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Remote talks: changes to economics seminars during Covid-19

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Abstract

This paper documents the changing nature of seminars in economics organized by institutions worldwide during the COVID-19 pandemic. The number of seminars held decreased by approximately 20 percent. The composition of seminar speakers changed significantly. Leading top economists in terms of overall output gave relatively fewer seminars, whereas the share of seminars held by top young economists increased. The share of seminars held by women increased in relative terms, but not in absolute terms. Moving from in person seminar delivery to online delivery of seminars caused a significant shift in the geography of knowledge dissemination. The distance between host and speaker institutions increased on average by 20 percent. The share of seminars held across countries' borders increased modestly by 2.9 per-cent.

JEL codes: A1; F14; I23; O33

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1 Introduction

The COVID-19 pandemic has led to an abrupt reorganization of dissemination in research in sciences. As the transmissibility of SARS-CoV-2 (colloquial “coronavirus”) between humans became obvious, countries across the world introduced non-pharmaceutical interventions (for example, contact restrictions). They issued international travel warnings and as a consequence, conferences and seminars in sciences were cancelled in spring 2020. By the fall term 2020 institutions across the world had adapted to the worldwide spread of COVID-19 by introducing online seminars. What are the implications of this dramatic change in mode of seminar delivery for the geography of knowledge dissemination? What are the consequences for the composition of seminar series with respect speakers’ experience, gender, and publicity in the profession?

This paper tackles these questions by building a large panel dataset of research seminars held at institutions across the world in fall 2019 and 2020. For this purpose, the study searched a large set of institutions worldwide regarding the criterion, whether they have recorded their current and past seminars in economics. A random sample of 60 percent of institutions that satisfy this criterion was drawn to provide first estimates on the effects of the pandemic on the delivery of economic research. The data on seminar talks are complemented by a rich set of characteristics both at the institutional and at the seminar speaker level. The first step of the analysis examines the extensive margin of seminar presentations. It shows that there was a significant reduction in seminars during the COVID-19 pandemic compared to before. The second step sheds light on the changing composition of seminars in economics during the COVID-19 pandemic. The key findings are a relative shift in presentation slots away from leading top researchers, as defined by the RePEc ranking, toward top young economists and less experienced researchers. The share of presenting women increased, whereas the absolute number of seminars given by women stayed constant. The final part of the paper focuses on the changing geography of online seminars compared to seminars delivered in-person. The key results are an increase in distance between the speaker and the host institution as well as an increase in seminars across countries’ borders. Taken together, these results suggest that the technological change has been a sudden shock to research dissemination, which is a critical part of the research production function. Seminar speakers receive comments from different seminar audiences, and the audiences are learning from a different set of speakers. Future revisions of this paper will analyze how these changes affect research quality.

This study contributes to four strands of the literature. The first literature to which this paper contributes examines the determinants and effects of presenting at seminars and conferences in sciences. Conferences can promote research collaborations (Campos, Lopez de Leon, and McQuillin 2018; Chai and Freeman 2019), increase the likelihood of citing other

participants (Head, Li, and Minondo 2019; Lopez de Leon and McQuillin 2020), and the likelihood to publish in leading journals (Gorodnichenko, Pham, and Talavera 2021). As such interactions through conferences or seminars can have a meaningful impact on researchers. Minondo (2020) analyzes the speaker level determinants of seminar invitations and seminar acceptances for seminars held in US economics departments. He finds that high quality scholars have a higher likelihood of getting invited and that distance between the speaker and the host institution reduces the likelihood of a seminar invitation. This paper contributes to this strand of the literature by expanding the data collection of seminars worldwide moving beyond the collection of US departments and by providing first evidence on the changing geography of knowledge dissemination in economics research seminars during the COVID-19 pandemic.

The second strand of the literature to which this paper speaks examines the gender inequality in the economics profession. Card et al. (2019) show that female-authored papers in leading economics journals receive more citations than observably similar male-authored papers. Hengel (2020) finds that female-authored papers in four leading economics journals are held to higher writing quality compared to male-authored papers and therefore subject to higher standards in peer-review. With regards to participation in economics conferences, Chari and Goldsmith-Pinkham (2017) report no difference between genders in acceptance rates of submissions to the NBER summer institute, whereas Hospido and Sanz (2020) find a 3.2 percentage point lower likelihood of acceptance for women to conferences in Europe. Doleac, Hengel, and Pancotti (2021) analyze the composition of seminars in US economics departments with respect to gender and underrepresented minorities in economic seminars. The authors report an increase in seminars given by women in the spring and fall of 2019. Dupas et al. (2021) collect questions in economics seminars and claim that female presenters are asked more questions, which are also more hostile and patronizing. With respect to the impact of the COVID-19 pandemic on women in academia, Deryugina, Shurchkov, and Stearns (2021) survey researchers and find that women with children report a disproportionately reduction in time dedicated to research relative to men and women without children. Amano-Patiño et al. (2020) provide early evidence that women contributed 12 percent of the total number of working papers on COVID-19 related research, significantly less compared to non-COVID related research. This study contributes to the literature by showing that in terms of presentation in seminars during the COVID-19 pandemic, the gender gap has narrowed and women have presented in more seminars in relative terms but not in absolute terms compared to before the pandemic, because the number of seminars declined in absolute terms.

Thirdly, this paper contributes to the literature on superstars and inequality. A number of papers document a correlation between market size and earnings of superstars, for example Gabaix and Landier (2008) show that the increase in CEO pay can be largely at-

tributed to an increase in market capitalization. Koenig (2021) tests the superstar model of Rosen (1981) empirically using the entertainment sector during the rollout of television. He provides causal evidence for superstar effects and shows that the rollout increased the share of the top 1 percent of top income earners by 50 percent. This paper exploits the technology shock of moving from in-person delivery of seminars to online seminars and documents that superstar effects in terms of seminar presentations did not occur for senior researchers, but that there was an increased demand for presentations of top young economists.

Finally, a body of the literature documents the persistent effects of distance in international trade (Disdier and Head 2008). Lendle et al. (2016) show that the effect of distance for trade on eBay is on average 65 percent smaller, as the platform facilitates matching of buyers and sellers from all over the world. Broadly interpreted, seminars in economics are a special type of trade in services in which persons move to deliver a service locally such as in professional services, for example in management consulting. Dingel and Neiman (2020) estimate that a large fraction in professional and technical services; education; business and finance; and management occupations can be performed from home. This paper contributes by showing that moving in-person seminars online led to an increase in distance between the seminar speaker and the hosting department, and a relative increase in seminars across countries' borders. Thereby, it provides first hints at the changing geography of trade in professional services during the COVID-19 pandemic.

The remainder of this paper is structured as follows. The following section describes the data. The third section presents the analysis. The final section concludes and indicates directions for future revisions of this study.

2 Data

The basis for the study is the following sample choice. The websites of three types of institutions that host seminars were accessed: universities, central banks, and research institutes. The universities list is taken from the Tilburg Ranking that measures the academic output in economics of universities worldwide. The journals included in the default settings in the ranking include 35 top general interest and top field journals. Initially, the sample in this paper restricted the search to institutions with a minimum of seven publications in these journals between 2015 and 2019.¹ This comprises 528 institutions worldwide.² Additionally, information on seminars held in central banks and research institutes were collected from the RePEc ranking that includes 31 central banks and 55 research

¹See Online Appendix for a full list of journals included in the Tilburg Ranking.

²See <https://econtop.uvt.nl/rankingsandbox.php> for a complete list of institutions. For the complete list of institutions, one has to click on show top: "All".

institutes.³ Furthermore, research institutes were identified through online search.

Among the set of institutions, this study identified 228 universities, 10 central banks, and 12 research institutes that recorded economics seminars in both the fall of the academic year 2019/20 and the fall of the academic year 2020/21. The mean (median) number of publications in the Tilburg ranking of matched universities is 60.33 (34), whereas the mean (median) number of publications of institutions included in the sample is 34 (23), i.e. higher ranked universities are more likely to report their seminar series over the past two academic years on their website. The average rank of central banks that record seminars in both academic years is 16.3, and therefore lower than the average rank of central banks included in the search, which is 15.53. This study restricts the set of seminars to those that are open to external speakers and excludes internal work in progress seminar series. It excludes cancelled and postponed seminars, as well as flyouts by job market candidates. When a seminar is held jointly by two series within an institution, it is assigned firstly to the seminar series which usually takes place at the time of the talk to avoid double recording. Initially, a 60 percent random sample is drawn stratified by the rank of the institution in the respective ranking.⁴

For each institution, the seminar talks by seminar series were collected. More precisely, the hand-collected data record the date at which the talk was given, the speaker, the speakers' institution, the time at which the seminar was held, the host institution, the seminar series (general, or the respective field), and the academic year in which the respective talk was given. Throughout the paper, speakers and spellings of institutions across different data sets were harmonized using the `matchit` and `geodist` commands in Stata.

For each speaker, this study identifies whether the speaker is a PhD student and excludes them. Speakers from institutions that are not universities are also included in the sample provided that they hold a PhD. This is done to ensure comparability in terms of research experience across speakers. The identification of PhDs follow from speakers' CVs, LinkedIn, the family tree of trade economists, the mathematics genealogy, speakers' PhD thesis, and the CVs of supervisors.⁵ In doing so, this study identified for 98.7 percent of speakers in the sample from which institution they hold a PhD and for 97.7 percent of the sample the year in which the PhD was obtained.

The speakers' gender is identified through a machine learning based algorithm.⁶ The algorithm provides a probability with which the suggested gender is true. This paper sets a cutoff, and trusts the algorithm for a probability greater or equal than 95 percent when determining the gender based on the algorithm. For the remaining speakers the proposed

³The complete list of central banks can be accessed from <https://ideas.repec.org/top/top.central.html> and the full list of research institutes can be accessed from <https://ideas.repec.org/top/top.ttanks.html>.

⁴At the time of this writing, the collection of the remaining 40 percent is in progress.

⁵If a researcher holds two PhD degrees, the PhD obtained first is recorded in the data.

⁶The provider is <https://gender-api.com>.

gender of the algorithm was hand-verified by searching for a photo of the speaker.

For all institutions included in the data, the latitude and longitude of the institutions were identified using Google maps. For universities, the location of the economics department was identified. The geodetic distance between institutions is calculated by using the coordinates and the `geodist` command in Stata. Additionally, the two-digit country ISO code of each institution was collected. The time zone difference between institutions was retrieved from the gravity data provided by CEPII.

Using the RePEc database, this study identified seminar speakers that are ranked among the top 5 percent based on their overall research output in RePEc and based on the last 10 years of publications in the RePEc database. Furthermore, a list that comprises 200 top young economists, whose first publication in the RePEc database is no older than 10 years.⁷

2.A Summary statistics

Table 1 shows summary statistics at the seminar series level and the seminar level in the fall term of the last academic year before the pandemic 2019/20. Overall there are 298 seminar series in the data. The average seminar series includes 8.57 speakers in the fall term 2019/20. The share of female speakers was on average 23.5 percent.

At the seminar level, 23.3 percent of the seminars were held by female speakers. The top 5 percent of researchers in terms of their overall output and in terms of their publication record in the last 10 years accounted for 20.6 and 27.5 percent of seminars, respectively. The 200 top young economists held 2 percent of the seminars. They are a distinct group as they account for only 0.16 (4.94) percent of the top 5 percent of researchers in terms of overall output (in terms of research output in the last 10 years). Finally, 45.7 percent of seminar talks involved travel across countries' borders and the time zone difference between host and speakers' countries was on average 1.82 hours.

3 The Effects of the COVID-19 Pandemic on Research Seminars in Economics

The following analysis is carried out on two levels, the level of the seminar series and the seminar talk. Let h denote the host institution, s the seminar series of the department, and t the academic year in which the seminar was held. The estimating equation at the seminar series level is given by:

$$\text{Outcome}_{hst} = \lambda_{hs} + \beta \times \mathbb{1}(t = \text{Academic year 2020/21}) + \varepsilon_{hst}, \quad (1)$$

⁷Note that there is some selection here in that not all authors are necessarily registered in RePEc.

where λ_{hs} is an institution-seminar series specific fixed effect and ε_{hst} the error term. Larger institutions offer many field specific seminars, and this specification considers the within seminar series change by including λ_{hs} . The coefficient estimate for β identifies the time fixed effect for seminars held during the COVID-19 pandemic relative to the pre-period. Equation (1) identifies the effect of the COVID-19 pandemic on seminar organization through a time fixed effect, as 73 percent of the institutions in the sample report at least some seminars online in the academic year 2020/21.⁸ Standard errors are clustered at the host institution level to allow for correlation between seminar series within an institution.

3.A The Extensive Margin of Seminar Series

The first outcome is the logarithm of the number of seminars given in a seminar series s organized by institution h .

The results in Table 2 show a negative point estimate that is statistically significant at the 1 percent level. The point estimate suggests that during the fall term of the academic year 2020/21 on average 20.4 percent fewer seminar talks were held compared to before. The number of individual researchers declined correspondingly by 15.1 percent from 2,126 in the pre-pandemic academic year to 1,809 in the academic year 2020/21. One possible explanation is that institutions partially substituted to online seminars that are open to the public. Numerous cross-institutional seminars have been established as a consequence of the pandemic.⁹ Some institutions allow unaffiliated researchers also to access their seminars, which may have caused a change in the composition of the audience. While these public seminars have facilitated access to frontier knowledge across the profession, they most likely cannot substitute informal bilateral discussions between seminar speakers and members of the host institution. Overall there are fewer opportunities for speakers to present. What are the implications for the composition of seminar series?

3.B The Changing Composition of Seminar Series by Speakers' Characteristics

To answer this question, the following analysis is conducted at the level of the seminar talk. Let i denote a seminar talk held by an individual speaker. The remaining notation is the same as introduced in equation (1) and the level of clustering remains at the host institution level.

$$\text{Outcome}_{ihst} = \lambda_{hs} + \beta \times (t = \text{Academic year 2020/21}) + \varepsilon_{ihst}. \quad (2)$$

⁸This is most likely a conservative lower bound, as the information is missing on most other institutions' websites.

⁹See, for example, <https://ideas.repec.org/v/> for a selection of virtual seminars.

The results in Table 3 analyze how speakers characteristics changed during the pandemic. The first two columns examine the change in presentations by leading researchers as measured by placement among the top 5 percent in two types of RePEc rankings. The first ranking considers the overall RePEc output of researchers in economics. The coefficient estimate is significant at the 5 percent level. Its magnitude suggests that the relative likelihood of this group to give a seminar talk decreased by 2.64 percentage points or 12.81 percent of the pre-pandemic average. The second ranking places economists in terms of their research output in the last 10 years. The results in column (2) show a positive but insignificant coefficient. The third outcome is equal to one, if the seminar speaker is among 200 top young economists whose first publication in RePEc is no older than 10 years. The point estimate for the academic year 2020/21 is positive and significant at the 5 percent level. Its magnitude suggests a 0.87 percentage point increase in the relative likelihood to hold a seminar as a top young economist, or 44 percent in terms of the pre-pandemic mean. The final column considers the experience in years at the time of the seminar talk after the speaker left the PhD. For example, a speaker that graduated in 2015 and gave a seminar talk in 2020 would have five years of experience post-graduation at this point. Consistent with the estimates for leading research in the profession in columns (1) and (3), the experience of the average seminar speaker declined by 0.72 years. Overall, superstar effects arise, only modestly for young top economists, but not for leading economists in terms of overall RePEc output.

The results in Table 4 examine the changing gender composition of seminars in economics during the pandemic. The first outcome is the likelihood that the seminar speaker is female. The point estimate is positive and significant at the 1 percent level. The coefficient estimate suggests a 4.43 percentage point increase in the relative likelihood that the seminar speaker during the pandemic is female, which is about 18.9 percent in terms of the pre-pandemic mean. The outcome in column (2) is the share of female speakers at the seminar series level. The corresponding regression is equation (1). The conclusions from column (1) carry over to column (2). The share of female speakers has increased during the pandemic at the seminar series level. However, as the number of overall seminars has declined (Table 2), the number of seminars held by female speakers has not significantly increased. The point estimate using this outcome in column (3) is positive, but insignificant.

3.C The Changing Geography of Seminar Series

Moving from in-person delivery to virtual delivery of seminars has led to literally zero trade costs for seminar speakers to hold a seminar in any location worldwide, apart from potential coordination difficulties due to time-zone differences. What are the consequences of this technology shock to the geography of seminar delivery? The latitude and longitude of the speakers' institution and the host institution were retrieved from Google maps to calculate the bilateral geodetic distance in Stata using the `geodist` command.

The results in Table 5 investigate the changing geography of seminar delivery during the pandemic, by using the log of the geodetic distance as outcome. The coefficient estimate in column (1) is positive and significant at the 1 percent level. The magnitude suggests a huge increase by 20.5 percent in geodetic distance relative to the last academic year before the pandemic. Column (2) examines heterogeneity among universities as hosting institutions by the rank in the Tilburg ranking. The interaction term is negative and significant at the 5 percent level. This implies that higher ranked institutions invited speakers from further apart compared to before the pandemic. The increase in distance is approximately 40 percent for a top 10 institution and diminishes to zero, when the rank of the host institution is 338 in the Tilburg ranking. Column (3) examines heterogeneity by the rank of the speakers' institution in the Tilburg ranking. The rank of the speakers' institution enters negatively, i.e. speakers from better ranked institutions travel to institutions further away. The interaction term between the time fixed effect and the rank of the speakers' institution is also negative, suggesting that speakers from better ranked institutions travel further during the pandemic. The increase in distance for a speaker affiliated with a top 10 institution is close to 37 percent, whereas the effect dissipates when the speaker comes from an institution ranked at place 235 in the Tilburg ranking. All in all, the results suggest that geographic knowledge dissemination has increased globally, and in particular for higher ranked hosting institutions and for speakers affiliated with higher ranked institutions.

What locations are driving the increase in distance between host institution and speaker institution? Table A.1 shows the changes in seminars between the academic years 2019/20 and 2020/21 among the five most frequent continent combinations in the pre-pandemic year. There is a decrease of roughly 20 percent for seminars within America and Europe. Likewise, there is a decline in seminars within Asia by 12.5 percent. There are only two continent combinations for which the extensive margin of seminars actually increased. There was a modest increase by 3.25 percent in seminars held by speakers from institutions in America hosted by institutions in Europe. The most significant surge was seen in seminars held by speakers from institutions in Europe hosted by institutions in America by 88.17 percent.

Table 6 examines whether the increase in distance also translated into a relative increase in seminars across borders. For this purpose, the country iso codes of the host institution and the speakers' institution were retrieved. The estimates in column (1) show that there was a positive increase in the share of seminars organized across borders during the pandemic. The point estimate implies a 2.9 percentage point increase or a modest rise of 6.3 percent in terms of the pre-pandemic mean. Column (2) examines the extensive margin of seminars across borders. The point estimate is negative and the PPML estimation of the elasticity suggests a 11 percentage points decrease during the pandemic relative to the last pre-pandemic year. The final column examines the time zone difference between the speakers' and host institutions' countries. The point estimate is positive and significant at the 1 percent level. The point estimate implies a moderate increase in time zone difference between speaker and host of approximately 22 minutes.

3.D Heterogeneity by Seminar Series Type

Which seminar series are driving the changing composition of speakers? In order to answer this question, seminars are classified into two categories: seminars that include speakers from more than one broad area of economics ("general") and seminars that invite speakers from a specific field, for example applied microeconomics, econometrics, or macroeconomics. About 65.1 percent of the seminar series in the sample are classified as "field seminar". The average rank of a hosting university in the Tilburg ranking with a seminar classified as "general" is 248, whereas the average rank of all universities included in the sample is 199. Seminar series of central banks and research institutes are also classified as general as these institutions usually host one seminar series with speakers from a variety of fields.

First, the differential response of field seminars with respect to the number of seminars is examined. The results in Table A.2 show a positive and significant interaction term between the time dummy and a dummy equal to one if the seminar is classified as field seminar. The results suggest that the number of seminars were reduced by almost 30 percent for general economics seminar series but only by 15.5 percent for field seminars.

The results in Table A.3 examine the differential changes in the composition of seminars by field seminars relative to general seminars. The outcome in column (1) is the likelihood that a researcher from the top 5 percent of the RePEc ranking is invited. The interaction term in column (1) is positive and significant at the 5 percent level. This suggests that the decline in the relative likelihood to invite a top researcher in terms of overall RePEc output is entirely driven by general seminar series. The total effect for field seminars is insignificant. The interaction term in column (3) is negative but insignificant. The

size of the baseline coefficient increases to close to 1 percentage point. This implies that the relative increase in invitations issued to top young researchers is driven by general seminars. Finally, the interaction term in column (4) for field seminars is positive and significant at the 5 percent level. The overall effect in terms of experience is close to zero and insignificant for field seminars, which implies that the decline in speakers' experience is entirely due to a change in the composition in general seminars.

4 Conclusion

This paper documents first evidence on the changing nature of seminars in economics during the COVID-19 pandemic. Using the transition from in-person delivery of seminars to online delivery as an exogenous shock, this study shows that the overall number of seminars declined. The composition of seminars speakers shifted toward top young economists and less experienced researchers. The share of seminars held by women increased, but the number of seminars given held by women remained roughly constant. The geography of knowledge dissemination changed significantly as the average distance between host and speakers' institutions increased by 20 percent and the share of seminars across borders also increased. The finding that the distance between speaker and host institution has increased could provide a first indication for the changing geography of professional services during the pandemic. The lessons drawn in this paper may not only be applicable to economics, but also to other sciences that experienced a similar transition in the organization of research seminars. Some of the reorganization of research dissemination may stay well beyond the pandemic.

Future revisions of this paper will refine the analysis by completing the collection of seminars for the remaining institutions and by collecting further information on speakers and institutions thereby expanding the set of outcomes and depth of the analysis. The existing literature has argued that inventors and workers gain from personal interactions (Lucas 2009; De La Roca and Puga 2016; Akcigit et al. 2018; Andrews 2020). Future research could trace whether interactions in online seminars result in knowledge spillovers, for example through citations, collaborations, and publications. Thereby quantifying the extent to which they are a substitute for in-persons seminars in creating ties among researchers and in improving the quality of presented work.

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Tables

Table 1: Summary statistics of dependent variables

		Mean	Std. dev.	Min	Max	Observations
Dependent variables	Description					
Number of seminars _{hst}	Number of seminars of a host institution in a given year	8.574	4.891	1	37	298
Share of female speakers _{hst}	Share of female speakers of a host institution in a given year	0.235	0.197	0	1	298
#Seminars female speakers _{hst}	Number of seminars given by female speakers of a host institution in a given year	1.990	1.628	0	8	298
#Seminars across borders _{hst}	Number of seminars given by speakers with a foreign affiliation of a host institution in a given year	3.919	4.150	0	22	298
$\mathbb{1}(\text{RePEc top 5 percent}_{ihst})$	Dummy equal to one, if speaker is among top 5 percent in RePEc ranking	0.206	0.404	0	1	2,555
$\mathbb{1}(\text{RePEc top 5 percent last 10 yrs.}_{ihst})$	Dummy equal to one, if speaker is among top 5 percent in RePEc ranking based on publications in last 10 years	0.275	0.446	0	1	2,555
$\mathbb{1}(\text{RePEc top young economist}_{ihst})$	Dummy equal to one, if speaker is among top 200 young economists, whose first REPEC publication is no older than 10 years	0.020	0.140	0	1	2,555
Experience _{ihst}	Experience after PhD graduation at the time of the seminar talk in years	12.412	10.328	0	55	2,500
$\mathbb{1}(\text{Speaker is female}_{ihst})$	Dummy equal to one, if speaker is female	0.233	0.423	0	1	2,545
$\ln(\text{distance}_{ihst})$	Log of distance between speaker institution and host institution	6.847	2.010	-1.272	9.884	2,384
$\mathbb{1}(\text{Speaker institution abroad}_{ihst})$	Dummy equal to one, if speaker institution is abroad	0.457	0.498	0	1	2,555
$\Delta\text{hours host and speaker}_{ihst}$	Time difference in hours between countries of speakers' and host institutions	1.820	3.191	0	12	2,555

Notes: The table shows means, standard deviations, minima, and maxima of the dependent variables. All values are for the academic year 2019/20.

Table 2: The association between the number of seminars and the COVID-19 pandemic

	$\ln(\text{number of seminars}_{hst})$
$\mathbb{1}(t = \text{Academic year 2020/21})$	-0.2042*** (0.0334)
Host institution \times Seminar series FE	Yes
R^2	0.807
Observations	596

Notes: Estimates of equation (1). The outcome is the log of the number of academic seminars in a host institution h , in seminar series s in a given year t . The specification includes an institution-seminar series fixed effect. The independent variables of interest is a time dummy for the academic year 2020/21. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: The association between speaker characteristics and the COVID-19 pandemic

	(1)	(2)	(3)	(4)
	$\mathbb{1}(\text{RePEc top 5 per.}_{ihst})$	$\mathbb{1}(\text{RePEc top 5 per. 10 yrs. publ.}_{ihst})$	$\mathbb{1}(\text{RePEc top young economist}_{ihst})$	Experience_{ihst}
Mean of dep var in academic year 2019/20	0.206	0.275	0.020	12.412
$\mathbb{1}(t = \text{Academic year 2020/21})$	-0.0264** (0.0116)	0.0056 (0.0121)	0.0087** (0.0043)	-0.7158** (0.3481)
Host institution \times Seminar series FE	Yes	Yes	Yes	Yes
R^2	0.126	0.176	0.072	0.136
Observations	4,726	4,726	4,726	4,644

Notes: Estimates of equation (2). The outcome in column (1) is a dummy variable equal to one, if the speaker is ranked among the top 5 percent of researchers in the RePEc database. The outcome in column (2) is a dummy variable equal to one, if the speaker is ranked among the top 5 percent of researchers based on publications in the last 10 years in the RePEc database. The outcome in column (3) is a dummy variable equal to one, if the speaker is ranked among the top 200 economists whose first publication in the RePEc database is no older than 10 years. The outcome in column (4) is experience in years between PhD graduation and the academic year of the seminar. The specifications include an institution-seminar series fixed effect. The independent variables of interest is a time dummy for the academic year 2020/21. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: The association between speakers' gender and the COVID-19 pandemic

	(1)	(2)	(3)
	$\mathbb{1}(\text{Speaker is female}_{ihst})$	share of female speakers $_{hst}$	#Seminars female speakers $_{hst}$
Mean of dep var in academic year 2019/20	0.235	0.233	1.99
$\mathbb{1}(t = \text{Academic year 2020/21})$	0.0443*** (0.0136)	0.0468** (0.0181)	0.0283 (0.0574)
Host institution \times Seminar series FE	Yes	Yes	Yes
R^2	0.100	0.602	
Log-likelihood			-797.92
Observations	4,709	596	554

Notes: Estimates of equations (1) and (2). The outcome in column (1) is a dummy variable equal to one, if the speaker is female. The outcome in column (2) is the share of female speakers of a host institution for a given seminar series in a given year. The outcome in column (3) is the number of seminars given by female speakers of a host institution in a given year. The regressions in columns (1) and (2) are estimated using OLS, and in column (3) using PPML. The specifications include an institution-seminar series fixed effect. The independent variables of interest is a time dummy for the academic year 2020/21. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.)

Table 5: The association of distance between host and speakers' institution and the COVID-19 pandemic

	(1)	(2)	(3)
	ln(distance _{ihst})		
$\mathbb{1}(t = \text{Academic year } 2020/21)$	0.2045*** (0.0723)	0.4037*** (0.0928)	0.3734*** (0.0847)
$\mathbb{1}(t = \text{Academic year } 2020/21) \times \text{Rank host institution}_h$		-0.0012** (0.0005)	
Rank guest institution _i			-0.0011** (0.0005)
$\mathbb{1}(t = \text{Academic year } 2020/21) \times \text{Rank guest institution}_i$			-0.0016*** (0.0005)
Host institution \times Seminar series FE	Yes	Yes	Yes
R^2	0.241	0.244	0.248
Observations	4,402	4,100	3,851

Notes: Estimates of equation (2). The outcome in column (1) is the physical distance between the speakers' institution and the host institution. Column (2) examines heterogeneity by the rank of the host institution in the Tilburg ranking. Column 3 shows heterogeneity by the rank of the speakers' institution in the Tilburg ranking. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: The association between cross-border travel and the COVID-19 pandemic

	(1)	(2)	(3)
Mean of dep var in academic year 2019/20	$\mathbb{1}(\text{Speaker institution abroad}_{ihst})$	#Seminars across borders _{hst}	$\Delta\text{hours host and speaker}_{ihst}$
	0.457	3.919	1.820
$\mathbb{1}(t = \text{Academic year 2020/21})$	0.0286* (0.0168)	-0.1132** (0.0500)	0.3608*** (0.1291)
Host institution \times Seminar series FE	Yes	Yes	Yes
R^2	0.404		0.197
Log-likelihood		-947.22	
Observations	4,726	556	4,726

Notes: Estimates of equations (1) and (2). The outcome in column (1) is a dummy equal to one, if the speaker institution is located in a different country than the host institution. The outcome in column (2) is the number of seminars given by speakers with a foreign affiliation of a host institution in a given year. The outcome in column (3) is the time difference in hours between the time zone of the country of the speakers' institution and the country of the host institution. The regressions in columns (1) and (3) are estimated using OLS, and in column (2) using PPML. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5 Online Appendix

List of Institutions included in the Sample

Universities:

- Arizona State University, Bates College, Bilkent University
- Bocconi University, Bogazici University, Boston College
- Ca Foscari University of Venice, Catholic University of Milan, Central European University
- City University Hong Kong, City University London, City University of New York
- College Carlo Alberto, Columbia University, Cornell University
- Dartmouth College, Deakin University, Del Rosario University
- George Washington University, Georgia State University, Goethe University Frankfurt
- Harvard University, Heidelberg University, Hong Kong University of Science and Technology
- Humboldt University of Berlin, Indiana University, Instituto Tecnológico Autónomo De Mexico
- Keio University, Kings College, London; Kobe University
- Korea University, Lancaster University, Lingnan University
- London School of Economics and Political Science, Louisiana State University, Luiss Guido Carli University
- Maastricht University, McGill University, Monash University
- New University of Lisbon, New York University, Northeastern University
- Osaka University, Pompeu Fabra University, Purdue University
- Radboud University Nijmegen, Rutgers State University, Ryerson University
- Sabanci University, Seoul National University, Shanghai Jiao Tong University
- Sogang University, Southern Methodist University, Stanford University
- Suny, Stony Brook; Syracuse University, Technical University of Karlsruhe
- Tel Aviv University, Trinity College Dublin, Tsinghua University
- Tulane University, Université Libre de Bruxelles, University College London
- University Complutense Madrid, University Laval, University of Adelaide

- University of Bergamo, University of Bergen, University of British Columbia
- University of California, Davis; University of California, Los Angeles; University of California, San Diego
- University of California, Santa Cruz; University of Connecticut, University of Edinburgh
- University of Erlangen-Nuremberg, University of Gothenburg, University of Granada
- University of Graz, University of Groningen, University of Haifa
- University of Hamburg, University of Hannover, University of Helsinki
- University of Hohenheim, University of Innsbruck, University of Kiel
- University of Konstanz, University of Mainz, University of Marburg
- University of Memphis, University of Miami, University of Michigan
- University of Minho, University of Missouri, Columbia; University of Munich
- University of Naples Federico 2, University of Nebraska, Lincoln; University of New South Wales
- University of Notre Dame, University of Nottingham, University of Oklahoma
- University of Oregon, University of Oslo, University of Ottawa
- University of Oxford, University of Parthenope, University of Pavia
- University of Pittsburgh, University of Potsdam, University of Quebec, Montreal
- University of Reading, University of Regensburg, University of South Carolina
- University of Surrey, University of Texas, Austin; University of Tokyo
- University of Toulouse, University of Trento, University of Trier
- University of Turin, University of Verona, University of Victoria
- University of Vienna, University of Wyoming, University of York, University of Zurich
- Vanderbilt University, Washington University, Yale University, York University

Central Banks

- Banco de la Republica de Colombia, Banque de France, de Nederlandsche Bank
- Federal Reserve Bank of Atlanta, Federal Reserve Bank of Dallas, Federal Reserve Bank of St. Louis

Research Institutes

- CEPII, IAB, IFN, IfW, RWI, VATT, WiiW

Journal List Tilburg Ranking

- American Economic Review; Brookings Papers on Economic Activity; Econometrica
- Economic Journal; Economics Letters; European Economic Review
- Games and Economic Behavior; International Economic Review; Journal of Applied Econometrics
- Journal of Business and Economic Statistics; Journal of Development Economics; Journal of Econometrics
- Journal of Economic Behavior and Organization; Journal of Economic Dynamics and Control; Journal of Economic Growth
- Journal of Economic Literature; Journal of Economic Perspectives; Journal of Economic Theory
- Journal of Financial Economics; Journal of Health Economics; Journal of Human Resources
- Journal of International Economics; Journal of Labor Economics; Journal of Monetary Economics
- Journal of Money, Credit and Banking; Journal of Political Economy; Journal of Public Economics
- Journal of Urban Economics; Journal of the European Economic Association; Quarterly Journal of Economics
- Rand Journal of Economics; Review of Economic Dynamics; Review of Economic Studies
- Review of Economics and Statistics; World Bank Economic Review

Table A.1: The growth rate of seminars at the continent level

(1) Continent host institution	(2) Continent speaker institution	(3) #Seminars in AY 2019/20	(4) Growth rate btw. 2020/21 and 2019/20
America	America	1061	-19.79
Europe	Europe	799	-21.40
Europe	America	246	3.25
Asia	Asia	160	-12.50
America	Europe	93	88.17

Notes: The table shows the aggregate number of seminars between continents in column (3). The growth rate in percent between the academic years 2019/20 and 2020/21 is calculated in column (4). America includes North and South America.

Table A.2: The association between the number of seminars and the COVID-19 pandemic - heterogeneity by field seminar

	$\ln(\text{number of seminars}_{hst})$
$\mathbb{1}(t = \text{Academic year } 2020/21)$	-0.2960*** (0.0530)
$\mathbb{1}(t = \text{Academic year } 2020/21) \times (\text{field seminar}_{hs})$	0.1410** (0.0634)
Host institution \times Seminar series FE	Yes
R^2	0.809
Observations	596

Notes: Estimates of equation (1). The outcome is the log of the number of academic seminars in a host institution h , in seminar series s in a given year t . The specification includes an institution-seminar series fixed effect. The independent variables of interest is a time dummy for the academic year 2020/21 and its interaction with a dummy equal to one if the seminar series is field specific. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: The association between speaker characteristics and the COVID-19 pandemic - heterogeneity by field seminar

	(1)	(2)	(3)	(4)
	$\mathbb{1}(\text{RePEc top 5 per.}_{i_{hst}})$	$\mathbb{1}(\text{RePEc top 5 per. 10 yrs. publ.}_{i_{hst}})$	$\mathbb{1}(\text{RePEc top young economist}_{i_{hst}})$	$\text{Experience}_{i_{hst}}$
Mean of dep var in academic year 2019/20	0.206	0.275	0.020	12.412
$\mathbb{1}(t = \text{Academic year 2020/21})$	-0.0554*** (0.0176)	0.0019 (0.0210)	0.0098** (0.0047)	-1.6498*** (0.4970)
$\mathbb{1}(t = \text{Academic year 2020/21}) \times \mathbb{1}(\text{field seminar}_{hs})$	0.0517** (0.0239)	0.0067 (0.0256)	-0.0021 (0.0080)	1.6616** (0.6863)
R^2	0.127	0.176	0.072	0.138
Observations	4,726	4,726	4,726	4,644

Notes: Estimates of equation (2). The outcome in column (1) is a dummy variable equal to one, if the speaker is ranked among the top 5 percent of researchers in the RePEc database. The outcome in column (2) is a dummy variable equal to one, if the speaker is ranked among the top 5 percent of researchers based on publications in the last 10 years in the RePEc database. The outcome in column (3) is a dummy variable equal to one, if the speaker is ranked among the top 200 economists whose first publication in the RePEc database is no older than 10 years. The outcome in column (4) is experience in years between PhD graduation and the academic year of the seminar. The specifications include an institution-seminar series fixed effect. The independent variables of interest is a time dummy for the academic year 2020/21 and its interaction with a dummy equal to one if the seminar series is field specific. Standard errors in parentheses, clustered at the host institution level.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

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