

## Abstract

Labor market mismatch is an important measure of the health of the economy but is notoriously hard to measure since it requires information on both employer needs and job seeker characteristics. In this paper we use data from a large online job search website which has detailed information on both sides of the labor market. Mismatch is measured as the dissimilarity between the distribution of job seekers across a set of predefined categories and the distribution of job vacancies across the same categories. We produce time series measures of mismatch for the US and a set of English-speaking countries from January of 2014 through December of 2019. **We find that title-level mismatch is substantial, with about 33% of the labor force needing to change job titles for the US to have zero mismatch in 2019, but that it declined from 40% in 2014 as the labor market has tightened.** Furthermore, over the same time period, the mix of job opportunities has shifted substantially, but in a way that has made the overall distribution of jobs more similar to the distribution of job seekers. We interpret this finding as evidence that **mismatch between job seekers and employers eased due to jobs coming back** in the slow recovery after the Great Recession.

## Data Source

Indeed is the **#1 job site in the world** (comScore Total Visits, March 2019) with **over 250 million unique visitors every month** (Google Analytics, Unique Visitors, September 2018).

Indeed aggregates jobs from everywhere on the internet for over 60 sites globally. We focus on 7 English-speaking countries: the US plus Australia, Canada, Ireland, New Zealand, Singapore, and the UK (results similar across countries, so only US on poster).

In February of 2019 comScore estimated that 73% of US online job seekers search for jobs on Indeed (per month).

## Mismatch Formula

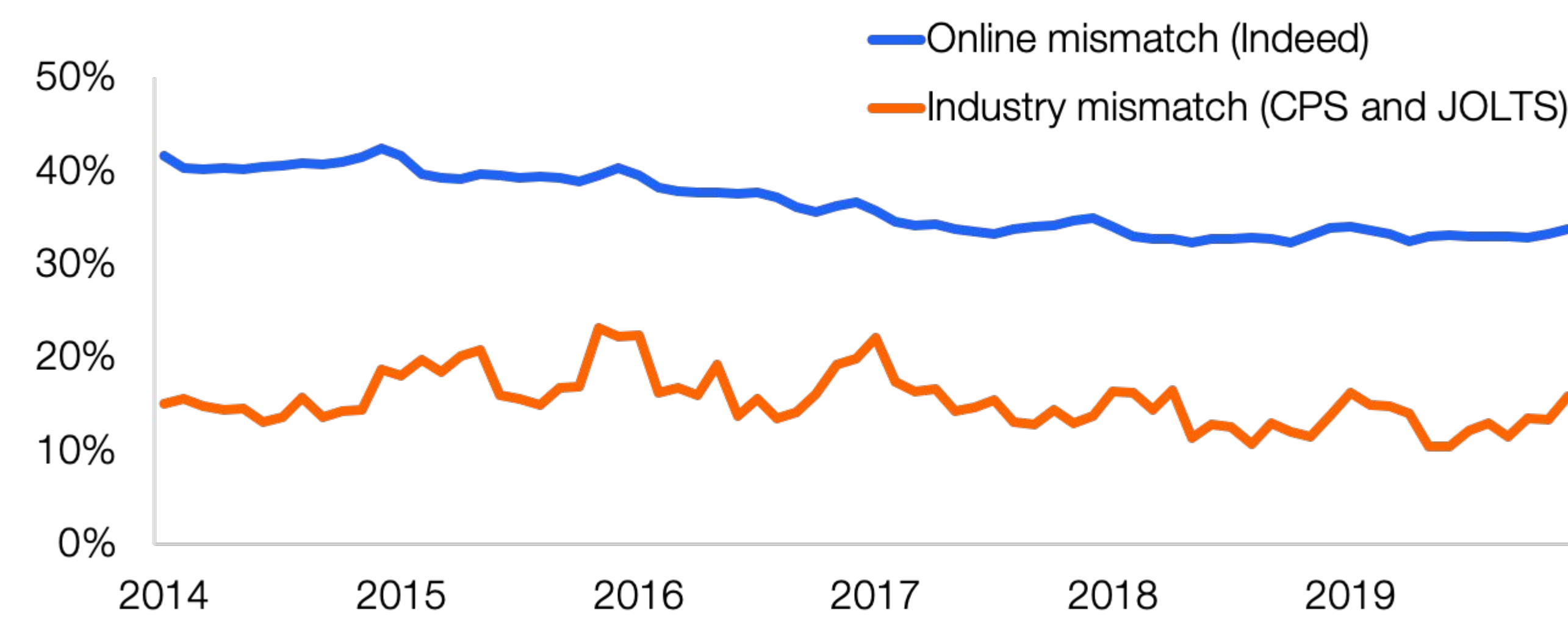
Mismatch: Comparing the distribution of job **seekers (S)** with the distribution of job **vacancies (V)**

$$\frac{1}{2} \sum_i \left| \frac{S_i}{S} - \frac{V_i}{V} \right|$$

Units: percentage of **job seekers** that would need to change categories for all categories to have the same **S/V** ratio.

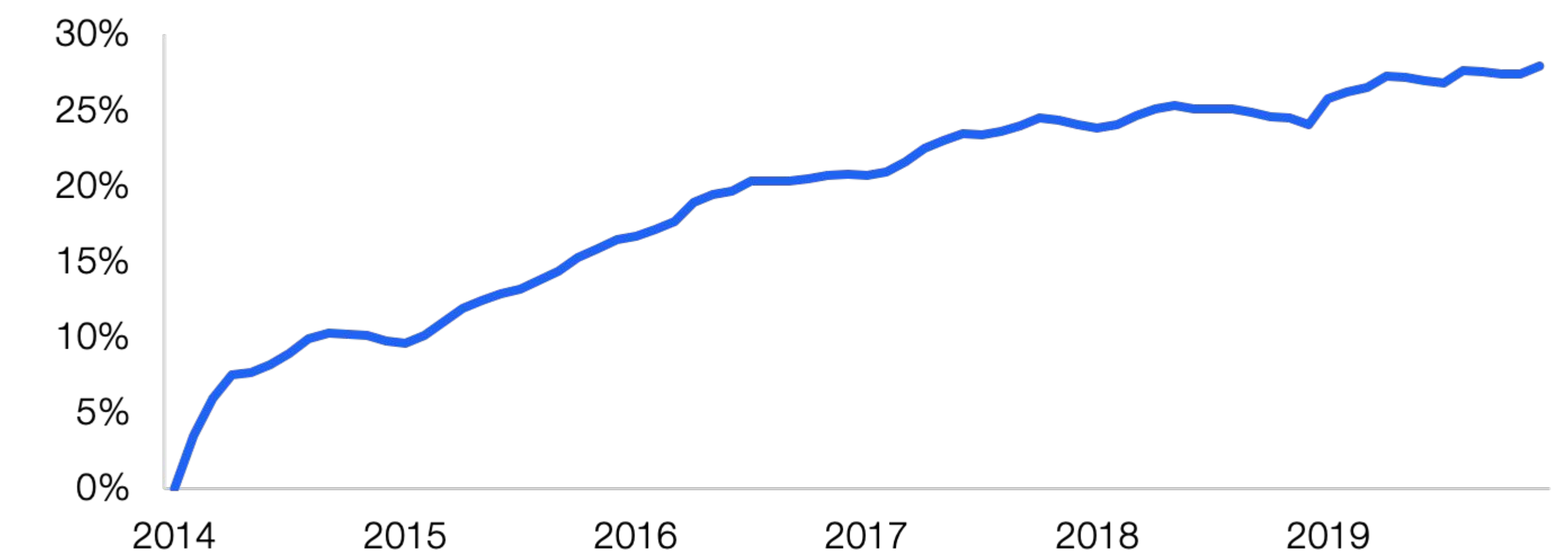
## Results

Mismatch modestly declined over last 6 years  
Percentage of job seekers to change to match vacancies distribution



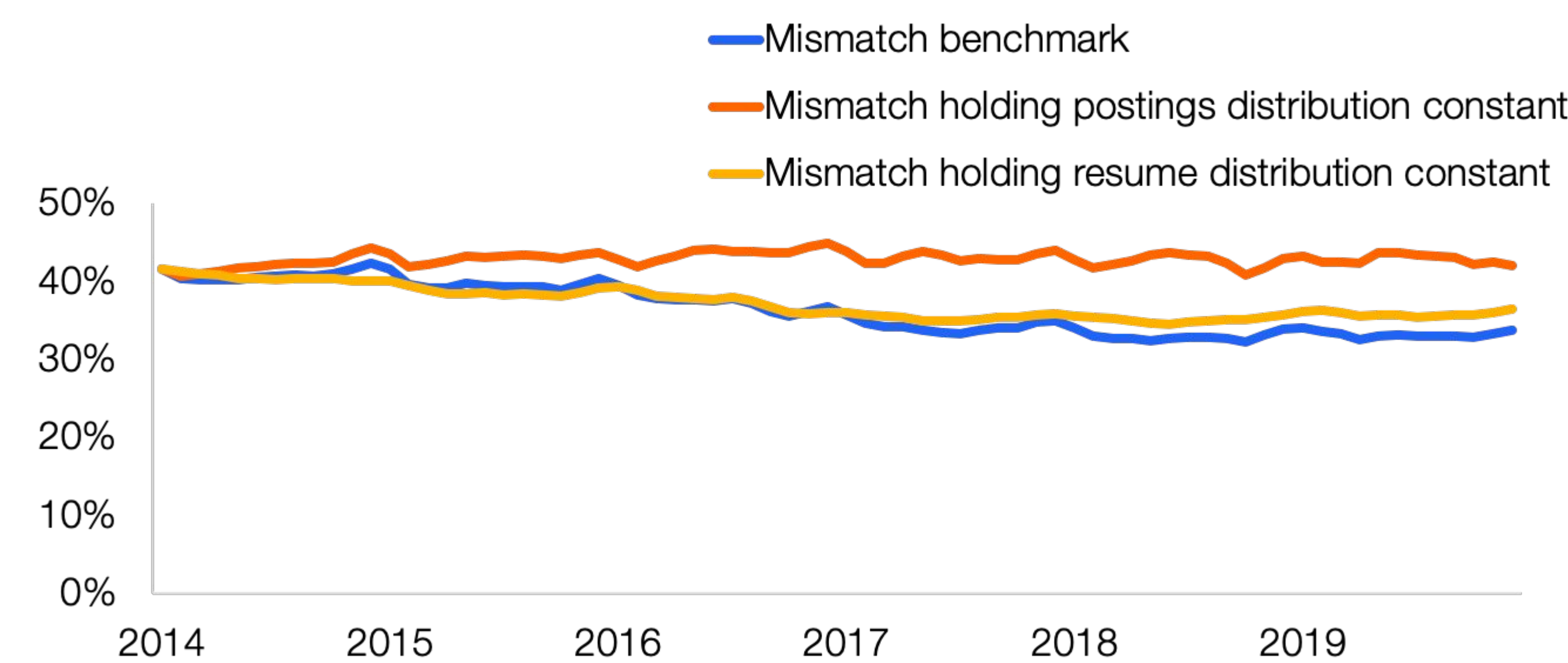
Source: Indeed, BLS, and authors' calculations

2019 US postings mix over 25% different from 2014  
Evolution of US job postings mix over time



Source: Indeed

Change in postings distribution drives mismatch decline  
Mismatch holding one side at Jan 2014 shares



Source: Indeed

## Conclusions

Even though the distribution of titles in job vacancies has changed substantially since 2014, we see a robust, although modest, decline in mismatch between the distribution of online job vacancies as compared to the distribution of online job seekers over the last several years for the US and also for a set of English-speaking countries.

The decline in mismatch appears to be driven by the change in the distribution of jobs towards the distribution of job seekers. One interpretation is that **jobs came back that were a better fit for job seekers as the global economy continued to improve over the last several years.**

## Discussion

**Mismatch is slightly declining. What does this mean?**

- Vacancies moving *towards* job seekers in terms of distribution.
- Economic recovery is bringing jobs back.
- Job seekers also evolving, but they're not the main driver.

For more of our research, visit [hiringlab.org](http://hiringlab.org)

## Robustness

Decline in mismatch is robust to:

- + Number of categories
- + Definition of active job seeker
- + Dissimilarity metric

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