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Revisiting Property Crime and Economic Conditions: An exploratory study to identify predictive indicators beyond unemployment rates

Key words: Property crime, economy, economic indicators, unemployment

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Abstract

*Numerous researchers have questioned the use of the unemployment rate as an explanatory factor in econometric studies which address the relationship between the economy and crime. This paper presents the findings from an exploratory study which sought to test the efficacy of the unemployment rate for predicting reported property crime rates and to identify other economic indicators which may also prove to be useful for predicting crimes with economic under tones or motives. Specifically, larceny-theft, burglary, motor vehicle theft, robbery, fraud and embezzlement. Given the exploratory nature of the study seven stepwise regressions were computed with unemployment only emerging as a significant predictor for one of the criminal offenses. Findings identified other useful economic variables, such as average wage and salary disbursements, supplemental security income receipts, the consumer price index and per capita personal income which should be considered in lieu of unemployment rates.*

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## Introduction/Literature Review

The current state of the national economy has once again sparked intense interest, among members of the media, the general public as well as criminal justice practitioners and policy makers, surrounding the relationship between economic decline and crime. Anecdotal evidence and media accounts which depict rising crime rates have either directly or implicitly inferred a causal association between the current recession and increases in property crimes such as burglary, larceny and motor vehicle theft. A review of Becker's (1968) seminal work suggests that as the economy spirals downward individuals are more likely to commit income producing criminal violations as the benefits of perpetration outweigh or surpass the associated costs of apprehension. Isaac Ehrlich (1973) suggests that individuals will engage in theft and other property related crimes as a result of increasing relative deprivation while Cantor and Land (1985) argue that a weaker economy will increase criminal motivation.

As Gould, Weinberg and Mustard (2002) argue the vast majority of the early literature focused on individual decision making and individual rational choice models involving personal cost/benefit assessments. Indeed, microeconomic theories dominated the crime-economy debate until the mid to late 1970s when both criminologists and economists began to employ advanced quantitative techniques on a macroeconomic level using aggregate crime and economic time series or trend data (See Long and Witte, 1981, for an excellent summary of these studies including data sources and analytical techniques).

Typically these macroeconomic analyses assess the effect of the unemployment rate, on property crimes such as burglary, larceny and motor vehicle theft and sometimes robbery, either directly or indirectly through a proxy measure for general economic health, stability or prosperity. These studies have also varied significantly in terms of the level of data analysis, employing either national, state or local time series data, the statistical methods employed which range from simple correlation tests to more commonly either regression or time-series ARIMA models and the type and time frames of the data such as cross sectional or panel designs with historical numbers and rates spanning fifteen to thirty years or more in the past.

Neustrom, Jannieson, Manual and Granlin (1988) studied a region in southern Louisiana, which had experienced considerable economic fluctuation over a time period of 54 months and found a statistically significant correlation between unemployment rates and both larceny and assault. Conversely, Young (1993) found no significant correlation between the percentage of unemployed men and women in 20 different nations and their respective national theft rates.

Employing a more robust and statistically powerful analysis Allen (1996) reported significant positive associations between the unemployment rate and robbery and burglary but found no statistical significance between unemployment and motor vehicle theft while Oster and Agell (2007) did find statistical significance between unemployment and auto theft. Ralston (1999) also found significant positive effects for both cyclical and frictional unemployment on reported property crime rates in the United States between 1958 to 1995.

More recent studies reveal the complex interaction between unemployment, property crime and other intervening factors that may affect or mitigate a straightforward linear relationship between unemployment and criminal activity. Raphael and Winter-Ebmer (2001) insightfully note that many studies do not control for crime fundamentals that may vary with the business cycle. The authors found a significant positive relationship with a one percent rise in the unemployment rate being equated with a one to four percent rise in property crime rates. Controlling for per capita alcohol consumption, which has been shown to be pro-cyclical, intensifies this relationship with unemployment exerting an even stronger and sizable effect on both property and violent crime rates.

Testing Cantor and Land's (1985) criminal motivation and opportunity hypotheses Arvanites and Defina (2006) utilized a fixed effects panel model with cross-sectional state level data. The authors found clear support for an inverse relationship between an improving economy and the index crimes of burglary, larceny-theft, motor vehicle theft and robbery even when controlling for population effects, such as age and racial composition, as well as prior and lagged incarceration rates.

In summary, the findings of the extant literature on the relationship between unemployment rates and crime can best be described as mixed, inconclusive and varied depending upon the type of data used and the statistical methods for analyzing the data. Freeman (1995) suggests that the link between unemployment and crime rates is generally found to be weaker in studies using a time-series model versus cross-sectional designs. Indeed the major finding of Chiricos' (1987) meta-analysis of 63 unemployment-crime research studies persists today. The study author reported that

fewer than half of these 63 studies revealed a statistically significant relationship between aggregate crime and unemployment rates. More recently Gould, Weinberg and Mustard (2002) report the same general inconclusive finding but do note that a moderate or small positive, yet statistically significant, association exists between unemployment and crime.

Commenting on identified substantive and methodological issues surrounding the use of the unemployment rate to predict or account for changes in crime rates numerous scholars have become skeptical and have critically questioned the validity of this measure. Seals and Nunley (2007) critically argue that the unemployment rate is not an ideal indicator or predictor variable as the measure does not include people who have completely ceased to actively seek out gainful employment. Consequently, this underreporting may produce an underestimation bias in many research studies (Arvanites and Defina (2006). Gould, Weinberg and Mustard (2002) offer further criticism arguing that the unemployment rate may be too short-term and cyclical to accurately predict crime patterns over an extended period. Recently, in a national radio broadcast criminologist Richard Rosenfeld encouraged researchers to include better and more varied indicators, such as the Gross National Product or the consumer confidence index, in their work and statistical models (National Public Radio, 2009).

Confronted with studies reporting either moderate or inconclusive effects as well as these methodological concerns many scholars have included other economic factors in their research on the relationship between crime and economic conditions either in lieu of, or jointly with, the unemployment rate.

Examining the effects of inflation on crime Allen (1996) found that inflation significantly affected both burglary and robbery rates and notes that anti-inflation policies

may have a substantial impact on lowering property crime. Seals and Nunley (2007) extended work in this area by assessing the effects of inflation on property crime using a structural time-series design. Study findings indicated statistical significance between inflation rates and all property crimes with both moving in a positive direction; i.e. when inflation increases property crimes increase as well and vice-versa. The authors further conclude that the unemployment rate does not provide consistent predictive power. Devine, Sheley and Smith (1988) theorize that as inflation reduces the real income wage of unskilled laborers a concurrent rise in the demand for cheaper and often illegal goods occurs which rewards and encourages property crime. Testing this theory within a larger study on Canadian crime patterns Bunge, Johnson and Balde (2005) found that inflation, and not unemployment, was a better predictor of breaking and entering and motor vehicle theft. A one percentage point gain in the inflation rate contributed to an increase of .021 percent in the motor vehicle theft rate and an increase of .019 percent in breaking and entering rates.

Fewer studies have used employee wages or a derived proxy for earnings to assess the crime-economy relationship, Grogger (1997) found a significant relationship between rising youth crime and declining wages while Gould, Weinberg and Mustard (2002) report that counties with larger declines in retail wages encountered significantly larger growth rates for both violent and property crime. Declining wages for unskilled men were posited as contributing to an 18 percent increase in robbery and increases of 13.5 percent and 7.1 percent for burglary and larceny respectively. The authors conclude that wages exerted a greater influence over recent crime trends than unemployment within their study areas. Machin and Meghir (2000) found similar effects

analyzing panel data from England and Wales for the period between 1975 and 1996. Areas with larger changes, at the bottom end of the wage distribution scale, experienced significantly faster rates of growth for property related offenses when contrasted with areas having more stable or non-declining wages among the lower end of the wage distribution scale.

Recently, additional studies have been conducted which include other non-traditional economic variables beyond unemployment, inflation and salary data. Fainzylber, Lederman and Loayza (2002) found a significant relationship between increasing Gross Domestic Product (GDP) per capita and a fall in robbery rates. Jones and Kutun (2004) found higher interest rates were statistically and significantly associated with theft and knife robbery rates. Rosenfeld and Fornango (2007) regressed the effects of consumer sentiment on robbery and property crimes and found statistically significant negative effects with improving consumer sentiment, or perceptions about the economy, contributing to 20 to 50 percent of the decline in reported robbery and property crime rates during the 1990s. Oh (2005) reports a significant relationship between a decline in the manufacturing to service employment ratio and increased larceny and burglary rates. Increasing crime rates have also been attributable to increases in the number of mortgage foreclosures (United States Conference of Mayors, 2008).

This paper presents the findings from an exploratory study following Rosenfeld's (National Public Radio, 2009) call for analyzing the effects of other and more varied economic indicators, beyond unemployment, on crime rates; specifically burglary, larceny-theft, motor vehicle theft, robbery as well as fraud and embezzlement. As Long and Witte (1981) cogently note research on the relationship between crime and the



economy should be broadened to include numerous measures of economic viability and to determine how these factors interact with and possibly affect change on each different type of criminal activity as opposed to simply analyzing the cumulative effects on aggregate property and/or violent crime rates.

### Methods

#### Data Sources

Crime and economic data for North Carolina, covering a time period of 1977 to 2007, were compiled and analyzed for this study. Both crime and the state's economy experienced significant fluctuations both upward and downward during this 30 year period. Crime data were obtained from the Federal Bureau of Investigation's annual Crime in the United States publication or Uniform Crime Reports. The number of reported offenses, per 100,000 or crime rates, were obtained for the Part 1 index property crimes of burglary, larceny-theft and motor vehicle theft. Robbery, which is a Part 1 violent crime, rates were also included in the study as this offense is typically assumed to have economic undertones. Since fraud and embezzlement are not Part 1 or index offenses the number of reported incidents are not collected and compiled as they are for the other offenses listed above. Consequently, arrest rates were used for these two variables.

The economic indicators or predictor variables, of wage and salary disbursements, supplemental security income, per capita disposable income, the gross domestic state product, food stamp distribution, income maintenance benefits and the average earnings per job were obtained from the United States Department of Commerce, National Bureau

of Economic Analysis. Unemployment and inflation rates as well as consumer price index data were obtained from the United States Department of Labor, Bureau of Labor Statistics. Retail sales data were collected from the North Carolina Department of Revenue. Where applicable variables were converted to per capita rates and inflation adjusted to 2007 dollars.

#### Data Analysis

All data were analyzed using the latest version of the Statistical Package for the Social Sciences (SPSS). Since this study is exploratory in nature regression techniques were utilized as opposed to time series ARIMA modeling. Stepwise regression is preferred when comparing multiple models in exploratory and or predictive studies (Garson, 2009). Curve estimation procedures were employed to test for linearity which is a common assumption for regression statistical techniques.

Collinearity diagnostics were assessed to determine the best fit models for each of the stepwise regressions. Model selection was based upon tolerance levels greater than .20 and conversely variance inflation factors less than four. In addition, natural log transformations were computed for each variable in order to achieve stationarity in the time series data, to transform any non-linear distributions and to correct or normalize the data where non-normal distributions were present. Given the small sample size adjusted R<sup>2</sup> values were reported and considered when discussing the effects of the economic indicators on the specific types of criminal offenses.

## Results

Table 1 presents descriptive information for each of the economic indicators included in the study while Table 2 depicts the same information for the crime variables. The average unemployment rate for North Carolina during the study period was 5.3 percent and ranged from a low of 3.3 percent in 1999 to a trend high 9.5 percent in 1982. Inflation rates and the consumer price indices, for the Southern United States, ranged from a low of 1.3 percent in 1998 and a trend low index of 60 in 1977. Inflation adjusted supplemental security income payments did not demonstrate a high degree of variance, during the trend period, ranging from 9,752 dollars per capita in 1982 to 13, 819 dollars in 1994.

The state's gross domestic product rate experienced steady and sizable growth from 1982 to 1990, remained relatively stable until 1996 and then grew from 3.5 million to 4.3 million in 2007. Total retail sales, per capita, followed a similar trend with significant gains occurring from 1982 to 1989, pronounced stability for the next five years followed by seven straight years of unprecedented growth into the 21<sup>st</sup> century. Other significant trend deviations included a strong growth curve in the income maintenance benefits which grew fifteen, out of a possible eighteen years, since 1989.

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INSERT TABLE 1 HERE

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A descriptive analysis of the state's reported property crime rate reveals a minor growth spurt from 1977 to 1980, followed by four years of decline. Beginning in 1984 this rate grew each year until it reached the study period high of 5,316 reported offenses

per capita in 1991. Since this spike occurred the aggregate property crime rate has dropped precipitously returning to levels approximating the study period low point in the late 1970s. The largest contributor to the aggregate reported property crime rate is larceny-theft which rose slightly in the late 1970s, dropped in the early 1980s and then skyrocketed to a trend high of 3,290 reported offenses per capita in 1987.

Reported burglaries followed a similar trend with the notable exception of a rapid drop from 1987 to 1991. Since that period reported burglaries declined to the point where the 2007 rate was slightly less than the 1978 rate. Conversely, the motor vehicle theft rate did not mimic or parallel trends for the other property crime rates. The motor vehicle theft rate was a trend low of 169, per 100,000, in 1983, experienced an extreme upward tick in 1986 and doubled the 1983 rate by 1996. Robbery rates grew exponentially from a 1986 rate of 90 per capita to reach a trend high of 198 per capita in 1993. Indeed, North Carolina had one of the highest robbery rates in the country during this period.

Despite having relatively low fraud and embezzlement arrest rates throughout the entire study period a few discernable trends emerged here. Arrests for fraud spiked in 1991 and dropped each year to a trend low of less than three arrests per capita in 2007. Embezzlement arrest rates demonstrated a greater amount of fluctuation with an insignificant small rise from 1977 to 1983 followed by a huge increase in arrests through 1989. Arrest rates declined from 1989 to 1996 and then experienced another upward tick through 2001. Rates dropped the final six years of the study period.

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INSERT TABLE 2 HERE

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Seven stepwise regressions were computed in order to identify those significant economic predictors and to assess the effects of these variables on the seven different criminal offenses. As Table 3 reveals two economic indicators emerged as significant predictors or indicators for the aggregate reported property crime rate. These two variables, supplemental security income receipts ( $\beta = .94, t = 4.34, p = .00$ ) and average wage and salary disbursements ( $\beta = -.52, t = -2.42, p = .02$ ) explained 38 percent of the variance in the reported property crime rates over the course of the study period (Adjusted  $R^2 = .379, F(1, 28) = 5.86, p = .02$ ).

Disaggregating the total property crime rate into its three constituent components produced a surprising effect in that none of the economic variables exerted any influence on the reported burglary rate. Not a single economic variable survived the stepwise entrance criteria or entrance threshold ( $F \leq .05$ ). Results were more promising for the reported larceny-theft and motor vehicle theft rates.

Reported larceny-theft rates were best predicted by changes in the consumer price index ( $\beta = 1.28, t = 4.97, p = .00$ ) and once again average wage and salary disbursements ( $\beta = -.84, t = -3.25, p = .00$ ). These two economic indicators were capable of explaining nearly half of the variance or fluctuations in the reported larceny-theft rates from 1977 to 2007 (Adjusted  $R^2 = .469, F(1, 28) = 10.57, p = .00$ ). Variation in the motor vehicle theft rate was explained by the two economic indicator variables of income maintenance payments ( $\beta = .83, t = 14.0, p = .00$ ) and the state's unemployment

rate ( $\beta = -.30$ ,  $t = -5.10$ ,  $p = .00$ ). Combined these two variables were capable of explaining a significant and sizable proportion of the motor vehicle theft rates (Adjusted  $R^2 = .903$ ,  $F(1, 28) = 25.7$ ,  $p = .00$ ).

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INSERT TABLE 3 HERE

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Table 4 presents the regression results for the remaining three crime variables - reported robbery and arrests for fraud and embezzlement. Reported robbery rates were most affected by changes in the supplemental security insurance receipt rates ( $\beta = .48$ ,  $t = 3.8$ ,  $p = .00$ ) as well as the consumer price index ( $\beta = .48$ ,  $t = 3.7$ ,  $p = .00$ ). These two indicators emerged as powerful predictors capable of explaining 79 percent of the variance in reported robberies (Adjusted  $R^2 = .790$ ,  $F(1, 28) = 13.7$ ,  $p = .00$ ). Total retail sales almost entered the model but was excluded based on its variance inflation factor being greater than the researchers' specified cutoff point of four.

Average wage and salary disbursements emerged as the only significant economic predictor for fraud arrests. As disbursements increase fraud arrests decline and conversely as wage and salary disbursements decline arrests for fraud increase ( $\beta = -.74$ ,  $t = -5.93$ ,  $p = .00$ ). The average wage and salary disbursement rate was found to be capable of explaining 53 percent of the fraud arrest rate variation (Adjusted  $R^2 = .532$ ,  $F(1, 28) = 29.0$ ,  $p = .00$ ). Arrests for embezzlement were found to vary significantly with per capita personal income in a direct manner. As the average per capita personal income grows embezzlement arrests decline and vice-versa ( $\beta = .88$ ,  $t = 9.86$ ,  $p = .00$ ).

Assessing the average per capita personal income level reveals that this measure is capable of accounting for 76 percent of the variance in the embezzlement rate.

(Adjusted  $R^2 = .762$ ,  $F(1, 29) = 97.31$ ,  $p = .00$ ).

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INSERT TABLE 4 HERE

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Discussion

Study findings indicate significant relationships between supplemental security income payments on a per capita basis, average wage and salary disbursements and property crime. As supplemental security payments increase and the average wage and salary disbursements decrease property crime will rise in response to these conditions. As economic conditions worsen, or trend downward, businesses and employers may be forced to implement temporary layoff or furlough programs which would cause paycheck reductions; reductions which could increase criminal motivation among those who are already financially strapped as well as those who are directly affected to the greatest extent. This finding is consistent with Cantor and Land's (1985) criminal motivation hypothesis in which property crimes rise directly with a declining economy as more individuals may engage in property crimes as the value of a product becomes unattainable by normal purchasing means.

An increase in property crimes will also produce an increase in the quantity and quality of goods which enter the black market. Many individuals, who normally do not participate in this underground economy will now find themselves purchasing stolen goods; goods that they would normally buy above ground during economic prosperity.

It is also plausible that more individuals may be inclined to report minor property losses, to the police, in an effort to recoup costs through insurance claims; claims that they might not normally have filed during periods of economic prosperity.

The relationship between rising property crime and supplemental security income (SSI) payments may be partly explained by, or co-vary with, an increasing elderly and disabled population. As the population ages and the number of SSI recipients, as well as payment amounts, rise it is plausible that property crimes committed against the elderly and disabled will increase as they offer easy targets for perpetrators; perpetrators who assume that the elderly have cash stored in the home or will offer less resistance to robbery or larceny-theft. Further research needs to be conducted to test these assumptions and to determine if crimes against the elderly and disabled increase during periods of economic prosperity.

In addition to the aggregate property crime offenses average wage and salary disbursements also varied inversely with the reported larceny-theft rate. The consumer price index and the average wage and salary disbursement measure were found to explain nearly half of the variance in the reported rate of larcenies during the study period. As the price of goods and services rise, in conjunction with declining or diminishing salaries, more consumers may be inclined to engage in the theft of property for similar reasons as hypothesized above. While data limitations precluded a more in-depth analysis of the types of larceny-theft more research should be conducted which seeks to ascertain if particular types of larceny-theft rise or decline as a direct result of economic conditions. Specifically, more work is needed to examine shoplifting offenses and to determine how thefts from businesses and private residences vary with the economy.



Surprisingly, motor vehicle theft was the only criminal offense to be significantly associated with the unemployment rate, supporting prior findings by Oster and Agell (2007). As unemployment rises, and income maintenance benefit payments decline, motor vehicle thefts also decline. This finding is contrary to a similar study by Bunge, Johnson and Balde (2005) who found a significant and direct linear relationship between their economic indicators and motor vehicle theft. Findings from this study indicate a non-direct and mixed relationship between economic measures and motor vehicle theft. It is possible that as unemployment increases, and people lose their jobs, they are either spending more time at home or are using their vehicles more to search for employment. Either way this would remove or lessen the opportunity to steal vehicles as they are occupied and more closely monitored under these circumstances. In a similar vein, persons who receive a cut or a reduction in their supplemental financial assistance from the government, and own a vehicle, may drive less or fore go unnecessary trips in order to compensate for the reduced assistance and to use funds normally used on fuel to makeup the difference. Consequently, their vehicles are more closely monitored as well.

Reported robbery rates were best predicted by the consumer price index and the supplemental security income receipts per capita. Combined these two economic indicators accounted for 79 percent of the variance with both moving in a direct and significant manner with robbery. As prices rise more money is needed to buy the same goods and services that were previously purchased at a lower value. If people, particularly the elderly who are less likely to use credit and debit cards, carry more cash they increase their chances of being robbed. This is also true of many immigrants, who do not trust or utilize banks, and tend to carry and possess more cash both inside and

outside of the home. More research is needed to determine how robberies and economic conditions vary by age and ethnicity and to determine to what extent these robberies are occurring as home invasions.

Fraud and embezzlement were found to be significantly associated with average wage and salary disbursements and per capita personal income respectively. As average wage and salary disbursements increase so do the number of fraud arrests. As personal income grows so do arrests for embezzlement. It is hypothesized that as earning power and salaries rise so do the number of frivolous and trivial acquisitions as well as the desire to have more. Increasing capital often signals more fun money and many may be duped by get rich quick schemes, Internet and other investment scams as well as become greedy and be more tempted to acquire even more wealth through the theft of company funds and pensions. With more wealth many become less fiscally conservative and more willing to make risky purchases and investments than they would have normally done when their salaries were lower. It is also possible that many of these same individuals are living beyond their means and must commit fraud and embezzlement to support their lavish lifestyles.

One caveat should be noted here. Arrest rates are also a measure of police productivity and activity. Thus fraud and embezzlement arrests may decline during austere economic periods, not as a result of the economy itself, but as a reflection of shifting police enforcement patterns. During bad times law enforcement agencies may experience layoffs and an inability to provide compensation for overtime work.

Consequently, fraud and embezzlement investigations are assigned a lower priority in deference to managing more serious offenses.

This paper presents the findings from an exploratory study which sought to critically examine the use of the unemployment rate, and numerous other economic indicators or predictor variables, when explaining or predicting changing property crime rates. The main study finding supports the use of other economic variables or measures, beyond the use of the unemployment rate, when assessing the effects of the economy on crime. Indeed, the unemployment rate proved to be neither a sufficient nor statistically significant measure in six of the study's seven regression models. These findings add further validity to Rosenfeld's (2009) recent argument to look beyond the unemployment rate as well as support earlier criticisms on the relationship between the unemployment rate and criminal activity.

Study findings provide more support for the use of wage and salary measures with three of the seven regression models, aggregate property crime, larceny-theft and fraud arrests, including average wage and salary disbursements as a significant economic predictor. More detailed and statistically powerful work, following Gould, Weinberg and Mustard's (2002) methodology should be conducted to further explicate the relationship between wages or salaries and economic ally motivated crimes. These studies should also be conducted at both macro and micro economic levels and utilize both panel data and cross sectional research designs in an effort to test the effects of wage and salary measures across numerous jurisdictions, historical time periods and with varying data sources.

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Table 1

## Descriptive Statistics for the Economic Indicators

Indicator variable	Mean	SD	Range
Unemployment rate (percent)	5.3	1.5	3.3 - 9.5
Inflation rate (South, percent)	4.2	2.9	1.3 – 13.1
Consumer price index (South)	134.0	39.3	60.0 – 200.0
Supplemental security income receipts per capita (dollars)	11,874	1,403	9,753 – 13,819
Food stamp payments per capita (dollars)	8,426	1,648	5,817 – 10,977
Per capita personal income (dollars)	27,500	4,366	20,621 – 33,375
Per capita disposable personal income (dollars)	24,204	3,817	18,047 – 29,486
Gross state product rate (millions)	3,446.9	599.7	2,476.8 – 4,402.0
Income maintenance benefits per capita rate (dollars)	40,541	10,861	27,873 – 58,012
Total retail sales rate (dollars)	971	150	738 – 1,213
Average wage and salary disbursements (dollars)	33,264	3,012	28,864 – 38,556
Average earnings per job (dollars)	37,696	3,196	32,360 – 42,417

Table 2

## Descriptive Statistics for the Reported Crime Rates Per Capita

Offense type	Mean	SD	Range
Aggregate property crime	4,374.7	511.7	3,366.0 – 5,316.0
Burglary	1,330.8	156.4	1,145.3 – 1,720.7
Larceny-theft	2,772.8	354.1	2,030.0 – 3,290.0
Motor vehicle theft	268.7	58.9	169.3 – 340.2
Robbery	132.4	43.1	61.4 – 198.5
Fraud (arrests)	6.1	1.2	2.9 – 7.9
Embezzlement (arrests)	.2	.09	.1 – .4



Table 3

Regression Models for Reported Property Crime Rates  
Standardized Beta Coefficients

Economic Indicator	Property Crime	Larceny-theft	Burglary	Motor vehicle theft
Unemployment rate	-.220	-.450	----	-.300*
Inflation rate (South)	-.124	-.192	----	.001
Consumer price index (South)	1.090	1.283*	----	.150
Supplemental security income receipts per capita	.939*	.540	----	.163
Food stamp payments per capita	-.087	-.271	----	-.021
Per capita personal income	1.907	2.166	----	.133
Per capita disposable personal income	1.851	1.955	----	.124
Gross state product rate	2.544	2.171	----	.022
Income maintenance benefits per capita rate	.303	.129	----	.826*
Total retail sales rate	.725	.786	----	-.175
Average wage and salary disbursements	-.524*	-.839*	----	-.143
Average earnings per job	1.166	1.619	----	-.082
Adjusted R <sup>2</sup>	.379	.469	----	.903

\* p ≤ .05

Table 4

Regression Models for Reported Robbery, Fraud and Embezzlement Arrest Rates  
Standardized Beta Coefficients

Economic Indicator	Robbery	Fraud	Embezzlement
Unemployment rate	-.108	-.341	-.169
Inflation rate (South)	.128	-.383	-.183
Consumer price index (South)	.475*	.455	.032
Supplemental security income receipts per capita	.481*	.605	-.034
Food stamp payments per capita	-.014	-.248	-.233
Per capita personal income	-.340	1.241	.878*
Per capita disposable personal income	-.436	1.215	-2.956
Gross state product rate	-.507	1.887	-2.150
Income maintenance benefits per capita rate	-.495	.266	-.480
Total retail sales rate	-.723	.792	-1.144
Average wage and salary disbursements	-.577	-.740*	-.988
Average earnings per job	-.556	2.412	-1.071
Adjusted R <sup>2</sup>	.790	.532	.762

\* p ≤ .05