



Bureau of Justice Statistics Special Report

Federal Justice Statistics Program

June 1999, NCJ 171682

Time Served in Prison by Federal Offenders, 1986-97

By William J. Sabol, Ph.D.
John McGready
The Urban Institute

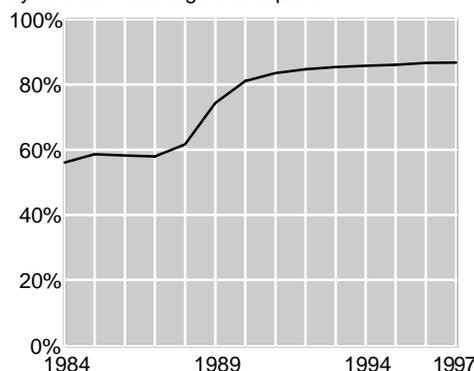
In 1987 the Bureau of Justice Statistics (BJS) published *Sentencing and Time Served*, reporting that Federal offenders who had parole hearings between July 1979 and June 1980 and who had been sentenced to 1 to 5 years in prison served about 2 years, on average, or about 70% of the prison term imposed.¹ Offenders who had received longer prison terms, while incarcerated for a longer time, served a smaller proportion of the prison term imposed — about 50% for offenders sentenced to 5 to 10 years and less than 40% for those sentenced to more than 15 years.

Beginning with the Sentencing Reform Act of 1984, however, Federal sentencing and release practices underwent a series of changes. The act, which took effect on November 1, 1987, established the Federal sentencing guidelines. The guidelines required a prison term for many offenses for which probation had routinely been imposed and longer sentences for other offenses. The act also eliminated parole and reduced the amount of good conduct time Federal offenders could earn. As a result of what are called "truth-in-sentencing" provisions

¹*Sentencing and Time Served*, BJS Special Report, NCJ 101043, June 1987.

Highlights

Percent of sentence to be served by offenders entering Federal prison



Sentences imposed

- Between 1986 and 1997 prison sentences for Federal offenses increased from 39 months, on average, to 54 months.

Time to be served, 1986 and 1997

- The proportion of the sentence imposed that the offenders entering Federal prison during 1986 would actually serve was 58%. For those entering during 1997, it was 87%.

- Overall, time to be served increased from 21 months, on average, for those entering Federal prison during 1986 to 47 months for those entering during 1997.

- Time to be served increased from 23 to 75 months for weapons offenders, from 30 to 66 months for drug

offenders, and from 74 to 83 months for bank robbery offenders.

- Between 1986 and 1997 the number of Federal inmates serving a term of imprisonment increased from 38,156 to 98,944. Approximately 65% of the increase in the Federal prison population is attributable to an increase in the time served.

Time served to first release

- For those released from Federal prison, time served increased from 15 months, on average, during 1986 to 29 months during 1997.

- Time served increased from 19 months to 40 months for weapons offenders, from 20 months to 43 months for drug offenders, and from 55 to 60 months for bank robbery offenders.

of the act, Federal offenders must serve at least 87% of the sentence imposed.

Between 1986 — the year before implementation of the Sentencing Reform Act — and 1997, imposed prison terms increased from 39 months to 54 months. Further, during this period, the proportion of the imposed prison term that offenders could expect to serve increased from 59% to 87%. The time offenders entering Federal prison could expect to serve increased from about 21 months, on average, during 1986 to about 47 months during 1997.

Those convicted of an immigration or weapons offense experienced the greatest relative increase in time to be served in Federal prison. The time to be served for immigration offenders increased from 3.6 months to 15.1 months, and for weapons offenders, from 23 months to 74.5 months. For drug offenders the increase was from 29.7 months to 66.2 months.

Not only did these changes affect individual offenders, but they also substantially affected the Federal prison population. The population increased nearly threefold from 38,156 in 1986 to 98,944 in 1997 (figure 1). About 60% of this increase can be attributed to the increase in time to be served by new court commitments; 25%, to the increase in the number of suspects investigated by U.S. attorneys; and 15%, to the increase in the proportion of offenders sentenced to prison. Decreases in the prosecution rate and in time served by supervision violators curtailed the growth of the prison population.

Changes to Federal sentencing policy have been accompanied by changes at the State level. The Violent Crime Control and Law Enforcement Act of 1994 authorized incentive grants to States that adopted truth-in-sentencing laws requiring offenders convicted of violent crimes to serve at least 85%

of the imposed sentence in prison.² Since 1994, 27 States and the District of Columbia have adopted the Federal requirement. Additionally, 13 States have adopted laws that require offenders to serve a specific proportion of the sentence imposed, albeit less than 85%. Fourteen States have abolished parole.³

Differences between entry and release cohorts

Different conclusions about the impact of sentencing policies on time served can be drawn, depending on whether entry or release cohorts are observed. (A cohort is a group of persons having a common characteristic, like a birth year or a particular year of entering or leaving prison.)

For measuring the effects of changing sentencing policies on length of stay, expected time to be served by the entry cohort has advantages over time actually served by the release cohort. Because the effects of sentencing reforms can be observed almost immediately in sentences imposed, expected time to be served by an entering cohort can provide a direct measure of the effects of reforms as they are implemented.

Actual time served by release cohorts may reflect a range of policies in effect during the years when cohort members entered prison. No single exit cohort represents offenders sentenced at the time a reform was implemented. To show the effects of reforms on length of stay, complex adjustments to exit cohort data would be needed to make them representative of entry cohorts.

In accounting for relatively recent changes in sentencing, release cohorts are more likely to contain offenders who received shorter sentences and less likely to contain those with longer sentences. As a result, time served by

²See, Office of Justice Programs, *Violent Offender Incarceration and Truth-in-Sentencing Incentive Grants: Program Guidance and Application Kit, FY1998*, NCJ 168942 (1998).

³*Truth in Sentencing in State Prisons*, BJS Special Report, NCJ 170032, February 1998.

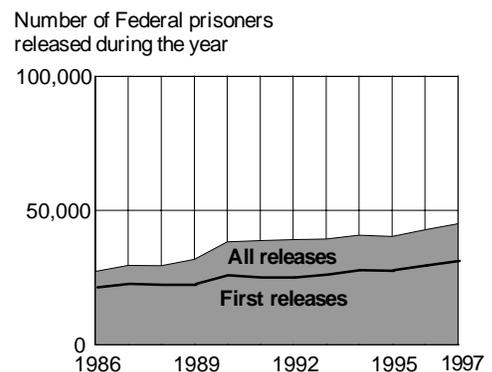
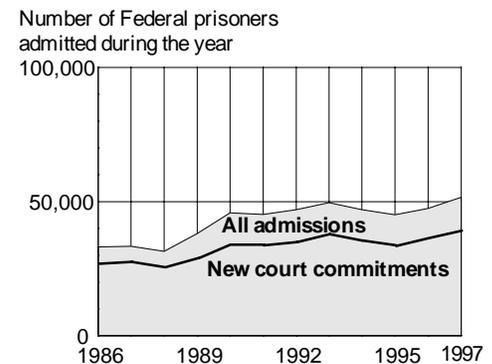
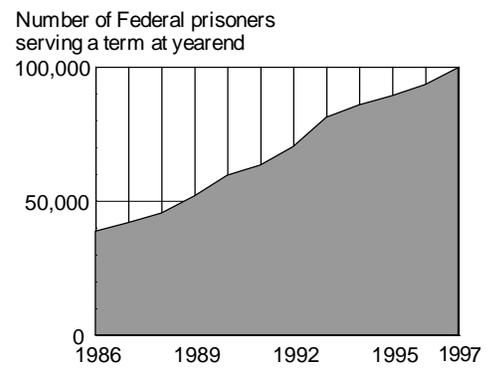


Figure 1 (a, b, and c)

Note: Includes only those inmates serving a term of imprisonment resulting from a conviction or a supervision violation. Arrestees, boarders, and other detainees are excluded.

release cohorts may understate the effects of sentencing reforms designed to increase lengths of stay even as prison terms increase.

During 1986, the year prior to implementation of the Sentencing Reform Act of 1984, 16% of offenders entering prison received prison sentences of more than 5 years. About 11% of the release cohort in that year were released from sentences of more than 5 years (not shown in a table). By 1997, 26% of the entering cohort received sentences of more than 5

years, and 18% of the exiting cohort were released from prison sentences of more than 5 years.

By offense group, the distribution of sentences in the entering and exiting cohorts varied. For example, 13.2% of the violent offenders released during 1997 were released from sentences of longer than 10 years, and 20.2% of the violent offenders entering during 1997 had sentences of more than 10 years. For drug offenders, 7.7% of the releases in 1997 had sentences of more than 10 years, while 18.3% of the drug offenders entering prison had sentences of more than 10 years.

Measuring length of stay for entering cohorts of Federal prisoners

To measure the effects of the Federal sentencing legislation on time to be served, data from entering cohorts of prisoners are used. *Time to be served* is the amount of time that offenders who enter prison on a U.S. district court commitment in a given year serve before their first release from prison. Time to be served by offenders entering Federal prison is based on a combination of actual data on time served for offenders who were also released during the study period and estimates of time to be served for those who had not been released.

During 1986-97, 383,108 offenders entered prison from a U.S. district court commitment. *Actual time served* is observed for the 72% who were released at some time before the end of the study period on December 31, 1997 (appendix table on page 14). For offenders who entered before 1993, more than 80% were released by yearend 1997; for the 1995 entering cohort, more than 53% were released.

Actual time served is not available for two categories of offenders who had not been released from prison: those sentenced pursuant to the Sentencing Reform Act of 1984 (new law offenders) and those sentenced under laws in effect before that act (old law offenders). (See the box on this page.)

New law offenders are given determinate sentences and can receive up to 54 days of good conduct credit for each year served without incident for sentences longer than 1 year. Those sentenced to 1 year or less are not eligible for good-time credits. Time to be served for new law offenders still in prison was estimated to be the sentence imposed less the maximum good conduct credit the offenders could possibly earn.

Time to be served for old law offenders still in prison was estimated from the average stay for released old law offenders, taking into account the offense.

Time to be served by Federal offenders, 1986-97

Offenders entering Federal prison

Beginning with the Sentencing Reform Act of 1984, sentencing and release practices in the Federal system underwent a series of changes — abolishment of parole, required completion of 87% of the imposed sentence in prison, and Federal sentencing guidelines. A series of mandatory penalties was established, most notably for drug offenders and for offenders using a weapon to commit an offense.

Offenders sentenced pursuant to the Sentencing Reform Act of 1984

The provisions of the Sentencing Reform Act of 1984 applied to offenders who committed their crimes on or after November 1, 1987. Offenders sentenced pursuant to this act are often called “new law” offenders, while those subject to laws in effect before the act are often called “old law” offenders.

The first cohort of offenders sentenced pursuant to the Sentencing Reform Act entered Federal prison during 1988. During 1988, 23% of the 24,591 commitments were new law offenders. During the following year, 62% of U.S. district court commit-

ments were new law offenders. By 1997 almost all (99.5%) of the 38,375 offenders entering Federal prison were sentenced pursuant to the Sentencing Reform Act.

Cohorts of first releases from Federal prison lagged entering cohorts by 2 years or more in their proportion of new law offenders. During 1989, 29% of first releases were new law offenders, as compared to the 62% of U.S. district court commitments. By 1995 more than 90% of released defendants were new law offenders.

Percent of offenders sentenced pursuant to the Sentencing Reform Act of 1984

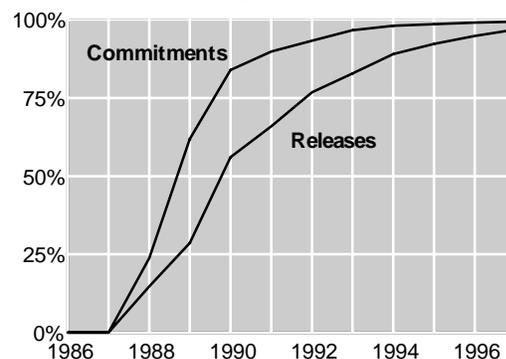


Table 1. Average time to be served by offenders entering Federal prison, 1986-97

Year	Number	Months of imprisonment		Proportion of sentence to serve
		Term in effect	Time to serve	
1986	25,820	38.9 mo	20.7 mo	58.2%
1987	26,684	42.6	23.1	58.0
1988	24,591	46.3	26.9	61.6
1989	28,249	42.1	30.3	74.3
1990	33,124	43.4	34.7	81.1
1991	32,812	46.9	38.8	83.5
1992	34,161	51.5	43.2	84.6
1993	37,065	53.4	45.4	85.3
1994	34,407	54.1	46.3	85.7
1995	32,566	53.8	46.4	86.0
1996	35,254	56.0	48.7	86.6
1997	38,375	53.9	46.9	86.7

Notes: Represents offenders committed to prison by U.S. district courts. Average sentence length excludes offenders sentenced to life or death sentences.
Data source: Federal Bureau of Prisons, SENTRY data file, annual.

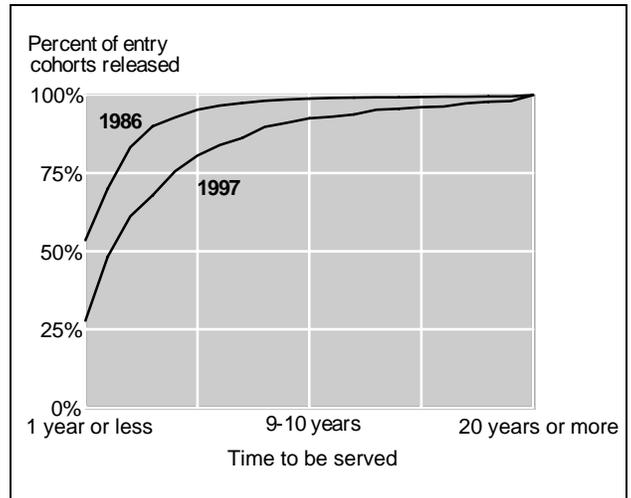


Figure 2

As a result of these sentencing reforms, prison terms imposed on offenders entering Federal prison on a U.S. district court commitment increased from 38.9 months during 1986 to 53.9 months during 1997 (table 1).

Prior to the implementation of the Sentencing Reform Act of 1984, Federal offenders could expect to serve about 58% of the sentence imposed by the court. A 39-month prison sentence translated into about 21 months to be served in prison. By contrast, following the implementation of the Sentencing Reform Act, an offender who received a 39-month prison sentence could expect to serve 34 months.

As a consequence of changes in the time served requirement and increases in the sentences imposed by the Federal courts, time to be served for offenders entering Federal prison nearly doubled between 1988 and 1997, increasing from 26.9 months to 46.9 months.

Prior to the implementation of Federal sentencing reforms, more than 50% of offenders entering Federal prison were released after serving a year or less in prison, and 70% were released after serving 2 years or less (figure 2). By contrast, about a quarter of offenders entering Federal prison during 1997 were released after serving

a year or less. About 5 years will pass before 70% of those entering during 1997 are released.

Following the elimination of parole and the requirement that Federal offenders serve at least 87%, the proportion of the sentence to be served by the entering prison cohort increased from about 58.2%, on average, to 86.7% (figure 3). As the proportion of prison commitments sentenced pursuant to the Sentencing Reform Act approached 100% during 1996-97, the proportion of the sentence to be served by Federal offenders approached 87%.

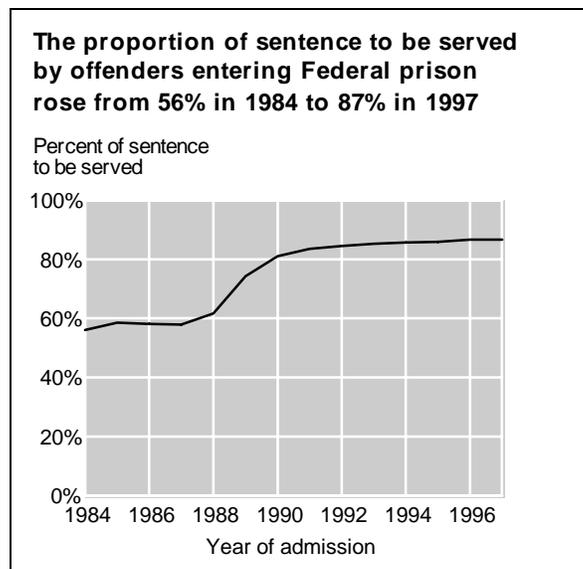


Figure 3

Table 2. Average time to be served by offenders entering Federal prison, by offense of conviction, 1986-97

Year	Average time to be served (in months)								
	All offenders	Violent		Property		Drugs	Public-order		
		Any	Robbery	Any	Fraud		Any	Weapons	Immigration
1986	20.7 mo	65.2 mo	73.5 mo	18.4 mo	16.9 mo	29.7 mo	9.3 mo	23.0 mo	3.6 mo
1987	23.1	69.5	75.3	17.0	15.9	31.9	11.2	27.9	3.6
1988	26.9	65.9	72.2	17.2	16.5	39.3	13.2	32.4	4.1
1989	30.3	59.2	66.7	14.9	14.8	48.1	13.7	42.3	3.7
1990	34.7	66.2	74.0	14.9	15.2	57.8	13.5	46.1	3.6
1991	38.8	69.6	79.6	16.2	16.3	61.0	16.8	47.4	4.6
1992	43.2	74.8	84.6	16.6	17.1	62.7	23.4	56.0	5.4
1993	45.4	77.3	84.6	17.4	17.9	62.8	27.1	62.3	7.3
1994	46.3	82.0	89.9	18.0	17.1	65.4	27.4	67.1	9.5
1995	46.4	85.0	93.5	17.5	18.0	67.8	28.1	68.8	11.0
1996	48.7	80.3	90.5	18.1	18.3	69.4	31.8	73.7	13.9
1997	46.9	76.1	82.6	17.8	18.2	66.2	30.8	74.5	15.1

Notes: Represents offenders committed to Federal prison by U.S. district courts. Excludes offenders sentenced to life in prison or to death. Data source: Federal Bureau of Prisons, SENTRY data file, annual.

Offense of conviction Except for property offenses, time to be served increased for each major offense category. Immigration and weapons offenses experienced the greatest relative increase in time to be served. For immigration offenders time to be served increased from 3.6 months during 1986 to 15.1 months during 1997 (table 2). For weapons offenders time to be served increased from 23 months to 74.5 months. Time to be served more than doubled for drug offenders, increasing from 29.7 months to 66.2 months.

For drug offenses the sharpest increase in time to be served followed the implementation of the Sentencing Reform Act of 1984 during 1987 and antidrug legislation enacted during 1986 and 1988. Between 1987 and 1990, time to be served for drug offenders increased from 32 to 58 months. While time to be served continued to increase after 1990, the rate of increase slowed, increasing to 66.2 months during 1997.

For weapons offenses time to be served also increased almost immediately following implementation of the Sentencing Reform Act, doubling from 23 months during 1986 to 46 months during 1990. However, by contrast to drug offenses, time to be served for weapons offenses continued to increase following additional statutory increases in the Omnibus Crime

Control Act of 1990, rising to 74.5 months during 1997.

For immigration offenses time to be served increased most dramatically following amendments to the Federal sentencing guidelines for immigration

offenses implemented on November 1, 1991. These amendments provided for sentence enhancements based on the number of aliens smuggled or the amount of trafficking in false nationality documents. During 1991 time to be served for immigration offenses was

Reduction of sentences based on substantial assistance

At the time of sentencing or up to 1 year after sentencing, district courts can grant reductions in sentences for substantial assistance to the Government. Pursuant to § 5K1.1 of the Federal sentencing guidelines, the Government may file a motion at sentencing to reduce the sentence in exchange for the defendant's assistance to the Government. During 1996 U.S. district courts granted 7,845 substantial assistance departures. About two-thirds of the departures were granted to drug offenders.*

*U.S. Sentencing Commission, 1996 Annual Report.

Rule 35(b) of the Federal Rules of Criminal Procedure also provides for reductions in sentences for offenders providing substantial assistance. The Government can file motions to reduce the sentence within 1 year of sentence imposition. Resentencings under Rule 35(b) increased from 27 such cases in 1988, the first year of applicability, to 1,536 in 1993, before decreasing to 1,076 in 1996.

Offenders who entered prison during 1991 and 1992 and who were resentenced under Rule 35(b) had their sentences reduced by about 46 months, on average — from about 116 months to 70 months.

Offenders resentenced pursuant to Rule 35(b) after providing substantial assistance to the Government, 1988-96

Year	Number	Average sentence imposed		Amount of reduction
		Original	New	
1988	27	94.1 mo	60.7 mo	33.3%
1989	219	125.5	81.5	44.0
1990	509	123.5	78.7	44.8
1991	818	118.1	72.3	45.8
1992	1,078	116.2	70.3	45.9
1993	1,536	111.9	68.4	43.6
1994	1,340	104.7	65.6	39.1
1995	1,025	98.2	60.8	37.4
1996	1,076	97.3	61.2	36.1

Data source: Federal Bureau of Prisons, SENTRY data file, annual.

Table 3. Average time served by offenders released from Federal prison, 1986-97

Year	Number	Months imprisonment		Percent of term served
		Term in effect	Time served to first release	
1986	21,661	27.3 mo	14.5 mo	59.2%
1987	23,319	27.5	15.0	59.4
1988	22,781	32.0	17.2	58.8
1989	22,951	33.4	18.1	59.6
1990	26,379	29.9	17.2	64.6
1991	25,771	31.8	19.4	70.7
1992	25,452	30.8	20.4	76.6
1993	26,503	32.6	22.9	79.9
1994	28,410	32.3	24.1	82.8
1995	27,902	33.9	26.4	84.5
1996	30,264	35.0	28.2	86.6
1997	31,894	34.9	28.8	86.7

Notes: Represents offenders committed to prison by U.S. district courts. Average sentence length excludes offenders sentenced to life in prison or to death. Data source: Federal Bureau of Prisons, SENTRY data file, annual.

The proportion of sentence served by offenders released from Federal prison rose from 59% in 1986 to 87% in 1997

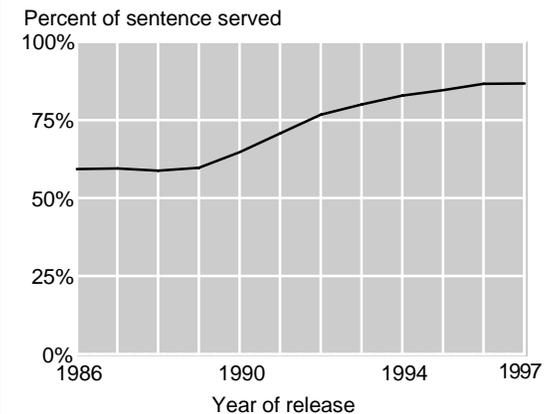


Figure 4

4.6 months, on average. Following the amendments, time to be served increased to 15.1 months during 1997.

While time to be served for violent offenses increased following Federal sentencing reforms, it increased at a lesser rate. Between 1986 and 1997, time to be served for violent offenses increased from 65.2 months to 76.1 months. For robbery offenses, time to be served increased from 73.5 months to 82.6 months.

By contrast to other offenses, time to be served for property offenses decreased slightly from 18.4 months during 1986 to 17.8 months during 1997.

Offenders released from Federal prison

As time to be served by offenders entering Federal prison increased, time served by released offenders also increased between 1986 and 1997 — from 14.5 months to 28.8 months (table 3). In contrast to offenders entering Federal prison, offenders released had been sentenced on average to substantially shorter prison terms.

Offenders committed to Federal prison during 1986 received a sentence of 38.9 months, on average, whereas those released during 1986 had received a sentence of 27.3 months. On average, offenders committed

during 1997 received a sentence of 53.9 months, whereas those released had received a sentence of 34.9 months.

Time served by offenders released from prison reflects sentences imposed over several years rather than one, and to a greater degree than occurs among offenders entering prison, the release cohort represents offenders sentenced to shorter terms of imprisonment. During periods of transition, such as the 10 years following implementation of the Sentencing Reform Act, actual time served by

offenders released from prison understates the impact of sentencing reforms.

The proportion of the sentence served by offenders released from Federal prison also increased following implementation of the Sentencing Reform Act — increasing from 59.2% during 1986 to 86.7% during 1997 (figure 4). Compared to commitments to Federal prison, fewer released prisoners had been sentenced pursuant to the Sentencing Reform Act. (See *Offenders sentenced pursuant to the Sentencing Reform Act of 1984* on page 3.)

Offenders committed to Federal prison for life

Between 1986 and 1997 the number of offenders annually committed to Federal prison with a sentence of life imprisonment increased from 36 to 314 (table). Ninety percent of these offenders, those who were sentenced pursuant to the provisions of the Sentencing Reform Act of 1984, are not eligible for release on parole. Federal law, however, permits the Bureau of Prisons to release offenders sentenced to life imprisonment if they are at least age 70 and have served at least 30 years.*

Old law offenders committed to Federal prison for life are eligible for parole at the discretion of the U.S.

*18 U.S.C. § 3582(c)(1)(A)(ii).

Parole Commission. Between 1986 and 1997, 93 offenders committed to Federal prison for life were released on parole after almost 16 years in prison (not shown in a table).

Year	Number of Federal prisoners with a sentence of life in prison or death
1986	36
1987	43
1988	32
1989	48
1990	82
1991	109
1992	194
1993	252
1994	295
1995	233
1996	261
1997	314

Data source: Federal Bureau of Prisons, SENTRY data file, annual.

Table 4. Average time to be served by offenders released from Federal prison, by offense of conviction, 1986-97

Year	Average time to be served (in months)								
	All offenders	Violent		Property			Drugs	Public-order	
		Any	Robbery	Any	Fraud	Any		Weapons	Immigration
1986	14.5 mo	48.8 mo	54.8 mo	15.5 mo	13.2 mo	20.4 mo	6.4 mo	18.6 mo	3.5 mo
1987	15.0	48.2	55.3	15.1	12.5	21.2	6.6	18.4	3.7
1988	17.2	50.8	58.3	15.8	13.7	22.6	8.3	19.7	4.2
1989	18.1	49.8	59.4	16.1	14.5	25.1	8.5	19.7	4.1
1990	17.2	51.0	60.3	15.6	14.2	26.4	7.3	18.9	3.6
1991	19.4	53.5	60.5	15.8	14.5	28.1	8.6	19.6	3.9
1992	20.4	51.8	60.8	15.7	14.8	28.6	10.0	19.3	4.9
1993	22.9	53.8	61.6	15.4	15.2	32.0	12.1	22.8	5.5
1994	24.1	51.5	59.2	15.3	14.8	33.9	13.1	26.4	5.9
1995	26.4	50.9	57.2	15.7	15.6	37.6	14.7	31.4	6.9
1996	28.2	53.7	59.8	15.6	15.5	40.3	17.2	37.9	8.3
1997	28.8	53.3	59.7	15.3	15.6	42.5	17.9	40.3	10.9

Notes: Represents defendants released by normal means following a commitment by a U.S. district court. Excludes offenders sentenced to life in prison or death. Data source: Federal Bureau of Prisons, SENTRY data file, annual.

Consequently, the average sentence served exceeded 80% of the imposed sentence about 5 years later for the release cohort than for the entry cohort.

Offense of conviction Except for property offenders, time served by offenders released from Federal prison increased for all major offense categories (table 4). Similar to offenders entering Federal prison, time served by

immigration, drug, and weapons offenders increased at the greatest rate. For immigration offenses time served increased from 3.5 months during 1986 to 10.9 months during

Extraordinary releases from Federal prison, 1986-97

Offenders can be released from prison following expiration of the sentence, completion of term with good time credits, release onto parole, or by an "extraordinary" means such as death, treaty transfers, commutation of sentences, termination of sentence ordered, and having the sentence vacated. In addition, in 1994 the Violent Crime Control and Law Enforcement Act permitted the early release of nonviolent offenders who successfully completed a drug treatment program. Offenders successfully completing a drug treatment program may have their terms reduced by up to 1 year.

Between 1986 and 1997 the number of offenders released by extraordinary methods increased from 377 to 2,814. Following the introduction of early release after drug treatment, the number of extraordinary releases increased from 769 in 1995 to 2,178 in 1996 and to 2,814 in 1997 (table).

Before 1996 most extraordinary releases were for sentence

Year	Total	Method of extraordinary release			
		Drug treatment	Death	Termination order*	Other
1986	377	0	55	233	89
1987	424	0	78	248	98
1988	393	0	100	221	72
1989	420	0	92	258	70
1990	510	0	110	291	109
1991	502	0	122	287	93
1992	699	0	120	317	262
1993	656	0	146	301	209
1994	1,021	0	175	376	470
1995	769	73	195	308	193
1996	2,178	852	210	428	688
1997	2,814	1,689	212	239	674

*Includes sentence commutation.

Data source: Federal Bureau of Prisons, SENTRY data file, annual.

commutation or a termination order — between 40% and 60% of extraordinary releases — or because the offender died — between 15% and 26%. By 1997 releases for successful completion of drug treatment accounted for 60% of extraordinary releases.

Time served to first release by those released by extraordinary means followed a different pattern than it did for offenders released by normal means. Average time served for

extraordinary releases was about 11 months in 1986 (not shown in a table), or about 3 months less than the average time served by normal releases. By 1997 average time served by extraordinary releases reached about 42 months, or about 13 months longer than the average time served by normal releases.

Extraordinary releases by definition leave prison before serving their expected terms. Consequently, the average percentage of term served by extraordinary releases is lower than that served by normal releases. Between 1986 and 1997 the percentage of term served by extraordinary releases increased from about 30% to almost 65% (not shown in a table). By comparison, normal releases served about 60% of their terms before release in 1986 and about 87% in 1997.

Table 5. Factors contributing to the increase in the time to be served by Federal offenders

Offense of conviction	Proportion of increase due to —			
	Total	Sentence imposed	Proportion of sentence to be served	Offenders sentenced
Total	100%	19%	61%	20%
Violent offenses	3	-5	8	0
Robbery	2	-5	6	1
Property offenses	-3	-6	5	-2
Fraud	3	-2	2	2
Drug offenses	77	11	32	33
Public-order offenses	23	18	16	-11
Weapons	12	3	4	5
Immigration	6	11	2	-6
Unknown offenses	0	1	0	-1

Notes: Totals may not equal the sum of the components due to rounding.
Data source: Federal Bureau of Prisons, SENTRY data file, annual.

1997. For drug offenses, time served increased from 20.4 months to 42.5 months. And for weapons offenses, time served increased from 18.6 months to 40.3 months.

The average time served for property offenses remained virtually constant throughout the 1986 to 1997 period. In 1986 the average time served by property offenders was 15.5 months; in 1997 it was 15.3 months. Offenders released from prison under sentences for fraud experienced less than a 3-month increase in the actual average time served, from 13.2 months to 15.6 months.

Time to be served

Following implementation of Federal sentencing reforms, time to be served by offenders entering Federal prison increased from 20.7 months during 1986 to 46.9 months during 1997. Truth in sentencing led to substantial increases in time to be served by increasing the proportion of sentence to be served. Increases in sentences

imposed — largely the result of mandatory minimum prison terms — led to a slight increase in time to be served by Federal offenders. Changes in the composition of offenders prosecuted and in the Federal sentencing guidelines also led to an increase in the proportion of offenders sentenced to prison.

Truth in sentencing, increased sentences, and more offenders being sentenced to prison impacted the overall time to be served in diverse amounts. The truth-in-sentencing provisions of the Sentencing Reform Act of 1984 that require offenders to serve at least 87% of the sentence imposed, when applied to the increases in sentences imposed, accounted for about 61% of the 26-month increase in time to be served by Federal offenders (table 5). The increases in prison terms alone accounted for about 19% of the overall increase, and larger numbers of offenders sentenced to prison accounted for an additional 19%.

The increase in time to be served by Federal offenders can be apportioned across offense categories. Among the major offense categories, the increase in time to be served by drug offenders accounted for 77% of the increase in time to be served by all Federal offenders. Changes in time to be served by public-order offenders accounted for an additional 23% of the overall increase. The proportion of the increase attributable to violent offenders (3%) was offset by the decrease in time to be served by property offenders.

Among public-order offenders the increase in time to be served by weapons offenders accounted for more than half the increase, while the increase for immigration offenders accounted for about a quarter of the total increase in the overall category.

Truth in sentencing, mandatory minimums, and the Federal sentencing guidelines affected different offenses to varying degrees. For some offense categories these factors led to an increase, while for others, a decrease.

For drug offenses the increase in time to be served was attributable in equal parts to the requirement that Federal offenders serve at least 87% of the sentence imposed and the increase in the proportion of drug offenders sentenced to prison. By contrast, for public-order offenses the change in the proportion of offenders sentenced to prison did not result in an increase in time to be served. Instead, the increase was the result of the increase in sentences imposed and in the proportion of sentence to be served.

Prison population

Between 1986 and 1997 the number of offenders serving a sentence in Federal prison increased from 38,156 prisoners to 98,944 prisoners (figure 4). While the number of offenders in each major offense category increased, the number of offenders incarcerated for a drug offense increased the most — from 14,976 to 58,610 prisoners (table 6). Drug offenders accounted for about 72% of the increase in the Federal prison population. Public-order offenders accounted for 22% of the increase; violent offenders, 4%; and property offenders, 1%.

Eight factors can be shown to be associated with the growth in the Federal prison population between 1986 and 1997. Some factors impacted the number of offenders sentenced to Federal prison while other factors impacted the number of offenders returning to prison following a supervision revocation.

Factors impacting offenders sentenced to Federal prison —

- investigations by U.S. attorneys increased from 80,613 to 98,454
- prosecutions by U.S. attorneys increased from 54,222 to 64,856

Table 6. Federal prison population, by offense of conviction, 1986-97

Offense of conviction	1986		1997	
	Number	Percent	Number	Percent
All offenses	38,156	100.0%	98,944	100.0%
Violent offenses	9,401	24.9%	11,658	11.9%
Robbery	6,507	17.2	8,464	8.7
Other violent	2,894	7.7	3,194	3.3
Property offenses	7,342	19.4%	8,151	8.4%
Fraud	2,451	6.5	5,280	5.4
Other property	4,891	12.9	2,871	2.9
Drug offenses	14,976	39.6%	58,610	60.0%
Public-order offenses	6,084	16.1%	19,197	19.7%
Weapons	1,611	4.3	8,082	8.3
Immigration	1,496	4.0	5,454	5.6
Other public-order	2,977	7.9	5,661	5.8
Unknown offenses	353		1,328	

Data source: Federal Bureau of Prisons, SENTRY data file, annual.

- defendants convicted increased from 43,920 to 56,670
- defendants incarcerated increased from 23,058 to 39,431
- time to be served increased from 20.7 months to 46.9 months.

Factors impacting offenders returning following a supervision revocation —

- offenders under Federal community supervision increased from 71,361 to 90,751
- supervision violations increased from 7,299 to 13,217
- time served for supervision violations decreased from about 10.4 months to 6.8 months.

The primary factors that resulted in the increase in the Federal population were increases in time to be served, investigations by U.S. attorneys, and the incarceration rate. Almost two-thirds of the increase in the Federal prison population can be attributed to the increase time to be served by Federal offenders (table 7). About a quarter of the increase can be attributed to the increase in investigations by U.S. attorneys. Fifteen percent of the increase is attributable to the higher rate at which Federal offenders were sentenced to prison, as measured by the ratio of prison commitments to convictions.

Table 7. Factors contributing to the increase in the Federal prison population, 1986-97

Component of change:	Change in prison population		Change in number of inmates due to offense-specific changes			
	Number of inmates	Percent	Violent	Property	Drugs	Public-order
Total	60,788	100%	3,441	1,280	42,925	12,913
Suspects in matters concluded	15,507	25.9	3,970	1,345	11,017	-825
Defendants in cases terminated	-6,267	-10.5	-3,045	-1,358	-3,141	1,277
Defendants convicted	2,939	4.9	997	150	1,070	722
U.S. district court commitments	9,182	15.4	816	1,092	3,461	3813
Length of stay for district court commits	39,199	65.5	704	51	30,518	7,926
Offenders under supervision	2,142	3.6	551	47	1,475	69
Supervised release violators	3,282	5.5	605	1,243	467	967
Length of stay for release violators	-6,171	-10.3	-2,339	-1,762	-1,234	-836

Notes: Offense-specific columns do not add up to total change in prison population because they exclude offenders whose offenses are unknown.

Data source: Federal Bureau of Prisons, SENTRY data file, annual.

Additionally, increases in the number of offenders convicted of Federal offenses, increases in the number of offenders under Federal community supervision, and the revocation rate also caused the Federal prison population to increase between 1986 and 1997.

But for two of the factors measured, the Federal prison population would have increased to a greater extent. The slight decrease in the prosecution rate — as measured by the ratio of prosecutions to investigations — from 67.3% of suspects investigated to 65.9%, and the decrease in time served by supervision violators from 10.4 months to 6.8 months, curtailed the growth of the prison population by more than 12,000 inmates.

The eight factors affected different offense categories to varying degrees. The increase in time to be served was the primary cause for the increase in the number of drug and public-order offenders in Federal prison: about 71% of the increase in drug offenders and 61% of the increase in public-order offenders were attributable to the increase in time to be served. By contrast, time served was associated to a lesser extent with the increase in the number of offenders incarcerated for property and violent offenses: about 20% of the increase in violent offenders and 4% of the increase in property offenders were attributable to the increase in time to be served.

The increase in the number of property offenders, though small in comparison to the increase in the number of offenders incarcerated for drug and public-order offenses, was attributable a variety of factors. Unlike other offense categories, the increase in the proportion of offenders sentenced to prison was a dominant factor. When other factors are controlled for, 85% of the increase in the number of property offenders incarcerated was attributable to the increase in the incarceration rate.

Methodology

Data sources

The source of data for tables presented in this report is the BJS Federal Justice Statistics Program database. The database is constructed from source files provided by the Executive Office for the U.S. Attorneys, the Administrative Office of the U.S. Courts, the U.S. Sentencing Commission, and the Federal Bureau of Prisons.

Data tabulations, except where otherwise indicated, were prepared from contractor analyses of the source agency datasets indicated.

The data for prison populations include only those inmates serving a term of imprisonment resulting from a conviction or a supervision violation. Arrestees, boarders, and other detainees are excluded.

Measuring time served and time to be served

This report uses several measures of length of stay, and it relies on two similar decomposition methods to calculate the degree to changes in length of stay and changes in the yearend prison population can be attributed to several factors. In addition, it uses concepts that sound similar but have different meanings. This appendix addresses these matters.

Prison term in effect *Term in effect* or *prison term* is the operative length of sentence after adjustments and credits, including jail credits, have been applied to the sentence imposed by the district court. For offenders sentenced to a single sentence, the term in effect is equal to the length of the single sentence imposed. For offenders sentenced to more than one sentence, term in effect is determined by whether the sentences are to be served concurrently or consecutively. If sentences are concurrent, then term in effect equals the longest sentence imposed. If sentences are consecutive, term in

effect equals the sum of the sentences imposed minus any portion of any sentence that is to be served concurrently with another sentence. These determinations of term in effect also assume that all postsentence adjustments to a sentence have been made. Most commonly, postsentence adjustments include Rule 35 resentencings, including Rule 35(b) reductions for substantial assistance.

Time served The measures of time served are defined for the cohort of persons entering prison during a year and the cohort of persons released from prison during a year. For persons entering Federal prison, time to be served is measured by expected time or the number of months that an offender can expect to serve until first release. For offenders released from prison, time served is measured as the number of months actually served, which is the difference between the release date and the commitment date plus adjustments for jail credits.

For each cohort of prisoners entering Federal prison following a U.S. district court commitment, expected time to be served is the average number of months of their prison term that members of the cohort can expect to serve before release from prison. This measure includes the jail time credited toward sentences. For members of entering cohorts who have been released from prison, time until first release is measured as actual time served plus jail credits. For offenders still in prison, time until first release is estimated as follows —

- for new law offenders sentenced to terms of less than or equal to 1 year, time to be served is the prison term imposed
- for new law offenders sentenced to more than 1 year, time to be served is 87% of the prison term imposed
- for offenders sentenced under old law, time to be served is the offense-specific average amount of time actually served by old law offenders

who were released from prison. Each offender in a given offense category is given the offense category's average based on all members of the category who had actually been released. This method will underestimate time to be served for old-law offenders still in prison, as these remaining prisoners will have served longer than average times before they are released.

Excluded from analyses of time to be served are (1) offenders sentenced to a term of life imprisonment or death and (2) offenders who were released by extraordinary methods such as commutation or death.

Proportion of term served *Proportion of term served* is a measure of truth in sentencing; it measures the degree to which prison sentences served correspond to the sentence imposed. Proportion of term served is measured relative to the prison term in effect.

Proportion of term served is calculated on and reported only for terms of imprisonment greater than 1 year. New law offenders sentenced to terms of less than 1 year are not eligible for good-time reductions. As the percent of term reported is the average of each individual's percent of term served, the relatively large number of prison terms of less than or equal to 1 year would raise the average percent of term served and provide a biased measure of truth in sentencing. For example, in 1995, the average percent of term served for all prisoners released from a U.S. district court commitment was about 90%. However, for those offenders released from terms of greater than 1 year, it was 85%. About 30% of the prisoners released during 1995 were released from terms of 1 year or less; the average percent of term served for these short sentenced prisoners was 100%.

For entering cohorts of prisoners, percent of term served is the ratio of time until first release to prison term in effect. The term in effect is the operating prison term or sentence, and it may differ from the imposed

sentence as it reflects postsentence adjustments or changes. For exiting cohorts of prisoners, percent of term served is the ratio of actual time served to the prison term in effect.

For exiting cohorts, percent of term excludes offenders released by extraordinary methods, such as treaty transfer, termination order or commutation, death, or early release for completion of drug treatment.

Decomposition methods

Changes in time served and the yearend prison population are analyzed using methods that apportion the change in each quantity into several components or factors that are responsible for the changes. Each decomposition begins with an identity that defines the relationship under investigation. As this identity holds for each period, it can be written for each period that is compared. To evaluate the changes between periods, the identity in the first period is subtracted from the identity in the second period. The differences are applied to the levels of each factor in the identity.

Decomposing changes in time until first release for the entering cohorts The change or difference in time until first release between the 1986 and 1997 entry cohorts is decomposed into the offense-specific portions due to changes in terms imposed, changes in the proportion of term served, and changes in the number of commitments. By definition, the offense-specific group average time until first release equals the average term imposed for the group times the group average percent of term served. Then, the average number of months until first release for an entry cohort comprised of several offense groups is equal to the sum of each offense group's weighted average time until release; the weight equals an offense-group's share of total commitments,

or

$$TUFR = T(i)*P(i)*c(i) \quad (1)$$

where

TUFR equals time until first release;

T(i) equals the average term imposed on the ith offense group;

P(i) equals the average percent of term served by the ith offense group; and

c(i) is the ith offense group's share of total commitments.

The identity in equation (1) holds for all time periods. Therefore, the change in time until first release equals:

$$TUFR(t) - TUFR(t-1) \quad (2)$$

or,

$$\frac{\sum T(i,t)*P(i,t)*c(i,t) - \sum T(i,t-1)*P(i,t-1)*c(i,t-1)}{\sum T(i,t-1)*P(i,t-1)*c(i,t-1)} \quad (3)$$

This can be rewritten as:

$$\sum T(i,t)*P(i,t)*[c(i,t) - c(i,t-1)] + \quad (4)$$

$$\sum T(i,t)*[P(i,t) - P(i,t-1)]*c(i,t-1) + \quad (5)$$

$$\sum [T(i,t) - T(i,t-1)]*P(i,t-1)*c(i,t-1) \quad (6)$$

where equation (4) represents the amount of the difference in length of stay due to changes in the offense composition of prison admissions; equation (5) represents the amount of the difference due to changes in the percent of term served; and equation (6) represents the amount of the difference due to changes in the terms imposed.

Decomposing changes in prison populations The change in the prison population between 1986 and 1997 is due to changes in several factors that affect prison population growth. As offenders may arrive in Federal prison by U.S. district court commitments or by violating conditions of supervision, the yearend stock prison population

consists of two groups: those who were committed from U.S. district courts and those who returned to prison for violating conditions of supervision. Similarly, there are two sets of factors affecting prison population growth: those related to how district court committed prisoners arrive, and those related to how supervised release violators arrive in prison.

Therefore, the number of persons in prison at yearend equals the number who were committed by district courts and the number who were committed for reasons of violations, or:

$$PP = PP(USDC) + PP(Violators) \quad (7)$$

where PP equals the yearend prison population; PP(USDC) equals the number in prison as a result of a U.S. district court commitment; and PP(Violators) equals the number in prison as a result of a violation of conditions of supervision. Each term on the right-hand side of equation (7) can be analyzed separately.

The number of persons in prison at yearend as a result of district court commitments is defined by the following identity:

$$PP(USDC) = M * p * c * s * \text{los}(dc) \quad (8)$$

where

PP(USDC) = the number of persons in prison at yearend who are there by virtue of a U.S. district court commitment;

M = the number of suspects investigated in criminal matters, as measured by the number of suspects in criminal matters concluded;

p = P/M or the prosecution rate. This is the ratio of the number of defendants prosecuted (P) to the number of criminal suspects in matters investigated (M). The number of defendants prosecuted is measured by the number of defendants in cases terminated in U.S. district

court. The number of suspects in matters is as above.

c = C/P or the conviction rate. This is the ratio of the number of defendants convicted in U.S. district court (C) to the number of defendants prosecuted (P). The number prosecuted is as above.

s = S/C or the imprisonment rate. This is the ratio of the number of offenders sentenced to prison (S) to the number convicted (C).

los(dc) = the length of stay for U.S. district court committed offenders. This is the ratio of the number of offenders in prison — PP(USDC) — to the number of U.S. district court commitments (S) into prison.

Equation (7) is an accounting identity. For it to hold, the length of stay is measured as the turnover rate, or the stock-to-flow ratio. The turnover rate underestimates the time until release for entering cohorts when either sentences are increasing or if the number committed is increasing. During the 1986-1997 period, both of these occurred; consequently, the impact of changes in length of stay on prison population growth will be underestimated.

The number of persons in prison as a result of supervision violations equals:

$$PP(Violators) = R * v * \text{los}(v) \quad (9)$$

where,

PP(Violators) = the number in prison for violations of supervision;

R = the number under supervision;

v = V/R or the violation rate. This is the ratio of the number of offenders returned to prison for reasons of violating conditions of supervision (V) to the number under supervision (R).

los(v) = the length of stay for violators of supervision. This also is measured as the ratio of the number of supervision violators in the prison stock to the number of supervision violators entering prison during a given year. In the case of supervision violators, lengths of stay are comparatively short, less than 1 year; therefore, the magnitude of the bias from this turnover rate is negligible.

As was done with the decomposition of changes in length of stay, the difference in the prison population between two periods can be related to offense-specific changes in each individual component in equations (8) and (9). Thus, the difference in the prison population between two periods is a weighted sum of the differences in each component, where the weights equal the offense-specific contribution to prison commitments.

$$PP(t) - PP(t-1) =$$

$$\sum M(i,t) * p(i,t) * c(i,t) * \text{los}(dc)(i,t) +$$

$$\sum R(i,t) * v(i,t) * \text{los}(v)(i,t) -$$

$$\sum M(i,t-1) * p(i,t-1) * c(i,t-1) * \text{los}(dc)(i,t-1) +$$

$$\sum R(i,t-1) * v(i,t-1) * \text{los}(v)(i,t-1) \quad (10)$$

where "l" measures the specific offense under consideration. Equation (10) can be rewritten as was done with equations (4), (5), and (6) to yield eight separate equations that measure the change in the prison population due to changes in:

- (a) the number of suspects investigated
- (b) the number of defendants prosecuted
- (c) the number of defendants convicted
- (d) the number of offenders sentenced to prison
- (e) the length of stay for U.S. district court committed prisoners
- (f) the number of offenders under supervision
- (g) the number of supervised release violators returned to prison

(h) the length of stay for supervised release violators.

The product of each of these equations is the number of persons contributed to the prison population by the factor under consideration.

Estimated number of suspects in criminal matters in 1986

The number of suspects in criminal matters concluded during 1986 is used in determining changes in the prison population. Data were not directly available on the number of suspects in criminal matters concluded during 1986. The offense-specific counts of suspects in matters concluded were estimated from data in two published reports. The *1986 Compendium of Federal Justice Statistics* gave the offense-specific aggregate counts of suspects in criminal matters plus appellants in appeals filed during 1986. The Administrative Office of U.S. Courts (Federal judiciary) *Judicial Business of the U.S. Courts* reported counts of the number of appeals.

To estimate the number of suspects in criminal matters concluded, we estimated the number of appellants subtracted from the aggregate counts of suspects plus appellants as reported in the compendium. Specifically, the objective is to estimate the number of appellants included in the compendium's number of suspects in criminal matters. Using compendium aggregate data on defendants in cases filed, plus appellants, and using Federal judiciary data, an estimator was developed under the assumption that the ratio of appellants to defendants plus appellants in the compendium was equal to the observed ratio of appellants to appellants plus defendants in the Federal judiciary data. The number of appellants was estimated and subtracted from the compendium's number of suspects plus appellants to yield the number of suspects in criminal matters concluded.

Appendix. Entries to and releases from Federal prison, 1986-97

Year	Entries	Entries released*	Proportion released*
Total	383,108	275,950	72.0%
1986	25,820	25,446	98.6
1987	26,684	26,152	98.0
1988	24,591	23,870	97.1
1989	28,249	26,388	93.4
1990	33,124	29,664	89.6
1991	32,812	28,172	85.9
1992	34,161	27,496	80.5
1993	37,065	26,698	72.0
1994	34,407	22,182	64.5
1995	32,566	17,454	53.6
1996	35,254	11,038	31.3
1997	38,375	11,390	29.7

*Represents defendants committed to Federal prison by U.S. district courts as of December 31, 1997.
Data source: Federal Bureau of Prisons, SENTRY data file, annual.

The Bureau of Justice Statistics is the statistical agency of the U.S. Department of Justice. Jan M. Chaiken, Ph.D., is director.

BJS Special Reports address a specific topic in depth from one or more data sets that cover many topics.

William J. Sabol, Senior Research Associate at the Urban Institute and Project Director of the Federal Justice Statistics Resource Center, and John McGready, Research Associate at the Urban Institute, wrote and verified this report. Gerald Gaes, Director of Research for the Federal Bureau of Prisons, provided methodological assistance. John Scalia, Jr., BJS Statistician, supervised preparation of the report. Tom Hester edited it. Yvonne Boston and Jayne Robinson prepared the report for final publication.

June 1999, NCJ 171682

This report, as well as other reports and statistics, can be found at the Bureau of Justice Statistics World Wide Web site:

<http://www.ojp.usdoj.gov/bjs/>

Data used in this report and other data that are a part of the Federal Justice Statistics Resource Center, maintained by the Urban Institute, can be obtained through the BJS website or at the following address: <http://fjsrc.urban.org>