THE EFFECTS OF THE POLICE ON CRIME:
A SECOND LOOK

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This paper is a replication of the analysis undertaken in 1978 by James Q. Wilson and Barbara Boland. We use time-series data for nine cities for portions of the period 1948-1978 to test the effect of aggressive policing on the robbery rate. Contrary to Wilson and Boland, we do not find moving violations to be a useful indicator of police aggressiveness. We also conclude that using the arrest/offense ratio introduces artifactual negative correlations. When one examines police expenditures, the size of the police force, the arrest rate, and the concentration of the police on robbery arrests, one generally finds positive relationships rather than negative ones. We interpret these results to indicate that a focus on the problem of robbery by the police leads the police both to make more arrests and to record more offenses, thus producing the positive correlations we found.

I. INTRODUCTION

When people perceive crime to be a serious problem, the most commonly proposed solution is that the police crack down. However, to those who study these matters seriously, it is not such a simple matter. The last two decades have witnessed a large rise in reported crime and a substantial increase in public expenditures devoted to the police. These expenditures have been used not only to hire additional police officers but also to recruit more qualified persons, to improve their training, and to supply them with better equipment— especially by providing them more firepower and by giving them sophisticated communications devices. New patterns of organization have been tried out and old ones reexamined. Yet, it is not clear that "more" or "better" policing deters crime.

Investigations of the relationship between expenditures, policing, and the crime rate have produced conflicting results. Jones (1974) reported that the relationship between police expenditures and the crime rate was weak at best. Similarly, Wellford (1974) found that the size of police forces and the level of police expenditures was only weakly related to clearance rates. Using two-stage least square equations rather than ordinary least squares, Swimmer (1974) reported a relationship in the opposite direction. Skogan (1976: 283) presents some evidence that police departments with high per capita manpower make more robbery arrests per offense than do departments with fewer officers per capita. Finally, results from the Kansas City Preventive Patrol Experiment (Kelling, 1974) suggest that more intensive patrolling does not produce a lower rate of criminal offenses.

Three years ago, James Q. Wilson and Barbara Boland published the most sophisticated analysis of this problem to date. Utilizing simultaneous equations and data centering around 1975, they examined the incidence of robbery in 35 large American cities. They concluded that "police resources and police activity independently affect the robbery rate . . ."(1978: 367). Nevertheless, Wilson and Boland state that "more might be learned by looking at a few cities over time. . . . If it could be shown, however, that in several cities the arrest rate changed over a five- or ten-year period and that this was associated with changes in the crime rate (controlling for population change), then we could be more confident both that the correlation between crime and arrests is real and that we can change the former by changing the latter" (1978: 382).

This paper addresses that task. Like Wilson and Boland, we also examine robbery rates. However, we do so with some misgivings. Robbery is a much feared crime because it often involves some measure of violence and is usually perpetrated by a stranger. But it is not a crime that attracts much public attention. In large cities at least, it is so common that it is rarely featured by the media. Instead, the media focus on murders and other sensational crimes. Consequently, it is difficult to isolate the point at which robbery becomes a serious enough problem to attract special attention from city officials and from the police in particular. On the other hand, if we think of robbery as symptomatic of the general crime problem (which it may well be), then we may be focusing on the symptom of the illness but not measuring the indicators of the cure. For example, a crack-down on crime in general may focus

on gambling or on burglary without affecting the robbery rate. It may change one element of the crime problem without having an impact on the problem as a whole.

We must remember that the police engage in a myriad of tasks not directly associated with fighting crime. As Bittner (1974) suggests, police in modern society are jacks of all trades. Skogan (1980), in a recent analysis of police dispatches in Evanston, Illinois, reported that only a small proportion of dispatches involved possible crimes. Most concerned service requests and automobile accident reports. Consequently, increases in a police budget may easily be absorbed by other police activities and may have little or no impact on the crime rate.

II.   RESEARCH DESIGN

This paper is part of a larger project examining governmental responses to crime since 1948, in ten cities of the United States. In the following pages, we shall look at nine of the ten cities for which we have the necessary data to examine this problem. The cities we examine here are Atlanta, Boston, Houston, Minneapolis, Newark, Oakland, Philadelphia, Phoenix, and San Jose. All but Houston were also among the cities examined by Wilson and Boland. Our data generally cover the 31-year span from 1948 to 1978, though in some instances the data are available only for a portion of that period. Many of the indicators we use are duplicates of those used by Wilson and Boland. However, we were unable to replicate some and have added others which were not available to them. Our data come from generally published sources and from unpublished agency records collected for us by our field staff. A more detailed specification of the indicators and data sources is reported in the appendix to this paper.

Our analysis necessarily proceeds along somewhat different lines than Wilson and Boland's did. Whereas they looked for the simultaneous occurrence of some indication of police aggressiveness and a lower level of robberies, we are looking for a sequential relationship between police aggressiveness and a decline in the robbery rate. They were concerned with some demographic characteristics of their cities in order to avoid a spurious relationship. That is of less concern to us because we shall be looking only at one city at a time (at least in the beginning of our analysis) over succeeding years. The one- and two-year lags we use are too short for demographic traits to have changed substantially.

We examine a number of indicators of governmental responses to crime in general and to robbery in particular. For example, a city may have expanded its police force or, what is almost the same thing, it may have increased expenditures for police, either in real dollars or as a proportion of the city's budget. In addition, the police may have become more aggressive. Wilson and Boland suggest that the number of moving violations can be used as an indicator of such aggressiveness. Another measure might be an increase in the number of arrests for serious offenses. Finally, we move to measures of police aggressiveness that are more directly related to robbery incidents. We examine the number of adult and juvenile robbery arrests, both in terms of their frequency for each police officer and in terms of their number relative to all other arrests for major crimes made by the police.

III. ANALYSIS

Measures of Police Aggressiveness

The number of moving violations do not appear in our data to be a good indicator of the type of police aggressiveness needed to deter robbery. Figure 1 charts the changes in the robbery rate and the number of arrests for moving violations in

Figure 1:   Changes in Robbery Rate and Moving Violations in Minneapolis, 1949-1977
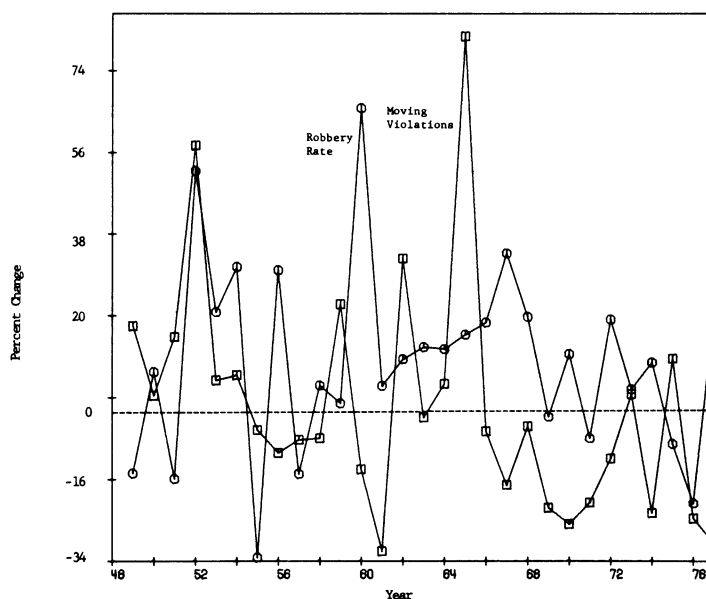
Minneapolis; the other cities have similar relationships. As Figure 1 shows, moving violations and robbery arrests sometimes follow the same path, but more often they move in opposite directions. In addition, moving violations fluctuate much more from year to year than does the robbery rate. Table 1 reports separately for each of the nine cities the results of a

Table 1.   Correlations* Between Moving Violations and Robbery Arrests

City (Years)	Moving Violations & Robbery Arrests Same Year	Moving Violations (T1) Robbery Arrests (T2)
Atlanta (1965-78)	−.36	−.50
Boston (1958-78)	−.06	−.06
Houston (1966-78)	NA**	NA
Minneapolis (1948-78)	−.41	−.36
Newark (1955-78)	.12	.31
Oakland (1969-78)	.44	−.15
Philadelphia (1957-78)	−.38	−.34
Phoenix (1956-78)	.82	.70
San Jose (1965-78)	.47	.60

* These correlations have not been corrected for autocorrelation. Such a correction would reduce the correlation coefficients, which strengthens rather than weakens the argument made in this article.
** NA indicates data were not available.

correlation analysis of the most direct indicator of police activity regarding robberies—the number of robbery arrests—with the number of moving violations. Column 1 of the table reports the correlation coefficient between robbery arrests and moving violations in the same year; the second column shows the relation between moving violations in one year and robbery arrests in the next. The relationships differ considerably from city to city. In Boston the two measures are related only to a negligible degree. In Atlanta, Minneapolis, and Philadelphia the relationship is modest and inverse; in Oakland, it is modest but direct; and in Phoenix it is substantial and direct. While the time spans differed from city to city, the length of time is not systematically related to the relationship discovered. All we can say is that the relationship between moving violations and robbery arrests—whether considered for the same year or whether lagged by one year—varies greatly from city to city. That substantial variation leads us to conclude that the number of moving violations is not a good indicator of the type of police aggressiveness that might be related to the apprehension of robbers and the deterrence of robbery.

There are good reasons for this disparity. Campaigns to crack down on errant drivers are responses to different

pressures than are campaigns to make the sidewalks safe for peaceable citizens. Former Atlanta Police Chief Herbert T. Jenkins (1977), for instance, takes note of the rise of superhighways and the increasing number of automobiles as well as specific accidents to explain changes in traffic enforcement patterns. In addition, moving violations also sometimes have the substantial side effect of producing revenues for the city treasury from the fines imposed on violators; robbery arrests never have that effect. Consequently, some departments allocate considerable police resources to traffic enforcement so that city coffers can be filled with fines rather than tax dollars. Further, there are special incentives for police to issue traffic tickets. A patrolman quoted by Gardiner (1968: 156) reflects this when he says: "Out here on the road, nobody bothers me. . . . So long as I hand in my tickets at the end of the day, I can pretty much do what I please." Therefore, we do not believe that moving violations are a useful indicator of generalized police aggressiveness.

A second measure that Wilson and Boland rely upon is the arrest/offense ratio. They report a strongly inverse relationship between the robbery rate and the robbery arrest/offense ratio. Like them, we find the arrest/offense ratio to be strongly related to the robbery rate, and the relation is an inverse one in all cities examined except Minneapolis. However, we believe that this strong negative relationship should not be interpreted to mean that where many arrests for robbery are made relative to the number of robberies, the robbery rate declines. Rather, we think that almost all of this relationship is artifactual, the result of using a variable—number of robberies—that is prone to considerable measurement error as the denominator of the ratio on one side of the equation and as the numerator on the other side. The relationship Wilson and Boland posit is of the form:

$$\text{robberies/population} = a + b(\text{arrests/robberies}).$$

According to some statisticians (e.g., Uslaner, 1976; Fuguitt and Lieberson, 1974; Schuessler, 1974; Logan, 1977), having the same term in the numerator on the left-hand side of the equation and in the denominator on the right-hand side produces a strong tendency to show a negative relationship. More recently, Long (1980) has developed an argument that the mere presence of both variables does not lead to such a bias but that measurement error in the common term does. Table 2 displays some of the evidence under the first critique. Column 1 shows the correlation between the two ratios Wilson and Boland used,

Table 2. Correlation* Between Robbery Rate and Arrest-Offense Ratio and Its Components

City (Years)	Correlation Between Robbery Rates and Arrest-Offense Ratio	Correlation Between Common Components of Robbery Rate and Arrest-Offense Ratio**	Correlation Between Arrest/Offense Ratio (T1) and Robbery Rate (T2)	Correlation Between Robbery Rate (T1) and Arrest/Offense Ratio (T2)
Atlanta (1965-78)	-.91	-.87	-.93	-.87
Boston (1958-78)	-.82	-.62	-.83	-.80
Houston (1966-78)	-.87	-.72	-.69	-.35
Minneapolis (1948-78)	.21	.37	.14	.26
Newark (1955-78)	-.48	-.86	-.55	-.26
Oakland (1969-78)	-.75	-.73	-.60	-.44
Philadelphia (1957-78)	-.64	-.51	-.72	-.52
Phoenix (1956-78)	-.77	-.88	-.73	-.69
San Jose (1965-70)	-.90	-.95	-.84	-.91

* These correlations have not been corrected for autocorrelation. Such a correction would reduce the correlation coefficients but would not substantially change the differences between the correlations in one column and another.

** The numbers in this column are referred to in the text as the expected correlation.

and the second column shows the relationship among the common components using a technique suggested by Schuessler (1974: 384-388). Note that the relationship between the common components is almost as high as between the ratios, and in some instances higher. If the second critique by Long is correct, we need only point to the many reservations ritually cited by users of crime statistics concerning the errors in reported crime rates. They suffer because of under-reporting by citizens and because of errors in recording by the police.

A further test of the relationship suggested by Wilson and Boland is to reverse the lag between the two variables. If higher robbery arrests lead to lower robbery offense rates, then the inverse should not be true. The last two columns of Table 2 display the evidence for this test. The third column shows the relationships between last year's arrest/offense ratio and this year's robbery rate. Column four shows the relationship between last year's robbery rate and this year's arrest/offense ratio. The relationships for the hypothesized lag and the reverse lag are almost the same, suggesting that both measures are being driven by a common (and perhaps artifactual) factor or that they are in almost simultaneous interaction with each other. These findings suggest that we cannot conclude that more robbery arrests lead to fewer robbery offenses.

Robbery Rates and Police Activities

It is no surprise that robbery rates increased markedly over the 31 years we have examined. This is true not only for the nine cities we examine in this paper but for all cities in the United States. The rise of the robbery rate in our nine cities is charted in Figure 2. What is somewhat surprising is that the robbery rate rose in approximately the same way, and at about the same times, for the nine cities. Thus we are dealing with a common phenomenon in each of the nine cities we are examining.

One governmental response of cities has been to increase expenditures for the police as a way of coping with rising crime and increasing citizen concern with it. In each of our cities, per capita expenditures for the police increased substantially over the 31-year period even when standardized in 1967 dollars.

Figure 2: Robbery Rate by City, 1948-1978
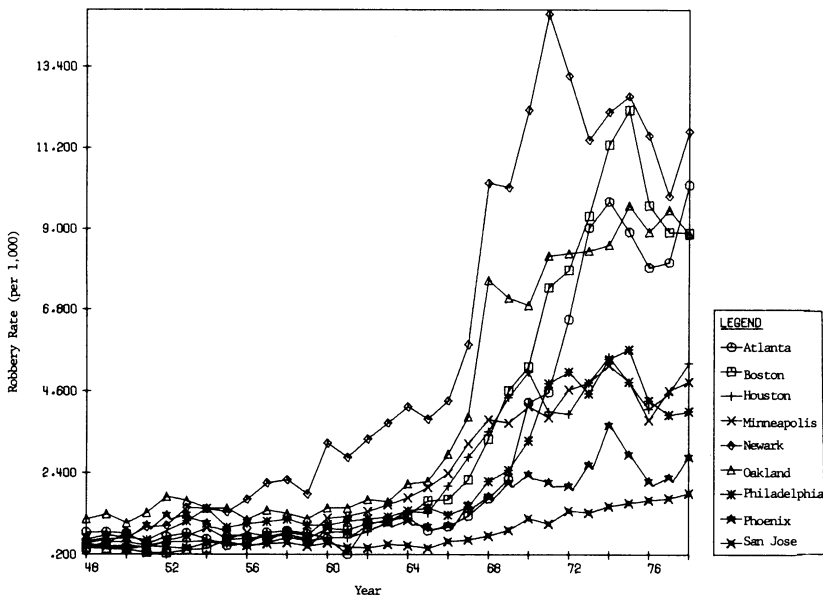
However, as Table 3 clearly indicates, the increased expenditures did not generally result in fewer reported robberies. Larger police expenditures, both in the same year and in the previous year, are by contrast strongly and directly

Table 3.   Correlations* Between Robbery Rates and Police Expenditures in 1967 Dollars

City (1948-78)	Robbery Rate and Police Expenditures Same Year	Robbery Rate (T2) and Police Expenditures (T1)
Atlanta	.87	.79
Boston	.86	.81
Houston	.48	.49
Minneapolis	.80	.78
Newark	.76	.69
Oakland	.75	.69
Philadelphia	.80	.78
Phoenix	.75	.74
San Jose	.89	.91

* These correlations have not been corrected for autocorrelation. Such a correction would reduce the correlation coefficients, but they would remain substantial.

related to higher robbery rates in each of the nine cities examined. Thus it is more likely that increased expenditures led more to increased citizen reporting and police recording of robberies than to deterrence of them.

As robbery rates rose, robbery arrests also increased in every city except Oakland. In Oakland there was an inverse relationship between the robbery rate and robbery arrests, but this did not reflect a deterrent effect of police activity. Rather in most years in Oakland, as robbery arrests decreased, the robbery rate increased. Table 4 shows the correlations between robbery rates and robbery arrests both for the same year and for the arrest data lagged by one year. Both lagged and unlagged correlations are strong and positive (except in Oakland), and the relationship flows in both directions. As the number of arrests increase, so do robbery rates; last year's

Table 4.   Correlations* Between Robbery Rates
and Robbery Arrests

City (Years)	Robbery Rate and Robbery Arrests Same Year	Robbery Rate (T2) Robbery Arrests (T1)	Robbery Rate (T1) Robbery Arrests (T2)
Atlanta (1965-78)	.82	.85	.68
Boston (1958-78)	.98	.97	.96
Houston (1966-78)	.88	.70	.81
Minneapolis (1948-78)	.97	.95	.97
Newark (1955-78)	.96	.90	.98
Oakland (1969-78)	.34	−.37	−.26
Philadelphia (1957-78)	.98	.92	.94
Phoenix (1956-78)	.76	.73	.71
San Jose (1965-78)	.96	.96	.95

* These correlations have not been corrected for autocorrelation. The Durbin-Watson test indicates little autocorrelation, and such a correction would not change the correlations substantially.

higher arrests are not reflected in lower robbery rates for this year but rather are followed by still higher robbery rates. Figure 3 illustrates this relationship for Minneapolis; in most of the other cities the two lines are similar. Moreover, as Figure 4 shows, the productivity of police officers in terms of the number of robbery arrests per police officer generally remained stable or increased slightly in these nine cities over time, although there were year-to-year fluctuations.

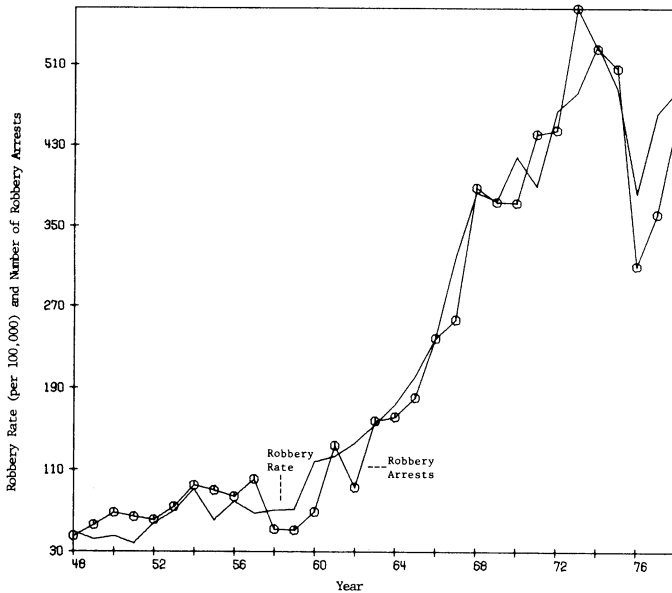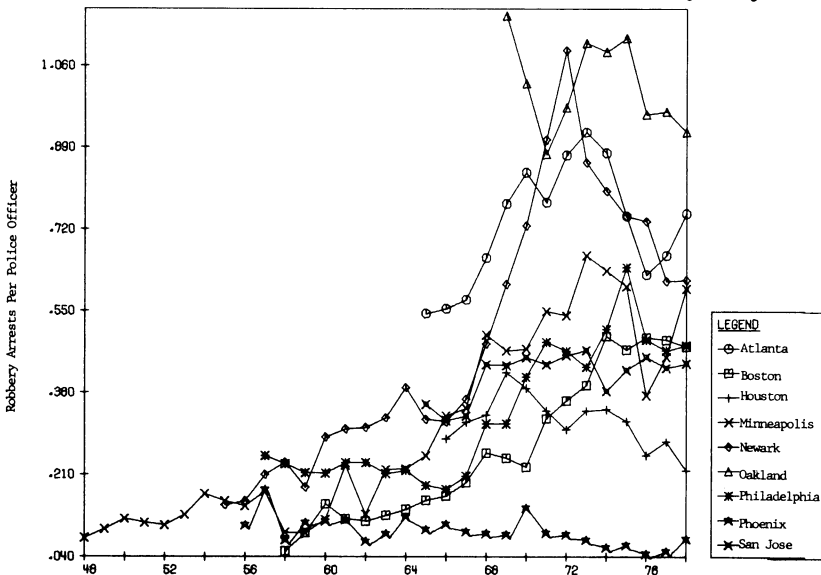Figure 3:   Minneapolis Robbery Rate and Robbery Arrests, 1948-1978

Figure 4:   Robbery Arrests Per Police Officer by City

Over the 31-year period, the police departments' focus on robberies also increased in these cities. Not only did the number of arrests increase, but arrests for robbery also constituted a larger portion of all arrests for Part I crimes. For instance, in Minneapolis this proportion ranged between 2.5 percent and 10 percent, with the higher percentages generally

occuring during the later years of the period. In Philadelphia, there were similar fluctuations, with the high being 24 percent in 1975. Most arrests, of course, in all nine cities were for theft, which is also the most frequently reported offense. Table 5 shows the relationship between this focus on robbery arrests and the robbery rate both for the same year and for the focus on robberies lagged by one year. In six of our cities the relationship is strong and direct. In these cities, as the police devote more attention to robbery arrests, they also record more robbery offenses. In Houston the relationship between the focus on robberies and the robbery rate is weak, while in Phoenix and Oakland the relationship is moderately to strongly negative. In the last two cities, our data show that this inverse relationship was not produced by increases in the focus on robberies and associated decreases in the robbery rate. Rather, the opposite occurred. Decreases in the focus on robberies were associated with increases in the robbery rate.

Table 5. Correlations* Between Focus on Robbery**
and Robbery Rate

City (Years)	Focus on Robbery & Robbery Rate Same Year	Focus on Robbery (T1) and Robbery Rate (T2)
Atlanta (1965-78)	.94	.92
Boston (1958-78)	.78	.81
Houston (1966-78)	−.02	.22
Minneapolis (1948-78)	.89	.84
Newark (1955-78)	.93	.84
Oakland (1969-78)	−.52	−.71
Philadelphia (1957-78)	.97	.92
Phoenix (1956-78)	−.54	−.56
San Jose (1965-78)	.60	.60

  * These correlations have not been corrected for autocorrelation. The Durbin-Watson test indicates little autocorrelation, and such a correction would not change the correlations substantially.
 ** Focus on robbery is the number of robbery arrests as a proportion of all Part I arrests.

IV.   CONCLUSION

Our analysis of the effects of policing suggests a considerably more complex relationship between policing and the crime rate than Wilson and Boland present. Our analysis implies that in some cities police activity actually increases the recorded robbery rate. Such a relationship occurs in six of our nine cities, but since this is not a random sample, we cannot generalize to all cities in the United States. However, what

appears to be happening is that as police become more concerned with robberies, that concern may induce citizens to report more robberies to the the police and lead the police to record more offenses as robberies. We have no direct evidence that this has occurred, but it is consistent with the data presented here. It is important to note that this does not mean that police concentration on robbery creates more crime; it only suggests that more crime is recorded because of increased police activity. A different pattern emerges for two of our cities, Oakland and Phoenix, for which we have no explanation.

We feel we have strong evidence against the use of moving violations as an indicator of police aggressiveness. In addition, we believe one should not infer from the strong negative relationship between the robbery rate and the arrest/offense ratio that police aggressiveness deters robberies. Thus our examination of these data lead us to reject the findings of Wilson and Boland.

Our analysis is certainly not the last word on the matter. For instance, we do not take into account the changing character of robbery during the period under examination. In 1948, one quarter of all reported robbery offenses were commercial, and only five percent were residential. By 1978, commercial robberies had declined to 14 percent, while residential robberies had increased to 11 percent. Over the same period, street robberies decreased in proportion to all others, according to the Uniform Crime Reports. These changing characteristics suggest changing opportunities for arrests and for deterrent activity by the police. Our data also do not take into account the changing proportions of armed robberies and robberies with guns.

Further, robbery—complex as it is—constitutes only a small part of the city's crime problem. If we had more precise data about police activities that targeted such crimes as street muggings or downtown burglaries, we might find evidence that aggressive policing deters or displaces criminal activity. All we wish to show here is that the findings of Wilson and Boland appear incorrect. We need to look further before we announce that aggressive policing deters crime.

APPENDIX A

Measures and Sources

ARRESTS: Number of arrests as reported in city police department reports or unpublished department statistics.

MOVING VIOLATIONS: Reported in city police department annual reports or unpublished department statistics.

POLICE OFFICERS: Number of sworn officers as published in UCR.

POLICE EXPENDITURES: Reported in Table 5, U.S. Census Bureau, Compendium of City Government Finances. These expenditures were then standardized by the national cost-of-living index based on 1967=100.

ROBBERY RATE: Number of robberies as reported in UCR divided by population estimates. Population is estimated for intercensal years 1948-49, 1951-59, 1961-69, 1971-74, and 1976-78 using a log-linear estimation procedure. The census estimate was used for 1975.

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