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Christopher Severen
Federal Reserve Bank of Philadelphia

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Delayed Sampling of Recent Immigrants in the Current Population Survey

Christopher Severen

Christopher Severen is an economic advisor and economist in the Research Department of the Federal Reserve Bank of Philadelphia.

The views expressed by the author are not necessarily those of the Federal Reserve.

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THE CONGRESSIONAL BUDGET OFFICE (CBO, 2024) FORECASTS an elevated level of net immigration to the United States of nearly 15 million people between 2021 and 2026. How immigration impacts employment statistics has therefore received increased attention recently (e.g., Edelberg and Watson, 2024a). There is substantial concern that labor market surveys—and in particular the Current Population Survey (CPS)—may not fully reflect the economic experiences of the recently immigrated population and thus may incorrectly summarize broader economic conditions.

I propose using systematic patterns in CPS-reported immigrant cohort size over time to estimate the undercounting of recent immigrants.[1] On average, CPS-reported immigrant cohort size reaches its maximum within two to five years of arrival. Because the size of an immigration cohort cannot reasonably increase after the initial (cohort immigration) year, the maximum CPS-reported immigrant cohort size provides a lower bound on the true size of a cohort in earlier periods. Depending on how immigration year is imputed in the CPS, the initial CPS-reported immigrant cohort size is only between 45 and 90 percent of the maximum CPS-reported immigrant cohort size. Comparing the composition of immigration cohorts over time, it is likely that younger immigrants and female immigrants are relatively more undersampled soon after arrival.

These methods depend substantially on how CPS respondents are assigned to an immigration cohort in the CPS. The CPS only reports year of immigration grouped into bins, typically of two to four years. I propose four methods of increasing complexity to interpolate immigration year that sometimes combine the CPS's binned immigration year variable with other variables, and that rely on the CPS's repeated sampling structure. All four methods rely on a crosswalk that I develop (and share publicly) to probabilistically assign households to an immigration year.[2] I then compare cohort size patterns across interpolation methods and recommend using a computationally simple method based on month of first interview in the CPS.

I use the systematic components of undercounting according to this interpolation method to develop adjustments to CPS sample weights that increase the relative weight of recent immigrants. With such adjustments

in hand, it is straightforward to estimate alternative measures of the recent immigrant cohort size. Moreover, under the assumption that recent immigrants in the CPS are representative of recent immigrants who are not sampled by the CPS, I derive corrections to headline employment statistics.[3] Because the overall labor market trends of recent immigrants differ only somewhat from those of native-born workers, and because recent immigrants quickly converge to the behavior of earlier immigrant cohorts, these adjustments lead to only small changes in headline household employment statistics—specifically, the unemployment, labor force participation, and employment-population rates. The most substantial change is a 0.05 percentage point (pp), or 5 basis point, increase in the unemployment rate.

I also use this methodology to compare measures of employment growth from the CPS with those from the Current Employment Statistics' (CES) establishment survey, as in Edelberg and Watson (2024a). The adjustments indicate that household survey employment growth (harmonized to the scope of employment covered by the CES) should currently be about 20–30 thousand per month larger than in the unadjusted series. Cumulatively since early 2022, this can account for about 500–600 thousand additional jobs. Taken together, this represents 20 to 30 percent of the total difference between the household and establishment surveys.[4]

In the next section, I briefly summarize the data I use in the analysis. I then discuss methods to interpolate year of immigration. Next, I demonstrate the delayed uptake of recent immigrants into the CPS and compare the results of different interpolation schemes. Then, I provide the adjustments needed to upweight recent immigrants in the CPS. Following this, I estimate changes to headline employment statistics based on these adjustments, before concluding with an analysis of which immigrants are most likely to be undercounted by the CPS soon after immigration.

Data

The primary data are the basic monthly CPS covering January 1994 through July 2024 from IPUMS (Flood et al., 2023). Key variables for this analysis are <yrimmig>, which reports binned year of immigration, and <cpsid>, which contains information on the month and year of CPS uptake. To supplement this analysis, I also use American Community Survey (ACS) data covering 2000 to 2022 from IPUMS (Ruggles et al., 2024). Additionally, I pull some special supporting series from the Bureau of Labor Statistics (BLS) and cite them when discussing their use.

Interpolating Year of Immigration

The first challenge to understanding survey uptake and labor market dynamics of recent immigrants in the CPS comes from the binning of <yrimmig>. This variable is typically binned into groups of two immigration years, although for recently arrived immigrants it is slightly coarser: The most recent bin is either three years (in even-year surveys) or four years (in odd-year surveys). Less problematically for understanding recent immigration, earlier immigration (before 1980) is grouped into bins of five years, and all immigration before 1950 is grouped together.[5]

I develop four methods to interpolate immigration year. All methods probabilistically assign survey records to a year of immigration and make use of a crosswalk developed for this purpose. The crosswalk permutates possible combinations of observation year, <yrimmig>, and interpolated immigration years. Each interpolation method builds on the basis provided by the crosswalk and consecutively increases precision by combining <yrimmig> with other variables in the CPS. None of these methods attempt to interpolate immigration year for immigrants who report having been in the United States for 30 years or longer.

Interpolation 0 (Baseline). This method interpolates immigration year from <yrimmig> directly, assigning an equal weight to each potential immigration year that composes the bin of <yrimmig>. This is typically a weight of one-third or one-fourth for the most recently arrived immigrants, and a weight of one-half for immigrants who arrived four to 29 years ago. This method relies only on the current survey's values of <yrimmig> and the provided crosswalk.[6]

Interpolation A (Survey Date). This method interpolates immigration year by first assigning a weight of zero to months and years after the <month> and <year> of the current survey that fall within the range of <yrimmig>. It then proportionally weights the prior months and years within that immigration bin. For example, for a survey record from January 1998 that reports <yrimmig> as the binned value 1996–1998, immigration year 1996 receives a weight of 0.48 (=12/25, where 25 is the total number of possible immigration months between January 1996 and January 1998), immigration year 1997 receives a weight of 0.48 (=12/25), and immigration year 1998 receives a weight of 0.04 (=1/25).

Interpolation B (CPS Entry Cohort). This method interpolates immigration year by first determining a respondent's initial survey period from <cpsid> and treating that as the last possible immigration month.[7] That is, it assigns a weight of zero to all periods following the month and year of first entry into the CPS, then proportionally weights the remaining (earlier) months and years within that immigration bin. For example, for a survey record from January 1998 with initial survey period October 1997 reporting immigration as the binned value 1996–1998, immigration year 1996 receives a weight of 0.545 (=12/22, where 22 is the total number of possible immigration months between January 1996 and October 1997), immigration year 1997 receives a weight of 0.455 (=10/22), and immigration year 1997 receives a weight of 0.0.

Interpolation C (Panel CPS). This method uses the panel aspect of the CPS to refine estimates of immigration year where possible. Because the precise meaning of <yrimmig> changes across survey waves (becoming weakly more specific three or four years after immigration), a respondent's later response to <yrimmig> sometimes narrows the range of possible immigration years. For example, <yrimmig> in November 1998 may indicate immigration in 1996–1998, but <yrimmig> in or after January 1999 may indicate immigration in 1996–1997. If a respondent provides such values of <yrimmig>, all estimates of that respondent's immigration years can be adjusted to only 1996 or 1997. I implement this method based on the first and last survey responses for each respondent, and I apply the results to all intermediate responses.[8] Respondent records whose first and last survey responses diverge revert to Interpolation B.

Table 1 provides an example of how each interpolation method assigns weights to year of immigration to two sample responses. The first shows a sample respondent who immigrated in 1999 and first responded to the CPS in October 2000, and it shows weights for survey responses in November 2000 and January 2002. The second is similar, except the sample respondent immigrated in 2000. This table reveals how each method provides some increase in precision over each prior method for at least some of the immigrant population.[9]

Table 1: Sample Immigration Year Interpolation Weights

		Interpolation Weights Assigned to Year of Immigration			
		Immigrated 1999 CPS Entry Cohort 10/2000		Immigrated 2000 CPS Entry Cohort 10/2000	
Method	Interpolated Year of Immigration	Survey 11/2000	Survey 1/2002	Survey 11/2000	Survey 1/2002
0 - Baseline	1998	0.333	0.5	0.333	
	1999	0.333	0.5	0.333	
	2000	0.333		0.333	0.333
	2001				0.333
	2002				0.333
A - Survey Date	1998	0.343	0.5	0.343	
	1999	0.343	0.5	0.343	
	2000	0.314		0.314	0.48
	2001				0.48
	2002				0.04
B - CPS Entry Cohort	1998	0.353	0.5	0.353	
	1999	0.353	0.5	0.353	
	2000	0.294		0.294	1.0
C - Panel CPS	1998	0.5	0.5		
	1999	0.5	0.5		
	2000			1.0	1.0

Delayed Sampling of Recent Immigrants

I next examine the size of each annual cohort of immigrants as captured in the CPS, both to evaluate the interpolation methods described above and because this will be key to the adjustment methods proposed below. I calculate the size of immigration cohort c at month m as:

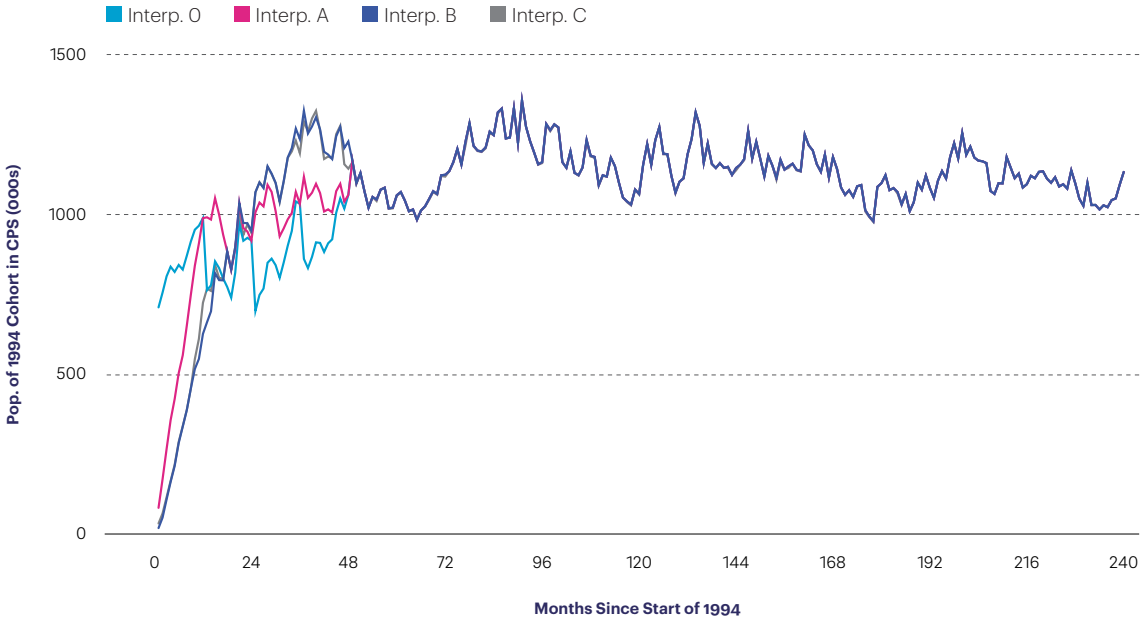
$$\text{Pop}_{cm} = \sum_{i \in m} \text{wtfinl}_i \text{ x Interpolation}_{ic},$$

where $\text{Interpolation}_{ic}$ refers to the weights from one of the interpolation methods described above, and <wtfinl> is the basic final weight created by the CPS and intended to be used to create representative estimates of the U.S. population.

Figure 1 shows the estimated size of the 1994 immigrant cohort (in thousands) as a function of time in months starting in January 1994 for each interpolation method. Interpolation 0 (the blue line) begins at the highest level but then is systematically smaller up through four years after immigration. Interpolation A starts at a lower level than Interpolation 0 but then follows the dynamics of Interpolation 0 more closely after one year. Interpolations B and C are quite similar to each other and reach their highest levels three years after immigration.

FIGURE 1

Size of the 1994 Immigration Cohort



Source: CPS and author's calculations.

The true population of the 1994 immigration cohort should fall starting in 1995 due to emigration and mortality. However, Interpolations 0 and A initially trend up over time and only reach their maxima after 91 months, suggesting that these interpolation methods undercount this immigration cohort for at least seven years. Interpolations B and C perform somewhat better; although they also do not reach their maximum until 91 months, they are very close at 40 months.

Because the CPS is a sample of the population, the dynamics of the population size of any cohort may well reflect sampling variability. I characterize the average relationship between each month after initial immigration and the maximum cohort size using log-linear regression, as described in detail in Appendix A1. This generates a series of coefficients that give the share of the maximal cohort size seen in each month after immigration year on average.

The results, shown in Figure 2, reveal that Interpolations 0 and A, on average, appear to reach maximum cohort size between 48 and 72 months

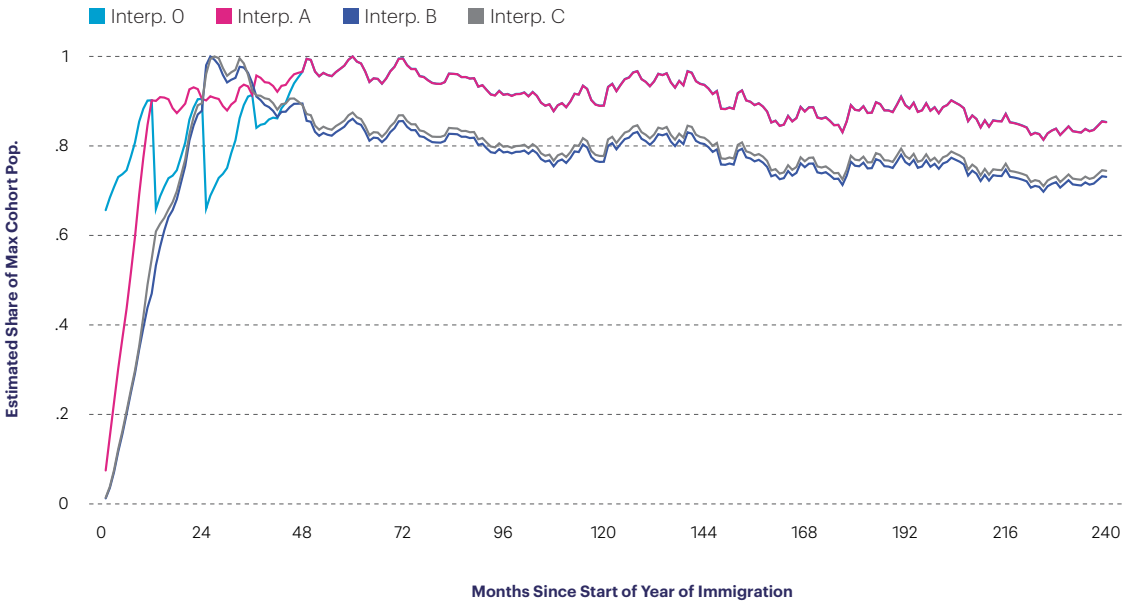
(4–6 years) after immigration. (The maximum is at 60 months for both series.) In contrast, Interpolations B and C reach maximum cohort size between 24 and 36 months (2–3 years) after immigration. (The maximum is after 26 months for Interpolation B and after 27 months for Interpolation C.)[10]

These results lead me to focus on Interpolation B during the rest of this analysis. Interpolation B is more accurate than Interpolations 0 and A, and it only differs slightly from the yet more accurate Interpolation C. However, Interpolation B is also substantially easier to calculate than Interpolation C and so offers substantial accuracy with little additional computational expense.

There are three conclusions from this section. First, to determine whether there is a delay of immigrants showing up in the CPS, one must interpolate immigration year, and how this is done substantially impacts the implicit timing of immigration. Second, Interpolation B offers a good mix of accuracy and computational simplicity. Finally, there is some delay of ingestion of recent immigrants into the CPS sampling frame regardless of interpolation method.

FIGURE 2

Estimated Share of Maximum Cohort Population (for Years of Immigration 1994–2019)



Source: CPS and author's calculations.

Adjusting for Recent Immigration

To overcome the undersampling of recent immigrants, I implement three adjustment methods and compare their effects on estimates of the size of the recently immigrated population. These methods each apply adjustments intended to be combined with the default weights in the

CPS (i.e., <wtfinl> in IPUMS CPS). Adjusted weights for each observation i of interpolated immigration cohort c at m months following immigration are given by:

$$\text{AdjWeight}_{icm} = \frac{\text{wtfinl}_i \text{ x Interpolation}_{ic}}{\text{Adjustment}_m}.$$

I propose three different methods to upweight recent immigrants in the CPS:

Delayed Take-Up Adjustment. This adjustment uses the average share of the maximum population in each year to upweight each immigration cohort. Specifically, this adjustment simply consists of the point estimates shown in Figure 2 for each month prior to when the average interpolation reaches its maximum (of 1.0), after which it retains a value of 1.0. Thus, the adjustment divides the numerator by the average share of the maximum cohort size seen in each month prior to the highest average population month.

Extrapolated Delayed Take-Up Adjustment. This adjustment is similar to the Delayed Take-Up Adjustment but imposes additional upweighting. Specifically, it first estimates the trend of average decline from the maximum cohort size to 120 months after immigration and then backcasts this trend to the point 12 months after immigration. It thus assumes that the population decline experienced post maximum started occurring immediately after the immigration year concluded (i.e., at month 13 in Figure 2). As in the Delayed Take-Up Adjustment, this adjustment is 1.0 for all months after the average maximum cohort size is reached.

Excess Nonresponse Adjustment. This method is described in Heinzel et al. (2021) and in CBO (2024). It upweights just-arrived immigration cohorts by 50 percent of the survey month nonresponse rate.[11] This upweight is then reduced linearly by 10 percent for each year since immigration, such that immigrants who have been in the United States for 10 years or longer are not upweighted.

Figure 3 shows estimates of just-arrived cohort sizes for each immigration cohort and for each adjustment method (each using Interpolation B). The top panel shows the size of immigration cohorts in the United States for less than one year, and the bottom combines two cohorts to estimate the size of the population in the United States for less than two years. For reference, the unadjusted series featuring only Interpolation B is also shown in purple, and the CBO's (2024) estimates of net immigration are included as yellow dots.[12] The Delayed Take-Up Adjustment (in blue) and the Extrapolated Delayed Take-Up Adjustment (in red) substantially increase estimates of the number of just-arrived immigrants, while the Excess Nonresponse Adjustment (in purple) yields a much smaller change. Delayed Take-Up estimates are roughly closer to

FIGURE 3

Adjustment Estimates of Just-Arrived Immigrants

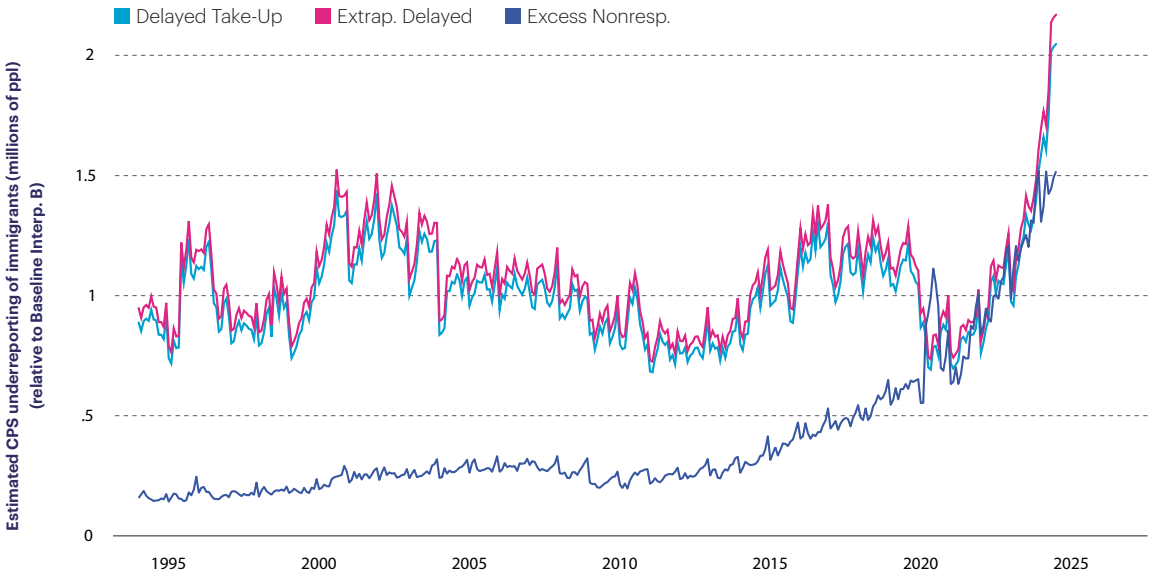
Source: CPS, CBO (2024), and author's calculations.

CBO estimates for recent years but may overpredict immigration in prior years.[13]

Figure 4 shows estimates of underreporting of the entire immigrant population in the CPS under each adjustment (again using Interpolation B) relative to the unadjusted estimates. Under the Delayed Take-Up and Extrapolated Delayed Take-Up Adjustments, the CPS is, on average, underreporting 700 thousand to 1.3 million immigrants between 1995 and 2019. Under the Excess Nonresponse Adjustment, the CPS underreports

FIGURE 4

Misreporting of Immigrants in the CPS



Source: CPS and author's calculations.

immigrants by 200–300 thousand between 1995 and 2019. Estimates of underreporting then fall substantially in 2019 and 2020. (See Borjas and Cassidy, 2023, and Peri and Zaiour, 2023, for a discussion of the rapid decline and recovery of immigrant employment in the period during and immediately after the pandemic.)

However, estimates of underreporting increase substantially beginning in 2022. Estimates using the Delayed Take-Up and Extrapolated Delayed Take-Up Adjustments jump to more than 2 million by May 2024. Estimates of underreporting using the Excess Nonresponse Adjustment also increase, tracking quite closely the other adjustments for much of the pandemic era (due to falling CPS response rates). However, current estimates of underreporting using the Excess Nonresponse Adjustment are a bit smaller (at about 1.5 million) than when using the other adjustments.

Impacts on Employment Statistics

These adjustments provide a larger weighting on observed recent immigrants than in the unadjusted data. This suggests that using these adjustments to adjust labor market statistics leads to a better representation of the situation of the labor market. However, it is important to note that the implicit assumption underpinning this exercise is that the recent immigrants observed in the CPS are representative of recent immigrants who are not sampled by the CPS. Immigrants who are not captured by the CPS may be more likely to be undocumented, and undocumented immigrants experience somewhat different labor market dynamics than similar legal immigrants (Borjas, 2017; Borjas and Cassidy, 2019).[14]

Adjusted CPS Labor Market Statistics

Figure 5 shows the estimated changes to headline unemployment, labor force participation, and employment-population rates in percentage points (that is, 0.05 signifies an adjustment to the headline rate of 0.05pp, or 5 basis points) using each adjustment method (again imputing immigration year with Interpolation B).[15] The Delayed Take-Up and Extrapolated Delayed Take-Up Adjustments typically increase the unemployment rate by between 0.01pp and 0.02pp. However, in recent months this has increased to roughly 0.05pp, enough to potentially shift headline unemployment by a tenth of a percentage point. This positive adjustment accords with the typical relationship between immigration and employment.[16]

Adjustments to labor force participation and employment-population rates are larger during the 1990s and early 2000s but are more muted in recent years (including the period following COVID-19). The most recent adjustments indicate that the labor force participation rate should be at most 0.03pp higher (though this number has bounced around zero). The most recent adjustment for the employment-population rate is approximately 0, although other recent months suggest a reduction of 0.04pp.

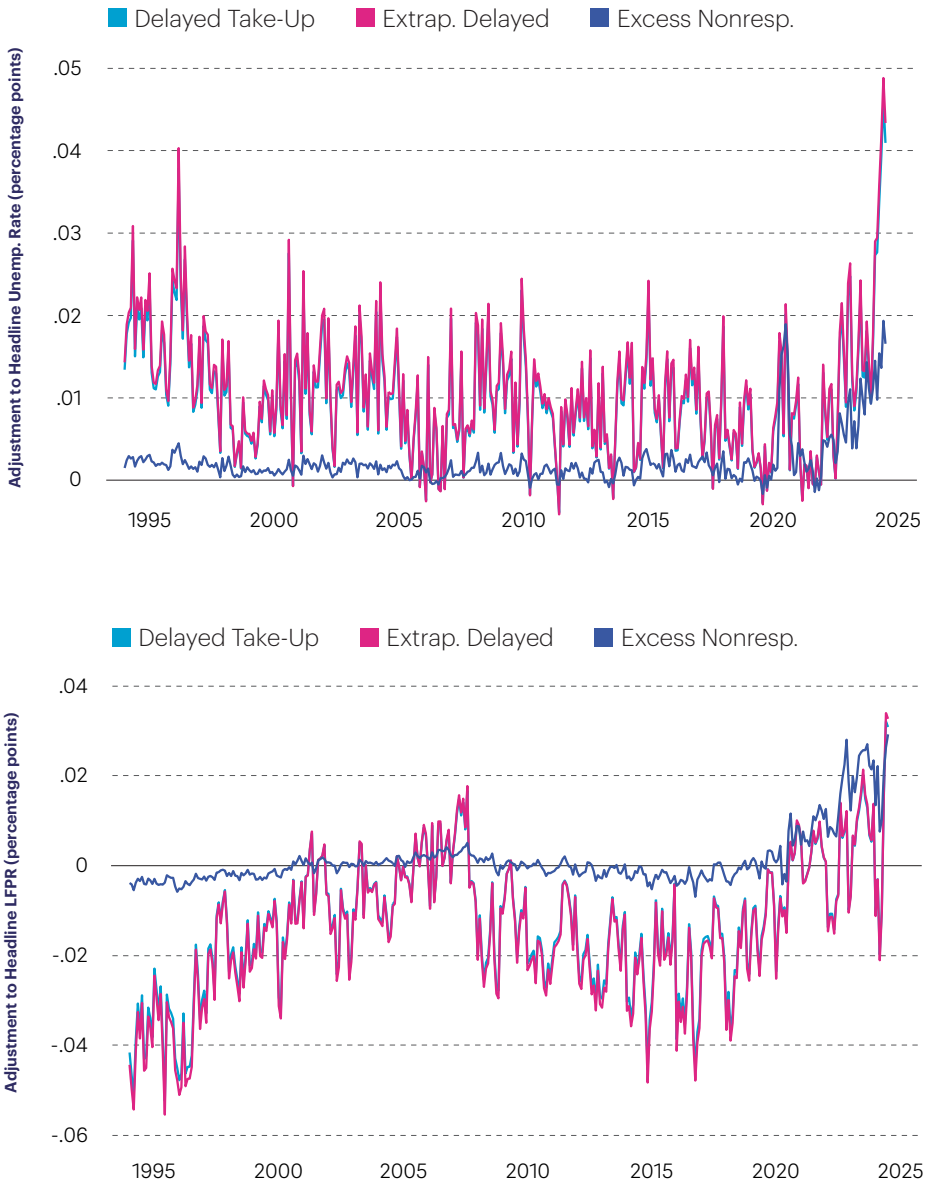
These adjustments are all relatively small, and the small shift to the unemployment rate may be the most economically meaningful.

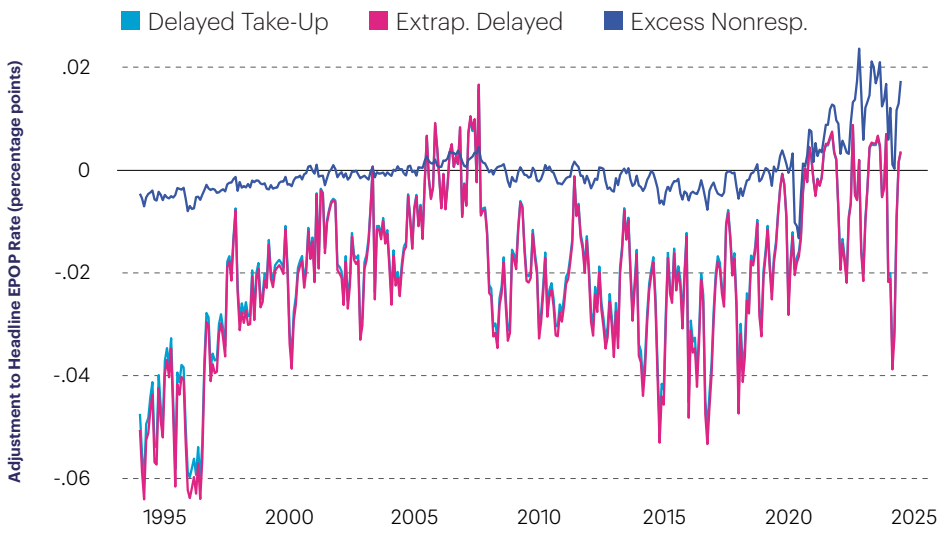
Comparison to the Employment Survey

Recent interest has focused on immigration as a potential explanation for why employment growth is lower in the household survey than in the establishment survey (Edelberg and Watson, 2024a, 2024b). The proposed adjustments can be used to reestimate employment growth from the household survey in an attempt to explain some of the discrepancy between the household and establishment surveys. To do this, I first adjust the CPS to more closely match the establishment survey concept of employment.[17] I then compare the data with the relevant official series to recover seasonal adjustments.[18] Next, I apply the seasonal adjustments to establishment-survey-concept-consistent household employment calculated using the Delayed Take-Up, Extrapolated Delayed Take-Up,

FIGURE 5

Adjustments to CPS Labor Market Statistics





Source: CPS, CBO (2024), and author's calculations.

and Excess Nonresponse Adjustments. Finally, I calculate the monthly difference of these numbers to provide estimates of job growth.

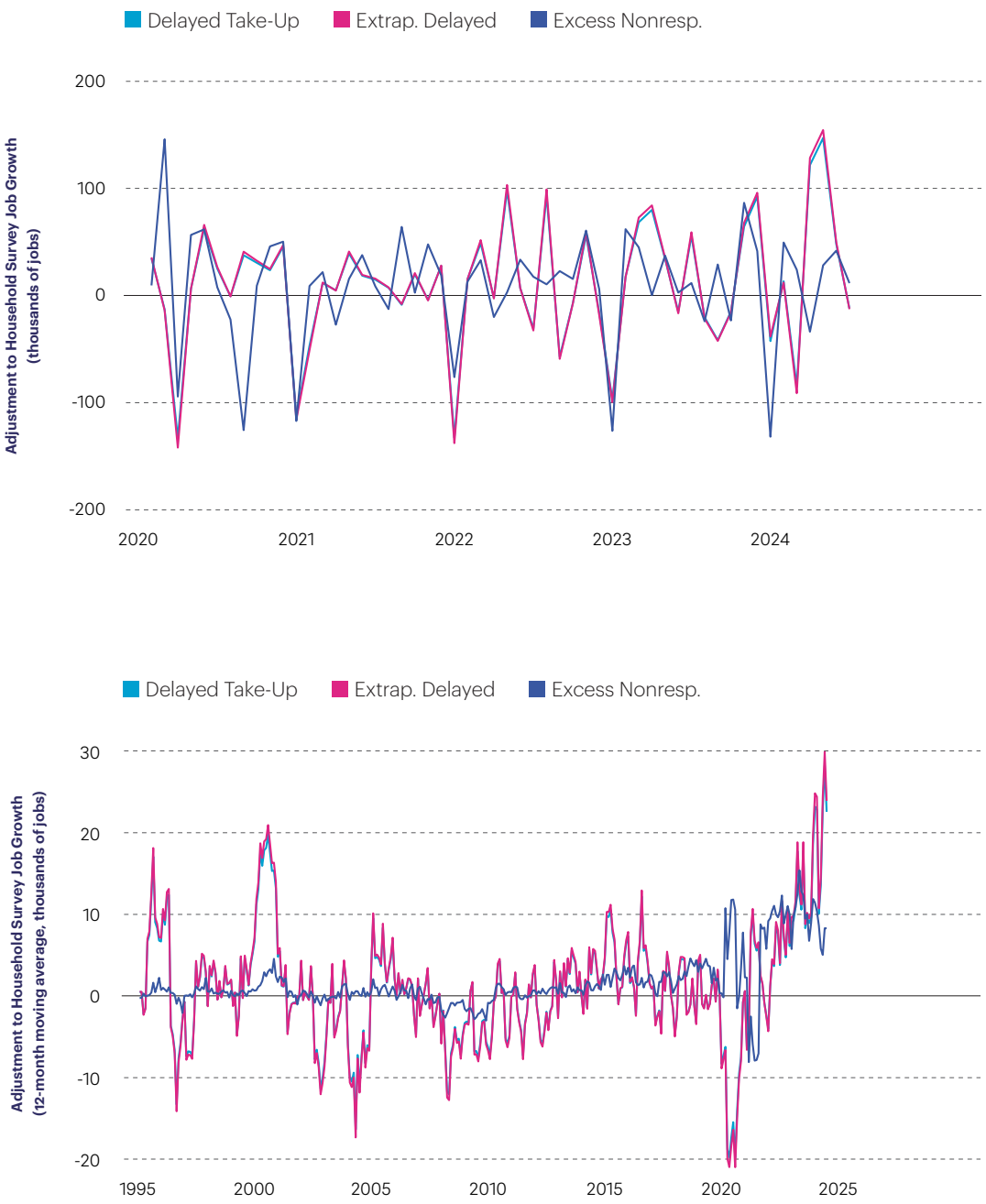
Figure 6 reports these results in terms of changes to the household survey employment growth numbers (in thousands of jobs per month). The top panel reports monthly changes since January 2020. The adjustments are highly variable but often shift household employment growth up or down by 100 thousand jobs.[19] The bottom panel provides 12-month moving averages to smooth the noise in the monthly series. This figure shows that Delayed Take-Up and Extrapolated Delayed Take-Up adjustments increase monthly job growth in the household survey by 10–30 thousand since 2022. Cumulatively (since early 2022), these changes account for between 500 and 600 thousand additional jobs, or about 20–30 percent of the total difference between the household and establishment surveys as presented in Edelberg and Watson (2024a).

Discussion: Who's Being Undersampled?

Using characteristics that do not change over time, CPS data offer some clues as to who is being undersampled. For outcomes that are constant within each person (such as age at year of immigration or birthplace), shifts in cohort averages over time reflect changes in the sample. While the sample of immigrants in the CPS may change because of attrition (e.g., due to mortality, emigration, or domestic migration), changes in the first years after arrival may also reflect a broadening of the sample to become more representative of a cohort's population. Thus, changes in

FIGURE 6

Implied Adjustments to Establishment Survey Job Growth



Source: CPS and author's calculations.

cohort averages may reflect people who are systematically undersampled by the CPS upon arrival.[20]

Figure 7 shows cohort-by-year averages of several outcomes that are unlikely to change within each person: age at arrival to the United States, gender, educational attainment, and Mexican origin. Figure 7 plots the path of cohort averages for odd-numbered arrival years (omitting even-numbered arrival years to maintain legibility), showing pre-COVID arrival years in teal and post-COVID arrival years in red and purple. Movements up or down of each line over time suggest changes in the cohort population.[21]

Focusing on movements that occur in the first few years after immigration, Figure 7 suggests one of two things: Either the CPS systematically undersamples younger immigrants soon after arrival, or older immigrants quickly leave the sample (which is somewhat unlikely). Focusing on the share male, which typically falls in the first two years after arrival, also suggests two things: Either the CPS systematically undersamples female immigrants soon after arrival, or male immigrants quickly leave the sample. Patterns for educational attainment are less clear, although it does appear that recent cohorts have slightly less education than those in the late 2010s. Figure 7 also suggests that, in the 2000s, the CPS may have oversampled Mexican immigrants initially or that Mexican immigrants were more likely to have left the sample within a year or two of arrival. This pattern does not appear in current waves, however.

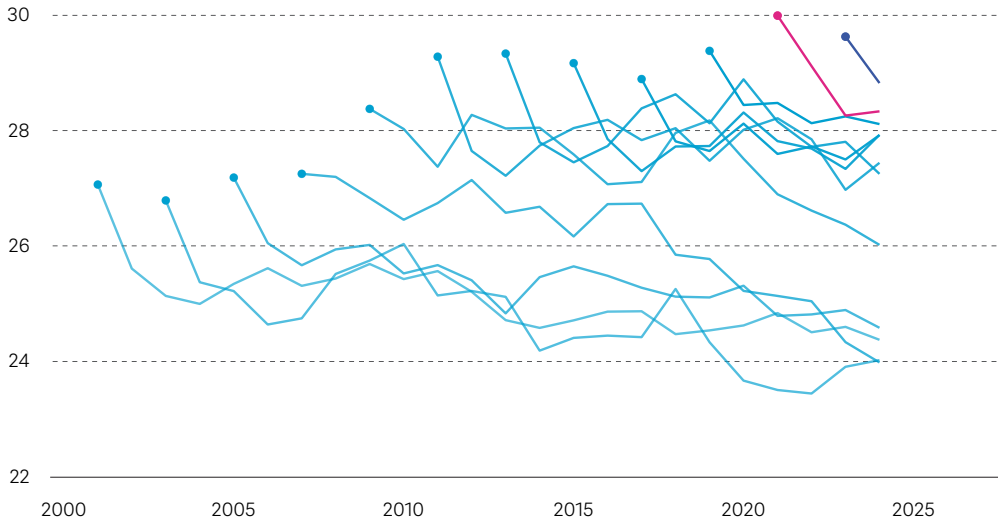
Conclusion

In this research brief, I provide evidence of systematic undercounting of recent immigrants in the CPS. Using this evidence, I develop methods for adjusting the CPS sample weights of recent immigrants to better reflect the true estimated size of the immigrant population. The consequences of these adjustments to headline employment statistics from the household survey are relatively small but can explain a substantial portion of the difference between household survey and establishment survey estimates of employment growth.

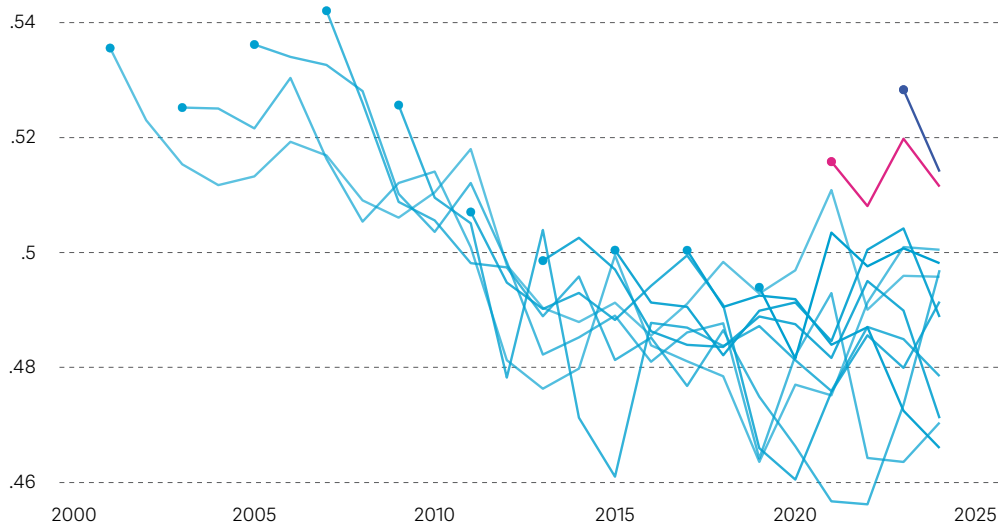
FIGURE 7

Evidence of Changing Cohort Composition

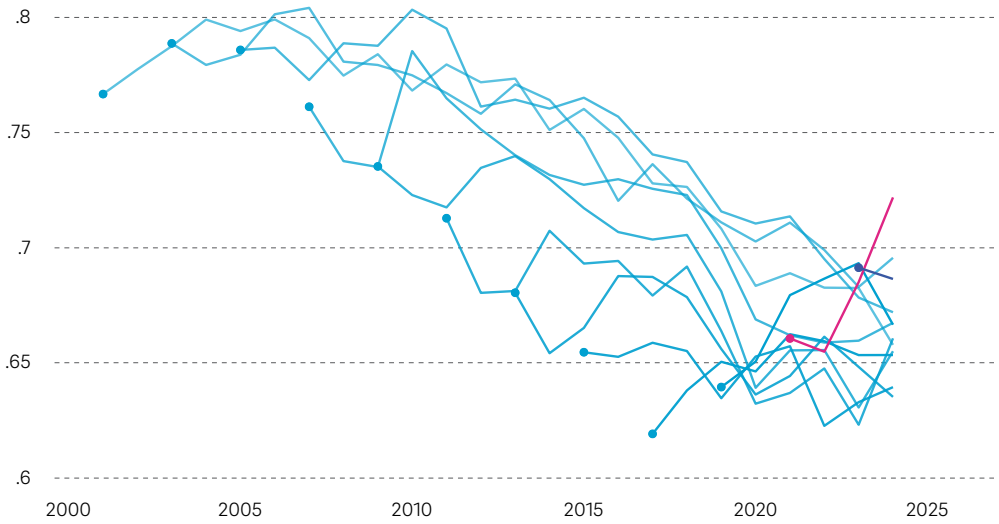
Average Age at Arrival by Cohort over Time



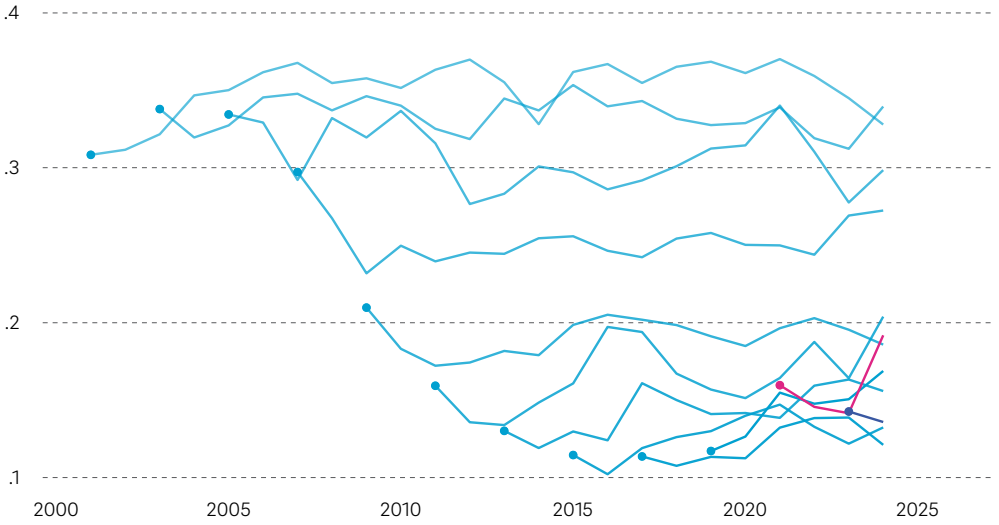
Male Share by Cohort over Time



Share of Cohort with Less than College Education over Time



Share of Cohort Born in Mexico over Time



Source: CPS and author's calculations.

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Appendix A: Data and Additional Methods

A1. Regression Analysis of Delayed Take-Up in the CPS

I model the population of each cohort c in month m after the first immigration month and year for that cohort as:

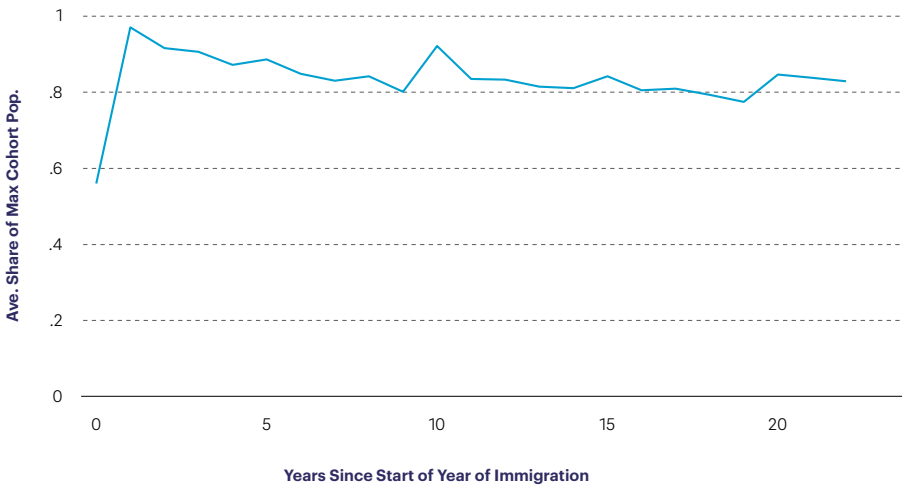
$$\ln(Pop_{cm}) = \sum_{k=1}^{360} \beta_k 1[k = m] + \delta_c + e_{cm}.$$

The inclusion of the cohort-specific fixed effect normalizes the scale of population for each cohort. To identify this equation, I drop one $ß_k$; specifically, I omit the $ß_k$ that is largest in magnitude. This imbues all the remaining values of $ß_k$ as the log-deviation from the maximum cohort size and ensures that $ß_k < 0$. I then define $\text{Adjustment}_m = e^{ßm} < 1$.

A2. Delayed Take-Up in the ACS

The ACS has a shorter delay into take-up than the CPS. Figure A1 shows the average ACS immigrant cohort size as a fraction of that cohort's maximum size. This ratio peaks the year after arrival, consistent with a model of slow attrition due to emigration and mortality.

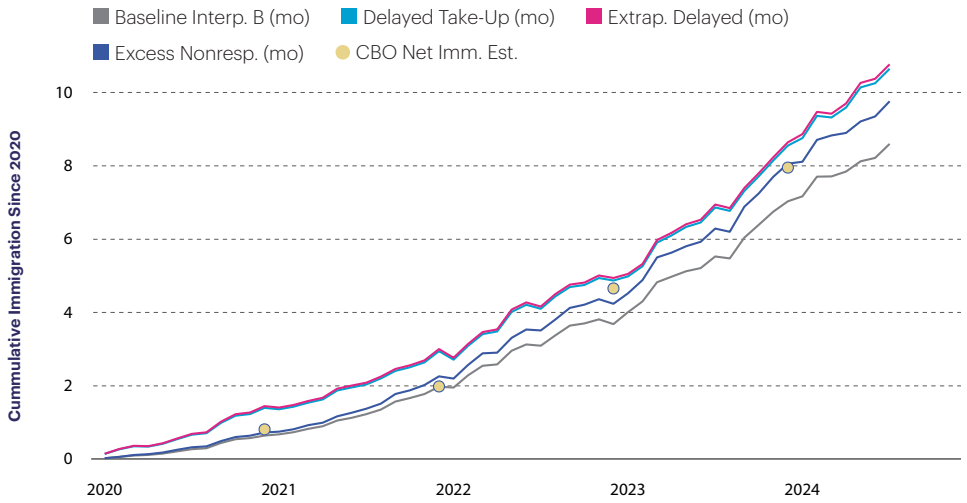
FIGURE A1: SHARE OF MAXIMUM COHORT POPULATION IN ACS '00-'19



Source: ACS and author's calculations.

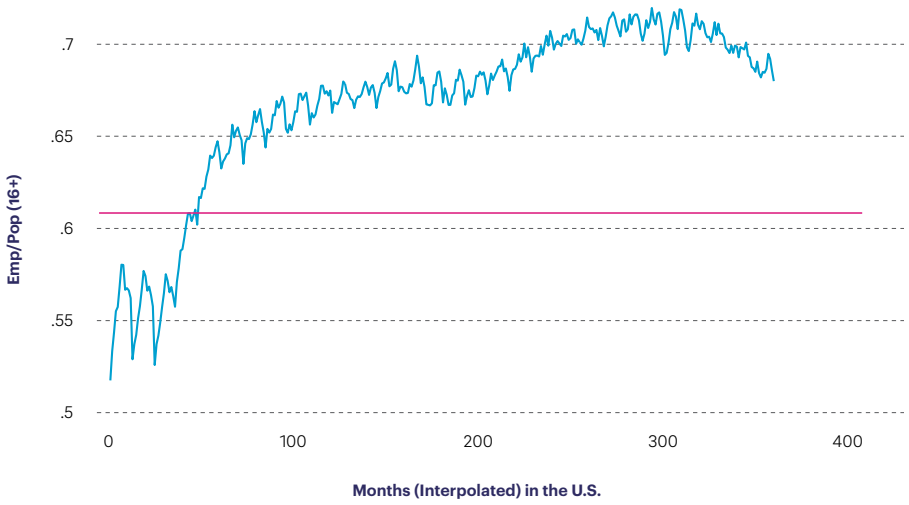
Appendix B: Additional Results

FIGURE B1



Source: CPS, CBO (2024), and author's calculations

FIGURE B2



Source: CPS and author's calculations

1 Throughout this research brief, CPS exclusively refers to IPUMS CPS (Flood et al., 2023), except where elsewhere mentioned.

2 This crosswalk, along with all code and results used herein, can be found at https://github.com/cseveren/upweighting-recent-immigrants.

3 Increasing nonresponse to CPS enumerators is a trend that leads to concerns about the representativeness of the CPS sample more generally. (See Bernhardt et al., 2021, and Ward and Edwards, 2021.)

4 The household and establishment surveys began to diverge in early 2022, with the establishment survey showing substantially higher employment growth (see, e.g., Willis and Zha, 2024).

5 The data quality flag reporting potential issues with <yrimmig> is relatively constant over time.

6 It is not uncommon for <yrimmig> to vary over time within respondent. This may reflect a mistaken or incorrect response, or miscoding of a correct response. Interpolation Method C attempts to resolve varying responses.

7 The first six digits of <cpsid> refer to the four-digit year and two-digit month that the household was first in the CPS. (See https://cps.ipums.org/cps-action/variables/cpsid#description_section.)

8 I implement this method on the subsample of immigrants. If a respondent switches their response to foreign-born status, their first record in the immigrant subsample may not be their first record more broadly.

9 Interpolations 0, A, and B are all straightforward to calculate, given the crosswalk. Interpolation C is a bit more computationally intensive because it requires linking responses across survey waves (which IPUMS CPS provides) and verifying that answers are consistent across waves.

10 In contrast, the U.S. Census and the ACS do not appear to undersample recent immigrants, at least as measured by maximum observed cohort size; see Appendix A2.

11 The response rate to the CPS is BLS series LNU09300000 and can be found at https://data.bls.gov/timeseries/LNU09300000.

12 Net immigration is somewhat distinct in concept from just-arrived immigration but may be roughly comparable during periods of expanding immigration in public surveys.

13 Figure B1 examines cumulative immigration since January 2020. The Delayed Take-Up and Extrapolated Take-Up adjustments predict about 1 million more immigrants since 2020 than the Excess Nonresponse Adjustments, which itself predicts about 1 million more immigrants than the baseline CPS measure. The adjustment methods tend to lead to some overprediction of immigration since 2020 (because they smooth immigration shocks over multiple years), but this represents the shifting of later arrivals to earlier periods.

14 Heinzel et al. (2021) also provide systematic estimates of the legal status of the foreign-born population. Such estimates are less accurate in the basic monthly CPS than in the Annual Social and Economic Supplement (ASEC) of the CPS or in the Census and ACS due to different variable coverage.

15 I report these results in terms of adjustments because they are small relative to the headline rates, and also to avoid trying to match BLS seasonal adjustments.

16 Immigrants participate in the labor force at lower rates than the native-born population for the first five years after arrival but then surpass native-born labor force participation after staying in the United States for a longer period (see Figure B2). Some of this may be due to the role employment can play in retaining immigrants (Dustmann and Görlach, 2015).

17 For an in-depth discussion of the differences, see https://www.bls.gov/web/empsit/ces_cps_trends.htm.

18 Seasonally adjusted household employment adjusted to CES (establishment survey) concepts is BLS series LNS16000000 and can be found at https://data.bls.gov/timeseries/LNS16000000.

19 The dips every January suggest that residual differences in seasonal adjustments may play a role.

20 Similar reasoning is used—in, e.g., Lubotsky (2007)—to argue for compositional changes in cohorts over time due to emigration.

21 People may also drop out of the survey if they move domestically. However, results look similar whether each individual's first or last CPS response is used, suggesting that differential domestic mobility does not explain these patterns.