The Remarkable Drop in Crime in New York City[1]

Patrick A. Langan, Ph.D.
Matthew R. Durose
Statisticians
Bureau of Justice Statistics
U. S. Department of Justice

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Research Summary:
According to NYPD statistics, crime in New York City took a downturn starting around 1990 that continued for many years, shattering all the city's old records for consecutive-year declines in crime rates.   To verify the declines, this study obtained New York City crime data from sources independent of the NYPD, principally the National Crime Victimization Survey. Independent data largely corroborate the NYPD statistics.

Policy Implications:
In 1994, the NYPD introduced an innovation in policing: "CompStat." The drops in crime that began before CompStat continued under it, giving rise to the perception that CompStat helped reduce crime. Consequently, police departments nationwide have adopted CompStat. Yet scientific proof of CompStat's success is hard to find. Moreover, before this study, no independent evidence existed attesting to the NYPD's statistics.

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[1]Paper prepared for the International Conference on Crime, Rome, December 3-5, 2003. The conference was organized by Italy's National Institute of Statistics (ISTAT). Views and opinions expressed in the paper are those of the authors and do not necessarily represent the official positions or policies of the United States Department of Justice.

Modern-day record keeping of crime statistics began in 1960, and in all the time since, crime in New York City had never fallen as many years in a row as it did starting around 1990, according to statistics compiled by the "NYPD," or New York City Police Department.[2] This study describes the city's record-setting period with NYPD statistics through the year 2002.

Journalists, researchers and others have occasionally questioned whether the NYPD statistics can be trusted. Some have wondered whether a change in NYPD record-keeping or perhaps even outright manipulation of the statistics may have produced the measured drop in crime, rather than real declines in criminal offending. To address such possibilities, this study compared the NYPD crime statistics to those obtained from sources independent of the NYPD.

The Remarkable Drop in Crime According to NYPD Statistics

Record-setting drop in homicide rate, 1990-1998. Up to 1990, the record for consecutive-year declines in the number and rate of homicide was the 4-year decline from 1981 to 1985. Those two records were broken from 1990 to 1998. Over that period, homicides in New York City went from 2,245 (the most ever recorded) to 633 (Appendix table 1). The last time the city saw fewer than 633 homicides was 1965!   The 633 represent the culmination of a record 8 consecutive years of drops in the number of homicides. Similarly, over that same period, the homicide rate fell a record 8 years in a row to .086 per 1,000 population (figure 1 and Appendix table 2). The last time the city saw a rate lower than .086 was 1966!
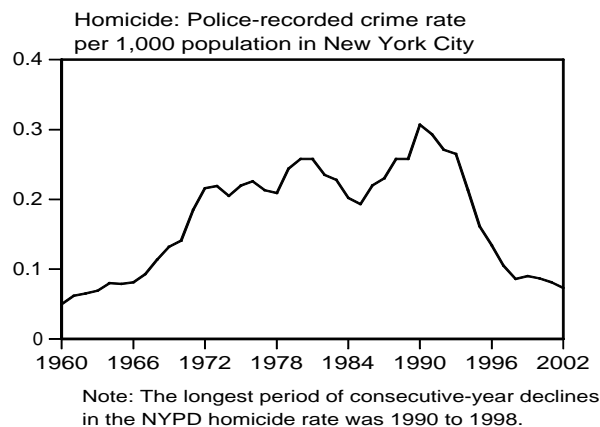

Homicide: Police-recorded crime rate
per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD homicide rate was 1990 to 1998.

Figure 1

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[2]National crime rates exist before 1960 but are viewed as "neither fully comparable with nor nearly so reliable as later figures" (President's Crime Commission 1967: 20). So modern-day record keeping of crime statistics is said to have begun around 1960 in the United States.

Record-setting drop in rape rate, 1993-2001. In 1993, police recorded 2,818 rapes against females in New York City (Appendix table 1). From 1993 to 2001, the number and the rape rate fell 8 years in a row, setting a new record for consecutive-year declines in both the number and rate (figure 2 and Appendix table 2). The previous record was the 7-year drop in the number and rate from 1985 to 1992. At the end of the record-setting 8-year decline, in 2001, the NYPD recorded 1,530 rapes. The last time fewer than 1,530 were recorded was 1965; 1965 was also the last time the rape rate was below the 2001 rate.
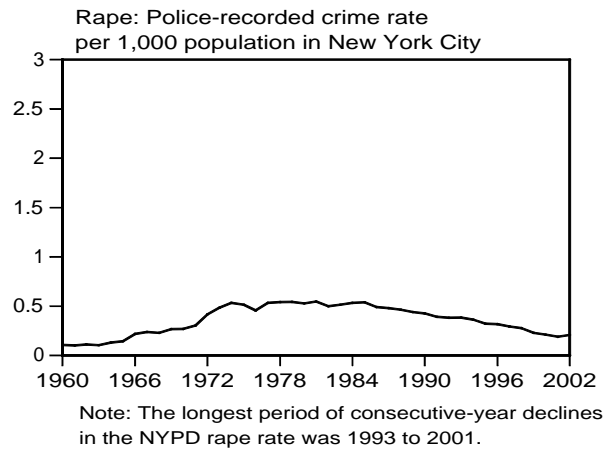
Rape: Police-recorded crime rate
per 1,000 population in New York City

Note: The longest period of consecutive-year declines
in the NYPD rape rate was 1993 to 2001.

Figure 2

Record-setting drop in robbery rate, 1990-2002. In 1990, 100,280 residents and non-residents were allegedly robbed, according to NYPD robbery statistics (Appendix table 1). From 1990 to 2002, both the robbery number and rate dropped 12 years in a row, shattering the former record of 4 consecutive years of robbery declines in the early 1980s (figure 3 and Appendix table 2). At the close of 2002, the NYPD recorded 27,229 robberies. The last time there were fewer than 27,229 was 1966. The last time the robbery rate was lower was also 1966.
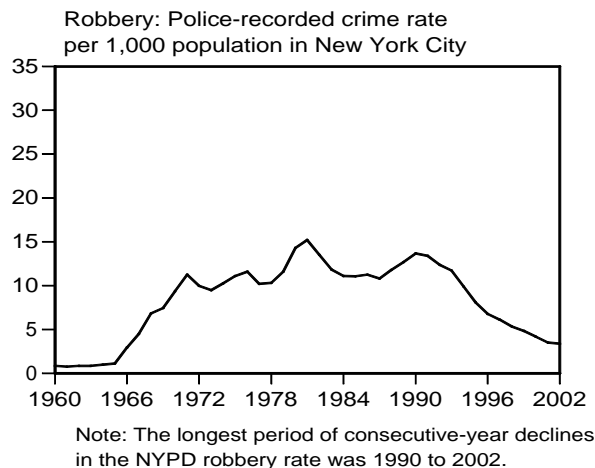
Robbery: Police-recorded crime rate
per 1,000 population in New York City

Note: The longest period of consecutive-year declines
in the NYPD robbery rate was 1990 to 2002.

Figure 3

Record-setting drop in <u>aggravated assault</u> rate, 1988-2002. The record fall in the number of aggravated assaults began in 1988 and ended in 1999, when aggravated assault declined to 40,551 (Appendix table 1). That's 11 years in a row of falling assault, unprecedented in New York City. The city's previous record was the short-lived back-to-back declines in 1976 and 1977. As for the aggravated assault <u>rate</u>, from 1988 to 2002 the rate fell 14 years in a row, setting a new record for consecutive-year rate declines (figure 4). The longest the assault rate had fallen before was 2 years in a row, from 1975 to 1977. The last time aggravated assault numbered under 40,551 was 1973. The last time the rate was lower? 1970.
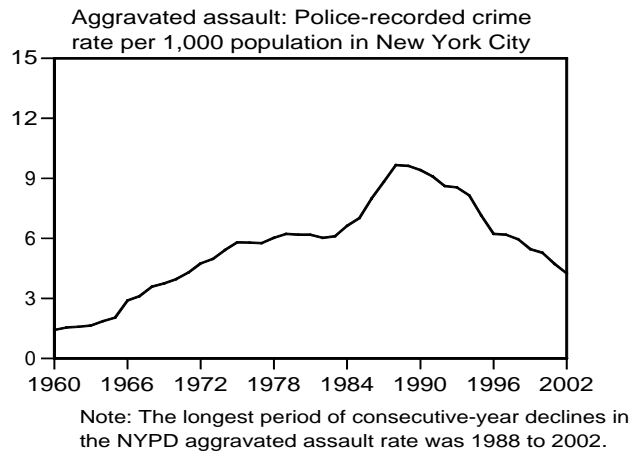

Aggravated assault: Police-recorded crime
rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in
the NYPD aggravated assault rate was 1988 to 2002.

Figure 4

Record-setting drop in <u>violent crime</u> rate, 1990-2002. The overall number of violent crimes (a category that combines NYPD homicide, rape, robbery, and aggravated assault), and the violent crime rate, both fell 12 years in a row in New York City from 1990 to 2002 (figure 5, and Appendix tables 1 and 2). The city's longest previous record for consecutive-year declines in recorded violence was the 3-year drop in the early 1980s. The drop 12 years in a row brought down the volume and rate (per 1,000 population) of violent crime in 2002 to 63,839 and 7.90, respectively. Government statisticians had to go to 1967 to find a time when police statistics recorded under 63,839, and even further to 1966 for a lower violent crime rate.
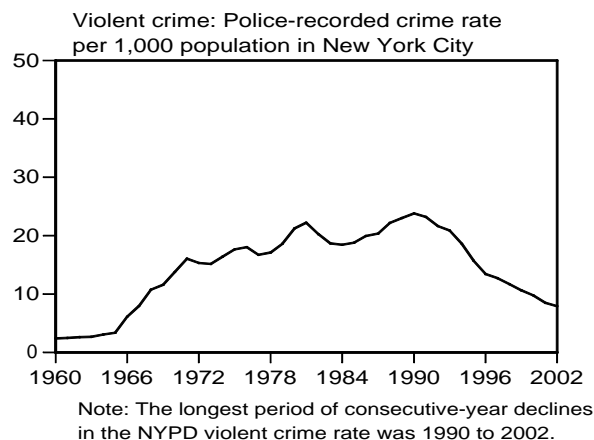

Violent crime: Police-recorded crime rate
per 1,000 population in New York City

Note: The longest period of consecutive-year declines
in the NYPD violent crime rate was 1990 to 2002.

Figure 5

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Record-setting drop in <u>burglary</u> rate, 1988-2002. Both the volume and the rate of this property crime fell 14 years in a row from 1988 to 2002 (figure 6, and Appendix tables 1 and 2). The previous record for the drop in the number and rate of burglaries was the 7-consecutive-year decline from 1980 to 1987. The record-setting 14-year decline brought the burglary total down to 30,102 in 2002. Going to the beginning of modern-day record keeping, 1960, government statisticians could not find a year with fewer burglaries and a lower burglary rate for New York City.
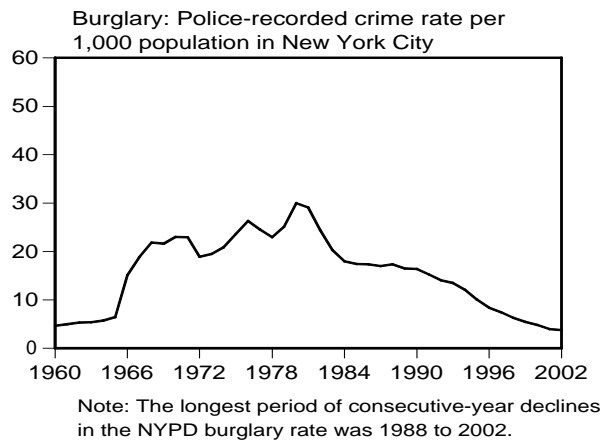
Burglary: Police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD burglary rate was 1988 to 2002.

Figure 6

Record-setting drop in <u>larceny-theft</u> rate, 1988-2002. Another type of property crime, larceny-theft, also had a record-setting 14-consecutive-year decline from 1988 to 2002 both in the number and in the rate (figure 7, and Appendix tables 1 and 2). The city's previous record for consecutive-year declines in the number and rate was three back-to-back drops in 1971, 1972, and 1973. At the end of the 14-year decline in 2002, the NYPD recorded 129,655 larceny-thefts. The last time fewer were recorded was 1972, and 1965 was the last year the city had a larceny rate lower than the one in 2002.
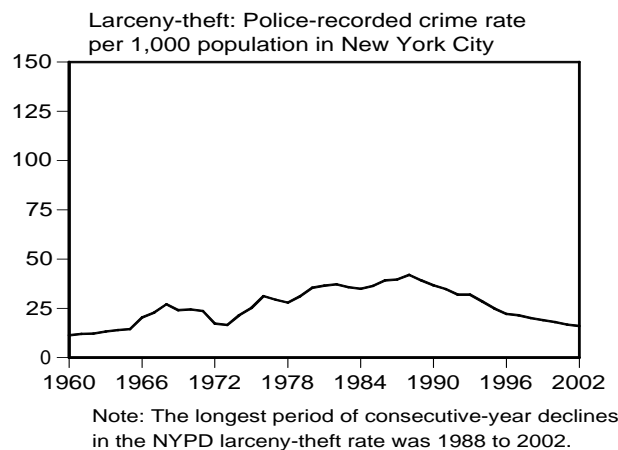
Larceny-theft: Police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD larceny-theft rate was 1988 to 2002.

Figure 7

Record-setting drop in motor vehicle theft rate, 1990-2002. From 1990 to 2002 New York City went 12 years in a row with drops in both the number and the rate of motor vehicle theft, easily breaking the city's previous record of 4 consecutive drops in the number from 1982 to 1986 and 3 consecutive drops in the rate from 1982 to 1985 (figure 8, and Appendix tables 1 and 2). In the year of the 12th decline, 2002, 27,034 vehicles were recorded as stolen. The last time fewer were stolen was 1962, and that was also the last time the city had a rate below the 2002 rate.

Vehicle theft: Police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD vehicle theft rate was 1990 to 2002.

Figure 8

Record-setting drop in property crime rate, 1988-2002. According to police statistics, property crime (a category that combines burglary, larceny-theft, and motor vehicle theft) set a new modern-day record when its volume and rate fell 14 years in a row from 1988 to 2002 (figure 9, and Appendix tables 1 and 2). The previous longest period of sustained falling property crime was from 1981 to 1985, when police recorded drops 4 years in a row. Property crime totaled 186,791 in 2002, the final year of the 14-year decline.   The last time police recorded less property crime was 1963. That was also the last time there was a lower rate.
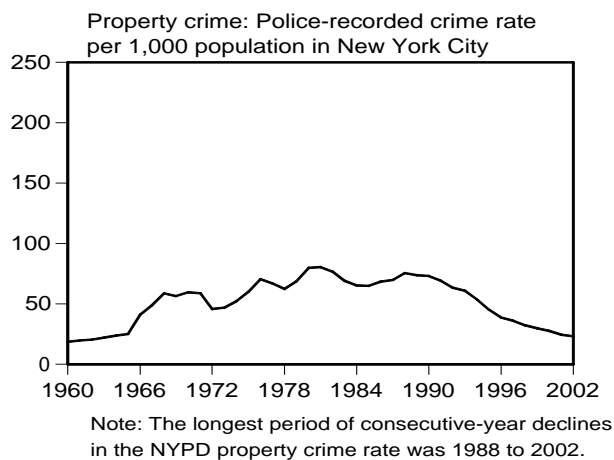
Property crime: Police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD property crime rate was 1988 to 2002.

Figure 9

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But Did Crime Really Drop in New York City?

Many of the year-to-year declines in crime in New York City occurred in the 1990s, a time when the NYPD was implementing numerous strategies to reduce crime, including in particular:

I.   hiring more officers (figure 10 and Appendix table 3)
II.   re-directing police patrols to combat public disorder (called "broken-windows policing")
III.   developing closer relationships with the community ("community policing")
IV.   strictly enforcing gun laws to reduce firearm crimes
V.   vigorously enforcing drug laws
VI.   practicing strict law enforcement generally ("zero-tolerance policing")
VII.   concentrating police sources on problem places and persons ("problem oriented policing"), and
VIII. introducing CompStat into the overall process of managing NYPD anti-crime strategies

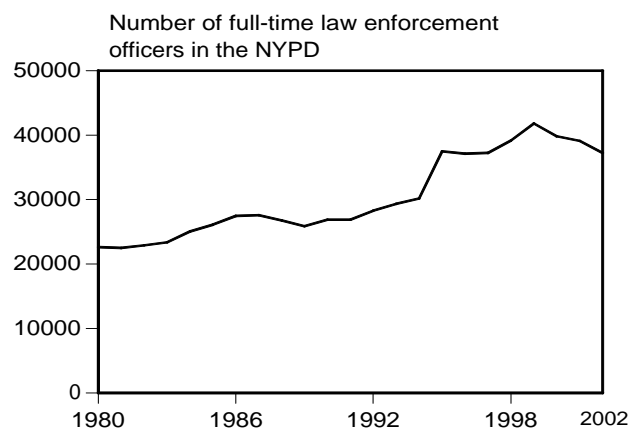Number of full-time law enforcement officers in the NYPD

Figure 10

The latter - CompStat - is discussed at length here partly because some experts have wondered whether the NYPD's adoption of this particular anti-crime strategy might have triggered widespread manipulation of the city's crime statistics.

How CompStat Might Encourage Manipulation of Crime Statistics

Managing a police force the size of New York City's - with over 30,000 officers scattered across 76 separate police precincts, each containing an average of a hundred thousand residents - is a formidable undertaking. "CompStat" is a technique for managing such a force, by holding precinct commanders accountable for crime in their area, by assuring that commanders are implementing the anti-crime strategies adopted by headquarters, and by developing strategies for reducing crime through the open exchange of ideas between headquarters and precinct officials.

Under CompStat, each precinct commander and members of his or her command come to the NYPD command center once a month to brief the department's highest ranking

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officials on crime in the precinct and efforts to combat it. As many as 200 people attend these three-hour meetings, including members of such governmental agencies as the District Attorney's Office, the U.S. Attorney's Office, the Housing Authority, the Transit Authority, the Port Authority police, parole and probation agencies, and the public schools.

Much of the meeting centers on computer-generated statistics compiled by headquarters and prominently displayed on three 8-foot-by-8-foot computer monitor screens. Computer statistics - hence the name "CompStat" - play a key role at the meetings. The huge screens show such precinct statistics as the number of homicides, robberies, and domestic assaults the week before the meeting, and the number the same week the year before. Other statistics include those on crimes cleared by arrest, on warrant arrests, and on arrests for quality-of-life crimes (for example, such crimes as aggressive panhandling, turnstile jumping at subway stations, riding bicycles on sidewalks, graffiti, operating illegal after-hours establishments). Together, the New York City Police Commissioner, the chief, the deputy chief, and other high ranking officials - all sitting at the command table - then grill the precinct commander on the statistics. Some commanders come well prepared; some not.

As mentioned earlier, a purpose of CompStat meetings is to let precinct commanders know what headquarters expects from them. For example, at a CompStat meeting that one of the authors of this paper attended in January 1997, the precinct commander was shown certain arrest statistics that headquarters had compiled. The statistics showed how many officers in his precinct had made no arrests in the entire year, how many had made just 1, how many had made a total of 2, and so on. The police chief asked the commander whether he was satisfied that so many men and women under his command had made no arrests or had made only a few. From the way the question was asked, the chief apparently wanted to make it clear to the commander and to everyone else in the room that he wanted officers to be out in the community, solving crimes, making arrests, practicing community policing, and the like, rather than sitting behind a desk.   The commander said "no", he was not satisfied, and promised the chief that the statistics would be different next year.

Considerable controversy surrounds CompStat. Many experts largely attribute the decline in New York City crime to CompStat's introduction in 1994. Others find little evidence of that and even question whether NYPD statistics can be trusted since, in their opinion, CompStat "increases the possibility that reported crimes could be manipulated" (Eck and Maguire 2000: 231). It is certainly easy to see how. Commanders who come to their grilling unprepared to provide thoughtful answers to questions both about rising crime in their precinct and about their efforts to combat it, risk more than public embarrassment at these highly attended gatherings; they also risk seeing their police careers come to an early end.

Given the pressure that CompStat places on precinct commanders to reduce crime, then, it is reasonable to ask whether crime really did fall in New York City. Bluntly put, did crime fall, or did precinct police officials falsify the numbers?

Putting NYPD Statistics to the Test

If manipulation existed, the ramifications are potentially far reaching. As news of the downturn in crime spread, thousands of police officials from around the world flocked to New York City to observe CompStat meetings firsthand. Many carried back what they had learned and adopted some form of CompStat policing. CompStat-like policing is now in place in much of the United States (Weisburd et al, 2003), based in part on the understanding that: 1) crime declined dramatically in the city, and 2) CompStat was a major reason. Yet scientific proof of CompStat's success is hard to find. Moreover, the recorded drop in crime has never been scientifically verified to rule out the possibility of statistical manipulation. The reason why such verification has not been done until now is simple. Crime data *independent* of the NYPD are needed to corroborate the official police statistics, but aside from independent homicide statistics kept by the New York City Medical Examiner, the only such data that exist - crime data on New York City from the National Crime Victimization Survey - are not publicly available. (This is to protect the confidentiality of survey respondents.) Instead, these data are locked securely away at the U.S. Census Bureau, the agency that conducts the survey interviews.

For this paper, the authors obtained from the Census Bureau never-before-seen tabulations of New York City crime rates from the National Crime Victimization Survey for the period 1980 to 1999.   (Tabulations over a longer time span were unavailable because they would have been considerably more costly for the Census Bureau to produce.) These tabulations, along with homicide statistics compiled by the New York City Medical Examiner, provide independent measures for determining if crime rates in New York City fell during the years in which NYPD statistics show record declines.

The National Crime Victimization Survey (NCVS)

The National Crime Victimization Survey, or NCVS, compiles annual data on crime through interviews with scientifically drawn samples of the entire U.S. population age 12 and older.[3] Of the tens of thousands of people interviewed each year, a small fraction says they were a recent crime victim.

In any year, from 2.5% to 3% of all interviews conducted in the NCVS are with residents of New York City (table 1). In 1980, for example, about 246,000 NCVS interviews were conducted nationwide, and of them, about 3% (7,378) were interviews with New York City residents. Similarly, the 4,535 NCVS interviews with the city's residents in 1995 comprised about 2.5% of the total 179,800 interviews that year.

Survey respondents are asked whether they were victimized by certain types of crime and, if so, whether the crime was reported to police. The NCVS confirms that much serious crime goes unreported. Historically, the NCVS has shown that police are not notified of about half of all rapes, robberies and aggravated assaults. Besides

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[3]See Appendix IV "The Nation's Two Crime Measures," in *Crime in the United States 2002* (FBI 2003) for more information on the NCVS and how it differs from police statistics.

questions about police reporting, survey respondents are asked numerous other questions about the crime, such as where it occurred and whether there was any injury.

For various reasons, the victimization survey is an appropriate data source to use to test or corroborate NYPD numbers. First, the samples of New York City residents in the NCVS database are representative; that is, each of the five boroughs that collectively make up New York City is a primary sampling unit in the survey. Second, the victimization survey is independent of the NYPD. And, third, the NCVS compiles data on both reported and unreported crimes. In that respect the NCVS provides a more complete measure of crime than police statistics since virtually the only crimes that get recorded in police statistics are the ones reported to police. Still, NCVS statistics have their own unique limitations, some of which are identified later.

Table 1. New York City NCVS interviews as a percentage of all NCVS interviews nationwide, 1980-1999

Year	(A) Number of NCVS interviews nationwide	(B) Number of NCVS interviews of New York City residents	New York City NCVS interviews as percentage of NCVS interviews nationwide
1980	246,000	7,378	3.00%
1981	252,000	7,072	2.81%
1982	254,000	7,481	2.95%
1983	254,000	7,551	2.97%
1984	228,000	6,304	2.76%
1985	204,000	5,845	2.87%
1986	200,000	5,517	2.76%
1987	200,000	5,233	2.62%
1988	202,000	5,221	2.58%
1989	194,000	5,395	2.78%
1990	190,000	5,325	2.80%
1991	167,000	5,485	3.28%
1992	152,000	5,126	3.37%
1993	186,840	4,844	2.59%
1994	181,120	4,626	2.55%
1995	179,800	4,535	2.52%
1996	170,660	4,456	2.61%
1997	158,940	4,341	2.73%
1998	157,800	4,114	2.61%
1999	155,500	3,937	2.53%

Source of A: The annual publication "Criminal Victimization in the United States" (BJS) provided the number of NCVS interviews over a 6-month period, which were doubled to produce yearly totals.
Source of B: Numbers are from an unpublished tabulation prepared by the Census Bureau from an NCVS database that distinguished between New York City respondents and other respondents (Watt 2003).
Note: NCVS statistics are for the "collection year," not the "data year." "Interviews," not distinct persons interviewed, are counted in the table.

NYPD Crime Statistics Compared to Statistics from Independent Sources

New York City crime data compiled by a source independent of the NYPD are needed to corroborate the city's dramatic drops in crime. Two such sources are used in this paper: for independent homicide statistics, the source is the Office of the New York City Medical Examiner, the agency that keeps homicide records as part of its overall responsibility for investigating causes of death in the city (Appendix table 4); for other crimes, the source is the NCVS (appendix tables 5 and 6).

In what follows, trends in NYPD crime rates are compared to trends from the independent sources. To the extent that the fall in NYPD homicide rates is mirrored in the city's medical examiner homicide statistics, and to the extent that drops in NYPD rates for other crimes are reflected in NCVS rates derived from interviews with New York City residents, confidence is enhanced that crime really did fall in the city.

The degree of correspondence between NYPD trends and trends from other sources was measured using Pearson's correlation coefficient (r). For each crime, the correlation between the two trends was computed for three separate periods: 1) correlation over the period 1980 to 1999 illustrates the general correspondence between the alternative sources of data on crime rate trends; 2) correlation over the period when NYPD rates set new records for consecutive-year declines provides a test of whether crime fell when NYPD statistics indicated it did; and 3) correlation over the years 1993 to 1999 shows the correspondence between NYPD and non-NYPD crime trend statistics during the first six years of CompStat, thereby providing a test of the impact of CompStat on crime recording by New York police.

Correlations over the 1993-1999 CompStat-test period are not shown in tables; all other correlations are given in tables 2 and 3. None of the study's correlations used data beyond 1999 because, as explained earlier, NCVS crime rates for New York City beyond 1999 were not readily available.

Table 2. Correlations over the 1980-1999 period between two sources of statistics on crime trends in New York City: NYPD and non-NYPD sources (victimization surveys and medical examiner records)
(Shown in bold are correlations for similarly-defined crimes across the sources.)

Police-recorded rate of --	Victim-survey/medical examiner rate of --							
	Violent offense				Property offense			
	1980-99 Total	1980-99 Homicide	1980-99 Robbery	1980-99 Aggra-vated assault	1980-99 Total	1980-99 Burglary	1980-99 Larceny-theft	1980-99 Motor vehicle theft
Violent crime	**.648** **	.980 **	.697 **	.303	.856 **	.673 **	.851 **	.685 **
Homicide	.670 **	**.993** **	.718 **	.320	.880 **	.662 **	.878 **	.754 **
Rape	.586 **	.706 **	.645 **	.264	.667 **	.861 **	.568 **	.176
Robbery	.771 **	.965 **	**.819** **	.384	.920 **	.847 **	.872 **	.632 **
Aggravated assault	.102	.595 **	.131	**-.003**	.353	-.007	.447 *	.525 *
Property crime	.714 **	.930 **	.769 **	.335	**.864** **	.860 **	.806 **	.506 *
Burglary	.748 **	.740 **	.770 **	.435	.781 **	**.965** **	.667 **	.291
Larceny-theft	.548 *	.859 **	.617 **	.194	.729 **	.718 **	**.690** **	.402
Motor vehicle theft	.632 **	.951 **	.691 **	.269	.852 **	.560 *	.876 **	**.806** **

Source: Correlations are based on data shown in appendix tables 2, 4 and 6.
Note: 1) Violent crime rate from non-NYPD sources includes medical examiner homicide, plus victim-survey rape, robbery, and aggravated assault. Correlations with victim-survey rape are not shown because victimization surveys are not based on enough interviews with New York City residents to provide reliable rape estimates for the city. 2) Correlations shown in the table for all victim-survey crimes, except robbery and vehicle theft, are based on "adjusted" victim-survey rates. Adjustment generally improved correlation. To assess the effect of adjustment, correlations based on adjusted and unadjusted rates are compared as follows: violent crime, .648** versus .600**; aggravated assault, -.003 versus -.066; property crime, .864** versus .700**; burglary, .965** versus .936**; and larceny-theft, .690** versus .392. 3) The correlation over the 1980-1999 period between NYPD and non-NYPD rates for all offenses was .855** (not shown in table). 4) The victim-survey/medical examiner rates used in all correlations are per 1,000 population ages 12 or older, except the ".993" correlation that used medical examiner homicide rates per 1,000 population all ages.
*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Table 3. Correlations over the record-setting period of falling crime between two sources of crime statistics in New York City: NYPD and non-NYPD sources (victimization surveys and medical examiner records]
(Shown in bold are correlations for similarly-defined crimes across the sources.)

| | Victim-survey/medical examiner rate of -- | | | | | | | |
| | Violent offense | | | | Property offense | | | |
Police-recorded rate of --	1990-99 Total	1990-98 Homicide	1990-99 Robbery	1988-99 Aggra-vated assault	1988-99 Total	1988-99 Burglary	1988-99 Larceny-theft	1990-99 Motor vehicle theft
Violent crime	**.927** **	.993 **	.917 **	.497	.983 **	.876 **	.982 **	.940 **
Homicide	.911 **	**1.000** **	.895 **	.372	.979 **	.861 **	.974 **	.929 **
Rape	.937 **	.993 **	.946 **	.875 **	.929 **	.929 **	.902 **	.824 *
Robbery	.917 **	.993 **	**.907** **	.484	.979 **	.872 **	.978 **	.937 **
Aggravated assault	.942 **	.987 **	.931 **	**.287**	.932 **	.905 **	.924 *	.939 **
Property crime	.921 **	.987 **	.923 **	.232	**.926** **	.910 **	.914 **	.944 **
Burglary	.937 **	.990 **	.933 **	.255	.927 **	**.914** **	.915 **	.943 **
Larceny-theft	.920 **	.986 **	.927 **	.156	.868 **	.897 **	**.852** **	.952 **
Motor vehicle theft	.907 **	.983 **	.907 **	.445	.973 **	.868 **	.971 **	**.932** **

Source: Correlations are based on data shown in appendix tables 2, 4 and 6.
Note: 1) Violent crime rate from non-NYPD sources includes medical examiner homicide, plus victim-survey rape, robbery, and aggravated assault. Correlations with victim-survey rape are not shown because victimization surveys are not based on enough interviews with New York City residents to provide reliable rape estimates for the city.
2) Correlations shown in the table for all victim-survey crimes, except robbery and vehicle theft, are based on "adjusted" victim-survey rates. Adjustment generally improved correlation. To assess the effect of adjustment, correlations based on adjusted and unadjusted rates are compared as follows: violent crime, .927** versus .875**; aggravated assault, .287 versus -.048; property crime, .926** versus .783**; burglary, .914** versus .824**; and larceny-theft, .852** versus .624*. 4) The victim-survey/medical examiner rates used in all correlations are per 1,000 population ages 12 or older, except the "1.000" correlation that used medical examiner homicide rates per 1,000 population all ages.
*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Homicide. Trends in NYPD homicide rates and New York City Medical Examiner homicide rates are shown in figure 11 and Appendix table 4. The correlation between the two over the entire period from 1980 to 1999 is +.993 (table 2); over the record-setting period 1990 to 1998, r = +1.0 (table 3); and over the CompStat-test period from 1993 to 1999, r = +1.0 (p < .01).

From 1990 to 1998, the drop in the NYPD homicide rate corresponded to the drop in the medical examiner rate (r = +1.0). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +1.0).

Homicide: Medical examiner-recorded and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD homicide rate was 1990 to 1998.
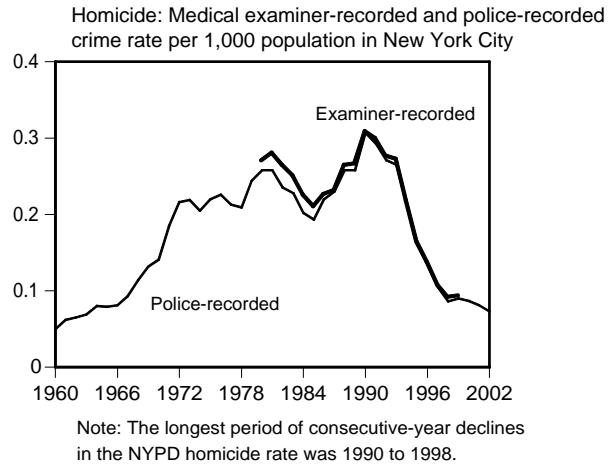
Figure 11

Rape. No rape trend comparisons are made between NYPD and NCVS statistics because the victimization surveys are not based on enough interviews with New York City residents to produce reliable rape estimates for the city.

Robbery. Trends in NYPD robbery rates and rates derived from NCVS interviews with New York City residents are shown in figure 12 and Appendix table 6. Over the period 1980 to 1999, the NYPD robbery rate and the victimization-survey rate for New York City followed similar trends (r = +.819). Over the 1990-1999 portion of the record-setting period for consecutive-year declines in the NYPD robbery rate, the correlation between NYPD robbery rates and NCVS-derived rates is +.907.   Over the CompStat-test period 1993 to 1999, the correlation is .985 (p < .01).

From 1990 to 1999, the drop in the NYPD robbery rate corresponded to the drop in the survey rate (r = +.907). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.985).

Robbery: Survey-estimated and police-recorded
crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD robbery rate was 1990 to 2002.

Figure 12

Aggravated assault. Trends in NYPD aggravated assault rates and NCVS rates derived from interviews with New York City residents are shown in figure 13 and Appendix table 6. Trends in one do not correspond at all with trends in the other over the 1980-1999 period (r = -.003). Over the 1988-1999 portion of the record-setting period for declines in the NYPD aggravated assault rate, the correspondence is, again, not close (r = +.287). But over the CompStat-test period from 1993 to 1999, there is a close correspondence in aggravated assault trends between NYPD statistics and those derived from NCVS interviews with New York City residents (r = +.855, p < .05).

From 1988 to 1999, the drop in the NYPD aggravated assault rate did not closely correspond to the survey rate (r = +.287). However, there was a close correspondence over the CompStat years 1993 to 1999 (r = +.855).

Aggravated assault: Survey-estimated and police-recorded
crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD aggravated assault rate was 1988 to 2002.

Figure 13

15

Violent crime overall. Non-NYPD statistics for "violent crime overall" combine New York City Medical Examiner homicide statistics with New York City victimization survey data for rape, robbery, and aggravated assault. NYPD and non-NYPD trends in violent crime rates for New York City are shown in figure 14 and Appendix table 6. Over the period 1980 to 1999, the correlation between the two trends is fairly close: r = +.648. Over the 1990-1999 portion of the record-setting period of uninterrupted declines in NYPD violent crime rates, the correlation is comparatively high: r = +.927. Over the CompStat-test period 1993 to 1999, the correlation is quite high: r = +.979 (p < .01).

From 1990 to 1999, the drop in the NYPD violent crime rate corresponded to the drop in the survey rate (r = +.927). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.979).
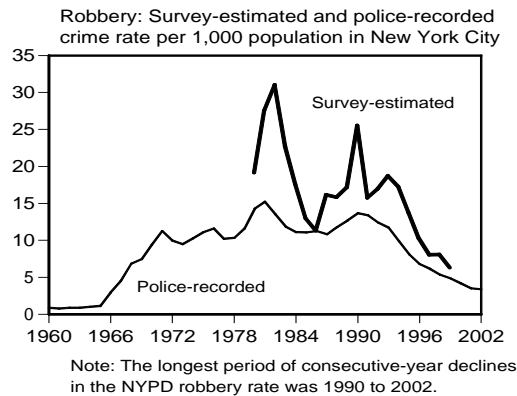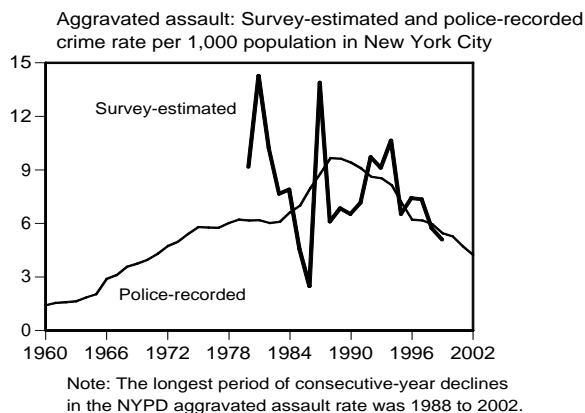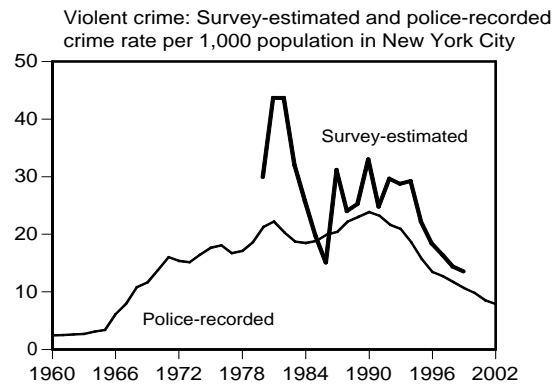
Violent crime: Survey-estimated and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD violent crime rate was 1990 to 2002. Survey-estimated violent crime rates include homicides recorded by medical examiners.

Figure 14

Burglary. Figure 15 and Appendix table 6 show trends in the burglary rate from two sources: NYPD records and NCVS interviews with New York City residents. The trends correspond closely over the 1980-1999 period (r = +.965), over the 1988-1999 portion of the record-setting period of consecutive-year declines (r = +.914), and over the 1993-1999 CompStat-test period (r = +.921, p < .01).

From 1988 to 1999, the drop in the NYPD burglary rate corresponded to the drop in the survey rate (r = +.914). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.921).

Burglary: Survey-estimated and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD burglary rate was 1988 to 2002.

Figure 15

16

Larceny-theft. Figure 16 and Appendix table 6 give trends in the burglary rate from two sources: NYPD records and NCVS interviews with New York City residents. The trends are similar over the period 1980-1999 (r = +.690). Over the 1988-1999 portion of the record-setting period of declining NYPD rates, correlation is fairly high: r = +.852. Over the 1993-1999 CompStat-test period, the correlation is quite high: r = +.970 (p < .01).

From 1988 to 1999, the drop in the NYPD larceny-theft rate corresponded to the drop in the survey rate (r = +.852). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.970).
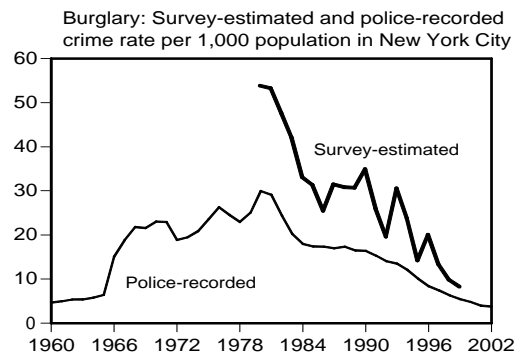
Larceny-theft: Survey-estimated and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD larceny-theft rate was 1988 to 2002.

Figure 16

Motor vehicle theft. Figure 17 and Appendix table 6 show the correspondence between the two ways of measuring trends in the motor vehicle theft rate. The correlation between the two is +.806 over the period 1980-1999; r = +.932 over the 1990-1999 portion of the record-setting period for consecutive declines; and r = +.916 (p < .01) over the 1993-1999 CompStat-test period.

From 1990 to 1999, the drop in the NYPD vehicle theft rate corresponded to the drop in the survey rate (r = +.932). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.916).

Vehicle theft: Survey-estimated and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD vehicle theft rate was 1990 to 2002.

Figure 17

17

Property crime overall. Figure 18 and Appendix table 6 give trends in the property crime rate as measured two different ways: one based on NYPD records; the other based on NCVS interviews with samples of New York City residents. The correlation between the two over the 1980-1999 period is +.864; over the 1988-1999 portion of the record-setting period, +.926; and over the 1993-1999 CompStat-test period, +.993 (p < .01).

From 1988 to 1999, the drop in the NYPD property crime rate corresponded to the drop in the survey rate (r = +.926). There was also a close correspondence over the CompStat years 1993 to 1999 (r = +.993).
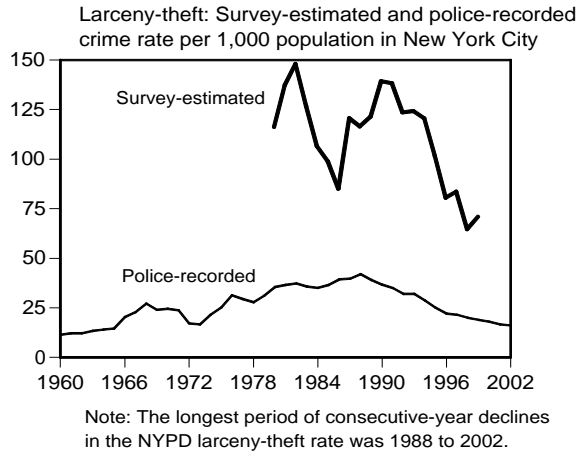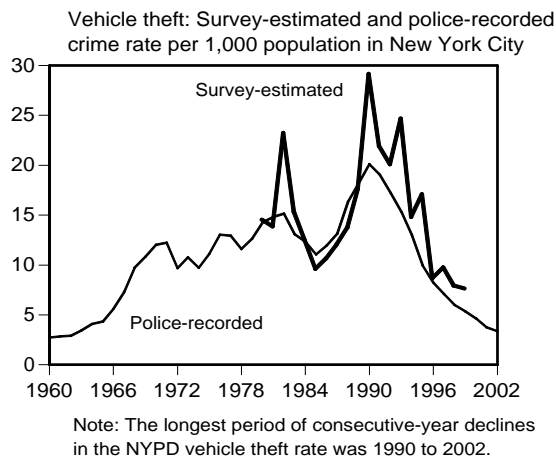
Property crime: Survey-estimated and police-recorded crime rate per 1,000 population in New York City

Note: The longest period of consecutive-year declines in the NYPD property crime rate was 1988 to 2002.
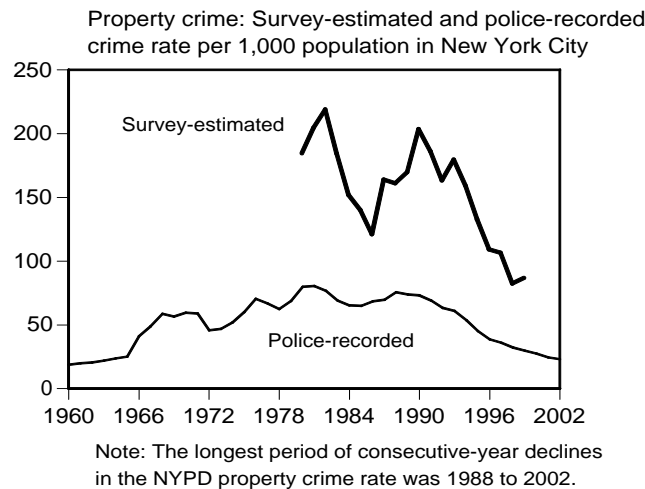
Figure 18

Summary. Over each of the record-setting periods, year-to-year changes in NYPD- and non-NYPD crime rates were closely correlated with one another. The only exception was aggravated assault, which had only a +.287 correlation. Over the CompStat-test period 1993-1999, NYPD and non-NYPD rates for each crime including aggravated assault were also closely correlated with one another. Moreover, if correlations over the entire period 1980-1999 are taken as a measure of what is generally found when NYPD- and non-NYPD crime trends are compared, the CompStat correlations are closer than what is usually seen. The one minor exception is burglary: r = +.965 from 1980 to 1999, compared to +.921 over the CompStat-test period 1993 to 1999.

Discussion

According to crime statistics compiled by the NYPD (New York City Police Department), crime in the city took a downturn starting around 1990 that continued for many years, shattering all the city's old records for consecutive-year declines in crime rates. Rates for homicide fell a record-setting 8 years in a row from 1990 to 1998; for rape, 8 consecutive years from 1993 to 2001; for robbery and motor vehicle theft, 12 consecutive years from 1990 to 2002; and, for aggravated assault, burglary and larceny-theft, 14 years in a row from 1988 to 2002. Many of the rates may still be falling; this paper had no NYPD statistics beyond 2002. Over the record-setting period, rates had fallen so low that government statisticians had to go back to 1970 to find a

lower rate for aggravated assault in the city, and even further back to the 1960s to find lower rates for homicide, rape, robbery, larceny-theft, and motor vehicle theft. As for burglary, going all the way back to 1960, no year was found with a lower rate than the one the NYPD recorded in 2002.

In 1994, the NYPD pioneered an innovation in policing: CompStat. Crime had been falling before 1994, but because the police-recorded fall continued under CompStat, this highly publicized innovation has been credited with being a major contributor to the amelioration of the crime problem in New York City. Police officials around the world have flocked to New York to observe CompStat first-hand, and to carry back what they have learned.   Versions of CompStat have now been widely adopted in the United States and have even been embraced by some police agencies abroad. Yet scientific proof of CompStat's success is hard to find. Moreover, the recorded drop in crime has never been scientifically verified.

This study put NYPD statistics to the test. Would non-NYPD crime data show crime falling in the city? Homicide statistics of the NYPD and the New York City Medical Examiner were compared over the period that NYPD statistics showed record-setting declines. The two were nearly a perfect match. For other crimes - robbery, aggravated assault, burglary, larceny, motor vehicle theft - NYPD statistics were compared to those derived from annual interviews with scientifically sampled residents of New York City, in which residents were asked whether they had recently been victimized by certain crimes. The interviews were all conducted as part of the on-going National Crime Victimization Survey, or NCVS. When these never-before-seen crime statistics from interviews with New York City residents were compared to NYPD statistics over the history-making period of falling police-recorded crime, results generally corroborated the NYPD.

We say "generally corroborated the NYPD" because NCVS statistics confirmed the drops in NYPD-recorded crime for all types of crime except one: aggravated assault. We have no explanation for the lack of correspondence for this one offense. A change in NYPD record-keeping might possibly account for it. That seems counterintuitive to us, though, since revised record-keeping might reasonably be expected to affect more than one crime. We explore some alternative explanations in the "Methodology" section.

CompStat. Besides attempting to verify the record-setting drops in crime, the study also looked for possible evidence of manipulation of crime statistics immediately following CompStat's 1994 introduction into the NYPD. If CompStat fostered manipulation, we reasoned, relatively low correspondence would be expected between NYPD and non-NYPD crime trends over a period when CompStat was in place. Results, however, did not show that to be true. That is, correlations measuring the correspondence between NYPD and non-NYPD crime trends in New York City were not lower during CompStat years than those normally found. If anything, they were higher. Violent crime, for example, had a +.970 correlation during the CompStat-test period from 1993 to 1999, but +.643 over the period 1980 to 1999. Aggravated assault had a +.855 correlation during these CompStat years, compared to the vastly lower -.003 that is generally found. In short, no evidence was found that the NYPD manipulated its statistics under

CompStat. Still, we cannot rule out the possibility that, on occasion, some of the 76 precincts in New York City may have downgraded or concealed crimes to make their statistics look better.

As for why crime fell in New York City, our study was not designed to answer that question. Instead, the aim was to learn whether independent crime data could corroborate official police data. We think our paper used a fair, unbiased test of the NYPD crime statistics. In our opinion, crime really did fall in New York City over the record-setting period that NYPD statistics said it did.

Methodology

Use of pre-1993 "adjusted" NCVS estimates. The history-making fall in NYPD-recorded crime starting around 1990 was corroborated by the corresponding drop in NCVS-measured crime. Since most pre-1993 NCVS rates were adjusted upward, the correspondence might conceivably be largely due to the adjustments. To rule out that possibility, correlations using adjusted and unadjusted rates were compared. As expected, results indicated that adjustments generally improved the magnitude of the correlation, but not by a great deal. For example, over the period 1990 to 1999, the correlation for violent crime based on adjusted rates and unadjusted rates was +.927 and +.871 respectively; for burglary, +.914 and +.824 respectively (table 3 note).[4]

Did NYPD-recorded crime fall because of growing reluctance to call the police? Drops in recorded crime can occur simply because victims and others, for whatever reason, grow less and less likely to report crime to police. To investigate whether that might help account for the record-setting declines in NYPD-recorded crime, the NCVS data from interviews with New York City crime victims were examined. In the interviews, victims were asked whether the crime committed against them was reported to police. Analysis of their responses revealed that, on average from 1980 to 1999, 49% of non-commercial robberies were reported to police; 51% of aggravated assaults; 55% of non-commercial burglaries; 23% of non-commercial larceny-thefts; and 70% of non-commercial motor vehicle thefts (Appendix table 7).[5] These percentages did not drop during the record-setting periods of falling NYPD crime rates, as indicated by the sign of the correlations between reporting percentage and year. The reporting percentage for

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[4]To be precise, absolute numbers of victimizations/incidents were directly adjusted, not rates. But since the rates were based on adjusted counts, the term "adjusted rates" is used. The study used unpublished adjustment ratios. These adjusted ratios are nearly identical to rate adjustment ratios published in *Criminal Victimization, 1973-1975* (Rand, Lynch and Cantor, 1997). The adjustment ratios applied to the New York City NCVS data are ones derived from national data, not New York City data. National adjustment ratios are the only ones that exist, and we felt that some adjustment was perhaps better than none.

[5]Victims are not asked which police agency the crime was reported to, only whether it was reported. Crimes against city residents that were committed outside the legal boundaries of New York City would not be reported to the NYPD.

non-commercial robbery, for example, had a positive correlation (r = +0.30) with year over the period 1990 to 1999, suggesting that, if anything, the reporting percentage rose, not fell, over the period. The positive sign in the correlation for three other crimes - aggravated assault (r = +0.04), residential burglary (r = +0.65) and motor vehicle theft (r = +0.53) - suggest the same: if anything, a rising, not falling, willingness to call police. Only larceny-theft had a negative sign in its correlation (r = -0.37), which might indicate growing reluctance to call police. But that correlation (like most of the others) was not statistically significant at the .05 level. In short, crime fell in New York City probably for lots of reasons, but rising reticence to report crime to the NYPD was not one of them.

Reconciling discrepant trends for aggravated assault. The drop in NYPD-recorded crime was corroborated for every crime except aggravated assault. In searching for an explanation, we tried to think of ways in which aggravated assault is different, or might be different, from other crimes.

1. The discrepant finding for aggravated assault is not unique to New York City. Studies have compared police and NCVS statistics for the entire nation and have also found a close correspondence in national trends for every crime category except aggravated assault (Langan 2004, Langan and Farrington 1998).

2. New York City's NCVS data are more complete than its police statistics in that the NCVS compiles data on both reported and unreported crime, whereas the NYPD only keeps records of crimes that are reported to them or that, in rare instances, NYPD officers witness. On the other hand, the city's police records are more complete than its NCVS data to the extent that the NYPD keeps statistics on certain crimes that are not counted in the city's NCVS data: for example, commercial robberies and burglaries; robberies and aggravated assaults against persons under 12; and crimes against non-residents of New York City.

We wondered what we might find if we compared New York City NCVS counts to NYPD counts after we: 1) subtracted from New York City NCVS numbers any crimes that victims said were not reported to police, and 2) subtracted from NYPD counts any crimes against commercial establishments or against persons under 12. We also wanted to eliminate from NYPD totals all crimes against non-residents, but that wasn't possible because we had no NYPD data distinguishing victims by their residency.

After the subtractions, the number of crimes that victims said were reported to police, was then compared to the number that the NYPD recorded. All other things being equal, we expected the NYPD-recorded number to exceed the NCVS reported number because the recorded number includes crimes against both residents and non-residents. Results were in line with our expectation except for the crime of non-commercial burglary. On average from 1980 to 1999, the NYPD-recorded number of non-residential burglaries was 86% of all the NCVS-estimated number of reported residential burglaries (Appendix table 8). The exception may have a simple explanation: non-residents of New York City contribute relatively little to the city's volume of burglary. Consequently, by limiting itself to interviews with New York City residents, the NCVS does not miss a great many of the city's burglaries.

By far, the biggest difference between NCVS-reported and comparable NYPD-recorded numbers was for aggravated assault. On average over the period 1980 to 1999, the number of NYPD-recorded aggravated assaults against persons 12 and older was nearly 2.5 times the number that New York City residents said were reported to police (Appendix table 8). For non-commercial robbery, the NYPD-recorded number against persons 12 and older was about 1.5 times the NCVS-reported number; for non-commercial larceny, the NYPD figure was 1.1 times the NCVS-reported total; and for non-commercial motor vehicle theft, the NYPD-recorded volume was 1.3 times the NCVS-reported volume.

While not surprising that NYPD-recorded numbers are generally larger than NCVS-reported numbers, it is not clear why aggravated assault stands out among the different crimes. Perhaps relatively large numbers of the aggravated assault victims in NYPD statistics are types that, by design, go uncounted in the NCVS: commuters, visitors, tourists, the homeless, institutionalized populations, and persons in group living quarters like dormitories and barracks. Perhaps comparatively large numbers of the assault victims coming to police attention are ones that the NCVS simply does a poor job of capturing. They might be victims who belong to an economic stratum, gender, or social class that NCVS interviewers do not reach well. They might be victims who, for one reason or another, are reluctant to tell interviewers about their victimization: 1) they were complicit in the crime (bar fights, for example) but emergency room treatment for their injuries brought them to police attention, 2) they were victimized by a co-habitant (husband or boyfriend) who was present during the interview, or 3) they were too embarrassed to say that they had been victimized by a boyfriend, girlfriend, husband, wife or other relative.[6] One piece of evidence that assault is less well counted in the NCVS than other violent crimes is from a study that compared NCVS numbers to those based on hospital records (Rand 1997). Hospital records showed three times more people receiving hospital treatment for violent crime injuries than NCVS statistics. Differences were not as large for other crimes. Results from that study also suggested that the NCVS violent crime undercount was particularly severe for crimes between boyfriends and girlfriends, spouses and other relatives.

Acknowledgment

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[6]Persons interviewed in the NCVS are encouraged to tell their interviewers about any incidents of domestic violence they experienced in the recent past, but they often don't, according to the limited research on the topic (Panel for the Evaluation of Crime Surveys 1976: 32-48).

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Appendix table 1. Number of police-recorded crimes in New York City, 1960-2002

Year	Population (all ages)	All offenses	Violent offense				
			Total	Homicide	Rape	Robbery	Aggravated assault
1960	7,781,984	164,125	18,831	390	841	6,579	11,021
1961	7,750,000	172,831	19,201	482	788	5,955	11,976
1962	7,825,000	179,488	20,441	507	882	6,634	12,418
1963	7,932,000	196,510	21,219	548	823	6,823	13,025
1964	7,989,000	214,632	24,509	636	1,054	7,988	14,831
1965	8,011,000	228,594	27,014	631	1,154	8,904	16,325
1966	8,019,100	378,658	49,158	653	1,761	23,539	23,205
1967	7,983,900	453,977	63,412	745	1,905	35,934	24,828
1968	7,964,200	552,916	85,664	904	1,840	54,405	28,515
1969	7,929,882	539,761	92,032	1,043	2,120	59,152	29,717
1970	7,895,563	578,149	108,615	1,117	2,141	74,102	31,255
1971	7,903,000	591,927	126,740	1,466	2,415	88,994	33,865
1972	7,835,500	478,869	120,294	1,691	3,271	78,202	37,130
1973	7,681,800	475,855	116,313	1,680	3,735	72,750	38,148
1974	7,597,800	519,825	124,616	1,554	4,054	77,940	41,068
1975	7,492,200	581,247	132,182	1,645	3,866	83,190	43,481
1976	7,427,800	658,147	134,153	1,622	3,400	86,183	42,948
1977	7,300,700	610,077	121,912	1,553	3,899	74,404	42,056
1978	7,178,900	570,354	122,685	1,503	3,882	74,029	43,271
1979	7,109,420	621,110	132,383	1,733	3,875	82,572	44,203
1980	7,035,348	710,151	149,549	1,812	3,711	100,550	43,476
1981	7,070,429	725,846	156,946	1,826	3,862	107,475	43,783
1982	7,096,559	688,567	143,943	1,668	3,547	95,944	42,784
1983	7,100,063	622,877	132,653	1,622	3,662	84,043	43,326
1984	7,167,121	600,216	132,292	1,450	3,829	79,541	47,472
1985	7,183,984	601,467	135,152	1,384	3,880	79,532	50,356
1986	7,179,609	635,199	143,251	1,582	3,536	80,827	57,306
1987	7,284,319	656,505	148,313	1,672	3,507	78,890	64,244
1988	7,346,352	718,483	162,916	1,896	3,412	86,578	71,030
1989	7,369,454	712,419	169,487	1,905	3,254	93,377	70,951
1990	7,322,564	710,222	174,542	2,245	3,126	100,280	68,891
1991	7,350,023	678,855	170,390	2,154	2,892	98,512	66,832
1992	7,375,097	626,182	159,578	1,995	2,815	91,239	63,529
1993	7,347,257	600,346	153,543	1,946	2,818	86,001	62,778
1994	7,336,224	530,120	136,522	1,561	2,666	72,540	59,755
1995	7,319,546	444,758	115,153	1,177	2,374	59,280	52,322
1996	7,339,594	382,555	98,659	983	2,332	49,670	45,674
1997	7,320,477	355,893	92,863	770	2,157	44,707	45,229
1998	7,357,745	323,150	85,891	633	2,046	39,359	43,853
1999	7,429,263	299,563	79,024	671	1,702	36,100	40,551
2000	7,746,511	288,368	75,745	673	1,630	32,562	40,880
2001	8,023,018	263,764	68,274	649	1,530	28,202	37,893
2002	8,084,693	250,630	63,839	587	1,689	27,229	34,334

Appendix table 1. Number of police-recorded crimes in New York City, 1960-2002 (continued)

Year	Property offense			
	Total	Burglary	Larceny-theft	Motor vehicle theft
1960	145,294	36,049	88,176	21,069
1961	153,630	38,460	93,392	21,778
1962	159,047	41,478	94,832	22,737
1963	175,291	42,775	105,342	27,174
1964	190,123	45,693	111,574	32,856
1965	201,580	51,072	115,782	34,726
1966	329,500	120,903	163,683	44,914
1967	390,565	150,245	182,151	58,169
1968	467,252	173,559	216,245	77,448
1969	447,729	171,393	190,540	85,796
1970	469,534	181,694	193,005	94,835
1971	465,187	181,331	187,232	96,624
1972	358,575	148,046	134,664	75,865
1973	359,542	149,311	127,500	82,731
1974	395,209	158,321	163,157	73,731
1975	449,065	177,032	188,832	83,201
1976	523,994	195,243	232,069	96,682
1977	488,165	178,907	214,838	94,420
1978	447,669	164,447	200,110	83,112
1979	488,727	178,162	220,817	89,748
1980	560,602	210,703	249,421	100,478
1981	568,900	205,825	258,369	104,706
1982	544,624	172,794	264,400	107,430
1983	490,224	143,698	253,801	92,725
1984	467,924	128,687	250,759	88,478
1985	466,315	124,838	262,051	79,426
1986	491,948	124,382	281,713	85,853
1987	508,192	123,412	289,126	95,654
1988	555,567	127,148	308,479	119,940
1989	542,932	121,322	287,749	133,861
1990	535,680	119,937	268,620	147,123
1991	508,465	112,015	256,473	139,977
1992	466,604	103,476	236,169	126,959
1993	446,803	99,207	235,132	112,464
1994	393,598	88,370	209,808	95,420
1995	329,605	73,889	183,037	72,679
1996	283,896	61,270	162,246	60,380
1997	263,030	54,099	157,039	51,892
1998	237,259	46,185	147,018	44,056
1999	220,539	40,469	140,377	39,693
2000	212,623	37,112	139,664	35,847
2001	195,490	31,563	133,938	29,989
2002	186,791	30,102	129,655	27,034

Source: Annual publication "Crime in the United States" (FBI).
Note: 1) "Homicide" is defined as murder and non-negligent manslaughter.
2) The 649 homicides shown for 2001 excludes 2,823 persons killed at the World Trade Center on September 11. 3) For each offense, the new record for consecutive-year declines in New York City is double boxed, and the old record is single boxed.

Appendix table 2. Data for figures 1 through 9

		Police-recorded crime rate per 1,000 population in New York City				
		Violent offense				
					Figure 4	*Figure 5*
	All	*Figure 1*	*Figure 2*	*Figure 3*	Aggravated	Total
Year	offenses	Homicide	Rape	Robbery	assault	violent
1960	21.09	0.05012	0.10807	0.85	1.42	2.42
1961	22.30	0.06219	0.10168	0.77	1.55	2.48
1962	22.94	0.06479	0.11272	0.85	1.59	2.61
1963	24.77	0.06909	0.10376	0.86	1.64	2.68
1964	26.87	0.07961	0.13193	1.00	1.86	3.07
1965	28.54	0.07877	0.14405	1.11	2.04	3.37
1966	47.22	0.08143	0.21960	2.94	2.89	6.13
1967	56.86	0.09331	0.23861	4.50	3.11	7.94
1968	69.43	0.11351	0.23103	6.83	3.58	10.76
1969	68.07	0.13153	0.26734	7.46	3.75	11.61
1970	73.22	0.14147	0.27116	9.39	3.96	13.76
1971	74.90	0.18550	0.30558	11.26	4.29	16.04
1972	61.12	0.21581	0.41746	9.98	4.74	15.35
1973	61.95	0.21870	0.48621	9.47	4.97	15.14
1974	68.42	0.20453	0.53358	10.26	5.41	16.40
1975	77.58	0.21956	0.51600	11.10	5.80	17.64
1976	88.61	0.21837	0.45774	11.60	5.78	18.06
1977	83.56	0.21272	0.53406	10.19	5.76	16.70
1978	79.45	0.20936	0.54075	10.31	6.03	17.09
1979	87.36	0.24376	0.54505	11.61	6.22	18.62
1980	100.94	0.25756	0.52748	14.29	6.18	21.26
1981	102.66	0.25826	0.54622	15.20	6.19	22.20
1982	97.03	0.23504	0.49982	13.52	6.03	20.28
1983	87.73	0.22845	0.51577	11.84	6.10	18.68
1984	83.75	0.20231	0.53425	11.10	6.62	18.46
1985	83.72	0.19265	0.54009	11.07	7.01	18.81
1986	88.47	0.22035	0.49251	11.26	7.98	19.95
1987	90.13	0.22953	0.48145	10.83	8.82	20.36
1988	97.80	0.25809	0.46445	11.79	9.67	22.18
1989	96.67	0.25850	0.44155	12.67	9.63	23.00
1990	96.99	0.30659	0.42690	13.69	9.41	23.84
1991	92.36	0.29306	0.39347	13.40	9.09	23.18
1992	84.90	0.27050	0.38169	12.37	8.61	21.64
1993	81.71	0.26486	0.38354	11.71	8.54	20.90
1994	72.26	0.21278	0.36340	9.89	8.15	18.61
1995	60.76	0.16080	0.32434	8.10	7.15	15.73
1996	52.12	0.13393	0.31773	6.77	6.22	13.44
1997	48.62	0.10518	0.29465	6.11	6.18	12.69
1998	43.92	0.08603	0.27807	5.35	5.96	11.67
1999	40.32	0.09032	0.22909	4.86	5.46	10.64
2000	37.23	0.08688	0.21042	4.20	5.28	9.78
2001	32.88	0.08089	0.19070	3.52	4.72	8.51
2002	31.00	0.07261	0.20891	3.37	4.25	7.90

Appendix table 2. Data for figures 1 through 9 (continued)

Police-recorded crime rate per 1,000
population in New York City

			Property offense	
			Figure 8	
		Figure 7	Motor	*Figure 9*
	Figure 6	Larceny-	vehicle	Total
Year	Burglary	theft	theft	property
1960	4.63	11.33	2.71	18.67
1961	4.96	12.05	2.81	19.82
1962	5.30	12.12	2.91	20.33
1963	5.39	13.28	3.43	22.10
1964	5.72	13.97	4.11	23.80
1965	6.38	14.45	4.33	25.16
1966	15.08	20.41	5.60	41.09
1967	18.82	22.81	7.29	48.92
1968	21.79	27.15	9.72	58.67
1969	21.61	24.03	10.82	56.46
1970	23.01	24.44	12.01	59.47
1971	22.94	23.69	12.23	58.86
1972	18.89	17.19	9.68	45.76
1973	19.44	16.60	10.77	46.80
1974	20.84	21.47	9.70	52.02
1975	23.63	25.20	11.11	59.94
1976	26.29	31.24	13.02	70.54
1977	24.51	29.43	12.93	66.87
1978	22.91	27.87	11.58	62.36
1979	25.06	31.06	12.62	68.74
1980	29.95	35.45	14.28	79.68
1981	29.11	36.54	14.81	80.46
1982	24.35	37.26	15.14	76.74
1983	20.24	35.75	13.06	69.05
1984	17.96	34.99	12.34	65.29
1985	17.38	36.48	11.06	64.91
1986	17.32	39.24	11.96	68.52
1987	16.94	39.69	13.13	69.77
1988	17.31	41.99	16.33	75.62
1989	16.46	39.05	18.16	73.67
1990	16.38	36.68	20.09	73.15
1991	15.24	34.89	19.04	69.18
1992	14.03	32.02	17.21	63.27
1993	13.50	32.00	15.31	60.81
1994	12.05	28.60	13.01	53.65
1995	10.09	25.01	9.93	45.03
1996	8.35	22.11	8.23	38.68
1997	7.39	21.45	7.09	35.93
1998	6.28	19.98	5.99	32.25
1999	5.45	18.90	5.34	29.69
2000	4.79	18.03	4.63	27.45
2001	3.93	16.69	3.74	24.37
2002	3.72	16.04	3.34	23.10

Source: Rates shown were calculated from data in appendix table 1.
Note: For each offense, the new record for consecutive-year declines in
New York City is double boxed, and the old record is single boxed.

Appendix table 3. Data for figure 10

Year	Number of full-time law enforcement employees in the NYPD		
	Total	Officers*	Civilians
1980	26,939	22,590	4,349
1981	27,831	22,467	5,364
1982	28,731	22,855	5,876
1983	29,289	23,339	5,950
1984	33,014	25,044	7,970
1985	32,328	26,073	6,255
1986	33,853	27,425	6,428
1987	34,764	27,523	7,241
1988	36,027	26,723	9,304
1989	35,605	25,858	9,747
1990	36,407	26,844	9,563
1991	36,227	26,856	9,371
1992	37,922	28,249	9,673
1993	39,442	29,327	10,115
1994	39,953	30,135	9,818
1995	46,802	37,450	9,352
1996	48,441	37,090	11,351
1997	48,549	37,219	11,330
1998	50,417	39,149	11,268
1999	62,969	41,791	21,178
2000	55,408	39,779	15,629
2001	56,208	39,067	17,141
2002	53,774	37,240	16,534

Source: Annual publication "Crime in the United States" (FBI).
Note: In 1995, the Transit and Housing Authority Police were added to the NYPD.
*The numbers in this column were used to construct figure 10.

Appendix table 4. Data for figure 11

Year	Population (all ages)	Homicides in New York City recorded by the -				
		NYPD		Medical examiner		
		Number	Rate per 1,000 population	Number	Rate per 1,000 population	
1960	7,781,984	390	0.050			
1961	7,750,000	482	0.062			
1962	7,825,000	507	0.065			
1963	7,932,000	548	0.069			
1964	7,989,000	636	0.080			
1965	8,011,000	631	0.079			
1966	8,019,100	653	0.081			
1967	7,983,900	745	0.093			
1968	7,964,200	904	0.114			
1969	7,929,882	1,043	0.132			
1970	7,895,563	1,117	0.141			
1971	7,903,000	1,466	0.185			
1972	7,835,500	1,691	0.216			
1973	7,681,800	1,680	0.219			
1974	7,597,800	1,554	0.205			
1975	7,492,200	1,645	0.220			
1976	7,427,800	1,622	0.218			
1977	7,300,700	1,553	0.213			
1978	7,178,900	1,503	0.209			
1979	7,109,420	1,733	0.244			
1980	7,035,348	1,812	0.258	1,902	0.270	
1981	7,070,429	1,826	0.258	1,977	0.280	
1982	7,096,559	1,668	0.235	1,871	0.264	
1983	7,100,063	1,622	0.228	1,778	0.250	
1984	7,167,121	1,450	0.202	1,615	0.225	
1985	7,183,984	1,384	0.193	1,509	0.210	
1986	7,179,609	1,582	0.220	1,623	0.226	
1987	7,284,319	1,672	0.230	1,681	0.231	
1988	7,346,352	1,896	0.258	1,942	0.264	
1989	7,369,454	1,905	0.258	1,963	0.266	
1990	7,322,564	2,245	0.307	2,254	0.308	
1991	7,350,023	2,154	0.293	2,197	0.299	
1992	7,375,097	1,995	0.271	2,032	0.276	
1993	7,347,257	1,946	0.265	2,001	0.272	
1994	7,336,224	1,561	0.213	1,594	0.217	
1995	7,319,546	1,177	0.161	1,200	0.164	
1996	7,339,594	983	0.134	1,006	0.137	
1997	7,320,477	770	0.105	786	0.107	
1998	7,357,745	633	0.086	666	0.091	
1999	7,429,263	671	0.090	690	0.093	
2000	7,746,511	673	0.087			
2001	8,023,018	649	0.081			
2002	8,084,693	587	0.073			

Source: 1960 population is from table 21 of the Census Bureau's "1960 Census of Population. Vol 1: Characteristics of the Population. Part 34: New York"; 1961-1968 populations are from the Census Bureau's "Current Population Reports - Population Estimates - P-25"; 1969 population was derived by averaging the 1968 and 1970 populations; 1970-1978 populations are from the Census Bureau's "Preliminary Estimates of the Intercensal Population of Counties, 1970-1979" (Rolland 2003). 1979-2002 populations and "homicides recorded by police" are from the annual publication "Crime in the United States" (FBI). 1980-1999 "homicides recorded by medical examiners" are from the New York City Department of Health and Mental Hygiene's annual publication "Summary of Vital Statistics" (López 2003).
Note: 1) "Homicides recorded by police" includes murder and non-negligent manslaughter. 2) Medical examiner-recorded homicides include some negligent manslaughters. Legal interventions were excluded from "homicides recorded by medical examiners" to make them more comparable to the police-recorded homicides. 3) The 2001 homicide figures in this table exclude the 2,823 persons killed at the World Trade Center on September 11.

Appendix table 5. Number of crimes in New York City based on medical examiner records (for homicide) and victimization surveys (all other crimes), 1980-1999

Year	Poplulation age 12 or older	Violent offense Total*	Homicide	Robbery	Aggravated assault
1980	5,930,190	176,799	1,902	112,950	54,188
1981	5,999,150	261,146	1,977	164,910	85,448
1982	6,017,660	262,049	1,871	186,180	61,479
1983	6,017,410	191,725	1,778	135,970	45,930
1984	6,099,730	156,510	1,615	106,870	48,025
1985	6,172,400	121,151	1,509	79,520	28,024
1986	6,108,840	91,284	1,623	68,620	14,992
1987	6,084,470	188,868	1,681	97,780	84,357
1988	6,150,640	146,838	1,942	96,710	37,324
1989	6,167,350	154,915	1,963	105,260	42,011
1990	6,474,860	212,777	2,254	164,690	42,098
1991	6,491,290	160,092	2,197	101,660	46,215
1992	6,260,030	184,560	2,032	105,820	60,586
1993	6,254,740	178,791	2,001	116,480	56,790
1994	6,095,780	177,234	1,594	104,620	64,610
1995	6,076,530	133,990	1,200	83,200	39,490
1996	6,118,380	111,686	1,006	62,230	45,230
1997	6,075,010	99,006	786	48,420	44,450
1998	6,162,420	87,686	666	49,310	35,110
1999	6,186,570	82,800	690	38,490	31,370

Year	Property offense Total	Burglary	Larceny- theft	Motor vehicle theft
1980	1,090,843	318,372	686,671	85,800
1981	1,222,277	318,660	820,927	82,690
1982	1,312,570	285,600	887,750	139,220
1983	1,104,214	252,540	759,944	91,730
1984	923,420	200,868	646,872	75,680
1985	859,845	192,576	608,309	58,960
1986	736,025	154,752	516,683	64,590
1987	994,327	190,380	731,157	72,790
1988	986,418	188,532	713,776	84,110
1989	1,042,908	188,208	746,450	108,250
1990	1,312,963	225,216	899,607	188,140
1991	1,203,832	167,544	894,608	141,680
1992	1,018,212	121,740	771,152	125,320
1993	1,118,440	189,890	774,880	153,670
1994	965,850	143,910	732,100	89,840
1995	803,720	85,500	614,920	103,300
1996	664,540	121,730	490,330	52,480
1997	644,570	80,350	505,550	58,670
1998	503,820	59,770	395,550	48,500
1999	533,230	50,160	436,310	46,760

Source: Homicide figures are from the New York City Department of Health and Mental Hygiene's annual publication "Summary of Vital Statistics," which has homicide data compiled by the New York City Medical Examiner (López 2003). All other figures are directly from or derived from an unpublished Census Bureau tabulation of data on NCVS interviews with New York City residents (Watt 2003). Derived figures pertain to adjusted NCVS estimates (see note below).

Note: 1) To make pre-1993 NCVS counts (not rates) compable to later-year counts, unadjusted pre-1993 counts were multiplied by an adjustment ratio. The crimes that were adjusted and the ratios are: rape (2.63), aggravated assault (1.24), household burglary (1.2), and household theft (1.27). Adjustment for 1992 counts was necessary because 90% of New York City interviews used a version of the NCVS questionnaire that became obsolete in 1993, when the questionnaire was redesigned. 2) Rape, aggravated assault, and personal theft were person weighted; burglary, household theft, and vehicle theft, household weighted; robbery was incident weighted for comparabaility with police data. 3) In this table, "larceny-theft" includes personal and household theft for comparability with police data.

*Total violent offenses include rape (not shown separately). For 1993-1999, rape includes sexual assault. For all years, rape includes male and female victims.

Appendix table 6. Data from 1980-1999 for figures 12 through 18

New York City crime rates based on victimization surveys (per 1,000
population age 12 or older) and the NYPD (per 1,000 population all ages)

	Violent offense					
	Figure 12		*Figure 13*		*Figure 14*	
	Robbery		Aggravated assault		Total violent	
Year	Victim-survey	NYPD	Victim-survey	NYPD	Victim-survey*	NYPD
1980	19.05	14.29	9.14	6.18	29.81	21.26
1981	27.49	15.20	14.24	6.19	43.53	22.20
1982	30.94	13.52	10.22	6.03	43.55	20.28
1983	22.60	11.84	7.63	6.10	31.86	18.68
1984	17.52	11.10	7.87	6.62	25.66	18.46
1985	12.88	11.07	4.54	7.01	19.63	18.81
1986	11.23	11.26	2.45	7.98	14.94	19.95
1987	16.07	10.83	13.86	8.82	31.04	20.36
1988	15.72	11.79	6.07	9.67	23.87	22.18
1989	17.07	12.67	6.81	9.63	25.12	23.00
1990	25.44	13.69	6.50	9.41	32.86	23.84
1991	15.66	13.40	7.12	9.09	24.66	23.18
1992	16.90	12.37	9.68	8.61	29.48	21.64
1993	18.62	11.71	9.08	8.54	28.58	20.90
1994	17.16	9.89	10.60	8.15	29.07	18.61
1995	13.69	8.10	6.50	7.15	22.05	15.73
1996	10.17	6.77	7.39	6.22	18.25	13.44
1997	7.97	6.11	7.32	6.18	16.30	12.69
1998	8.00	5.35	5.70	5.96	14.23	11.67
1999	6.22	4.86	5.07	5.46	13.38	10.64

New York City crime rates based on victimization surveys (per 1,000
population age 12 or older) and the NYPD (per 1,000 population all ages)

	Property offense							
	Figure 15		*Figure 16*		*Figure 17*		*Figure 18*	
	Burglary		Larceny-theft		Motor vehicle theft		Total property	
Year	Victim-survey	NYPD	Victim-survey	NYPD	Victim-survey	NYPD	Victim-survey	NYPD
1980	53.69	29.95	115.79	35.45	14.47	14.28	183.95	79.68
1981	53.12	29.11	136.84	36.54	13.78	14.81	203.74	80.46
1982	47.46	24.35	147.52	37.26	23.14	15.14	218.12	76.74
1983	41.97	20.24	126.29	35.75	15.24	13.06	183.50	69.05
1984	32.93	17.96	106.05	34.99	12.41	12.34	151.39	65.29
1985	31.20	17.38	98.55	36.48	9.55	11.06	139.30	64.91
1986	25.33	17.32	84.58	39.24	10.57	11.96	120.49	68.52
1987	31.29	16.94	120.17	39.69	11.96	13.13	163.42	69.77
1988	30.65	17.31	116.05	41.99	13.67	16.33	160.38	75.62
1989	30.52	16.46	121.03	39.05	17.55	18.16	169.10	73.67
1990	34.78	16.38	138.94	36.68	29.06	20.09	202.78	73.15
1991	25.81	15.24	137.82	34.89	21.83	19.04	185.45	69.18
1992	19.45	14.03	123.19	32.02	20.02	17.21	162.65	63.27
1993	30.36	13.50	123.89	32.00	24.57	15.31	178.81	60.81
1994	23.61	12.05	120.10	28.60	14.74	13.01	158.45	53.65
1995	14.07	10.09	101.20	25.01	17.00	9.93	132.27	45.03
1996	19.90	8.35	80.14	22.11	8.58	8.23	108.61	38.68
1997	13.23	7.39	83.22	21.45	9.66	7.09	106.10	35.93
1998	9.70	6.28	64.19	19.98	7.87	5.99	81.76	32.25
1999	8.11	5.45	70.53	18.90	7.56	5.34	86.19	29.69

Source: Rates shown were calculated from data in appendix tables 1 and 5.
*Includes homicides recorded by medical examiners and victim-survey rape.

Appendix table 7. Crimes reported to the police as a percentage of criminal victimizations and incidents in New York City, 1980-1999

Year	Non-commercial robbery	Aggravated assault	Residential burglary	Non-commercial larceny	Non-commercial vehicle theft
1980	48 %	58 %	54 %	25 %	79 %
1981	44	51	62	25	68
1982	48	47	51	24	66
1983	48	51	47	24	58
1984	56	58	50	22	80
1985	42	34	48	24	61
1986	51	76	66	31	66
1987	47	25	48	24	75
1988	61	56	56	26	59
1989	48	50	47	21	75
1990	34	41	39	23	64
1991	47	52	50	21	61
1992	37	70	48	20	75
1993	59	63	61	21	73
1994	40	35	56	22	78
1995	62	37	63	22	68
1996	41	47	46	21	66
1997	24	50	73	26	78
1998	95	61	63	19	84
1999	44	58	66	18	72
Average	49 %	51 %	55 %	23 %	70 %
Consecutive years of decline	1990-99	1988-99	1988-99	1988-99	1990-99
Correlations between reporting percentage and year	0.30	0.04	0.65*	-0.37	0.53

Source: Percentages are based on an unpublished Census Bureau tabulation of data on NCVS interviews with New York City residents (Watt 2003).
Note: Correlations are between reporting percentage and consecutive years of falling crime rates.
*Correlation is significant at the 0.05 level (2-tailed)

Appendix table 8. NYPD-recorded crimes as a percentage of crimes reported to police, 1980-1999

Year	Non-commercial robbery	Aggravated assault	Residential burglary	Non-commercial larceny	Non-commercial vehicle theft
1980	155 %	132 %	89 %	105 %	123 %
1981	124	96	75	91	154
1982	91	140	83	90	97
1983	111	174	84	100	144
1984	116	163	88	127	121
1985	210	505	92	129	184
1986	204	477	82	123	168
1987	152	294	91	119	146
1988	129	324	78	121	201
1989	161	322	86	135	137
1990	153	378	89	92	101
1991	174	263	90	98	134
1992	194	143	122	109	112
1993	104	167	61	102	83
1994	146	250	79	85	112
1995	96	342	98	89	86
1996	162	204	78	104	145
1997	326	192	67	74	95
1998	70	195	91	117	89
1999	180	213	94	107	98
Average	153 %	249 %	86 %	106 %	127 %

Source: "Crimes reported to police" are from an unpublished Census Bureau tabulation of data on NCVS interviews with New York City residents (Watt 2003). "NYPD-recorded crimes" are from the annual publication "Crime in the United States" (FBI). NYPD crime totals were reduced as explained in the note below.

Note: 1) NYPD crime totals were reduced to be comparable to victim-survey crimes reported to police. 2) Commercial robberies (from banks, gas stations, convenience stores, and commercial houses) were subtracted from NYPD-recorded robberies. NYPD-recorded robbery was further reduced by 2%, the estimated percentage of robbery victims under age 12. 3) Commercial larcenies (shoplifting and theft from buildings or coin-operated machines) were excluded from NYPD-recorded larcenies. 4) Commercial burglaries were subtracted from NYPD-recorded burglary totals. 5) The New York State Division of Criminal Justice Services provided the proportion of robberies, larcenies, and burglaries against businesses for New York City. 6) NYPD-recorded vehicle theft was reduced by 17% to eliminate vehicle thefts involving businesses. 7) NYPD-recorded aggravated assault was reduced by 5% to eliminate assault victims under age 12.