

# Coauthorships in Economics Post #MeToo

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## Abstract

We study the impact of the #MeToo movement on coauthorships in economics, by analyzing papers published in the NBER and CEPR working paper series between January 2004 and December 2020. Post #MeToo men authors have included more women in their collaboration groups. However, #MeToo had an overall negative effect on establishing new coauthorships, driven by authors initiating fewer research collaborations with junior economists. Post Covid-19, men authors have a smaller share of women coauthors, partially reversing the positive effect of #MeToo, and they initiated fewer new coauthorships with mid-career and junior economists, and especially so with junior women economists.

**JEL Classification:** D8, J7, J16, O30

**Keywords:** #MeToo, gender, coauthorship patterns, networks, Covid-19

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# 1 Introduction

Scientific collaboration is widely recognized as a fundamental aspect of success for research. Bringing together researchers with diverse areas of expertise and knowledge can provide a broader perspective on a research question or problem, lead to new perspectives and discoveries, and yield more comprehensive and innovative solutions. Collaboration also enables and accelerates the sharing of data, methods, and results, which can save time and effort. Importantly, scientific collaboration builds bridges across generations by bringing together researchers of different seniorities and assigning to senior researchers a pivotal role in the development of young researchers, through the provision of guidance, support, and opportunities to expand their collaboration networks.<sup>1</sup> Any disruption that affects collaboration incentives can have very different consequences and detrimental effects on researchers depending on their career stage, and whether they rely on co-authorship networks of different sizes and strength. Such shocks may affect for example productivity, job opportunities and career progressions.

The #MeToo movement in 2017 shook the public opinion and led to increased awareness around issues of gender discrimination and harassment in the workplace. In 2018, the Economics profession faced its own #MeToo moment with abundant evidence of discriminatory and harassment culture.<sup>2</sup> Several academic and policy institutions, and international associations have reacted to this and implemented measures to tackle the issue. At the same time, a strong debate emerged broadly across social media platforms and inside several institutions. This may have affected the dynamics and costs of scientific collaborations. On one hand, for example, it could have led to a more respectful environment for all participants, or to the increased scrutiny of male-dominated fields as well as a push for greater diversity and inclusivity in the scientific community. On the other hand, it is also possible that the movement led to a chilling effect on collaborations, making some researchers hesitant to work with researchers not in their network, for lack of trust or fear of damaging their own reputations.

Here, we investigate the effect of #MeToo on coauthorships in economics, by utilizing the databases of papers published in the NBER and CEPR working paper series from January 2004 to December 2020. Our analysis is done from the vantage point of an author in a paper: we look at whether the characteristics of an author's coauthors in a given paper have changed after #MeToo. We are interested in the break-down of coauthors by seniority and gender, as well as in whether co-authorship relationships are pre-existing or new.

Our findings suggest a varied effect of #MeToo on coauthorships among economists of different seniorities. On one hand, post #MeToo, authors tend to coauthor less often with junior and early-career researchers.<sup>3</sup> On the other hand, they coauthor more with mid-career economists, which might reflect increased reliance on pre-existing collaboration networks. To further assess this, we also examine how *new* coauthorships were affected by #MeToo. We find evidence of a decrease in the shares of new coauthors across genders, driven primarily

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<sup>1</sup>For economics, the literature reports a trend of increasing collaboration over time (Ginther and Kahn (2004) and Hamermesh (2013)), and that research teams with more co-authors and gender diversity tend to produce papers of higher impact and citations (Anderson and Richards-Shubik (2022) and Maddi and Gingras (2021)), although Ductor et al. (2018) find that men and women tend to have different types of collaboration networks.

<sup>2</sup>The *American Economic Association* has produced several reports on the professional climate in economics (see for example <https://www.aeaweb.org/news/member-announcements-sept-26-2019>). The results of these reports and the measures that have been taken were recently discussed in a panel session at the ASSA 2023 Annual Meeting in New Orleans: <https://www.aeaweb.org/webcasts/2023/harassment-lessons-learned>.

<sup>3</sup>Early-career researchers include post-docs and pre-docs alongside PhD, masters and undergraduate students. Junior researchers include junior and non-tenured professors.

by a drop in new collaborations that all authors form with junior and early career economists. This negative effect is stronger when considering the sub-sample of senior male authors. In terms of gender composition in coauthorships, our results are more stark. Post #MeToo there has been an increase in papers written by a balanced mix of men and women authors, and importantly men authors have included more women of all seniorities in their collaboration groups. However, senior men authors seem to have opted to coauthor more with senior women. These results are novel.

Not long after #MeToo, a new shock came in 2020, when the Covid-19 pandemic profoundly changed the working methods and collaboration. Several papers have reported that economic research experienced a temporary increase in productivity, but one spread unevenly across genders (see [Amano-Patiño et al. \(2020\)](#); [Deryugina et al. \(2021\)](#); [Barber et al. \(2021\)](#); [Squazzoni et al. \(2020\)](#); [Kruger et al. \(2022\)](#)). The fact that, for a time, all collaborations had to be conducted virtually may have further changed how new collaborations form. For example, researchers may have felt more comfortable about initiating new work with old and new coauthors of different seniorities because of social distancing measures. At the same time, some researchers with young families, in particular women, faced new constraints that impacted on their research productivity. We therefore extend our analysis to look at the initial impact of Covid-19 pandemic on coauthorships and investigate whether the effects of the #MeToo movement were reversed, mitigated or intensified. In general, we find that the pandemic mildly benefited younger and less established researchers including PhD students and postdoctoral researchers. However, we see a partial reversal of the increase in men's shares of women coauthors that followed #MeToo: post Covid-19 shock, men authors have *smaller* shares of women coauthors and in particular junior women coauthors, the opposite impact to what was seen following the #MeToo shock. Moreover, we see a further decrease of the formation of new coauthorships by men authors, driven by fewer new coauthorships with mid-career and junior economists, especially junior women authors. On the other hand, women authors saw a rise in the shares of new coauthorships during the pandemic. Combined with the effect of the #MeToo shock, these results suggest a slow down in the expansion dynamic of collaboration networks across seniorities and genders. These results are also novel.

This paper contributes to the literature that studies the unequal experiences and career outcomes of academic researchers. Well before the #MeToo movement, [Ginther and Kahn \(2004\)](#), [Bayer and Rouse \(2016\)](#) and [Card and DellaVigna \(2013\)](#) studied collaboration and academic publishing, and this work addressed issues of gender diversity in the economics profession. In more recent times, an unprecedented wave of empirical and theoretical research has documented the productivity gaps between men and women economic researchers, and in particular the barriers that women face at various stages of their careers from low representation and access to graduate programs to promotion outcomes and the publication process (see for example [Adams and Lowry \(2022\)](#); [Card et al. \(2020\)](#); [Chari and Goldsmith-Pinkham \(2017\)](#); [Dupas et al. \(2021\)](#); [Ghosh and Liu \(2020\)](#); [Heckman and Moktan \(2020\)](#); [Hengel \(2022\)](#); [Huang et al. \(2020\)](#); [Kosnik \(2022\)](#); [Lusher et al. \(2021\)](#); [Bansak et al. \(2021\)](#); [Paredes et al. \(2020\)](#); [Sarsons \(2017\)](#); [Sarsons et al. \(2021\)](#); [Wu \(2018\)](#)).<sup>4</sup> Our work is closely related to [Gertsberg \(2022\)](#). This work looks at the effect of the #MeToo shock on coauthorships of junior women academics in the top 100 economics US departments, and finds that junior women academics have written fewer papers with senior academics in their institutions post-2018. We complement her results by exploiting our more comprehensive and novel dataset, which includes 19,861 distinct papers and 15,439

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<sup>4</sup>An extensive summary of the literature can be found in [Lundberg \(2018, 2020\)](#) and in the *AEA Status of Women in the Economics Profession*, <https://www.aeaweb.org/about-aea/committees/cswep/survey/related-literature>.

distinct authors at different stages of their career in academic and policy institutions.

Our work also contributes to the aforementioned literature that studies the effects of Covid-19 on research productivity. This literature finds that, especially at the beginning of the pandemic and in the periods of lockdown, women academics had to reduce their research hours, their productivity decreased and they submitted fewer papers for publication than men. In particular, our paper is complementary to that of Kruger et al. (2022) who suggest that the Covid-19 pandemic led to an increased reliance on past coauthorships, with larger production gains for authors that are more central to the collaboration network.

## 2 Methodology and data

We aim to assess the impact of the #MeToo movement on research collaboration and coauthorships in economics. Looking at papers in economics written post #MeToo, we examine how the composition of coauthors has changed relative to the composition of papers written before #MeToo. Our approach is to view coauthorship from the perspective of an author in a paper: we examine the shares of an author’s coauthors in a given paper by gender and seniority, and explore how these shares have been affected by #MeToo. For this purpose, we use a subset of the dataset collected for Project CAPER and used in Amano-Patiño, et al. (2020), which includes all working papers published in the NBER Working Paper series and the CEPR Discussion Paper series between January 2004 and December 2020.<sup>5</sup> For each of these papers we have information on the papers, including title, publication date, JEL codes (where available), and author names. For each author in any given paper we have information on gender and seniority at the time of publication, as well as other author characteristics useful for our analysis, such as years of professional experience, number of past coauthors, number of previous papers, average number of coauthors per paper, etc. We can also construct measures of the size of their collaboration network as represented by their involvement in papers published to the two series.

### 2.1 Empirical strategy

We are interested in understanding how the #MeToo movement has affected the composition of coauthors in paper  $p$  from the perspective of author  $i$ . The main dependent variable in our regressions is the share  $y_{ip}$  of author-paper coauthors of a certain type; the share of an author’s coauthors in the paper that are women and men or of a particular seniority level, or interactions between these characteristics. We consider specifications that use both shares of coauthors overall, but also shares of *new* coauthors of a certain type. We can then answer how the composition of both overall and new coauthorships changed, if at all, post #MeToo.

Our regressions are specified as follows:

$$y_{ip,t} = \beta_0 + \beta_1 sex_i + \beta_2 metoo_p + \beta_3 covid_p + \beta_4 metoo_p \times sex_i + \beta_5 covid_p \times sex_i + \beta_6 controls_{ip,t} + \varepsilon_{ip,t}, \quad (1)$$

where  $sex_i = 0, 1$  if author  $i$  is a man or a woman respectively,  $metoo_p = 0, 1$  if paper  $p$  was written before or post #MeToo respectively, and  $covid_p = 0, 1$  if paper  $p$  was written before or after the start of the pandemic respectively. The Covid-19 dummy variable is an important control variable for our analysis, as it represents a major event that took place quite soon after the original #MeToo with a large impact on working and coau-

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<sup>5</sup>See [https://www.nber.org/papers?page=1&perPage=50&sortBy=public\\_date](https://www.nber.org/papers?page=1&perPage=50&sortBy=public_date) and <https://cepr.org/publications/discussion-papers> for details of NBER and CEPR series respectively.

thorship patterns. The pandemic may have had a separate and different effect on research collaborations to #MeToo. The set of controls used includes (i) a time trend variable, (ii) variables that describe characteristics of the author  $i$ , e.g. professional experience, research productivity, number of coauthorships and coauthor clustering up to the period prior to writing the specific paper and (iii) characteristics of the paper  $p$ , e.g. number of authors involved in the paper, and paper field. We provide precise definitions of pre/post #MeToo and the pandemic, and all the different controls considered, when we describe how the variables are constructed from our dataset.

## 2.2 Data description and variable definitions

We have information on papers from the NBER and the CEPR, that appear in these repositories some time between Jan 2004 and Dec 2020.<sup>6</sup> In order to control for a possible time trend of increased research outputs in these two outlets, but also for author characteristics that may be changing over time, we create a time period variable  $t$ , and assign a period value to each paper depending on when the paper was written. The sample of papers used in the analysis begins in Jan 2009 and ends in Dec 2020. These twelve years are split in four time periods; the first period  $t = 1$  includes papers from 1 Jan 2009 to 31 Dec 2011, the second period  $t = 2$  includes papers from 1 Jan 2012 to 31 Dec 2014, the third period  $t = 3$  includes papers from 1 Jan 2015 to 31 Dec 2017 and last the fourth period  $t = 4$  includes papers from 1 Jan 2018 to 31 Dec 2020. The data and papers from the pre-period  $t = 0$  from the Jan 2004 to Dec 2008 are used to create lagged variables of interest for authors. The total number of author-paper observations in from Jan 2004 to Dec 2020 is 67,145. The number of distinct authors is 17,997 and the number of distinct papers is 26,794. Of these observations, 52,078 author-paper observations are dated in periods 1 to 4, with 15,798 distinct authors and 19,960 distinct papers.

### 2.2.1 Author-paper variables

The set of authors with papers in NBER and CEPR naturally defines a network of coauthorships.<sup>7</sup> We define a variable of coauthorship for author  $i$  in paper  $p$  with author  $j$  as

$$ca_{ip}(j) = \begin{cases} 1 & \text{if author } j \text{ is an author in paper } p, \\ 0 & \text{otherwise.} \end{cases} \quad (2)$$

We note that we set  $ca_{ip}(i) = 1$  for each paper, whether single-authored or not, to allow us to include single-authored papers in the sample, whilst being consistent in the treatment of coauthorships. This means that all author-paper level characteristics include a ‘self-link’. We then use author-paper-coauthor variables to calculate the author-paper level characteristics, which serve as our dependent variables. For an author-paper pair  $ip$ , the first set of dependent variables of interest are the shares of coauthors for author  $i$  in paper  $p$  by gender, seniority and gender-seniority.<sup>8</sup> Moreover, for each coauthorship  $ca_{ip}(j)$  we have the date of first submission of the paper, and use this to work out author’s  $i$  coauthorships in each period. This allows us to

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<sup>6</sup>Some papers appear at different stages of development in both outlets. We use string similarity code in Python to identify papers with very similar titles and the same set of authors, allowing us to remove ‘duplicate’ papers where a paper has been submitted at different times to different working paper series, although we retain information on each outlet a paper appears in. We keep the first submission for each paper, since this most accurately reflects when coauthorships develop.

<sup>7</sup>In what follows, we exclude papers with seven or more coauthors, which only constitute a very small fraction of our sample (0.5%).

<sup>8</sup>We explain how gender and seniorities are assigned in 2.2.3.

identify the proportion of *new* coauthorships in each paper and define the second set of dependent variables of interest as the shares of new coauthors for author  $i$  in paper  $p$  again by gender, seniority and gender-seniority. A coauthorship of author  $i$  with author  $j$  in paper  $p$  is defined as *new* if there has been no other paper dated before paper  $p$  in which the two authors collaborated. Moreover, if after the first time we observe a coauthorship, additional papers coauthored by the same two authors appear within an appropriately selected time interval, we count these additional coauthorships as new too, since it may not be possible to determine which paper was really the first that was initiated by the two authors. We choose an interval of three months as a cutoff for such new coauthorships in order to take into account that researchers may work simultaneously on more than one paper. As a robustness check, we have also repeated the analysis with an interval of 0 days, that is, by defining only the papers entering into the series on the first date we observe a coauthorship as new.

### 2.2.2 Paper characteristics

The end of 2017 marks the beginning of the post #MeToo period across the world. The movement hit the field of economics well into 2018, and so in order to account for the possible lag between initiating new research projects and the time it takes to finalise them and deposit them to the two working paper series, we set the variable  $metoo_p = 1$  if paper  $p$  is dated after the end of the second quarter of 2018 onwards, and 0 otherwise. Similarly, we define  $covid_p = 1$  if paper  $p$  is dated after the end of the first quarter of 2020, and zero otherwise.

In addition to the above, we use the following control variables related to a paper in observation  $ip$ : the total number of authors in a paper, including author  $i$ , and a set of dummy variables for each of the 20 JEL code letters, to control for the field of the paper.

### 2.2.3 Author characteristics

For each author in our sample we identify a set of characteristics, as well information about each author's career path, using information from authors' papers in CEPR and NBER, and publicly available CVs and webpages.

Specifically, for each author we manually assigned gender using the author's publicly available information, such as webpages, CV, organisational profiles or LinkedIn profiles. We also extracted PhD completion year and institution from the same sources where this information was available, as well as job title and institution information at the point in time when papers were published. We use PhD information to define the control variable of *experience* of an author  $i$  in observation  $ip$  as the years from completion of PhD at the time of publication of the paper  $p$ , and define experience in our period-arranged data as the time elapsed between the middle of the period and the year of PhD graduation. We also use PhD year and PhD institution information to ensure that we uniquely identify each author, despite variations in name spelling, using string similarity programs in Stata.

Additional author-level controls in our regressions include the total number of papers written and appearing in the CEPR or NBER series by the author up until the time period that the paper belongs to, and the number of papers written by the author in the same period as that of the paper of the given observation. These last two measures serve as proxies of output and productivity of authors.

We include two author control variables related to the network of coauthorships of authors. The first is the lagged coauthorship *degree* of an author, which simply measures the number of distinct coauthors the author had collaborated with until the last day in period  $t - 1$  for author-paper observation in period  $t$ . The second is lagged *clustering* of an author, which loosely speaking measures the extent to which the author clusters, or

collaborates, together with a group of other authors, again until the last day in period  $t - 1$  for author-paper observation in period  $t$ . To construct these, we follow the corresponding definitions of [Ductor et al. \(2018\)](#), and provide details in the Online Appendix.

We define authors' seniorities in order to create the dependent variables of shares of coauthors and new coauthors by seniority accordingly. We use authors' CVs and we recover the title/position of an author  $i$  at the date that paper  $p$  from observation  $ip$  appears in our dataset. We infer five seniority categories: senior, mid-career, junior, early-career and unclassified. For academics, *senior* is assigned to Professors, Full Professors or Chaired positions, *mid-career* is assigned to Associate Professors, Senior Lecturers or Readers, *junior* is assigned to non-tenured Assistant Professors and Lecturers, and *early-career* is assigned to all remaining non-established researchers, i.e. Post-docs, PhD candidates, Pre-docs, Masters' and Undergraduate students. For non-academic researchers, we use standard metrics of seniority. The remaining category, *unclassified*, is used for all authors who could not be easily put into one of the other classifications.

#### 2.2.4 Creating the samples

We create the three versions of the sample. The first sample contains *all authors* and papers as described in the previous section, after removing any author-paper observation for which the author appears only once in the sample with a single paper. Moreover, since the first time any author appears with a paper in the sample, all her coauthorships in this paper are by construction new, this may artificially inflate the actual number new coauthorships. We therefore remove the author-paper observations when each author appears for the first time in the sample (with this criterion we also remove any such new coauthorships as defined in section 2.2.2, using the three-month cutoff). After this, the remaining number of author-paper observations is 38,486, with 7,731 distinct authors and 1,706 distinct papers. The second sample contains all author-paper observations of authors that have at least one paper deposited in CEPR or NBER in each of the periods we consider, and we call this the *productive authors* sample. Once these authors and their author-paper observations have been identified, we again remove observations as for the *all authors* sample, so that this sample is a subset of the first sample. Finally, the third sample is subset of the *all authors* sample that contains only author-paper observations of authors that are senior, according to our definition of seniority, at the time of submission of the paper to NBER or CEPR. We call this the *senior authors* sample. Although there may be some overlap between the productive and senior authors, the two are sufficiently different to make results interesting when we look at them separately. These two sub-samples will help us zoom in on the effects of #MeToo on the coauthorship patterns of more established academic economists.

[Table 1](#) provides some summary statistics of the data sets we use for our analysis. All our samples are composed of mostly men authors (78%-85%).<sup>9</sup> The authors' characteristics are in line with what the literature finds (e.g. [Ductor et al. \(2018\)](#)). Men have on average larger coauthorship networks and are more productive than women. Women have on average more clustered collaboration networks. More productive and senior authors have more distinct coauthors and less clustered networks and, as expected, are more experienced than the average author from the full sample.

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<sup>9</sup>Women authors are slightly under-represented in our sample relative to standard reported shares of women authors in economics. For example, using the universe of EconLit data since 1970, [Ductor et al. \(2018\)](#) report that in the period we consider the share of authors that are women is well over 20%, and in more recent times closer to 28%.

### 3 Results

The Online Appendix first presents results based on a simpler specification where the main explanatory variable is #MeToo and its interaction term with gender, and the two trend control variables *time period* and *number of coauthors in paper*. Here, we present regression results using the three versions of the sample, based on specification (1) in Tables 2 to 5. Observations are weighted by the inverse of the number of in-sample authors in the paper, in order to avoid oversampling papers with larger number of authors (see Solon et al. (2015)). Because the dependent variables are defined as shares (proportions), we opt to use the generalized linear model (GLM) estimator for a fractional logit model, as recommended in Papke and Wooldridge (1996), with standard errors clustered by author. The tables show the estimated marginal effects of #MeToo and Covid-19.<sup>10</sup> Nevertheless, the estimated marginal effects from linear regressions with weighted least squares are qualitatively similar (tables available in the Online Appendix).

#### 3.1 Effects of #MeToo on coauthorships

Table 2 reports the marginal effects of #MeToo on shares of coauthors, for men and women authors. Columns 1 to 4 show the effects on shares of coauthors of different seniority. Columns 5 to 9 show the effects on shares of women coauthors, and women coauthors broken down by seniority.

For men authors, we see that #MeToo had a negative effect on shares of junior coauthors. Importantly, post #MeToo men have increased shares of women coauthors, with significant increases for established women (senior and mid-career). For women authors we see the same negative effect on shares junior coauthors, and lower shares of women coauthors, particularly with senior women coauthors. The results on the effects of #MeToo on coauthorship shares are similar for the two narrower samples of productive and senior authors. For productive men the negative effects on shares of juniors and early-career economists are weak, while the effects on shares of women at all seniority levels are positive, significant and larger for mid-career and junior women. On the other hand, productive women authors have fewer coauthorships with women coauthors. These results suggest that post #MeToo there are more papers written with a mix of men and women authors. This can also be corroborated by symmetric regressions of shares of men coauthors at all seniority levels, i.e. replicating columns 5 to 9 for men, not shown here. Using network terminology, the results suggest that post #MeToo homophily by gender has decreased for both men and women authors.

We next investigate the effects of #MeToo on establishing *new* coauthorships. Table 3 reports the marginal effects of #MeToo on shares of new coauthors, for men and women authors. Columns 1 to 5 show the effects on shares of all new coauthors, and new coauthors by seniority. Columns 6 to 10 show the effects on shares of new women coauthors, and new women coauthors broken down by seniority. The main result that stands out of this table is that #MeToo has had a negative effect on initiating new coauthorships, across all samples and especially so for men authors. Notably, both men and women authors initiate fewer new coauthorships with junior economists. For senior women authors, there are relatively fewer new collaborations with both senior and junior women authors, and also with early-career women and senior women.

Combining the results from Tables 2 and 3 our evidence supports the view that post #MeToo men authors

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<sup>10</sup>Our sample resembles a panel, but adding author fixed effects is not necessary here because the only relevant time invariant characteristic for an author is the gender, and this is already included in the explanatory variables. Also, the number of available time periods is small and the main sample unbalanced, so it is sufficient to cluster the standard errors by author and use pooled estimators.



include more women in their collaboration groups. However, all authors seem to have reduced collaborations with junior economists and initiated fewer newer research collaborations, especially so with junior economists.

### 3.2 Effects of Covid-19 on coauthorships

Next, we examine the effects of the Covid-19 pandemic on coauthorships, and ask whether any of the effects of #MeToo were mitigated or exaggerated by it. The pandemic could have had big effects on coauthorships, because it was a very dramatic and big event, that also happened in a very abrupt way. Results from the early days of the pandemic suggest varied and uneven experiences especially by women and mid-career economists who had trouble keeping up with doing research at the start of the pandemic (see [Amano-Patiño et al. \(2020\)](#), [Barber et al. \(2021\)](#), [Deryugina et al. \(2021\)](#), [Kruger et al. \(2022\)](#)). Nevertheless, the overall productivity across genders and seniorities increased substantially by the end of 2020 and into 2021.

[Table 4](#) reports the marginal effects of the Covid-19 pandemic on shares of coauthors, for men and women authors. As in [Table 2](#), columns 1-4 show the effects on shares of coauthors of different seniority. Columns 5-9 show the effects on shares of women coauthors, and women coauthors broken down by seniority.

We first note that the effect of the pandemic on men's coauthorships was an increase in the shares of senior coauthors, and a decrease in the shares of junior coauthors. The productive and senior men authors also see a decrease in their share of mid-career coauthors. Interestingly, we see a partial mitigation of the positive #MeToo effect of how research groups mix: men authors have a smaller share of women coauthors, and in particular junior women coauthors. These two negative effects are stronger for the men in sample of productive and senior authors. This finding, and the fact that productive and senior men have less coauthorships with mid-career economists, are both consistent with the general view that the productivity of mid-career economists and women economists was hampered in early stages of the pandemic. The negative effect is even stronger for shares of mid-career coauthors of senior men authors, and still present for junior women coauthors. For women authors, the main result is the negative effect of Covid-19 on the overall share of women coauthors. Women authors wrote less with mid-career economists and junior women economists. Senior women have increased shares of junior coauthors.

We now turn to effects of Covid-19 on establishing *new* coauthorships, reported on [Table 5](#). Columns 1 to 5 show the effects on shares of all new coauthors, and new coauthors by seniority, for men and women authors. Columns 6 to 10 show the effects on shares of new women coauthors, and new women coauthors broken down by seniority.

In all samples, women authors see large positive effects of Covid-19 on shares of new coauthorships. On the other hand, men have lower shares of new coauthors driven by decreases in shares of new coauthorships with mid-career and junior authors. Importantly for men authors the shares of new women authors are significantly lower, driven primarily by the fact that they have fewer new junior women coauthors. This, combined with effects on overall shares for junior women, suggests that junior women authors were generally less included in papers written by men authors in the last three quarters of 2020, during the pandemic.

### 3.3 Robustness and additional results

We performed a battery of robustness exercises to confirm the validity of our results over the three samples we consider. In all cases, the magnitudes and statistical significance of the effects of #MeToo and Covid-19

change slightly in intuitively expected directions, but the signs of the effects remain unaltered, giving strong support to our main findings. The corresponding tables of all results are available in the Online Appendix.

First, we have re-run all regressions using linear and logit models, and for different sets of control variables. Notably, in one variation we include the share of women authors in the relevant period as a control variable to account for the increasing trend in women's representation in Economics, as documented by [Ductor and Prummer \(2022\)](#) and [Davies \(2022\)](#). We find that adding this leaves the results largely unaffected; estimated marginal effects scarcely differ from the baseline estimates.

Second, we repeated all analysis with period lengths defined as *two* years instead of three, to confirm our results were not being driven by an arbitrary way of accounting for authorship trends in the profession. Our results are generally robust to this change, however for the sub-sample of productive authors they are somewhat weaker because the sample of distinct authors is very small (only 714 authors vs 1436 for 3-year periods), given that they are required to be present in all the periods of the sample.

Due to the lag between initiating new research projects and the time it takes to finalise them, the start of the post #MeToo era cannot be defined very precisely. For this reason, in a third exercise, we consider a variation for which we define the #MeToo period as beginning after 1 Jan 2019 instead of 1 Jul 2018 in our baseline results. This helps to account for the possible delayed and additional impacts associated with period over which *American Economic Association* ran their 'Professional Climate Survey' (late 2018) and formally established their 'Policy on Harassment and Discrimination' (early 2019). The results from this are reported in the Online Appendix and are in line with the results from the baseline specifications. A notable difference relative to the baseline is that, post #MeToo, productive and senior authors have lower shares of overall and new coauthorships with early career economists.

Fourth, in an effort to further disentangle the effects of the pandemic from those of #MeToo, we repeated all the analysis with sub-samples that exclude the 452 papers written in last three quarters of 2020 and classified as related to the Covid-19 pandemic.<sup>11</sup> All these papers were initiated and written after March 2020, when most countries were under strict lockdown policies. These policies dramatically changed how researchers collaborated during that period (working from home, via electronic platforms such as Zoom, Teams, etc.). To the extent that resources were switched away from non-covid research projects toward research related to the pandemic in that period, this may have biased any estimated impacts we see, especially in relation to the effects of the pandemic on coauthorships. We believe that the remaining papers in the post-covid period are products of research collaborations that may have been initiated before the pandemic hit, and should therefore exhibit similar coauthorship patterns with papers from 2019 and before. Indeed, when looking at shares of coauthorships with Covid-19 papers removed, the reported #MeToo effects are essentially the same as in our baseline case. It is interesting to look at these results in conjunction with the reported marginal effects of the Covid-19 period for both types of samples. When we exclude the Covid-19 related papers, we see larger shares of new coauthors post-Covid for both men and women authors, and the negative effect previously seen on junior women authors turns insignificant. This suggests that the negative effect of Covid-19 on new junior women coauthors for men authors is primarily due to junior women being less often included in Covid-19 related literature written by men. In the same spirit, we also check the sensitivity of the results to re-defining the dummy variable for #MeToo to take values 0 for the part of 2020 that was affected by the pandemic (from

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<sup>11</sup>Papers from NBER and CEPR dated in 2020 are classified as related to the pandemic using the classification of NBER (<https://www.nber.org/topics/covid-19?page=1&perPage=50>), specific words in the paper titles and keywords, and manually checked by the authors, as in [Amano-Patiño et al. \(2020\)](#).

the second quarter of 2020 onwards). Again, the estimated effects of #MeToo on shares of coauthorships and shares of new coauthorships remain largely unchanged.

In a final variation and as indicated earlier, we repeat the analysis but set the cutoff for defining the new coauthorships to 0 months instead of 3 and, whilst still removing the first every time that an author appears with a paper in the sample. This changes the number of coauthorships defined as *new* and will only impact results with shares of *new* coauthorships as dependent variables. The estimated marginal effects in this case for shares of men are very slightly smaller but otherwise results are very similar to those obtained with the 3-month cutoff.

## 4 Discussion and closing comments

We offer evidence that #MeToo had some significant effects on the coauthorship patterns of economists: post #MeToo men authors have overall included more women in their collaboration groups. This result is good news for the economics profession. It suggests that authors may have recognised that more diverse collaborations could be conducive to higher quality and more impactful research, as established by the literature ([Anderson and Richards-Shubik, 2022](#); [Maddi and Gingras, 2021](#)). However, we also see that senior men authors have higher shares of senior women authors only. Moreover, our results suggest that men have refrained from coauthoring with less established researchers, e.g. junior, post-docs, PhD students even when these are already in their network. The economists in our sample, irrespective of gender, have initiated fewer new research collaborations with researchers not in their network, and especially so with junior economists. This remains true when we restrict our analysis to senior authors. This is bad news. These results combined point to two plausible interpretations: first, men authors may have opted to increase the gender diversity of their collaborations; second, authors have more often relied on their existing collaboration networks rather on creating new coauthorships with other economists. These changes in coauthorship patterns may have long lasting consequences in the development not only of the career of women economists, but also of researchers on their first steps in the profession, and may further disrupt an already ‘leaky’ pipeline.

This paper also establishes that, in the first months of the Covid-19 pandemic, the effects of #MeToo may have been partially reversed. In particular, we find that the pandemic has somewhat benefited young, less established researchers such as PhD students and postdoctoral researchers. This is good news. The shock to the working practices caused by the pandemic may have fostered an environment that is perceived as safer by all counterparts, and facilitated new coauthorships and new projects. However, we find that men had smaller shares of women coauthors and in particular junior women coauthors, dampening the positive #MeToo effect we just described. This is again bad news, given that women academics have been disproportionately affected by the pandemic reducing their research hours and productivity ([Amano-Patiño et al., 2020](#); [Barber et al., 2021](#); [Deryugina et al., 2021](#); [Squazzoni et al., 2020](#); [Kruger et al., 2022](#)).

It is crucial that the economics profession continues to take action to create a safe and inclusive environment for all researchers by evaluating, monitoring, and educating on these issues, and implementing measures to address them. It is also important to address the underlying structural barriers that perpetuate these issues and support the career development of women and junior economists in the field.

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|  | All   | Men   | Women |
|--|-------|-------|-------|
| <b>All authors</b>                         |       |       |       |
| <b>Number of papers</b>                    | 19410 |       |       |
| <b>Number of authors</b>                   | 7731  | 6025  | 1706  |
| <b>Authors' average characteristics</b>    |       |       |       |
| Lagged degree                              | 4.51  | 4.70  | 3.84  |
| Lagged clustering                          | 0.83  | 0.82  | 0.86  |
| Years of experience                        | 12.70 | 13.42 | 10.15 |
| Number of coauthors per paper              | 3.05  | 3.05  | 3.07  |
| Number of papers per period                | 2.46  | 2.53  | 2.19  |
| Cumulative num. of papers                  | 5.81  | 6.12  | 4.72  |
| <b>Authors' seniorities at publication</b> |       |       |       |
| Early career economists                    | 478   | 332   | 146   |
| Junior economists                          | 2137  | 1551  | 586   |
| Micareer economists                        | 1694  | 1276  | 418   |
| Senior economists                          | 3212  | 2710  | 502   |
| Unclassified                               | 210   | 156   | 54    |
| <b>Productive authors</b>                  |       |       |       |
| <b>Number of papers</b>                    | 14714 |       |       |
| <b>Number of authors</b>                   | 1436  | 1206  | 230   |
| <b>Authors' average characteristics</b>    |       |       |       |
| Lagged degree                              | 10.18 | 10.33 | 9.35  |
| Lagged clustering                          | 0.56  | 0.56  | 0.60  |
| Years of experience                        | 18.01 | 18.63 | 14.76 |
| Number of coauthors per paper              | 2.83  | 2.81  | 2.93  |
| Number of papers per period                | 4.38  | 4.46  | 3.98  |
| Cumulative num. of papers                  | 14.42 | 14.77 | 12.59 |
| <b>Authors' seniorities at publication</b> |       |       |       |
| Early career economists                    | 7     | 5     | 2     |
| Junior economists                          | 146   | 111   | 35    |
| Micareer economists                        | 261   | 213   | 48    |
| Senior economists                          | 1008  | 866   | 142   |
| Unclassified                               | 14    | 11    | 3     |
| <b>Senior authors</b>                      |       |       |       |
| <b>Number of papers</b>                    | 15539 |       |       |
| <b>Number of authors</b>                   | 3545  | 2971  | 574   |
| <b>Authors' average characteristics</b>    |       |       |       |
| Lagged degree                              | 6.94  | 7.01  | 6.54  |
| Lagged clustering                          | 0.71  | 0.71  | 0.74  |
| Years of experience                        | 20.31 | 20.80 | 17.77 |
| Number of coauthors per paper              | 3.01  | 3.00  | 3.06  |
| Number of papers per period                | 2.89  | 2.94  | 2.62  |
| Cumulative num. of papers                  | 8.94  | 9.13  | 8.00  |
| <b>Authors' seniorities at publication</b> |       |       |       |
| Early career economists                    | 0     | 0     | 0     |
| Junior economists                          | 0     | 0     | 0     |
| Micareer economists                        | 0     | 0     | 0     |
| Senior economists                          | 3545  | 2971  | 574   |
| Unclassified                               | 0     | 0     | 0     |

*Notes:* Number of authors by seniority is counted using the mode seniority of each distinct author. Average characteristics are calculated as the average across the mean characteristic of distinct authors.

**Table 1: Summary Statistics**

|                           | (1)                 | (2)                   | (3)                   | (4)                 | (5)                    | (6)                    | (7)                   | (8)                   | (9)                   |
|---------------------------|---------------------|-----------------------|-----------------------|---------------------|------------------------|------------------------|-----------------------|-----------------------|-----------------------|
|                           | Senior              | Mid-career            | Junior                | Early-career        | All women              | Senior women           | Mid-career women      | Junior women          | Early-career women    |
| <b>All authors</b>        |                     |                       |                       |                     |                        |                        |                       |                       |                       |
| Men                       | -0.0058<br>(0.0068) | 0.0221***<br>(0.0068) | -0.0145**<br>(0.0063) | 0.0023<br>(0.0039)  | 0.0105**<br>(0.0042)   | 0.0054***<br>(0.0021)  | 0.0040*<br>(0.0021)   | 0.0036<br>(0.0028)    | 0.0008<br>(0.0021)    |
| Women                     | -0.0010<br>(0.0131) | 0.0049<br>(0.0111)    | -0.0189*<br>(0.0108)  | 0.0090<br>(0.0068)  | -0.0415***<br>(0.0126) | -0.0334**<br>(0.0136)  | -0.0089<br>(0.0097)   | -0.0042<br>(0.0105)   | -0.0041<br>(0.0047)   |
| <i>N</i>                  | 35,755              | 35,755                | 35,755                | 35,755              | 35,755                 | 35,755                 | 35,755                | 35,755                | 35,755                |
| <b>Productive authors</b> |                     |                       |                       |                     |                        |                        |                       |                       |                       |
| Men                       | -0.0088<br>(0.0086) | 0.0252***<br>(0.0087) | -0.0105<br>(0.0079)   | 0.0009<br>(0.0049)  | 0.0197***<br>(0.0058)  | 0.0033<br>(0.0027)     | 0.0101***<br>(0.0035) | 0.0116***<br>(0.0043) | 0.0023<br>(0.0027)    |
| Women                     | 0.0100<br>(0.0179)  | 0.0147<br>(0.0153)    | -0.0259*<br>(0.0149)  | -0.0055<br>(0.0094) | -0.0437**<br>(0.0189)  | -0.0001<br>(0.0184)    | -0.0188<br>(0.0122)   | -0.0283**<br>(0.0124) | -0.0116**<br>(0.0057) |
| <i>N</i>                  | 20,488              | 20,488                | 20,488                | 20,488              | 20,488                 | 20,488                 | 20,488                | 20,488                | 20,488                |
| <b>Senior authors</b>     |                     |                       |                       |                     |                        |                        |                       |                       |                       |
| Men                       | -0.0103<br>(0.0063) | 0.0182***<br>(0.0057) | -0.0130**<br>(0.0060) | 0.0041<br>(0.0047)  | 0.0098*<br>(0.0054)    | 0.0052**<br>(0.0021)   | 0.0033<br>(0.0031)    | -0.0004<br>(0.0034)   | 0.0022<br>(0.0027)    |
| Women                     | -0.0168<br>(0.0123) | 0.0304***<br>(0.0105) | -0.0234**<br>(0.0111) | 0.0067<br>(0.0087)  | -0.0513***<br>(0.0178) | -0.0466***<br>(0.0139) | 0.0087<br>(0.0070)    | -0.0132*<br>(0.0071)  | -0.0014<br>(0.0053)   |
| <i>N</i>                  | 21,775              | 21,775                | 21,775                | 21,775              | 21,775                 | 21,775                 | 21,775                | 21,775                | 21,775                |

Notes: SE in parentheses clustered by author. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 2: Marginal effects of #MeToo on proportions of all coauthors in papers from CEPR and NBER.**

|                           | (1)                    | (2)                  | (3)                 | (4)                    | (5)                 | (6)                   | (7)                    | (8)                | (9)                   | (10)                |
|---------------------------|------------------------|----------------------|---------------------|------------------------|---------------------|-----------------------|------------------------|--------------------|-----------------------|---------------------|
|                           | New coauthors          | New senior           | New mid             | New junior             | New early-career    | New women             | New senior women       | New mid women      | New junior women      | New early women     |
| <b>All authors</b>        |                        |                      |                     |                        |                     |                       |                        |                    |                       |                     |
| Men                       | -0.0161***<br>(0.0052) | -0.0053<br>(0.0037)  | -0.0007<br>(0.0030) | -0.0089**<br>(0.0041)  | 0.0020<br>(0.0035)  | 0.0016<br>(0.0037)    | 0.0003<br>(0.0015)     | 0.0003<br>(0.0015) | 0.0010<br>(0.0023)    | 0.0012<br>(0.0019)  |
| Women                     | -0.0086<br>(0.0091)    | -0.0102<br>(0.0064)  | 0.0046<br>(0.0050)  | -0.0162**<br>(0.0069)  | 0.0113*<br>(0.0059) | -0.0137**<br>(0.0066) | -0.0090***<br>(0.0029) | 0.0019<br>(0.0031) | -0.0077*<br>(0.0043)  | -0.0009<br>(0.0037) |
| <i>N</i>                  | 35,755                 | 35,755               | 35,755              | 35,755                 | 35,755              | 35,755                | 35,755                 | 35,755             | 35,755                | 35,755              |
| <b>Productive authors</b> |                        |                      |                     |                        |                     |                       |                        |                    |                       |                     |
| Men                       | -0.0194**<br>(0.0076)  | -0.0033<br>(0.0050)  | -0.0003<br>(0.0040) | -0.0116**<br>(0.0053)  | -0.0008<br>(0.0043) | 0.0052<br>(0.0047)    | 0.0009<br>(0.0018)     | 0.0015<br>(0.0020) | 0.0017<br>(0.0028)    | 0.0023<br>(0.0024)  |
| Women                     | -0.0157<br>(0.0136)    | -0.0054<br>(0.0089)  | 0.0147*<br>(0.0079) | -0.0310***<br>(0.0097) | 0.0028<br>(0.0079)  | -0.0183*<br>(0.0099)  | -0.0087*<br>(0.0045)   | 0.0030<br>(0.0048) | -0.0088<br>(0.0062)   | -0.0048<br>(0.0047) |
| <i>N</i>                  | 20,048                 | 20,488               | 20,488              | 20,488                 | 20,488              | 20,488                | 20,488                 | 20,488             | 20,488                | 20,488              |
| <b>Senior authors</b>     |                        |                      |                     |                        |                     |                       |                        |                    |                       |                     |
| Men                       | -0.0168**<br>(0.0069)  | -0.0079*<br>(0.0041) | 0.0036<br>(0.0040)  | -0.0141***<br>(0.0049) | 0.0031<br>(0.0042)  | -0.0008<br>(0.0044)   | -0.0008<br>(0.0016)    | 0.0015<br>(0.0021) | -0.0029<br>(0.0026)   | 0.0026<br>(0.0024)  |
| Women                     | -0.0039<br>(0.0127)    | -0.0088<br>(0.0078)  | 0.0139*<br>(0.0074) | -0.0184**<br>(0.0092)  | 0.0088<br>(0.0076)  | -0.0184**<br>(0.0086) | -0.0102***<br>(0.0036) | 0.0042<br>(0.0046) | -0.0140**<br>(0.0054) | 0.0002<br>(0.0048)  |
| <i>N</i>                  | 21,775                 | 21,775               | 21,775              | 21,775                 | 21,775              | 21,775                | 21,775                 | 21,775             | 21,775                | 21,775              |

Notes: SE in parentheses clustered by author. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 3: Marginal effects of #MeToo on proportions of new coauthors in papers from CEPR and NBER.**



|                           | (1)                   | (2)                    | (3)                    | (4)                | (5)                    | (6)                 | (7)                    | (8)                   | (9)                 |
|---------------------------|-----------------------|------------------------|------------------------|--------------------|------------------------|---------------------|------------------------|-----------------------|---------------------|
|                           | Senior                | Mid-career             | Junior                 | Early-career       | All women              | Senior women        | Mid-career women       | Junior women          | Early-career women  |
| <b>All authors</b>        |                       |                        |                        |                    |                        |                     |                        |                       |                     |
| Men                       | 0.0200***<br>(0.0069) | -0.0007<br>(0.0063)    | -0.0274***<br>(0.0062) | 0.0043<br>(0.0042) | -0.0113***<br>(0.0041) | -0.0026<br>(0.0019) | -0.0024<br>(0.0019)    | -0.0059**<br>(0.0024) | -0.0012<br>(0.0019) |
| Women                     | 0.0157<br>(0.0146)    | -0.0213*<br>(0.0111)   | -0.0020<br>(0.0122)    | 0.0111<br>(0.0088) | -0.0314**<br>(0.0142)  | 0.0056<br>(0.0143)  | -0.0102<br>(0.0099)    | -0.0227**<br>(0.0104) | 0.0057<br>(0.0065)  |
| <i>N</i>                  | 35,755                | 35,755                 | 35,755                 | 35,755             | 35,755                 | 35,755              | 35,755                 | 35,755                | 35,755              |
| <b>Productive authors</b> |                       |                        |                        |                    |                        |                     |                        |                       |                     |
| Men                       | 0.0307***<br>(0.0085) | -0.0216***<br>(0.0075) | -0.0154*<br>(0.0086)   | 0.0036<br>(0.0055) | -0.0137**<br>(0.0056)  | -0.0022<br>(0.0028) | -0.0037<br>(0.0027)    | -0.0073**<br>(0.0033) | -0.0008<br>(0.0026) |
| Women                     | 0.0014<br>(0.0203)    | -0.0312*<br>(0.0183)   | 0.0296<br>(0.0219)     | 0.0096<br>(0.0148) | -0.0277<br>(0.0238)    | 0.0035<br>(0.0198)  | -0.0256*<br>(0.0147)   | -0.0147<br>(0.0184)   | 0.0035<br>(0.0096)  |
| <i>N</i>                  | 20,488                | 20,488                 | 20,488                 | 20,488             | 20,488                 | 20,488              | 20,488                 | 20,488                | 20,488              |
| <b>Senior authors</b>     |                       |                        |                        |                    |                        |                     |                        |                       |                     |
| Men                       | 0.0155**<br>(0.0065)  | -0.0141***<br>(0.0052) | -0.0052<br>(0.0068)    | 0.0037<br>(0.0050) | -0.0129**<br>(0.0051)  | -0.0032<br>(0.0022) | -0.0027<br>(0.0028)    | -0.0063**<br>(0.0031) | -0.0014<br>(0.0023) |
| Women                     | 0.0019<br>(0.0146)    | -0.0286**<br>(0.0118)  | 0.0369**<br>(0.0160)   | 0.0017<br>(0.0109) | -0.0426**<br>(0.0202)  | -0.0071<br>(0.0132) | -0.0179***<br>(0.0066) | 0.0032<br>(0.0096)    | -0.0038<br>(0.0059) |
| <i>N</i>                  | 21,775                | 21,775                 | 21,775                 | 21,775             | 21,775                 | 21,775              | 21,775                 | 21,775                | 21,775              |

Notes: SE in parentheses clustered by author. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 4: Marginal effects of Covid-19 on proportions of all coauthors in papers from CEPR and NBER.**

|                           | (1)                  | (2)                 | (3)                   | (4)                  | (5)                | (6)                    | (7)                  | (8)                   | (9)                    | (10)                |
|---------------------------|----------------------|---------------------|-----------------------|----------------------|--------------------|------------------------|----------------------|-----------------------|------------------------|---------------------|
|                           | New coauthors        | New senior          | New mid               | New junior           | New early-career   | New women              | New senior women     | New mid women         | New junior women       | New early women     |
| <b>All authors</b>        |                      |                     |                       |                      |                    |                        |                      |                       |                        |                     |
| Men                       | -0.0078<br>(0.0060)  | -0.0028<br>(0.0041) | -0.0051*<br>(0.0030)  | -0.0084*<br>(0.0045) | 0.0041<br>(0.0039) | -0.0113***<br>(0.0035) | -0.0024*<br>(0.0014) | -0.0016<br>(0.0015)   | -0.0058***<br>(0.0020) | -0.0020<br>(0.0018) |
| Women                     | 0.0240*<br>(0.0125)  | 0.0061<br>(0.0088)  | -0.0110**<br>(0.0055) | 0.0175*<br>(0.0102)  | 0.0103<br>(0.0077) | 0.0020<br>(0.0096)     | 0.0056<br>(0.0051)   | -0.0050<br>(0.0032)   | -0.0006<br>(0.0060)    | 0.0045<br>(0.0051)  |
| <i>N</i>                  | 35,755               | 35,755              | 35,755                | 35,755               | 35,755             | 35,755                 | 35,755               | 35,755                | 35,755                 | 35,755              |
| <b>Productive authors</b> |                      |                     |                       |                      |                    |                        |                      |                       |                        |                     |
| Men                       | -0.0047<br>(0.0089)  | 0.0048<br>(0.0060)  | -0.0068<br>(0.0041)   | -0.0075<br>(0.0062)  | 0.0026<br>(0.0049) | -0.0111**<br>(0.0047)  | -0.0013<br>(0.0019)  | -0.0020<br>(0.0020)   | -0.0065**<br>(0.0026)  | -0.0021<br>(0.0023) |
| Women                     | 0.0437**<br>(0.0209) | 0.0179<br>(0.0143)  | -0.0118<br>(0.0088)   | 0.0335**<br>(0.0170) | 0.0067<br>(0.0122) | 0.0062<br>(0.0154)     | 0.0181<br>(0.0114)   | -0.0056<br>(0.0050)   | -0.0047<br>(0.0083)    | -0.0003<br>(0.0066) |
| <i>N</i>                  | 20,048               | 20,488              | 20,488                | 20,488               | 20,488             | 20,488                 | 20,488               | 20,488                | 20,488                 | 20,488              |
| <b>Senior authors</b>     |                      |                     |                       |                      |                    |                        |                      |                       |                        |                     |
| Men                       | -0.0061<br>(0.0077)  | -0.0004<br>(0.0047) | -0.0082**<br>(0.0038) | -0.0034<br>(0.0057)  | 0.0037<br>(0.0045) | -0.0099**<br>(0.0043)  | -0.0028*<br>(0.0015) | -0.0011<br>(0.0021)   | -0.0051**<br>(0.0025)  | -0.0017<br>(0.0021) |
| Women                     | 0.0275<br>(0.0176)   | 0.0082<br>(0.0115)  | -0.0124<br>(0.0085)   | 0.0277**<br>(0.0136) | 0.0048<br>(0.0102) | -0.0063<br>(0.0123)    | 0.0086<br>(0.0071)   | -0.0093**<br>(0.0047) | 0.0034<br>(0.0079)     | -0.0035<br>(0.0055) |
| <i>N</i>                  | 21,775               | 21,775              | 21,775                | 21,775               | 21,775             | 21,775                 | 21,775               | 21,775                | 21,775                 | 21,775              |

Notes: SE in parentheses clustered by author. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 5: Marginal effects of Covid-19 on proportions of new coauthors in papers from CEPR and NBER.**