

Supplement to:

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# ONLINE SUPPLEMENT FOR: Do employers care about past mobility? A field experiment examining hiring preferences in technology and non-technology jobs

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## **Online Supplement A: Correspondence study design details**

# Geography

While previous resume audit studies have tended to apply to jobs in a few locations, we designed our study to apply to jobs across all of the continental United States. Weissharr (2018) applied to jobs across the country with all applicants (home address on the resume) located in Madison, Wisconsin. We worried, though, that this approach of using a single location would create considerable variation in responses based upon distance from that location. We instead chose seven locations across the country. We selected medium-sized cities that were ranked between 25 and 50 on a list of metropolitan areas (MSAs) by 2010 population, were in neither the top nor bottom ten percent of MSAs ranked by income or education, and were geographically dispersed. Because all of our applicants would have to move for the job, we chose medium-sized

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cities where it would be more reasonable that an individual would move away in search of new opportunities. We assigned the closest of our selected cities that was more than 100 miles away from the job posting location to ensure that all candidates would have to move and to avoid accidental discovery of the experiment that might occur with a fictional resume from the same city. We chose not to randomly assign the origin city because we felt that long distances would depress our overall callback rates significantly. All of the candidates did have to move, which we addressed in our cover letter noting that the applicant had fond memories of living in the region as a child and was eager to return. In all analyses we control for the origin city of the resume.

We selected mailing addresses in each city following a procedure similar to Neumark, Burn and Button (2019), with the goal of choosing addresses that would not be a signal of race or income, well-known sources of discrimination. We eliminated zipcodes that were in the bottom or top quintiles of the CBSA median income distribution, median housing value distribution, and the unemployment rate distribution, as well as the top quintile of the percentage of residents who are black and the bottom quintile of the CBSA population size distribution. Final streets selected were those with the shortest distance to city hall with housing values similar to the median for the CBSA average median value using Zillow.com house values (on May 7, 2019). Final street addresses were modified to a street number that is close in value to a house on the market but not an actual address.

### Selecting previous employers and their industries

Within each of these metropolitan areas, we identified medium-sized companies to use as former employers on the resumes. A challenge in selecting the employers was creating profiles that were both realistic and would allow us to apply to positions in a variety of industries. For the software testing resume, technology companies fit both of these purposes. For the other positions, our discussions with recruitment specialists indicated that a quite strong divide exists between manufacturing and other types of employers. This advice, combined with our specific interest in the technology industry, led us to select three sets of employers for each origin city: technology, manufacturing, and service. For each application we looked up the industry code of the hiring employer and used on the resume the employer set that best matched. The text in the resumes did not vary across these employer sets, only the names of the employers. Each employer set included four employers. The job hopper profile used all four employers but the order was randomized. The stable profile used one randomly selected employer from the set, and the moderate profile two randomly selected in random order.

#### Names

We used two last names and four first names (two male, two female) from lists of the most common names in the United States, randomly assigning a name to each application. We decided not to include tests for the effects of other social groups, for instance race, in an effort to not make the study too complex. However, an examination of such questions would be valuable in the future.

#### Search terms and posting screening

We identified postings by searching one of the major job posting sites weekly. In planning our study, we also examined postings on a number of occupation-specific job boards, but we found that most jobs were also listed on the major sites and so we used this site for all occupations to ensure consistency. For each of our five occupations, we searched for postings that were not designated as an entry-level job and included manager, senior, director, lead, or principal in the title to indicate a higher-level job. We applied to positions that required at least two but not more than twelve years of experience, and no more than 5 years of management experience (our resumes had 8 and 2 years respectively). We excluded positions that were listed as temporary, part-time, or posted by a recruiter. After collecting the postings we randomized their order to eliminate any ordering by the website.

Our goal was to apply to roughly similar numbers of positions for each of our five job

types. We therefore monitored the application rates to ensure that the number of applications for

any job type did not fall more than 80 percent behind the level of any other. If they did, we

focused on that job type until the application numbers caught up to the threshold.

### **Online Supplement B: Technology industry codes**

We considered a job posting to be in the technology industry if the employer had one of the following North American Industry Classification System (NAICS) codes. The four-digit codes include all detailed codes falling into that category.

5112	Software Publishers
5182	Data Processing, Hosting, and Related Services
519130	Internet Publishing and Broadcasting and Web Search Portals
5415	Computer Systems Design and Related Services
3341	Computer and Peripheral Equipment Manufacturing
3344	Semiconductors and Other Electronic Component Manufacturing
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing

	(1)	(2)	(3)	(4)	(5)
Employer size (reference: 5000+ employees)	(-/	(-)	(-)	( ')	(-)
≤50	-0.026	-0.026	-0.026	-0.026	-0.050
	(0.023)	(0.023)	(0.023)	(0.023)	(0.046)
50-200	-0.014	-0.013	-0.014	-0.014	-0.087*
	(0.020)	(0.020)	(0.021)	(0.021)	(0.042)
201-999	-0.031	-0.030	-0.031	-0.031	-0.084*
	(0.019)	(0.019)	(0.019)	(0.019)	(0.040)
1,000-5,000	0.003	0.003	0.004	0.004	-0.027
	(0.019)	(0.019)	(0.019)	(0.019)	(0.040)
Employer size x moderate mobility (reference	e: 5000+er	mployees)			
≤50					0.039
					(0.057)
50-200					0.116*
					(0.052)
201-999					0.069
					(0.049)
1,000-5,000					0.059
					(0.052)
Employer size x stable mobility (reference: 5	000+ emplo	oyees)			
≤50					0.029
					(0.049)
50-200					0.095*
					(0.047)
201-999					0.083
					(0.044)
1,000-5,000					0.025
Employer founding year (reference: <1061)					(0.046)
1061 1004	0.026	0.025	0.007	0.006	0.060
1901-1994	0.020	0.025	0.027	0.026	0.069
1005 2007	0.010)	(0.018)	(0.018)	0.010	(0.039)
1993-2007	(0.014)	(0.014	(0.014	(0.014)	-0.000
>2008	-0.010	-0.014	-0.014	-0.014	0.035
2000	-0.014	-0.014	(0.014)	-0.014	(0.036)
Employer founding year y moderate mobility (r	eference.	<1961)	(0.010)	(0.010)	(0.030)
1961-199 <i>/</i>	ciciciice.	(1001)			-0.045
1501 1554					(0.050)
1995-2007					0.024
1555 2007					(0.045)
≥2008					-0.058
=2000					(0.047)
Employer founding year x stable mobility (refe	rence: <19	61)			(01017)
1961-1994	20				-0.077
					(0.045)
1995-2007					0.023
					(0.041)
≥2008					-0.075
					(0.042)
Woman	-0.010	-0.009	-0.011	-0.019	-0.022
	(0.012)	(0.012)	(0.012)	(0.025)	(0.025)
	Continued	on next page	· · ·		· · · ·

# Online Supplement C: Coefficients for control variables and main effects

	(1)	(2)	(3)	(4)	(5)
Pasuma homa city (reference: Baltimore)	(1)	(2)	(3)	(4)	(3)
rescitu=2	0.034	0.035	0.035	0.035	0.034
Tescity-2	(0.034	0.035	(0.033	(0.035	(0.034
rosoity-2	(0.023)	0.023)	(0.023)	0.023)	0.023)
Tescity-5	(0.001)	(0.030	0.050	(0.030	(0.030
roppity_4	(0.021)	(0.021)	(0.020)	(0.021)	(0.021)
rescriy=4	0.015	0.014	0.016	0.015	0.014
and the F	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
rescity=5	-0.016	-0.016	-0.015	-0.015	-0.014
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
rescity=6	0.023	0.023	0.023	0.023	0.025
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
rescity=7	0.025	0.025	0.025	0.025	0.025
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Type of organization (reference: publicly trac	ded company)				
Private company	0.010	0.011	0.009	0.010	0.009
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Non-profit/govt/educational	0.043	0.044	0.043	0.043	0.044
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Other/Unknown	0.096	0.094	0.094	0.096	0.079
	(0.070)	(0.070)	(0.071)	(0.070)	(0.070)
Occupation (reference: finance)	. ,	. ,	. ,	. ,	. ,
HR	-0.032	-0.032	-0.031	-0.031	-0.033
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Marketing	-0.021	-0.022	-0.020	-0.021	-0.021
	(0.019)	(0.018)	(0.019)	(0.018)	(0.018)
ІТ	-0.007	-0.003	-0.007	-0.007	-0.005
	(0.020)	(0.038)	(0.020)	(0.020)	(0.038)
Software	0.020)	(0.038)	0.056**	0.055**	(0.038)
Soltware	(0.033	-0.000	(0.021)	(0.033	-0.007
Industry (2 digit NAICS reference: E4 Profes	(0.021)	(0.033)	(0.021)	(0.021)	(0.035)
11 Agriculture Forestry Fishing and				0.047	0.042
11 Agriculture, Forestry, Fishing and	0.046	0.044	0.046	0.047	0.043
Hunting	(0.118)	(0.119)	(0.118)	(0.118)	(0.121)
21 Mining, Quarrying, and Oil and Gas	-0.097**	-0.098**	-0.098**	-0.098**	-0.091**
Extraction	(0.023)	(0.023)	(0.022)	(0.023)	(0.025)
22 Utilities	-0.086**	-0.089**	-0.085**	-0.086**	-0.095**
	(0.025)	(0.026)	(0.025)	(0.025)	(0.026)
23 Construction	-0.020	-0.021	-0.020	-0.021	-0.020
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
31-33 Manufacturing	0.001	0.000	0.001	0.001	-0.003
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
42 Wholesale Trade	0.070	0.069	0.070	0.071	0.069
	(0.049)	(0.049)	(0.049)	(0.049)	(0.048)
44-45 Retail Trade	-0.047*	-0.047*	-0.047*	-0.047*	-0.047*
	(0.024)	(0.024)	(0.024)	(0.024)	(0.023)
48-49 Transportation and Warehousing	0.026	0.025	0.025	0.026	0.020
	(0.054)	(0.053)	(0.054)	(0.054)	(0.053)
51 Information	-0.007	-0.004	-0.007	-0.007	-0.014
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
52 Finance and Insurance	-0.024	-0.022	-0.024	-0.024	-0.026
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
53 Real Estate and Rental and Leasing	-0.049	-0.050	-0.049	-0.050	-0.053
	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)
55 Management of Companies and	-0.088**	-0.087**	-0.088**	-0.088**	-0.094**
Enternrises	(0.030)	(0.030)	(0.030)	(0.030)	(0 030)
56 Administrative and Support and Waste	0.056	-0.059	0.055	-0.057	0.063*
Management and Remediation Services	-0.000	-0.039	-0.000	-0.037	-0.003
management and Remeulation Services	(U.U31)	(0.031)	(0.031)	(0.031)	(0.032)

	(1)	(2)	(3)	(4)	(5)
61 Educational Services	0.071	0.072	0.07	0.07	0.068
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
62 Health Care and Social Assistance	-0.011	-0.011	-0.011	-0.011	-0.016
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
71 Arts, Entertainment, and Recreation	-0.039	-0.040	-0.039	-0.039	-0.044
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
72 Accommodation and Food Services	-0.006	-0.006	-0.006	-0.006	-0.005
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
81 Other Services (except Public	0.054	0.053	0.053	0.054	0.049
Administration)	(0.050)	(0.049)	(0.050)	(0.050)	(0.049)
92 Public Administration	0.009	0.009	0.008	0.009	0.008
	(0.057)	(0.057)	(0.057)	(0.057)	(0.056)
Tech industries: software and other IT	0.042	0.042	()	0.042	()
(see note below for models 3 & 5)	(0.049)	(0.048)		(0.049)	
Tech industries: hardware	-0.002	-0.003	0.004	-0.002	-0.001
reen maastres. naraware	(0.002)	(0.023)	(0 127)	(0.002)	(0.130)
Industry sector main effects (ref: nontech_ter	h software (	mitted above to	avoid multico	(0.023) Ilinearity)	(0.150)
Tech sector	moonware		0 022	uncarity)	0.048
Tech sector			(0.120)		(0.122)
Application month (ref: Aug 2010)			(0.129)		(0.132)
Application monul (rel. Aug 2019)	0.010	0.014	0.010	0.011	0.010
3eh-1a	(0.020)	(0.029)	0.010	0.011	0.010
Opt 10	(0.036)	(0.036)	(0.036)	(0.036)	(0.039)
001-19	0.004	0.006	0.002	0.004	0.011
Nov. 10	(0.037)	(0.037)	(0.037)	(0.037)	(0.038)
N0V-19	0.024	0.025	0.022	0.024	0.032
	(0.038)	(0.038)	(0.038)	(0.038)	(0.039)
Dec-19	0.035	0.043	0.034	0.035	0.048
	(0.040)	(0.040)	(0.040)	(0.040)	(0.041)
Jan-20	-0.072	-0.068	-0.074	-0.073	-0.060
	(0.061)	(0.060)	(0.061)	(0.061)	(0.060)
Feb-20	-0.047	-0.046	-0.050	-0.048	-0.045
	(0.050)	(0.050)	(0.050)	(0.050)	(0.051)
Mar-20	0.029	0.030	0.026	0.029	0.038
	(0.048)	(0.048)	(0.048)	(0.048)	(0.049)
Apr-20	-0.029	-0.028	-0.030	-0.029	-0.020
	(0.037)	(0.037)	(0.038)	(0.037)	(0.038)
May-20	0.000	0.002	-0.002	0.000	0.006
	(0.041)	(0.041)	(0.041)	(0.041)	(0.042)
Jun-20	0.004	0.008	-0.000	0.004	0.005
	(0.051)	(0.051)	(0.052)	(0.052)	(0.053)
Jul-20	0.012	0.014	0.010	0.012	0.021
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)
Aug-20	0.003	0.009	0.001	0.003	0.019
	(0.046)	(0.046)	(0.046)	(0.046)	(0.047)
Sep-20	-0.016	-0.014	-0.017	-0.016	-0.007
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Oct-20	0.031	0.034	0.030	0.031	0.038
	(0.062)	(0.062)	(0.062)	(0.062)	(0.063)
Nov-20	0.001	0.003	-0.000	0.001	0.009
	(0.042)	(0.042)	(0.042)	(0.042)	(0.043)
Dec-20	-0.033	-0.029	-0.035	-0.033	-0.024
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Jan-21	-0.013	-0.012	-0.016	-0.013	-0.002
=-	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)
Feb-21	0.034	0.035	0.032	0.034	0.042
	(0.052)	(0.052)	(0.052)	(0.052)	(0.053)
Constant	0.086	0.00/*	0.083	0.001*	0.106*
Constant	(0.044)	(0.045)	(0.044)	(0.045)	(0.050)
N	(0.044)	(0.045)	3878	(0.045)	(0.000)
11			3070		

\* p<0.05, \*\* p<0.01

### **Online Supplement D: The Covid-19 Pandemic**

The Covid-19 pandemic occurred partway through our data collection period. We paused data collection for a few weeks both because we felt that employer behaviors during this period would be highly unusual and also we and our research assistants were dealing with the personal and family challenges posed by the pandemic. We then resumed applications, with the exception of refraining from applying to health care facilities for several more months because we did not want to burden them during this difficult period. We passed over 89 such positions.

While the Covid-19 pandemic caused some disruption to the study, it also offered a type of natural experiment. The initial months of the study, before the pandemic, were marked by tight labor market conditions, while the onset of the pandemic caused a sharp rise in unemployment.<sup>2</sup> We urge caution in reading too much into this "natural experiment", though, because clearly the pandemic was not a typical slack labor market as both worker and employer behaviors were affected by factors unique to the crisis. Nevertheless, the shock does offer an opportunity to assess whether employer mobility preferences shifted with the sudden change in employment circumstances.

Surprisingly, our analysis found that the pandemic did not greatly impact employer mobility preferences. We observed a decline in the number of job postings, especially in the first few months of the pandemic, but only moderate decreases in the callback rates for our applications, a difference that was not statistically significant.<sup>3</sup> Figure D shows the callback rates

<sup>&</sup>lt;sup>2</sup> In 2021 the pandemic brought labor shortages, but we concluded our study in January 2021 before these shortages became widespread.

<sup>&</sup>lt;sup>3</sup> While the unemployment rate increased sharply in the first few months of the pandemic, much of this increase consisted of individuals who were temporarily unemployed (authors' own analysis of CPS data) and therefore not necessarily actively searching for other jobs. This likely explains why we did not see a more dramatic decline in callback rates, as employers were likely not as flooded with applicants as the very high unemployment rate might have suggested.

by mobility history before and after the onset of the pandemic. While the callback rates were lower, the patterns by mobility profile are very similar. In a regression none of the differences were statistically significant.

We also examined patterns of responses before and after the pandemic for subgroups by our occupation and industry categories. None of the differences were statistically significant and generally the mobility patterns in these subgroups were similar in the two time periods. Overall, the results suggest that employer mobility preferences are not highly sensitive to economic cycles and changing labor market conditions.



Before and after March 13, 2020

Figure D. Callback rates by mobility history before and after the declaration of a global pandemic.

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