Interval ADP

A Method for Estimating Recent Populations at ICE Detention Facilities

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Executive Summary

Immigration and Customs Enforcement (ICE) regularly releases data on two key data points associated with immigrant detention: (1) the total number of immigrants currently in detention nationwide and (2) the average daily population (ADP) of individual detention facilities over the fiscal year to date (FYTD). ICE does not provide up-to-date data on the total currently detained population at individual detention facilities — an important yet missing data point. In this paper, Relevant Research outlines a method for estimating the recent daily average populations at individual detention facilities for the time interval between ICE's previous detention spreadsheet and the current detention spreadsheet. We refer to ICE's facility-level ADP estimates as "Reported ADP" and we refer to our facility-level ADP estimates as "Interval ADP". As we show in this paper, sudden spikes or dips in ICE's detained population at specific facilities may result in significant differences between Reported ADP and Interval ADP. Thus, Interval ADP provides facility-level estimates that are closer to current reality than ICE's Reported ADP.

Understanding ICE's Immigrant Detention Data: Total Detained Population and Average Daily Population (ADP)

Immigration and Customs Enforcement (ICE) releases immigrant detention data in an Excel spreadsheet about every two weeks as required by Congress. The spreadsheet is available online at https://www.ice.gov/detain/detention-management (URL is subject to change). The detention spreadsheet provides the most up-to-date data on ICE's detained population, as well

as data on ICE's Alternatives to Detention (ATD) program and ICE removals, thus making it an invaluable source of public information.

ICE's detention spreadsheet provides two distinct yet overlapping sources of data on ICE's detained population.

First, the ICE detention spreadsheet reports the total number of people in detention at a given point in time (aka "snapshot data") on the spreadsheet tab currently named "Detention FY25". ICE's detention snapshot data is nationwide only and does not provide the current actually detained population at individual facilities as of each reporting date. The reporting date is documented in the "Footnotes" tab of ICE's detention spreadsheet as the day that the ICE National Docket data were current in the Enforcement Integrated Database (EID). The method below does not use this data point in the analysis.

Second, the ICE detention spreadsheet reports the average daily population (ADP) for each facility in use at the time of reporting under the spreadsheet tab currently named "Facilities FY25". This data provides fiscal-year-to-date averages, but does not provide the current actually detained population at individual facilities as of each reporting date. The reporting date, which will be used in the calculations below, is documented in the "Facilities FY25" tab above the table. ICE's facility-level Reported ADP is the subject of this paper.

Calculating Reported ADP

ICE reports facility-level data using an average daily population (ADP) based on an unweighted cumulative average starting at the beginning of every fiscal year (October 1) and ending with the reporting date.

ICE's description of the ADP calculation in the footnotes of its detention spreadsheet is as follows:

> "The Average Daily Population (ADP) is based on MANDAY Count. A MANDAY is based on whether a SUBJECT is in an ERO detention facility for the midnight count. For every SUBJECT in a facility for the midnight count, that corresponds to one MANDAY. The ADP is the number of MANDAYS for a given time period, divided by the number of days in that time period."

The following example illustrates ICE's calculation. Suppose the following scenario at a given facility: 10 people are in detention at midnight on October 1, 12 on October 2, and 15 on October 3. The ADP would be calculated as $10 + 12 + 15$, a total of 37 MANDAYS, divided by three (3) days, for an ADP of 12.3.[1]

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[1]ICE does not list the facility-by-facility total ADP in its detention spreadsheet, instead choosing to disaggregate detention counts by "threat level", "male/female", and "criminality". We determine the total reported ADP by facility by summing the various fields in the same category.

The cumulative average (CA) method that underlies ICE's ADP calculation can be generalized as follows, with the x representing the number of detainees at a facility at midnight ("one detention day" or one "MANDAY") and n representing the total number of days from the start of the fiscal year on October 1 to the reporting date in the detention spreadsheet.

$$CA_n = \frac{x_1 + x_2 + \cdots + x_n}{n}$$

ICE's detention spreadsheet supplies the ADP in each data release and the reporting date. When combined, these two values allow us to derive the cumulative number of detention days (i.e., MANDAYS) over the fiscal year as:

$$CA_n \cdot n = x_1 + x_2 + \cdots + x_n$$

In plain language, this can be described as:

$$ADP = \frac{Cumulative\ Detention\ Days}{Total\ Reporting\ Days}$$

and:

$$ADP \cdot Total\ Reporting\ Days = Cumulative\ Detention\ Days$$

Disadvantage of ICE'S Reported ADP

While ICE's Reported ADP may be useful for the agency, it suffers from severe shortcomings when considered from the perspective of the public, who has an interest in understanding what is happening currently at individual detention facilities.

As a result of ICE's method of calculating ADP, the facility-level ADP numbers released by ICE may diverge considerably from reality. The total currently detained population of any individual facility may be higher or lower than the average daily population over the current fiscal year. This divergence is especially true when numbers spike or dip suddenly, since it will take time for sudden recent changes in a facility's real population to be reflected in the facility's Reported ADP.

Furthermore, the "smoothing" effect of ICE's ADP calculation becomes increasingly pronounced over the duration of the fiscal year, so that sudden changes later in the fiscal year will take longer to register than sudden changes earlier in the fiscal year. Significant changes in a given facility's detained population in November or December would be noticeable more quickly than significant changes in that same facility's detained population in July or August.

We emphasize that ICE's method of calculating ADP is not a recent creation of the current administration, but has been used since ICE started producing detention data in the present format during the first Trump administration.

A Halfway Solution: Interval ADP

Despite the disadvantages of ICE's Reported ADP outlined above, ICE's detention data spreadsheet provides sufficient information for estimating the recent average daily population at any given facility using simple algebra. This is possible by comparing the change in average daily population between two reporting dates and comparing that to the total days between reporting dates.

Instead of using a *cumulative* approach to ADP over a fiscal year, we calculate the ADP for the *interval* between ICE data releases. To put it simply, this method answers the question: "What must the average daily population have been over the recent reporting period (typically 14 days) for the FYTD ADP to have fluctuated from the previous reported value to the current value?"

Although this calculation does not answer the basic question of how many people are held in each facility at a given time, a data point that would be more consistent with ICE's reporting for its total nationwide detained population, our calculation does provide a simple and defensible approach to estimating recent ADP at individual facilities over a more restricted time period.

This "Interval Average" can be represented by:

$$IA_n = \frac{(x_1 + x_2 + \cdots + x_n)_1 - (x_1 + x_2 + \cdots + x_n)_2}{n_1 - n_2}$$

With x as the number of detainees at a facility at midnight ("one detention day") within the interval and n as the number of days *since the last data release by ICE*. In plain language, this can be described as:

$$Interval\ ADP = \frac{Cumulative\ Detainees\ Held\ Since\ Last\ Release}{Days\ Since\ Previous\ Release}$$

Unlike the cumulative average used by ICE, the Interval ADP presented here is based on a simple moving average (specifically a backward moving average), which has the advantage of highlighting recent changes in population. Whereas ICE's reporting method smooths out facility increase or decrease that occur later in a given fiscal year, the Interval ADP method shows recent facility-level population estimates regardless of whether the change occurs in December or July.

Interval ADP Case Study: Adams County Detention Center

We now apply this method to a real case study of Adams County Detention Center, a facility with one of the largest detained populations in the country. As of March 17, 2025, ICE reported that Adams County Detention Center in Natchez, Mississippi, had a (rounded) ADP of 2,154 detainees.

First, let us apply the "Reported ADP" calculation to determine the number of cumulative detention nights on March 17, the 168th day in the fiscal year:

$$2,154 \; ADP = \frac{x_1 + x_2 + \cdots + x_n}{168 \; days \; in \; the \; fiscal \; year}$$

We can determine that the number of cumulative detention days as of March 17 is:

$$2,154 \cdot 168 = 361,872 \; detention \; days$$

In the subsequent detention spreadsheet, ICE reported that on March 31, 2025 — two weeks later — Adams County Detention Center had an (again, rounded) ADP of 2,161 detainees. Using the above calculation, we find that there were a total of 326,311 detention nights as of that date.

We now have two cumulative detention night estimates and the number of days between the two dates: 14 days. We insert these values into the formula as follows:

$$IA_n = \frac{393,302 - 361,872}{14} = \frac{31,430}{14} = 2,245 \; Interval \; ADP$$

Finding the difference between the "Reported ADP" from ICE and the "Interval ADP" developed here, we can determine the divergence of ICE's Reported ADP compared to the Interval ADP:

$$2,245 \; Interval \; ADP - 2,161 \; Reported \; ADP = 84 \; more \; detainees \; than \; reported$$

To summarize, the Interval ADP shows that between March 17, 2025, and March 31, 2025, Adams County Detention Center had an ADP of 2,245 detainees. The Interval ADP for this period is 84 detainees per day higher than reported by ICE.

Assessing the Interval ADP Method

The Interval ADP method has a distinct advantage over the ICE Reported ADP estimates: it provides more accurate recent estimates of the detained population at any given facility. In general, anyone seeking the most recent estimate of the detained population at a given facility will be well-served by applying this method.

This method requires some prerequisite knowledge and skills. We note that ICE does not maintain a public historical archive of its detention spreadsheets. However, the public may use the Internet Archive's Wayback Machine and the URL provided above to find older spreadsheets. We also warn against using ICE's facilities data without proper validation first. ICE's detention spreadsheet routinely contains obvious and unobvious errors that may corrupt the calculations described in this paper — unless those errors are identified first. (It is beyond the scope of this paper to describe the various validation techniques we use for this dataset.)

The Interval ADP method, although useful, leaves important questions unanswered. Like any average daily population estimate, it still does not answer the question of how many people are in a given facility at a single point in time. The method is also agnostic as to the forces that determine increases and decreases in facility population; we cannot determine the full range of factors the drive population number up or down at a given facility.

The method is also not the only way to calculate a moving average for ADP. The backward moving average shown here provides immediate estimations of current facility detainee populations. However, a center moving average, one which calculates changes at an historical point in time using data forward and backward, may be preferable for certain projects, although it would not provide immediate estimates at the time of each of ICE's detention spreadsheet releases.

Despite the limitations of the method proposed in this paper, we believe that most people will find the Interval ADP calculation to be significantly more relevant than ICE's Reported ADP.

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