

The Unemployment - Crime Relationship

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Abstract

This paper attempts to show what affect the unemployment rate has on the level of property crimes in a sample of sixteen states. It is important to understand what and how significant the relationship between the unemployment and crime rates is. If the impact is extremely significant, then the benefits of reducing unemployment would be two-fold and the social costs of not doing so might be unrealized and cause greater problems than anticipated. Among my research is a review of previous findings, the data and methods used in conducting the regression analysis as well as how it relates to prior studies, limitations of my research and the implications my findings have on policy formation.

1. Introduction

The Employment Act of 1964 made it the Federal Government's responsibility to promote maximum employment through federal investment and expenditures (Santoni). What if by reducing the unemployment rate, we could reduce the occurrence of property crimes? Reaching a general consensus on the clear link between crime and unemployment has proved to be a futile effort among researchers. However, regardless of the various outcomes from different methods in empirical testing, this topic remains extremely important due to the consequences a reduction in the unemployment rate has on the overall economic welfare of the U.S. The high costs of unemployment can be felt in many levels of society; from the insurance costs borne by the federal government to the results of job loss on an individual. The unemployment level for 2005 was an estimated 7,591,000 people. Not included in this figure is the estimated 436,000 that were discouraged, according to the U.S. Bureau of Labor Statistics (BLS). But contrary to popular belief, the most important problem facing the U.S is not decreased productivity due to the loss of these individuals from the job market, but instead the possibility that some of the unemployed will resort to criminal behavior as a means to rectify their loss of financial income.

In his acceptance speech, the 1992 Nobel Laureate Gary S. Becker stated, "One reason why the economic approach to crime became so influential is that the same analytic apparatus can be used to study enforcement of all laws... Since few laws are self-enforcing, they require expenditures on conviction and punishment to deter violators." In carefully studying questions such as whether or not unemployment influences the crime rate, legislators can do more to structure policy decisions at aiming

to lower the unemployment rate and therefore deter some crimes before they have the chance to happen. The benefits of doing so would be two-fold due to the increase in society's welfare and the reduction in crime.

2. Literature Review

The unemployment rate is simply the number of unemployed persons divided by the total labor force¹ (Williamson). Those that are unemployed are defined by the government as people who do not have a job, have actively looked for work in the prior four weeks², and are currently available for work. However, the BLS calculates this number by taking a representative sample of 60,000 households. It is noted on the U.S Department of Labor website that there is a 90% chance of the recorded figures falling within about 230,000 of a number that would be obtained if they had used a census of the entire population, but the possible error due to sampling is not large enough to create an abnormal distortion in the data. The data is seasonally adjusted to account for changes in unemployment due to seasonal fluctuations.

In a study by Chamlin and Cochran published in *The Journal of Quantitative Criminology*, the researchers identify problems with the BLS measurement of the unemployment rate as being 'conventional,' rather than 'conceptual'. Their belief is that the measurement fails to take into account discouraged workers; those who believe there is no work available for their field, do not possess the skills to be employed, or who have

¹ The labor force is the total amount of unemployed plus the employed

² Actively seeking work includes: Contacting an employer directly or having a job interview; A public or private employment agency; Friends or relatives; A school or university employment center; Sending out resumes or filling out applications; Placing or answering advertisements; Checking union or professional registers; or some other means of active job search.

simply just given up altogether. The representation of unemployed in the BLS number is an inaccurate representation of the people who would be inclined to engage in criminal activity (Becker) due to conclusions drawn on Rational Choice Theory (Chamlin and Cochran). The theory simply attempts to explain behavior of rational individuals and their ability to assess benefits and costs of any situation before acting, in this case, criminally. Therefore, an individual who believes that crime is a more attractive way of obtaining income instead of working, will choose to commit the crime.

In “Crime and Economic Incentives,” Machin and Meghir use data collected from England to find the extent to which declining labor market opportunities, specifically the wage rate, contribute to crime. Using the lower 25th percentile wage rate instead of the unemployment rate leaves the possible notion that crime and work may coexist. Taken into account were both the size of the police force and conviction rates, as well as average sentence lengths. The lowest percentile wage and the less likely probability that one would be convicted were both found statistically significant in their model. From a policy standpoint, Machin and Meghir suggest that bettering the education system to provide increased economic incentives to work rather than to resort to criminal activity is the best prevention.

Published in the *American Economic Review*, Burdett, Lagos and Wright focused on the relationship between crime, unemployment and inequality, suggesting that two identical neighborhoods could have different crime rates simply due to a variance in the wage rate. Basing their study on the efficiency wage theory, which states that firms pay their workers a higher wage to decrease “shirking,” or poor performance and lack of effort, they propose that firms may pay a higher wage to deter crime, which causes

turnover if these individuals are caught. The mathematics of this article is highly complex but the conclusion is that crime leads to wage dispersion and multiple equilibria while efficiency wage theory will only lead to one equilibrium.

Criminology professors Gary Kleck and Theodore Chiricos from Florida State University conducted a study of 67 counties in Florida for one given year in attempt to develop other's ideas about the "intervening mechanisms" that identify the link between crime and unemployment. Both the opportunity for crime and criminal motivation are said to be important factors in this relationship. Opportunity for crime simply means that as the economy is in a recession, there would be a lack of available targets in the environment for criminals, thus reducing the crime rate in times of high unemployment. If unemployment had this affect on crime it would seem that the crime rates actually *decreased* in times of high unemployment. Past studies referenced in their work, including one by Cantor and Land, stress the importance for clearly defining these factors but give no definite way on how to determine 'system activity' to measure the opportunity for crime. For example, in a recessionary period fewer people would buy luxury cars. The lack of luxury cars would decrease the opportunity for crime since fewer attractive cars are available for theft. The rate of poverty is used to measure criminal motivation in Kleck and Chiricos's study, but those in the past have included the population density ratio in a community of a single parent household or one in which a female was in the labor force but had a husband present. Variables tested in their study included 'ages 15 to 24,' 'percent of female headed households' as an indicator of family disruption, the 'proportion of African- Americans' in the community and 'urban areas.' A dummy variable was used for counties in South Florida due to their distinctly unique

demographic characteristics. Their findings showed that motivation and opportunity were ruled out as explanations for the results of the data possibly because of the fact that the data was limited to one year and one state.

Bausman and Goe took an alternate approach to the unemployment- crime relationship by using employment volatility instead of the unemployment rate in a study of 683 major metropolitan counties published in *The American Journal of Economics and Sociology*. Focusing on the manufacturing industry, they reason that the problem with using the unemployment rate is that it is “not an indicator of the extent to which residents lack access to stable employment.” Instead, they examined the gross effect of job loss so as not to account for the possibility of the creation of new jobs in unrelated sectors in which individuals may not be easily able to transfer to. As with almost all other prior research they indicate that it is property crimes³ that have the highest incidence with an increase of unemployment. Robbery is also included in this particular study because it leads to the acquisition of personal property, as noted by Grant and Martinez in prior research. Included in their test were the ‘percentage receiving public assistance,’ ‘incomes below poverty threshold,’ and a ‘generalized property crime rate potential,’ as proposed by researchers Land and Deane, to attribute for the spreading of crime to other nearby places. A point to note in their research is an anomaly in their findings. Auto theft decreased with a loss of non-manufacturing jobs. This may support the logic of opportunity theory as suitable targets for criminal activity decline in periods of economic recession.

³ Property crimes include burglary, larceny-theft, and motor-vehicle theft as stated by the FBI’s Uniform Crime Reports.

Nobel Laureate Gary S. Becker from the University of Chicago explores the idea that the motivation for criminal behavior is rational and by no means any different than anyone else's decision making. He explains the importance of studying crime with respect to unemployment because when faced with choices, criminals will weigh the benefits of illegal activity versus working, subject to the likelihood and severity of punishment, as well as financial benefits of the outcome. What he considers to be the determinants of crime include expenditures on police forces, punishment, employment opportunities, schooling, and training programs. Individuals willing to take risks, he claims, will refrain from criminal activity if they have a higher uncertainty of punishment with an increase in the probability of conviction. He suggests, humorously, that optimal behavior by 'the State' would include consideration of 'punishing innocent persons.'

Steven D. Levitt, author of the best-selling book "*Freakonomics*," provides insight on the reasons for the decline in crime in his article, "Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that Do Not." He agrees with Becker that improvements in labor market opportunities have a relevant impact on crime when there is a financial incentive to commit. He adds that a "one percent increase in the unemployment rate accounts for a one percent increase in property crimes," indicating the common use of a double-log regression in past research. However, he does impress upon the reader that increased spending on police and prisons through state and local government budgets is where the economy has the most impact on crime. What appears to have no effect on the decline in crime is the threat of execution and increased gun control laws. He shows in his research that the four factors that do

explain the decline are the increase in police force, in prison populations, in the crack epidemic, and the controversial legalization of abortion.

In a second paper by Levitt, “Alternative Strategies for Identifying the Link Between Unemployment and Crime,” he explains the importance of age on the unemployment-crime relationship and the fact that panel data delivers relatively consistent results on the impact of crime. There is also a note that crime may actually cause unemployment in some cases, given the difficulty of an individual obtaining a job with a criminal record or businesses being less interested in opening in high-crime areas. He also notes that the use of panel data, which has multiple observations over time for a geographic area is important due to the variation it contains both cross-sectionally and with time series. There are multiple observations per year which help account for any variation within the country that may have taken place. National time series data alone would be unhelpful since there is said to be local variation in the crime rate itself.

We can gather from these respective studies that there is significance in the relationship between unemployment and property crimes as well as increased expenditures on crime, and education. Violent crimes seem to have no statistical significance on the unemployment rate but public expenditures in all cases play an important role in explaining the decrease in unemployment. There is also a tradeoff between the lowest 25th percentile wage and crime, presuming that crime and unemployment can co-exist (Machin). Empirical methods all vary in each study conducted, from county to major metropolitan level, to the individual motivational theory on crime. It may be impossible to account for every contributing factor because there are

so many variables that may cause confounding effects and when coupled together can produce significantly different results.

3. Methods

Microsoft Excel was used to run four separate multiple regression analyses to find out if crime is affected by unemployment. The sample of states chosen for this study were randomly selected and include sixteen states⁴ representing 54% of the U.S population. The unemployment level is an annual average shown as a percentage of the labor force. The total property crime rate is measured as a percentage of the population and include larceny, burglary, and motor-vehicle theft. Crimes in violent nature are not included due to previous research showing that little or no correlation exists between these types of crimes and the level of unemployment. Only crimes where a tangible benefit is obtained are significant. The variables used in the regression include per capita income for each state, the percentage of males age 18-24, percentage of the population black and white, and the total amount of federal funding for elementary and secondary education, including the amounts spent on Bush's "No Child Left Behind" Act of 2001.

The study was only conducted over the years 2001-2003 due to the limited amount of historical data available. Demographic data can only be obtained from one reliable source from 2001 to 2003, and in order to keep the data consistent, the use of one source for data was chosen. The year 2005 and the state of Louisiana were not included in the sample due to Hurricane Katrina and the inflated unemployment level. Crimes in 2001 do not reflect anything related to the events of September 11th that would create a

⁴ Arkansas, California, Florida, Kansas, Kentucky, Michigan, Missouri, Nevada, New Jersey, New York, Ohio, Oregon, Rhode Island, South Carolina, Texas, and Virginia.

distortion in the data. Data was obtained from the Bureau of Justice Statistics, Bureau of Labor Statistics, the U.S Department of Education, and the U.S Census Bureau's annual American Community Survey.

4. Results

Five different regressions were run to show the impact of each variable on four different types of crimes, as well as those in total. The equation rendered was:

$$\%Crime = a + \beta\%UE + \beta\%White + \beta\%Black + \beta\%Age + \beta\$PerCap + \beta\$Exp$$

The variables chosen explain approximately 40% of the model for total property crimes, which implies that a majority of influential variables were not accounted for.

| <i>Regression Statistics</i> | |
|------------------------------|-------------|
| Multiple R | 0.630980462 |
| R Square | 0.398136344 |
| Adjusted R Square | 0.292810204 |
| Standard Error | 0.006316566 |
| Observations | 48 |

Testing for a 95% confidence interval at a two-tailed t- table test statistic, (-2.04227 to 2.04227), the variables statistically significant in the total property crimes regression included per capita income and federal funding on elementary and post secondary education. This means that a 1% increase in income decreases the total

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|-----------------|---------------------|-----------------------|---------------|----------------|
| Intercept | 0.11711322 | 0.043087843 | 2.71801078 | 0.00966174 |
| Population | 1.4684E-09 | 1.40316E-09 | 1.04646478 | 0.30162912 |
| UE RATE | 0.00207199 | 0.001136294 | 1.82346139 | 0.07571238 |
| Males Age 18-24 | -1.533E-08 | 2.84539E-08 | 0.53889712 | 0.5929447 |
| Income | -1.384E-06 | 3.99797E-07 | -3.4623103 | 0.00128939 |
| White | -0.0005527 | 0.000358099 | 1.54339265 | 0.1306109 |
| Black | -0.0004669 | 0.000321186 | 1.45362974 | 0.15385045 |
| Total Funding | -8.114E-12 | 3.91965E-12 | 2.07009585 | 0.04494246 |

property crime rate by 1.38%. For every 1% increase in total federal funding, the crime rate drops by a more substantial 8.1%.

Consistent with what one would assume in this model is the fact that unemployment does, in fact, increase with a respective increase in the crime rate. While this is not statistically significant, it may show that unemployment is not necessarily the direct cause of increasing crime in the nation, as one could gather, but rather there are many variables that come between, identifying the link in the relationship. Population also has a positive relationship with the crime rate, as one would expect, but is not statistically significant in the model.

What is not consistent with previous findings is the fact that an increase in the amount of males ages 18-24 actually decreases the crime rate, whereas other studies show that this is the target group of individuals most likely to influence the crime rate (Levitt).

No assumptions can be made about various race categories and their relationship with crime due to the fact that neither are significant. However, just because race changes by only a fraction of a percentage does not imply one should disregard the findings altogether. Perhaps running a regression with percentage Hispanic and another racial category would provide more insight on the relationship.

For the regression run on burglary rates, 59% of the variability was explained by the model. In addition to the variables found significant in the total property crime rates, population was also significant. A 1% increase in population increased the amount of burglaries by 7.65%, while an increase in the white population by almost a tenth of a percent decreased the crime rate. Per capita income reduced burglary related incidents by

almost 5%. It would be interesting to determine whether previous studies on race and income shed any light on the relationship with crimes such as these.

The results for larceny and motor vehicle thefts relate similarly to those of total crimes, however income proves to be the only significant factor in explaining the unemployment-crime relationship for both and in each case, less than 40% of the model is explained by these variables.

Overall, the relationships between the variables and the total crime rate are essentially the same as what prior research predicts them to be. The results are not as statistically significant as hoped but do support both Becker and Levitt's research that expenditures have the biggest impact on crime.

5. Discussion

Limitations to the research include the fact that many data sets are not available for matching consecutive years. Partial data extends beyond 2003 and other data sets stop at 2001, therefore the number of observations are limited. A study done on a larger time frame may provide for more consistent results, as Levitt suggests.

The year 2001 had to be included in the analysis due to the issue with matching data sets. It is possible that the events following 911, and the shock to the economy had an influence since unemployment rates increased and continued to rise for most states in the study. It is possible that a larger time range to account for more variation of the business cycle would be helpful.

However, increasing the number of states would seem to reverse the chances that the results would reflect a more accurate measure of the relationship between crime and

unemployment, simply due to the fact that as prior research points out, there is a local variation within the crime rate.

Metropolitan area analysis may be more pertinent for this study as different cities can end up with extremely different crime rates, as noted in the research done by Burdett et. al. Finding some variable to define labor market conditions would be extremely useful if this study was to be conducted in a set of major cities, as a means to differentiate the groups and take into account characteristics unique to each location.

Data concerning education and the drop out rates, which would be an important extraneous variable, is only available every few years. These observations would most likely be significant in the analysis because of the effect education has on unemployment, as well as crime. These variables, and others pertaining to education would most likely address the issue of confounding in the model as well. Consistent throughout the research is the fact that the negative relationship between educational funding at the federal level and crime remains significant. It would be interesting to see the effects each state's expenditure has on the results.

The fact that the measure of unemployment and the annual population are simply estimates could also have an impact on the results. Discouraged workers are not taken into account for the BLS calculations of unemployment which can be assumed to alter the results significantly. Simply running the regression against an estimate of discouraged workers is not enough though to accurately identify this relationship. Also, the number of crimes are only those actually reported for each state. Other incidents may have occurred but were not reported due to an unwillingness to do so on behalf of the victim or some other extenuating circumstance.

Future research should focus more on analyzing the impact of unemployment in various metropolitan areas, in one state, or as a comparison between different income strata. Crime, as we know, varies between locations and it is important to understand why it does and how it can be reduced. Just saying that funding on education reduces the crime rate is not enough. Results of long run benefits of education such as salaries, higher education jobs and labor market conditions, may provide better information to come to a more stable conclusion. Also, including expenditures on crime may be beneficial to see the type of expenditures having the most impact. The fact that both crime and unemployment can coexist and are influenced by many different variables, some like motivation which is difficult to measure, makes it extremely difficult to presume a causal relationship.

6. Conclusions

Both crime and unemployment are factors that when left uncontrolled can produce devastating problems for individuals that ultimately affect the entire economy. Developing this relationship between crime and unemployment and emphasizing its importance is necessary for subsequent policy formation. However, it is more important to identify the linking factors in this relationship than it is to define the relationship itself. If the unemployment rate has a large influence on the number of crimes committed in a certain geographic location, policy should be structured in increasing educational expenditures on local schools and tightening the educational requirements to reduce drop outs in order to prevent future unemployment. If property crimes, rather than violent crimes are the biggest crimes affected by unemployment, funding should be distributed to seek out the root of the cause before it has time to develop. Money spent on police

expenditures seeking to prevent these crimes may or may not be as significantly influential as expenditures on education. Turning a blind eye to unemployment, on the other hand, will cause social costs that are both direct and implicit in nature, due to the increased costs of dealing with criminals and their actions. It is beneficial for policy makers to understand this relationship in order to promote maximum welfare as well as provide federal and state expenditures to reduce unemployment.

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*For Excel spreadsheet including data documentation and additional summary statistics, please refer to the CD enclosed.