

## Job Seekers Display Striking Propensity to Target New Vacancy Postings

This edition of *DHI Hiring Indicators* continues to explore the **DHI Vacancy and Application Flow Database** for new insights about labor market behavior. Section I highlights several key results. Section II describes the DHI Database and uses it to develop new statistics on application flows and vacancy postings. Section III presents statistics on vacancy duration and recruiting intensity based on the Job Openings and Labor Turnover Survey. Section IV provides additional information about the *DHI Hiring Indicators* and DHI Group, Inc.

### I. Highlights

1. The **DHI Vacancy and Application Flow Database** links 60 million applications to nearly 7 million vacancy posting since January 2012. This report focuses on postings for single-position openings.
2. Job seekers display a striking propensity to target new vacancy postings: 39 percent of applications flow to vacancies posted in the last 48 hours, and 54 percent go to those posted in the last 96 hours.
3. Vacancy postings for single-position openings are typically short lived, with a mean duration of 9.1 days. Only 20 percent of single-position postings stay active online for more than two weeks.
4. Applications received fall rapidly as a vacancy posting ages: The daily application rate falls by half from the first to the second day online, and it falls by two-thirds within one week.
5. The **DHI-DFH Mean Vacancy Duration Measure** fell to 28 working days in August, 0.4 days below a revised value of 28.4 days in July.
6. The **DHI-DFH Recruiting Intensity Index** was 1.02 in August, unchanged from its revised level in July.

“Online job seekers flock to newly posted vacancies. That may not surprise hiring managers and recruiters, but it is at odds with leading economic models of the labor market search and matching process,” said Dr. Steven Davis, William H. Abbott Professor of International Business and Economics at the University of Chicago Booth School of Business. “Last month’s edition of the *DHI Hiring Indicators* showed that job seekers are more active early in the workweek and less active late in the month. This month’s report shows that job seekers also display a striking propensity to target newly posted vacancies. Hiring managers and recruiters may want to consider these temporal patterns in choosing when to post new job vacancies.” Davis is a co-developer of the DHI Database and co-creator of the DHI-DFH Mean Vacancy Duration Measure and Recruiting Intensity Index.

“Candidates with specialized skills have a unique position in today’s job market, creating competition among employers who need their particular skillset,” said Michael Durney, President and CEO of DHI Group, Inc. “While sourcing is an integral part of finding top talent, hiring managers who swiftly respond to applications will have an advantage over competitors who choose to post and pray.”

## ***II. Results Based on the DHI Vacancy and Application Flow Database***

The **DHI Vacancy and Application Flow Database** links daily application flows to millions of online vacancy postings. The raw data come from DHI Group, Inc., which owns and operates several specialized online platforms for posting job vacancies and attracting applications. Employer-side clients of these platforms comprise organizations that directly hire their own employees, recruitment firms that solicit applicants for third parties, and staffing firms that hire workers to lease to other firms. Vacancy postings are concentrated in technology sectors, software development, other computer-related occupations, engineering, financial services, business and management consulting, and a variety of other professional occupations.

Currently, the DHI Database contains nearly 7 million unique vacancy postings from more than 50,000 employer-side clients.<sup>1</sup> These vacancy postings have attracted nearly 60 million applications since January 2012.<sup>2</sup> More than half of the applications went to positions posted by recruitment and staffing firms.

Nearly 80 percent of postings in the DHI Database fit a “standard” pattern: (a) The client posts a vacancy, (b) most applications arrive within the first week or two after posting, and (c) the client permanently removes the posting within one month. Other postings do not conform to this pattern; instead, they remain online for many weeks or months, and applications flow in over time. The vast majority of these “long-duration” postings reflect employers with recurring hiring needs for certain positions and recruiting firms that more or less continuously seek applicants for certain types of jobs.<sup>3</sup> In other words, each long-duration posting typically involves multiple job openings rather than a single position. The rest of Section II in this report restricts attention to standard postings, each of which typically pertains to a single job position.

Figure II.1 displays the distribution of applications over vacancy postings by elapsed time since the posting first became active, i.e., visible to job seekers. We group the applications into 24-hour intervals defined by the posting age of the vacancy at the time of application. For example, “1” on the horizontal scale in Figure II.1 refers to applications that flow to vacancies within their first 24 hours online, “2” refers to applications that flow to vacancies during their second 24 hours online, and so on.

As seen in Figure II.1, job seekers exhibit a striking propensity to target new and recently posted vacancies: 39 percent of applications flow to vacancies posted within the last 48 hours, and 54 percent go to those posted in the last 96 hours. Older postings attract relatively few applications.

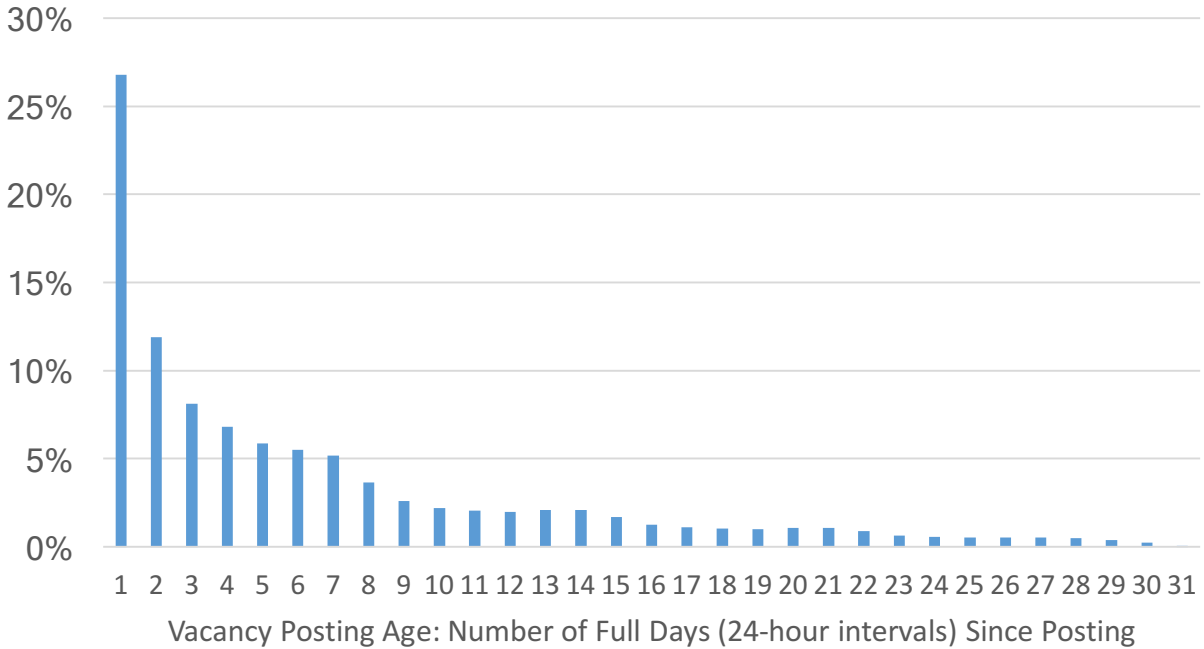
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<sup>1</sup> Currently, the DHI Database draws mainly from DHI’s Dice.com platform. Other DHI platforms include [eFinancialCareers](#), [Biospace](#), [Rigzone](#), [ClearanceJobs](#), [Health eCareers.com](#), and [Hcareers](#). Analysis of the DHI Database in this report draws on “Application Flows” by Steven J. Davis and Brenda Samaniego de la Parra.

<sup>2</sup> When posting a vacancy, the DHI client decides whether job seekers must file an application via email through the DHI platform or through an external URL operated by the client or a third party. In the first case, the DHI database records the number of completed email applications. In the second case, the database records how often job seekers click through to the external URL. We pool these two classes of vacancies and applications in this report.

<sup>3</sup> A small number of long-duration postings arise from single-position job vacancies that take many weeks or months to fill. This situation is rare in the DHI Database. See “Application Flows” by Davis and Samaniego de la Parra for more information about the distinction between standard and long-duration postings.

Figure II.1. The Distribution of Applications by Vacancy Posting Age, January 2012 to July 2016



One reason fewer applications flow to older postings is because there are fewer of them. Only 20 percent of standard postings in the DHI Database stay active for more than two weeks. To account for this fact, we also consider the relationship of application numbers to time online from a different angle. Specifically, Figure II.2 shows how daily applications per vacancy vary with elapsed time since posting. Vacancy postings receive, on average, 1.38 applications within their first 24 hours online, 0.68 postings in their second 24 hours online, and even fewer per 24-hour interval as they age further.

Figure II.2. Mean Daily Applications Per Vacancy by Posting Age, January 2012 to July 2016

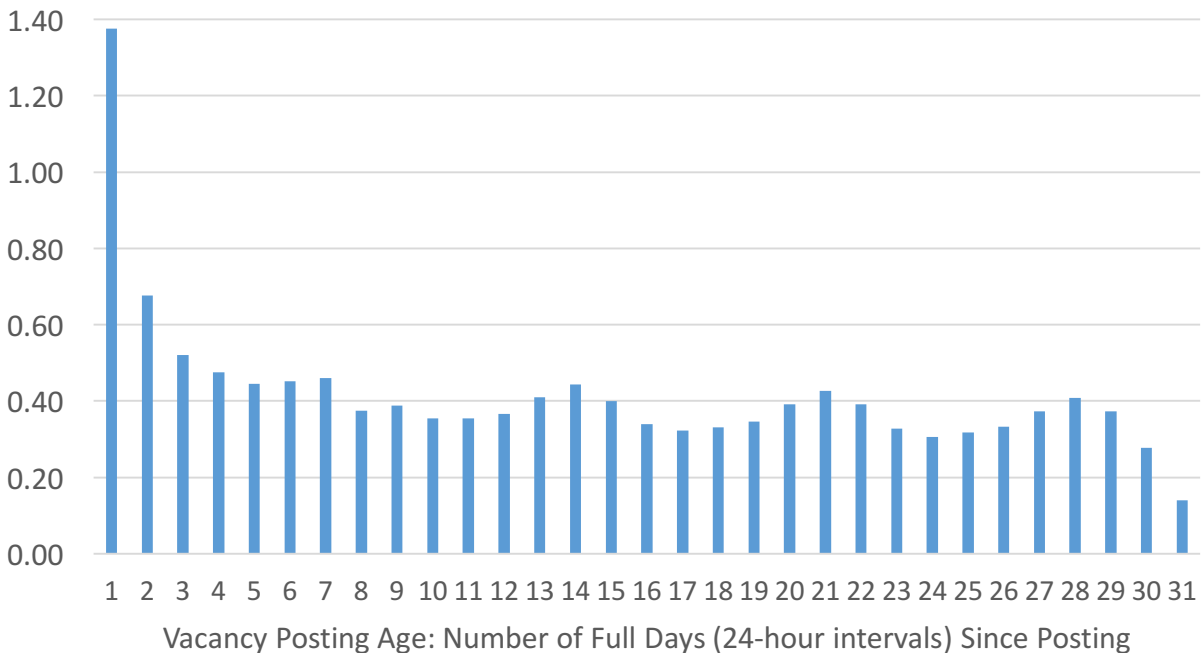
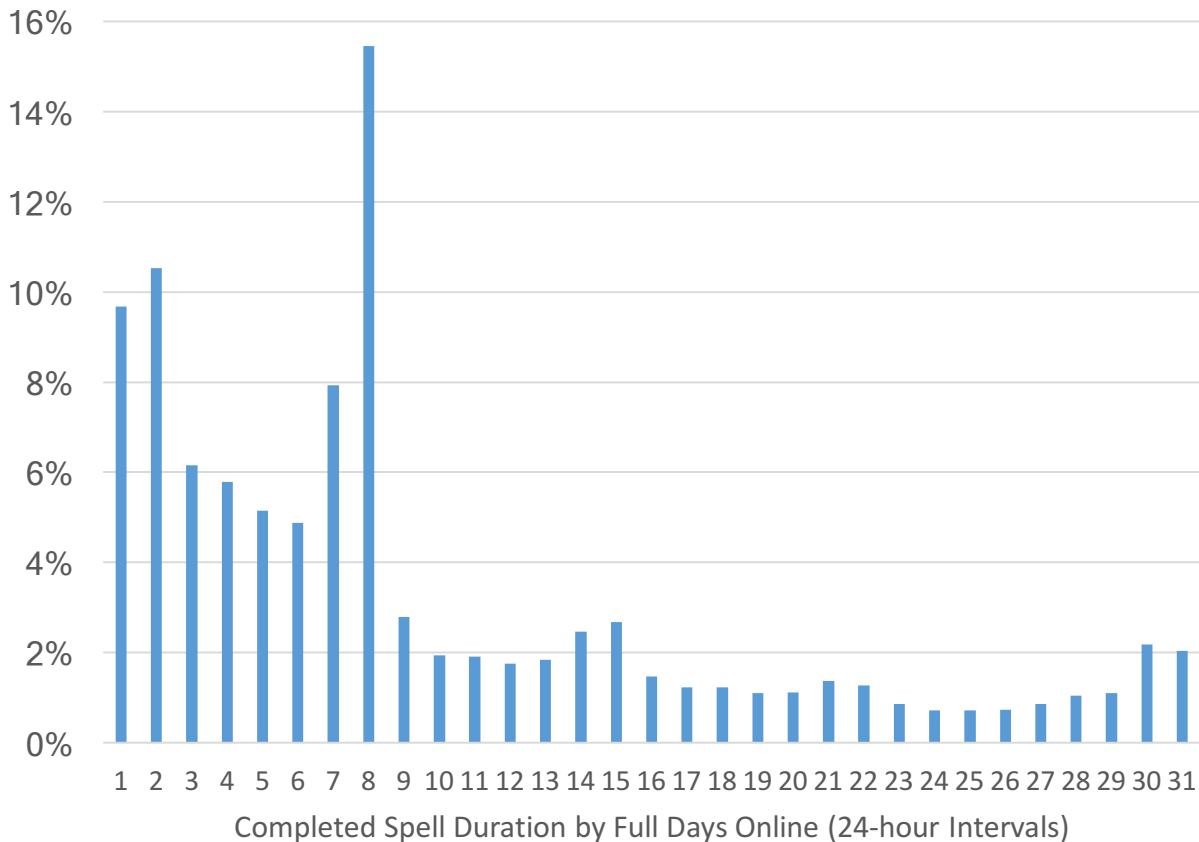


Figure II.3 displays the distribution of completed spell durations for standard postings in the DHI Database. We measure duration by the amount of time from initial posting to final removal of the vacancy posting, and we group these duration observations into 24-hour intervals. The figure reveals that only 20 percent of postings remain active for more than two weeks. The mean completed spell duration for standard vacancy postings is 9.1 days.

Figure II.3. The Distribution of Completed Spell Durations, Standard Vacancy Postings, January 2012 to July 2016



The posting duration measure in Figure II.3 differs conceptually from the JOLTS-based **DHI-DFH Vacancy Duration Measure** reported in Section III below. The latter measure quantifies the mean number of working days taken to fill vacant job positions, which involves more than soliciting and accepting applications. It also involves screening and interviewing applicants, selecting an applicant for a job offer, extending an offer, negotiating terms, and waiting for a decision to accept or reject the offer. In this light, it is reassuring that the mean posting duration of 9.1 days in the DHI Database is much shorter than the mean JOLTS-based vacancy duration. From January 2012 to June 2016, the mean JOLTS-based vacancy duration is 42.5 days for the Information sector and 44.2 for Professional & Business Services, which are the closest JOLTS counterparts to the coverage in the DHI Database.<sup>4</sup>

<sup>4</sup> We calculated these vacancy duration figures from the statistical release that accompanies the August 2016 edition of the DHI Hiring Indicators Report at <http://dhihiringindicators.com/data-charts/>. That report contains mean vacancy duration statistics measured in working days, which we converted to calendar days by multiplying by (7/6).

### III. Results Based on the Job Openings and Labor Turnover Survey

The **DHI-DFH Mean Vacancy Duration Measure** fell to 28 working days in August, 0.4 days below a revised value of 28.4 days in July and 1.5 days lower than its historical high in April 2016. Figure III.1 shows the evolution of the mean vacancy duration in the United States since 2001. The vacancy duration measure in Figure III.1 reflects the vacancy concept in the Job Openings and Labor Turnover Survey (JOLTS). Specifically, a job opening gets “filled” according to JOLTS when a job offer for the open position is accepted. So the vacancy duration statistics refer to the average length of time required to fill open positions. Typically, there is also a lag between the fill date and the new hire’s start date on the new job.

Figure III.2 displays four other indicators of labor market slack alongside the mean vacancy duration. All five measures show a pronounced tightening of U.S. labor markets since 2009. Three of the measures – mean vacancy duration, the vacancy-unemployment ratio, and the ratio of vacancies to the number of persons unemployed for 26 weeks or less – now exceed their peak values prior to the recession of 2008-2009. The post-recession rise in the mean vacancy duration is especially pronounced.

Figure III.1. DHI-DFH Measure of National Mean Vacancy Duration, January 2012 to August 2016

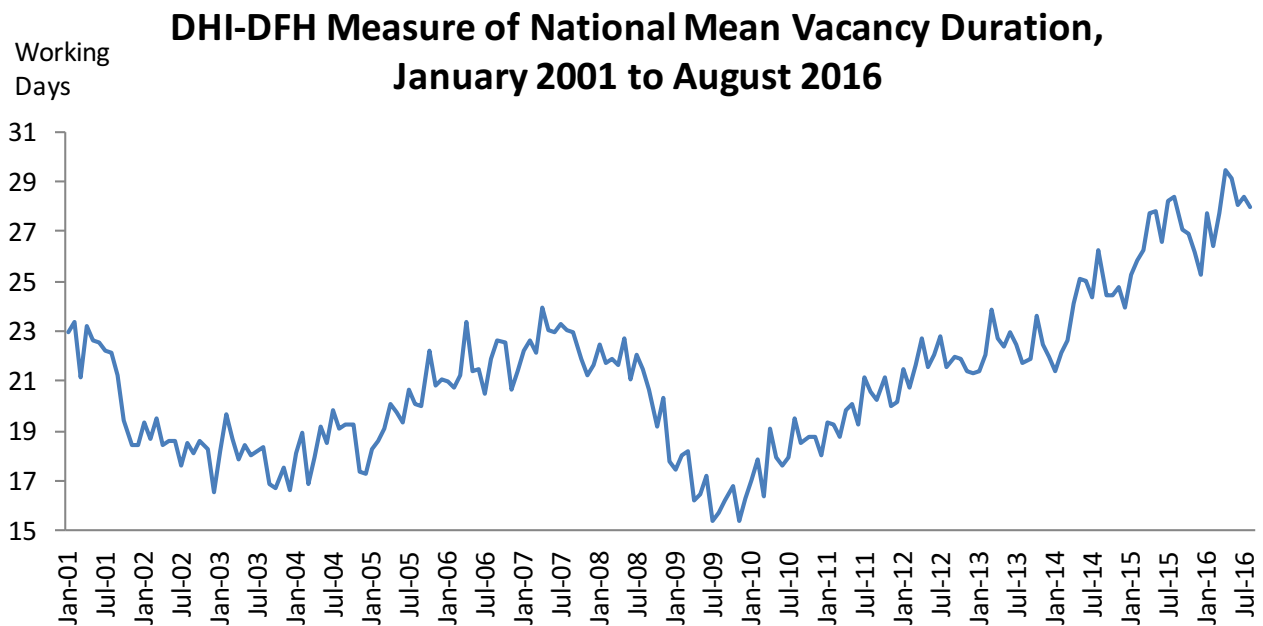
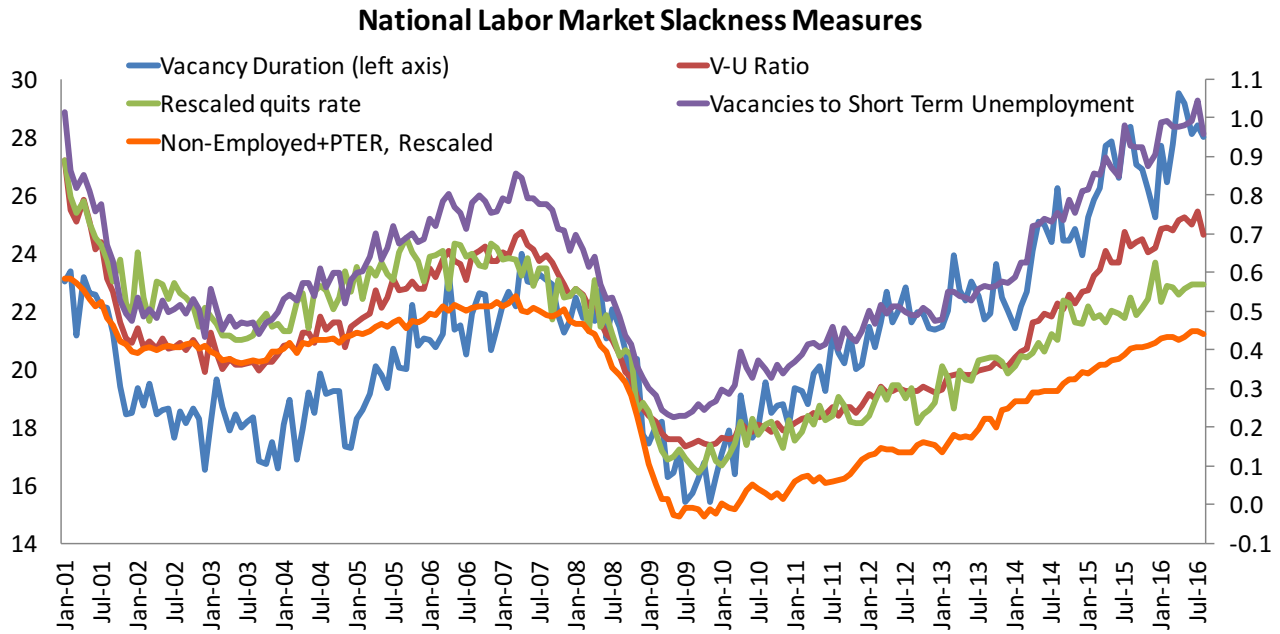


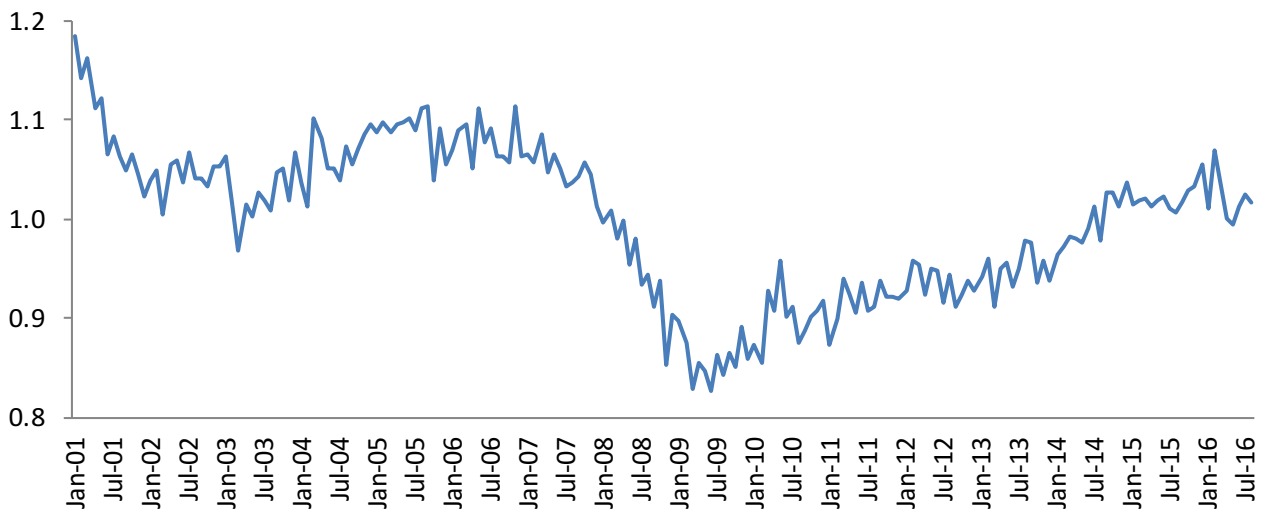
Figure III.2. National Labor Market Slackness Measures, January 2012 to August 2016



The **DHI-DFH Recruiting Intensity Index**, plotted in Figure III.3, was 1.02 in August, unchanged from its revised level in July.

Figure III.3. DHI-DFH Index of Recruiting Intensity per Vacancy, January 2012 to August 2016

**DHI-DFH Index of Recruiting Intensity Per Vacancy,  
January 2001 to August 2016**



Tables III.1 and III.2 below report industry-level statistics for vacancy duration and recruiting intensity per vacancy, respectively.

Table III.1. DHI-DFH Measure of Mean Vacancy Duration by Industry and Time Period, No. of Working Days, January 2012 to August 2016

Mean Vacancy Duration (Number of Working Days)									
By Industry and Time Period									
	2001 to 2003	2004 to 2006	2008	2009	2010 to 2012	2013	2014	2015	Jan.-Aug. 2016
Resources	12.0	14.0	18.1	13.5	18.7	17.3	22.5	16.5	13.4
Construction	7.9	8.8	7.3	4.3	6.1	9.5	10.9	11.5	15.4
Manufacturing	17.4	20.9	21.6	13.8	23.4	28.4	29.2	30.6	33.6
Wholesale and Retail Trade	14.2	15.8	15.5	13.1	15.9	19.8	18.6	20.6	22.9
Warehouse, Trans. & Utilities	18.6	17.0	20.6	11.3	18.2	22.5	23.9	28.0	29.9
Information	25.8	36.0	34.4	23.4	40.9	36.5	36.7	35.3	31.2
Financial Services	28.0	32.1	27.6	25.7	33.3	36.2	37.3	43.0	42.2
Professional and Business Services	18.3	19.9	21.3	16.6	18.8	19.6	21.9	26.5	26.4
Education	21.3	25.0	22.0	18.5	21.1	23.8	26.6	31.2	29.2
Health Services	39.1	35.8	36.4	29.8	33.5	34.6	38.4	45.0	47.8
Leisure and Hospitality	13.7	14.8	14.9	10.4	13.3	16.6	19.3	19.7	19.8
Other Services	22.5	18.6	25.2	16.9	18.9	20.0	20.8	21.9	29.7
Government	33.2	30.7	35.7	32.2	33.0	35.9	37.7	38.0	36.9
Non-Farm	19.3	20.0	21.1	16.6	20.0	22.5	24.1	26.8	28.1

Table III.2. DHI-DFH Recruiting Intensity Index by Industry and Time Period, January 2012 to August 2016

Recruiting Intensity Index									
By Industry and Time Period									
	2001 to 2003	2004 to 2006	2008	2009	2010 to 2012	2013	2014	2015	Jan.-Aug. 2016
Resources	0.99	1.06	1.05	0.70	1.00	0.98	1.04	0.92	0.97
Construction	1.07	1.04	0.89	0.90	1.01	0.94	0.89	0.88	0.86
Manufacturing	1.02	1.09	0.95	0.85	0.94	0.88	0.92	0.92	0.95
Wholesale and Retail Trade	1.05	1.10	0.96	0.84	0.89	0.94	1.04	1.04	1.03
Warehouse, Trans. & Utilities	0.96	1.13	0.94	0.92	0.96	1.01	1.11	1.10	1.01
Information	1.10	1.08	0.87	0.83	0.91	1.06	1.10	1.15	1.12
Financial Services	1.06	1.09	0.99	0.84	0.87	0.99	0.95	0.95	0.97
Professional and Business Services	1.08	1.07	0.90	0.83	0.94	0.96	1.00	1.01	1.01
Education	1.00	0.99	1.04	0.96	0.99	0.94	1.00	1.00	1.06
Health Services	1.08	1.04	1.01	0.93	0.89	0.92	0.96	1.01	0.99
Leisure and Hospitality	1.08	1.08	0.97	0.84	0.88	0.92	0.96	1.00	1.02
Other Services	1.02	1.07	0.94	0.96	0.95	0.98	0.96	1.04	0.95
Government	1.05	1.05	0.94	0.87	0.93	0.93	0.99	1.09	1.13
Non-Farm	1.05	1.08	0.95	0.86	0.92	0.95	1.00	1.02	1.02

#### **IV. About the DHI Hiring Indicators**

The creation of the **DHI Vacancy and Application Flow Database** is a cooperative effort between DHI Group, Inc. and two researchers at the University of Chicago, Professor Steven J. Davis and Brenda Samaniego de la Parra, a Ph.D. student. Their research paper on “Application Flows” contains additional information about the DHI Database and the analysis of the data in this report.

The **DHI-DFH Recruiting Intensity Index** quantifies the effective intensity of recruiting efforts per vacancy by employers with vacant job positions. The index is normalized to an average value of 1.0 for the period from January 2001 to December 2012. It complements the monthly [Job Openings Rate](#) produced by the U.S. Bureau of Labor Statistics (BLS) from the [Job Openings and Labor Turnover Survey](#).

The pace of new hires in the economy depends on the number and types of job seekers, the number and types of job vacancies, and employer actions that affect how quickly vacant jobs are filled. These actions include the choice of recruiting methods, expenditures on help-wanted ads, how rapidly employers screen job applicants, hiring standards, and the attractiveness of compensation packages offered to prospective new hires. The BLS Job Openings Rate captures the availability of job vacancies in the economy, while the **DHI-DFH Recruiting Intensity Index** captures the intensity of employer efforts to fill those vacancies. The index is available at the national, regional and industry levels and by establishment size class (number of employees).

The index construction follows the method developed by Steven J. Davis, R. Jason Faberman and John Haltiwanger (DFH) in “[The Establishment-Level Behavior of Vacancies and Hiring](#),” published in the May 2013 issue of the *Quarterly Journal of Economics*, and extended to industry and regional indices in “[Recruiting Intensity during and after the Great Recession: National and Industry Evidence](#),” published in the May 2012 issue of the *American Economic Review*.

The **DHI-DFH Vacancy Duration Measure** quantifies the average number of working days taken to fill vacant job positions. It supplements other measures often used to assess the tightness of labor market conditions such as the ratio of vacant jobs to unemployed workers.

Vacancy durations depend on the relative numbers of job seekers and job vacancies, the recruiting and search methods available to employers and job seekers, employer recruiting intensity per vacancy, the search intensity of job seekers, and the degree to which the requirements of jobs on offer match the skills, locations and preferences of job seekers. Other things equal, a larger ratio of job vacancies to job seekers yields longer vacancy durations.

The **DHI-DFH Vacancy Duration Measure** follows the method developed by Steven J. Davis, R. Jason Faberman and John Haltiwanger (DFH) in “[The Establishment-Level Behavior of Vacancies and Hiring](#),” published in the May 2013 issue of the *Quarterly Journal of Economics*. That method combines a simple model of hiring dynamics with data on hires and vacancies from the [Job Openings and Labor Turnover Survey](#) (JOLTS) conducted by the U.S. Bureau of Labor Statistics. Using their model and the JOLTS data, DFH estimate an average daily job-filling rate for vacant job positions in each month. Taking the reciprocal of the daily job-filling rate yields the **DHI-DFH Vacancy Duration Measure**, which is available at the national, regional and industry levels and by establishment size class.

The average daily job-filling rate is closely related to the “vacancy yield,” the ratio of hires during the month to the stock of vacancies on the last business day of the previous month. Unlike the vacancy yield, however, the daily job-filling rate (and the **DHI-DFH Vacancy Duration Measure**) adjusts for job vacancies that are posted



and filled within the month. Working days are defined as Mondays through Saturdays, excluding major national holidays.

### **About DHI Group, Inc.**

DHI Group, Inc. (NYSE: DHX) is a leading provider of data, insights and connections through our specialized services for professional communities including technology and security clearance, financial services, energy, healthcare and hospitality. Our mission is to empower professionals and organizations to compete and win through expert insights and relevant employment connections. Employers and recruiters use our websites and services to source and hire the most qualified professionals in select and highly-skilled occupations, while professionals use our websites and services to find the best employment opportunities in and the most timely news and information about their respective areas of expertise. For over 25 years, we have built our company on providing employers and recruiters with efficient access to high-quality, unique professional communities, and offering the professionals in those communities access to highly-relevant career opportunities, news, tools and information. Today, we serve multiple markets located throughout North America, Europe, the Middle East and the Asia Pacific region.

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