

Scottish Government Central Analysis Division

Prison population projections: September 2024 edition

This is the fifth report published since 2023 on the Scottish Government modelling of the level of the prison population in Scotland. It presents short term prison population projections for the six month period from August 2024 to January 2025¹. They have been produced using ‘microsimulation’ scenario modelling, which simulates prison arrivals and departures, to estimate the number of individuals in prison on a particular date in the future. The first issue of the Scottish prison population projections² provided a detailed overview of the modelling technique used.

The projections are produced to help inform high level decision making, planning and policy development. As they do not take account of the complexity of the prison population, they are not intended for use in the day to day management of those in prison.

Developments since the last projection publication

During June and July 2024 Emergency Release (ER)³ was implemented for eligible individuals on short-term sentences who were already due for release in the near future. This action was taken to ease pressure on the prison estate, following substantial population growth during 2023 and early 2024. ER⁴ led directly to 477 individuals departing during June/July 2024 and the population reduced to 7,876 on 20th July (the lowest level). Afterwards it increased rapidly, reaching 8,247 on 20th September⁵.

¹ The projections start at the beginning of August because data available to us on cases progressing through courts only currently extends up to the end of July 2024 (due to a time lag on receiving the processed data). As a result, the initial prison population used for the modelling is taken from 1st August 2024.

² For more information, refer to [Scottish prison population projections - gov.scot \(www.gov.scot\)](https://www.gov.scot/scottish-prison-population-projections).

³ Emergency Early Release of those on short term sentences, June 2024, [Emergency Early Release | Scottish Prison Service \(sps.gov.uk\)](https://www.sps.gov.uk/emergency-early-release).

⁴ SPS Early Release Data, Research and Evidence, 2nd September 2024, [Early Release of Prisoners and Prescribed Victim Supporters \(Scotland\) Regulations 2024- Data Analysis Summary Report.pdf \(sps.gov.uk\)](https://www.sps.gov.uk/early-release-of-prisoners-and-prescribed-victim-supporters-scotland-regulations-2024-data-analysis-summary-report.pdf).

⁵ SPS Prison Population up to 20th September, accessed 25th September 2024, [Data, Research and Evidence | Scottish Prison Service \(sps.gov.uk\)](https://www.sps.gov.uk/data-research-and-evidence).

1 Key Points

On 20th September 2024, the overall prison population in Scotland was 8,247, and the remand and sentenced populations were 2,220 and 6,027, respectively. The latest prison population projections modelling to January 2025 suggests that:

- The average daily prison population could be between 7,750 and 9,250 in January 2025. Modelling indicates it is likely⁶ that the overall prison population will increase between 1st August 2024 and 31st January 2025.
- The average daily remand population could be between 1,050 and 3,150 in January 2025. Modelling indicates it is likely that the remand population will decrease slightly between 1st August 2024 and 31st January 2025.
- The average daily sentenced population could be between 6,000 and 6,800 in January 2025. Modelling indicates it is highly likely that the sentenced population will increase between 1st August 2024 and 31st January 2025.

There is uncertainty in the prison population projections over the next six months due to several factors, including variability in court demand, throughput and sentenced departures. Due to the June/July 2024 ER, sentenced departures in July 2024 were the highest since May 2020 (when an earlier ER took place). However, after ER was completed sentenced departures were temporarily reduced; in August 2024 they were at their lowest since October 2023 (if excluding January 2024 when they were low due to seasonal effects). The modelling accounts for slightly lower sentenced departures for the next few months, until the due dates for all those released early have passed. Since ER meant that July 2024 was atypical for flows into and out of the population, this month has not been included in the period sampled to produce key modelling assumptions on future flows into and out of the prison population. There is further uncertainty around the turn of the year when the population historically has tended to fluctuate rapidly during the months of December and January⁷.

⁶ For more information refer to the Professional Head of Intelligence Assessment (PHIA) framework of language for discussing probabilities, Page 5, [Epidemiology Modelling Review Group: consensus statement on COVID-19 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/123456/epidemiology-modelling-review-group-consensus-statement-on-covid-19.pdf).

⁷ Seasonal trends for the prison population since the COVID-19 pandemic indicate some very general similarities at the turn of the year. The sentenced population around late November/early December tends to increase, then between Christmas and the first week of January steeply decrease. The remand population tends to reduce from late November/early December, then it tends to increase sharply before stabilising between Christmas and New Year. The total population tends to fall slightly in late November/early December, then falls more sharply in late December before recovering somewhat by early February.

2 Background

The 'microsimulation' scenario modelling approach is to simulate arrivals and departures of individuals to and from the prison population to help estimate the number of individuals in prison on a particular date in the future. The microsimulation model uses individual-level data to construct a representation of the population of interest. The model can simulate, using known probabilities, changes in individuals' custody status over time.

Data and assumptions

To produce outputs, the model draws on selected court activity data, for example, levels of court hearings at different stages (such as pre-trial or trial) in High Court, Sheriff Court Summary and Sheriff Court Solemn. This data is used to estimate levels of remand arrivals in the coming months. The model includes assumptions on future court capacity, as these are one of the most important factors for prison population changes in the short/medium term.

Modelling limitations

As the model can be validated against historical data and can reflect a wide variety of dynamics, it is suitable for forecasting in the short and medium term. However, due to uncertainty underlying the justice system's recovery (e.g., the rate at which court backlogs can be reduced by the recovery programme) which impacts the model's assumptions and longer-term predictive power, currently only a 6-month projection is generated using the model. The model does not currently simulate flows for different crime-types, so crime-based trends are not explicitly modelled.

Report structure

The rest of this report is organised as follows. Section 3 includes a brief overview of the prison population from 2020 to 2024 and court demand trends from 2014 to 2024. Section 4 includes an overview of the assumptions used to project the prison population and explains how the model's previous projections are validated for robustness against the actual prison population in recent months. Section 5 summarises the population projection results for the period from August 2024 to January 2025. Section 6 features a brief discussion of factors which may influence the size of the prison population in the longer term. Finally, the report concludes with a short annex covering some technical aspects of the modelling approach and how the scenario variant assumptions are derived.

3 Overview of Scottish Prison Population and Court Demand Trends

Figure 1 shows there have been substantial fluctuations in the total and sentenced populations since 2020.

Total population

As presented in Figure 1, the prison population fluctuated within a range between 7,350 and 7,650 from September 2020 until late 2022. In 2023 the population grew strongly, and has remained above 7,800 since mid-July 2023. As expected, the population temporarily fell during December 2023/January 2024 due to seasonal effects. It then increased rapidly in early 2024, peaking at 8,361 on 14th May. The Scottish Parliament approved the ER of certain short-term prisoners to reduce pressure on the estate on 12th June. ER⁸ led directly to 477 individuals departing between 26th June and 25th July 2024 and the population reduced to 7,876 on 20th July (the lowest level). Afterwards it increased rapidly, reaching 8,247 on 20th September⁹.

Remand population

The remand population (see Figure 1) increased from the beginning of 2022, reaching a peak of 2,292 on 1st February 2022, then typically decreased gradually during the rest of the year. In 2023 the remand population increased strongly throughout April and May, peaking at 2,312 on 30th May. From August to December 2023 the remand population generally decreased (it was 2,081 on 1st January 2024). In early 2024 it increased again, reaching a peak of 2,360 on 14th May 2024. It has remained high since, and was 2,220 on 20th September. The outlook for the remand population in 2024 remains uncertain and it is unknown whether it will follow the trends seen in recent years.

Sentenced population

The sentenced population decreased slightly during 2022, from around 5,350 in January to around 5,250 in December. In contrast, during 2023 the sentenced population increased, reaching a peak of almost 5,900 near the end of the year. The sentenced population then reduced at the end of December 2023 before increasing again until it reached 6,056 on 21st June 2024¹⁰. Due to ER¹¹ the sentenced

⁸ SPS Early Release Data, Research and Evidence, 2nd September 2024, [Early Release of Prisoners and Prescribed Victim Supporters \(Scotland\) Regulations 2024- Data Analysis Summary Report.pdf \(sps.gov.uk\)](#).

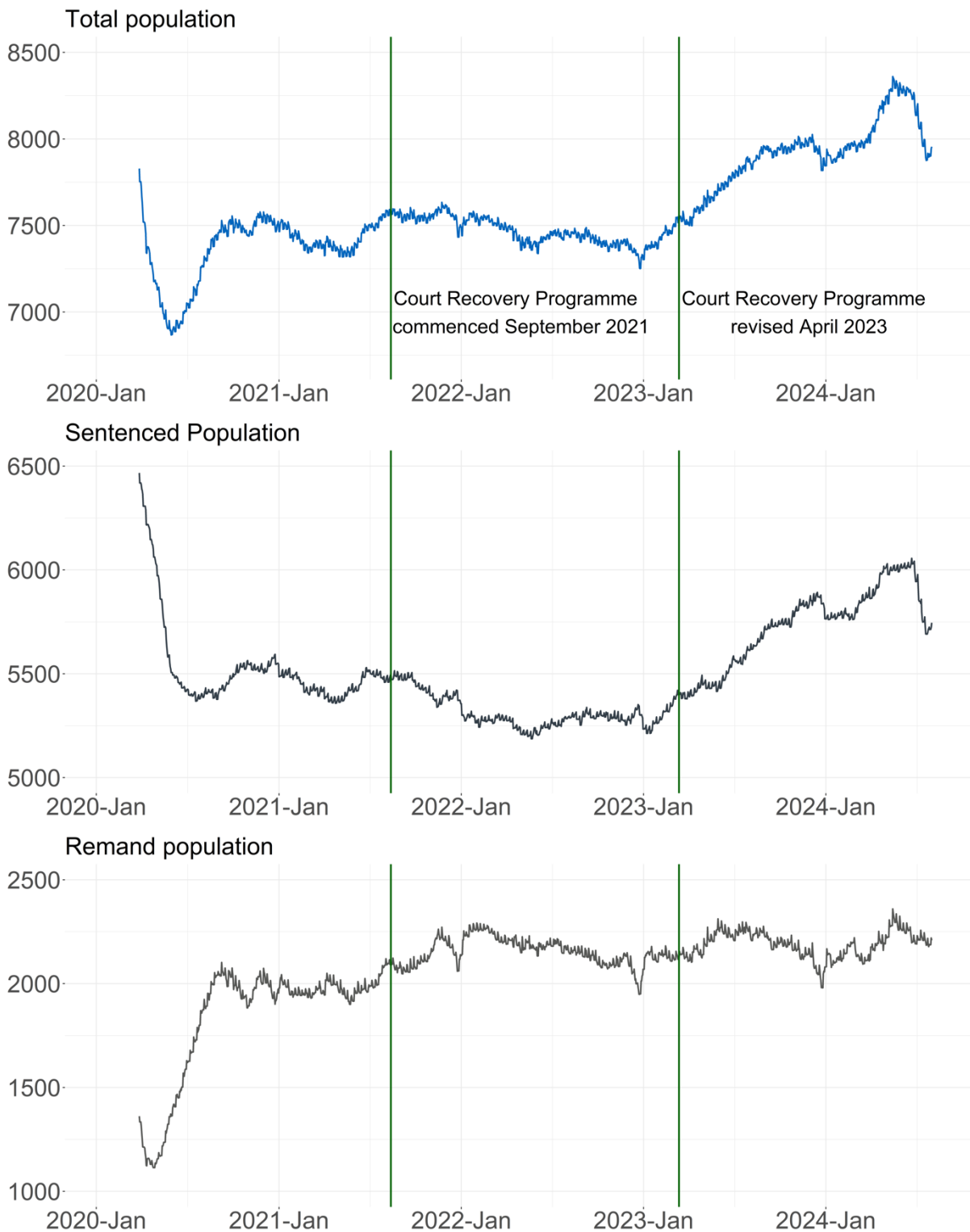
⁹ SPS Prison Population up to 20th September, accessed 25th September 2024, [Data, Research and Evidence | Scottish Prison Service \(sps.gov.uk\)](#).

¹⁰ SPS Prison Population up to 20th September 2024, accessed 25th September 2024, [Data, Research and Evidence | Scottish Prison Service \(sps.gov.uk\)](#).

¹¹ Scottish Government, Prison population information note, 12th June 2024, [Prison population: information note - gov.scot \(www.gov.scot\)](#).

population reduced to 5,691 on 20th July but rose again, reaching 6,027 on 20th September 2024.

Figure 1. Prison population (total, remand and sentenced), between 26th March 2020 and 1st August 2024¹².

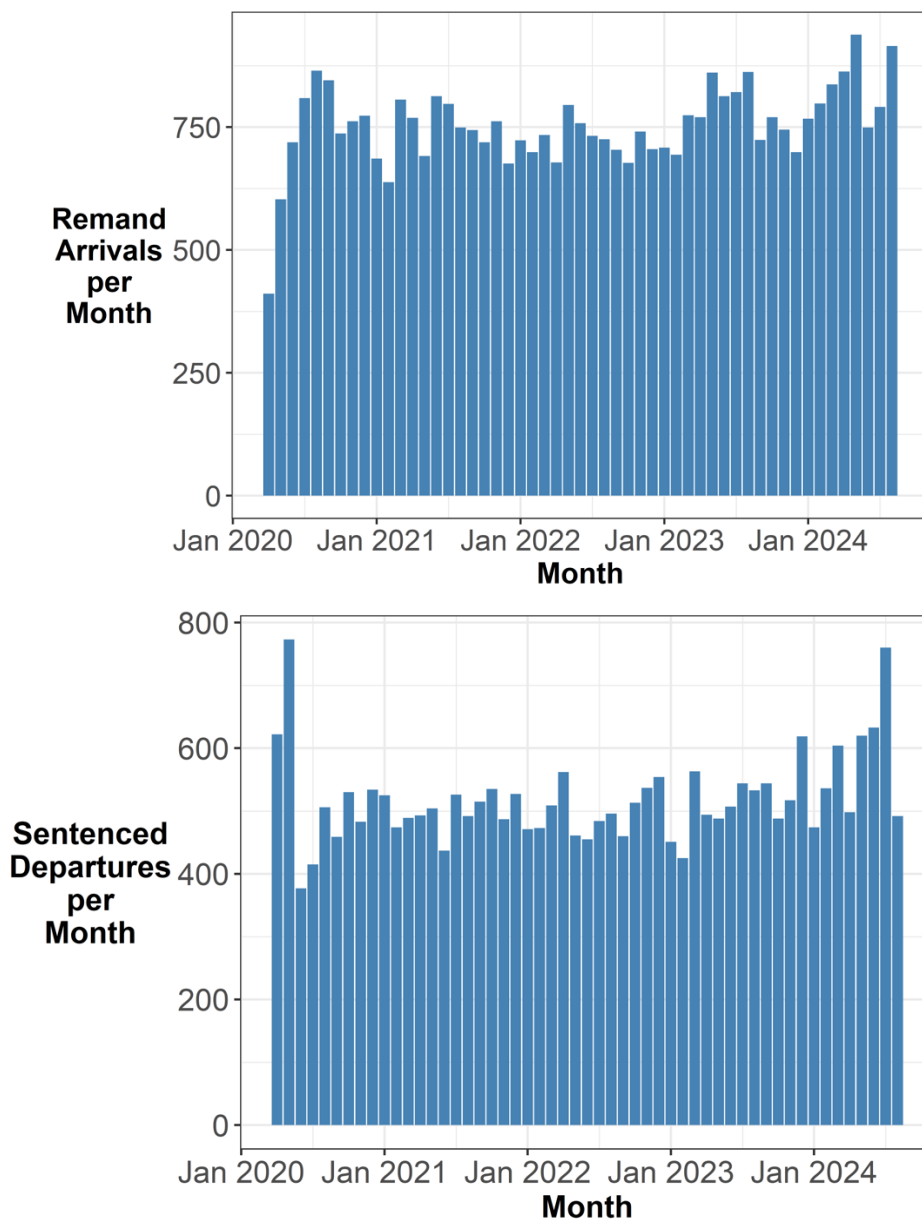


¹² Breakdown of total, remand and sentenced prison population, [Justice Analytical Services: safer communities and justice statistics monthly report - gov.scot \(www.gov.scot\)](https://www.gov.scot/resources/information/justice-analytical-services-safer-communities-and-justice-statistics-monthly-report/).

Remand Arrivals and Sentenced Departures

Figure 2 shows monthly remand arrivals from April 2020 to August 2024. Remand arrivals increased month on month for each successive month from December 2023 to May 2024. Furthermore, the average monthly remand arrivals for the three months March to May 2024 were the highest for any three month period since at least March 2020, at around 880 per month. Remand arrivals in August 2024 were only slightly lower than in May. During the last 12 months the three-month period with the lowest remand arrivals (excluding December due to seasonal effects) was September to November 2023, with an average of around 750 remand arrivals per month.

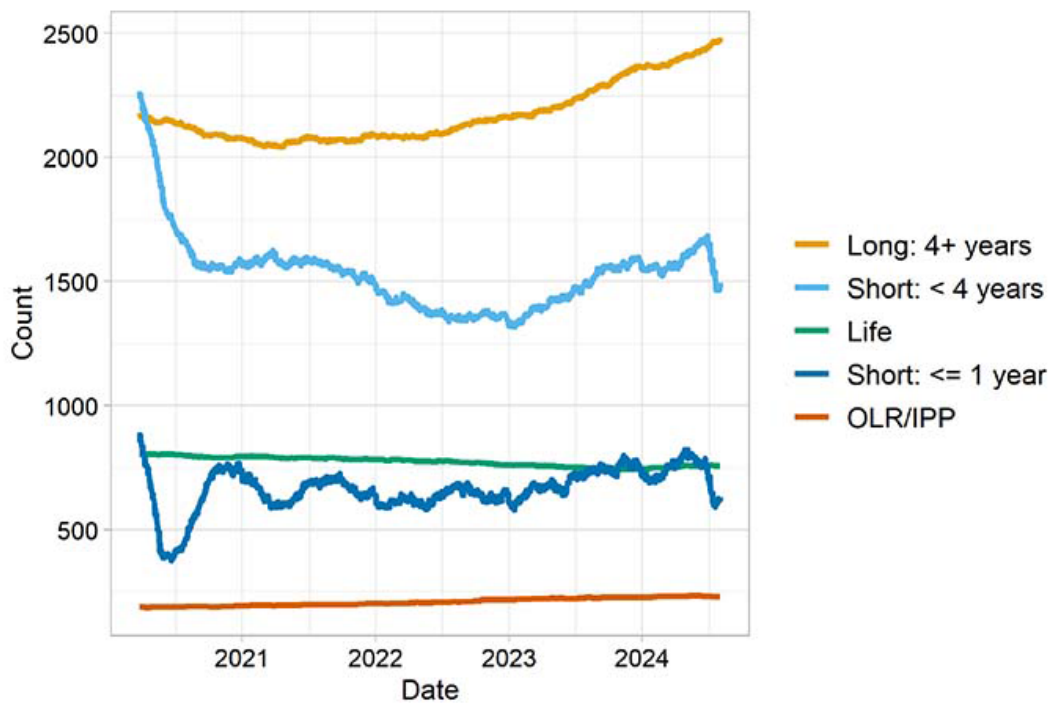
Figure 2. Remand Arrivals and Sentenced Departures per Month between April 2020 and August 2024.



Sentenced departures (see Figure 2) in June and July 2024 were the highest since May 2020 (when the previous ER took place¹³). Following ER, sentenced departures were temporarily reduced; in August 2024 it was at its lowest since October 2023 (if excluding January 2024 due to seasonal disruption).

The sentenced prison population from March 2020 to August 2024, sub-divided by sentence length is shown in Figure 3 below. All population groups tended to increase from 1st January 2023 until June 2024. The short term prison population decreased sharply during the ER period in June/July 2024. The population serving overall sentences of more than four years, as well as those serving Orders of Lifelong Restriction, have continually increased over several years and now exceed pre-pandemic levels. The population serving life sentences has declined gradually since 2020.

Figure 3. Prison populations by overall sentence, 26th March 2020 to 1st August 2024¹⁴.



¹³ Emergency Release, [The Release of Prisoners \(Coronavirus\) \(Scotland\) Regulations 2020 \(legislation.gov.uk\)](https://legislation.gov.uk), May 2020.

¹⁴ Prison population monthly report, [Safer communities and justice statistics monthly reports - gov.scot \(www.gov.scot\)](https://www.gov.scot).

The growth in the total prison population since the beginning of 2023 was driven by both remand and sentenced arrivals to custody¹². The remand population is influenced by the level of new cases registered and cases concluded in Scottish Courts¹⁵. Elevated court throughput (case conclusions) can lead to increased flow into the sentenced population. The Scottish Courts and Tribunals Service (SCTS) frequently publish information on the level of registrations and conclusions across all courts¹⁶.

Court recovery programme resources were switched from summary procedure on 1st April 2023, resulting in 2 additional High Court and 6 additional Sheriff Solemn trial courts¹⁷, but 10 fewer Sheriff Court Summary trial courts. The charts in Figures 4 to 9 below show registrations and conclusions for High Court, Sheriff Court Solemn and Sheriff Court Summary. Figure 4 shows the number of High Court indictment registrations over the last decade from 2014/15 Q1 (covering April to June 2014) to 2024/25 Q1 (covering April to June 2024)¹⁸. The number of High Court indictments registered in 2023/24 (935) was almost identical to 2022/23 (939). In contrast, as shown in figure 5, High Court conclusions during 2023/24 (996) were 22% higher than in 2022/23 (815). The increase in conclusions is likely to be partially due to the uplift in High Court capacity from April 2023¹⁹. Indictment registrations (see Figure 6) in Sheriff Solemn have also been high recently; there were almost 25% more Sheriff Solemn indictments in 2023/24 than during 2022/23. As shown in figure 7, following the introduction of six further Sheriff Court Solemn trial courts in April 2023, conclusions in 2023/24 were around 13% higher than 2022/23, and they were the highest since at least 2014/15. Imprisonments from Sheriff Solemn in 2023/24 (6,450) were 10% higher than during 2022/23 (5,859)²⁰.

¹⁵ Management Information from the Scottish Court and Tribunal Service ([SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk)) includes information about the arrival and liberty status for criminal case new business. This information includes the proportion who are on remand following Sheriff Court Petition (First Appearance) and Sheriff Court Summary First Calling (First Appearance), which have been broadly stable, ranging between 33.2% to 37.0% and 5.7 to 6.0% respectively during the past three years.

¹⁶ SCTS official statistics, MI and analysis, [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

¹⁷ SCTS Quarterly Criminal Court (QCC) bulletin, 7th September 2023, [Latest quarterly criminal court figures show progress in Sheriff solemn backlog \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

¹⁸ The SCTS QCC statistics provide quarterly Official Statistics on criminal case activity in Scotland. They follow an annual cycle which begins on 1st April, hence Q1 covers April to June, Q2 covers July to September, Q3 includes October to December and Q4 runs from January to March.

¹⁹ SCTS switch of court recovery resources from summary to solemn, 25th April 2023, [Monthly information on Criminal Case Throughput for March 2023 \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

²⁰ Scottish Government Justice Analytical Services Criminal Disposals Dashboard, [Scottish Government Justice Analytical Services Criminal Disposals Dashboard \(shinyapps.io\)](https://shinyapps.io), accessed 13th September 2024.

Figure 4. High Court Indictments registered²¹.

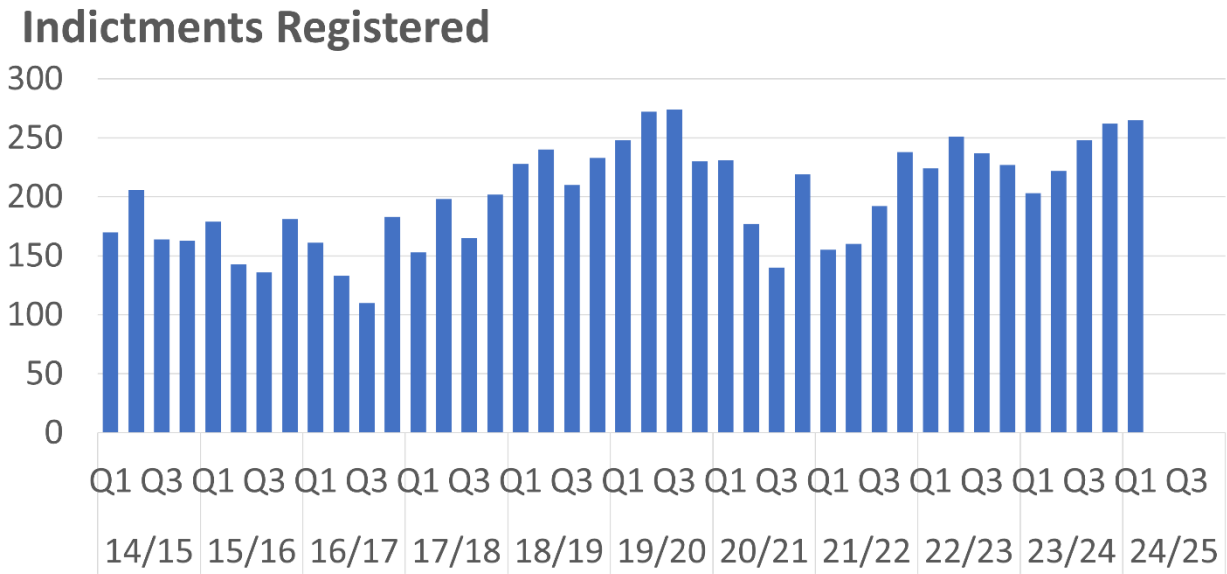
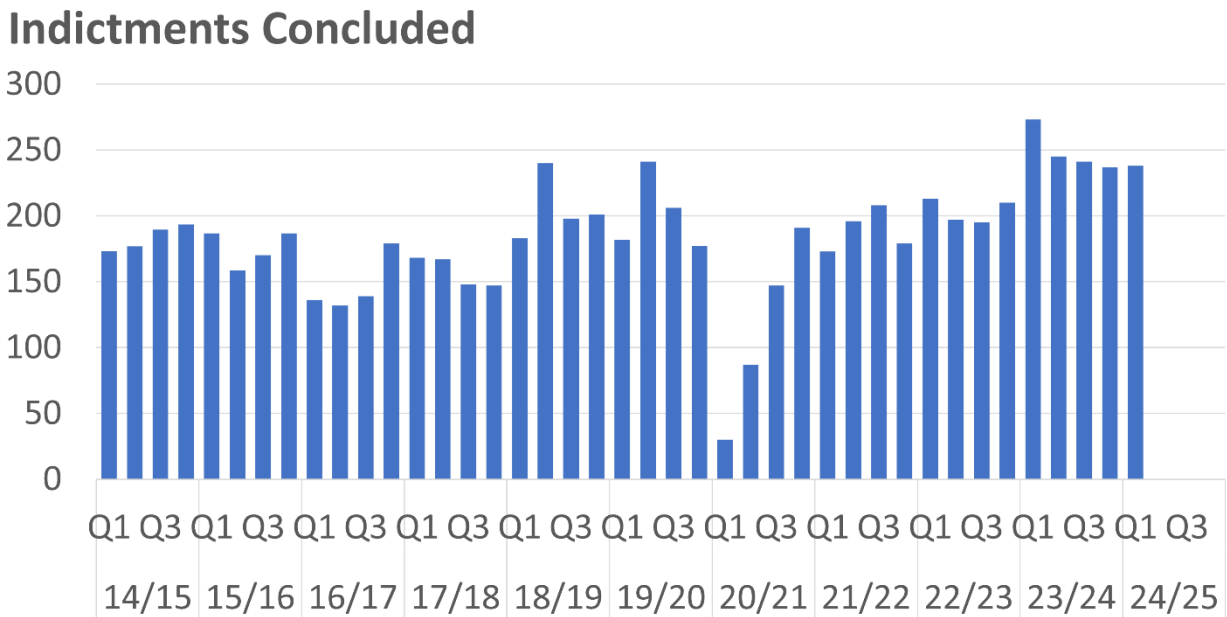


Figure 5. High Court Indictments concluded²².



²¹ SCTS QCC bulletin, 5th September 2024, High Court (QCC 2b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

²² SCTS QCC bulletin, 5th September 2024, High Court (QCC 2b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

Figure 6. Sheriff Court Solemn Indictments registered²³.

Indictments Registered

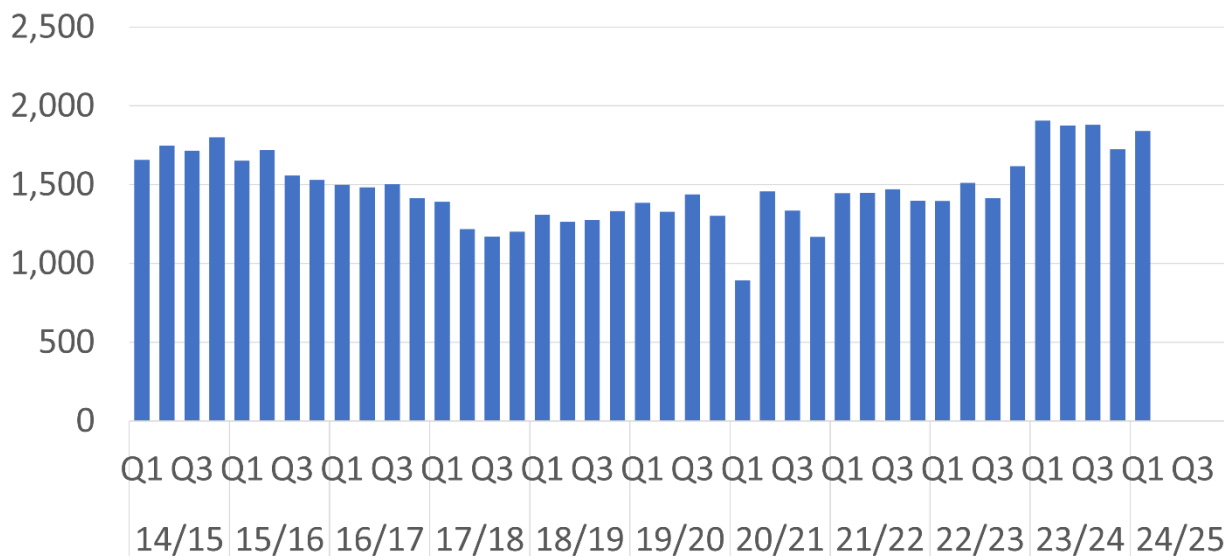
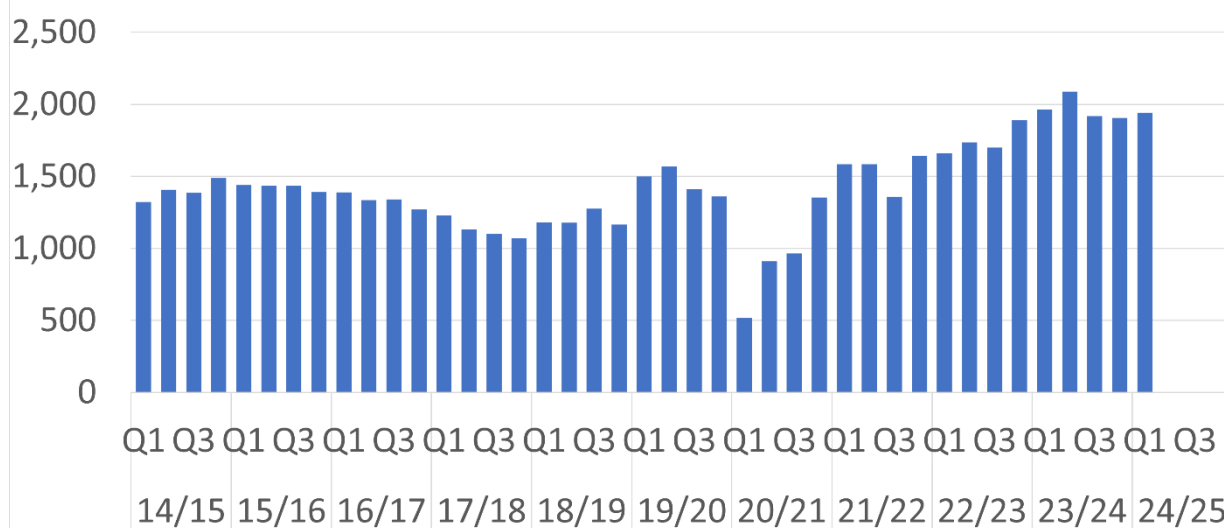


Figure 7. Sheriff Court Solemn Indictments concluded²⁴.

Indictments Concluded



The level of complaints registered in Sheriff Summary Courts in 2023/24 was around 14% higher (65,400) than in 2022/23 (57,200) (see Figure 8) and were at their highest since 2019/20. Sheriff Court Summary conclusions in 2023/24 were around 5% lower than during the 2022/23 (see Figure 9). There were slightly fewer Sheriff Summary conclusions than registrations during 2023/24. The slight reduction in complaint conclusions is mainly due to the switch of court recovery programme resources from summary to solemn in April 2023, so there were 10 fewer Sheriff Court Summary trial

²³ SCTS QCC bulletin, 5th September 2024, Sheriff Court Solemn (QCC 3b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

²⁴ SCTS QCC bulletin, 5th September 2024, Sheriff Court Solemn (QCC 3b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk).

courtrooms in 2023/24. Sheriff Summary imprisonment disposals were 15% higher in 2023/24 (10,745) than in 2022/23 (9,322)²⁵.

Figure 8. Sheriff Court Summary complaints registered²⁶.

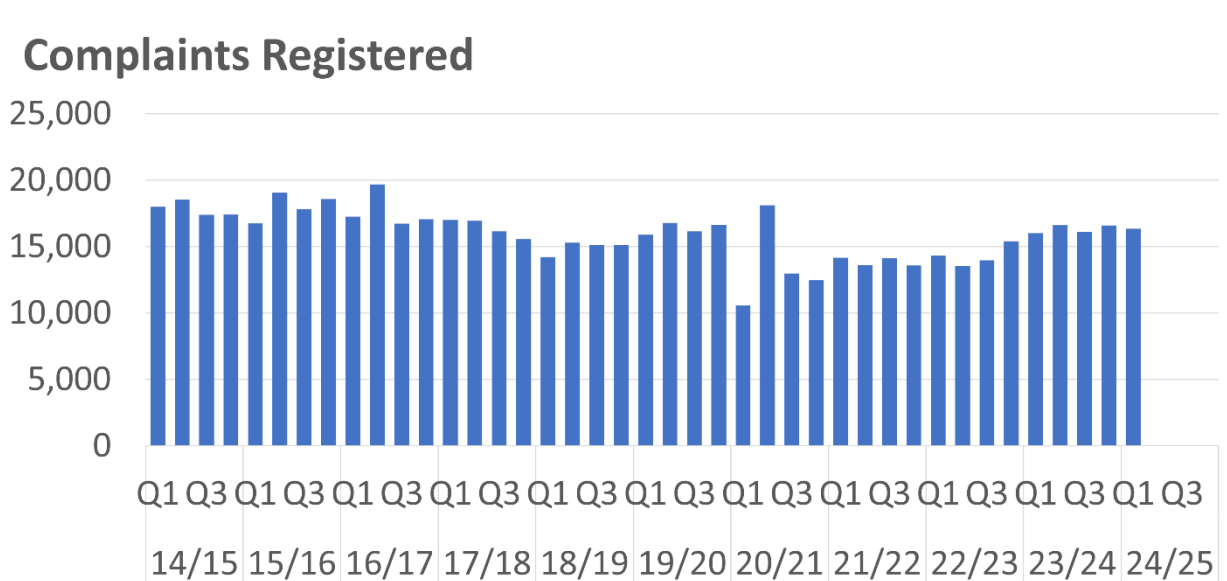
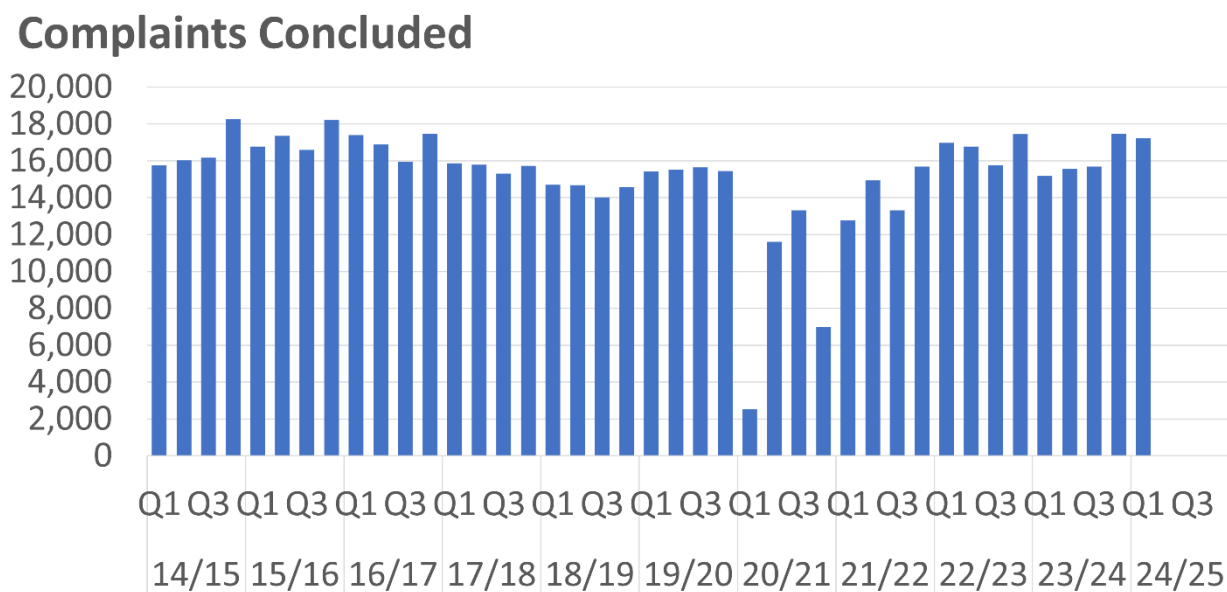


Figure 9. Sheriff Court Summary complaints concluded²⁷.



²⁵ Scottish Government Justice Analytical Services Criminal Disposals Dashboard, [Scottish Government Justice Analytical Services Criminal Disposals Dashboard \(shinyapps.io\)](https://shinyapps.io/scotcourts/), accessed 13th September 2024.

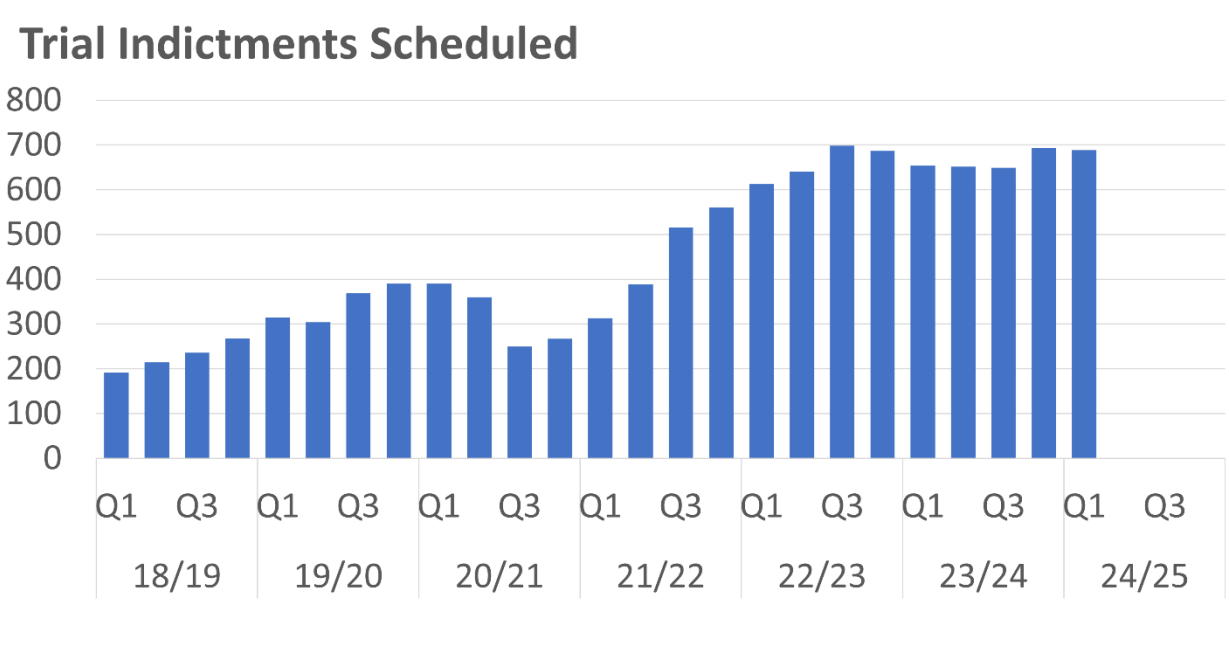
²⁶ SCTS QCC bulletin, 5th September, Sheriff Court Summary (QCC 4b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://scotcourts.gov.uk/).

²⁷ SCTS QCC bulletin, 5th September, Sheriff Court Summary (QCC 4b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://scotcourts.gov.uk/).

Taking all courts into consideration, elevated remand arrivals during 2023/24 are associated with an increased level of criminal cases in Sheriff Solemn and Sheriff Summary²⁸.

SCTS monthly management information²⁹ shows that the national total trials scheduled³⁰ across all criminal courts increased steeply, due to the effects of the COVID-19 pandemic, by around 140% from 18,100 in April 2020 to over 43,600 at the peak in January 2022. However, by the end of June 2024 there were less than 26,000. The number of outstanding trials in High Court (see Figure 10) were at a very similar level in March 2024 (693) to one year earlier, in March 2023 (687). The number of Sheriff Solemn outstanding trials (Figure 11) decreased by almost 30% during 2023/24. The enhanced court recovery resources in solemn courts has helped with this reduction in future scheduled trials. However, as figure 12 shows, the number of Sheriff Summary trials outstanding increased slightly between the end of March 2023 (when summary court resources were reduced) and March 2024.

Figure 10. High Court scheduled trials at end of period³¹.



²⁸ Analysis of the drivers of criminal case registrations are beyond the scope of this publication. National crime statistics are updated annually: [Recorded crime in Scotland - gov.scot \(www.gov.scot\)](http://www.gov.scot).
²⁹ SCTS QCC bulletin, 5th September 2024, National Overview of criminal court cases in Scotland (QCC 1a), SCTS Management Information, [SCTS Official Published Statistics \(scotcourts.gov.uk\)](http://scotcourts.gov.uk).
³⁰ Outstanding trials scheduled are sometimes colloquially known as the courts backlog.
³¹ SCTS QCC bulletin, 5th September 2024, High Court trial indictments scheduled (QCC 2b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](http://scotcourts.gov.uk).

Figure 11. Sheriff Court Solemn scheduled trials at end of period³².

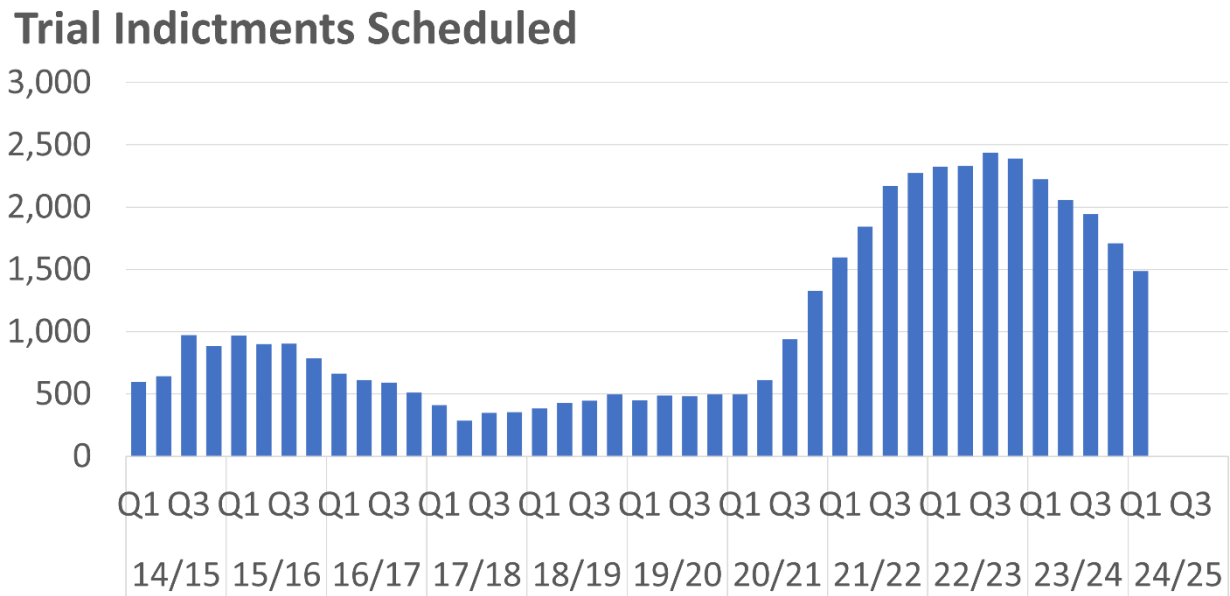
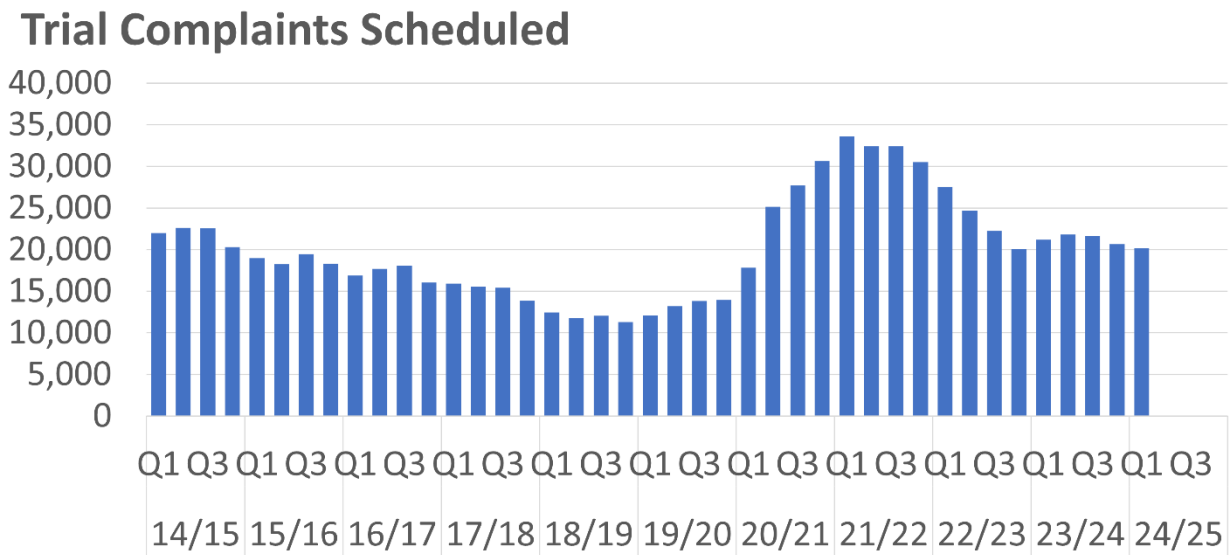


Figure 12. Sheriff Court Summary scheduled trials at end of period³³.



³² SCTS QCC bulletin, 5th September 2024, Sheriff Court Solemn trial indictments scheduled (QCC 3b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://scotcourts.gov.uk).

³³ SCTS QCC bulletin, 5th September 2024, Sheriff Court Summary trial indictments scheduled (QCC 4b), [SCTS Official Published Statistics \(scotcourts.gov.uk\)](https://scotcourts.gov.uk).

4 Introduction to Prison Population Projections

This section provides an overview of the assumptions and scenarios developed to project the prison population and explains how the model's previous projections are validated for robustness against actual prison population figures in recent months. The first issue of the Scottish prison population projections³⁴ provides a more detailed overview of the modelling technique used.

Model Assumptions and Scenarios

The projection scenarios are based on a variety of assumptions about how the rate of transitions into and out of the prison population might change. The assumptions depend on trends and planned changes to the court system, including court capacity changes, increased court conclusions rate, increased remand arrivals, remand/bail mix and prioritisation of remand case progression through courts. Departures from the sentenced population are estimated using a combination of court disposal data and snapshots of the prison population.

For the first issue (June 2023) of the Scottish prison population projections³⁵ only three scenarios were developed, using central remand arrivals and either low, central or high court throughput. Due to the heightened level of inflows and outflows which contributed to growth in the sentenced and remand populations in mid-2023, additional scenarios were developed and added to the projections from November 2023 onwards. These six additional scenarios featuring alternative remand arrivals assumptions (low and high) combined with the three levels of court throughput (low, central and high) were introduced from November 2023³⁶. A full breakdown of all nine scenarios is given in Table 1. This set of scenarios was developed to help account for uncertainty in future remand arrivals.

The three variations of remand arrivals assumptions used for the scenarios are: central, higher and lower. The central remand arrivals scenario assumes remand arrivals will be similar over the next few months to what they were between July 2023 and June 2024³⁷. For the previous edition of the projections the higher remand arrivals assumptions were based on the 3-month period with the highest remand arrivals since 2020 (i.e., February to April 2024), during which time average monthly remand arrivals were around 830 per month. Since those projections were completed, remand arrivals have been elevated, and the average monthly remand arrivals during the 3-month period from March to May 2024 was 880. Therefore, for this edition of the

³⁴ Scottish Government Prison Population projections, 1st June 2023, [Scottish Prison Population Statistics and Projections - gov.scot \(www.gov.scot\)](https://www.gov.scot/statistics-and-projections).

³⁵ For more information, refer to [Scottish Prison Population Statistics and Projections - gov.scot \(www.gov.scot\)](https://www.gov.scot/statistics-and-projections).

³⁶ Scottish Government Prison Population projections, 14th November 2023, [Scottish Prison Population Statistics and Projections - gov.scot \(www.gov.scot\)](https://www.gov.scot/statistics-and-projections).

³⁷ July 2024 has not been used due to the temporary impact of Emergency Release on sentenced population flows.

projections the high remand scenario assumptions have been updated with the latest information and are based on the higher remand arrivals from the period from March to May 2024. This should ensure that the modelling for the projections has accounted for the possibility that remand arrivals could be sustained at a higher level than was assumed for previous editions of the projections, and should help account for some of the uncertainty around the level of remand arrivals in 2024, given the very high levels in recent months. For this edition the low remand arrivals assumptions are based on the three-month period from September to November 2023, which was the contiguous 3-month period in the last 12 months with the lowest remand arrivals (when December 2023 is excluded due to atypical seasonal flows).

Furthermore, to help with understanding how sensitive the size of the prison population may be to variations in court case conclusion rate, three variants have again been included in the modelling - central, higher, and lower throughput. The “central” court throughput scenario variant assumes case conclusion rates per courtroom which are based on data covering July 2023 to June 2024. The “higher” scenario assumes the average case throughput per court will be slightly greater than it has been over the same period, and the “lower” scenario assumes that the average case throughput per court will be slightly smaller. The nine scenario variants shown in table 1 include all the possible combinations of the above variations of court throughput and remand arrivals.

Table 1. Prison population scenario variants.

Scenario	Remand Arrival Rate - Central	Remand Arrival Rate - Higher	Remand Arrival Rate - Lower
Conclusion Rate - Central	1. Sc1a Central Conclusions & Central Remand Arrivals	4. Sc2a Central Conclusions & Higher Remand Arrivals	7. Sc3a Central Conclusions and Lower Remand Arrivals
Conclusion Rate - Higher	2. Sc1b Higher Conclusions and Central Remand Arrivals	5. Sc2b Higher Conclusions & Higher Remand Arrivals	8. Sc3b Higher Conclusions and Lower Remand Arrivals
Conclusion Rate - Lower	3. Sc1c Lower Conclusions & Central Remand Arrivals	6. Sc2c Lower Conclusions & Higher Remand Arrivals	9. Sc3c Lower Conclusions and Lower Remand Arrivals

Since the progression of the justice system’s recovery (e.g., rate of reduction of scheduled trials) impacts the model’s assumptions and longer-term predictive power, the projections cover a limited period, from August 2024 to January 2025.

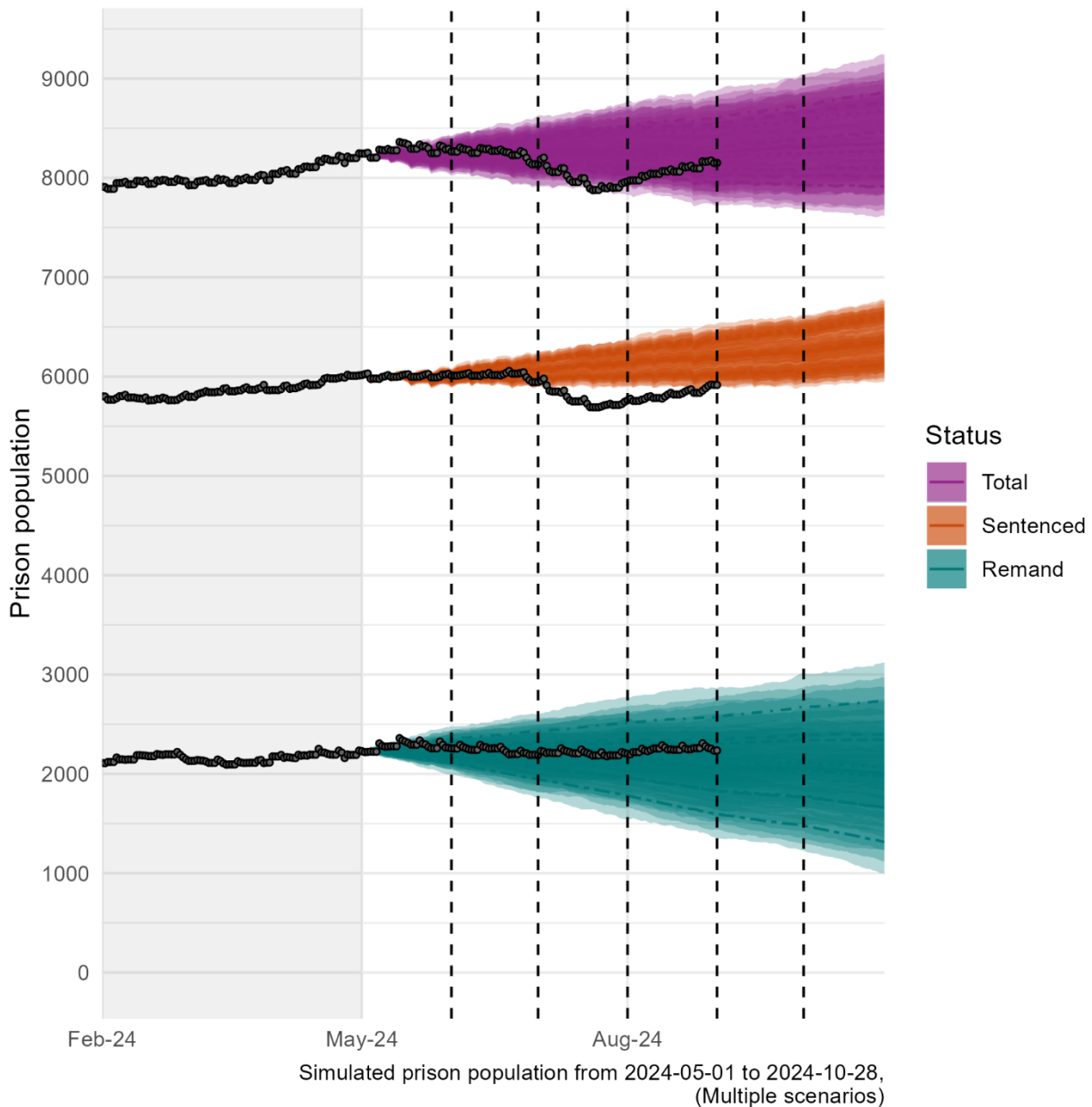
Model Quality Assurance

At each update, the previous projections are compared with the actual population to determine the model's suitability to continue providing reliable projections. Figure 13 shows the May 2024 projections from the microsimulation, which were published in June 2024³⁸. The modelling did not include the potential effects of the Emergency Release measures announced by the Scottish Government, as they had not yet been considered and approved by the Parliament. Even after accounting for a wide variety of uncertain dynamics in the system, Figure 13 indicates that the projected ranges for the remand, sentenced and total populations reasonably accurately aligned with the actual levels up until ER commenced on 26th June 2024. As expected ER led to a very much higher rate of outflow from the population which caused a reduction in the sentenced and total populations during June/July 2024. The actual remand population has increased, but remained near the centre of the range from May to the beginning of September 2024.

Solemn court procedure throughput was high in recent months (see Figure 7) and has contributed to the growth seen in the sentenced population in every month of 2024 (except when ER was underway). As shown in Figure 13, the total and sentenced populations have increased sharply since ER completed, such that the total population was nearing the middle of the range.

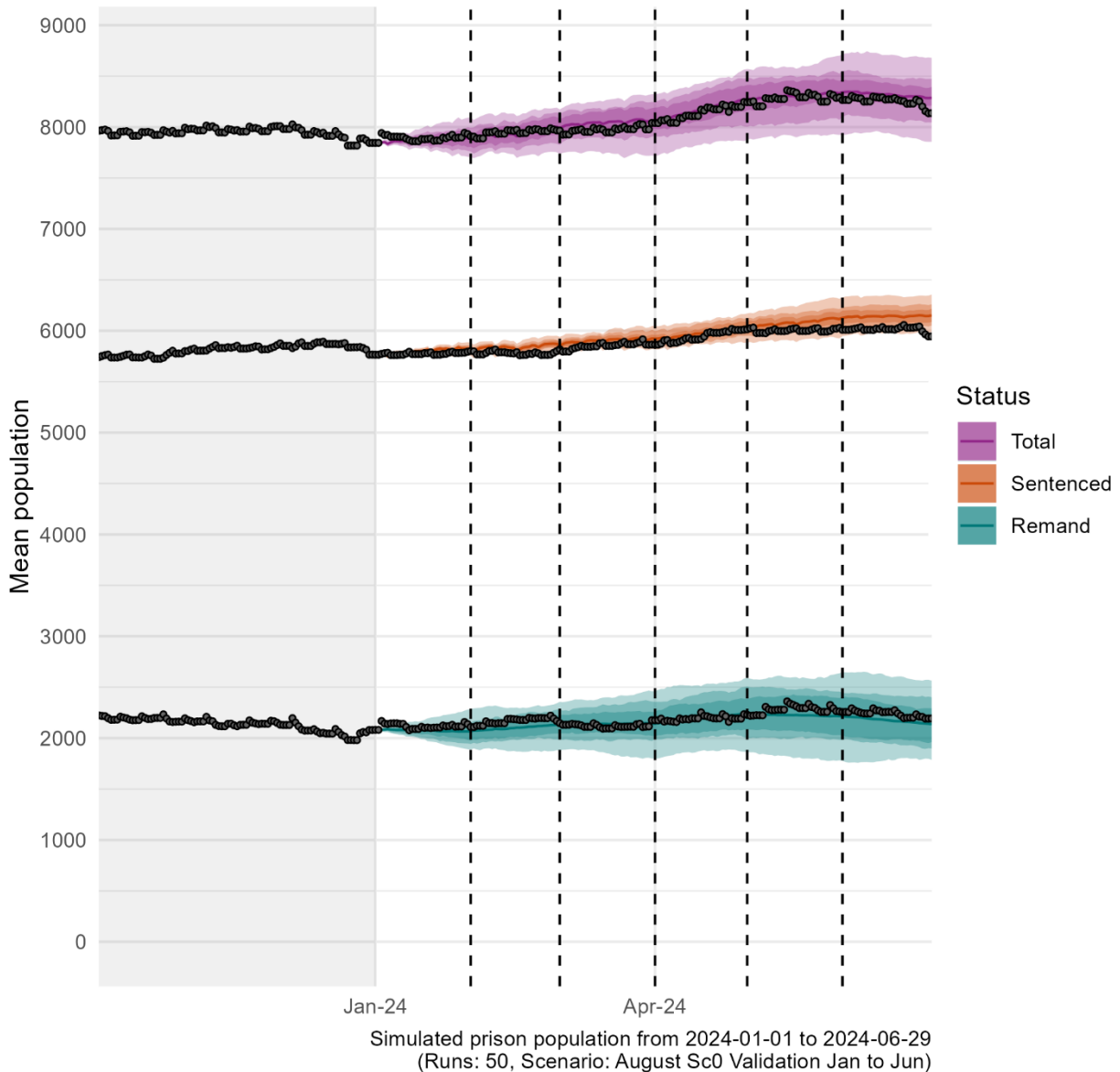
³⁸ Scottish Government Prison Population projections, 13th February 2024, [Scottish Prison Population Projections: February 2024 Edition - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/prison-population-projections/2024-02-13/pages/13.aspx).

Figure 13. Prison population projections and actual prison population beginning on 1st May 2024, based on courts and prison population data up to end of April 2024. The actual population is shown as a series of black points up to 1st September.



To check the model further, back-casting is used to retrospectively compare the actual prison population for the past few months against a projection generated by the model based on actual monthly court throughput data. The back-cast eliminates uncertainty about the majority of the assumptions, so if there was a difference between the back-cast and the actuals it may indicate technical deficiencies in the model. The recent back-cast projections presented in Figure 14 show that the back-cast from January 2024 to June 2024 is largely accurate (although the actual sentenced population at the very end of June is slightly lower than the projected range due to the commencement of ER).

Figure 14. The back-cast based on remand arrival and courts throughput data from January 2024 up to June 2024. The actual population is shown as a series of black points.



Microsimulation Model Limitations

The model relies on the availability of a large amount of frequently refreshed high-quality data about court activity and prison populations, some of which can be resource intensive to obtain and process.

The model does not currently simulate flows for different crime-types, so crime-based trends are not explicitly modelled. However, there are plans to develop the model further and include case-mix in future modelling.

5 Microsimulation Model Results: August 2024 to January 2025

The latest prison population projections are shown in figure 15 and table 2 below. The actual total prison population on 31st July 2024 was around 7,950. The overall projected range for the average daily prison population in January 2025 is between 7,750 and 9,250. Modelling indicates it is likely that the overall prison population in Scotland will increase between the beginning of August 2024 and the end of January 2025.

The actual remand population on 31st July 2024 was around 2,200. The overall projected range based on modelling for the average daily remand population in January 2025 is between 1,050 and 3,150. Modelling indicates it is likely that the remand prison population in Scotland will decrease slightly between the beginning of August 2024 and the end of January 2025. If the remand population decreases primarily because of enhanced monthly case conclusions, this could contribute to an increased sentenced population as people transition from remand to the sentenced population.

The actual sentenced population on 31st July 2024 was around 5,750. The overall projected range based on modelling for the average daily sentenced population in January 2025 is between 6,000 and 6,800. Modelling indicates it is highly likely that the sentenced prison population in Scotland will increase between the beginning of August 2024 and the end of January 2025. The sentenced population is almost certain to rise if inflows exceed outflows. The rate of inflow to the sentenced population could increase if either the overall rate of transition from remand to the sentenced population increases, or if there is a greater inflow of individuals directly from the community to the sentenced population.

Figure 15. Prison population projections for August 2024 to January 2025. The projection range (sometimes referred to as the fan) includes the overlapping 50%, 75% and 95% confidence intervals for all scenario variants given in table 1. The actual population is shown as a series of black points.

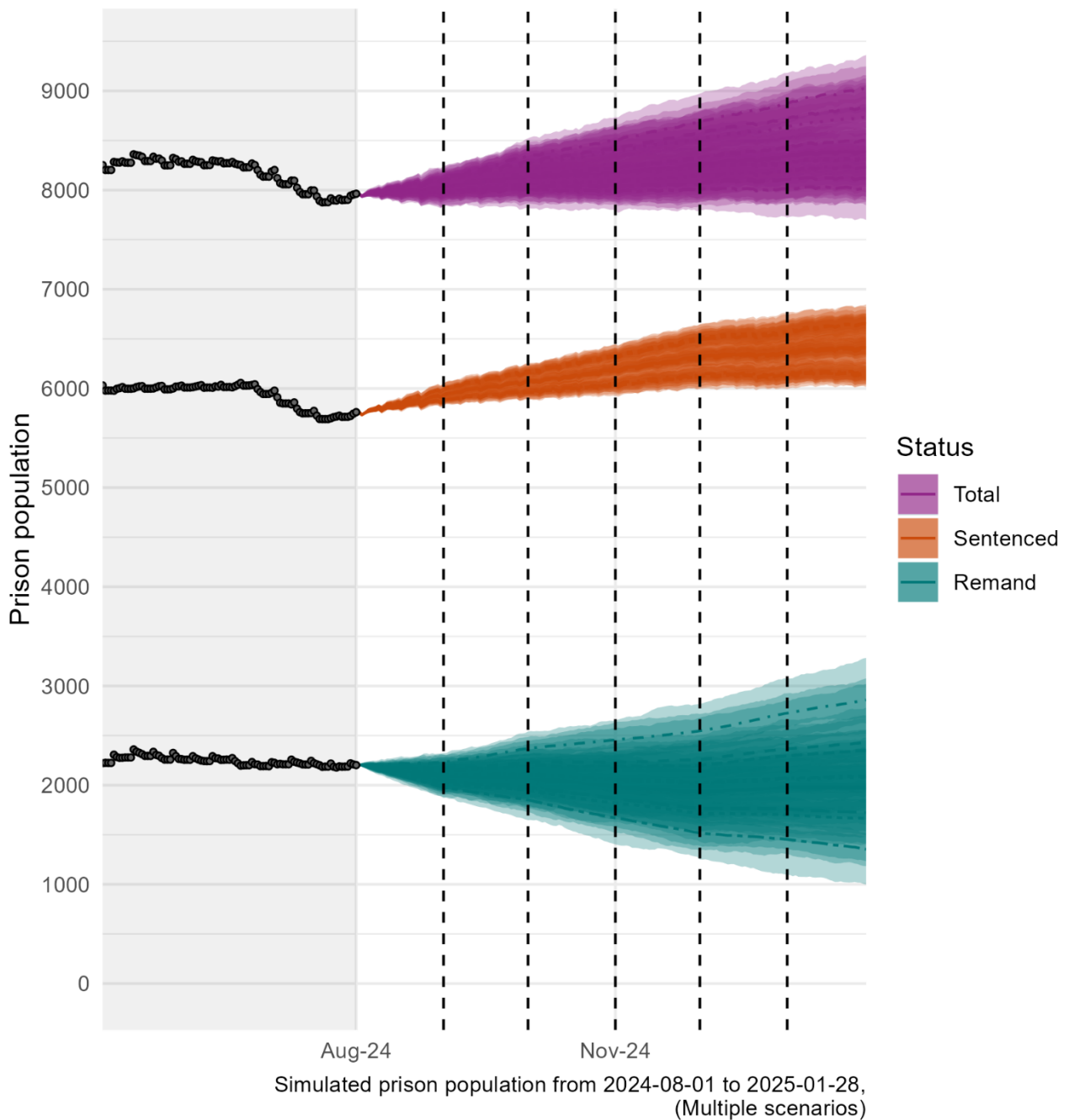


Table 2. Prison average daily population upper/lower estimates for August 2024 to January 2025³⁹. These estimates are calculated from the 95% confidence intervals combined across all nine scenario variants given in table 1.

Month	Remand - Lower estimate	Remand - Upper estimate	Sentenced - Lower estimate	Sentenced - Upper estimate	Total - Lower estimate	Total - Upper estimate
Aug-24	2,050	2,300	5,800	5,900	7,900	8,100
Sep-24	1,750	2,400	5,850	6,150	7,850	8,350
Oct-24	1,550	2,600	5,900	6,350	7,800	8,600
Nov-24	1,350	2,750	5,950	6,550	7,800	8,850
Dec-24	1,200	2,950	6,000	6,700	7,750	9,050
Jan-25	1,050	3,150	6,000	6,800	7,750	9,250

In Table 2 the upper total population and upper remand range estimates are from the scenario variant with a lower conclusion rate and higher remand arrival rate. The lower range estimates for the total and remand populations are from the scenario with a high conclusion rate and a low remand arrival rate.

It should be noted that whilst the projections are based on recent trends, they do not explicitly model the impact of potential future policy or operational changes and their potential impact on the prison population.

³⁹ The values have been rounded to the nearest 50 and exclude the home detention curfew population. The upper and lower estimates of the total prison population may not be equal to the sum of the sentenced and remand populations as they can be from different scenario variants.

6 Conclusions

As of 31st July 2024, the prison population was around 7,950. The modelling indicates a projected range for the average daily total prison population of between 7,750 to 9,250 in January 2025. The population has been growing rapidly since ER was implemented but it is unclear whether this will continue, hence the need for the modelling to account for this possibility (as well as potential reversal) in the months ahead.

The rapid rise in the prison population since ER in June/July 2024, comes at a time when the population was already relatively high following substantial growth in 2023/2024. In the first publication of June 2023, only low, central and high court throughput scenarios were reported. Since the November 2023 publication⁴⁰, six additional scenarios have been included which tend to help ensure the projections account for periods of high inflow to the population (whether into the remand or sentenced population). Over the course of the next few months remand arrivals, sentenced arrivals and case conclusion levels will be monitored to assess with which scenarios the actual prison population numbers are most closely aligned.

For several reasons, modelling the future prison population using the microsimulation becomes less accurate the further ahead it is projected (whether due to systematic errors in the model, inaccurate assumptions due to unforeseen circumstances, or due to changed circumstances that the model is not built to account for). Experience to date suggests that a maximum projection period of six months allows for reliable projections.

As previously highlighted, the key factors impacting changes in the prison population in the short term will be the flows into and out of the remand and sentenced populations. This is influenced by the court recovery programme, for example the resource re-allocation from summary to solemn which took place in April 2023. It is assumed in the projections that the number of court rooms allocated to summary and solemn procedure will be unchanged until at least January 2025. SCTS reporting has indicated that elevated levels of summary demand in 2023 meant that the level of outstanding summary trials has levelled off rather than continuing to fall⁴¹.

⁴⁰ Scottish Government prison population projections, 14th November 2023, [Scottish Prison Population Statistics and Projections - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/prison-population-projections/pages/introduction.aspx).

⁴¹ SCTS Courts modelling, 14th December 2023, [Updated modelling on criminal court backlog published today | Scottish Courts \(scotcourts.gov.uk\)](https://www.scotcourts.gov.uk/news/2023/12/14/scts-courts-modelling).

7 Technical annex

Terminology definitions

This section includes explanations of modelling practice and terms to describe the level and range for the projections of the total, sentenced and remand populations.

Microsimulation Scenario definitions

Each new edition of this publication since November 2023 has featured nine different scenario variants. These scenarios use common underpinning data on court case progression and the prison population, from SCTS and SPS respectively. The scenarios are distinct from each other in that they rely on differing assumptions about how future levels of court conclusions and remand arrivals might change.

The microsimulation prison population modelling methodology requires each scenario to be simulated repeatedly dozens of times so that the combined output yields confidence intervals for the total, sentenced and remand population for each scenario. The full projection includes the 95% range intervals for all nine scenarios. These are overlapping in figures 13 and 15, such that it is not possible to easily identify individual scenarios. The values denoting the upper and lower estimates of the populations in the scenarios in table 2 represent the corresponding outer bounds of the 95% range interval for the widest ranging scenarios in the projection.

Court throughput rate scenario definitions

The central court throughput rate scenario variants assume that the conclusions per courtroom will be similar over the next few months to the typical level and range over the year leading up to the 1st August 2024 data cut off date. To note: the unrepresentative ER period has been excluded (i.e., the period sampled was from 1st July 2023 to 30th June 2024 for the projections in this edition of the publication). The "high" scenario assumes the average and range of case conclusions per court per day will be around 10% greater than it has been over the same period, and the "low" scenario assumes that the average case throughput per court will be 10% smaller. A rolling sampling period means that for each edition of the projections the model uses data on case conclusion rates from the last year, thereby accounting for the most recent trends in each successive update to the modelling. As an aside, previous iterations of the modelling included additional scenarios where assumptions about the level of conclusions in future at a national level was informed by changes to the number of High Court, Sheriff Solemn and Sheriff Summary trial courtrooms in accordance with revisions to the Court Recovery Programme. These are no longer necessary but will be re-introduced if it is appropriate to represent potential further changes to the Court Recovery Programme.

Remand arrival rate scenario definitions

The distribution of remand arrival rates for scenarios which use central remand arrivals are normally based upon the daily levels for the entire 12 month period up to

the data cut off date (in this instance, 1st Aug 2024). However, due to the singular impact of the ER implemented from late June to late July 2024 a sampling period was selected (1st July 2023 to 30th June 2024) which omitted almost all of the ER period. This gives the baseline assumptions for remand arrivals, and the start and end dates progress from one edition of the projections to the next so that the sample period covers a year of typical population flows leading up to the data cut off date. The “low” and “high” remand arrival scenarios use assumptions in line with the most extreme remand inflow levels in recent history. The “low” remand arrivals scenario in the latest edition of the projections uses a range of remand arrivals sampled from the contiguous three month period with the lowest remand arrivals seen in recent history (excluding seasonal periods). Hence the “high” remand arrivals scenarios use remand arrivals sampled from the contiguous 3-month period with the highest remand arrivals in recent history: March to May 2024 (see Table 3). Sampling ranges from a longer period of time can give a more representative sample of what could happen in future. When developing scenarios to replicate rates of arrivals/conclusions in more extreme months it may be appropriate to sample from a single month, but this tends to only support sensitivity analysis.

Table 3. The remand arrival scenario variants use the past year as the baseline central scenario and use the highest consecutive 3 month period and lowest consecutive 3 month period of remand arrivals to sample from for the high and low remand arrival scenarios respectively. The higher variant has an 8.5% increase and the lower variant has a 5.5% decrease applied.

Scenario variant	Sampling period	% difference from baseline
Central remand arrivals	July 2023 - June 2024	Baseline
Higher remand arrivals	March 2024 - May 2024	+8.5%
Lower remand arrivals	September 2023 - November 2023	-5.5%

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