

The interiorization of Brazilian violence, policing, and economic growth^{☆, ☆}

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Abstract

Brazilian homicide rates are among the highest in the world, inclusive of actual war zones. However, the character of Brazil's violence is changing. Recent analyses highlight a trend of dispersion of violence such that homicide rates in urban areas, traditionally the most violent places, have stagnated and declined while smaller cities and rural areas experienced a marked increase. An incipient explanation is that this trend is related to greater economic dynamism in the smaller cities, unaccompanied by increased policing. This article's empirical analysis uses locational Hoover indexes to express the dispersions of violence and economic activity, and also generates a proxy to measure the geographic concentration of police forces. Using panel data across all 26 states from 1995 to 2011, we find evidence of a correlation between dispersion of violence and GDP to less urban areas, and ambiguous results regarding police concentration.

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Resumo

As taxas de homicídio do Brasil estão entre as mais altas do mundo, inclusive das atuais zonas de guerra. No entanto, o caráter dessa violência está mudando. Análises recentes destacam uma tendência de dispersão de violência, de forma que as taxas de homicídio em áreas urbanas, tradicionalmente os lugares mais violentos, estagnaram e declinaram, enquanto cidades menores e áreas rurais experimentaram um aumento acentuado. Uma explicação incipiente é que esta tendência está relacionada com um maior dinamismo econômico nas cidades menores, sem haver um aumento do efetivo policial. A análise empírica deste artigo utiliza índices locais de Hoover para expressar as dispersões da violência e da atividade econômica, e também um indicador para medir a concentração geográfica das forças policiais. Usando dados de um painel dos 26 estados brasileiros entre 1995–2011, encontram-se evidências de uma correlação entre a dispersão da violência e do PIB para as áreas menos urbanas, e alguns resultados ambíguos em relação à concentração da polícia.

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Palavras-chave: homicídios; disseminação da violência; índice de Hoover

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1. Introduction

Brazil is a violent place. In fact, the country ranks among the most violent nations in the world, with an intentional homicide annual rate ranging around 27 homicides per 100 thousand inhabitants. This rate is roughly two to three times that of the United States and upwards of 40 times that of Japan. To put Brazilian violence in perspective, consider some of these staggering facts¹:

- Between 1980 and 2010 more people died in Brazilian homicides caused by fire arms than the combined total of the 12 bloodiest armed conflicts in the world during the same period.
- Brazil is one of the few countries in the world where homicide rates surpass traffic accident mortality rates.
- Nearly two in five of all registered deaths for men aged 15–24 are the result of homicides.

These levels of violence exist and persevere despite Brazil being a nation without territorial disputes, civil war, or pronounced racial or ethnic tensions. It is clear that this violence costs Brazilian society dearly and is therefore among the nation's top challenges.

However, the nature of this violence is changing. [Waiselfisz \(2011\)](#), in his annual editions of *Mapa da Violência*² (Map of Violence), noted that in recent years big cities experienced declining rates of violence while the previously tranquil countryside saw dramatic increases. He termed this shift the *interiorization* of violence. [Andrade and Diniz \(2013\)](#) analyzed Waiselfisz's data and found indications that the areas that experienced the greatest uptick in violence also had the greatest economic growth.

The standard analysis of the economics of crime is based on [Becker \(1968\)](#), and assumes criminals act rationally considering not only the benefits, but also the costs of their actions. If the probability of being caught is low, then the expected benefits of committing a crime may outweigh the costs. In this light, criminal activity, and therefore violence, should increase in lockstep with economic growth (increased benefits) and a lacking police presence (reduced costs).

Following the rationale of Becker, the conclusions of [Andrade and Diniz \(2013\)](#) appear to explain only part of the interiorization of violence – that violent criminals are drawn to the benefits associated with economic dynamism. However, the migration of violence to the countryside could also be framed in terms of costs. Specifically, criminals are likely incentivized to migrate to the countryside to take advantage of the reduced costs associated with a lacking police presence. For example, [Di Tella et al. \(2004\)](#), [Evans and Owens \(2007\)](#) and [Draca et al. \(2011\)](#) already documented causal relationships between greater policing and less crime.

In fact, the press has also taken notice of criminals targeting less well-policed areas. News stories abound, highlighting trends of crime, and especially violent crime, migrating from big cities to rural areas. The media reports these stories on a frequent basis and emphasize the lacking police presence in the countryside vis-a-vis urban centers as causal to the migration.³

Brazil attempted to combat its violence epidemic by raising the costs violent criminals faced by increasing spending on public security. According to the Anuário Brasileiro de Segurança Pública (ABSP, Annual Yearbook of Public Safety)⁴ and the Secretaria do Tesouro Nacional (STN, Secretary of the Treasury)⁵ the total expenditures in public security among states more than doubled from 1995 to 2011 from R\$ 109 to R\$ 252 per person. Additionally, the policed force nearly doubled from roughly 306 thousand state police in 2004 (the first year of ABSP) to 527 thousand by 2011. In relative terms, this was a rate increase of 171 police per 100 thousand inhabitants to 290.

If these expenditures were more heavily concentrated in urban areas, which would leave the countryside relatively less secure, it may explain the spread of violence to these less populated areas. It is this possibility, which suggests that violent criminals are fleeing the more heavily-policed urban areas for less well-protected targets in the countryside, that

¹ Details in [UNODC \(2011\)](#).

² See mapadaviolencia.org.br.

³ One compelling anecdote suggesting the interiorization of violence highlights a criminal gang in Goiás that specializes in armed robbery of ATM cash machines. In a taped conversation, gang leaders consider potential targets based on their relative lack of security resources. In this example, the gang preferred to rob ATMs in a smaller city with “only two police officers and one patrol car.” See 1:05 the video: g1.globo.com/bom-dia-brasil/videos/t/edicoes/v/presa-quadrilha-que-explodia-caixas-eletronicas-em-goias/2934315

⁴ See forumseguranca.org.br/produtos/anuario-brasileiro-de-seguranca-publica.

⁵ See: tesouro.fazenda.gov.br/estados_municipios.

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