilateral debt
Medical education/training	Pharmaceutical production	Removal of land mines and explosive remnants of war
Medical research	Plant and post-harvest protection and pest control	Reproductive health care
Medical services	Population policy and administrative management	Rescheduling and refinancing
Mineral prospection and exploration	Precious metals/materials	Research/scientific institutions
Mineral/mining policy and administrative management	Primary education	River basins' development
Monetary institutions	Privatisation	Road transport
Multilateral trade negotiations	Promotion of development awareness (non-sector allocable)	Rural development
Multisector aid	Public finance management	STD control including HIV/AIDS
Multisector aid for basic social services	Public sector policy and administrative management	Sanitation - large systems
Multisector education/training		Secondary education
Narcotics control		

Sectors not specified	Transport policy and administrative management
Security system management and reform	Tuberculosis control
Site preservation	Urban development and management
Small and medium-sized enterprises (SME) development	Vocational training
Social mitigation of HIV/AIDS	Waste management / disposal
Social/ welfare services	Water resources conservation (including data collection)
Solar energy	Water sector policy and administrative management
Statistical capacity building	Water supply - large systems
Storage	Water supply and sanitation - large systems
Tax policy and tax administration support	Water transport
Teacher training	Wind energy
Technological research and development	Women's equality organisations and institutions
Telecommunications	
Textiles, leather and substitutes	
Tourism policy and administrative management	
Trade education/training	
Trade facilitation	
Trade policy and administrative management	
Transport equipment industry	