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Unemployment and the specialization of criminal activity: A neighborhood analysis

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ABSTRACT

Purpose: Test the Cantor and Land (1985) model of unemployment on crime at the neighborhood level considering crime specialization.
Methods: A panel of 87 census tracts in Vancouver, Canada for the years 1991, 1996, and 2001 is used in a decomposition model. We also control for a large number of routine activity and social disorganization theory variables.
Results: Unemployment has an impact on crime specialization, but this impact varies in magnitude and by crime type. Strong support for the Cantor and Land (1985) model is found in the context of crime specialization.
Conclusions: The Cantor and Land (1985) is robust to an alternative measure of criminal activity. The use of alternative measures provides insight into the subtleties of the relationship between unemployment and crime.

1. Introduction

The relationship between unemployment and crime has long been an area of empirical inquiry and understandably so, as continued insight into this phenomenon is necessary for continued theoretical development and policy alike (Cantor & Land, 1985). Criminological studies into this relationship date back at least to the works of Shaw (1929) and Shaw and McKay (1931, 1942) who analyzed the direct impact of socioeconomic status on social disorganization and, in turn, crime (Andresen, 2013; Sampson & Groves, 1989). The long history of investigative efforts on the state of the economy and crime resulted in the establishment of various casual mechanisms for this relationship, all of which were grounded in different and seemingly disparate theoretical models. Strain theory, rational choice theory, conflict theories and opportunity theories were amongst the theoretical perspectives considered and, although these theories were related, early researchers did not consider them within a common framework.

Distinguished from previous researchers, Cantor and Land (1985) recognized the shortfall of having disjointed theoretical components and sought to remedy this limitation. In doing so they formulated a model of unemployment and crime that effectively integrated previously fragmented theoretical approaches. While earlier research focused solely on the effects of the unemployment rate on the prevalence of motivated offenders in the population, Cantor and Land (1985) saw that this method of inquiry provided an incomplete structural characterization of a rather complex relationship. Influenced by the works of Cohen and Felson (1979), Cantor and Land (1985) framed their model in accordance with routine activity theory. The result was a model that synthesizes two distinct and counterbalancing structural effects of unemployment on crime: the motivation effect and the opportunity effect. Such a model effectively conjoins criminal motivation theories that relate unemployment to the prevalence of motivated offenders in the population with criminal opportunity theories that relate unemployment to suitable crime targets. In their seminal publication, Cantor and Land (1985) found that the unemployment-crime relationship varied by crime type and that the opportunity effect mattered more than the motivation effect.

The work of Cantor and Land (1985) inspired a series of empirical research, much of which compares economic measurements to traditional crime measures such as counts or rates. However, dating back many decades, researchers have cautioned against the use of such crime measures, for concerns of potential inaccuracies (Andresen & Jenion, 2010). In 1993, the location quotient was introduced to the criminological literature as a tool capable of addressing some of the potential inaccuracies of traditional crime measures (Brantingham & Brantingham, 1993). The location quotient is adaptable to criminological research because it allows for relative comparisons of the occurrence of crime in a particular place relative to an entire area of study, thereby providing a more nuanced interpretation of crime occurrence (Andresen, 2007). In short, the percentage of a crime type in a neighborhood is measured relative to the percentage of that crime type for the entire study area, usually the city. This complex fraction measures the degree to which a neighborhood has more crime than would be expected given what is known for the city as a whole. In essence, it is a measure of spatial (crime) specialization.

The aim of this paper is to utilize the location quotient to evaluate the Cantor and Land (1985) model, identifying crime specialization across neighborhoods and crime types. The utilization of this statistic allows for a more nuanced understanding of violent and property crime

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specialization at the neighborhood level. Therefore, the current study moves beyond traditional evaluations of the Cantor and Land (1985) model with the use of the location quotient to test the impact of neighborhood characteristics on crime specialization. This is important because understanding changes in the levels of criminal activity from changes in unemployment only tell part of the story. If the levels of different crime types change at different rates, then the relative mix of crime can change during an economic downturn or expansion. The most practical implication of such knowledge would be changing priorities in crime prevention activities that could be anticipated by monitoring changes in variables such as the unemployment rate. As such, our general research question is: is the Cantor and Land (1985) model of unemployment and crime able to predict crime specialization? Our research hypotheses are as follows: 1) the Cantor and Land (1985) model of unemployment and crime is instructive for understanding crime specialization; and 2) the strength of the relationship between the predictors of the Cantor and Land (1985) model and crime specialization will vary by crime type.

2. Related research on unemployment and crime

2.1. Theoretical considerations

Cantor and Land (1985) hypothesized that economic change, measured by the national unemployment rate, alters conditions of social strain and social control (Phillips & Land, 2012). Additionally, economic changes influence the availability of vulnerable targets and, therefore, the number of suitable criminal targets (Phillips & Land, 2012). Cantor and Land (1985) predicted that these two distinct structural effects would be counterbalancing: a downturn in aggregate economic activity would increase motivation in the long-run, but decrease opportunity in the short-run. It is important to note that the unemployment and crime relationship put forth by Cantor and Land (1985) is not direct in the sense that unemployment directly impacts crime. Rather, the effect of unemployment on crime is mediated through two distinct channels, motivation and opportunity, that subsequently impact crime rates in differing ways. The differential impact of opportunity and motivation on crime is attributed to the different time frames with which these structures operate.

Cantor and Land (1985) discovered that the effect of criminal motivation was lagged as individuals do not immediately turn to llegitimate activity in the face of economic hardship and, thus, criminal motivation takes time to develop. The lagged effect of unemployment was attributed to the *cushion period* where newly unemployed individuals, primarily in Western industrialized nations such as Canada and the United States, receive financial assistance in the form of unemployment benefits for a period of time after becoming unemployed (Cantor & Land, 1985).

Conversely, the opportunity effect occurs immediately as unemployment instantly alters the duration and frequency that individuals are away from the home: being unemployed leads to a shift in routine activities toward the home, allowing people to guard their person and property, making them less susceptible to victimization (Cantor & Land, 1985). Moreover, unemployment produces financial strain, such that individuals have less to spend on non-essential goods and services. Taken together unemployment has a contemporaneous effect on crime by decreasing the circulation of suitable targets that is expected to lead to a decrease in criminal opportunities. In the end, Cantor and Land (1985) found that both motivation and opportunity matter, particularly for property crime, but operated at different time frames. Motivation matters in the long run, due to the lagged effect and opportunity matters in the short run, because of the immediate effect (Cantor & Land, 1985). Finally, Cantor and Land (1985) found that the opportunity effect dominates the motivational effect, primarily for property crimes.

2.2. Empirical issues

Since inception, researchers have argued over the empirical validation of the Cantor and Land (1985) model, more specifically whether opportunity actually dominates motivation, but the theory behind the model is not often questioned (Andresen, 2013). Two major issues have been raised concerning to the current state of empirical inquiry on unemployment and crime: the first pertains to disagreements on the empirical methods, primarily the statistical models used to test the Cantor and Land (1985) model and the second is a set of issues relating to the appropriateness of using unemployment as an isolated measure to test economic performance (Andresen, 2013; Arvanities & DeFina, 2006).

Though the theoretical mechanisms for the Cantor and Land (1985) model are generally not contested, the methods for investigating those mechanisms have been. In fact, by 2001 there were a number of methodological concerns that arose—see Hale and Sabbagh (1991) for an early methodological criticism. For example, Greenberg (2001) identified a number of problematic aspects of this literature: statistical misspecification, the operationalization of explanatory variables, units of analysis, and statistical methods. Using state-level data for the United States, Levitt (2001) used a fixed effect panel model and obtained more realistic parameter estimates than in other approaches. And Raphael and Winter-Ebmer (2001) performed some very instructive analyses that showed using multiple statistical methods that the results were only robust for property crime.

More recently, Phillips and Land (2012) investigated the Cantor and Land (1985) model using counties, states, and the United States as a whole. They identified the expected parameter signs in 78 of 84 cases and that the motivation effect dominated the opportunity effect in the cases of property crimes. In that same year, Andresen (2012) analyzed a panel of census tracts and found that the unemployment rate had a positive estimated parameter with various crime types in the long-run and a negative estimated parameter with various crime types in the short-run. And most recently, Fallahi and Rodríguez (2014) analyzed the relationship between unemployment and crime using a Markov-Switching model. They found that the relationship between unemployment and robbery was procyclical, whereas the relationship between unemployment and larceny was countercyclical with the magnitude of these relationships changing over time.

This research all points to the importance of using the most appropriate statistical technique when testing a model's predictions. For example, panel data models are common but measure short-run effects and are, therefore, not able to simultaneously test the motivation (long-run) and opportunity (short-run) effects. As such, we follow Andresen (2012) in using the decomposition, or hybrid, model that allows for the identification of both short- and long-run effects, a more precise test of the Cantor and Land (1985) model predictions.

3. Crime specialization and the location quotient

The location quotient is a statistic that has been used in economic geography since the 1940s. Introduced to the criminological literature by Brantingham and Brantingham (1993), the location quotient measures spatial crime specialization, or how often a particular phenomenon occurs in comparison to surrounding areas, allowing researchers to determine whether a particular area specializes in particular types of crime relative to the entire study area (Block, Clarke, Maxfield, & Petrossian, 2012). Therefore, one of the benefits in using this type of measure in criminological research is that it enables a more nuanced, or accurate, understanding of geographical variations in crime specialization. Furthermore, because this statistic only relies on data for the phenomenon in question, it avoids some of the methodological issues that arise from measures of concentration (crime rates) (Andresen & Jenion, 2010).

In the current context, the location quotient measures the percentage of one crime type in a neighborhood relative to the same crime