ECONOMIC SOURCES OF HOMICIDE: REESTIMATING THE EFFECTS OF POVERTY AND INEQUALITY*

KIRK R. WILLIAMS
Memphis State University

A tradition of research has consistently found that poverty is a major economic source of homicide. Two studies have recently presented findings that call this research tradition into question. These studies are reviewed, and it is argued that the reported results are the result of an incorrect specification of the relationship between poverty and the homicide rate. Revised estimates of the effect of poverty reported which show that it is a significant positive predictor of the homicide rate for a sample of SMSAs (N = 125) when the nonlinear form of the relationship is taken into account. That effect, however, appears to vary by the regional location of SMSAs, that is, whether they are in the South or non-South. The implications of the findings for economic and subcultural explanations of homicide are briefly discussed.

Previous macrosociological studies of criminal violence have consistently found that poverty is positively associated with the homicide rate (e.g., Loflin and Hill, 1974; Flango and Sherbenou, 1976; Parker and Smith, 1979; Smith and Parker, 1980; Parker and Loflin, 1983). The primary implication of these studies—that poverty is a major economic source of homicide—has been corroborated by micro analyses indicating that homicide offenders are disproportionately drawn from the ranks of the poor (e.g., Wolfgang, 1958; Swigert and Farrell, 1976). In light of this research tradition the findings reported recently by Blau and Blau (1982) and Messner (1982) are quite perplexing. Neither study found poverty to be positively associated with the homicide rate.

In fact, Messner reported that poverty has a significant negative effect on this rate. Given the weight of previous evidence to the contrary, these findings should be critically examined.

This research note presents revised estimates of the equations specified by the Blau and Messner, using 1970 data for the 125 largest SMSAs in the United States. The results of the analysis are consistent with the earlier research in that poverty has the expected positive effect on the homicide rate. It is shown that the Blau and Messner did not find this effect because they failed to detect a nonlinear pattern in the relationship between poverty and the homicide rate.

A REVIEW OF THE STUDIES

Messner designed his research to focus on the violence-inducing consequences of poverty. After making the distinction between "absolute deprivation," defined as the proportion of a population below a fixed standard of well-being, and "relative deprivation," defined as the relative dispersion of income within a population, Messner (1982:105) addressed the following question: Is the homicide rate "better predicted by measures of poverty corresponding to the relative approach or by measures reflecting the subsistence approach?" He used

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* Direct all correspondence to: Kirk R. Williams, Department of Sociology and Social Work, Memphis State University, Memphis, TN 38152.

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1 The Blau also examined the impact of inequality and poverty on other types of criminal violence (i.e., assault, rape, robbery, and a composite index of violent crime). The focus here is exclusively on the nature of their analysis as it pertains to homicide. The reason for the restricted focus is that there is a strong research tradition, as noted in the text, which bears on this particular offense, and the controversy character of their study centers on the difference between their findings and those reported in earlier studies.
1970 census data drawn from *Characteristics of the Population (Vol. 1)* and the *County and City Data Book* and 1970 homicide data taken from the *Uniform Crime Reports* for a sample of 204 SMSAs. The homicide rate was measured conventionally, that is, the total number of homicides known to the police per 100,000 population. The specific measure of relative deprivation used was the Gini index of family income concentration, while absolute deprivation was measured as the percent of families below the United States Social Security Administration's poverty line.

Messner initially estimated an equation, using Ordinary Least Squares, which included the relative and absolute deprivation measures plus five control variables: regional location (i.e., a dummy variable indicating Southern/non-Southern SMSAs), proportion of the population that is black, population size, population per square mile as a measure of density, and proportion of the population 15 to 29 years-of-age. The two population measures (size and density) and the proportion 15 to 29 were included in the analysis, according to Messner (1982:107), "because of their frequent appearance in earlier studies." A special comment should be made, however, about regional location and the proportion black.

These two variables were used by Messner and the Blaus as measures of "cultural" variables. The primary objective of these studies was surely to estimate the effect of income inequality and poverty on the homicide rate. Nonetheless, testing alternative "cultural" explanations of homicide, particularly the subculture-of-violence thesis (e.g., Wolfgang and Ferracuti, 1967), was another acknowledged objective. This issue has become central to the more recent research conducted by Messner (1983). In any case, the investigators drew from Hackney (1969) and Gazul (1971), who maintained that the consistently high rates of homicide in the South can be attributed to a regional culture of lethal violence. The dummy variable identifying the regional location of SMSAs, therefore, was used to measure the violent subcultural orientation assumed to characterize the South. The high rate of homicide among blacks has also been attributed to a violent subcultural orientation (e.g., Curtis, 1975; Silberman, 1980). So it was assumed that the greater the relative size of the black population, the greater the prevalence of this orientation, and thus the greater the homicide rate.

Messner's analysis yielded no significant effect of income inequality, but a surprising negative effect of poverty on the homicide rate was found. Regional location and the proportion black, however, consistently had significant positive effects on the homicide rate. These findings held regardless of whether the absolute and relative deprivation measures were considered separately in two different equations or added to the same equation. And they held when Messner substituted the proportion of families below an annual income of $1,000 for his original measure of absolute deprivation. He concluded that the findings call for a serious reconsideration of the linkages between poverty, inequality, and homicide.

While Messner treated the comparative effects of poverty and inequality as an empirical question, the Blaus derived an hypothesis from a macrosociological theory of social structure (Blau, 1977), asserting that inequality is the primary economic source of criminal violence. Their argument emphasizes the socially disorganizing consequences of inequality, especially racial economic inequality in a democratic society. Such inequality, they contend, will increase the likelihood of disrupted social relations, thus increasing the likelihood of "non-realistic conflict" (e.g., violent crime like homicide). They (1982:118-119) argue in more detail that:

> inborn inequalities that distribute political rights and economic opportunity on the basis of the group into which a person is born are feudal survivals condemned as illegitimate in a democracy. . . . The hypothesis inferred is that socioeconomic inequalities that are associated with ascribed positions, thereby consolidating and reinforcing ethnic and class differences, engender pervasive conflict in a democracy.

The Blaus tested their argument using 1970 data for SMSAs with a population of more than 250,000 (N = 125). The source of their data was the one-in-a-hundred public use sample for counties of the United States Bureau of the Census. Individual-level data were taken from this source and aggregated by SMSA. The Blaus obtained data pertaining to criminal violence from the 1971 issue of the *Uniform Crime Reports*. The homicide rate was logarithmically transformed (base 10) due to the skewed distribution of this variable. As in Messner's study, overall income inequality was measured by the Gini index of family income concentration, and the proportion in poverty was based on the poverty index developed by the United States Social Security Administration. The Blaus also used regional location (i.e., the South/non-South dichotomy) and racial composition (i.e., proportion black) to evaluate subcultural explanations of violence. Racial inequality was measured as the difference in average socioeconomic status (Duncan's SEI scores) between nonwhites and whites. The
Blaus' measure of social disorganization was the proportion of people 14 years or older who are divorced or separated. They used population size (log base 10) on the assumption that as size increases, the opportunity for interpersonal contact and conflict increases—and thus the greater the likelihood of criminal violence.

The Blaus organized their analysis in a series of four sets of regressions. They initially addressed the issue of "whether urban poverty or economic inequality is the major source of criminal violence" (Blau and Blau, 1982:121). Accordingly, they regressed the homicide rate on the Gini index and the proportion in poverty. The results showed that overall income inequality, not poverty, had a significantly positive effect on the homicide rate. They concluded that the zero-order correlation between poverty and the homicide rate is spurious, and inequality rather than poverty "...provides the most fertile soil for criminal violence" (Blau and Blau, 1982:122). The Blaus went on to estimate other equations, addressing such issues as whether regional and racial effects could be accounted for by socioeconomic inequalities. But on the basis of these initial results, they excluded the poverty measure from subsequent analysis.

In short, the studies conducted by Messner and the Blaus found no support for the argument that poverty leads to homicide. The two studies are divergent, however, when it comes to the argument that inequality leads to homicide. Messner found no support for this position either and advocated a renewed effort to evaluate the empirical validity of the subculture-of-violence thesis (Messner, 1983). Conversely, the Blaus' findings supported the inequality argument, and they claimed inequality "explains away" most evidence suggesting subcultural influences. The analysis reported below suggests that these disparate findings are the consequences of specification error. When the non-linear relationship between poverty and the homicide rate is taken into account, empirical results are obtained which corroborate the earlier research bearing on the subject.

**DATA AND VARIABLES**

The units of analysis of this research are 125 SMSAs of 250,000 population or more in 1970. This is in keeping with the Blaus' study, although Messner selected his 204 SMSAs without regard to size. The choice of the most appropriate units of analysis for this type of research is certainly debatable. One can argue, as does Messner, that states are arbitrary statistical aggregations, and SMSAs approximate more meaningful social communities.

The argument may apply as well to cities in that they are also delimited by arbitrary political boundaries. Furthermore, as Gibbs and Erickson (1976) have shown, cities having boundaries which do not encompass most of the SMSA population tend to have "inflated" official crime rates. The reason is that non-city residents of the SMSA who visit the city and become involved in crime as victims or offenders contribute the frequencies used in the numerator of the city crime rate, but they are excluded from the population base (i.e., the denominator) of that rate. Those same cities may have greater concentrations of poverty inside the city limits and wealth outside those limits. Therefore, if this pattern is true, the size of cities relative to their respective SMSAs may bias estimated effects of poverty and inequality on the homicide rate when cities are the units of analysis.

A counter-argument is that the inequality-leads-to-homicide hypothesis, in particular, rests on the assumption that residents are aware of the income differences among members of their community, evaluate those differences as unjust, and respond violently. The assumption is plausible if the social context in which this evaluative process occurs is well defined; that is, individuals regularly interact with each other and thus gain knowledge about income differences, with such knowledge influencing the nature of subsequent interactions. But SMSAs are rather large heterogeneous units. Regular patterns of interpersonal interaction between people who live in central cities and residents of the suburbs are unlikely. Therefore, it is difficult to imagine how SMSA residents can become aware of the level of income inequality within the SMSA, and given the generally higher rate of homicide in central cities compared to the surrounding area, it is difficult to understand how SMSA-wide inequality, even assuming it is known by residents, would result in homicides concentrated in the central city.

Since the primary objective of the present study is to examine critically the findings reported by Messner and the Blaus (i.e., replication), no attempt is made to address the issue of which units of analysis are most appropriate for this line of research. The issue should be kept in mind, however, when reviewing the findings, and future research should attempt to resolve the matter.

Following Messner and the Blaus, homicide data were obtained from the Uniform Crime Reports (Federal Bureau of Investigation, 1971), with the rate calculated as the number of murders and non-negligent manslaughter per 100,000 population. Income inequality was measured by the Gini index of family income
concentration, taken from Volume I of Characteristics of the Population (Bureau of the Census, 1973b). The percent of the population aged 14 or older who are separated or divorced, referred to henceforth as percent divorced, was obtained from the State and Metropolitan Area Data Book, 1979 (Bureau of the Census, 1980). Data for all other independent variables were drawn from the County and City Data Book (Bureau of the Census, 1973a and 1978), including total SMSA population, population per square mile (density), the percent of the population who are black, the South/non-South dichotomy pertaining to regional location of SMSAs, racial income inequality, and the percent of families below the United States Social Security Administration's poverty line (percent poor). The proportion aged 15 to 29 was excluded from the analysis because the Blaus did not use this variable and Messner (1982) found that it had no significant effect on the homicide rate. More generally, the findings regarding the effect of age on the homicide rate, irrespective of the age categories used, have been at best inconsistent (e.g., Loftin and Hill, 1974; Smith and Parker, 1980; Messner, 1983; Parker and Loftin, 1983). Density and population size were logarithmically transformed (base 10) because their distributions are highly skewed.

Racial inequality was measured as the difference between median income for white families and that for black families. This measure differs from the one used by the Blaus. Since they began with individual-level data, they were able to calculate individual SEI scores and derive average socioeconomic status values for white and nonwhite families by SMSA. The Blaus' measure, as noted above, was the difference between these average values. That measure was not used here because data in the County and City Data Book are presented in aggregate form and thus preclude the necessary calculations. Furthermore, while the Blaus' argument is well taken that differences in socioeconomic status capture more about the nature of racial inequality than income differences, they (1982:121) noted that empirical results using an income-based measure paralleled those using the differences in socioeconomic status measure. Consequently, it was assumed that the conclusions drawn from the present study would not be significantly influenced by the choice of racial inequality measures, if such a choice were possible.³

³ A correlation matrix, means, and standard deviations of all variables, and a list of the SMSAs are available on request from the author.

ANALYSIS AND FINDINGS

The analysis was organized in the following manner. The initial step was to estimate the full equations specified by the Blaus and Messner holding as closely as possible to their procedures. Again, the two notable differences are the measure of racial inequality used here, as compared to the Blaus', and Messner's use of a larger sample of SMSAs. It also should be noted that the racial inequality measure was logarithmically transformed (base 10), unlike the Blaus' measure, because an inspection of a bivariate scattergram revealed a nonlinear pattern in the relationship between this measure and the homicide rate.³ In support of this observation, the logged variable consistently provided more efficient estimates of the effect of racial inequality than the variable expressed in original units of measurement (i.e., dollars).

The second step in the analysis was to reestimate the equations correcting for the nonlinear relationships between the homicide rate and two additional variables, percent black and percent poor. In his more recent research, Messner (1983) has shown that the homicide rate is an inverted U-shaped function of the percent black. As he (1983:1003) describes it, "the homicide rate rises along with the percent black to a certain point, levels off, and then actually declines." He estimates this relationship using a polynomial regression model in which a squared term for the percent black was added to the equation. That term was significantly negative, while the "simple term" (i.e., the percent black) was significantly positive, and those results are consistent with the function Messner specified. He also noted that a logarithmic model (i.e., percent black logarithmically transformed) was estimated, but it did not provide as good a fit to the data as did the polynomial model. On the basis of these findings, a scattergram of the relationship between the percent black and the homicide rate was examined here, and it revealed the same pattern as described by Messner. Therefore, percent black and a squared term for percent black were used in reestimating the Blaus' and Messner's equations.

More central to the present analysis is the nonlinear relationship between percent poor and the homicide rate. The scattering of SMSAs for this relationship is not unlike that for the relationship between percent black and the homicide rate. Yet there is one important difference. Only a few SMSAs (e.g., El Paso
and Huntington-Ashland) are situated so as to pull the slope of the relationship in a significant negative direction (i.e., especially high on the percent poor but relatively low on the homicide rate). Accordingly, logarithmic models consistently yielded more efficient parameter estimates than polynomial models in this case. Hence, logarithmic transformations (base 10) of the homicide rate and the percent poor were used in reestimating the equations. In keeping with the Blaus and Messner, Ordinary Least Squares was the estimation technique.

The results of the analysis are shown in Table 1. The initial estimates of the equations specified by the Blaus and Messner are presented in column 1 of that table. Consider first the Blaus’ equation. The substantive conclusions to be drawn from those coefficients are identical to those drawn by the Blaus. The Gini index of family income concentration, racial inequality, the percent divorced or separated, and the percent black have significant positive effects on the homicide rate. In fact, the magnitudes of the coefficients are remarkably similar to those reported by the Blaus, adjusting for the fact that they used the proportion divorced and the proportion black, while percentages are used here. Recall that the Blaus did not include the percent poor in their full equation since it did not have a significant effect on the homicide rate independent of the Gini index in the preliminary stage of their analysis. An estimate of the effect of the percent poor, therefore, is not listed in column 1 of Table 1.

Consider the initial parameter estimates for Messner’s equation also presented in column 1 of Table 1. To maintain consistency with Messner’s analysis, the homicide rate and the percent poor were expressed in their original units of measurement, not logarithms, in this initial estimation. The pattern of the results, once again, is quite similar to that reported by Messner. The two “subcultural variables,” the South/non-South dummy and the percent black, as well as population size have significant positive effects on the homicide rate, while density has a significant negative effect. More importantly, although the effect of the percent poor is not significant, as was the case in Messner’s research, it is negative in direction; and the estimate of the effect of the Gini index fails to attain statistical significance. In sum, the initial parameter estimates of the equations specified by the Blaus and Messner, by-and-large, reproduce their findings.

The revised parameter estimates correcting for the nonlinearity discussed above are shown in column 3 of Table 1. Observe that in both equations the effect of the percent black is significantly negative, while the effect of the squared term is significantly positive, supporting Messner’s contention that the homicide rate is an inverted U-shaped function of this

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* Log base 10.
* p \( < .05 \).
variable. The most striking finding, however, is that the log of the percent poor has a significant positive effect on the log of the homicide rate in the Blau's equation and Messner's equation. This finding suggests that if those investigators had more accurately specified the relationship, the Blau would not have excluded poverty from their analysis, and Messner would not have reported a surprising negative effect of poverty on the homicide rate.

Other important differences exist between these findings and those in the initial estimation of the Blau's and Messner's equations. First, the estimated effect of the Gini index in the Blau's equation becomes statistically insignificant, and the magnitude of the coefficient is reduced substantially. This suggests that since the log of the percent poor and the Gini index are highly correlated (r = .778), the effect of poverty is absorbed by the inequality measure when the measure of poverty is excluded from the analysis. Second, the coefficient representing the effect of regional location (South/ non-South) on the homicide rate in Messner's equation is also reduced substantially in magnitude and is no longer statistically significant. This finding is consistent with earlier studies which have attempted to "explain away" the effect of regional location with economic variables (e.g., Loftin and Hill, 1974; Smith and Parker, 1980). It also suggests the possibility that there are important interactions among regional location, poverty, and the homicide rate. Further evidence of this possibility was found in the scattergram of the relationship between the percent poor and the homicide rate. As implied above, the homicide rate appears to increase as the percent in poverty increases, but it does so at a decreasing rate.

There is a preponderance of SMSAs in the Southern region of the United States at the point in which the slope begins to taper off. The implication is that the relationship between the percent poor and the homicide rate is different among Southern, as compared to non-Southern SMSAs.

CONCLUSION

The findings presented above contradict a major conclusion drawn by Messner and the Blau—that poverty is not an important economic source of homicide. Specifically, the measure of poverty, the percent of families below the poverty line, had a significant positive effect on the homicide rate for the total sample of SMSAs when the nonlinear form of the relationship was taken into account. This finding is consistent with the earlier studies which reported evidence in support of the argument that poverty leads to homicide. Yet it appears that the effect of poverty varies by region; that is, the homicide rate may increase rapidly with increases in poverty among non-Southern SMSAs, but the rate at which that increase occurs appears to decline among SMSAs in the South. Why this is so remains a question for future research.

In addressing this question investigators should consider alternative measures of poverty. Income-based measures such as the one used here may not completely capture the nature and extent of deprivation suffered by those at the lower end of a continuum of economic well-being. To the extent that people have incomes below the poverty line but receive other forms of subsistence, for example, transfer payments through welfare programs, the aggravations of income poverty may be somewhat lessened. Additionally, whether available means of subsistence can provide people with an adequate standard of living is relative to the economic context in which they reside. To illustrate, individuals in poverty who live in communities with high overall levels of affluence and a high cost of living may suffer more than poor people in communities having a lower cost of living and a lower average level of economic well-being. Such issues should be dealt with in future research on poverty and the homicide rate, and it may turn out that the regional differences concerning the influence of poverty on that rate are due to the relativity of the income poverty measure.

The present study has two primary substantive implications for the Blau's theoretical argument. First, the findings reaffirm their assertion that racial economic inequality is a major source of criminal violence in the United States. Racial disparities in median family income consistently had a significant positive effect on the homicide rate. Nonetheless, the

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4 It should be noted that using the same sample of SMSAs, Messner (1983) more recently has found that "structural poverty," an index originally constructed by Loftin and Hill (1974), has a significant positive effect on the homicide rate, but the effect of inequality again is insignificant. He has not explained why the findings are so divergent, depending upon whether the structural poverty index or the percent below the poverty line is used. One hypothesis, given the findings reported in Table 1, is that the relationship between the structural poverty index and the homicide rate is linear, while that between percent in poverty and the homicide rate is not.

5 In a separate analysis, not shown here, an interaction term (i.e., the product of the regional dummy and the percent poor) was added to the Blau and Blau and Messner equations. That term was statistically significant at the .05 level, indicating that the poverty coefficients for Southern and non-Southern SMSAs are significantly different.
second implication is that poverty, in addition to racial inequality, also provides ‘fertile soil for criminal violence.’ Correcting for the nonlinear relationship between poverty and the homicide rate yielded a significantly positive parameter estimate and reduced the effect of overall income inequality (i.e., the Gini index) to statistical insignificance. Furthermore, given the Blau’s theoretical argument, a significant direct effect of overall income inequality on the homicide rate should not be expected. Its effect should be indirect through some indicator of social disorganization (e.g., the percent divorced), which did in fact have a significant positive effect on the homicide rate.

As for the ‘subculture of violence revisited’ (Messner, 1982, 1983), the most important finding was that a relatively large black population was consistently associated with high homicide rates, and that association was not accounted for by the economic variables considered. While that finding could represent the impact of a violent subcultural orientation, it may also be due to unmeasured economic variables (e.g., the percent of the black population in poverty). So any conclusions about the subculture-of-violence thesis at this point would be premature. Messner’s (1983) recommendation that innovative methods of measuring subcultural orientations through “cultural artifacts” such as art, literature, or music is surely in order. But investigators should also recognize that more research is needed on how structural factors like class relations and labor market conditions perpetuate high levels of poverty and thus criminal violence.

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