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PERSPECTIVE PAPER

*Benefits and Costs of the Conflict and Violence
Targets for the Post-2015 Development Agenda*

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Post-2015 Consensus

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Abstract

This paper is a companion paper to Fearon and Hoefflers “Peaceful, Stable, and Resilient Societies” (FH 2014). In this perspective paper, I evaluate FH (2014) with the intention of providing a broader array of benefit-cost ratios. In doing so, I find that the impact of employing aid to prevent violence has an expected BCR between 0.32 to 2.1 depending on the welfare cost measurement. The impacts vary dramatically across regions with the largest possible impact found in Eastern Europe and Central Asia as well as the Middle East and North Africa. According to our findings, the area with the greatest potential payoff for policy intervention appears to be child abuse and female violence with BCRs ranging from 3 to 5. Based on these findings, this research suggests that there is modest support for achieving the Open Working Group goals on this issue.

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Introduction

The purpose of this perspective paper is to evaluate the impact of policy intervention on violence. The evaluation is by no means a small endeavor. For the purposes of this paper, policy intervention is defined as a myriad of activities in the donor community including engaging with bi-lateral and multi-lateral agencies, NGOs, firms, individuals, and governments. Violence is not limited to conflict in the form of civil war, external war and terrorism but is also meant to include personal, sexual and physical violence toward women and children to include homicide. This analysis goes well beyond what is typically seen in the academic literature.

Typically, researchers have a much smaller mandate in that existing literature, authors are interested in addressing a single smaller scale question. Does aid prevent war? Do more peace-keeping operations lower the incidence of conflict? Do UNDP policies help to prevent violence toward women? Does increased expenditure on policing limit homicides? The purpose of this study is to combine all of these questions into a single paper and evaluate the extent to which policy can provide a more peaceful future. In doing so, it is imperative to evaluate these policies with a metric that is comparable to other policy endeavors. This metric is the Benefit-Cost Ratio (BCR) and the central purpose of this perspective paper is to attempt to explain this metric in a comprehensive manner.

By doing so, this paper will make strong assumptions using previous research and the challenge paper (FH 2014). Some may argue that such assumptions are too restrictive and to some degree this paper is sympathetic to this view. Still, there is some value to doing such calculations so that there is some baseline measure for comparison.

One way to see this paper is that it attempts to operationalize FH (2014) with the specific Open Working group assessment goals in mind. In doing so, I find that most of the policies being evaluated in FH (2014) are most likely to have modest impact with little evidence that these policies implemented in a manner that would be exceptional.

I begin with a summary of the challenge paper. FH (2014) study the effects of large-scale and household violence to low and middle income countries. The purpose of investigating civil war, domestic abuse, and homicide is to compare the cost of each type of violence on social welfare. FH (2014) aim to highlight the prevalence of at-home violence compared to the amount of money spent on large-scale violence reduction. It is postulated that the costs of domestic violence are much greater than that of civil war and large-scale conflicts. Thus, it would make more sense to fund police competence and programs focused on reducing crime rather than focus such a large portion of resources and attention to conflicts with at least 1000 casualties. FH (2014) offer cost estimates and some BCRs based on pain caused, and violence reducing aid and programs. The challenge paper focuses these BCRs on how to best appropriate funds for violence reduction and welfare improvement.

The authors have done a remarkable job of cataloging various forms of violence and including associated cost estimates with many of them. This is highly commendable and goes a long way to helping us understand how prevalent are the many forms of violence

and how expensive they can be when they occur. FH (2014) also provide some detailed estimates of the benefits of existing programs that could help stem such violence. Again, this is highly commendable and helps clarify the possible opportunities for policy intervention.

The authors make some interesting choices when providing their estimates. First, they do not include other forms of conflict (e.g. terrorism) or other forms of violence (e.g. property crime). Second, they do not include the costs associated with richer countries in all cases. They employ some estimates based on data that includes the developed world but provide other estimates that do not. They should be consistent throughout.

Still, the paper does a nice job of uncoupling the various forms of violence by incidence and cost ranging from child, female, and partner violence. This is one of the more interesting portions of the paper. The sub-category with the largest cost is that associated with Child Abuse. Somewhat surprisingly, the cost from Child Abuse is several multiples greater than that of homicide or sexual violence or partner violence. This is likely due to the survey conducted to estimate Child Abuse.

The authors have not been able to provide systematic BCRs associated with various violence alleviation policies however. This is a notable weakness to the paper and while it is a challenge to do such an exercise, I believe this violence alleviation is an area that should be carefully considered.

Methodology

In this section, I describe the techniques used to evaluate “the key assessments” suggested by OWG. The metric employed will be regional and global BCRs of using aid to encourage peaceful, stable and resilient societies. To perform such an analysis, one approach is to estimate the following equation:

$$BCR = \varepsilon * (\text{Benefit}/\text{Cost})$$

where ε = elasticity from a given policy. These elasticities, benefits and costs are then weighted or summed across the various types of violence when estimating BCRs.

One recent example of such an approach is seen in Chalfin and McCrary (2013). In their work, they estimate the elasticity of police on crime using a new panel data set from U.S. cities over 1960-2010. They tackle data measurement issues by employing an instrumental variable technique and estimate the elasticity to be -.5. Taken together with the cost of police and the benefit of crime reduction, they estimate the BCR to be 1.6.

Using such an example is instructive for this paper. If I could obtain estimates of the benefits of reduced violence, the cost of aid, and the elasticity of aid effectiveness on violence, I could appropriately estimate the various BCRs. While this notion seems simple enough, it is far from that.

As stated by FH (2014), “Unfortunately, in part because the global development agenda has paid so little attention to “enhancing the capacity, professionalism and accountability of the security forces, police and judiciary,” it is impossible to provide anything more than extremely speculative estimates of the benefit-cost ratio for reducing levels of (for example) homicide by 10 per cent globally.” FH(2014) also state “There is limited evidence that aid prevents conflict. Although there is no evidence that aid prevents civil war onset (Hoeffler, 2014), there is some evidence that development aid helps to stabilize post-conflict situations. Aid has a positive effect on growth in postwar economies. However, the effect is moderate: an extra 1 per cent of aid might increase growth by 0.05 –0.1 per cent.”

This perspective paper is sympathetic to FH (2014)’s reluctance to adopt the approach suggested above as the results from such an exercise may be highly speculative. First, it is challenging to estimate the benefit of reducing violence when separating out all of the various contemporaneous factors. For example, consider the cost of 9/11 on the United States macro economy. It is well documented that the United States went into a recession shortly after the attack. How much of this was due to the violence and how much was due to the fact that there was already a weakening in the employment sector following the dot.com “bubble” bursting? Once the recession was known, policy-makers actively pursued expansionary policy to limit the economic loss. How much of this response dampened the cost of 9/11? If one extends these questions to all forms of violence in all countries, some of which with limited data coverage, it is easy to understand the limitations of such analysis.

Second, it is challenging to estimate the elasticity of aid effectiveness. Ignoring the obvious challenges in measuring the effect which would be similar to those described in the preceding paragraph, estimating such an elasticity is also challenging because much of aid is not directed simply to stem violence. Hence, even if one could control for the various countervailing forces, it would still be no small order to directly do such an experiment. So while estimating the cost of aid is a minor hurdle to obtaining BCRs, the first two challenges are quite daunting.

So, instead FH (2014) concentrate on dealing with the first challenge. They provide a broad array of estimates of the cost of violence. FH (2014) break down the cost of conflict in various sub-categories. It appears that the largest cost comes from child abuse and partner violence. Taken together, the benefits of removing all of the costs of violence would be 11.5 percent of GDP.

Summary of Cost Estimates

Type of Violence	Cost in USD, billions	Cost to World, % of GDP
Interpersonal Violence	1245	1.44
Collective Violence	167	0.34
Child Homicide	37	0.04
Child Abuse	3594	4.21
Child Sexual Violence	36	0.04
Female Homicide	105	0.12
Female Homicide, Intimate	40	0.04
Intimate Partner Violence	4423	5.18
Women Sexual Violence	66	0.07

Note: Total Cost estimates are the sum of costs of violence in low and middle income countries, the last column provides cost as a percentage of total GDP for low and middle income countries.

These estimates are large but seemingly plausible. In Blomberg and Hess (2012), using a utility-based approach, the authors estimate the benefit to world-wide peace to be 8.7 percent of GDP. Moreover, BH (2012) only considers larger forms of violence such as war, civil war and terrorism.

So FH (2014) estimates the benefits of a world without violence with results consistent with what one might expect. However, they do not choose to engage in measuring the elasticity of aid effectiveness for obvious reasons. This paper, will however takes into account such an exercise. I will employ estimates on the elasticity of aid effectiveness and then include the cost of aid so as to provide the BCRs not included in FH (2014).

So what is the appropriate measure of the elasticity of aid effectiveness? As there is no paper that I know of that has directly estimated the elasticity in the experiment suggested here, I assume that the impact of aid would be similar to other impacts. Hence, I will make the assumption that the elasticity of aid effectiveness is similar when employed to reduce poverty, encourage growth and development and reduce violence.

In previous studies, it has been shown that all measures of these elasticities are small in magnitude. In a recent working paper by Frot and Perrotta (2012), the authors estimate the elasticity of aid effectiveness to be 0.03. While admittedly small, it is larger than the typical estimate of 0.01. This paper will employ both of these elasticities in estimating BCRs. I will also employ the BH (2012) estimate for the benefit to reducing violence for robustness. I believe that while there are many issues associated with such an exercise, this maintains a rather conservative approach.

Results

Table 1 provides the estimates from this exercise. The estimates on the benefits to reducing violence come directly from FH (2014) and BH (2012). Column 1 provides the regional designation. For Panel 1, Column 2 provides the Interpersonal violence cost as a percentage of GDP (IP). Column 3 provides the costs of collective violence, column 4 provides the cost of child homicides, column 5 provides the cost of child abuse, and column 6 provides the cost of child sex abuse. For panel 2, column 2 provides the cost of female

homicides, column 3 provides the cost of female violence, column 4 provides the cost of female sexual violence, and column 5 provides the sum of all of these costs. Column 5 provides the welfare cost of conflict in BH (2012), and the final column provides the sum of costs with the BH measure.

Table 1 shows that the costs differ dramatically based on the type of violence and the region of the world. The welfare costs of violence appears to be largest when considering child abuse and partner (female) violence or when considering the aggregate measure in BH (2012). The areas of the world with the greatest potential for benefits are in Latin America and the Caribbean (LAC), the Middle East and North Africa, and in Sub-Saharan Africa. Taken together, these potential benefits are quite large, with double-digit improvements as a percentage of GDP in certain regions and in all regions when using the BH (2012) measure.

Table 1 – Welfare costs of violence as a share of regional GDP

	IP	Coll. Viol	Child Hom	Child Abuse	Child Sex Abuse		
High Income Countries	1.23	0.00	0.03	1.87	0.06		
East Asia/Pacific	0.46	0.01	0.02	3.60	0.02		
Europe and C. Asia	1.41	0.74	0.02	3.16	0.01		
LAC	4.61	0.45	0.09	6.78	0.08		
M. East/N. Africa	0.95	1.92	0.05	16.13	0.01		
South Asia	0.76	0.27	0.04	9.93	0.00		
SubSaharan Africa	3.23	0.72	0.36	18.66	0.05		
World	1.44	0.34	0.06	4.21	0.01		
	Female Hom	Fem Violence	Fem Sex V	Total Costs	BH (2012)	Total*	
High Income Countries	0.04	3.06	0.11	3.19	3.71	8.89	
East Asia/Pacific	0.02	5.29	0.03	4.11	6.85	15.84	
Europe and C. Asia	0.06	6.08	0.01	5.34	4.51	13.85	
LAC	0.09	8.01	0.11	12.01	7.20	22.35	
M. East/N. Africa	0.00	10.55	0.01	19.06	15.39	42.14	
South Asia	0.04	9.87	0.02	11.01	6.85	26.76	
SubSaharan Africa	0.19	14.94	0.06	23.02	11.75	46.00	
World	0.17	5.18	0.08	6.05	8.76	27.82	

Note: See Feron and Hoffler (2014). Column 1 provides the regional designation. For Panel 1, Column 2 provides the Interpersonal violence cost as a percentage of GDP (IP). Column 3 provides the costs of collective violence, column 4 provides the cost of child homicide, column 5 provides the cost of child abuse and column 6 provides the cost of child sex abuse. For panel 2, column 2 provides the cost of female homicide, column 3 provides the cost of female violence, column 4 provides the cost of female sexual violence and column 5 provides the sum of all of these costs. Column 5 provides the welfare cost of conflict in Blomberg and Hess (2012) and the final column provides the sum of costs with the BH measure.

Obviously, these potential benefits to reducing violence should be considered with the associated costs to prevention in the form of aid. Table 2 provides these associated costs to aid and the resulting BCRs. The estimates of the cost of different types of aid come directly from FH (2014). Column 1 provides the regional designation. For Panel 1, column 2 provides the dollar cost of aid. Column 3 provides the costs of aid as a percentage of GDP,

column 4 provides the benefits to ending violence from FH (2014), column 5 provides the benefits of ending violence when using Blomberg and Hess measure to Fearon and Hoeffler. The final two columns provide the ratio of these benefits to costs. For panel 2, the first numerical column provides the BCR for each region using the benefits to peace from Fearon and Hoeffler using an elasticity of 0.03. The next column provides the BCR when adding the Blomberg and Hess estimate for benefits using an elasticity of 0.03. The final two columns provide the BCR with elasticities of 0.01. Table 2 shows that the ratio of these costs to the potential benefits is significantly large. Using the FH (2014) measures, the ratio is greater than 30 on average and is as large as 98 in Europe and Central Asia. It is smaller in Sub-Saharan Africa and other regions because there is such a significant commitment to aid in these regions.

Table 2 also shows the BCRs upon employing the elasticities found in the literature of 0.03 and 0.01. For both elasticity measures, the average impact in the world using the FH(2014) estimates is less than one. This would suggest a weak outcome using the OWG assessment. However, for some regions, particularly in Europe and Central Asia and the Middle East and North Africa, there are estimates between 1 and 3. If one were to take the broadest measure that includes welfare costs from BH (2012), the results are more striking. Still, the BCRs are rather modest.

Table 2 – Economic Cost and Benefits to Peace: Benefit Cost Ratio for Aid

	Cost of Aid	Benefit to Peace			Benefit/Cost	
	Billions	(% of GDP)	FH (2014)	FHBH	FH(2014)	FHBH
East Asia/Pacific	91.23	0.19	4.11	15.84	21.34	82.23
Europe and C. Asia	65.91	0.05	5.34	13.85	97.78	253.49
LAC	202.63	2.16	12.01	22.35	5.55	10.33
M. East/N. Africa	79.07	0.23	19.06	42.14	82.52	182.48
South Asia	114.40	0.82	11.01	26.76	13.45	32.69
SubSaharan Africa	388.10	4.57	23.02	46.00	5.04	10.06
World	941.35	1.34	6.05	27.82	37.61	95.21

	Benefit Cost Ratio			
	Elasticity = .03		Elasticity = .01	
	FH(2014)	FH*	FH(2014)	FH*
East Asia/Pacific	0.64	2.47	0.21	0.82
Europe and C. Asia	2.93	7.60	0.98	2.53
LAC	0.17	0.31	0.06	0.10
M. East/N. Africa	2.48	5.47	0.83	1.82
South Asia	0.40	0.98	0.13	0.33
SubSaharan Africa	0.15	0.30	0.05	0.10
World	1.13	2.86	0.38	0.95

Note: See Feron and Hoeffler (2014). Column 1 provides the regional designation. For Panel 1, Column 2 provides the dollar cost of aid Column 3 provides the costs of aid as a percentage of GDP, column 4 provides the benefits to ending violence from Feron and Hoeffler column 5 provides the benefits to ending violence when using Blomberg and Hess measure to Feron and Hoeffler. The final two columns provide the ratio of these benefits to costs. For panel 2, the first numerical column provides the BCR for each region using the benefits to peace from Feron and Hoeffler using an elasticity of 0.03. The next column provides the BCR when adding the Blomberg and Hess estimate for benefits using an elasticity of 0.03. The final two columns provide the BCR with elasticities of 0.01

As a final exercise, Table 3 provides the BCRs when considering each subcomponent. Table 3 is organized in the same fashion as above. The first panel presents BCRs when the elasticity is 0.03. The second panel presents the BCRs when the elasticity is 0.01. Estimates for cost come from the percentage of the budget devoted to women which is 0.04 percent.

Table 3 shows that in most of the sub-categories, the BCRs are relatively small. Table 3 shows that the areas that have the highest potential BCRs are in stemming Child Abuse and Female Violence. Using the more conservative elasticity of 0.01, has BCRs in the range of 0-8. For some regions such as Europe and Central Asia and the Middle East, the BCRs are significantly higher. When using the less conservative elasticity of 0.03, the BCRs approach 20 to 25 for female violence and child abuse, more associated with a larger impact.

Table 3 – Benefit Cost Ratio for Aid for each subcomponents

	Child Hom.	Child Abuse	Sex Abuse	Fem Hom	Fem Violence	Sex V
East Asia/Pacific	0.06	14.02	0.09	0.09	20.60	0.13
Europe and C. Asia	0.30	43.36	0.16	0.77	83.43	0.19
L.America&Caribbean	0.03	2.35	0.03	0.03	2.78	0.04
M. East/N. Africa	0.15	52.39	0.03	0.01	34.26	0.04
South Asia	0.04	9.10	0.00	0.04	9.04	0.02
SubSaharan Africa	0.06	3.06	0.01	0.03	2.45	0.01
World	0.11	20.71	0.05	0.16	25.43	0.07

	Child Hom.	Child Abuse	Sex Abuse	Fem Hom	Fem Violence	Sex V
		Elasticity = .01				
	Child Hom.	Child Abuse	Sex Abuse	Fem Hom	Fem Violence	Sex V
East Asia/Pacific	0.02	4.67	0.03	0.03	6.87	0.04
Europe and C. Asia	0.10	14.45	0.05	0.26	27.81	0.06
L.America&Caribbean	0.01	0.78	0.01	0.01	0.93	0.01
M. East/N. Africa	0.05	17.46	0.01	0.00	11.42	0.01
South Asia	0.01	3.03	0.00	0.01	3.01	0.01
SubSaharan Africa	0.02	1.02	0.00	0.01	0.82	0.00
World	0.04	6.90	0.02	0.05	8.48	0.02

Note: See Feron and Hoeffler (2014)

Conclusions

In FH's (2014) study, they explore the impact of aid policy on stemming violence. They do a yeoman's job of describing all the challenges of data collection and reporting, the current state of affairs regarding violence of all forms, provide cost estimates of violence, and even provide possibilities for policy. In short, it is a valuable piece of research for the Copenhagen Consensus.

The contribution of this perspective paper is to take the work provided in FH (2014) and attempt to measure the BCRs of the various policies. This is not an easy task as there exist numerous assumptions made to estimate the BCRs. These assumptions may be restrictive and therefore, the results presented here should be considered with the usual caveats.

In the future, it would be valuable for policy-makers to adopt the approach that the World Bank and others have taken with regards to certain policies. This approach has been to conduct experiments in targeted areas. If policy-makers are really interested in best evaluating these issues, then they can only be really understood using such a methodology. This may be costly and challenging to implement but it would go a long way to helping our understanding.

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This paper was written by S. Brock Blomberg, Professor of Economics and Finance at Claremont McKenna College. The project brings together more than 50 top economists, NGOs, international agencies and businesses to identify the goals with the greatest benefit-to-cost ratio for the next set of UN development goals.

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