

**To:** Members of the American Economic Association

**From:** AEA ad hoc Committee on the Job Market: John Cawley (chair), Matt Gentzkow, Brooke Helppie-McFall, Peter Rousseau, and Wendy Stock

**Date:** January 15, 2021

**Re:** Demand for, and Supply of, New Ph.D. Economists, 2020 versus 2019

This memo provides an end-of-2020 summary of the demand for, and supply of, new Ph.D. economists in 2020 versus recent years.

### ***Demand for New Ph.D. Economists***

We measure the demand for new Ph.D. economists using the number of new job openings listed on Job Openings for Economists (JOE), in 2020 compared to recent years. To show how this changed during 2020, we present counts by week. We present both the total number of new jobs and the number of new jobs by sector (e.g. tenure-track academic and non-academic).

Some clarifications on the data and graphs in this memo:

- Week of the year is defined according to the International Organization for Standardization (ISO), so the exact days contained in a given numbered week differ slightly across years. For example, week 1 in 2020 runs from December 30, 2019 to January 5, 2020, whereas week 1 in 2019 is one day later - it runs from December 31, 2018 to January 6, 2019. This minor difference in the specific days included in each numbered week should not generate meaningful differences late in the calendar year.
- The data cover ISO weeks 1 through 53 of 2020, ending January 3, 2021. However, there were no new jobs listed January 1-3, 2021, so the 2020 numbers run through December 31, 2020. None of the comparison years (2017-19) had an ISO week 53.
- The counts that are graphed are the number of job *openings*. To clarify, it is not the number of job listings (a listing may include multiple openings).
- For all years, if the employer contacts JOE to say that the search is cancelled, those openings are removed from the count. They are kept in the count if the employer states that the position has been filled. Note that employers may not always contact JOE after a search has been cancelled.
- On each graph, the year-to-date cumulative number of job openings is listed for 2020 and 2019. (For the sake of clarity it is not listed for 2018 or 2017.)

The graphs are shown below, overall and by sector. Figure 1 (on p. 5) shows the total number of job openings in 2020 compared to recent years. In 2020, there were 2,729 unique jobs listed on JOE, which is a 26.5% decrease from 2019, when there were 3,713.

Subsequent graphs compare the number of job openings separately by sector. Figure 2 (on p. 6) shows that, in 2020, there were 408 unique full-time academic jobs in the U.S. listed on JOE; this was a 52.8% decrease from 2019, when 864 such jobs were listed.

Figure 4 (on p. 8) shows that, in 2020, there were 991 unique full-time academic jobs outside the U.S. listed on JOE; this was a 20.3% decrease from 2019, when 1,244 such jobs were listed. Thus, the decrease in full-time academic jobs was greater for U.S. institutions (-52.8%) than for non-U.S. institutions (-20.3%)

Figure 6 (on p. 10) shows that full-time non-academic positions were less hard-hit than full-time academic positions, but were still down 17.7% in 2020 compared to 2019. In 2020, there were 678 unique full-time non-academic jobs listed on JOE, whereas in 2019 there were 824.

One silver lining to this admittedly big cloud is that the job outlook improved slightly during the Fall. The decrease in the total number of jobs listed in 2020 versus 2019 was 43.8% in our report of October 13, 33.4% in our report of November 19, 30.1% in our report of December 3, and 26.5% at the year's end. There was a similar improvement in the number of full-time academic jobs in the U.S.; relative to the same time in 2019, the decrease in 2020 was 64.1% in our report of October 13, 58.7% in our report of November 19, 56.1% in our report of December 3, and 52.8% at the year's end. In other words, it seems that there was some "catch-up" in labor demand towards the end of 2020. That said, these year-end decreases are substantial, and are in fact the largest one-year decreases in labor demand seen in the JOE data.

### ***Supply of New Ph.D. Economists***

The decline in labor demand may be coupled with a decline in labor supply if, for example, fewer advanced graduate students entered the job market in 2020 than in recent years.

Those applying to the jobs listed on JOE are a heterogeneous group, including both rookies (those about to graduate from their Ph.D. and seeking their first full-time job that requires a Ph.D.) and advanced candidates (e.g. current assistant professors looking to make lateral moves). Our concern is more about the welfare of rookies, as they do not already have a full-time job that they can stay in, and the shock to labor demand may have lasting consequences for their careers (see, e.g., [Oyer, 2006](#)).

In order to investigate this possibility, we examine two measures of labor supply: first, the number of people sending signals through the AEA's signaling mechanism in early December; and second, the number of new candidate accounts created on Job Openings for Economists (JOE).

### ***Labor Supply Measure 1: Number of Candidates Sending Job Market Signals***

The AEA allows job candidates to send employers a signal of special interest. Because candidates are limited to two signals (enforced by having the signals submitted to, and then transmitted by, the AEA), the signals credibly convey information. For more information, see the [AEA signaling webpage](#).

In 2020, the deadline for candidates to submit their signals to the AEA was November 30, and they were transmitted to employers on December 2. In 2020, 1,502 candidates sent signals, which was 14.9% lower than in 2019, when 1,766 candidates sent signals.

### ***Labor Supply Measure 2: Number of New Job Candidate Accounts Created on JOE***

A second measure of labor supply is the number of people creating new job candidate accounts on the JOE Network. In 2020, the number of people creating new candidate accounts was 19.1% lower than in 2019 (2,091 in 2020 versus 2,584 in 2019).

However, not everyone creating a new account was necessarily a rookie job candidate. In order to better distinguish rookies from more senior job searchers, we use the JOE Network data on year of Ph.D. Those creating a job candidate account on JOE are requested, but not required, to list their year of Ph.D. receipt (which may be in the future). We define *students* as those who indicate that their year of Ph.D. receipt is the same year or a later year than the one in which they created their JOE candidate account. (For example, someone who created a new account in 2020 is classified as a student if they list their year of Ph.D. as 2020 or later.) Those who indicate that their year of Ph.D. receipt is prior to the one in which they created their JOE candidate account are classified as *non-students*. (For example, someone who created a new account in 2020 is classified as a non-student if they list their year of Ph.D. as 2019 or earlier.) Those who did not state their year of Ph.D. receipt are classified as *unknown*. In 2020, the percentage of new all new accounts created by category was: students: 77.5%; non-students: 18.7%; unknown: 3.8%.

Among students, the number of new accounts was down 13.4% in 2020 versus 2019 (specifically, 1,621 new student accounts in 2020 versus 1,871 in 2019). The number of new accounts by non-students was down 37.1% (391 in 2020 versus 622 in 2019). The number of new accounts created by those whose student status is unknown was down 13.2% in 2020 compared to 2019 (79 in 2020 compared to 91 in 2019).

One interpretation is that the larger reduction in new accounts by non-students (-37.1%) than students (-13.4%) indicates that more people who already have full-time employment are more likely to sit out this difficult market than advanced graduate students, which may be to the advantage of rookie job candidates. Two caveats are: 1) many economics Ph.D.s in full-time employment already had existing JOE Network accounts, and so their decisions to re-enter the market cannot be inferred from these data on new accounts; 2) rookie job candidates may not be seen as perfect substitutes for experienced Ph.D. economists for all positions, so a reduction in experienced applicants may have limited benefit for rookie applicants.

In summary, the two measures of labor supply provide similar estimates: a 13.4% reduction in JOE Network job candidate accounts created by students, and a 14.9% reduction in candidates sending AEA job market signals.

### ***Comparing the Measures of Labor Demand and Labor Supply***

There may be a temptation to compare the total new job candidate accounts created on JOE (2,091) to the number of job openings listed on JOE (2,729), but these numbers are not directly comparable for a number of reasons, including: 1) job candidates may have created an account on JOE in a previous year; 2) job candidates may apply to these jobs without creating an account on JOE (e.g. through an employer-specific platform or other electronic clearinghouse); 3) employers may primarily be searching for senior, experienced economists rather than rookie job candidates; and 4) some positions may be open to applicants from disciplines other than economics.

Despite the challenge of comparing the measures of labor demand and labor supply, it is the clear impression of our committee that this is a difficult year for job candidates. In particular, the drop in the number of new full-time academic jobs in the U.S. (-52.8%) is dramatic. The data discussed in this report, combined with anecdotal feedback from those on the job market,

indicates that this is a very challenging year for Economics Ph.D. job candidates. Our committee recommends that Ph.D. programs consider offering ongoing support for Ph.D. candidates who do not find positions in spring 2021.

Figure 1: Number of Job Openings on JOE, All Types

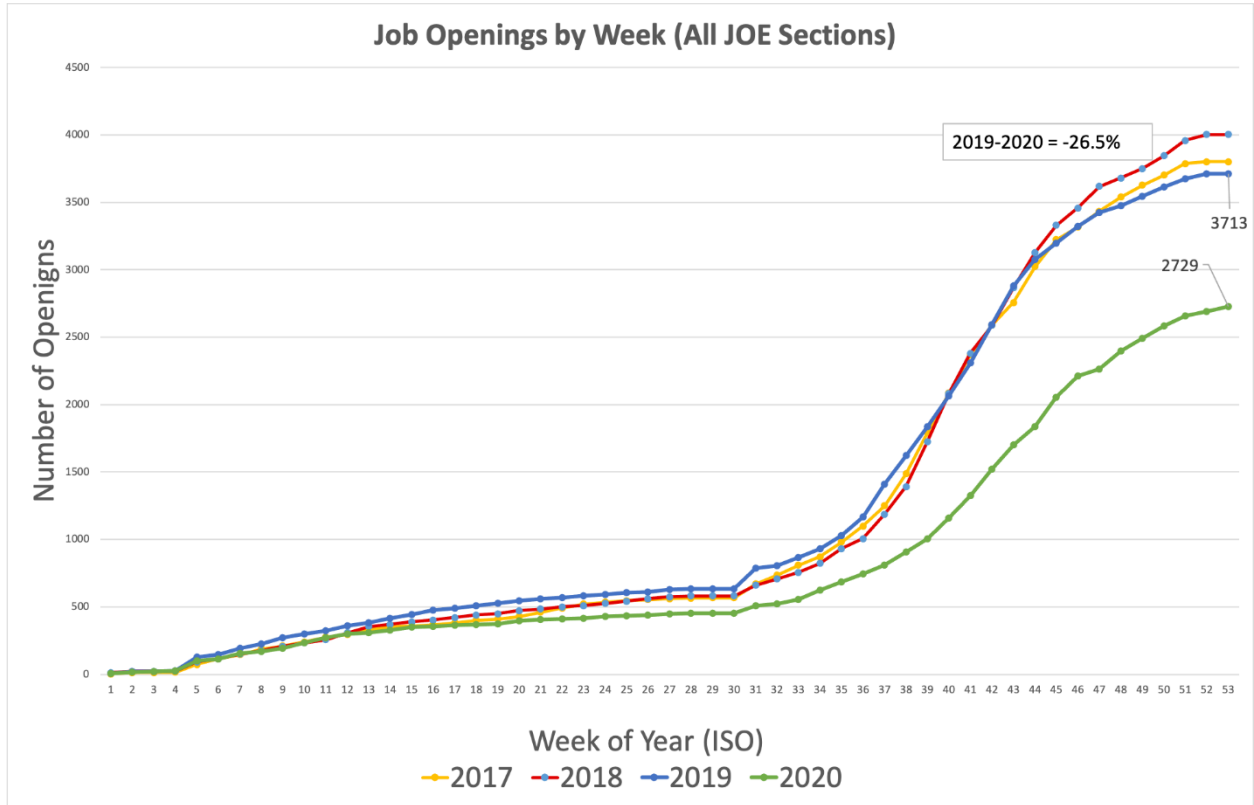


Figure 2: Number of Job Openings on JOE, Full-Time Academic Jobs in the U.S. Only

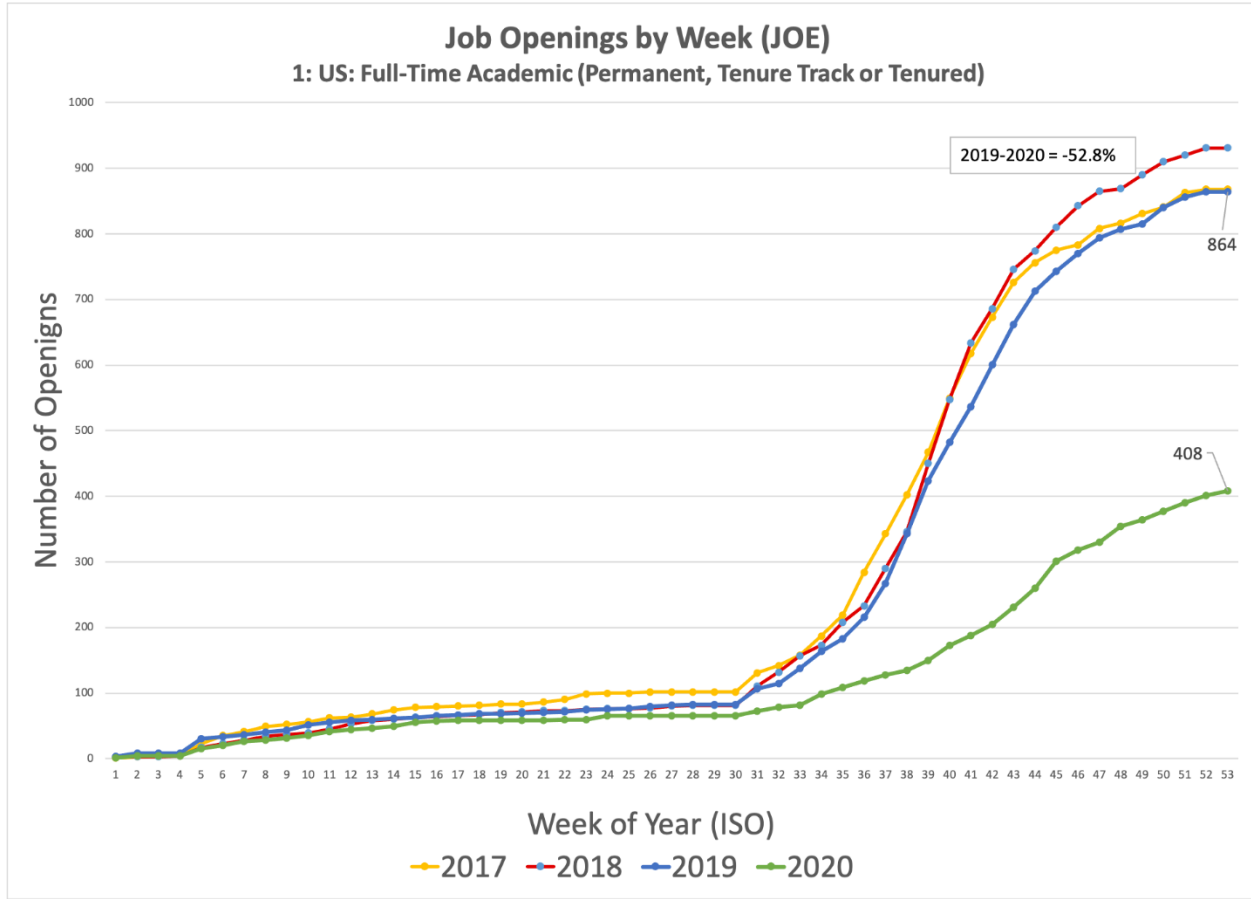
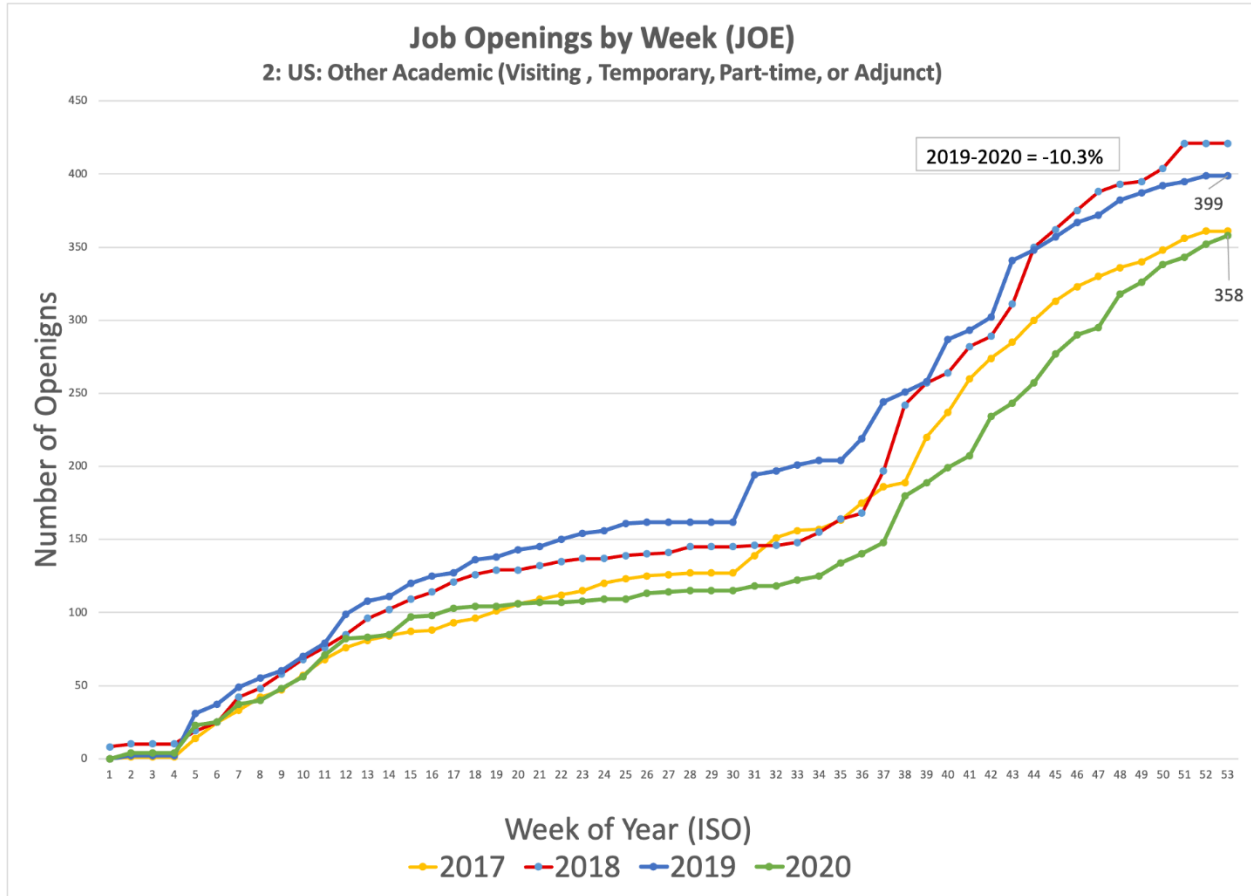


Figure 3: Number of Job Openings on JOE, Other Academic Jobs in the U.S. Only



Note: “Other” academic jobs includes visiting, temporary, part-time, or adjunct positions; that is, everything other than full-time positions.

Figure 4: Number of Job Openings on JOE, Full-Time Academic Jobs Outside the U.S. Only

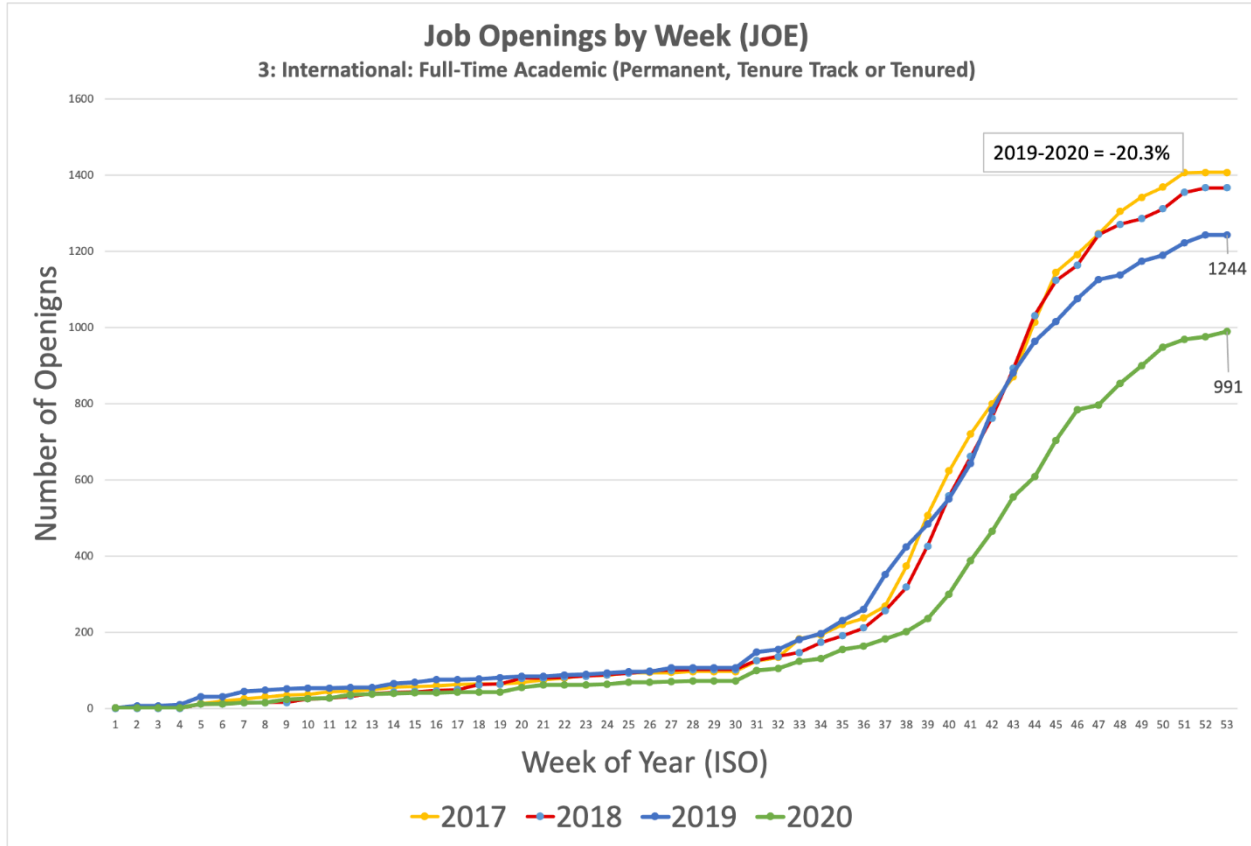
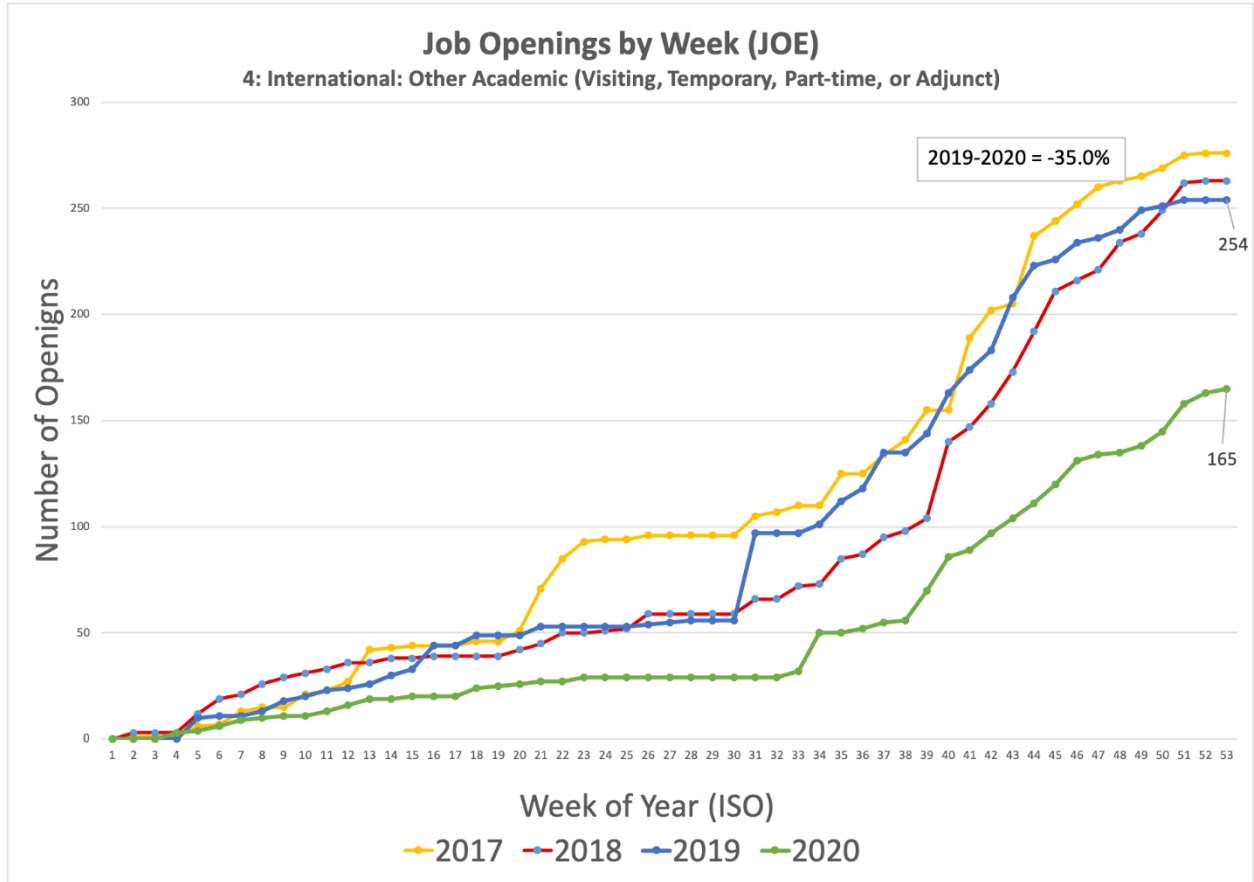




Figure 5: Number of Job Openings on JOE, Other Academic Jobs Outside the U.S. Only



Note: “Other” academic jobs includes visiting, temporary, part-time, or adjunct positions; that is, everything other than full-time positions.

Figure 6: Number of Job Openings on JOE, Full-Time Non-Academic Jobs Only

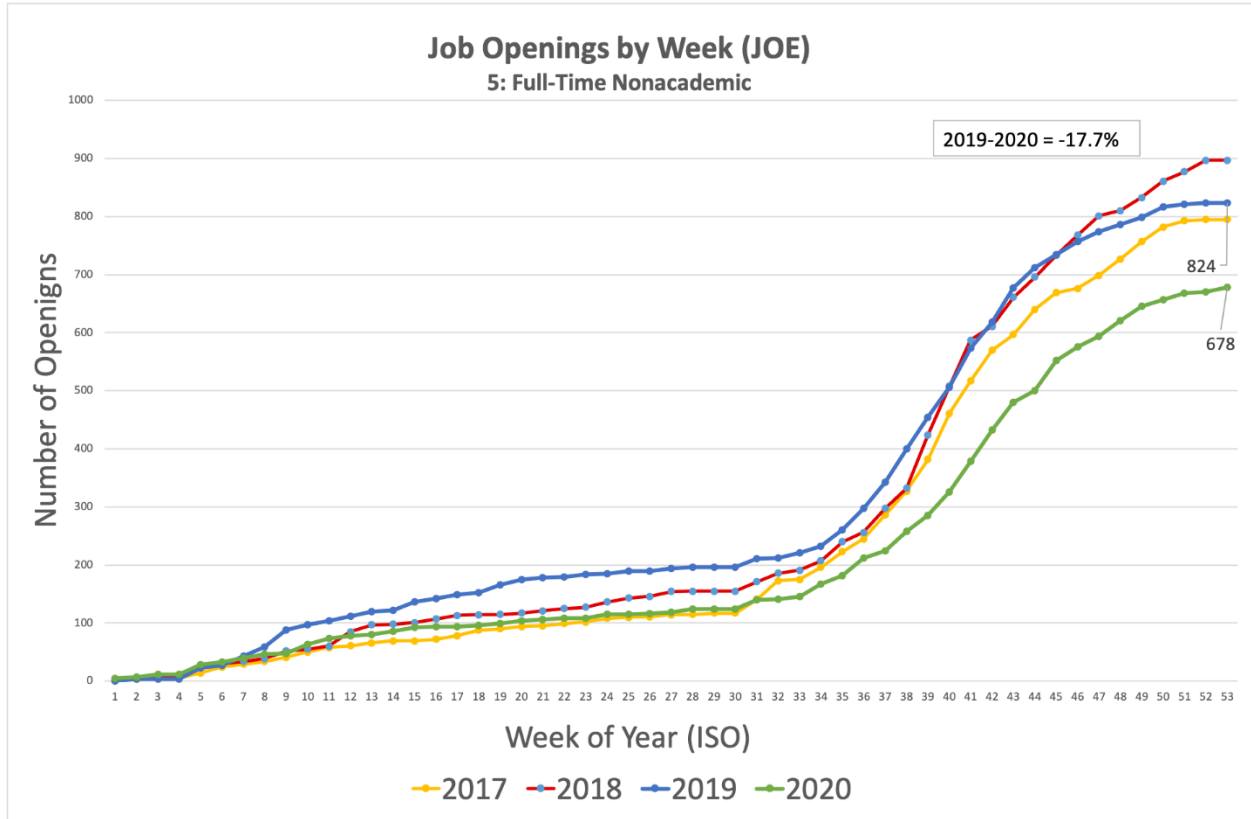
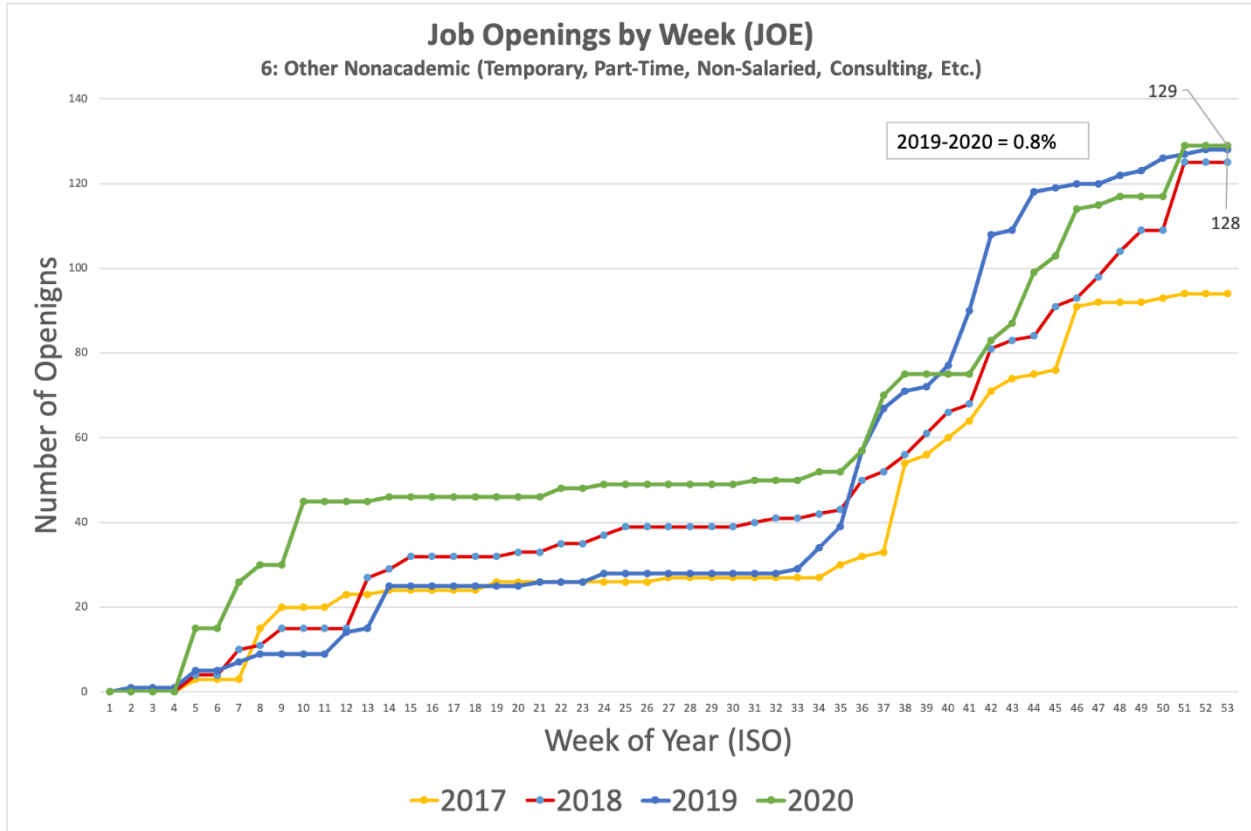


Figure 7: Number of Job Openings on JOE, Other Non-Academic Jobs Only



Note: “Other” non-academic jobs includes temporary, part-time, non-salaried, or consulting positions; that is, everything other than full-time positions.