



Convergence of Homicides in the United States

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1. ABSTRACT

Plenty of studies have explored the association between the homicide rate and the *transitory economic conditions*. This study emphasizes the *long term trends* - convergence of homicide rate.

Using a nearly five-decade (1968-2016) state-level annual homicide-rate data that is obtained from the Centers for Disease Control and Prevention (CDC), this study provides the **evidence of convergence of homicide rates in the contiguous United States**.

Region-wise, the speed of convergence seems to be highest in the West, followed by the Midwest, and the South, but no statistically significant evidence of convergence is being shown in the Northeast. The findings have important policy implications for homicide intervention in the United States.

2. INTRODUCTION

Most of the research on crime in the United States has studied the homicide rate from different angles such as the causes and factors of homicide, its prevention measures, variations across genders, races, and locations, etc.

Our analysis is completely new in this literature. We study the **convergence of homicide rates** across U.S. states. Though originated from literature on economic growth (Kuznets 1955, Baro and Sala-i-Martin 1992), one can find the applications of convergence in other areas as well (Li and Wang 2016).

This study has several important implications.

1. Such analysis shows how states are doing regarding the prevention of homicides compared to their previous levels as well as compared to other states. The presence of convergence could be a good or a bad news.
2. It would indicate how the public health policies have been applied and how they could be disseminated efficiently. For example, a higher rate of convergence will reflect a potential, faster dissemination of information or repercussions of policies.

3. METHODOLOGY

Similar to Barro and Sala-i-Martin (1990) and Parsley and Wei (1996), the following **model of convergence** is used here.

$$\Delta H_{it} = \alpha_i + \delta_t + \beta H_{it-1} + \Sigma \gamma \Delta H_{it-1} + \epsilon_{it} \quad (1)$$

- ΔH_{it} : change in natural log of homicide rate in state i over time t
- H_{it-1} : natural log of the previous level of homicide rate in state i
- ΔH_{it-1} : to control for serial correlation
- α_i - state fixed effects
- δ_t - time fixed effects
- β is the coefficient of interest. A negative and statistically significant β between 0 and 1 means the presence of convergence.
- Data is obtained from CDC.

4. RESULTS

Table 1: β -Convergence of Homicide in the US (1968-2016)

Total Homicide Rate	-0.238*** (0.038)
#Observations	2,029
R^2	0.26

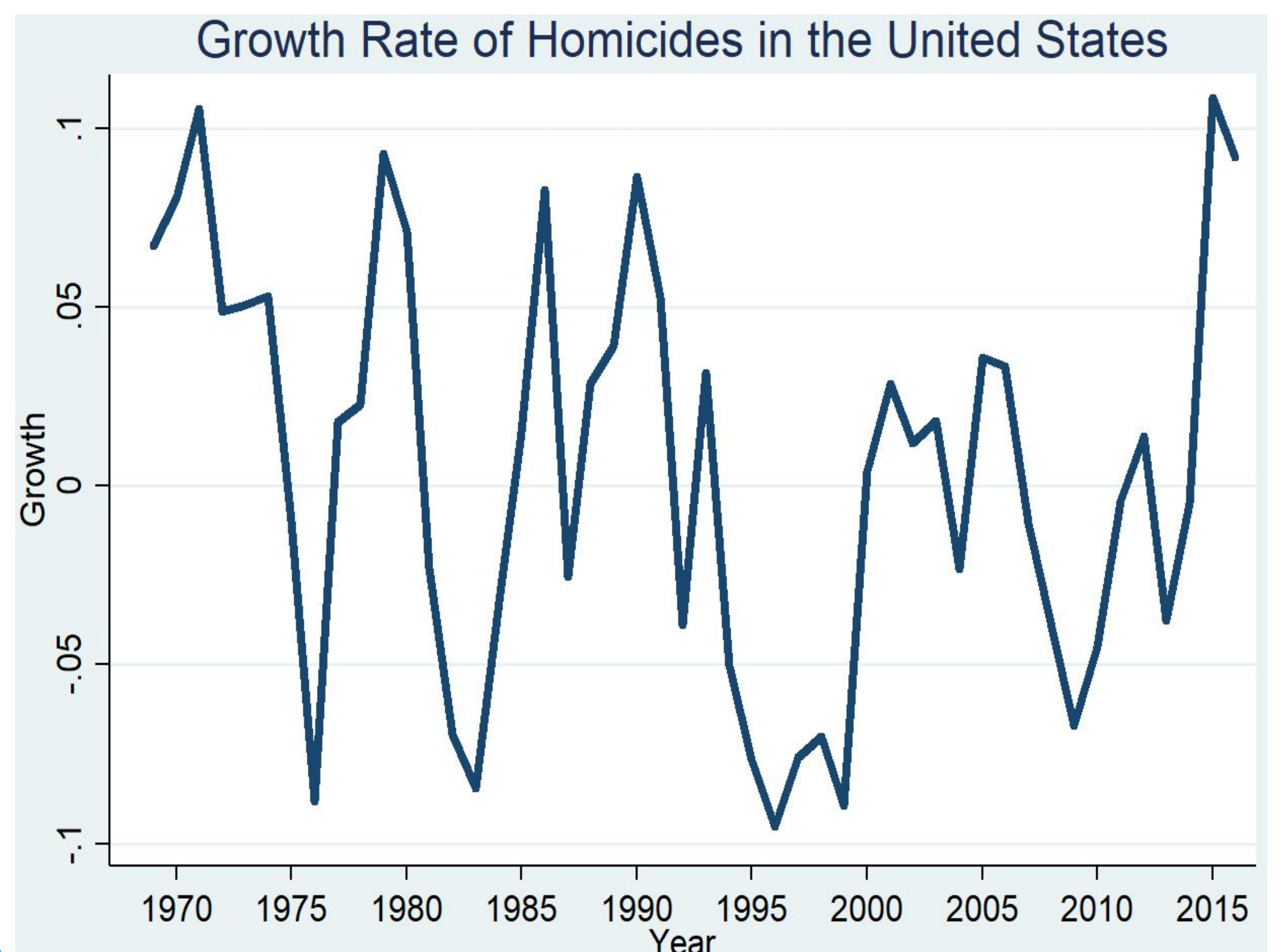
Notes: Average rate of mortality is used as the benchmark. The regression contains state and year FEs. Clustered standard errors at the state level are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: β -Convergence across Regions (1968-2016)

	(1) Northeast	(2) Midwest	(3) South	(4) West
Total Homicide Rate	-0.218 (0.143)	-0.282*** (0.085)	-0.168*** (0.042)	-0.508*** (0.110)
#Observations	317	488	752	472
R^2	0.38	0.36	0.27	0.41

Notes: Average rate of mortality is used as the benchmark. All regressions contain state and year FEs. Clustered standard errors at the state level are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5. GRAPH



6. CONCLUSION

- This study finds the presence of β -convergence for homicide rates using data from the contiguous 48 U.S. states during 1968-2016.
- West and non-coastal states have stronger prevalence of convergence.
- More public policies and prevention measures should be placed on specific regions, such as the West and landlocked states.

7. CONTACT

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