US Daily: How to Read the Employment Report (Abecasis)

- We provide a guide for distilling key signals from the employment report. We find that the best estimates of underlying labor market conditions are given by the following measures:
- **Underlying job growth** = 75% weight on 3-month average payroll growth + 25% weight on 9-month average payroll-adjusted household employment growth.
- **Underlying job growth during turning points** = 60% weight on 3-month average payroll growth + 40% weight on 6-month average payrolls-adjusted household employment growth.
- **Underlying wage growth =** 85% weight on 9-month average total average hourly earnings (AHE) growth + 15% weight on 3-month average production and nonsupervisory AHE growth.
- **Underlying unemployment rate =** 3-month average unemployment rate.
- **Underlying labor force participation rate =** 6-month average participation rate.
- We also find that temporary help services employment and the payrolls diffusion index add a small amount of information about the direction of the labor market, especially around turning points in job growth, but the numbers of part-time workers and multiple job holders do not.
- We also explain weather effects, calendar effects, seasonality, revisions, and the annual and decennial benchmarking.

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How to Read the Employment Report

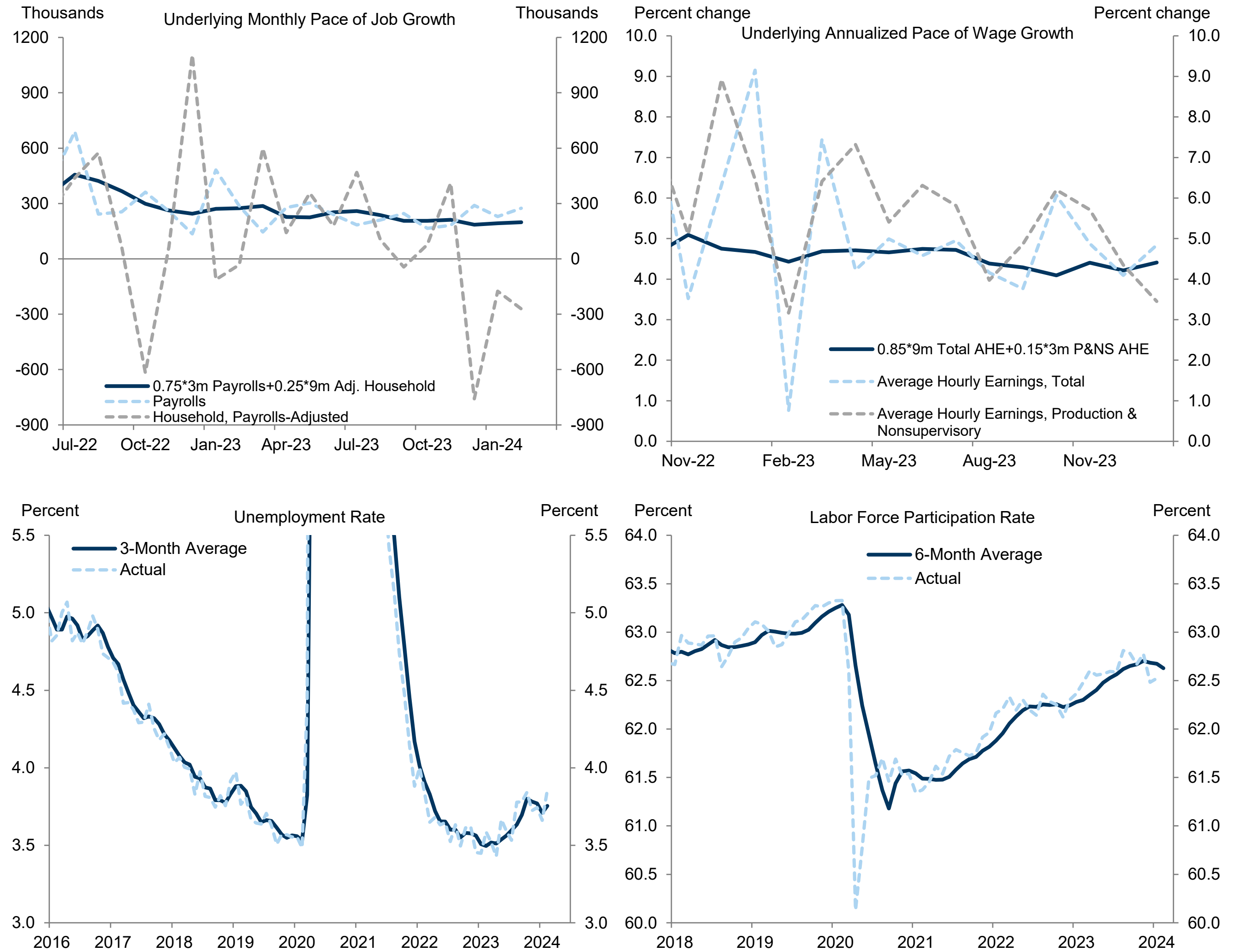
OPTIMAL WEIGHTS AND SMOOTHING FOR KEY DATAPOINTS

For job growth and wage growth, we choose the number of months to average and weights that are the most predictive of the 5-month centered moving average of our job growth tracker and revised total average hourly earnings (AHE) growth, respectively. For the unemployment and participation rates, we choose the optimal number of months to predict the 3-month-ahead change in each variable. We use real-time data where applicable and choose parameters by minimizing mean squared error.

In general, we find that it is best to place the most weight on payroll growth and to smooth household employment growth over many months because the latter is quite noisy. (In fact, at the moment we would further down-weight household employment growth because it is based on out-of-date population growth estimates and is underestimating the elevated rate of immigration and consequently employment growth.)

	Number of Months to Average	Weight
Job growth		
Payrolls	3	75%
Household, payrolls-adjusted	9	25%
Wage growth		
Total AHE	9	85%
Production and nonsupervisory AHE	3	15%
Unemployment rate (change)	3	--
Labor force participation rate (change)	6	--

Source: Goldman Sachs Global Investment Research



Source: Department of Labor, Goldman Sachs Global Investment Research

PAYROLLS-ADJUSTED HOUSEHOLD EMPLOYMENT

Household employment adjusted to match the payrolls definition = Household Employment – Agricultural Workers – Unincorporated Workers – Unpaid Family Workers – Paid Private Household Workers – Workers on Unpaid Leave + Multiple Jobholders

BIRTH-DEATH MODEL

The payrolls survey does not capture employment at opening firms. As a result, the BLS excludes job losses at closing firms and imputes net job creation from business openings and closings—the birth-death model. The BLS updates the birth-death model to incorporate past data on business births and deaths from unemployment insurance tax records. These data typically become available with a one-year lag, and the BLS updates its forecasts each quarter as the data become available (e.g. the April 2024 employment report will include estimates of business births and deaths using data up until 2023Q2).

TURNING POINTS IN JOB GROWTH: HOUSEHOLD VS. ESTABLISHMENT SURVEYS

In the past, it has paid to put greater weight on household employment around turning points in job growth. When 3-month payroll growth slows to below 0.05% a month, or roughly 75k jobs/month currently, the optimal formula becomes:

*0.60*3-Month Payroll Growth + 0.40*6-Month Payrolls-Adjusted Household Employment Growth*

The reason to put somewhat less weight on the establishment survey is that it estimates job gains and losses at opening and closing firms using the birth-death model, but the source data are lagged and openings and closings can change quickly during cyclical turning points. Household employment—which is measured by asking people if they are employed—is immune to this problem. Today, we can also check whether the business openings and closings assumptions underlying the establishment survey remain realistic in real time using data on new business applications and bankruptcies.

TEMPORARY HELP, PART-TIME WORKERS, MULTIPLE JOBHOLDERS, AND THE BREADTH OF JOB GROWTH

Temporary help services employment and the payrolls diffusion index add a small amount of information about the direction of the labor market, especially around turning points in job growth. Changes in the number of part-time workers or multiple jobholders generally do not offer any additional information about the direction of the labor market.

	Contains Information About the Direction of Job Growth?	Number of Months to Average	Weight* in Estimating Trend Job Growth	Weight* When Job Growth Slows Below 75k/Month
Variable:				
Temporary help services employment	Somewhat	4	5%	10%
Part-time workers	No	--	--	--
Multiple jobholders	No	--	--	--
Payrolls diffusion index	Somewhat	8	4%	7%

* We first estimate the optimal number of months to smooth over to predict the revised 5-month centered moving average of revised payroll growth. We then test whether each indicator contains statistically significant information about the 3-month-ahead pace of job growth. We reject indicators that either do not show statistically significant information or whose coefficients are both small and have the “wrong” sign based on how they should intuitively relate to job growth.

Source: Goldman Sachs Global Investment Research

In fact, high-frequency changes in the shares of part-time workers, multiple jobholders, and marginally attached workers are so noisy that they provide limited information even about underlying changes in the measures themselves.

	Number of Months to Smooth Over	R-Squared on 12-Month Forward Change
Variable:		
Part-time workers	10	1%
Multiple jobholders	4	13%
Marginally attached	11	10%

Source: Goldman Sachs Global Investment Research

WEATHER EFFECTS ON PAYROLLS

We proxy for the effect of unusually cold weather on payrolls by looking at job growth net of trend in the most weather-sensitive industries. We use the formula:

Weather effect on payrolls = Sum of job growth in mining, construction, retail trade, transportation, and leisure and hospitality – prior 3m average job growth in those industries

We estimate that a month-over-month deviation of 50 population-weighted heating degree days relative to normal in November-March corresponds to a roughly 70k drag on employment through its effect on these industries. Natural disasters can also weigh on payroll growth.

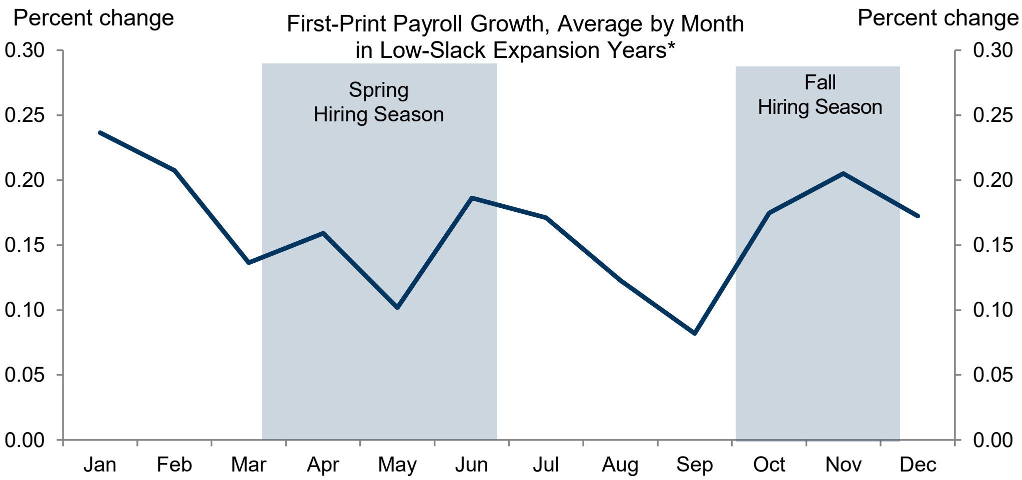
WEATHER EFFECTS ON AVERAGE HOURLY EARNINGS

Severe winter weather tends to boost average hourly earnings because it lowers reported hours by more than reported total earnings. We estimate that an increase of 50 heating degree days—a direct measure of the temperature—in a month relative to the seasonal norm (corresponding to a roughly one standard deviation change) boosts average hourly earnings by around 0.3pp. This effect usually reverts in the subsequent month, resulting in a drag on month-over-month AHE of a similar magnitude.

SEASONALITY

The payrolls seasonal factors can change from year to year for a given month for appropriate reasons like changes in the number of weeks in the month covered by the survey and slower-moving changes in hiring patterns over time. But sometimes the seasonal factors inappropriately extrapolate too much from temporary non-seasonal fluctuations in the data. This generates artificial swings in job growth within the year, but those distortions average out across the year.

Seasonality is usually less pronounced in tight labor markets. When the labor market is tight, seasonally-adjusted job growth often slows disproportionately in the spring and in September, when the seasonal factors expect more hiring than is realistic with fewer workers available, but rises in January, when the seasonal factors expect more layoffs than are likely to occur when employers have more incentive to retain their workers. Tight labor markets also incentivize firms to frontload autumn and pre-holiday hiring, which boosts job growth in October and November.



*Pre-pandemic years in which the unemployment rate gap vs. NAIRU is below the median in Q1. We exclude recession years to avoid conflating labor supply and labor demand effects. Includes 1988-89, 1997-2000, 2006-07, and 2017-19.

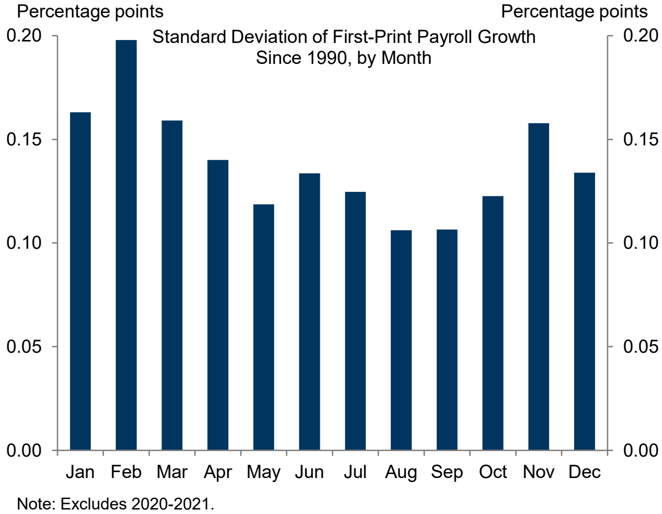
Source: Department of Labor, Goldman Sachs Global Investment Research

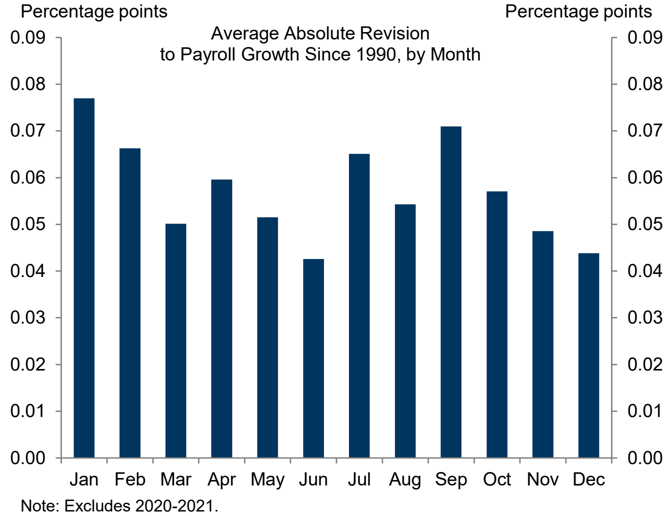
CALENDAR EFFECTS IN AVERAGE HOURLY EARNINGS

Months with more working days tend to feature lower month-over-month average hourly earnings growth, likely because some employers distribute pay evenly across pay periods regardless of fluctuations in hours worked. Each one-day increase in the number of weekdays ex-holidays relative to the previous month generates a 4-5bp drag on month-over-month AHE growth.

RELIABILITY OF DATA IN DIFFERENT MONTHS

January and February data are particularly volatile in both the payrolls and household surveys, so readings of job growth in those months should be read cautiously. In the household survey, this is in part because of the annual update to the population controls at that time. But even adjusting for those changes, job growth is harder to measure at the start of the year because a disproportionate number of companies reset their hiring plans in these months and weather distortions can be especially large.

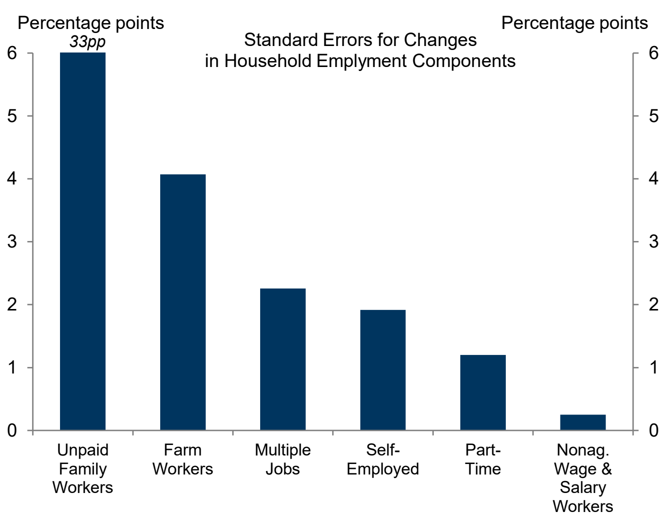


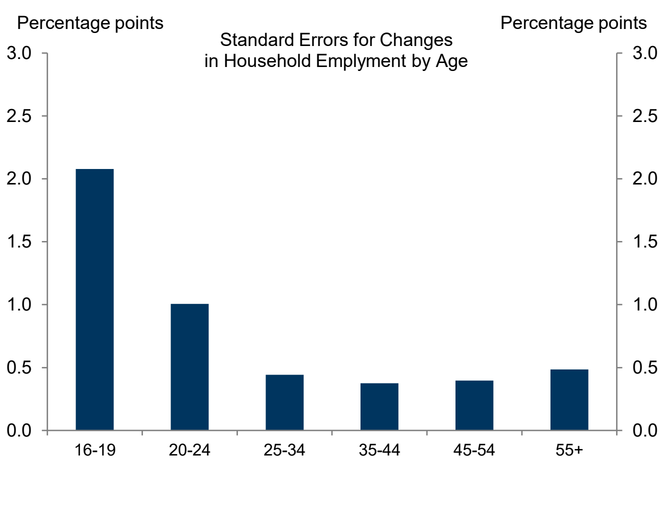


Source: Department of Labor, Goldman Sachs Global Investment Research

MULTIPLE JOB HOLDERS, SELF-EMPLOYED, PART-TIMERS, ETC.

The most reliable household employment series is employment of nonagricultural wage and salary workers. Estimates of agricultural workers, unpaid family workers, and self-employed workers have much more sampling uncertainty and volatility. Similarly, estimates of employment of younger workers are much more uncertain than estimates of employment of workers aged 25+.





Source: Department of Labor, Goldman Sachs Global Investment Research

REVISIONS

The prior two months of payrolls data can be revised each month as the BLS receives more survey responses from businesses. The BLS also recalculates seasonal factors for the two prior months of data each month. Over the last 10 years excluding 2020-2021, the average absolute revision to the prior two months of payroll growth is a little under 0.02%, or around 27k jobs/month currently. A low response rate to the establishment survey can make payroll growth estimates for the most recent months more prone to revision.

Each year, the BLS re-estimates the seasonal factors for the household survey, and the revisions span the most recent 5 years of data. The BLS releases re-estimated seasonal factors with the December employment report, one month before it benchmarks the household survey to a new set of population controls (see below).

ANNUAL BENCHMARKING OF THE PAYROLLS SURVEY IN JANUARY

Each year, the BLS benchmarks up to 2 years of payroll data to employment counts in unemployment insurance tax records. Over the last 10 years, the average annual benchmark revision to the level of employment has averaged 0.1% of employment (currently around 13k jobs/month). These data are also the basis of another BLS publication, the Quarterly Census of Employment and Wages (QCEW).

In August of each year, the BLS publishes a preliminary estimate of the effect of the benchmarking process on payroll employment through March of the same year. The final benchmarking is incorporated with the January employment report of the following year. The BLS also recalculates payrolls seasonal factors with the annual benchmark revision.

ANNUAL BENCHMARKING OF THE HOUSEHOLD SURVEY IN JANUARY

The BLS benchmarks household employment to updated Census estimates of the population in each January employment report. Because the December data is not revised, the month-over-month change in household employment in January mostly reflects changes in the population controls and not underlying changes in employment. The BLS publishes estimates of the effects of the population controls on household survey data here. To smooth out the effect of population controls on household employment, we can apply the value in the "Difference" column of the BLS's table to the level of employment over the prior year. A similar method can be used for other household survey series.

In the second year of each decade, the population controls in the household survey are based on a new census (see below). For every other year, the Census Bureau estimates changes in the population using estimates of births, deaths, and net migration.

For births and deaths, the Census uses data from the National Center for Health Statistics (NCHS), which is available with a two-year lag, and supplements it with provisional data from the NCHS through roughly June of the year being benchmarked (e.g. through June 2023 for the population controls released with the January 2024 employment report). For net migration, the Census uses data from the American Community Survey (ACS), which is available with a one-year lag (e.g. the population controls released with the January 2024 employment report included net migration estimates from the 2022 ACS). ACS data are released between mid-September and early December of each year.

DECENNIAL BENHCMARKING OF THE HOUSEHOLD SURVEY

In the second year of each decade, the January benchmark includes population control adjustments based on a new census year (e.g. January 2022 first included population control adjustments based on the 2020 census). In January of those years, the value in the "Difference" column of the BLS publication must be distributed over the prior ten years to a version of the series that is already smoothed to account for the impact of the controls in each of the prior ten years. The Atlanta Fed publishes estimates of these longer-run series here.

Manuel Abecasis

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We, Jan Hatzius, Alec Phillips, David Mericle, Spencer Hill, CFA, Ronnie Walker, Manuel Abecasis, Tim Krupa, Elsie Peng and Jessica Rindels, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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