Economic Downturn and Intimate Partner Violence

Executive Summary

September 2019

Intimate Partner Violence (IPV) Before, During, and After the Great Recession: Findings from South Carolina

INTRODUCTION

The South Carolina Law Enforcement Division (SLED) manages the South Carolina Incident-Based Reporting System (SCIBRS), a system that is National Incident-Based Reporting System (NIBRS)-certified by the Federal Bureau of Investigation (FBI). The South Carolina Governor's Domestic Violence Task Force identified the SCIBRS as the primary source for domestic violence data. This data source provides a rich and important perspective into the lives and families within South Carolina that are impacted by intimate partner violence. The SCIBRS contains information about crime in South Carolina: it results from South Carolina's approximately 275 law enforcement agencies reporting information about victim, offense, offender, and arrestee (if applicable) for all criminal incidents known to police. The result is a rich set of crime data unparalleled in criminal justice data collection. SLED provides support to law

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enforcement agencies through auditing, training, and guidance on coding individual incidents. SLED also stores every incident submitted by the law enforcement agencies on a state repository and submits those same incidents to the FBI.

Currently, 14 of the SCIBRS offense categories require reporting the victim-to-offender relationship, which can include the following five intimate relationships: spouse, ex-spouse, common-law spouse, (ex-)boy/girlfriend, and same-sex relationship. Information about offenses coupled with victim-to-offender intimate relationships means that the SCIBRS can be used to study domestic violence. As a NIBRS-certified system, its crimes are categorized by general definitions; thus, the SCIBRS provides a unique opportunity to study domestic violence across jurisdictions—independent of statutory differences.

The intent of this work is to examine the association between intimate partner violence and unemployment before, during, and after the Great Recession. As unemployment statistics are oftentimes the primary metrics cited when examining economic downturn, unemployment also has spillover effects that negatively impact families – this includes the potential for an increase intimate partner violence due to the lack of employment. This project will measure and assess what effect size and statistical association, if any exists, between these two variables.

DATA AND METHODOLOGICAL APPROACH

The data in this work stems from three sources. The first source was SCIBRS data supplied by the South Carolina Statistical Analysis Center. The second data source was unemployment data obtained from the Bureau of Labor Statistics. The third data source was from the US Census Bureau. Data from the Census Bureau includes variables from the American Community Survey (ACS) along with intercensal population estimates. The relevant years of study for the data included 2000 through 2017, although not all data sources contained all desired variables for all counties throughout the entire time period. In order to compensate for this limitation, multiple statistical models were developed to compare the results when adjusting the timeframe and available variables.

Four fixed effects models were in this analysis to provide various perspectives on the association between unemployment and intimate partner violence before, during, and after the Great Depression. The unit of analysis was county-year. Fixed effects models are popular among econometrics, as the models utilize an approach that accounts for variables that cannot be measured. The dependent variable is the natural log of aggravated assaults, reported for the corresponding county and year. Variables in the analysis were transformed with the natural log in order to appropriately scale the differences in magnitude across the variables utilized and to normalize the variables in the models. These variables include population, the number of unemployed workers, the estimated number of households, and the population between the ages of 18 and 24 with less than a high school diploma (all variables were aggregated at the county-level). The four models were used to fluctuate the years in the analysis whilst accounting for the variability availability of variables for the corresponding time periods.

Model (1) includes unemployment data for all years from 2000-2017. Model (2) only includes unemployment data for the years 2005-2012, as this provides a basis for comparison in Model (3). Model (3) includes observations from years 2005-2012, but only includes a subset of counties (n = 20). Model (4) includes observations from 2005-2012; it also incorporates variables from the American Community Survey with the same counties represented in Model (3). The beginning time period for models (2) through (4) is 2005 as this corresponds to when one-year estimates were introduced in the ACS. The ending time period was limited to 2012, as several counties had missing ACS data beginning in 2013.

RESULTS

Key variables of interest presented in Table 1 identify the summary statistics which are stratified by the fixed effects model numbers. As Models 1 and 2 utilize observations from all 46 counties in South Carolina, it is evident that there are counties with lower observations of aggravated assault, unemployment, and population as compared to the subset of counties used in Models 1-4. Table 1 also shows a wide distribution in the statistics at the county-level; this is evident in both the standard deviations and the interquartile ranges for all statistics.

Table 1: County-Level Summary Statistics on Variables of Interest Stratified by Models

	Counties in Models 1 & 2 (N = 46)		Counties in Models 1 – 4 (n =20)	
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
Aggravated Assault	68 (119)	120 (140)	180 (205)	224 (159)
Unemployment	2,367 (4,153)	3,953 (4,075)	7,084 (5,542)	5,756 (4,447)
Population	55,822 (111,706)	98,130 (104,467)	153,850 (155,158)	184,465 (107,668)
Total Households	-	-	58,617 (66,024)	70,792 (42,183)
Population 18-24 < HS diploma	-	-	2,779 (2,431)	3,177 (1,757)

Note: Statistics were rounded to the whole number; some county-level statistics are not presented (represented by '-') as counties with a population less than 65,000 do not have estimates available; IQR = interquartile range; SD = standard deviation.

Source: Stonewall Analytics

Figure 2 displays the mean (average) count of aggravated assaults at the county-level along with the mean count of unemployed workers at the county-level in South Carolina from 2000 through 2017. The y-axis is presented in the natural logarithm (or natural log). The recession time period is captured by the vertical, dotted lines at years 2008 and 2009. All time periods prior to 2008 incorporate the pre-recession, whereas all time periods after 2009 correspond to the post-recession (the time between 2008 and 2009 corresponds to the recession).

Figure 2: Unemployment and Aggravated Assaults in South Carolina

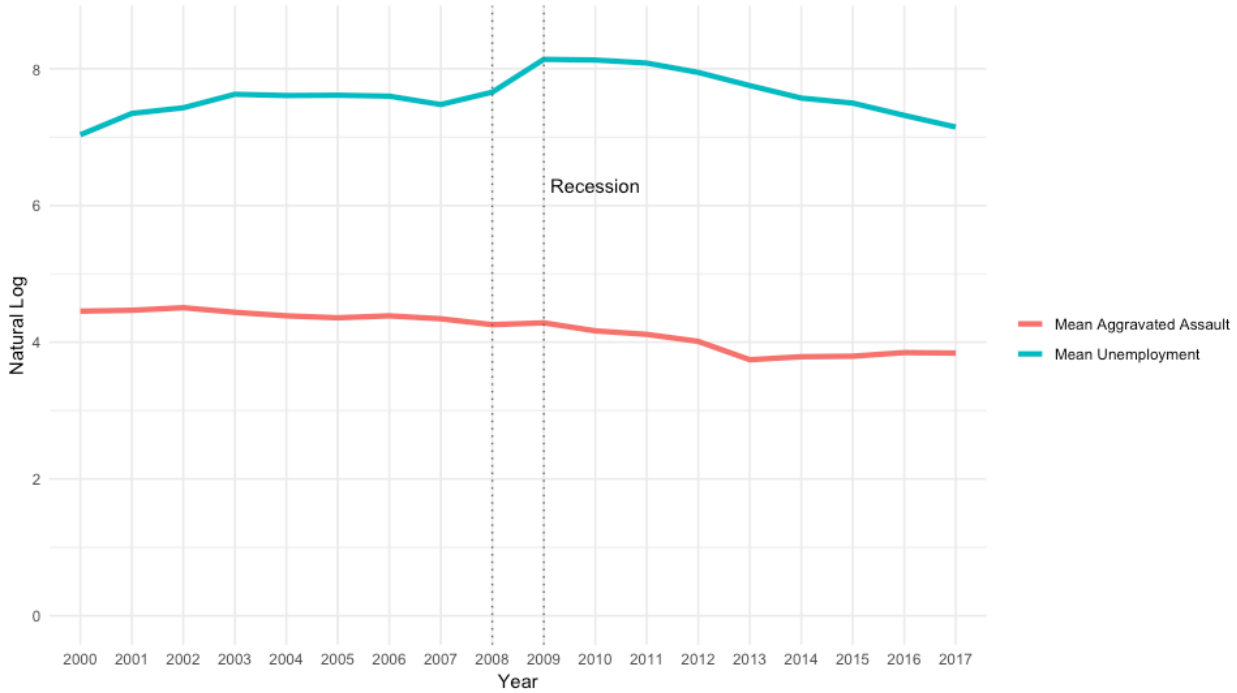

Table 2 presents results for the fixed effects models. Model numbers are displayed by numerical value in parentheses along the top row of the table. Values reported in each cell for the corresponding variable are coefficient estimates, and values reported in parentheses are standard errors.

Table 2: Model Results for County-Level Reported Aggravated Assaults in South Carolina

	Model (1)	Model (2)	Model (3)	Model (4)
Coefficients				
Recession	-0.243 ***	-0.108 *	-0.075	-0.079
	(0.444)	(0.050)	(0.062)	(0.063)
Post-recession	-0.561 ***	-0.288 ***	-0.143	-0.145
	(0.029)	(0.059)	(0.079)	(0.079)
Unemployment (ln)	0.204 ***	0.041	-0.040	-0.044
	(0.042)	(0.098)	(0.116)	(0.117)
Total population (ln)	0.224	0.100	-0.012	0.783
	(0.207)	(0.534)	(0.646)	(0.942)
Total households (ln)				-0.817
				(0.714)
Population 18-24 years < HS diploma (ln)				-0.038
				(0.081)
Fixed Effects				
All counties (N = 46)	X	X		
ACS counties (n = 20)[1]			X	X

Note: X indicates fixed effects were included in the model; * = p-value < 0.05, ** = p-value < 0.01, *** = p-value < 0.001; ln = natural log; HS = high school; ACS = American Community Survey; [1] = refer to the Appendix for a listing of included counties.

When examining Model 1 (all counties in South Carolina from 2000-2017), unemployment is statistically significant (it has a corresponding p-value less than 0.001), and its magnitude is positive (indicating that as the independent variable increases, so does the dependent variable). The recession, as compared to the pre-recession is also statistically significant, although its magnitude is negative (indicating that the recession experienced lower counts of aggravated assaults as compared to the pre-recession). This finding is also similar with the post-recession, where the magnitude was negative and statistically significant (this estimate is also compared to the pre-recession). The population estimate is not associated with aggravated assaults.

In Model 2 (all counties in South Carolina from 2005-2012), the recession and post-recession time periods are also statistically significant. Similar to Model 1, both are of a negative magnitude. Furthermore, neither unemployment nor population is associated with aggravated assaults in Model 2. In Model 3 (20 counties from 2005-2012), none of the variables are statistically significant. Similar to Model 3, Model 4 (20 counties from 2005-2012 with additional variables) does not have any statistically significant findings. Comparing the trends from Models 1-4, we find that as the time periods are limited (less years present) and more variables are added to the models, variables that were statistically significant in previous models are no longer statistically significant. With the exception of the categorical variables representing the recession and post-recession, the magnitudes (i.e., positive or negative values) do not hold constant across all four models when examining variables individually. For instance, unemployment is positively associated with aggravated assaults in Model 1, positively associated in Model 2 (not statistically significant), but then has a negative association in Model 3 and Model 4 (and not statistically significant in both of these models).

Our findings suggest there is not enough evidence to indicate an association exists between reported aggravated assaults and unemployment before, during, and after the Great Recession. While this report does not provide any evidence of a link between unemployment and intimate partner violence, it does demonstrate South Carolina's continued commitment to improved understanding of the contributors of intimate partner violence. Given the continued decline of intimate partner violence within the state, it is possible that these efforts have prevented an increase that may have happened as a result of increased unemployment. Continued monitoring of these metrics as it relates to changes in economic activity within South Carolina along with any changes to public policies that may affect intimate partner violence are important steps to preserve public interest and protect well-being of the families of South Carolina.