Cost Countries Pay for High Levels of Homicide

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Introduction

In 2015, the United Nations adopted 17 Sustainable Development Goals—international targets to ensure a peaceful and prosperous world. Goal 16 focuses on peaceful societies, access to justice, and accountable institutions. This goal lead to the Geneva Declaration on Armed Violence and Development, an initiative signed by over 100 countries aimed at addressing the relationship of violence and its ensuing burden on humans[1]. While there is a clear humanitarian development cost from violence, does violence have a cost associated with an economy's development? In this study, homicide rates are used as a measure of violence and GDP per capita is used as a measure of economic development. This leads to the question: Do homicide rates have an effect on a country's GDP per capita?

Violence's impact on an economy is important to measure for several reasons. If violence negatively impacts an economy, it can hinder the productivity and growth that are needed to spur both economic and humanitarian development. In drastic cases, an economy's development could potentially be slowed or even halted due to violence, leaving its citizens worse off. The costs of violence on an economy could take the form medical bills or salaries of public servants involved, such as police officers and judges, that members of the society must pay. Society also must bear the economic cost of programs implemented at the public, institutional level to reduce violence. Understanding violence's role in these economic costs and losses can guide decision makers on how to allocate funding to violence prevention in order to stimulate an economy and control for the losses.

Methodology & Results

To find the answer to the research question, I gathered country-level data on the independent variable of interest, homicide rates[2]; the dependent variable, log of GDP per capita[3]; as well as control variables, the percentage of population living in an urban place[4] and the unemployment rate[5], that were included to ensure an unbiased estimator. Then, a log-linear regression[6] with

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[1] "More Violence, Less Development: Examining the relationship between armed violence and MDG achievement." *Geneva Declaration on Armed Violence and Development*, 2010.
http://www.genevadeclaration.org/fileadmin/docs/MDG_Process/MoreViolenceLessDevelopment.pdf
[2] "Global Study on Homicide." *United Nations* Office on Drugs and Crime, 2019.
https://dataunodc.un.org/GSH_app
[3] "GDP per capita (current US$)" *World Bank* national accounts data, and OECD National Accounts data files, 2019.
https://data.worldbank.org/indicator/ny.gdp.pcap.cd
[4] "Urban population (% of total population)" *United Nations* Population Division, 2018.
https://data.worldbank.org/indicator/SP.URB.TOTL.in.zs?end=2018&start=1990
[5] "Unemployment, total (% of total labor force) (modeled ILO estimate)" *International Labour Organization*, ILOSTAT database, 2019.
https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?end=2019&start=1991&view=chart
[6] A log-linear model is a mathematical model that takes the form of a function whose logarithm equals a linear combination of the parameters of the model, which makes it possible to infer causal change.

these variables and time and country fixed effects is used to find the direct effect that homicide rates have on GDP per capita.
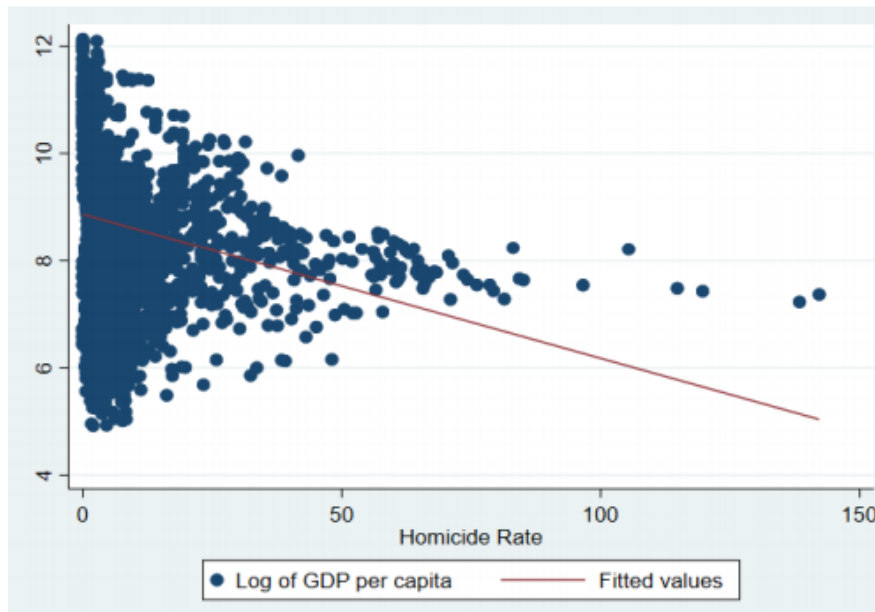

Figure 1: *Scatter Plot with Line of Fit between Log GDP Per Capita and Homicide Rates.*

Table 1: *Fixed Effects Log-Linear Regression of Log GDP Per Capita.*

	(1) lngdp_percap b/se	(2) lngdp_percap b/se	(3) lngdp_percap b/se	(4) lngdp_percap b/se
hom_rate	-0.007**	-0.006*	-0.007**	-0.006*
	(0.00)	(0.00)	(0.00)	(0.00)
unem_rate		-0.020***		-0.020***
		(0.01)		(0.01)
per_urban			0.006	0.003
			(0.01)	(0.01)
r2	0.9777	0.9779	0.9778	0.9779
N	2933	2611	2933	2611

* p<.1, ** p<.05, *** p<.01

The results of this model which are highlighted in Table 1 find that a higher amount of violence does have a statistically significant, negative cost to the economy of a country. Overall, a one unit increase in the homicide rate decreases GDP per capita by .6%. Though it is a small effect, it is still statistically significant, and negatively impacting GDP per capita. The unemployment rate had negative effect on GDP per capita; and the percentage urban, had a positive effect on the GDP per capita. Both were statistically significant which means they worked to create an unbiased independent variable. Lastly, the measure of fit shows that the variables included explained a large amount of the regression, creating a reliable estimate.

Conclusion & Discussion

There are no doubts about the clear harm that violence has on a society and its people. However, the importance in understanding the economic costs of violence is not to put a dollar amount on inhumane issues. Instead, this critical question and following research is to incentivize decision makers to take into account how violence harms both individuals and larger communities in more than one straightforward way, and to guide decision makers in allocating an effective and efficient amount towards violence prevention.

Decision makers should use the results of the model in this study in order to find the direct cost of decreasing violence on their country's economy, and then allocate the correct amount of spending to address it. For example, GDP per capita in 2018 was $62,641 in the United States[7]. A one unit decrease in the homicide rate would cause GDP per capita to increase by $3,758. With a population of 323,156,000 in 2018[8], the total increase of GDP would have been over $1 trillion.

With updated information based on this research, decision makers can understand the urgent need to reallocate or increase funds to address and decrease violence because of the higher payback to society than the cost to implement a program. Action is needed in order to decrease violence in their communities and boost their economies to create a safer and more prosperous society for their citizens.[9]