

Statistical Release

Crime and Justice Series

A National Statistics Publication for Scotland

Scottish prison population projections: 2009-10 to 2018-19

January 2010



Current projections

The latest set of prison population projections suggests that the daily prison population in Scotland will increase from an annual average of 8,100 in 2009-10 to 9,600 by 2018-19 (Table 1). These projections take into account recent trends in the prison population, including the latest available data for the first 10 months of 2009.

Table 1 Prison population projections: October 2008 and October 2009

	October 2008 average daily population	October 2009 average daily population	Estimated home detention curfew population	Projected plus HDC population
2008-09	7,700	7,835 (actual)	371 (actual)	8,206 (actual)
2009-10	8,000	8,100	370	8,470
2010-11	8,200	8,400	370	8,770
2011-12	8,500	8,700	370	9,070
2012-13	8,700	8,800	370	9,170
2013-14	8,800	9,000	370	9,370
2014-15	9,000	9,100	370	9,470
2015-16	9,200	9,200	370	9,570
2016-17	9,400	9,400	370	9,770
2017-18	9,600	9,500	370	9,870
2018-19		9,600	370	9,970

Note: Estimated home detention curfew population is based on current levels with the assumption that they will remain stable.

The prison population in the first 10 months of 2009 has been consistently high, with levels similar to those observed during the latter part of 2008. The recent increase is reflected in the current projections, which give somewhat higher numbers in the short to medium term than the October 2008 projections, confirming the steady upward trend observed since 2000.

The increase has been across all main prisoner groups. There has been a gradual increase in the long-term population (sentenced to four years or more) over the years. The remand population showed a marked increase during 2006, which has also contributed to the current high prison population.

However, the main driver for the record population levels seen so far in 2008 and 2009 are the numbers of short-term prisoners (sentenced to less than four years). These have increased steadily since 2007, and the rate of increase accelerated markedly during 2008 and 2009. These trends are described in more detail in the next section.

Recent trends

The prison population has been increasing steadily since the early 2000s, and the rate of increase has become more marked over the past four years. The overall increase in average daily population between 2007 and 2008 was 6.8 per cent, with some degree of levelling out during 2009 compared to the rapid increase during the latter part of 2008.(Table 2).

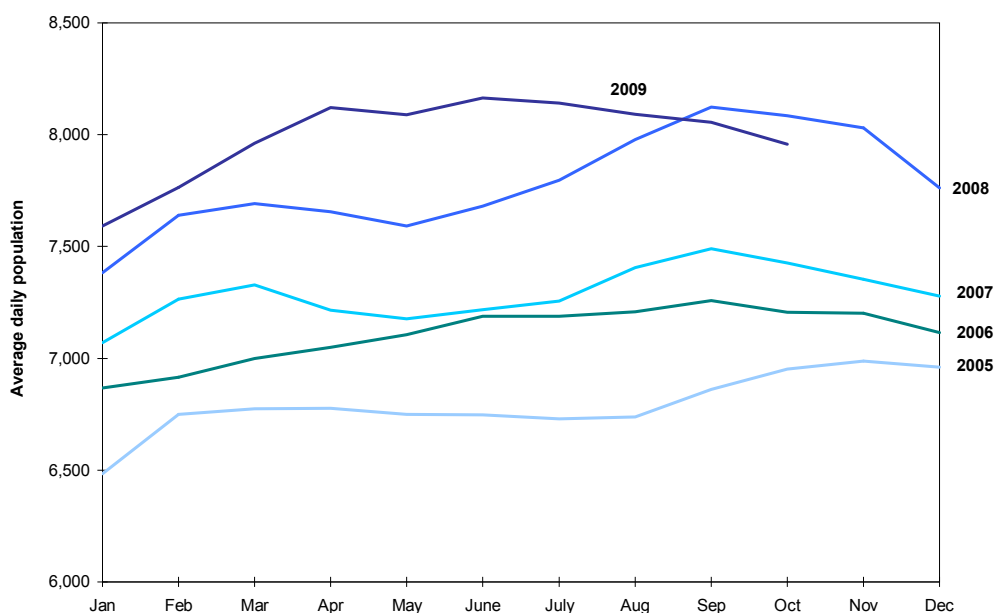
Table 2 Average daily population figures: January 2007 to October 2009

	2007	2008	2009 (provisional from April)	2007 to 2008 % change	2008 to 2009 % change
Jan	7,070	7,384	7,591	4.4	2.8
Feb	7,265	7,639	7,765	5.2	1.6
Mar	7,327	7,691	7,962	5.0	3.5
Apr	7,214	7,655	8,120	6.1	6.1
May	7,176	7,591	8,090	5.8	6.6
June	7,218	7,681	8,163	6.4	6.3
July	7,256	7,797	8,142	7.5	4.4
Aug	7,406	7,978	8,092	7.7	1.4
Sep	7,489	8,124	8,055	8.5	-0.8
Oct	7,425	8,083	7,958	8.9	-1.6
Nov	7,353	8,029		9.2	
Dec	7,279	7,762		6.6	
Annual	7,290	7,784	7994 (provisional)	6.8	

Seasonality

What is also notable is how seasonality has varied over the past four years. Population levels traditionally show a seasonal high in March-April which follows a marked dip over December-January (Chart 1). There also tends to be a lull over the summer months before the figures rise again. The seasonal lows reflect holiday periods and the reduced number of court sitting days.

Chart 1 Average daily prison population: January 2005 to October 2009



In 2006, the population rose steadily until the autumn, despite the introduction of early release on home detention curfew for low risk prisoners in July. A similar pattern can be seen in 2009, with population levels remaining very high for the first half of the year. This is in contrast with 2008, where there were unprecedented increases during the last quarter of the year.

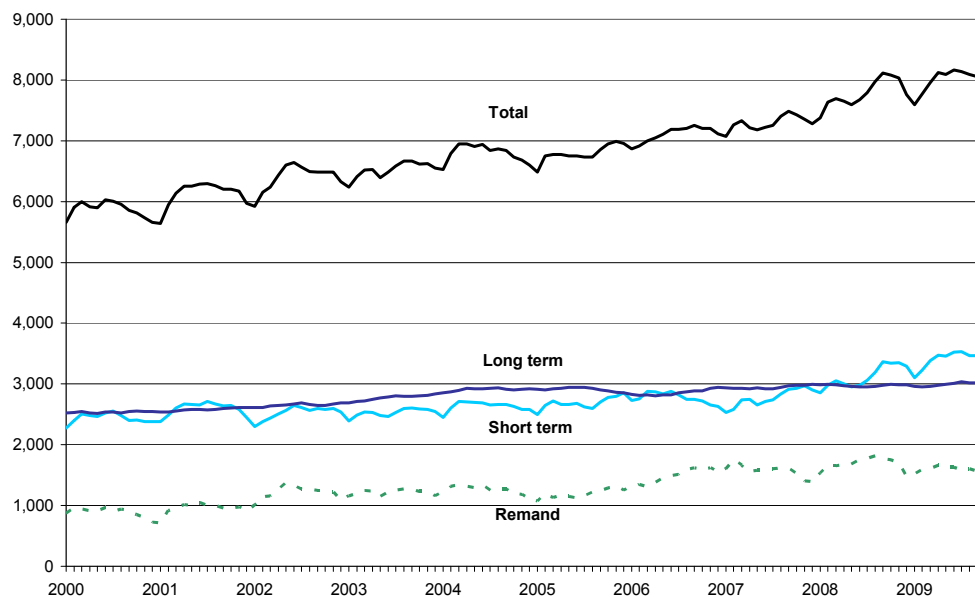
Prisoner type

While there has been an increase in numbers overall, the patterns of change have not been the same for all segments of the prison population (Chart 2). The increase in the long-term population (sentenced to four years or more) has been gradual over the years, from about 2,500 in 2000 to 3,000 in 2009.

The number of remand prisoners increased sharply during 2006 from about 1,200, stabilising at 1,600 in 2007 before increasing further during 2008. This is the main reason for the increased prison population in 2006 and one of the contributing factors to the high prison population in 2008.

However, the main driver for the record population levels seen so far during 2008 and 2009 are the numbers of short-term prisoners (sentenced to less than four years). These have increased steadily since 2007, from approximately 2,600 to 3,000, with the rate of increase accelerating markedly during 2008 and 2009 to reach 3,500.

Chart 2 Average daily prison population: January 2000 to October 2009



Potential influences

There have been a series of initiatives in the past few years, primarily aimed at improving the efficiency of the criminal court system as part of [summary justice reform](#). These are likely to have contributed to the observed increases in the prison population in the short to medium term, and include:

- *Increased sentencing powers*
 - Maximum sentence for sheriff solemn cases increased from three to five years (May 2004)
 - Maximum sentence for sheriff summary cases increased from three to 12 months, with additional penalties for failing to comply with bail conditions (December 2007)

- Increased powers for Justice of the Peace courts to deal with a wider range of road traffic offences (March 2008).
- *Reforms to bail procedures*
 - Judges to provide reasons for granting/refusing bail
 - 'Exceptional circumstances' test for bail where an accused in solemn proceedings for a violent, sexual, or drug trafficking offence has a previous similar solemn conviction
 - Attitude of prosecutor no longer restricts the power of the court so the court can now refuse bail even if the prosecutor does not oppose bail (December 2007).
- *Changes in public prosecution policy*
 - Revised Crown Office and Procurator Fiscal Service (COPFS) policy on knife crime with a presumption of prosecution in solemn courts and opposition to bail for repeat offenders (June 2006)
 - Revised COPFS case marking guidelines with a presumption in favour of action and an outcome focused approach to increase likelihood of conviction. Where court action is appropriate, this will take place in the lowest appropriate forum (March 2008).
- *Legal Aid reform*
 - Payments to solicitors changed to encourage early pleas (June 2008).

In addition, changes in police activity, both in the short and long term, may affect the prison population, although the link here is less direct.

However, other changes in policy and practice, particularly in terms of alternatives to custody, may also impact on sentencing patterns and affect the prison population in the longer term. In particular, the Scottish Prisons Commission report *Scotland's choice* made strong recommendations regarding greater use of alternatives to custody, a position which has been endorsed in the Scottish Government paper *Protecting Scotland's communities: fair, fast and flexible justice*. If such policies are implemented, the observed trends in sentencing behaviour will alter in future, and this will need to be taken into account in future prison population projections.

Methodology

Reception data for different sentence categories are projected separately for adults and young offenders and then converted into populations. Female prisoner numbers are not projected separately as the number of women in custody is too small to be modelled statistically. The data used are derived from the Scottish Prison Service management information system.

Some groups of prisoners are treated differently from the direct sentenced group for the projections (details shown in Table 4 in Annex):

- Remand receptions are projected as a proportion of direct sentenced receptions during 2008.
- Part of the prison population consists of persons who have been previously released under licence or supervision but subsequently recalled into custody. This population has been projected as a proportion of the long-term population.
- Receptions of fine defaulters are held constant at 2008 levels. This group spends very short periods in custody (around three days) and so any change in the number of receptions makes very little difference to the resulting projected population.
- The population of other types of prisoners is also very low and held constant at 2008 levels.

Projected receptions are converted into populations using the average time spent in custody, or time served factor, for each sentence band (see Table 5 in Annex for more detail on time served factors).

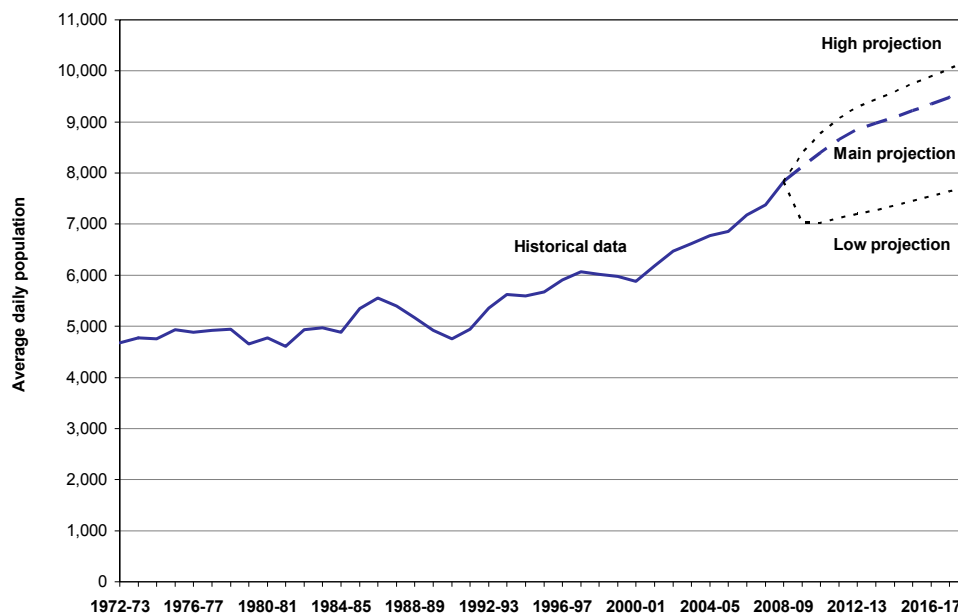
The projection model was run during December 2009 using the most recent available reception data to October 2009. The underlying trends assumed for all categories of sentenced receptions are trends in receptions since 1972, but the projected trends are based on a range of time periods in order to model more accurately changes of different magnitudes over different time scales.

Sensitivity of population projections: high and low variants

A range of methods are required to compensate for the inherent volatility of the population over time, particularly for the smaller groups. Three time periods are used to take account of short (past 10 years), medium (past 25 years) and long (since 1972) term trends. Two different approaches are used: exponential smoothing models the seasonal variation over the year using monthly data, while linear regression models underlying trends using annual data. This gives six projection variants for each sentence category.

The main projection is derived by combining the most likely projection variant for each sentence category. The sensitivity of the projection to the choice of variant is shown by the upper and lower limits for all possible projections, based on the highest and lowest variant for each sentence category (Chart 3).

Chart 3 Prison population projections: 2009-10 to 2018-19



At present, 10 years is the shortest time period used to establish a trend. This makes the projections less volatile in relation to potential short lived spikes in the figures. However, in periods of rapid change such as the ones observed over the past few years, it is difficult to predict to what extent an initial spike may turn out to be the leading edge of a change in trend.

For example, the high variant for the October 2008 projections gave the best fit at that point. The next highest projection substantially under projected the population for 2008, confirming to some extent that recent developments were driving the increases at that point in time.

However, for the 2009 projections, the volatility of the population appears to have stabilised to some degree. It is still showing an overall upward trend, although the rate of increase seems to have eased off somewhat. The choice of main variant reflects this in that it is relatively high (in line with the consistently upward trend over the past 10 years), but not the highest variant (Table 3).

Table 3 Prison population projection variants: October 2008 and October 2009

	October 2008		October 2009		
	Main (high) variant	Low variant	High variant	Main variant	Low variant
2008-09	7,700	6,900		7,835 (actual)	
2009-10	8,000	7,000	8,400	8,100	7,000
2010-11	8,200	7,100	8,800	8,400	7,000
2011-12	8,500	7,300	9,100	8,700	7,100
2012-13	8,700	7,400	9,300	8,800	7,200
2013-14	8,800	7,600	9,400	9,000	7,300
2014-15	9,000	7,700	9,600	9,100	7,400
2015-16	9,200	7,800	9,700	9,200	7,500
2016-17	9,400	8,000	9,900	9,400	7,500
2017-18	9,600	8,100	10,000	9,500	7,600
2018-19			10,200	9,600	7,700

Annex

Table 4 Projection method: October 2009

Population	Projection method
<i>Remand</i>	Fixed proportion of direct sentenced receptions
<i>Sentenced adults</i>	
Fine defaulters	Receptions held constant
Less than 6 months	Full reception projection
6 months up to 18 months	Full reception projection
18 months up to 2 years	Full reception projection
2 years up to 4 years	Full reception projection
4 years and over, excluding Life	Full reception projection
Life prisoners	Population projected directly using linear regression
<i>Sentenced young offenders</i>	
Fine defaulters	Receptions held constant
Less than 6 months	Full reception projection
6 months up to 18 months	Full reception projection
18 months up to 4 years	Full reception projection
4 years and over, excluding Life	Full reception projection
Life/S205/S206 prisoners	Population projected directly using linear regression
<i>Persons recalled from supervision/licence</i>	Fixed proportion of long-term population
<i>Others</i>	Population held constant

Note: Since 2004, the population of prisoners sentenced to life has been projected directly. This was due to changes in release policy for this group, with lifers being currently eligible for parole once the punishment part of their sentence has been served. This has resulted in larger numbers of long-serving lifers being released than had previously been the case, causing the projection method for lifer receptions to provide unrealistic estimates for the lifer population. The population of lifers is currently projected directly using linear regression over the period 1995 to 2008.

Table 5 Time served factors: October 2009

	Time served factors (days)
<i>Remand</i>	27
<i>Sentenced adults</i>	
Fine defaulters	3
Less than 6 months	25
6 months up to 18 months	89
18 months up to 2 years	210
2 years up to 4 years	365
4 years and over, excluding Life	1159
Life prisoners	n/a
<i>Sentenced young offenders</i>	
Fine defaulters	2
Less than 6 months	22
6 months up to 18 months	86
18 months up to 4 years	273
4 years and over, excluding Life	734
Life/S205/S206 prisoners	n/a
<i>Persons recalled from supervision/licence</i>	n/a
<i>Others</i>	n/a

Note: Time served factors are estimated by dividing the average daily population by the number of receptions during the year. This represents the time spent in custody as a sentenced prisoner, and does not include time spent on remand or home detention curfew. For young offenders, the time served factor represents the time spent in custody before either release or reclassification to adult prisoners should they reach 21 while in custody.

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