For the Record

Supplement to *Measuring Public Safety*

Expanded to include final 2016 data for 294 cities with populations of 100,000 or greater

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Summary

In *Measuring Public Safety: Responsibly Interpreting Statistics on Violent Crime*, the Vera Institute of Justice (Vera) used historical crime trend data to illustrate some common pitfalls when interpreting statistical data on crime.[1] This supplement expands Vera's previous analyses by incorporating official Uniform Crime Reporting statistics for 2016 and providing data on crime rates for 294 cities with populations of 100,000 or greater.[2] Highlights from this updated analysis include:

- Property crime continued a 20-year decline. Homicide and total violent crime increased slightly in 2015 and again in 2016 but remained close to their lowest levels in decades.
- Average violent crime and homicide rates continued to be noticeably lower for cities in the Mountain and Pacific regions, and for the group of cities with the smallest populations, than for cities in the other regions and those with larger populations.
- Average crime rates hide substantial variation among cities. Property crime rates in 2016 ranged across cities from 1,005 to 8,535 per 100,000 residents; violent crime rates ranged from 44 to 2,047 per 100,000; and homicide rates ranged from 0 to 59.8 per 100,000.

Across all crime types, most cities experienced stable rates of reported crime between 2015 and 2016. However, there were fluctuations at both ends of the scale. To highlight these patterns, single-year changes from 2015 to 2016 were classified as minimal, notable, or large.[3] Far more cities experienced decreases or minimal changes in crime rates than experienced large or notable increases.

- For property crime rates, 44 of 278 cities experienced increases from 2015 to 2016 that were classified as large or notable, compared to 80 with large or notable decreases and 154 that experienced minimal change.
- For violent crime rates, 89 of 284 cities experienced large or notable increases, 35 experienced large or notable decreases, and the remaining 160 cities experienced minimal change.
- For homicide rates, 62 of 284 cities experienced large or notable increases, 45 experienced large or notable decreases, and the remaining 177 cities experienced minimal change.

In *Measuring Public Safety*, Vera cautioned that recent increases in homicide rates in some of the nation's largest cities may not reflect the experiences of the much larger number of smaller cities and rural jurisdictions; that even among major cities, the increases that were large and unusual in the context of historical patterns were concentrated in a handful of places; and that it was too soon to conclude that even those increases foreshadow a broad-based crime wave. The analyses presented in this supplement confirm that the majority of US cities with populations of 100,000 or greater have not been experiencing unusual increases in violent crime generally or homicide specifically.

About these briefs

Public policy—including decisions related to criminal justice and immigration—has far-reaching consequences, but too often is swayed by political rhetoric and unfounded assumptions. The Vera Institute of Justice has created a series of briefing papers to provide an accessible summary of the latest evidence concerning justice-related topics. By summarizing and synthesizing existing research, identifying landmark studies and key resources, and, in some cases, providing original analysis of data, these briefs offer a balanced and nuanced examination of some of the significant justice issues of our time.

Introduction

In *Measuring Public Safety*, Vera highlighted some ways in which crime data can be misinterpreted by, for example:

- focusing too much on changes in the national crime rate, which can obscure the wide variation among localities and suggest shifts are more widespread than is actually the case; or
- relying exclusively on percentage change to assess year-to-year shifts in the crime rate, which can exaggerate the actual impact on public safety in places with historically low crime rates, where one or two additional offenses may look like a dramatic increase.

As Vera described in the earlier brief, no single measure of crime is optimum for all purposes. However, when the focus is on risk to public safety, and the question has to do with how widespread a change is, Vera researchers have found it most informative to rely primarily on change in absolute magnitude of local-level crime rates—the actual rate or change in rate of crime per 100,000 residents—adjusted for population. (Absolute magnitude is simple to interpret, based on the raw number of offenses, as compared to percentage change, which relies on a number of factors including the size of the jurisdiction and the level of crime in the previous reporting period.)

This supplement examines how recent changes in city-level rates of property crime, violent crime, and homicides per 100,000 residents relate to longer-term historical trends, as well as how those changes were distributed across individual localities, among cities grouped by population, and by geographic regions. It is divided into five sections:

- Sections I and II display recent changes in crime rates in the context of long-term trends from 1985 through 2016—first comparing trends among cities grouped by population, and then comparing trends among regions of the country.
- Section III examines how group averages hide considerable variation among cities in year-to-year changes in crime rates, and defines five categories that illustrate the size and direction—increase or decrease—of these changes.
- Sections IV and V use the categories set out in Section III to compare the distribution of increases and decreases across groups of cities—first by population and then by region.

The FBI's newly released 2016 crime data provides a barometer of reported crime in America, and should be considered seriously so that appropriate measures can be taken to reduce crime and protect public safety. Only by mining that data, however—by drilling down into city-level crime rates, trends, and changes, and placing this analysis in a historical context—can a true picture of crime in the United States emerge. The illustrations that follow demonstrate that although crime levels have increased in 2016 in some places—increases that are crucial to address immediately—these increases do not represent a nationwide epidemic of crime, but rather a city-level phenomenon in particular locations that will require targeted, evidence-based local solutions tailored to each locale's unique population, size, and geography. These local pockets should not drive national crime policy, since such knee-jerk reactions risk undoing the significant progress the country has achieved to date in reducing crime. Ultimately, the larger message from the FBI's 2016 data is this: America is much safer than it was two or three decades ago, and its response to crime is working in most places, which have stable or declining crime rates.

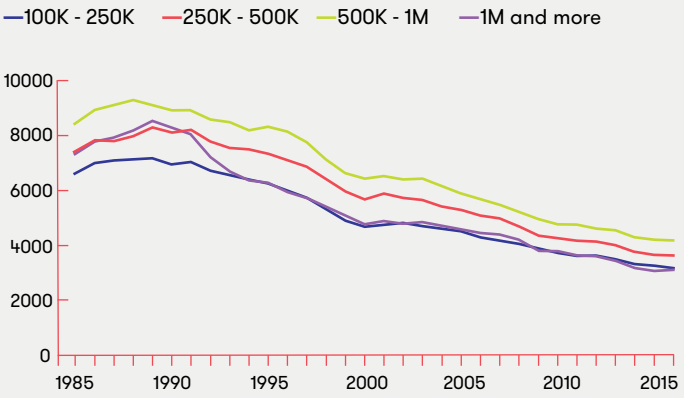
I. Recent changes in crime rates in the context of long-term trends, by city population

Figures 1 through 3 illustrate long-term trends in city-level crime rates per 100,000 residents for property crime, violent crime, and homicide for US cities grouped into four categories by population size.[4]

Trends in property crime rates have been similar across city population groups, with peaks in the late 1980s to early 1990s and mostly steady declines thereafter. In 2016, average property crime rates remained constant or continued to decline in all four groups, were about half what they had been in the late 1980s, and ended at their lowest levels in several decades. (See Figure 1 below.)

Figure 1

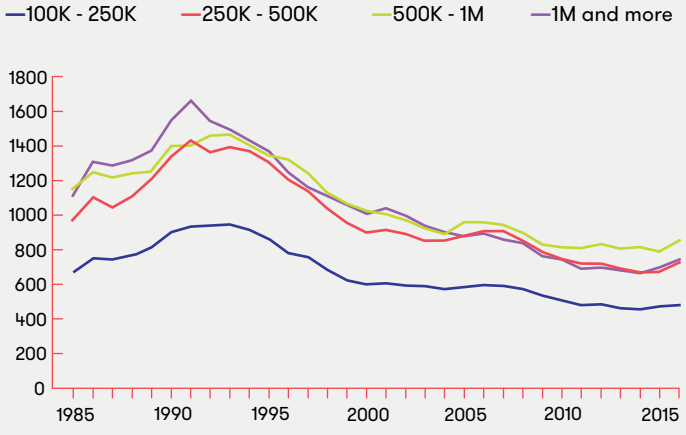
Average city-level property crime rates per 100,000 residents by year and city population



The average of city-level violent crime rates has been noticeably lower for the smallest cities than for the other three groups. However, the patterns of long-term trends have been very similar across the groups. Most recently, the averages for all four groups increased slightly from 2014 to 2016, but the changes were small relative to the experience over the preceding decade and resulted in levels that were still only a fraction of earlier peaks and near the lowest in several decades. (See Figure 2.)

Figure 2

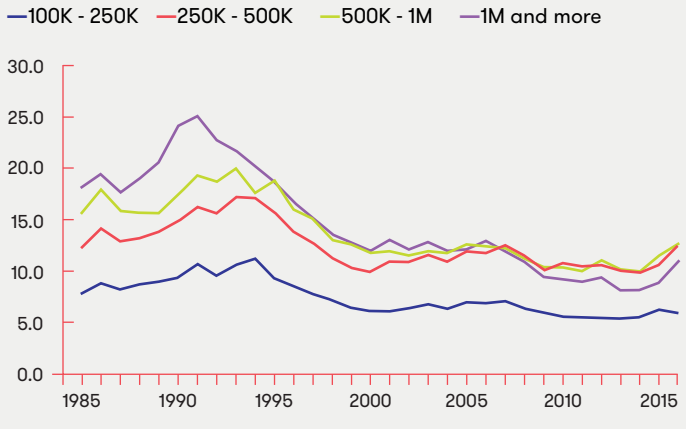
Average city-level violent crime rates per 100,000 residents by year and city population



Likewise, the average of city-level homicide rates has been noticeably lower for the smallest cities than for the other three population groups, though the historical trends have been very similar across the groups. The average for the smallest cities declined slightly in 2016, while the averages for all three groups of larger cities continued increases that began two or three years earlier. Despite these increases, the averages of city-level homicide rates for all four population groups ended at levels that were still only a fraction of the earlier peaks and near the lowest in several decades. (See Figure 3.)

Figure 3

Average city-level homicide rates per 100,000 residents by year and city population



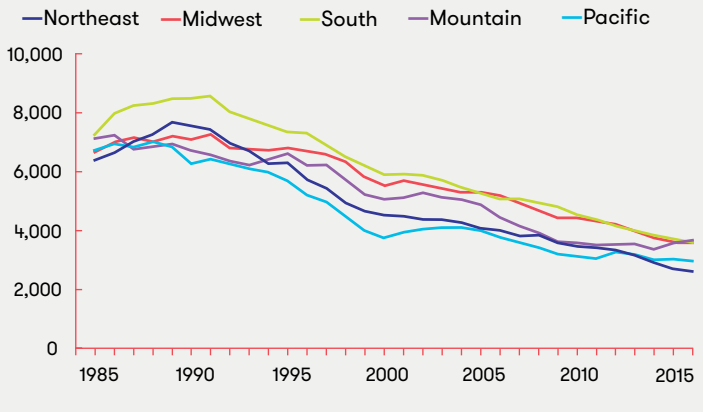
II. Recent changes in crime rates in the context of long-term trends, by geographic regions

Figures 4 through 6 show long-term trends in city-level crime rates per 100,000 residents for property crime, violent crime, and homicide for US cities grouped by the five census regions: Northeast, Midwest, South, Mountain, and Pacific.

Trends in property crime rates have been similar across regions, with peaks in the late 1980s to early 1990s and mostly steady declines thereafter. Average property crime rates increased slightly in 2015 in the Mountain region, but average city-level property crime rates in all five regions still ended at or near their lowest levels in several decades. (See Figure 4 below.)

Figure 4

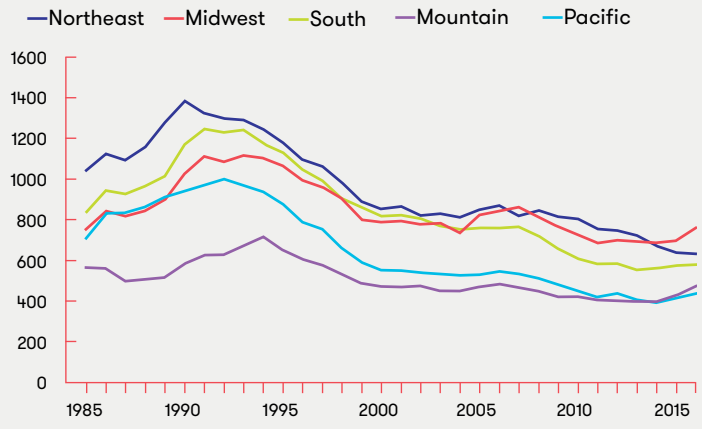
Average city-level property crime rates per 100,000 residents by year and census region



The average of city-level violent crime rates has been noticeably lower for the Mountain and Pacific regions than for the other three regions. However, the patterns of long-term trends have been very similar. Most recently, the averages increased slightly from 2014 to 2016 for all but the Northeast, but the changes were small relative to the experience over the preceding decade and resulted in levels that were well below the earlier peaks and still near the lowest in several decades. (See Figure 5.)

Figure 5

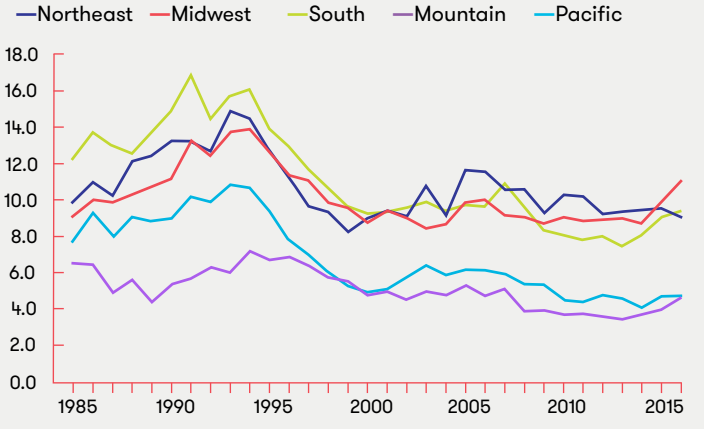
Average city-level violent crime rates per 100,000 residents by year and census region



The average of city-level homicide rates has also been noticeably lower for the Mountain and Pacific regions over the past two decades than for the other three regions. However, the patterns in the long-term trends have been very similar. (See Figure 6.) Most recently, the average homicide rates increased more sharply in the cities in Vera's sample that are located in the Midwest and South than in the other regions. The average 2016 rate for the cities in the Midwest included in this analysis was the highest in almost 20 years, though still well below the peak in the early 1990s. The Midwest region encompasses Chicago, St. Louis, Cleveland, and Milwaukee, all cities that were flagged in Vera's earlier brief as places that have recently experienced large and unusual increases in violent crime. The averages of city-level homicide rates for the other four regions ended at levels that were still only a fraction of the earlier peaks and near the lowest in several decades.

Figure 6

Average city-level homicide rates per 100,000 residents by year and census region



III. Wide variation among cities in the size and direction of changes in crime rates

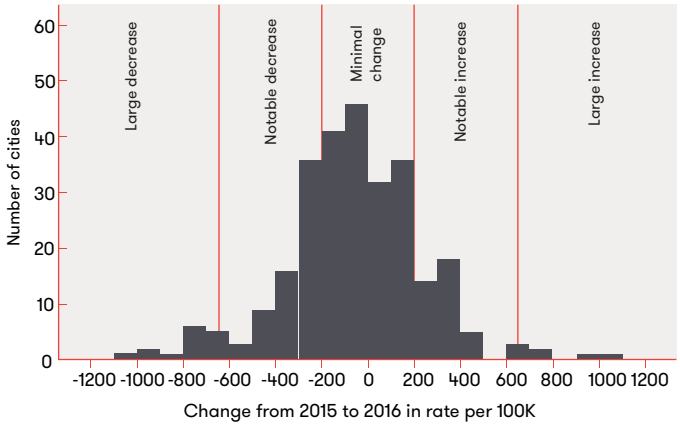
The focus in the previous section on group averages of city-level rates hides substantial variation among cities, both nationally and within regions or population groupings. This section displays the variation in crime rates from 2015 to 2016 across the total sample of cities available for these analyses.

To simplify comparisons among subgroups, changes were classified as minimal, notable, or large. Cut points were established so that the small, most frequently occurring changes were classified as "minimal," statistical outliers were classified as "large," and changes between those extremes were classified as "notable." (See Appendix at page 8 for details).

In 2016, city-level property crime rates ranged widely from 1,005 to 8,535 per 100,000 residents. The city-level changes from 2015 to 2016 ranged from a one-year decrease of 1,072 per 100,000 to a one-year increase of 1,005 per 100,000. In total, 13 cities showed large decreases, 67 notable decreases, 154 minimal changes, 38 notable increases, and six large increases. (See Figure 7 below.)

Figure 7

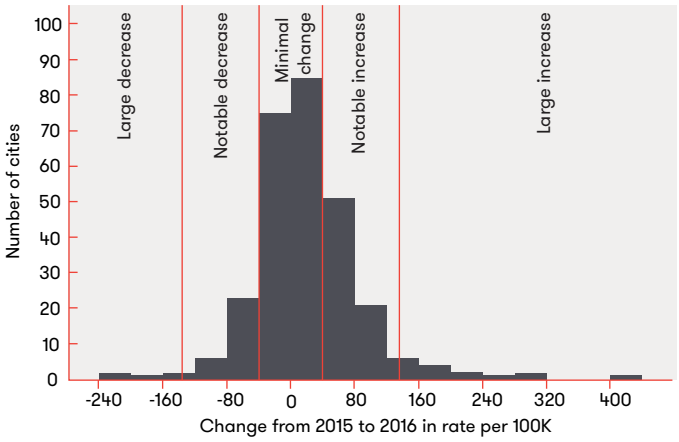
Distribution of changes from 2015 to 2016 in city-level property crime per 100,000 residents



Violent crime rates in 2016 ranged from 44 to 2,047 per 100,000 residents. Changes ranged from a one-year decrease of 227 per 100,000 to a one-year increase of 417 per 100,000. Three cities experienced large decreases, 32 notable decreases, 160 minimal changes, 77 notable increases, and 12 large increases. (See Figure 8.)

Figure 8

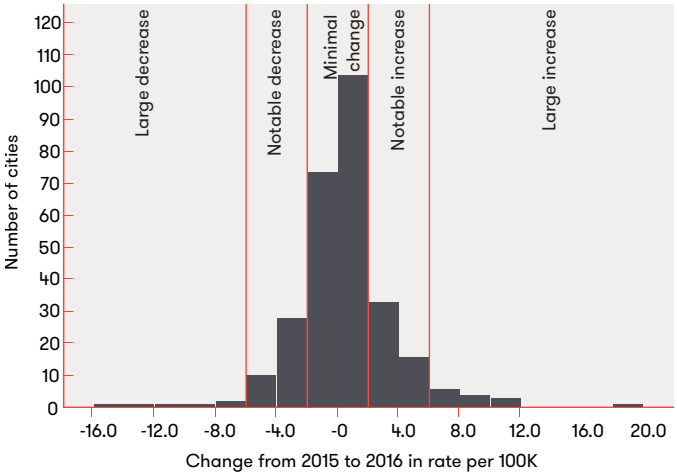
Distribution of changes from 2015 to 2016 in city-level violent crime rates per 100,000 residents



Homicide rates in 2016 ranged from 0.0 to 59.8 per 100,000 residents. Changes ranged from a one-year decrease of 14.4 per 100,000 to a one-year increase of 18.3 per 100,000. Six cities had large decreases, 39 notable decreases, 177 minimal changes, 48 notable increases, and 14 large increases. (See Figure 9.)

Figure 9

Distribution of changes from 2015 to 2016 in city-level homicide rates per 100,000 residents



IV. Changes in crime rates by jurisdiction size

Figures 10 through 12 compare distributions of absolute change in crime rates (the number of crimes per 100,000 population) from 2015 to 2016 across cities grouped by population size.

Thirty-one of the 200 smallest cities experienced large or notable increases in property crime rates, compared to 58 of the smallest cities that experienced large or notable decreases. Across the three groups of larger cities, 13 of 78 cities experienced large or notable increases, compared to 22 that experienced large or notable decreases. (See Figure 10 below.)

Figure 10

Categories of change from 2015 to 2016 in city-level property crime rates per 100,000 residents, by city populations (Entries are numbers of cities)

Size of change	100K to 250K	250K to 500K	500K to 1M	1M or more	Total
Large decreases	8	3	2	0	13
Notable decreases	50	11	6	0	67
Minimal change	111	22	11	10	154
Notable increases	28	6	3	1	38
Large increases	3	2	1	0	6

In contrast, 51 of the smallest cities experienced large or notable increases in violent crime rates, compared to 23 cities that experienced large or notable decreases. Among the larger cities, 38 had large or notable increases, and 12 had large or notable decreases. (See Figure 11.)

Figure 11

Categories of change from 2015 to 2016 in city-level violent crime rates per 100,000 residents, by city populations (Entries are numbers of cities)

Size of change	100K to 250K	250K to 500K	500K to 1M	1M or more	Total
Large decreases	2	1	0	0	3
Notable decreases	21	6	3	2	32
Minimal change	130	19	9	2	160
Notable increases	47	17	7	6	77
Large increases	4	2	5	1	12

For homicides, more cities experienced increases than decreases in all but the group of smallest cities. Thirty-eight of the smallest cities had large or notable increases, compared to 39 that had large or notable decreases. (See Figure 12.)

Figure 12

Categories of change from 2015 to 2016 in city-level homicide rates per 100,000 residents, by city populations (Entries are numbers of cities)

Size of change	100K to 250K	250K to 500K	500K to 1M	1M or more	Total
Large decreases	6	0	0	0	6
Notable decreases	33	5	1	0	39
Minimal change	127	23	19	8	177
Notable increases	29	14	3	2	48
Large increases	9	3	1	1	14

V. Changes in crime rates by census region

Figures 13 through 15 compare distributions of absolute change in crime rates from 2015 to 2016 across cities grouped by regions.

In the Northeast, only one city experienced large or notable increases in property crime rates and, in the Midwest, South, and Pacific regions, more cities had large or notable decreases than increases. Starting from a slightly lower base level, a few more cities in the Mountain region had large or notable increases than had large or notable decreases.[5] (See Figure 13 on page 7.)

Figure 13

Categories of change from 2015 to 2016 in city-level property crime rates per 100,000 residents, by census region (Entries are numbers of cities)

Size of change	North-east	Midwest	South	Mountain	Pacific	Total
Large decreases	2	0	6	2	3	13
Notable decreases	7	11	25	1	23	67
Minimal change	16	26	47	19	46	154
Notable increases	1	8	16	6	7	38
Large increases	0	1	2	1	2	6

In the Northeast, slightly more cities experienced large or notable decreases in violent crime rates than experienced large or notable increases. In each of the other four regions, more cities experienced large or notable increases than experienced large or notable decreases. (See Figure 14.)

Figure 14

Categories of change from 2015 to 2016 in city-level violent crime rates per 100,000 residents, by census region (Entries are numbers of cities)

Size of change	Northeast	Midwest	South	Mountain	Pacific	Total
Large decreases	1	0	2	0	0	3
Notable decreases	8	4	15	1	4	32
Minimal change	14	24	47	17	58	160
Notable increases	4	15	28	11	19	77
Large increases	0	4	5	2	1	12

In the Northeast and Pacific regions, the number of cities with large or notable increases in homicide rates was less than the number with large or notable decreases. In each of the other three regions, the number of cities with large or notable increases exceeded the number with large or notable decreases. (See Figure 15.)

Figure 15

Categories of change from 2015 to 2016 in city-level homicide rates per 100,000 residents, by census region (Entries are numbers of cities)

Size of change	North-east	Midwest	South	Mountain	Pacific	Total
Large decreases	2	0	3	1	0	6
Notable decreases	4	8	13	2	12	39
Minimal change	18	25	53	19	62	177
Notable increases	3	11	19	9	6	48
Large increases	0	3	9	0	2	14

Appendix A

Definitions and data tables

This supplement examines how year-to-year changes in crime rates relate to longer-term historical trends, as well as how these shifts are distributed across individual localities and within groups of cities defined by population size and by geographic region. In order to promote an understanding of the magnitudes of changes across time and the differences among localities, the analyses rely heavily on absolute differences in rates (adjusted for population). Other, more common approaches are more relative. *Percentage change*, for example, is sensitive to the base rate on which it is calculated. This metric tends to exaggerate the implications for public safety for crime types or jurisdictions with low base rates, and underestimate the implications for jurisdictions with very high base rates. *Statistical significance*, an alternative measure, confounds the magnitude of change with sample size, precision of measurement, and the amount of natural variation in observations, and it can represent as "significant" small differences that are not substantively meaningful.

The approach taken in this document is to present distributions of absolute changes in crime rates per 100,000 residents, which is directly interpretable in terms of an associated change in risk to public safety. In some analyses, these absolute differences are classified into categories summarizing the magnitude of change. The classification is partially subjective, but it simplifies the comparisons among cities grouped by population size and region. The categories are defined as follows:

Minimal changes: This identifies a range of single year-to-year changes in rates that might be considered "typical" or "not unusual." It was determined separately for each crime type by inspecting the frequency distributions for single year-to-year changes across each of the five years from 2011 through 2015. Those distributions all tended to be nearly symmetrical with sharp, central peaks—central intervals that encompass changes for a large proportion of the cities—with noticeably lower numbers of cities experiencing changes outside those intervals.

The widths of those central intervals were similar across the five years; the width of the minimal change interval for each crime type was defined as an easy-to-interpret number that is similar to the observed intervals across those prior years. The resulting intervals are zero change, plus or minus 2.0 homicides per 100,000 residents, plus or minus 40 violent crimes per 100,000 residents, and plus or minus 200 property crimes per 100,000 residents. Figures 7 through 9 show how the actual distributions of changes from 2015 to 2016 relate to those intervals.

Large changes: Large changes are statistical outliers, extreme changes in the context of the actual range of observed changes. The cut points for identifying large changes were established separately for each crime type by examining the standard deviations of year-to-year changes ending in each of the preceding five years (2011 through 2015) and calculating the average standard deviations across the five years. Then, the cut points were defined as changes that were outside the range of zero, plus or minus two times the five-year averages of the standard deviations. This is analogous to a common statistical criterion for identifying observations with less than a 5 percent chance of occurring. The resulting intervals are zero change, plus or minus 6.0 homicides per 100,000 residents, plus or minus 136 violent crimes per 100,000 residents, and plus or minus 650 property crimes per 100,000 residents. Figures 7 through 9 show how the actual distributions of changes from 2015 to 2016 relate to these cut points.

Notable change: Changes that fall outside the minimal change range, but short of the large-change cut points, are characterized as "notable."

These criteria for classifying changes as minimal, notable, or large are obviously subject to debate; others may not agree with these choices. That is part of the reason this supplement displays the actual distributions of changes in rates, so readers can judge for themselves.

Another critical choice was the decision to focus on city-level rates as the fundamental unit of analysis. In order to emphasize the distribution of crime rates across cities, these analyses focus on city-level rates and averages of city-level rates for groupings based on region and jurisdiction size. This differs from many other reports that provide group-wide averages (e.g., property crime rate for all large cities combined). Basing averages on group-level and national-level aggregates emphasizes the number of people affected. The analyses presented in this supplement emphasize the number of cities affected.

Table 1

Measures of property crime rates per 100K by population categories

		100K-250K	250K-500K	500K-1M	1M or more	Total
N of cities in each category		200-211	44-48	21-24	11	276-294
Avg. peak rate before 2000		8094	8980	10499	8790	8454
Average of 2016 rates	Mean	3164	3632	4189	3105	3322
	(Range)	(7530)	(4530)	(5063)	(3728)	(7530)
Change from 2015 to 2016	Mean	-66	-51	-55	29	-59
	(Range)	(2077)	(1777)	(1572)	(351)	(2077)
2014 - 2016 net change	Mean	-105	-135	-134	-76	-111
	(Range)	(3280)	(2211)	(2114)	(719)	(3346)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)						
Large decreases		18	5	2	0	25
Notable decreases		57	16	10	3	86
Minimal decreases		54	7	3	5	69
Minimal increases		32	7	3	2	44
Notable increases		32	6	3	1	42
Large increases		11	3	1	0	15

Table 2

Measures of property crime rates per 100K by census regions

		Northeast	Midwest	South	Mountain	Pacific	Total
N of cities in each category		26-28	46-48	96-103	29-32	80-83	281-294
Avg. peak rate before 2000		8122	8062	9600	8154	7500	8454
Average of 2016 rates	Mean	2595	3627	3576	3673	2963	3322
	(Range)	(3151)	(7395)	(5893)	(7219)	(6457)	(7530)
Change from 2015 to 2016	Mean	-136	3	-72	43	-91	-59
	(Range)	(1220)	(1180)	(1773)	(1584)	(1751)	(2077)
2014 - 2016 net change	Mean	-288	-112	-213	211	-50	-111
	(Range)	(1112)	(1634)	(2654)	(1870)	(3002)	(3346)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)							
Large decreases		4	2	12	0	7	25
Notable decreases		11	19	38	1	17	86
Minimal decreases		7	13	21	9	19	69
Minimal increases		3	4	13	6	18	44
Notable increases		2	4	8	11	17	42
Large increases		0	4	4	3	4	15

Table 3

Measures of violent crime rates per 100K by population categories

		100K-250K	250K-500K	500K-1M	1M or more	Total
N of cities in each category		203-210	45-48	23-24	11	284-293
Avg. peak rate before 2000		1136	1568	1632	1744	1272
Average of 2016 rates	Mean	480	724	853	742	560
	(Range)	(1614)	(1856)	(1805)	(732)	(2003)
Change from 2015 to 2016	Mean	13	19	65	47	20
	(Range)	(536)	(447)	(497)	(273)	(644)
2014 - 2016 net change	Mean	33	43	63	78	39
	(Range)	(617)	(657)	(532)	(261)	(701)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)						
Large decreases		6	4	0	0	10
Notable decreases		23	5	2	0	30
Minimal decreases		43	6	5	3	57
Minimal increases		49	9	4	2	64
Notable increases		65	15	7	3	90
Large increases		19	6	5	3	33

Table 4

Measures of violent crime rates per 100K by census regions

		Northeast	Midwest	South	Mountain	Pacific	Total
N of cities in each category		27-28	41-47	97-103	31-36	81-83	284-293
Avg. peak rate before 2000		1576	1217	1435	833	1168	1272
Average of 2016 rates	Mean	631	759	579	473	433	560
	(Range)	(1028)	(1985)	(1743)	(1034)	(1382)	(2003)
Change from 2015 to 2016	Mean	-18	38	17	36	20	20
	(Range)	(289)	(387)	(471)	(218)	(517)	(644)
2014 - 2016 net change	Mean	-41	85	29	67	41	39
	(Range)	(338)	(487)	(641)	(273)	(592)	(701)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)							
Large decreases		4	0	5	0	1	10
Notable decreases		9	1	14	1	5	30
Minimal decreases		9	9	17	6	16	57
Minimal increases		3	9	24	6	22	64
Notable increases		3	18	25	12	32	90
Large increases		0	9	12	6	6	33

Table 5

Measures of homicide rates per 100K by population categories

		100K-250K	250K-500K	500K-1M	1M or more	Total
N of cities in each category		209-211	48	23-24	11	284-294
Avg. peak rate before 2000		16.0	21.3	25.0	27.0	18.0
Average of 2016 rates	Mean	5.9	12.6	12.7	10.9	7.8
	(Range)	(34.1)	(59.4)	(49.8)	(24.6)	(59.8)
Change from 2015 to 2016	Mean	0.0	1.4	1.2	2.0	0.4
	(Range)	(26.0)	(22.4)	(13.4)	(11.1)	(32.7)
2014 - 2016 net change	Mean	0.6	2.5	2.8	2.7	1.2
	(Range)	(21.6)	(30.5)	(19.6)	(12.9)	(33.5)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)						
Large decreases		4	1	0	0	5
Notable decreases		28	4	1	0	33
Minimal decreases		67	8	6	1	82
Minimal increases		57	14	7	6	84
Notable increases		35	12	6	3	56
Large increases		15	6	4	1	26

Table 6

Measures of homicide rates per 100k by census regions

		Northeast	Midwest	South	Mountain	Pacific	Total
N of cities in each category		27-28	48	101-103	32	82-83	284-294
Avg. peak rate before 2000		18.5	17.5	22.3	12.3	15.0	18.0
Average of 2016 rates	Mean	9.0	11.0	9.4	4.6	4.7	7.8
	(Range)	(35.5)	(59.8)	(51.4)	(10.9)	(28.5)	(59.8)
Change from 2015 to 2016	Mean	-0.5	0.9	0.6	0.6	0.0	0.4
	(Range)	(19.9)	(14.9)	(32.0)	(13.1)	(14.0)	(32.7)
2014 - 2016 net change	Mean	-0.4	2.5	1.5	0.9	0.7	1.2
	(Range)	(13.2)	(23.7)	(31.4)	(15.7)	(18.2)	(33.5)
Distribution of net 2-year changes from 2014 to 2016 (Entries are numbers of cities)							
Large decreases		2	0	2	1	0	5
Notable decreases		5	4	13	2	9	33
Minimal decreases		10	10	24	8	30	82
Minimal increases		7	17	23	12	25	84
Notable increases		3	8	23	7	15	56
Large increases		1	8	12	1	4	26

Endnotes

1 Bruce Frederick, *Measuring Public Safety: Responsibly Interpreting Statistics on Violent Crime* (New York: Vera Institute of Justice, 2017), https://perma.cc/DNA6-8NRF. Using preliminary full-year data for 2016, *Measuring Public Safety* analyzed trends from 1975 through 2016 in rates per 100,000 population for homicide, robbery, aggravated assault, and total violent crime in 65 jurisdictions with populations of 250,000 or greater. This supplement uses final full-year data for 1985 through 2016 to analyze trends in rates per 100,000 for total property crime, total violent crime, and homicide in 294 jurisdictions with populations of 100,000 or greater. Data for 1985 through 2014 were obtained from the Federal Bureau of Investigation (FBI) Uniform Crime Reporting (UCR) system via the FBI's online data tool. Data for 2015 and 2016 were obtained from separate data files accompanying the FBI's annual reports of *Crime in the United States*. Because of varying patterns of missing data for some jurisdictions in some years, the number of cities included in specific analyses varied from 276 to 292.

2 Providing data to the FBI as part of the UCR monitoring system is voluntary and not all police agencies submit reports. Therefore any analysis of UCR data provides an *estimate* of actual reported crime. Of 294 cities with data for most or all of the years from 1985 through 2014, ten of them were missing violent crime and homicide data and 15 were missing property crime data for 2015 or 2016. Thus, the maximum number of cities that could be included in analyses of recent changes was 284 for violent crime and homicide and 279 for property crime. Eleven of the 15 cities missing critical data were in the group of smallest cities. Cities with missing data were about evenly divided between those with below average crime rates and those with above average crime rates in the preceding decade. About two-thirds of the cities missing recent crime data were in the South and Midwest regions.

3 For a discussion of how these categories were chosen and defined for the purposes of this analysis, see the Appendix at page 8.

4 In order to emphasize the distribution of crime rates across cities, these analyses focus on city-level rates and averages of city-level rates for groupings based on jurisdiction size. This differs from many other reports that provide group average (e.g. property crime rate for all large cities combined). Basing averages on group-level and national-level aggregates emphasizes the number of people affected. The analyses presented in this supplement emphasize the number of cities affected.

5 The "base level" or "base rate" is the initial level from which a change or difference is calculated.

About citations

As researchers and readers alike rely more and more on public knowledge made available through the Internet, "link rot" has become a widely-acknowledged problem with creating useful and sustainable citations. To address this issue, the Vera Institute of Justice is experimenting with the use of Perma.cc (https://perma.cc/), a service that helps scholars, journals, and courts create permanent links to the online sources cited in their work.

Credits

 An electronic version of this report is posted on Vera's website at www.vera.org/for-the-record-measuring-public-safety-supplement.

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