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Current Employment Survey Benchmark Revisions

On February 7, 2025, the Bureau of Labor Statistics (BLS) released annual “benchmark” revisions to official estimates of national-level nonfarm employment from April 2023 through October 2024. These revisions downwardly adjusted national nonfarm employment in March 2024 by 598,000 jobs (-0.4% of the revised employment level). BLS previously announced on August 21, 2024, that the “preliminary estimate” of these revisions would downwardly adjust national nonfarm employment by 818,000 jobs. This revision is larger than most recent benchmark revisions, and the announcement of the preliminary estimate attracted attention from Congress.

This In Focus provides an overview of BLS annual benchmark revisions, which have been part of regular BLS employment estimation processes since 1935. Benchmark revisions incorporate less timely but more comprehensive data into employment estimates.

Initial Employment Change Estimates

BLS initially estimates month-to-month employment changes for the previous three months as part of the Current Employment Statistics (CES) program. These estimates rely on a survey of nonfarm establishments and models of employment in establishments that cannot be surveyed.

Survey

The CES survey, also known as the *payroll survey* or the *establishment survey*, is a monthly survey of approximately 119,000 businesses and government agencies. The employers surveyed are randomly selected to represent all nonfarm employers by state, industry, and employer size categories. After selection, employers are surveyed for at least two years. Each month, BLS asks these employers how many civilians were on their payroll during the pay period that included the 12th day of the month.

Employment reports received by the last Friday of the month are incorporated into “first preliminary estimates,” which BLS releases on the first Friday of the next month. Additional employment reports received in time for the following month’s estimates are incorporated into revised, “second preliminary estimates.” Employment reports received from more employers responding to the survey in time for a third month of estimation are incorporated into “third and final sample-based estimates” for each month.

Business Birth and Death Modeling

Some businesses cannot be chosen for the CES survey because they are too new to be included. Other businesses do not answer the survey because they are no longer operating. Patterns of business openings and closings over the year vary by industry in predictable ways. BLS uses historical data to model employment changes due to business “births” and “deaths” and updates this model with new data every year. This modeled component is part of all

national-level CES employment estimates (except during the COVID-19 pandemic, when use of the model was modified because business births and deaths were not following usual patterns).

Seasonal Adjustment

Some month-to-month changes in employment are part of seasonal patterns, such as the opening and closing of ski resorts as the seasons change. Seasonal employment patterns differ by industry. BLS uses historical data to model these patterns and produces both seasonally adjusted and unadjusted estimates of month-to-month changes.

Benchmarking

The CES program produces estimates of month-to-month changes in the number of jobs soon after the end of each month. However, BLS revises these estimates of monthly employment changes based on additional data on overall civilian employment levels.

Additional Data

BLS receives additional data on employment levels after publishing the survey-based CES estimates. Employers are required to report the number of workers in jobs covered by Unemployment Insurance (UI) on their payrolls to states every quarter. UI covers about 97% of nonfarm payroll employment in the United States. These payroll reports are then forwarded to BLS, which receives them several months after CES survey responses. BLS also receives periodic employment data for employers not covered by UI, such as railroads.

These additional data sources provide information on the actual employment of all covered employers. They are not affected by which businesses respond to a survey or by the accuracy of models. BLS uses these additional data to further revise, or *benchmark*, estimates of employment. The same data are also used to produce the model of employment changes due to business births and deaths.

Benchmark Process

BLS uses the additional data to make a more accurate estimate of employment levels by industry for the previous March. The difference between the previous estimate of employment and the new, more accurate estimate is called the “benchmark revision.”

At the time of the benchmark revision, estimates of employment changes in the 11 months before and 9 months after March are adjusted proportionately to match the new, more accurate March employment levels by industry.

Benchmark Timing

Benchmark employment estimates for the previous March are released in early February. However, in August BLS

releases a “preliminary estimate” of the overall size of the upcoming benchmark revision.

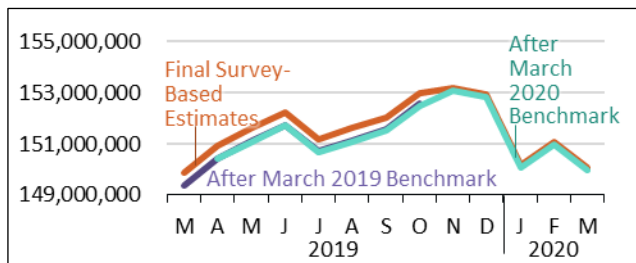
Although BLS benchmarks employment levels only once per year, it publishes quarterly employment totals from the UI data by industry and geography about six months after the quarter ends. Federal Reserve district banks in Dallas, Philadelphia, and New York use these employment totals to estimate and publish their own estimates of benchmarked employment more frequently than BLS.

BLS continues to benchmark national level employment estimates annually because quarterly revisions can be larger than annual revisions and because the seasonal pattern of employment changes in the CES is different than the seasonal pattern of employment changes in UI data.

An Example of Benchmark Revisions

Figure 1 illustrates CES benchmark revisions for March 2019 through March 2020. Employment in this period was the subject of a large negative benchmark employment revision, similar to 2024. This period ended just before the labor market disruptions of the pandemic period.

Figure 1. CES Estimates for March 2019–March 2020
Final Sample-Based and Revised Estimates



Source: BLS, CES vintage estimates, available from <https://www.bls.gov/web/empst/cesvinfo.htm>.

Notes: Non-seasonally adjusted estimates of employment in the pay period including the 12th day of each month. March 2019 benchmark estimates were released February 7, 2020; March 2020 benchmark estimates were released February 5, 2021.

The March 2019 benchmark revisions reduced the estimate of total nonfarm civilian employment in March 2019 from 149,864,000 to 149,359,000 (a decrease of 505,000). This benchmark affected estimates of employment from April 2018 through October 2019 and was incorporated into final survey-based CES estimates for November 2019 and later. The March 2020 benchmark revisions reduced the estimate of employment in March 2020 from 150,073,000 to 149,952,000 (a decrease of 121,000). This benchmark affected estimates of employment from April 2019 through October 2020 and was incorporated into final survey-based estimates for November 2020 and later.

Estimates of employment for April 2019 through October 2020 were affected by both of these benchmark revisions. However, the impact of the benchmark revisions on month-to-month employment changes (the main focus of the CES program) were small. For example, the third and final survey-based estimates for September 2019 showed non-seasonally adjusted employment growth from August to September 2019 of 409,000. The March 2019 benchmark

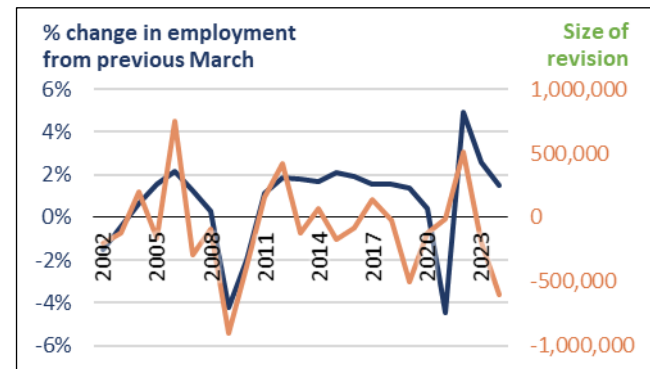
revision revised this non-seasonally adjusted month-to-month employment growth to 415,000, while the March 2020 benchmark revision revised it to 417,000.

Magnitude of Benchmark Revisions

From 2002 through 2023, the magnitude of benchmark revisions averaged 255,000, meaning that on average the estimate of employment in the previous March was revised by 255,000. As shown in **Figure 2**, some benchmark revisions are negative and others are positive. Over these 22 years, the largest benchmark revision (in absolute value) was a decrease in employment of 902,000 for March 2009, while the smallest benchmark revision (in absolute value) was a decrease in employment of 7,000 for March 2021. The benchmark revision in March 2009 was -0.7% of the revised employment level.

Figure 2. Magnitude of CES Benchmark Revisions

Compared with estimated percentage change in employment from the previous March, 2003-2024



Source: BLS, CES, Annual Benchmark Revisions, various years

Notes: Estimates and revisions shown are not seasonally adjusted.

Reasons for Large Benchmark Revisions

As shown in **Figure 2**, benchmark revisions tend to be particularly large in years when employment changes are different from the previous year. This happens because the employer birth and death modeling component of CES estimates cannot anticipate off-trend changes in employment, such as when recessions or expansions will begin. The negative benchmark revision for March 2024 is consistent with this pattern because employment grew more slowly from March 2023 to March 2024 than from March 2022 to March 2023 or from March 2021 to March 2022.

The accuracy of CES preliminary estimates is also affected by response rates to the CES survey. In recent years, this response rate has been falling, which reduces the accuracy of survey-based preliminary estimates of month-to-month employment changes.

Data on Benchmark Revisions

CES benchmark revisions for 2002 through 2024 are described in articles listed at <https://www.bls.gov/web/empst/cesbmarch.htm>. Data are available by industry, and also include information on earnings and hours worked.

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