Crime and Victimization in the Three Largest Metropolitan Areas, 1980-98

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Introduction

For more than three decades, the Nation has had two national indicators of crime: the Uniform Crime Reporting (UCR) program and the National Crime Victimization Survey (NCVS). The UCR program contains information that is voluntarily provided by police departments and forwarded to the FBI. The NCVS gathers information from a nationally representative sample of persons age 12 or older to produce estimates of crime that are independent of the recording practices of criminal justice systems. Data from the two programs are routinely used together to provide a more complete assessment of crime in the United States.1

Annual estimates of the number of crimes derived from NCVS data have often been higher than the annual counts in the UCR. There are several reasons why this may occur. Most importantly, the NCVS data include crimes that are not reported to the police.2 According to recent estimates, approximately 51% of violent victimizations and 64% of property victimizations are not reported to the police. In addition, NCVS counts may be higher if police departments do not record all of the incidents that come to their attention or do not forward the reports to the national UCR program. Indeed, increased knowledge about crimes not reported to the police and assessments of the reliability of police data were two important reasons for the development of the crime survey in the early 1970's.

For some types of crimes in the NCVS and the UCR, it is possible to reconcile apparent discrepancies in annual estimates by taking into account differences in the coverage of both data series and adjusting the NCVS counts to include only those incidents said to have been reported to the police. When such adjustments are made, levels and trends in burglary, robbery, and motor vehicle theft appear similar in the NCVS and UCR. On the other hand, UCR and NCVS levels and trends in aggravated assault and rape continue to exhibit discrepancies after these kinds of adjustments are made. Remaining differences in levels or trends in aggravated assault and rape may reflect broader changes concerning the public's willingness to report crime to the police, the ways in which police departments record crime, the quality of victimization survey data, or other factors. It is clear that the differences in the methodologies of the UCR and NCVS programs must be considered when assessing both levels and trends of crime in the Nation.

When State and local governments are interested in assessing levels or trends in crime in their own areas, they typically rely solely on police data because victimization survey data are rarely available for places other than the Nation as a whole. The collection of reliable crime survey data is costly and most State and local governments have not had the resources to conduct their own victimization surveys, especially on an annual basis. Knowing that crime may not be reported to the police or fully recorded, many wonder whether police-based estimates for local areas provide an accurate foundation on which to assess levels or short- or long-term trends in crime. In addition, many wonder whether conclusions drawn from national police and victim survey data also apply to their local areas.

To examine how police records compare to victimization survey estimates for places other than the Nation as a...
whole, the Bureau of Justice Statistics (BJS) and the U.S. Census Bureau have developed special subsets of NCVS data that are capable of providing survey-based estimates of crime for the largest metropolitan areas in the country. This report compares NCVS and police estimates of burglary, robbery, and aggravated assault for the country’s three largest metropolitan areas — New York, Chicago, and Los Angeles — for 1980 through 1998. The features of the NCVS sample limit the UCR-NCVS comparisons to the core counties that comprise each of these metropolitan areas (described below). These comparisons can be used to inform the public about the levels and trends in criminal victimization in these three areas. They also provide information about the correspondence between police and victim survey data throughout the 1980’s and 1990’s for the New York, Chicago, and Los Angeles areas.

Characteristics of the data

NCVS estimates

The NCVS, and its predecessor, the National Crime Survey (NCS), are household-based surveys designed to gather information about victimization directly from the public. A random sample of U.S. households is generated using a multistage stratified sampling procedure. The result is a representative sample of households and persons ages 12 or older living in households.\(^3\) The Census Bureau develops the sample and administers the survey for BJS.

The sampling strategy for the NCVS is developed explicitly to provide national estimates of criminal victimization. Generally speaking, the sample design is capable of providing local area estimates of crime only for certain places. Heavily populated metropolitan areas constitute unique self-representing portions of the sample; as a result, it is possible to use the data from the largest of those areas to form reliable survey-based estimates of crime for those places.\(^4\)

Two important limitations of the NCVS metropolitan area data should be noted. First, the boundaries of metropolitan areas often change due to population shifts and development patterns. To ensure that metropolitan area victimization rates remain comparable over time, it is necessary to restrict the geographic boundaries of the areas to the core counties that remained continuously part of each metropolitan area from 1980 through 1998. For the New York core county area, the sample includes residents from Bronx, Kings, New York, Queens, Richmond, Putnam, Rockland, and Westchester Counties.\(^5\) For the Chicago core county

\(^3\)Persons not living in households, such as homeless, institutionalized or incarcerated persons, are not included in the sample design.

\(^4\)The NCVS sample is generated in two stages. During the first stage, primary sampling units (PSU’s) are designated to reflect metropolitan areas, counties, and groups of counties. Larger PSU’s (reflecting metropolitan areas) are termed self-representing (SR) and are automatically included in the sample. Smaller PSU’s (non-self-representing or NSR PSU’s) are grouped together in similar strata based on known Census geographic and demographic characteristics. From the NSR PSU’s, sample PSU’s are selected by probability proportionate to population size.

area, residents are selected from the city and Cook, DuPage, and McHenry Counties. For the Los Angeles core county area, residents of the city and Los Angeles County form the sample used in these victimization estimates.

Second, compared to the national sample, the number of persons interviewed within each metropolitan area in a year is relatively small (table 1). Altogether these three metropolitan core county areas constitute roughly 9.5% of the U.S. population. Sample size places statistical limitations on the types of crimes that can be reliably estimated for each metropolitan area and year. The three crimes that occur with sufficient statistical regularity to permit comparisons with police data are burglary, robbery, and aggravated assault. To maximize the reliability of the NCVS metropolitan area estimates of burglary, robbery, and aggravated assault victimization, 3-year moving averages are used for NCVS crime rate estimates.

**Police estimates**

Police counts of burglary, robbery, and aggravated assault in each metropolitan area are based on offenses known to the police departments with jurisdiction in each of the core county areas. Police data for each county and year were gathered from different sources for each metropolitan area. Population data for each county and year were obtained from the Census Bureau so that standardized rates could be used for comparisons.

In each metropolitan area, police-based crime rates rely on summaries from multiple police departments and jurisdictions. As a result, it is not possible to draw conclusions about the reporting practices of any particular police department within the metropolitan area. Nonetheless, it is possible to illustrate the degree of correspondence between the two data series by comparing the crime rates based on police department records to those estimated by the survey.

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6Because police departments voluntarily submit data to the UCR a large amount of data is missing across time and places. This missing data issue made it difficult to collect consistent data across all of the counties over the 20-year period. For this reason, the police data used here for the metropolitan core county areas of New York and Chicago were gathered from their respective State criminal justice websites rather than from the UCR reports. The New York metropolitan area police data were retrieved from the New York State Division of Criminal Justice Services at <http://www.crimaljustice.state.ny.us/>. The Chicago metropolitan area police data were retrieved from the Illiniois Criminal Justice Information Authority at <http://www.icja.state.il.us/public/>. The Chicago core county police data were not complete for 1979 through 1982. Unlike police data for the Chicago and New York areas, the Los Angeles metropolitan area data were complete. Therefore, the Los Angeles area data were obtained directly from UCR records.

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**Nature of the comparisons**

Three sets of estimates are provided for each crime type, year, and metropolitan area. The first set of estimates, based on NCVS data, is designated “NCVS Crime Rates.” They consist of the burglary, robbery, and aggravated assault victimization rates regardless of whether the incident was reported to the police. The second set of estimates, also based on NCVS data, is the victimization rates based on incidents that victims said were reported to the police. These estimates are referred to as “NCVS Reported Crime Rates.” The third set of estimates, based on police records, consists of the UCR crime rates for each metropolitan area. These estimates are referred to as “UCR Crime Rates.”

For each metropolitan area and crime type, the NCVS Crime Rates are compared with the NCVS Reported Crime Rates to assess whether levels of reporting crime to the police have changed appreciably. The NCVS Reported Crime Rates are compared to the UCR Crime Rates.

7Because the NCVS is a household-based survey, it includes residential burglaries but not commercial burglaries. The UCR data that were available to us included both residential and commercial burglaries. Because we were unable to determine how many of the police recorded burglaries were against commercial establishments in each county and year, the UCR burglary rates are expected to be higher than the NCVS reported burglary rates. Also, unlike the NCVS burglary rate which is typically based on the number of households, the UCR burglary rate is measured by taking the total number of burglaries known to the police and dividing by the total number of persons. To make the NCVS and UCR burglary rates as comparable as possible, the NCVS rates were estimated using persons age 12 or over in the denominator. In addition, it was not possible to determine how many of the police recorded robberies and aggravated assaults were against persons under age 12 (incidents excluded from the NCVS because persons under age 12 are not interviewed). As a result, the NCVS robbery and aggravated assault rates were created by dividing the number of victimizations by the population age 12 or over, while the UCR rates were created by dividing the total number of offenses known divided by the total population for each county and year. UCR rates based on the total population age 12 or over in the denominator were calculated to check the sensitivity of the findings to differences in population coverage. Of course, the UCR rates increased when the denominator was restricted to the population age 12 or over. However, the substantive conclusions reported here were similar regardless of which denominator was used for the UCR and NCVS rates.

8Significant changes were made to the methodology of the NCVS in 1992. To make the NCVS rates comparable before and after 1992, the earlier rates were weighted by their crime specific adjustment factors. These weights were derived from assessments of how national estimates changed following a phase-in of the new methodology. There is little reason to suspect that the effects of the new methodology varied across these three metropolitan areas. For more information on the weighting of crimes, see Kindermann, C., Lynch, J., and Cantor, D. (1997), *Effects of the Redesign on Victimization Estimates*, Bureau of Justice Statistics, NCJ 164381.
to ascertain the correspondence between police data and victim reports for each metropolitan area.

**Burglary**

**New York Metropolitan Area**

For the core counties of the New York metropolitan area, both police and survey data agree that burglary declined from 1980 to 1998 (figure 1). And as expected, the total NCVS burglary rate was higher than the UCR burglary rate. According to New York area victims, roughly 61% of burglaries were reported to the police over these two decades. The gap between the NCVS burglary rates and the NCVS reported burglary rates appears to have diminished somewhat in the New York metropolitan area, suggesting an increase in reporting to the police.9

Throughout the 1980’s and 1990’s, the NCVS reported burglary rate was similar to the UCR burglary rate. The correspondence in these two trends indicates that the UCR burglary data for the New York metropolitan area closely match both the levels and trends indicated by the victim survey data.

**Chicago Metropolitan Area**

Police and survey estimates for burglary in the Chicago metropolitan area agree that there was a decline in burglary throughout the 1980’s and 1990’s (figure 2). The NCVS burglary rate was higher than the UCR rate, with victims in the Chicago area stating that 52% of burglaries were reported to the police over this period. The gap between the NCVS burglary rates and the NCVS reported burglary rates was somewhat reduced later in the series, suggesting that there may have been an increase in reporting to the police over these two decades.

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9The statistical limitations associated with the size of the metropolitan area sample do not permit one to conclude that this change is statistically significant. Statements about differences between the UCR crime rates and the NCVS crime reported to police rates are based on the point estimates shown in the figures and not strictly on significance testing. The reason for this is that even though 3-year moving averages are used for the NCVS rates, the 95% confidence intervals around those averages are, at a minimum, plus or minus 4 per 1,000. Thus, very few of the annual differences between a UCR rate and an NCVS reported to police rate would be statistically significant. The purpose of these analyses is not to determine the specific years in which the two rates are or are not statistically significant for each crime type and metropolitan core county area, but to show the broader patterns of correspondence between police data and victim survey reports.
In the Chicago metropolitan area, the NCVS reported burglary rate is somewhat higher than the UCR burglary rate during the early years of the time series. In later years, the NCVS reported burglary rate and the UCR burglary rate corresponded more closely. Although long-term trends in the victim and police data indicate a general decline in burglaries reported to police, the decline appears greater in the NCVS data than in the Chicago metropolitan area police data.

Los Angeles Metropolitan Area

In the Los Angeles metropolitan region, police and survey data agree that the burglary rate declined throughout much of the 1980's and 1990's (figure 3). The exception to the decline appeared in the late 1980's when the NCVS rates suggested an increase in residential burglary victimization. The decline in burglary in the Los Angeles region appeared larger than the declines in the New York and Chicago areas because the survey based rates in Los Angeles were higher in the earlier years of the time series. According to victims, the level of reporting burglary to the police averaged 50% over the two decades, with no apparent change in the level at which residential burglary was reported to the police.

Throughout much of the 1980's and 1990's, the NCVS reported burglary rate was similar to the UCR burglary rate in the Los Angeles metropolitan area. Since the early 1990's, the two data series have shown similar short and long-term trends in burglary victimization.

Robbery

Unlike residential burglary, robbery can take place away from home. This fact makes comparisons of UCR and NCVS robbery data more complex. If a nonresident, such as a tourist or commuter, is victimized by robbery while in the metropolitan area, the crime (if reported) is likely to be reported to the police department with jurisdiction in the area where the incident occurred. This means that UCR robbery counts for metropolitan areas include crimes committed against nonresidents. NCVS robbery counts, on the other hand, are based only on interviews with persons who reside in the metropolitan core county areas. If UCR robbery rates for the New York, Chicago, and Los Angeles areas contain many incidents against persons who live outside these counties, they will be higher than the local NCVS robbery rates.10

10 UCR robbery rates also will be higher than NCVS robbery rates if police robbery data include many incidents against persons who are not part of households (for example, homeless persons). Such persons are ineligible to participate in household-based surveys.
Alternatively, if many of the robberies against metropolitan area residents took place while they were outside of the core counties of their metropolitan areas, the NCVS estimates could be higher than UCR estimates. The NCVS counts do not easily distinguish victimizations that occurred inside the metropolitan core county area from those that occurred outside. Little evidence indicates which of the above concerns is more problematic. To resolve the issue would require additional information about the residence of each victim in UCR records and location information for each incident in the NCVS reports. The UCR-NCVS correspondence in robbery will reflect in part, the extent to which these two concerns are relatively equal.

**New York Metropolitan Area**

Police and victim survey data for the New York metropolitan area agree that robbery rates have generally declined over the past two decades (figure 4). As expected, NCVS robbery rates were higher than UCR rates, but both exhibit similar long-term trends. On average, about 53% of robberies that occurred to residents were reported to the police, with no statistically significant changes in reporting between the early and later portions of the time series. Nonetheless, the NCVS data suggest a decrease in the reporting of robbery to the police in the New York metropolitan area from approximately 1989 to 1994.

From the mid-1980’s until the mid-1990’s, annual UCR robbery rates were higher than NCVS reported robbery rates. Given the limitations associated with the size of the sample, the annual differences were not large enough to be statistically significant. Even so, this difference in robbery rates may be important. If one assumes that the reliability of the UCR and NCVS robbery rates did not change during this time period, the higher UCR rates may have reflected a relatively higher occurrence of robberies against nonresidents of the New York metropolitan area during these years. The higher UCR rate might also indicate a relatively greater increase in robbery against persons not captured in the NCVS sample, such as homeless persons. If crimes against such groups increased at rates higher than it did among others, UCR robbery rates could be higher than NCVS reported robbery rates.

**Chicago Metropolitan Area**

Both police and victim survey data for the Chicago metropolitan area suggest that robbery rates were lower in the late 1990’s compared to the early 1980’s (figure 5). Both data series show that the declines in the Chicago area were relatively smaller than in the New York area during this same time period. Over these two decades, the average level of robbery reporting among residents was 56%, and there appears to have been relatively little change in reporting.

As in the New York metropolitan area, Chicago area UCR robbery rates were somewhat higher than NCVS reported robbery rates in several years. These differences were not large enough to be found statistically significant. After 1984 the short and long-term trends in NCVS reported robbery rates and UCR robbery rates generally corresponded, although the police data on robbery peaked and began to decrease about 2 years earlier than the survey data.

**Los Angeles Metropolitan Area**

In the Los Angeles metropolitan area, robbery rates based on police and victim survey data were lower in the late 1990’s compared to the early 1980’s (figure 6). UCR and NCVS data agree that Los Angeles area robbery rates declined from the mid- to late-1990’s. The gap between NCVS robbery rates and NCVS reported robbery rates changed little in the Los Angeles area during the 1980’s and 1990’s. Roughly 49% of all robberies against residents were reported to the police during these two decades.

Annual UCR robbery rates and NCVS reported robbery rates were very similar throughout most of the 1980’s and the latter half of the 1990’s. As was found in the New York and Chicago metropolitan areas, the Los Angeles area UCR robbery rates were somewhat higher than NCVS reported robbery rates in selected years of the series (roughly 1989 through 1993). Similarly, these annual differences were not large enough to be statistically significant. As noted earlier, the higher UCR robbery rate may reflect more robberies against nonresidents or against persons not captured by the survey during this time period.

**Aggravated assault**

Like robbery, comparisons of police and victim survey data for aggravated assault involve unique complexities. Police data will include an unknown number of crimes committed against nonresidents, and residents may become victims of aggravated assault when they are outside of their metropolitan area. Police data will also include an unknown number of crimes against persons ineligible or unlikely to participate in the NCVS. But the measurement of aggravated assault also is unique in that it is likely to have been affected by broad scale changes in police response to domestic assault incidents. Mandatory arrest policies have replaced informal dispositions in many areas of the Nation. As a result, trends exhibited in police data may not correspond closely with trends based on survey data, but instead reflect changes in police handling of aggravated assault incidents.

**New York Metropolitan Area**

In the New York area, the NCVS data indicate that there were fluctuations in aggravated assault levels, followed by a gradual decrease in the later 1990’s (figure 7). Comparisons of NCVS aggravated assault rates and the NCVS reported
aggravated assault rates show no significant changes in the level at which these crimes were reported to the police.

About 56% of all aggravated assaults against New York area residents were reported to the police. Police data for aggravated assault suggest that there was a gradual increase in this crime throughout the 1980’s, followed by a gradual decline in the 1990’s. Compared to burglary and robbery, the correspondence between police and survey estimates of aggravated assault levels and trends was lower. During much of the 1980’s and 1990’s the police rate of aggravated assault was higher than the NCVS reported rate. In several years the police-based rate of aggravated assault in the New York metropolitan area was greater than the total NCVS rate. Although the two series suggest different trends during some years, there was greater similarity in the trends in the latter half of the 1990’s.

**Chicago Metropolitan Area**

NCVS rates of aggravated assault in the Chicago metropolitan area show a mixed set of trends. The survey data suggest that rates were at their highest in the early 1980’s and lowest in the later 1990’s (figure 8). The gap between the NCVS aggravated assault rate and the NCVS reported aggravated assault rate remained relatively consistent throughout the two decades. Fifty-one percent of residents’ aggravated assaults were reported to the police during these years.

The correspondence between the police and survey estimates of aggravated assault was lower in the Chicago area than the correspondence for the crimes of burglary and robbery. Police rates of aggravated assault suggest increases until the early 1990’s, while NCVS rates suggest that the rates were highest in the early 1980’s. More fluctuations also were exhibited in the survey estimates than in the

**Los Angeles Metropolitan Area**

In the Los Angeles area, the NCVS data exhibit no clear long-term trend in the risk for aggravated assault victimization (figure 9). The UCR rates, on the other hand, suggest stability in the early 1980’s, an increase in the later 1980’s, and a steady decrease beginning around 1992. The gap between the NCVS aggravated assault rate and the rate reported to police was steady, and the average level of reporting among residents was approximately 50%.
Both police and victim survey data in the Los Angeles metropolitan area agree that aggravated assault began to decrease gradually in the early 1990’s. But for earlier years, the two series often suggested different year-to-year changes in aggravated assault rates. Nonetheless, the UCR rates were similar to the NCVS reported rates, indicating agreement about the level of aggravated assault brought to the attention of the police.

Conclusions

As noted earlier, local governments often are interested in assessing levels or trends in crime, but they typically draw conclusions about crime in their areas solely on the basis of police data. These analyses have examined how police data compare to victim survey data for burglary, robbery, and aggravated assault for the three largest metropolitan areas in the Nation. For burglary and robbery, UCR crime rates were generally similar to NCVS reported crime rates in the New York, Chicago, and Los Angeles areas for 1980 through 1998. Police and victim survey data were more likely to show discrepancies in levels and trends of aggravated assault, a crime that is likely to have been affected by broader policy changes in police handling of domestic violence incidents.

Even though UCR rates and NCVS reported rates often suggest different levels and trends in aggravated assault, there are many instances in which the two data series provide statistically similar annual estimates for this crime. For the Los Angeles metropolitan area for example, annual differences between the UCR rates and NCVS reported rates rarely were statistically significant. And for the New York and Chicago areas, the UCR rates and NCVS reported rates did not differ significantly in many of the years. Statistical significance is a function of both sample size and the magnitude of the difference between the NCVS reported rate and the UCR rate. Given the relative rarity of aggravated assault and the sample size limitations noted earlier, it is not surprising that few statistically significant differences are found. Nonetheless, the differences between some of the UCR and NCVS annual estimates of aggravated assault provide important information about the sensitivity of these estimates to methodological differences between the two sources of data.