



Academic profile of Chinese economists: Productivity, pay, time use, gender differences, and impacts of COVID-19[☆]

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ABSTRACT

Using two waves of surveys (2019 and 2021) among Chinese economists with support from the Chinese Economists Society (CES), we capture a current profile of Chinese academic economists on their demographics, education, academic rank, wage, time use, research interests, and productivity. Our data reveal many similarities among those employed in China and overseas, with statistically significant differences in pay and teaching load. More profound disparities lie in gender comparisons, with findings echoing the recent trend in the overall economics profession, including career advancement challenges for women and lower pay for female economists, among others. Finally, this paper investigates the impact of the COVID-19 pandemic on Chinese economists. Comparing their time allocation with that before the pandemic suggests male economists with children were able to spend slightly more time per workday on research and leisure during the pandemic. On the contrary, female economists with children reduced time for research to cope with the increased demand for childcare.

1. Introduction

Professions evolve as technologies change and business paradigms shift, as we have seen in the diminishing influence of home economics (Simerly, Ralston, Harriman, & Taylor, 2000). Agricultural economists experienced similar anxieties, as reflected in a survey on faculty salary, employment, and hiring prospects at the direction of the Board of Directors of the then American Agricultural Economics Association (Epperson, 2009; Marchant & Zepeda, 1995). Gibson & Burton-McKenzie surmised that the different reward structures across disciplines might have led to frustrations among agricultural economics faculty because of the lower return to research quality (Gibson & Burton-McKenzie, 2017). Morrissey and Cawley examined US health economists' demographics and work portfolios (Morrissey & Cawley, 2008). Menachemi and coauthors analyzed data from a survey of health administration faculty

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members and estimated the association between faculty salaries and individual characteristics, including education, experience, measures of human capital, and demographics (Menachemi, Morrisey, Cawley, & Ginter, 2009). The general economics discipline has been searching inside as well, with McCoy and Milkman investigating the passion for teaching among recent Ph.D. economists (McCoy & Milkman, 2010) and Lucey and Delaney drawing a psychological, attitudinal, and professional profile of Irish economists (Lucey & Delaney, 2007).

In the case of Chinese economists, Hsu assessed their influence on policy formulation and implementation (Hsu, 1988), while Cai argued for a more upbeat estimate of economists' role in post-reform China (Cai, 1998). In addition, Yu investigated the impact of American-trained Chinese economists on economic policies in Taiwan (Yu, 2002). Although these studies focused on Chinese economists, an updated profile of this dynamic group is needed. More than forty years have passed since the start of China's economic reforms, which brought profound changes to all aspects of Chinese society, including the transformations of higher education and the economics profession. Yet we know little of the characteristics of this group, leaving many questions unanswered. For instance, is there a gender gap among Chinese economists, as documented in the Chinese urban labor market for pay, unpaid care, and pension (Chi & Li, 2008; Connelly, Dong, Jacobsen, & Zhao, 2018; Zhao & Zhao, 2018)? With more economics departments in Chinese universities adopting the tenure system, is there a difference in time allocation, promotion mechanism, and productivity between economics faculty in China and those employed overseas? Those are only a few of the questions that were asked by the Chinese economist community, in particular, the membership of the Chinese Economists Society (CES).

One cannot capture the current profile of academics without addressing the unprecedented challenges imposed by the COVID-19 pandemic (Gabster, van Daalen, Dhatt, & Barry, 2020). Amano-Patiño and colleagues examined three repositories of economics working papers and concluded that the pandemic had affected economists differently by career stage and gender (Amano-Patiño, Faraglia, Giannitsarou, & Hasna, 2020). Deryugina and coauthors administered a global survey of academics and found that all academics reported substantial increases in childcare and housework, but women had larger increases than men (Deryugina, Shurchkov, & Stearns, 2021). Do we observe the same impacts on Chinese economists who live in a society with a different trajectory of the pandemic from Western countries?

Specifically, this paper addresses three sets of research questions. First, who are the Chinese economists? What do we know about their demographic composition, education history, salary, time allocation of various job duties, employment ranks, productivity, and career path? Second, what are the gender differences in the economics profession among Chinese economists? Is there a similar gender gap among Chinese economists, as reported in Western academia, even though the gender role differs (Chen & Crown, 2019)? Third, given the ubiquitous impact of the COVID-19 pandemic, how were the Chinese economists affected, and how have they coped with the challenges?

We answer these questions with a survey among a sample of Chinese economists, most of whom are members of the CES. The CES, a non-profit academic organization registered in the US, was founded on May 26, 1985, by a group of Chinese graduate students and scholars studying economics and business administration in North America (www.china-ces.org). The CES has evolved into an international professional society for Chinese scholars of economics and scholars interested in studies of the Chinese economy to promote scholarly exchanges. The CES organizes annual conferences in China and the US, and has this journal (*China Economic Review*) as its flagship publication. In addition to answering the three sets of research questions mentioned above, our survey also serves the purpose of providing anonymized summary feedback to the CES leadership on the CES membership profile, members' participation in CES activities, and their perceived needs for professional development and mentoring.

Encouraged and approved by the leadership of the CES in 2019, Dr. Chen and colleagues conducted the first wave of the survey through the CES membership database. In 2021, Drs. Chen, Jiao, and Qi conducted another round of the survey, with additional questions on time use and the COVID-19 pandemic impact. The data collected revealed remarkable similarities in the current profile between Chinese economists employed in China and those employed overseas, despite differences in pay and teaching load. The similarities could reflect similar job functions and converging promotion criteria between Chinese and overseas academic programs. However, we find disconcerting gender disparities in pay and allocated research time and trends that echo the challenges and obstacles for female economists reported in other populations. Further, our data indicate that COVID-19 imposed the biggest impact and penalty on working mothers. Failures to address these disparities could lead to profound future impacts on the profession.

The remainder of the paper is organized as follows. Section 2 reviews the survey data and research method. Section 3 presents a current profile of Chinese economists, whereas Section 4 focuses on gender disparity findings. Section 5 discusses the impacts of the COVID-19 pandemic. Finally, Section 6 provides concluding remarks and discussion.

2. Survey methods

With approval from the Regents Committee and the Board of Directors of the CES, the authors conducted two waves of the survey among the CES members and non-member Chinese economists in 2019 and 2021. This study received approval from the Ethics Review Committee of the University of Nottingham Ningbo China on October 5, 2018.

The survey team solicited voluntary responses via the CES email list-serv (for both the 2019 and 2021 waves) and administered both waves of the survey online using Qualtrics. For the 2021 wave, CES officers also promoted and distributed the survey to conference attendees at the 2021 Chinese Economists Society annual meeting (held virtually). No tracking IDs were utilized for the survey, and responses were not linked to names or email addresses. Out of the 524 respondents collected in the two waves (292 in 2019 and 232 in 2021), 277 were currently employed in academia, 12 worked for the government sector, 25 worked in the private sector (for-profit or non-profit organizations), 14 were self-employed, 3 retired, and the rest of the 193 respondents were graduate students. Among the 277 respondents employed in academia, 18 post-doctoral fellows were dropped as this study focuses on full-time

employees. Our final sample consists of 234 individuals, as we also dropped 25 observations with missing wages. About 40% of this group were on the CES email list-serv (indicating they had either registered for CES's events or requested to be included on the CES email list-serv), and 32% were registered paid members of the CES at the time of the survey, and finally, 28% had attended CES conferences and other activities. Although the response rate and sample size are comparable to several surveys studies conducted by other economics professional societies and organizations (Cawley, Morrisey, & Simon, 2015; Epperson, 2009), we caution against extrapolating the results to the entire community of academic Chinese economists.

3. Profile of Chinese academic economists

We first present summary statistics of key survey variables in Table 1 with a focus on comparing those employed in China with those employed overseas.

Columns 1–4 in Table 1 report the characteristics of Chinese economists stratified by their location of employment (China vs. overseas) for the pooled data of the two waves.¹ We have slightly older overseas survey respondents (mean age 44.5) than those employed in China (mean age 40.1). This is in line with the overseas group often spending three more years (compared with those in China) beyond the time of receiving their terminal degrees. We also have 15% more female respondents and 10% more with a doctoral degree in the overseas group than in China. However, we see no substantial difference in marital status and percentage of respondents with children across these two subsamples.

The overseas economists, on average, earn ¥480,000 more per year (¥1 ≈ \$0.16 as of February 2022), with a slightly lower number of months of pay from their work contract.² However, they do teach a higher course load (1.37 more) than those in China.

In terms of academic rank, for the pooled sample of 234 respondents, 60.7% are either associate or full professors, 32.9% are tenure track assistant professors, and 6.4% are non-tenure track assistant professors. But we see no statistically significant differences in the distributions across the two groups.

Research output and productivity are measured by the total number of peer-reviewed publications (in both Chinese and English) throughout their career and within the past five years. Table 1 reports the trend of the overseas group leading in the number throughout their career by roughly four publications, but that trend is reversed in the last five years. However, this difference is not statistically significant. We should also mention that the quantity reported here does not reflect the quality of the research or the rank of the peer-reviewed journal that published the research.

On the self-reported time allocation (in percentage) across research, teaching, administrative, and other work-related activities, we find that, those employed in overseas academic institutions spent less time (4.37%) on research and more time on teaching (4.61%) and administration (1.21%) than those in China. Although this again lacks statistical significance.

In summary, comparisons between surveyed academic economists in China and overseas institutions do not suggest a stark contrast in terms of research output, time allocation on various job tasks, and academic rank, even though differences do exist in pay. We surmise that the higher education reform that followed the economic reforms may be a contributing factor, with the discipline of economics considered one of the most outward-looking fields. Huang and colleagues documented the Chinese government's initiatives to build world-class universities, which offered higher education institutions "strong incentives to align their scientific research with international standards at the beginning of the 21st century" (Huang, Liu, Xing, & Zheng, 2022). China's reform and opening-up policy in the last four decades, as well as scholarly exchanges promoted by higher education institutions and organizations, including the CES, allowed the economics profession to quickly emulate foreign institutions in curriculum design, promotion and tenure, and faculty governance. Chinese institutions have also actively competed on the world stage in recruiting young economists, pushing the profession to adopt many international standards and practices.

4. Gender disparity findings

We now turn to gender disparity in demographics, education, employment, wage compensation, research output, time use, and perceived promotion standards among Chinese economists.

4.1. Gender disparity in demographics

The top rows of Table 2 illustrate the gender differences in the demographic profile of Chinese economists employed in China and overseas. Readers can see that the male respondents in our overseas group are, on average, six years older than their female counterparts. For the China group, 13% more women are married than men, with no statistically significant difference in the percentage of men and women with children.

The most prominent gap between men and women in both groups is in pay, with men earning significantly more (nearly 22% for the overseas group and 13% for the China group). In addition, 28% more men received pay outside their primary job. We will devote additional analyses on pay disparity in Section 4.8 to understand further factors that correlate with this gender gap.

¹ Results of the balance test for the Chinese and overseas economists provided support to integrate the two waves. The reported trends here remain largely unchanged when each wave is shown separately.

² For example, it is very common that faculty's pay is based on a 9-month contract in the U.S.

Table 1
Summary Statistics by Employment Location (2019 and 2021 pooled).

	(1)		(2)		(3)	(4)
	Employ in China		Employ Overseas		Mean Difference	T-Stats
	Mean	Std. Dev.	Mean	Std. Dev.	(2)–(1)	
Age	40.09	7.94	44.53	12.52	4.44**	–3.04
Female	0.29	0.46	0.44	0.50	0.15*	–2.33
Married	0.81	0.39	0.83	0.38	0.02	–0.38
Child or not	0.77	0.42	0.73	0.45	–0.03	(–0.59)
Wage (in 10 k Yuan)	37.14	32.02	85.21	49.81	48.07***	–8.25
Doctoral Degree	0.84	0.36	0.94	0.46	0.10*	(–2.55)
Years of Receiving the Highest Degree	8.10	5.32	11.13	8.76	3.03*	–2.60
Annual Employment Months	11.03	1.27	10.63	1.34	–0.40*	(–2.24)
Courses Taught per Year	4.15	2.57	5.52	3.83	1.37**	–3.02
Whether Receiving Outside Pay	0.66	0.48	0.57	0.50	–0.09	(–1.37)
Full Professor	0.28	0.45	0.37	0.48	0.09	–1.42
Associate Professor	0.34	0.48	0.23	0.42	–0.12	(–1.94)
Tenure Track (TT) Assistant Professor	0.30	0.46	0.38	0.49	0.08	–1.23
Non-TT Assistant Professor	0.09	0.28	0.03	0.18	–0.05	(–1.77)
Total Peer Reviewed (PR) Publications	16.26	20.22	20.25	30.71	3.99	–1.10
PR Publications within Last 5 Years	8.99	10.55	8.85	11.36	–0.14	(–0.09)
Percentage of Research	48.85	19.80	44.48	19.44	–4.37	(–1.62)
Percentage of Teaching	32.31	16.98	36.92	17.10	4.61	–1.96
Percentage of Administration	13.44	14.52	14.65	15.07	1.21	–0.59
Percentage of Other Activities	5.40	9.14	3.95	6.64	–1.45	(–1.37)
Observations	141		93		234	

Note: ***, **, and * denote statistical significance level of 1%, 5%, and 10% respectively.

4.2. Gender difference in academic rank

In Table 2's academic rank section with the sample of those employed in China, men lead in the rank of full and tenure-track assistant professors but lag in the rank of associate and non-tenure-track assistant professors. But none of these trends is statistically significant. We do, however, observe larger magnitude differences in the overseas group that are also statistically significant. For example, 48% of our overseas male sample reached the full professor rank compared with only 22% of females. However, only 27% of overseas males are at the tenure-track assistant professor rank compared with 51% of females.

Fig. 1 shows that when both the Chinese and overseas groups are pooled together, 64.5% of our sampled male economists are at the associate and full rank, while only 53.7% of the sampled female economists make it to those ranks.

These differences (especially in the overseas group), echo the recent findings on gender disparity in the economics profession. A recent study finds that “women who do go on to earn PhDs in economics have a harder time earning tenure and getting promoted than their male peers, and that the gender gap is even more pronounced among international PhDs (Chen, Liu, & Kim, 2022).” Additionally, relatively more female economists than male economists leave academia within a tenure cycle from earning their PhDs. Ginther and Kahn (2004) also find that “although gender differences in productivity and the effect of children on promotion partly explain women's lesser chances of receiving tenure in economics, a significant portion of the gender promotion gap remains unexplained by observable characteristics.”

4.3. Gender difference in Ph.D. education

Almost all the Chinese economists (95.8%) in our sample hold a Ph.D. degree in Economics. The fraction of Ph.D. holders is slightly higher for male economists (96.7%) than for females (94.2%).

The third section (Education) of Table 2 shows the self-reported ranking of schools from which the participants received their highest degree. Here we list the percentage of men (women) who received their highest degrees from four categories of Chinese universities, including 211, 985, Double First-Class (Shuang-Yi-Liu), and other Chinese universities, as well as from four categories of overseas institutions, including Top 20, Top 20–50, Top 50–100, and other overseas universities.³ Statistically significant gender difference lies in the China group, with more men (7%) receiving their highest degree from the 985 institutions and slightly more women (9%) earning their highest degree from the top 20–50 institutions overseas. Interestingly, 84% (74%) of male (female) respondents employed in China received their highest degrees from a Chinese institution, whereas only 16% (13%) of male (female) respondents employed overseas received their graduate training from China. Female economists working abroad are less likely (7%) to get degrees from the top 20 institutions and more likely (11%) to have degrees from the top 20–50 institutions.

³ The categories, 211, 985, and Double-First Class, are designations of Chinese Universities, with increasing recognition. They are often used as a proxy of reputation but may overlap.

Table 2
Summary Statistics for Male and Female Chinese Economists (2019 and 2021 pooled).

	Employed in China						Employed Overseas					
	Men		Women		Mean Difference		Men		Women		Mean Difference	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Mean	SD	Mean	SD	(3)–(1)	t-Stat	Mean	SD	Mean	SD	(9)–(7)	t-Stat
Demographic												
Age	39.49	7.86	41.54	8.05	2.05	–1.38	47.27	13.01	41.05	11.07	–6.220*	(–2.49)
Married	0.77	0.42	0.90	0.30	0.132*	–2.10	0.85	0.36	0.80	0.40	–0.0413	(–0.51)
Have Child	0.74	0.44	0.83	0.38	0.09	–1.21	0.79	0.41	0.66	0.48	–0.13	(–1.38)
Received Doctoral Degree	0.85	0.36	0.83	0.38	–0.02	(–0.30)	0.75	0.48	0.76	0.43	0.01	–1.07
Annual Pay (in 10,000 Yuan)	40.80	35.51	28.22	18.74	–12.58**	(–2.73)	94.75	53.16	73.12	42.85	–21.63*	(–2.17)
Years of Receiving the Highest Degree	7.84	5.53	8.75	4.80	0.91	–0.91	12.17	8.94	10.03	8.57	–2.141	(–1.01)
Annual Employment Months	11.07	1.29	10.92	1.24	–0.15	(–0.64)	10.70	1.36	10.54	1.33	–0.16	(–0.56)
Courses Taught per Year	4.12	2.61	4.22	2.50	0.10	–0.21	6.17	4.36	4.68	2.88	–1.49	(–1.98)
Received Pay Outside Primary Job	0.68	0.47	0.61	0.49	–0.07	(–0.78)	0.69	0.47	0.41	0.50	–0.278**	(–2.74)
Academic Rank												
Full Professor	28.0%	45.0%	27.0%	45.0%	–1.2%	(–0.14)	48.0%	50.0%	22.0%	42.0%	–26.1%**	(–2.73)
Associate Professor	33.0%	47.0%	37.0%	49.0%	3.6%	–0.40	23.0%	43.0%	22.0%	42.0%	–1.13%	(–0.13)
Tenure-track (TT) Assistant Professor	31.0%	46.0%	27.0%	45.0%	–4.2%	(–0.50)	27.0%	45.0%	51.0%	51.0%	24.3%*	–2.42
Non-TT Assistant Professor	8.0%	27.0%	10.0%	30.0%	1.8%	–0.32	2.0%	14.0%	5.0%	22.0%	2.95%	–0.76
Education												
211 University (%)	29.0%	46.0%	20.0%	41.0%	–9.0%	(–1.14)	2.0%	14.0%	3.0%	16.0%	1.0%	(–0.16)
985 University (%)	32.0%	47.0%	25.0%	44.0%	–7.0%**	(–2.84)	8.0%	14.0%	7.0%	27.0%	–1.0%	(–1.18)
Double First-Class University (%)	16.0%	46.0%	23.0%	42.0%	–7.0%	(–1.04)	6.0%	24.0%	3.0%	22.0%	–3.0%	(–0.21)
Other Chinese University (%)	7.0%	26.0%	6.0%	22.0%	–1.0%	(–0.46)	0.0%	0.0%	0.0%	22.0%	0.0%	–1.43
Top 20 Overseas University (%)	6.0%	26.0%	4.0%	0.0%	–2.0%	(–0.73)	20.0%	40.0%	13.0%	33.0%	–7.0%**	(–2.96)
Top 20–50 Overseas University (%)	3.0%	24.0%	12.0%	30.0%	9.0%**	2.75	12.0%	33.0%	23.0%	42.0%	11.0%*	2.29
Top 50–100 Overseas University (%)	5.0%	31.0%	5.0%	44.0%	0.0%	–1.84	32.0%	47.0%	28.0%	45.0%	–4.0%	(–0.46)
Other Overseas University (%)	2.0%	34.0%	5.0%	22.0%	3.0%	(–1.65)	20.0%	40.0%	23.0%	42.0%	3.0%	0.28
Employment												
211 University (%)	32.00%	47.00%	26.00%	45.00%	–6.00%	(–0.61)						
985 University (%)	22.00%	42.00%	22.00%	42.00%	0.00%	(–0.01)						
Double First University (%)	24.00%	46.00%	25.00%	47.00%	1.00%	–0.31						
Other Chinese University (%)	22.00%	50.00%	27.00%	49.00%	5.00%	(–0.60)						
Top 20 Overseas University (%)							8.00%	14.00%	5.00%	22.00%	–3.00%	–0.74
Top 20–50 Overseas University (%)							12.00%	30.00%	10.00%	26.00%	–2.00%	(–0.42)
Top 50–100 Overseas University (%)							35.00%	44.00%	30.00%	43.00%	–5.00%	(–0.12)
Other Overseas University (%)							45.00%	50.00%	55.00%	51.00%	10.00%**	2.35
Productivity and Time Allocation												
Peer Reviewed (PR) Publications	17.29	20.97	13.76	18.25	–3.53	(–1.00)	25.06	36.61	14.15	19.78	–10.91***	(–2.84)
PR Publications within last 5 years	9.70	11.29	7.24	8.36	–2.46	(–1.42)	9.98	12.10	7.41	10.31	–2.566**	(–2.10)
Percent of Research	51.13	19.92	43.15	18.53	–7.980*	(–2.22)	43.94	19.75	45.19	19.27	1.25	–0.29
Percent of Teaching	29.34	15.78	39.69	17.79	10.35**	–3.17	35.80	16.80	38.41	17.60	2.609	–0.69
Percent of Administrative	13.65	15.64	12.92	11.45	–0.73	(–0.30)	15.29	17.29	13.81	11.67	–1.475	(–0.47)
Percent of Others	5.88	10.02	4.23	6.43	–1.65	(–1.14)	4.98	7.42	2.59	5.25	–2.385	(–1.75)
Observations	100		41		141		52		41		93	

Note: ***, **, and * denote statistical significance level of 1%, 5%, and 10% respectively.

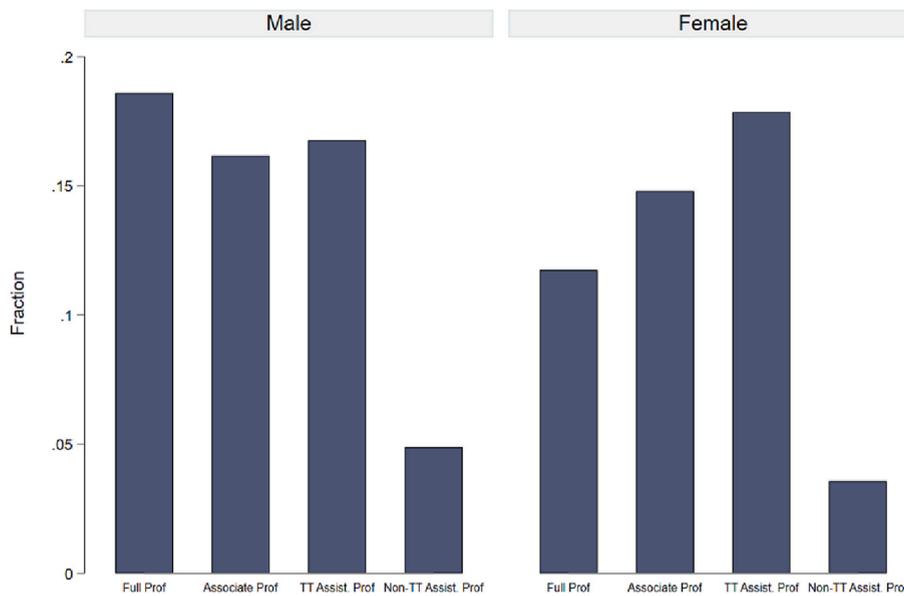


Fig. 1. Gender Differences in Academic Rank.

4.4. Gender gap in employment

The “employment” section of Table 2 reports the same distribution information on rankings of schools of employment as in the previous section on education. For example, readers can see that 32% (27%) of men (women) employed in China hold jobs in 211 universities. The largest proportion of men and women in this sample work at schools *not* in the high-ranking group of 211, 985, nor Double First-Class. Similarly, the schools outside the Top 100 group employ 45% (55%) of men (women) in the overseas group. We find only a slight difference between men and women employed by the top 20 and top 20–50 programs overseas.

We further investigated the correlation between the ranking categories of one’s Ph.D. program and that of the school of employment. Our data revealed a strong correlation coefficient of 0.39 for those employed in China, signaling the premium earned by the prestige and the quality of students’ graduate training and education. This relationship turned out to be even stronger for those employed overseas (with the correlation coefficient reaching 0.62).

4.5. Gender gap in research output

We show research output (measured by total peer-reviewed publications and the number of peer-reviewed publications in the last five years) in Table 2. We find no statistically significant gender differences for those in China. However, overseas male economists led by almost 11 more publications throughout their career, but that gap shrank substantially to only 2.57 in the last five years. It is also worth noting that the higher proportion of male full professors in our overseas sample could partially explain this gap. Further, this quantitative measure does not control for the quality of the publications nor the rank of the peer-reviewed journals that published the research.

Fig. 2 compares the research output by rank between men and women. The blue bars represent the total number of publications in peer-reviewed journals, and the orange bars represent the publications in the past five years. Men lead substantially in total publications at the full professor rank. However, men’s advantage shrinks as we move down to the rank of associate professor. The gender difference almost disappeared for assistant professors and even reversed at the non-tenure track, with women leading in both measures of publications. The magnitude of the gender productivity gap for publications in the last five years is much smaller compared with that for total career publications. All these findings suggest women are on par with men in research productivity at the junior stage. But the gender gap widens as women move towards more senior ranks.

4.6. Gender difference in time use and perception of professional life

The last section in Table 2 (and Fig. 3) shows self-reported time use on research, teaching, administrative, and other duties. Survey respondents reported spending 43–51% of their time on research, 29–39% on teaching, 12–15% on service, and 3–6% on other activities. It is worth noting that for the group in China, women spend significantly more time (10% more) teaching than men but 8% less time on research.

Additionally, this survey collected the self-ranked importance of different job duties (research, teaching, service, and grants) for promotion. Fig. 4 shows that for both male and female economists, research is ranked as the most important element for promotion both overseas and in China. However, academics outside China viewed teaching as the second most important determinant for

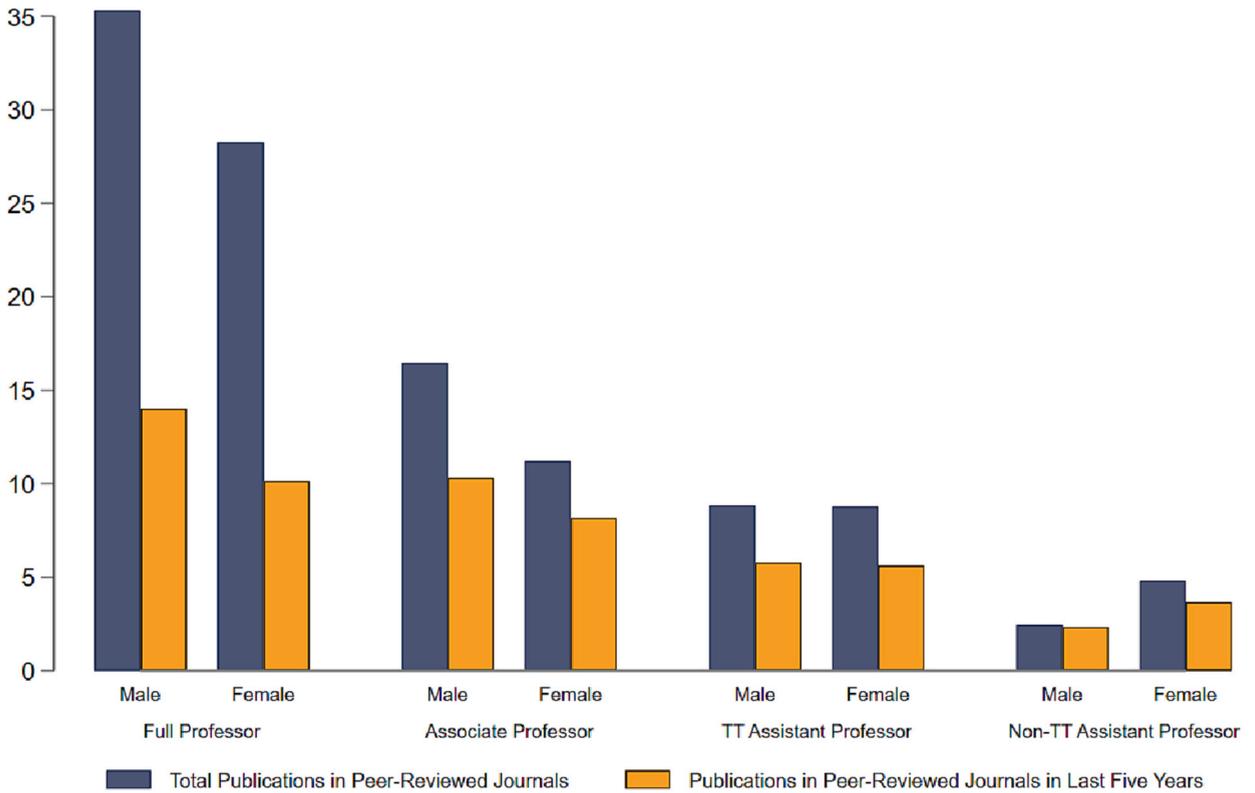


Fig. 2. Number of Publications by Academic Rank.

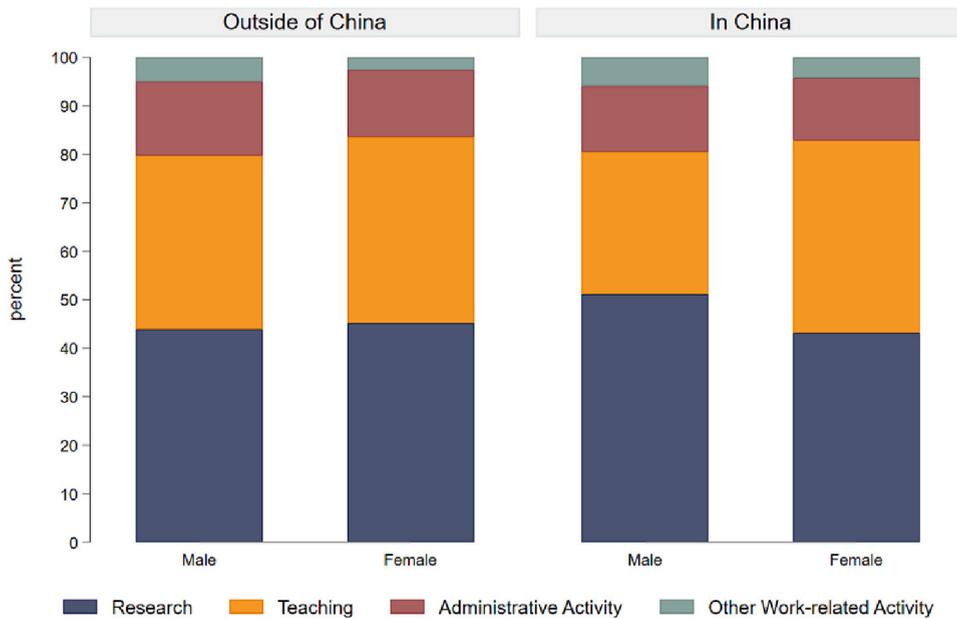


Fig. 3. Time Allocation on Different Job Duties.

promotion, whereas those employed in China ranked obtaining research grants as the second most important promotion factor, reflecting an overall stronger emphasis on research in China. Another interesting pattern is that women view service as a much more important contribution to promotion than men for both groups.

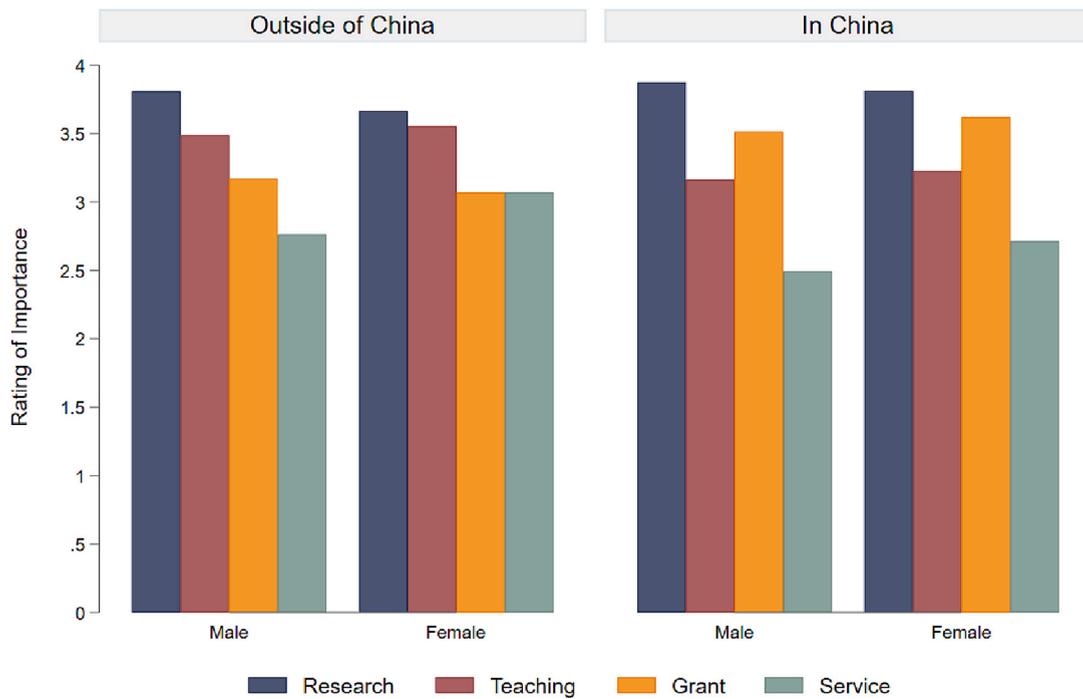


Fig. 4. Importance of Job Duties for Promotion.

4.7. Gender difference in research interests

Among those with a terminal degree in Economics, the top three research fields are development economics, financial economics, and labor and demographic economics. However, if we partition research fields by gender, male and female economists revealed

Table 3
Areas of Research Interests and Gender Differences.

Areas of Primary Research Interest	(1)		(2)		(3)		(4)		(5)		(6)
	Male		Female		Mean Difference		T-Stats				
	Mean	Std. Dev.	Mean	Std. Dev.	(1)–(3)						
Applied Econometrics	0.09	0.29	0.10	0.30	0.00					(-0.09)	
Behavioral Economics	0.01	0.08	0.06	0.24	-0.05*					(-2.50)	
Financial Economics	0.13	0.34	0.05	0.22	0.08*					-2.05	
Development Economics	0.11	0.32	0.15	0.36	-0.03					(-0.71)	
Education Economics	0.03	0.16	0.02	0.16	0.00					-0.11	
Economic Growth	0.02	0.14	0.01	0.11	0.01					-0.44	
Economic Inequality	0.00	0.00	0.04	0.19	-0.04*					(-2.37)	
Environmental Economics	0.07	0.26	0.02	0.16	0.05					-1.56	
Experimental Economics	0.01	0.12	0.02	0.16	-0.01					(-0.61)	
Fiscal Policy	0.02	0.14	0.05	0.22	-0.03					(-1.21)	
Game Theory	0.03	0.16	0.01	0.11	0.01					-0.73	
Health Economics	0.05	0.21	0.10	0.30	-0.05					(-1.49)	
International Finance	0.01	0.12	0.01	0.11	0.00					-0.08	
Industrial Organization	0.05	0.21	0.01	0.11	0.03					-1.38	
Trade	0.11	0.31	0.06	0.24	0.05*					(-2.17)	
Labor Economics	0.08	0.27	0.15	0.36	-0.07*					(-2.57)	
Microeconomic Theory	0.01	0.12	0.02	0.16	-0.01					(-0.61)	
Monetary Policy	0.02	0.14	0.01	0.11	0.01					-0.44	
Public Economics	0.02	0.14	0.00	0.00	0.02					-1.29	
Political Economy	0.02	0.14	0.01	0.11	0.01					-0.44	
Chinese Economy	0.05	0.21	0.05	0.22	0.00					(-0.06)	
Urban Economics	0.03	0.18	0.01	0.11	0.02					-0.97	
Others	0.02	0.14	0.02	0.16	0.00					(-0.21)	
Observations	152		82		234						

Note: ***, **, and * denote statistical significance level of 1%, 5%, and 10% respectively.

different patterns in research interests. Table 3 details the areas of primary research interests of men and women separately. The top three research fields for males are development (tied with international trade), financial economics, and applied econometrics. The top three fields for female economists are development economics (tied with labor economics) and health economics (tied with applied econometrics).

The only statistically significant difference between women and men is that, relative to their male counterparts, female economists are more likely to study behavioral economics, labor economics, and economic inequality but less likely to be in the area of financial economics and trade.

4.8. Gender gap in pay

Academic faculty earnings and their determinants have been a well-studied subject in the economics literature (Gordon, Thomas, & Braden, 1974; Menachemi et al., 2009; Menachemi, DelliFraine, Lemak and Halverson, 2016). Following the theme of gender comparison in this section, we present findings from this new data set specifically collected for Chinese academic economists.

Table 2 indicates that economists who work overseas earn higher wages than those in China. However, the gender pay gap is also larger for those employed overseas. Specifically, male economists earn ¥947,500, and female economists earn ¥731,200, resulting in a difference of ¥216,300. For those who work in China, the wage for male and female economists are ¥408,000 and ¥282,000, respectively (with a difference of almost ¥125,800).

Fig. 5 separates the pooled wage data by employment location and academic rank and reveals that for the China group, the gender pay gap is the largest for full professors. In contrast, a similar gap exists for full and associate professors for overseas economists.

While these summary statistics comparisons confirm the existence of gender disparity in pay, we use additional regression analyses to control different moving factors established in previous labor economics research on faculty salary (Menachemi et al., 2009). In addition, we tested model specifications with variables that help understand nuances in pay differences for economists. Table 4 details six model specifications and the corresponding regression results. The last three regression models confirmed a statistically significant gender bias against women. Take the full specification of Model 6 as an example, we use the logarithm of pay as the dependent variable and control demographic factors such as age, marital status, children, rankings of employment and institutions that granted their Ph.D. degree, academic rank, employment location, teaching load, years since receiving their terminal degree, and research productivity. We find that women, on average, earn 19% less than men per year. The gender bias coefficient remains fairly consistent and robust across models 3–6 as we incorporate more control factors. This sizeable difference will have profound implications for an economist’s lifetime earnings. In addition to the gender factor, we also find a consistent earning premium for those who are married, have been out of school longer (presumably with more years of work experience), hold an overseas degree, work at an overseas institution, have more publications over the last five years.

5. Impact of COVID-19 on Chinese scholars

Finally, our 2021 survey added a series of questions to assess the impact of COVID-19 on personal and professional life. In

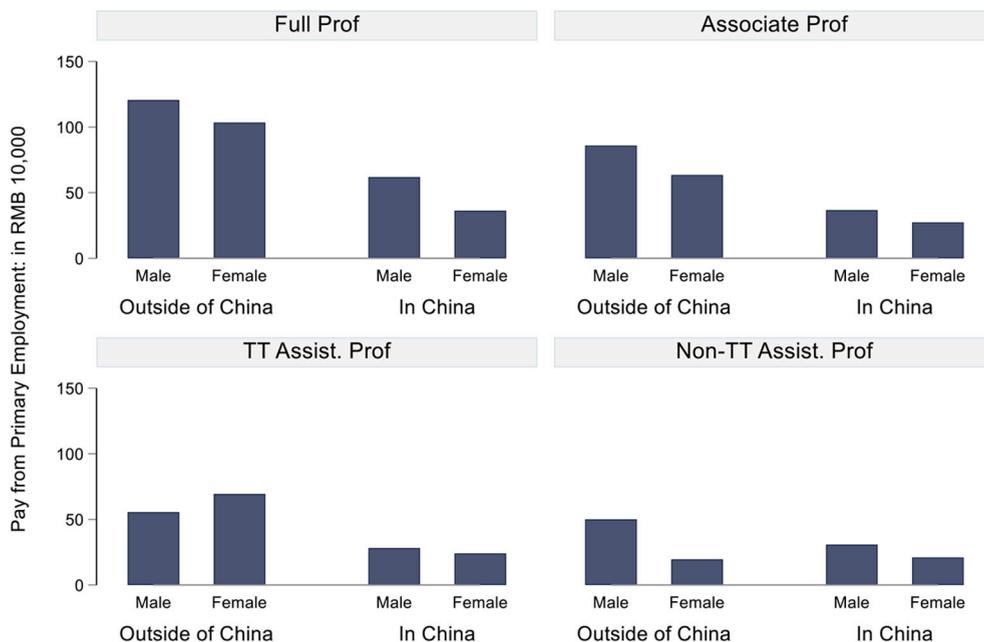


Fig. 5. Gender Pay Difference by Employment Location and Academic Rank.

Table 4
Regression of Gender Pay Disparity.

Variable: Ln (annual pay)	(1)	(2)	(3)	(4)	(5)	(6)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Female	-0.13 (0.11)	-0.12 (0.11)	-0.09 (0.11)	-0.20** (0.09)	-0.19** (0.09)	-0.19** (0.09)
Age		0.04*** (0.01)	-0.02 (0.01)	-0.02* (0.01)	-0.02** (0.01)	-0.02* (0.01)
Married		0.17 (0.13)	0.24** (0.12)	0.30*** (0.10)	0.29*** (0.10)	0.30*** (0.10)
Whether has a child		-0.29* (0.17)	-0.42** (0.18)	-0.15 (0.14)	-0.18 (0.14)	-0.17 (0.14)
Years of Receiving the Highest Degree			0.07*** (0.02)	0.06*** (0.01)	0.05*** (0.01)	0.04*** (0.01)
Annual Employment Months			0.01 (0.04)	0.01 (0.04)	0.01 (0.04)	0.02 (0.04)
Courses Taught last year			0.04** (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)
Whether has outside Pay			-0.14 (0.11)	0.07 (0.09)	0.08 (0.09)	0.05 (0.09)
<i>Employment Overseas (reference group: Employment in China)</i>						
Top 20 University				1.07*** (0.25)	1.13*** (0.23)	1.06*** (0.25)
Top 20–50 University				0.57** (0.24)	0.58** (0.24)	0.61** (0.25)
Top 50–100 University				0.69*** (0.14)	0.70*** (0.15)	0.70*** (0.15)
Other Overseas University				0.49*** (0.15)	0.49*** (0.15)	0.54*** (0.15)
<i>Education Overseas (reference group: Education in China)</i>						
Top 20 University				0.49** (0.22)	0.49** (0.21)	0.54*** (0.21)
Top 20–50 University				0.60*** (0.16)	0.63*** (0.16)	0.66*** (0.17)
Top 50–100 University				0.44*** (0.14)	0.42*** (0.15)	0.44*** (0.15)
Other Overseas University				0.50*** (0.15)	0.52*** (0.14)	0.52*** (0.14)
<i>Title of Employment (reference group: non-tenure track professor)</i>						
Full Professor					0.43** (0.18)	0.35* (0.18)
Associate Professor					0.12** (0.05)	0.17*** (0.02)
Tenure Track Assistant Professor					0.12* (0.07)	0.09 (0.07)
Peer Review Publication Last 5 Years						0.03** (0.00)
Constant	3.75*** (0.07)	2.08*** (0.23)	3.29*** (0.54)	2.92*** (0.48)	2.99*** (0.48)	2.86*** (0.50)
Observations	234	234	189	189	189	189
R-squared	0.03	0.24	0.31	0.58	0.61	0.61
Survey Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes

Note: The dependent variable is the logarithm of annual pay; thus, the coefficient of the dummy variable “female” is interpreted as the percentage point differences between a male and female economist. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

particular, we asked the survey respondents to estimate the number of hours they spend on research, all other job-related activities, commute, child care, housekeeping, sleeping, entertainment, etc., on a typical day *before* and *after* the pandemic. Fig. 6 depicts changes in daily hours spent on these activities *before* and *after* COVID-19.

Table 5, with more rigorous statistical comparisons, reveals that the most striking differences come from gender comparisons and the burden of child care. Men could spend more time on research regardless of parenthood status, albeit with a small magnitude in the change of hours per day. On the contrary, women (with or without children) reported a loss of research time. For those with children, women increased more time on child care than men but lost leisure time, while men reported a slight increase in leisure time.

Gender and parenthood affected changes in time allocation. Men without children spent time saved from the commute and other work-related activities, as well as reductions in leisure time on research and housework, while women without children were able to

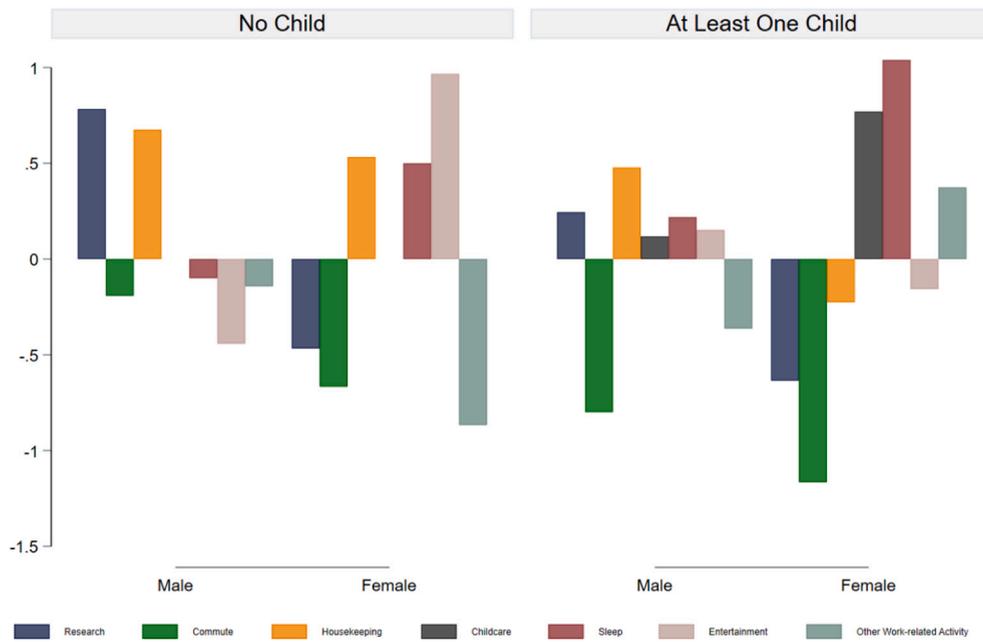


Fig. 6. Impact of Covid-19 on Changes in Time Allocation to Different Activities.

Table 5

Difference in Time Allocated to Activities Before and After Pandemic.

Change in # of Hours of a Workday (Post- minus Pre-Pandemic)	No Child				Gender Difference		With Children				Gender Difference						
	(1)		(2)		(3)	(4)	(5)		(6)		(7)	(8)	(9)	(10)	(11)		(12)
	Men		Women		(3)–(4)		T-Stats		Men		Women		(9)–(10)		T-Stats		
	Mean	Std. Dev.	Mean	Std. Dev.			Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.					
Change in Research	0.78	4.04	-0.47	0.50	1.25**	(-2.54)	0.20	3.90	-0.63	3.82	0.83***	(-3.08)					
Change in Commute	-0.59	4.14	-0.67	0.76	-0.08	(-0.37)	-0.80	1.89	-1.17	2.36	-0.37	(-0.60)					
Change in Housework	0.68	0.84	0.53	0.84	-0.15	(-0.26)	0.48	1.41	-0.23	1.50	-0.70	(-1.70)					
Change in Child Care	0.00	0.00	0.00	0.00	0.00	(.)	0.12	1.91	0.77	2.34	0.65***	2.97					
Change in Sleep	-0.10	1.33	0.50	0.87	0.60*	(2.35)	0.22	1.04	1.04	4.72	-0.82	(-0.82)					
Change in Leisure	-0.44	0.92	0.97	1.00	1.41	1.21	0.15	1.60	-0.16	1.49	-0.31**	(-2.71)					
Change in Other Work-related Activities	-0.34	1.65	-0.87	0.81	-0.5	(-1.09)	-0.36	2.72	0.37	1.86	0.74	-1.13					
Observations	22		21		43		25		15		40						

Note: ***, **, and * denote statistical significance level of 1%, 5%, and 10% respectively.

increase sleep and leisure time from less commute and work-related activities, although they also spent less time on research and more time on housework. For working parents, men allocated more time to research, housework, and childcare but were also able to have more sleep and leisure time. For working mothers, time saved from the commute and even less housework time failed to increase research time, as they allocated more time for childcare, although they also reported an increase in sleep time.

These findings highlight the pandemic's penalty for working mothers and are consistent with findings from other countries and professions (Deryugina et al., 2021). If this gender gap persists after the pandemic, it could have significant implications for gender status in the profession.

6. Concluding remarks

Using two waves of a survey among Chinese economists through the database maintained by the Chinese Economists Society (CES) and its conference events, we capture a current profile of Chinese academic economists employed in China and overseas. The biggest difference lies in a substantial pay premium for the overseas group (earning, on average, ¥480,000 more than the group in China). We do have a slightly older overseas sample (4.44 years older than the group in China). Overseas faculty also have a slightly higher teaching load. Despite these contrasts, there are many similarities in the profile of these two groups (in terms of research output, time allocation of various job tasks, etc.). We surmise that this could reflect impacts from the overall economic, social, and higher education

reforms and opening-up policies that China has embarked on since 1978. China's push to build world-class universities, competitions with overseas institutions in recruiting young talents and international scholar exchanges promoted by organizations like CES also contributed to the convergence of the two groups.

The survey data also allowed us to investigate gender differences in Chinese academic economists. Many of the mean differences in our gender comparisons did not turn out to be statistically significant for both groups in China and overseas (including demographic factors such as age, marital status, children, as well as education, ranks of the school of employment, research output, etc.). It is worth noting that many of these disparities, although not statistically significant, do echo the recent findings on gender inequality in the economics profession. For example, more male economists reach the rank of full professor, while women tend to fall off the academic career ladder.

Some differences turn out to be more pronounced (and statistically significant). For instance, female economists in China had almost 8% less in the percentage of time spent on research compared with male economists. We also find evidence supporting the observation that female and male economists exhibit different research interests.

Among all these statistically significant differences, one of the most disconcerting disparities lies in pay. Our regression analyses with control factors on age, marital status, number of children, education background, research output, academic rank, etc., confirm a substantial gender pay gap. In particular, females earn, on average, 19% less per year than male economists, which could translate into vast differences in accumulated earnings considering a career of 2–3 decades for most academic economists. Further research and policy interventions are encouraged to investigate and mitigate this.

Finally, the timing of the two waves of our survey enabled us to investigate the impact of the COVID-19 pandemic on economists and our profession. We find that COVID-19 imposed the biggest impact and penalty on working mothers, who suffered the most lost time on research while picking up the additional burden of childcare (compared to both their pre-pandemic level as well as to the male economists who were able to spend slightly more time on research during the pandemic). These findings are consistent with the trends reported in other societies and professions. Failure to address these negative impacts can lead to significant gender disparities in the future in this profession.

Our study has two important limitations. First, to protect the privacy of the respondents, we have not, and in fact are unable to, create an identifier of the respondents. Therefore, we are unable to track individuals across the two waves. Second, as is typical of studies using small convenience samples, our survey sample is susceptible to selection biases, where those who are more willing to participate are more likely to appear in the sample.

While we caution against extrapolating our findings beyond the survey respondents, our findings are a good snapshot capturing the current membership profile of a large professional society of Chinese economists and highlighting gender disparities and the differences between those employed in China and overseas. In particular, our study also provides key information on understanding the impacts of the COVID-19 pandemic on the economics profession, which could guide future policy interventions. Future research efforts may address the issues related to repeated sampling and the small sample size using alternative sampling techniques.

Data availability

Data will be made available on request.

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