

# Glassdoor Economic Research: The Value of Unfilled U.S. Online Jobs

## SUPPLEMENT DATA & METHODOLOGY

By Dr. Andrew Chamberlain, Glassdoor Chief Economist

### OVERVIEW

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Glassdoor now features base salary estimates in [job listings](#) fueled by our proprietary data science algorithm based on millions of salary reports. Coinciding with this product improvement, we asked the question: With approximately 5.1 million open jobs online in the U.S. on Glassdoor, what is the total value — or sum of all these potential salaries — that is being left on the table? Using the Glassdoor data science model for salary estimates, we were able to put an annual median base salary estimate to each of these open jobs, then sum them together to find that the total value of unfilled U.S. jobs is more than \$272 billion.

We also broke this data down by industry, state, metro and job title. In this supplement, you'll find additional data revealing some of the highest and lowest values of unfilled jobs across these four categories. Further below the data, we've also included the full methodology.

[Learn more](#) about how salary estimates in job listings are calculated. For additional data or questions, please email [pr@glassdoor.com](mailto:pr@glassdoor.com).

### BY INDUSTRY

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Among 25 industries analyzed, the top 5 industries with the highest and lowest values for unfilled jobs are:

#### Top 5: Highest Value

1. Healthcare  
Open Jobs: 797,036  
Economic Value: \$45,193,404,413
2. Business Services  
Open Jobs: 657,632  
Economic Value: \$39,388,290,303
3. Retail  
Open Jobs: 787,372  
Economic Value: \$31,337,539,323
4. Transportation & Logistics  
Open Jobs: 506,763  
Economic Value: \$29,502,105,983
5. Information Technology  
Open Jobs: 263,586  
Economic Value: \$20,989,437,802

#### Top 5: Lowest Value

1. Mining & Metals  
Open Jobs: 2,315  
Economic Value: \$132,191,346
2. Agriculture & Forestry  
Open Jobs: 6,687  
Economic Value: \$365,420,408
3. Real Estate  
Open Jobs: 32,928  
Economic Value: \$1,654,167,954
4. Non-Profit  
Open Jobs: 42,026  
Economic Value: \$2,050,577,141
5. Media  
Open Jobs: 34,401  
Economic Value: \$2,278,449,084

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### BY METRO

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Among more than 700 U.S. metros analyzed, the top 10 metros with the highest and lowest values for unfilled jobs are:

#### Top 10: Highest Value

1. New York City, NY  
Open Jobs: 266,884  
Economic Value: \$16,834,950,684
2. Washington, DC  
Open Jobs: 166,784  
Economic Value: \$10,972,250,051
3. Los Angeles, CA  
Open Jobs: 174,569  
Economic Value: \$10,351,576,551
4. Chicago, IL  
Open Jobs: 166,155  
Economic Value: \$9,292,022,101
5. San Francisco, CA  
Open Jobs: 115,800  
Economic Value: \$8,531,439,960
6. Boston, MA  
Open Jobs: 122,126  
Economic Value: \$7,710,356,991
7. Seattle, WA  
Open Jobs: 95,250  
Economic Value: \$6,783,204,806
8. Dallas, TX  
Open Jobs: 125,315  
Economic Value: \$6,580,729,485
9. Philadelphia, PA  
Open Jobs: 105,046  
Economic Value: \$5,848,739,811
10. Atlanta, GA  
Open Jobs: 98,187  
Economic Value: \$5,238,658,645

#### Top 10: Lowest Value

1. Tallulah, LA  
Open Jobs: 101  
Economic Value: \$3,889,653
2. Lamesa, TX  
Open Jobs: 96  
Economic Value: \$4,218,475
3. Andrews, TX  
Open Jobs: 114  
Economic Value: \$4,734,587
4. Raymondville, TX  
Open Jobs: 106  
Economic Value: \$4,860,018
5. Clewiston, FL  
Open Jobs: 135  
Economic Value: \$6,107,892
6. Pierre Part, LA  
Open Jobs: 142  
Economic Value: \$6,378,487
7. Yazoo City, MS  
Open Jobs: 142  
Economic Value: \$6,655,334
8. West Point, NY  
Open Jobs: 159  
Economic Value: \$6,737,559
9. Vermillion, SD  
Open Jobs: 179  
Economic Value: \$7,158,843
10. McMinnville, TN  
Open Jobs: 146  
Economic Value: \$7,172,727

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### BY STATE

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Among 50 U.S. states analyzed, the top 10 states with the highest and lowest values for unfilled jobs are:

#### Top 10: Highest Value

1. California  
Open Jobs: 542,538  
Economic Value: \$34,424,941,711
2. Texas  
Open Jobs: 374,931  
Economic Value: \$18,845,250,284
3. New York  
Open Jobs: 257,623  
Economic Value: \$15,566,625,075
4. Illinois  
Open Jobs: 234,701  
Economic Value: \$12,804,481,815
5. Pennsylvania  
Open Jobs: 235,535  
Economic Value: \$12,552,325,502
6. Florida  
Open Jobs: 262,326  
Economic Value: \$12,384,542,385
7. Virginia  
Open Jobs: 177,231  
Economic Value: \$10,314,328,210
8. Massachusetts  
Open Jobs: 155,449  
Economic Value: \$9,563,182,494
9. Ohio  
Open Jobs: 185,947  
Economic Value: \$9,072,764,729
10. Washington  
Open Jobs: 132,372  
Economic Value: \$8,910,418,861

#### Top 10: Lowest Value

1. Wyoming  
Open Jobs: 7,825  
Economic Value: \$379,864,272
2. Vermont  
Open Jobs: 9,698  
Economic Value: \$502,722,049
3. South Dakota  
Open Jobs: 11,238  
Economic Value: \$512,190,819
4. North Dakota  
Open Jobs: 11,028  
Economic Value: \$533,064,870
5. Alaska  
Open Jobs: 9,710  
Economic Value: \$561,307,845
6. Montana  
Open Jobs: 12,662  
Economic Value: \$583,745,666
7. Hawaii  
Open Jobs: 13,871  
Economic Value: \$705,238,616
8. Idaho  
Open Jobs: 16,351  
Economic Value: \$792,117,944
9. Delaware  
Open Jobs: 15,924  
Economic Value: \$853,392,188
10. Rhode Island  
Open Jobs: 16,474  
Economic Value: \$873,623,798

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### BY JOB TITLE

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Among more than 2,500 job titles analyzed, here is a selection of 10 of the highest and lowest values for unfilled jobs (of those with at least 200 job openings in the U.S.):

#### Top 10: Highest Value

1. Registered Nurse  
Open Jobs: 56,188  
Economic Value: \$3,500,955,526

2. Physical Therapist  
Open Jobs: 32,073  
Economic Value: \$2,249,184,762

3. Software Engineer  
Open Jobs: 13,198  
Economic Value: \$1,296,871,985

4. Restaurant Manager  
Open Jobs: 28,777  
Economic Value: \$1,279,338,433

5. Sales Associate  
Open Jobs: 49,411  
Economic Value: \$1,116,009,132

6. Pharmacy Technician  
Open Jobs: 30,946  
Economic Value: \$885,816,075

7. Physician  
Open Jobs: 2,519  
Economic Value: \$642,394,321

8. Systems Engineer  
Open Jobs: 6,769  
Economic Value: \$606,424,461

9. Psychiatrist  
Open Jobs: 3,093  
Economic Value: \$569,533,129

10. Customer Service Representative  
Open Jobs: 19,685  
Economic Value: \$534,931,355

#### Top 10: Lowest Value

1. Car Salesman  
Open Jobs: 305  
Economic Value: \$9,362,912

2. Admissions Counselor  
Open Jobs: 246  
Economic Value: \$9,711,141

3. News Reporter  
Open Jobs: 248  
Economic Value: \$10,383,730

4. HR Associate  
Open Jobs: 201  
Economic Value: \$10,570,416

5. Editorial Assistant  
Open Jobs: 265  
Economic Value: \$10,936,596

6. Teaching Assistant  
Open Jobs: 367  
Economic Value: \$11,679,371

7. Public Relations Specialist  
Open Jobs: 210  
Economic Value: \$12,090,637

8. Pastor  
Open Jobs: 284  
Economic Value: \$12,975,788

9. Flight Instructor  
Open Jobs: 235  
Economic Value: \$13,362,793

10. Chauffeur  
Open Jobs: 449  
Economic Value: \$13,811,038

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### METHODOLOGY: ESTIMATED VALUE OF UNFILLED U.S. JOBS

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The value of unfilled U.S. jobs is based on unique, online jobs that are open, direct from employers, in the U.S. on Glassdoor as of December 9, 2016. Glassdoor's proprietary machine learning algorithm that fuels [salary estimates](#), based on millions of salary reports, was used to calculate the annual median base salary estimate for each open job. Annual median base salary estimates for each open job were then summed together to determine total value.

#### How we determined number of open jobs (job listings):

This analysis is based on unique, open "direct employer" online jobs in the U.S. on Glassdoor, as of December 9, 2016. Total count is 5,086,512 open jobs.

#### How we determined salary estimates for open jobs in which there is enough data:

- Salary estimates are generated by Glassdoor using base salary data from millions of U.S. employees and third-party sources using patent-pending machine learning algorithms. Salary estimates factor in recent user-generated salary reports for similar job titles at the company, its competitors and other employers for a specific location.
- Note, salary estimates are estimates, derived from patent-pending machine learning algorithms. At this time, the median error (as measured by the difference between an estimated base salary and a user generated salary for a comparable role) of our base salary estimates is about 13.5%.

#### How we determined salary estimates for open jobs in which there is not enough data using Glassdoor's salary estimates model:

- For 82% of the open jobs in the sample, we were able to use Glassdoor's proprietary algorithm fueling salary estimates to designate an annual median base pay amount to each open job.

*Note, because we looked at a high-quality sample of open online U.S. jobs on Glassdoor that are from known employer sources, this percentage is higher than the overall coverage for salary estimates in job listings on Glassdoor, which includes jobs from all sources including job boards.*

- For the remaining 18% of the sample, our official salary estimates model was not able to generate a base salary amount for them, because they are missing an employer, metro, or other critical field needed to generate a reliable salary estimate.
- To estimate missing salaries for this 18% of the sample, Glassdoor's Chief Economist built and used a linear regression model that predicts median base pay, based on which U.S. state the job opening is based in (known as state "fixed effects").
- Using this model, estimated values (annual base salaries) were then designated for these open jobs.

#### MORE GLASSDOOR ECONOMIC RESEARCH:

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