The Conference Board-Lightcast Help Wanted OnLine® Technical Note

Background

The ***Help Wanted OnLine™*** (HWOL) program measures the demand for labor in the United States using advertised online job vacancies. HWOL utilizes millions of individual job ads collected in real-time from thousands of online job boards to deliver a comprehensive and robust measure of labor demand.

The HWOL program first started as the Help-Wanted Advertising Index (HWI) in 1951, surveying monthly job ad counts in the classified sections of 51 newspapers in 51 cities. In July 2005, the program evolved to collecting online job advertisements and published the HWOL Data Series, providing users with a data series of total and new online job ads. All online advertised vacancies posted directly on online job boards were targeted to create the HWOL universe of ads. In December 2018, the program revised the HWOL Data Series and launched the HWOL Index, improving upon the HWOL Data Series' ability to assess local labor market conditions.

During 2019, HWOL program shifted its data source to Lightcast (formerly Burning Glass Technologies) to help create a more sophisticated view of the job market and allow for future product development and offerings. With this partnership, the program continues to offer the HWOL Index and the HWOL Data Series. HWOL data is now available on the Lightcast platform.

Description

The ***Help Wanted OnLine™*** Index serves as an indicator for understanding economic movements in the labor market. The HWOL Index measures changes over time in advertised online job vacancies. It reflects monthly trends in employment opportunities across the US. Since job advertising is usually one of the first stages in the hiring process, it represents a key barometer of employers' intentions to increase or decrease employment and the volume of goods produced or services provided. For this reason, the HWOL Index is a leading indicator of the labor market and overall economic activity.

The HWOL Index improved upon the prior HWOL Data Series' ability to assess local labor markets trends by reducing volatility and non-economic noise and improving correlations with local labor market conditions. HWOL Indices are available for the Nation, National 2-digit SOC Occupation, National 2-Digit Industry, all states, and all MSAs with data beginning in December 2005.

Help Wanted OnLine™ Data Series measures the number of total and new online job advertisements in the United States. Ads are collected in real-time (by Lightcast) from different online job boards and are deduplicated across all in-scope job boards to create the HWOL universe of online job ads. The HWOL universe is subject to an annual revision where new sources may be added, and others removed if deemed unreliable. The number of unique job ads from the HWOL universe are aggregated every month to create the HWOL Data Series of total and new ads. The total and new ads series is available

(seasonally and non-seasonally adjusted) for the Nation, Census Regions and Divisions, all States, all MSAs, and 2-6-digit SOC or 8-digit O*NET occupations with data beginning in January 2015.

Additional breakouts are made available on the Developer platform. The total and new ads series is available by all geographic areas down to the city level, 8-digit O*NET occupations, 5-digit NAICS industries, and other detailed granular breakouts including employer, skills, and job type. However, the granular series are not available seasonally adjusted.

Methodology

During 2019, ***The Conference Board Help Wanted OnLine®*** (HWOL) program partnered with Lightcast, the new sole provider of online job ad data for HWOL. Data is collected in real-time from over 45,000 online job domains covering traditional job boards, corporate boards, and social media sites to create the HWOL universe of online job ads.

The new HWOL universe is aided by Lightcast's unique methodology for how they collect, process, de-duplicate, classify, clean, and label job postings. Glassdoor and Indeed, large sources of unique and reliable job postings, are notable additions to the universe.

Job boards that are aggregators (i.e. only scrape ads from other sources, including corporate boards, and provide no unique ads) are identified and excluded to eliminate a major source of duplicate ads. Ads from staffing firms have proven to be exceptionally problematic due to their volatility and ineffectiveness in signaling actual hiring trends, and therefore are also excluded from the HWOL universe. Every month, the number of unique job ads from the HWOL universe are aggregated to create the HWOL Data Series of total and new ads.

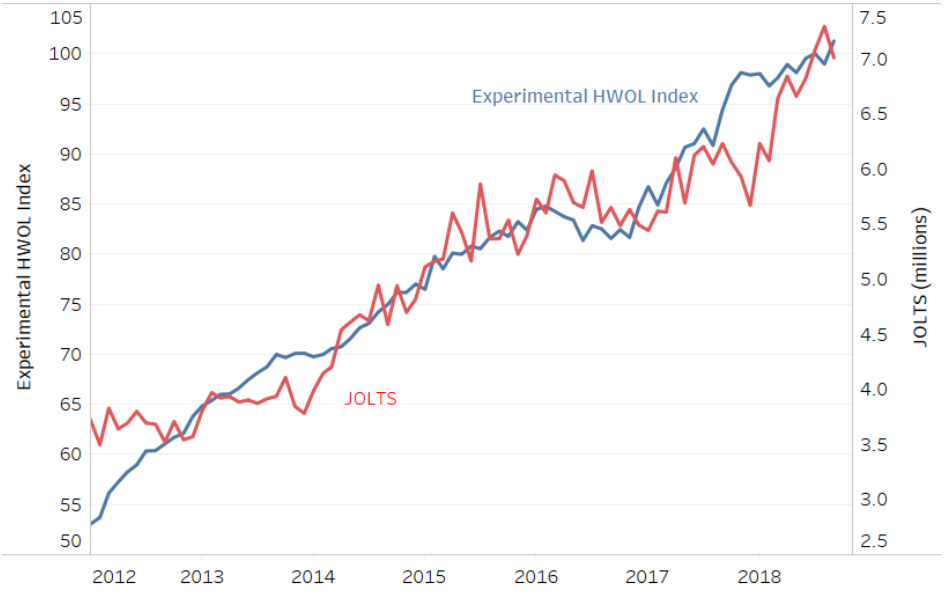
The HWOL Index aggregates month-to-month changes in the number of ads posted within each ad source from the HWOL universe, and excludes the ads contributed by new boards in each period. The HWOL Index is based on a dynamic panel of sources which is redefined each month. Ads specifically from job boards that experience unusually large movements in the previous month may be excluded to reduce the impact of non-economic noise. Anonymous ads with an unknown employer are excluded to ensure reliability of trends.

For data beginning in January 2020, the HWOL Index utilizes the Bureau of Labor Statistics' JOLTS national and state experimental data. Changes over time based on ad data are calibrated to national and state trends in the JOLTS job openings data. As a result, the index serves as a broader and more consistent indicator of labor demand over time. The HWOL Index is published in preliminary form and subject to monthly revisions and an annual revision. HWOL Index values prior to 2020 are based on job ads collected by CEB, Inc.

The Conference Board-Lightcast partnership will result in continued efforts to improve the HWOL universe of job ads by reviewing and upkeeping the collection of online job ads to ensure accuracy and representation across occupations, industries, and geography.

Reliability of Estimates

At the national level, The HWOL Index tracks well with the leading measure of job openings from the BLS Job Openings and Labor Turnover Survey (JOLTS). The HWOL Index is smoother than JOLTS, with less volatility in measuring employment opportunities across the country.



Source: The Conference Board, Bureau of Labor Statistics

The HWOL program includes most online job ads and aims to capture a universe count and is not subject to the typical sampling error and non-response error components associated with most statistical surveys. The non-sampling error sources for the HWOL program would include population under-coverage due to missing a portion of the targeted population (e.g. a large Internet job source) and over-coverage due to the inability to fully eliminate duplicate ads from survey estimates. Additional potential sources of non-sampling error would include occupational and/or geographic coding errors which could affect the proper classification of individual ads.

Data Coverage

Collection. All online advertised vacancies posted directly on internet job boards are targeted to create the HWOL universe. The HWOL program uses data collected from online job sources including traditional job boards, corporate boards, and social media sites to create a universe of online job ads. Direct collection from corporate boards (i.e. employer-specific career sites) are an important, reliable, and stable source of online job postings and are now included since the December 2018 revision. New job board sources are continuously added while some existing sources may be dropped if deemed unreliable.

Internet job sources that are aggregators (i.e. only scrape ads from other sources, including corporate boards, and provide no unique ads) are identified and removed from active collection to eliminate a major source of duplication in counting online ads. Job sources that cover smaller niche markets are also included in the HWOL program; however, smaller local job sources in an area with a limited number of ads may not be targeted for collection. Ads from staffing firms have proven to be exceptionally problematic due to their volatility and ineffectiveness in signaling actual hiring trends, and therefore are targeted for removal from the HWOL program.

Reference Period. The HWOL program uses a mid-month survey reference period. Data is aggregated from the 14th of the previous month to the 13th of the current month. This reference period is aligned to the BLS unemployment "job search" time period to provide a more accurate comparison of labor supply and labor demand in the US economy.

Deduplication. Data in the HWOL program series reflect deduplicated ads. A major issue in producing estimates of the actual level of advertised vacancies for a geographic area is the elimination of duplicate ads. There is a significant amount of ad-scraping across job sources, and there are large nationwide job boards that contain only scraped ads. The HWOL program first identifies job boards that are only aggregators of ads from other job sources and eliminates these from active collection. We then attempt to remove any remaining duplicate ads across all in-scope HWOL job boards are eliminated from published estimates. This process significantly limits the level of potential duplicates in the final estimates.

Occupational coding. The HWOL program uses the Office of Management and Budget (OMB) Standard Occupational Classification (SOC) Manual to assign an occupational code to each ad. Occupational coding is done at the 6-digit SOC level and the 8-digit O*Net level using an autocoder software. The O*Net classification of HWOL is periodically updated with new OMB revisions to the SOC manual.

Industry coding. The HWOL program uses the Office of Management and Budget (OMB) North American Industry Classification System (NAICS) to classify ads by industry.

Area coding. The area coding for an ad is determined by the location cited in the text of the ad itself. Every job posting is tagged to the most granular geography available.

Estimation. All HWOL level counts are produced as a direct sum of the locations within (i.e. a county total is a sum of the cities contained within the county and MSA total is a sum of the counties contained within the MSA). There are two exceptions: The State counts, which include "Statewide ads" and the US counts, which include both "Statewide ads" along with "Nationwide ads." Nationwide ads would appear in the national total but not in any regional, state, or metropolitan area totals.

Definitions

Job boards. The HWOL program includes traditional job boards (employment websites), corporate boards (i.e. employer-specific career sites), and social media sites that collect online job ads. Job boards that are aggregators (i.e. only scrape ads from other sources, including corporate boards, and provide no unique ads) are removed from the HWOL universe of online job ads.

New ads. New ads are all unduplicated ads which did not appear in the previous reference period. An ad is counted as "new" only in the month it first appears.

Total ads. Total ads are unduplicated ads appearing in the reference period. This figure includes both new ads and ads reposted from the previous month. HWOL imposes a 120-day expiration for all ads. If an ad is available for longer than 120 days, it is not included in the Total ads count.

Regional data. Regions are as defined by the U.S. Census Bureau.

Metropolitan area data. The Conference Board uses the 2018 Office of Management and Budget (OMB) county-based MSA for the HWOL data..

Occupational data. Occupational data use the 2018 OMB Standard Occupational Classification (SOC) system. All ads are coded to the 6-digit SOC level and 8-digit O*Net level. National data in the monthly release are at the 2-digit major occupational group level.

Industry data. Industrial data use the 2017 North American Industry Classification System (NAICS) system. Ads are coded to the 2-6-digit NAICS level. National data in the monthly release are at the 2-digit major industrial group level.

Unemployment data. The unemployment and labor force data used in this release come from the BLS Current Population Survey (CPS) and the Local Area Unemployment Statistics (LAUS) program. Taken together, both programs provide a timely and accurate profile of labor force information for the nation and all major levels of geographic detail.

BLS Job Openings Data. The BLS publishes monthly job openings data from its Job Openings and Labor Turnover Survey (JOLTS). This program provides a broad national picture of hiring activity, which includes openings, hires and separations.

Seasonal Adjustment. The HWOL program uses the Census Bureau's X-12 seasonal adjustment software to annually update the seasonal adjustment factors for each of the publication time series. The new seasonally adjusted series are released with the publication of each year's January data.

HWOL Annual Revision. With the March 2023 press release, the HWOL program has incorporated its annual revision, which helps ensure the accuracy and consistency of the HWOL Data Series. This year's annual revision includes updates to the Occupational coding, the Industry coding, and the Geography coding for the HWOL Data Series from January 2015-forward.

In May 2023, Lightcast experienced a technical error with the deduplication of the new data. This resulted in an update to remove duplicate job postings in HWOL data on the platform. HWOL data files were not affected by Lightcast's technical errors.

In June 2023, Lightcast and The Conference Board identified a technical coding error in the HWOL Data Series. The HWOL Data Series was historically revised from January 2015-present with the release of the May 2023 data.

For detailed information, please review the HWOL changelog.

The underlying data for ***The Conference Board-Lightcast Help Wanted OnLine®*** Program is collected by Lightcast.