Applied Economics Letters, 2007, **14**, 311–314

Routledge
Taylor & Francis Group

Dissertation advisors and initial job placements for economics PhD recipients

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Using a unique data set that matches economics PhD recipients with their advisors, we find that after controlling for programme quality, the relative standing of a student's dissertation advisor has a significant impact on his or her initial job placement.

> 'You will write a better dissertation if your chosen subject is congruent with the interests and writings of a well-known supervisor. That will help your job placement too.'
>
> – Daniel Orr in his advice to graduate students at the 1993 ASSA meetings

While this sentiment is no doubt shared by most academics, it is, at its heart, an empirical question. Specifically, if the researcher is able to identify a PhD recipient's dissertation advisor and initial job, then he or she should be able to estimate whether working with a well-known advisor truly helps a student's job placement. Surprizingly, such a study has yet to be conducted for the economics profession.

The current study utilizes available data sources to identify the primary dissertation advisor and first postgraduate job taken by a sample of PhD recipients from top 30 economics programmes. Our main finding is that, controlling for programmes quality, the relative standing of a student's dissertation advisor has a significant impact on his or her initial job placement. Specifically, we find that students with highly ranked advisors are statistically more likely to accept first jobs with the top US colleges and universities and with the US Federal Reserve System and statistically less likely to accept first jobs with other domestic colleges and universities and foreign academic institutions. At the same time, the quality of programme from which the students graduated only has a significant effect on the likelihood that the student initially accepts a position with a domestic college or university. Combined, these results suggest that Professor Orr's advice should be well-taken by graduate students, as the relative standing of a student's dissertation advisor appears to have a greater impact on his or her initial job placement than the reputation of the programme from which he or she receives their PhD.

I. Data

We draw our data from a number of sources. Since 1990 the Dissertation Abstracts database (published by ProQuest Information and Learning) has included the name of the student's primary dissertation advisor for the vast majority of dissertations filed.[1] From this, we collected information on students graduating between 1990 and 1994 from the US economics

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[1] According to its description, this database contains information on 'dissertations on all academic topics accepted at accredited institutions since 1861, including more than 1.2 million citations (with abstracts since 1980) to doctoral degree dissertations by accredited North American educational institutions and more than 200 institutions elsewhere.'

http://www.tandf.co.uk/journals
DOI: 10.1080/13504850500426293

Table 1. Summary first job type by school and advisor rank

		Programme rank			Advisor rank		
	Total	Tier 1	Tier 2	Tier 3	Star	Ranked	Unranked
Observations							
US academic							
Top econ programme	276	147	88	41	128	94	54
Other university	386	78	180	128	84	125	177
Foreign academic	332	90	137	105	99	93	140
US federal reserve	69	28	26	15	33	20	16
World bank/IMF	78	23	31	24	30	21	27
Other job	306	82	121	103	84	81	141
Percentages							
US academic:							
Top econ programme	0.191	0.328	0.151	0.099	0.279	0.217	0.097
Other university	0.267	0.174	0.309	0.308	0.183	0.288	0.319
Foreign academic	0.229	0.201	0.235	0.252	0.216	0.214	0.252
US federal reserve	0.048	0.063	0.045	0.036	0.072	0.046	0.029
World bank/IMF	0.054	0.051	0.053	0.058	0.066	0.048	0.049
Other job	0.211	0.183	0.208	0.248	0.183	0.187	0.254

departments ranked among the top 30 in the 1995 NRC rankings. To quantify the relative standing of the student's dissertation advisor, we utilize Coupe (2003) who ranks the top 1000 worldwide economists by a weighted-average of 11 different historically utilized metrics of research productivity. Overall, we define an advisor as either being ranked among the worldwide top 250 ('*star*' advisors), ranked between 251 and 1000 ('*lower ranked*' advisors) or not ranked in the top 1000 ('*unranked*' advisors).[2]

A student's first postgraduation job is gathered from two different sources. Our first source is the self-reported job histories contained in the American Economic Association's Directory of Members surveys from 1993, 1997 and 2000. For students who either did not belong to the AEA or did not provide such information, we turn to the author affiliation in Econlit (the AEA's directory of peer-reviewed publications) for the first article published after the student received his or her PhD. We broadly define initial job placements as: (1) top domestic colleges and universities, (2) other domestic colleges and universities, (3) foreign academic institutions, (4) the US Federal Reserve, (5) World Bank/IMF and (6) all other jobs.

Combined, we collected data on 1447 students who reported the identity of their dissertation advisor and for whom we were able to identify the first postgraduation job. In addition to these values, we control for PhD programme rank, dissertation field, year of PhD receipt, sex and domestic/international status. This information is gathered from the Dissertation Abstracts database and is cross-referenced against the 'Doctoral Dissertations in Economics Annual List' published each December in the *Journal of Economic Literature*. To rank economics programmes, we follow the three tier ranking of Siegfried and Stock (2001), which correspond to programmes 1–6, 7–15 and 16–30, respectively, in the 1995 NRC rankings of PhD granting economics programmes.[3]

II. Results

Table 1 presents summary statistics on a student's first job placement by programme tier and advisor rank. Overall, 31, 40 and 29% of the students in our sample graduated from tier 1, tier 2 and tier 3 programmes, respectively, while 32, 30 and 38% of students worked with star, lower ranked and unranked advisors, respectively. Looking at initial job placements, the clear plurality of our students, roughly 46%, initially accepted domestic academic positions. Among these students, roughly 42%, or 19% of all students, started their careers at top

[2] This classification might seem somewhat arbitrary. However, we did explore a multitude of other categorical breakdowns (every 100, every 200, etc.) as well as the inclusion of a continuous measure of advisor rank. Every alternative specification yielded similar results and thus, we believe that the results presented here are highly robust.

[3] Tier 1 programmes are Harvard, Chicago, M.I.T., Stanford, Princeton, and Yale. Tier 2 programmes are UC Berkeley, Pennsylvania, Northwestern, Minnesota, UCLA, Columbia, Michigan, Rochester and Wisconsin. Tier 3 programmes are UC San Diego, NYU, Cornell, Cal Tech, Maryland, Boston University, Duke, Brown, Virginia, North Carolina, University of Washington-Seattle, Michigan State, Illinois, Washington University (St. Louis) and Iowa.

Table 2. Estimated marginal effects from multinomial logit controlling for advisor rank and program tier

	Top domestic university		Other domestic school		Foreign academic institution		Federal reserve		World Bank/IMF	
Advisor rank										
Star	0.1478**	(0.0354)	−0.1052**	(0.0309)	−0.0648**	(0.0269)	0.0355**	(0.0156)	0.0175	(0.0145)
Ranked	0.1474**	(0.0343)	−0.0249	(0.0296)	−0.0633**	(0.0263)	0.0355	(0.0156)	−0.0068	(0.0122)
Programme rank										
Tier 1	0.2462**	(0.0405)	−0.1320**	(0.0334)	−0.0094	(0.0312)	0.0006	(0.0110)	−0.0164	(0.0120)
Tier 2	0.0826**	(0.0326)	−0.0033	(0.0301)	−0.0118	(0.0277)	0.0029	(0.0106)	−0.0131	(0.0118)
Individual characteristics										
Years since PhD	0.0056	(0.0077)	0.0149	(0.0093)	0.0000	(0.0084)	−0.0035	(0.0028)	−0.0027	(0.0038)
International student	−0.0674**	(0.0212)	−0.1268**	(0.0260)	0.2530**	(0.0332)	−0.0427**	(0.0094)	0.0328**	(0.0117)
Male	−0.0464	(0.0293)	−0.0671**	(0.0339)	0.0885**	(0.0291)	−0.0047	(0.0103)	0.0124	(0.0132)
	Top econ programme		Other university		Foreign academic		Federal reserve		World Bank/IMF	
Dissertation field										
Development	−0.1100**	(0.0307)	−0.1085**	(0.0521)	0.0595	(0.0718)	0.0222	(0.0446)	0.0473	(0.0443)
Microeconomics	−0.0135	(0.0422)	−0.0961**	(0.0480)	0.1791**	(0.0717)	0.0003	(0.0280)	−0.0256	(0.0167)
Finance	−0.0324	(0.0425)	−0.1118**	(0.0503)	−0.0081	(0.0619)	0.1439	(0.0975)	−0.0077	(0.0228)
Public economics	−0.0702	(0.0447)	−0.1139*	(0.0592)	0.0348	(0.0837)	0.0722	(0.0787)	−0.0125	(0.0269)
Quantitative methods	0.0404	(0.0541)	−0.0637	(0.0547)	0.1326*	(0.0748)	0.0403	(0.0521)	−0.0304**	(0.0148)
Money & banking	−0.0996**	(0.0313)	−0.1115**	(0.0480)	0.0394	(0.0650)	0.1461	(0.0940)	0.0056	(0.0257)
International economics	−0.0841**	(0.0333)	−0.0651	(0.0494)	0.0598	(0.0630)	0.0210	(0.0381)	0.0829*	(0.0494)
Industrial organization	−0.0863**	(0.0342)	−0.0223	(0.0572)	−0.0285	(0.0596)	−0.0039	(0.0274)	−0.0203	(0.0196)
Health, Ed. and welfare	−0.0780*	(0.0405)	−0.0326	(0.0675)	−0.0576	(0.0722)	−0.0103	(0.0264)	−0.0257	(0.0223)
Labour economics	−0.0673*	(0.0360)	−0.0757	(0.0480)	0.0700	(0.0674)	0.0078	(0.0315)	−0.0259	(0.0176)
Urban economics	−0.1309**	(0.0354)	−0.1139**	(0.0685)	−0.1165*	(0.0667)	0.1577	(0.1324)	−0.0142	(0.0329)
Log likelihood	−3416.95									
Observations	1447									

Notes: Value listed in the column heading is the dependent variable.
**, * significant at 5 and 10% levels.

institutions. Otherwise, roughly 23% of all students accepted first jobs at foreign academic institutions while roughly 21% of all students accepted 'other' first jobs. The remaining 10% of students are nearly equally split between accepting first jobs with the US Federal Reserve and with the World Bank/IMF.

Turning to cross-programme differences, nearly 33% of tier 1 students, as opposed to 15 and 10% of tier 2 and tier 3 students, respectively, accepted positions within top domestic institutions while 17, 31 and 31% accepted positions within other domestic academic programmes. At the same time, smaller percentages of tier 2 and tier 3 students than of tier 1 students accept positions with the US Federal Reserve while greater percentages of tier 2 and tier 3 students than of tier 1 students accept positions with foreign academic institutions. These trends are remarkably similar across advisor rankings, which might suggest that hiring decisions, particularly within top-ranked economics programmes and the US Federal Reserve, are based on a combination of the programme from which the student graduated and the advisor with which he or she worked.

To empirically assess the degree to which the rank of a student's dissertation advisor affects his or her initial job placement we estimate the student's first job as a function of whether the student worked with a star, lower ranked, or unranked advisor, as well as the other readily observable characteristics mentioned above. Due of the categorical nature of our dependent variable, we estimate the first job function with full-information maximum likelihood multinomial logit.

Table 2 presents results that have been converted to marginal effects. The entries should therefore be interpreted as the effect that changes in the independent variables have on the probability of accepting a particular type of first job over the other types of first jobs, holding all else constant. The main finding is that, all else equal, the relative standing of a student's dissertation advisor has a significant effect on his or her initial job placement. Specifically, holding programme tier constant, students working with star advisors are roughly 14.8 and 3.6% more likely to have accepted initial jobs at top domestic colleges and universities and the US Federal Reserve System, respectively and roughly 10.5 and 6.5% less

likely to have accepted initial jobs with other domestic colleges and universities and foreign academic institutions, respectively, than otherwise similar students working with unranked advisors. At the same time, students working with lower ranked advisors are 14.7% more likely to have accepted initial jobs at top domestic colleges and universities and 6.3% less likely to have accepted first jobs with foreign academic institutions. Focusing on programme quality, holding advisor rank constant, estimated differences across the three programme tiers are only statistically significant in three instances. In other words, it appears that much of the previously estimated effect of doctoral programme on future job placements (McMillen and Singell, 1994; Buchmuller *et al*., 1999; Stock and Alston, 2000) might instead be due to the matching between the student and his or her dissertation advisor.

Finally, dissertation field is estimated to have a much larger impact on the likelihood that a student accepted a position with a domestic academic institution, as students writing in development, money and banking and urban economics are less likely to have accepted positions with either type of domestic institution while students writing in international economics, industrial organization, health, education and welfare and labour economics are less likely to have accepted initial jobs with top domestic institutions and students writing in microeconomics and public economics are less likely to have accepted initial jobs with other domestic institutions.

III. Conclusions

This article is the first to examine the effect that the student-advisor match has on a student's early career productivity. We find that, controlling for programme reputation, students with highly ranked advisors are statistically more likely to accept first jobs with the top US colleges and universities and with the US Federal Reserve System and statistically less likely to accept first jobs with other domestic colleges and universities and foreign academic institutions.

These results have implications for current and future economics PhD students. Namely, previous research has demonstrated that students accepting first jobs with the top US economics departments receive higher initial salaries (Siegfried and Stock, 2001) and are more likely to publish in top journals during their early careers (Buchmuller *et al*., 1999). Given that the academic labour market rewards articles in top journals more highly (Sauer, 1988) there appears to be a clear and significant monetary payoff associated with accepting a first job in a top department. Our results suggest that following Professor Orr's advice of choosing a 'subject is congruent with the interests and writings of a well-known supervisor' may help students gain access to such jobs.

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