Scholarly Collaboration Between Economics Ph.D. Recipients and Their

Dissertation Advisors: Early Career Productivity and Favoritism in Top Journals

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Abstract: Based on a unique sample of 1,888 students who received their economics Ph.D.s between 1990 and 1994 we find that students who coauthor with their dissertation advisors are significantly more productive across four important metrics than otherwise similar students that do not. In addition, we find that students working with advisors who served on the editorial board at the *Quarterly Journal of Economics* were significantly more productive than students working with advisors who served on the editorial boards of the remaining top 5 journals. This statistical advantage does not appear to result strictly from undue favoritism on the part of the editors however, as such students publish significantly more articles in both the *QJE* and the *American Economic Review*.

1. Introduction

During the course of his or her graduate studies, a Ph.D. student encounters many potential influences. Among the most important is surely his or her dissertation advisor. Given the importance of this relationship, we argue that observed interactions between Ph.D. recipients and their advisors might provide valuable insight into which students are the most likely to become productive researchers. Namely, we predict that students who coauthor peer-reviewed papers with their dissertation advisors should be more productive researchers than their otherwise similar counterparts who do not. We base this prediction on several observations. First, because of the significant time commitment required to direct a dissertation, we believe that potential advisors will have the incentive to become as informed as possible about a student's potential before agreeing to serve as the primary advisor. Further, as the dissertation progresses we expect the advisor to become even better informed as to the student's actual research ability and work habits. Finally, given the potential difficulties inherent in the coauthor relationship, we expect that advisors will choose to work with only the best and the brightest of their Ph.D. students. Hence, we believe that by choosing to coauthor with only specific students dissertation advisors are inherently signaling which of their students they believe to possess the greatest research potential. Accordingly, we expect that such students will turn out to be the most productive in their early careers.

Empirically assessing this prediction combines two existing lines of research. First, a notable literature has demonstrated the importance of coauthorship within the economics discipline (for example, Hamermesh and Oster, 2002; Laband and Tolison, 2000; Endersby, 1996; Durden and Perri, 1995). Second, because a newly-minted

Ph.D.'s true research potential is not directly observable a literature has developed examining factors affecting the early career productivity of economics Ph.D. recipients. Prominently, Coupe (2003), Buchmuller, Dominitz, and Hansen (1999) and Hogan (1981) find that students graduating from higher-ranked programs tend to be more productive than students graduating from lower-ranked programs. A glaring hole in this finding, however, is that roughly 30 percent of tier 1 graduates do not publish any academic articles within the first 9 years after Ph.D. receipt (Buchmuller, Dominitz, and Hansen, 1999). In other words, the signal represented by the student's graduate program is potentially very noisy, and thus departments interested in hiring the most productive faculty will desire additional predictors of early career success. We posit that observing whether the student collaborated on published work with his or her dissertation advisor might provide such an indicator.

We analyze a sample of 1,888 individuals receiving economics Ph.D.s from top 30 programs during a five-year period in the early 1990s. Our main finding is that, controlling for program and advisor quality, first job type, years since Ph.D. receipt, dissertation field, gender, and international/domestic status, students who coauthor with their advisors are significantly more likely to publish across four important metrics than their otherwise similar peers who do not coauthor with their advisors. Hence, it appears that the fact that a student published a paper coauthored with his or her dissertation advisor is a potentially important signal of early career research productivity. Additionally, we find that students working with advisors who served on the editorial board of the *Quarterly Journal of Economics* between 1990 and 2002 publish significantly more across all four metrics than otherwise similar students who do not. We

do not, however, observe statistically significant differences for student working with advisors who served in editorial capacities at the four remaining top 5 journals during the same time period. Finally, we observe that students working with *QJE* board members publish significantly more articles in both the *QJE* and the *AER* while students working with *RE Stat* board members publish significantly more articles in the *RE Stat* and students working with *Econometrica* board members publish significantly more articles in the *JPE* and the *RE Stat*. Together, these facts suggest that journal editors do not appear to systematically be giving undue preference to articles authored by their former advisees.

2. Data

The data for this analysis are drawn from a number of sources. In 1990, the *Dissertation Abstracts* database (published by ProQuest Information and Learning) started including the name of the student's dissertation advisor for the vast majority of dissertations filed.¹ From this, we collected information on 1,888 dissertations filed in economics fields between 1990 and 1994 for students graduating from top 30 economics programs and reporting the identity of their dissertation advisor.² The five-year time frame is chosen to avoid any single-year aberrations that might bias the results while the 1994 endpoint is chosen to allow significant time for students to develop publication records.³ Individual-specific peer-reviewed publication data as of December 2002 are collected from *Econlit*, which is the American Economic Association's bibliography of economics literature throughout the world.⁴ To define research productivity we consider four common metrics. The first two are the total number of publications and the total

number of top 5 publications according to Scott and Mitias (1996).⁵ To account for differences in article length, we further define the total number of pages published. Finally, because, as has often been noted "an article is not an article" we follow Sauer (1988) and calculate a measure of pages published that is weighted for journal quality, number of authors, and number of characters per page (*AEQ Pages*).

To rank dissertation advisors, we utilize the global top 1000 economist ranking of Coupe (2003). 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). While we tried numerous other breakdowns, including a linear specification, our results were robust throughout. We settled on this definition based on our belief that while it is possible to quibble over an individual's exact cardinal ranking (i.e. whether a given individual should be ranked say 73rd or 74th out of 1000) broad groupings should be highly accurate in terms of relative research productivity.⁸ To rank economics programs, we follow the three tier ranking presented in Siegfried and Stock (2001), which divides the 1995 NRC rankings of Ph.D. granting economics programs into programs 1-6, 7-15 and 16-30, respectively. Finally, as several studies have indicated, an important determinant of a student's future productivity is whether he or she holds a research-oriented job (Davis, Huston, and Patterson, 2001; Collins, Cox and Stango, 2000; and Buchmuller, Dominitz, and Hansen, 1999). We define research-oriented jobs as those in the academic sector or with the Federal Reserve. 10 We determine a student's first postgraduation job based either on self-reported information contained in the American Economic Association's

Directory of Members or on the author affiliation listed in Econlit for the first article published after the student received his or her Ph.D.

3. Results

3.1 Summary Statistics

Table 1 presents summary statistics on our students' propensity to coauthor with their dissertation advisors. Looking first at raw publication statistics, roughly 68 percent of our students had published at least one article by December 2002, while roughly 17 percent had published at least one top 5 article. This is broadly consistent with data reported in Buchmuller, Dominitz, and Hansen (1999). Among the subset of publishers roughly 21 percent of students had published at least one article that was coauthored with their dissertation advisor while among the subset of top 5 publishers roughly 15 percent had done so.

Turning to program tier and advisor rank, the percentages of students publishing at least one total article and at least one top 5 article are monotonically decreasing with quality. Specifically, across program and advisor rankings, roughly 78 percent of the top, 67 percent of the middle, and 62 percent of the bottom group ever publish any article while roughly 29 percent of the top, 16 percent of the middle, and 10 percent of the bottom group ever publish a top 5 article. Perhaps more interestingly, tier 1 students appear less likely than tier 2 and tier 3 students to coauthor with their advisors while star advisees appear more likely than lower ranked and unranked advisees to do so. At the same time, star advisees publish a smaller percentage of their total and top 5 articles with their advisors than lower ranked and unranked advisees. Together, these facts might

suggest that the most productive faculty are best able to identify which students are potential superstars and therefore desirable coauthors and that being potential superstars, these students are better able to produce articles without the advisor's input. Finally, within each program tier and advisor ranking group the percentage of top 5 articles published with the advisor is nearly twice as great as the percentage of all articles published with the advisor, suggesting that many of those students who are able to coauthor with their advisors actually appear to do their best work with the advisor.

Table 2 presents summary productivity statistics across the different program tiers and advisor ranking groups. Overall, the entries suggest that students who coauthor with their advisors are more productive than their counterparts who do not, at least on average. This trend holds across all the different comparison presented. While several other trends could be addressed, we choose to highlight one. Notably, across all metrics the difference between coauthoring and non-coauthoring students is largest for the highest quality publications. For example, in terms within the overall data, coauthoring students average roughly 22 percent more total articles and 59 percent more top 5 articles.

3.2 Are Students Who Coauthor With Their Advisors More Productive?

To empirically assess the degree to which coauthoring with one's dissertation advisor acts as a signal of early career productivity, we estimate standard productivity functions for each of our four productivity metrics. In addition to dummy variables indicating whether the student coauthored at least one paper (or at least one top 5 paper) with his or her advisor, we include the reputation tier of the student's Ph.D. program, the global rank of his or her dissertation advisor, whether the student is male or an

international student, the field in which the student's dissertation is written, the number of years since the student received his or her Ph.D., and whether the student's first job was research-oriented. Because our four productivity measures are truncated at zero, we estimate our productivity functions as negative binomials.¹¹

Table 3 presents results that have been converted to marginal effects. Controlling for program tier and advisor rank, we find that students who coauthor with their advisors are significantly more likely to publish across all four metrics than otherwise similar students who do not coauthor with their advisors. Specifically, holding all else constant, we estimate that coauthoring students publish 2.08 more total articles, .80 more top 5 articles, 24.93 more total pages, and 8.11 more AEQ pages. In other words, it appears that publishing a coauthored paper with one's dissertation advisor might represent an improved indicator of early career publishing success.

The remaining results in Table 3 are generally consistent with previous findings. As with Hilmer and Hilmer (2005), we find that holding program tier constant students working with star or lower ranked advisors are significantly more likely to publish across all four metrics than otherwise similar students working with unranked advisors, while holding advisor rank constant statistically significant differences only exist between students graduating from tier 1 programs and students graduating from tier 3 programs. Otherwise, all else constant, we find that international students publish significantly fewer total and top 5 articles than otherwise similar domestic students while males publish significantly more total articles and total pages than otherwise similar females. Finally, all else equal, holding a research job appears to be an important indicator of early careers success across all four metrics. These findings for our observed individual

characteristics are consistent with previous results presented in Coupe (2003), Davis, Huston, and Patterson (2001), Collins, Cox and Stango (2000), Buchmuller, Dominitz, and Hansen (1999) and Hogan (1981).

3.3 Does Working With a Top 5 Editorial Board Member Increase the Likelihood of Publishing a Top 5 Article?

An obvious question is why students with highly ranked advisors produce more articles, and especially more top 5 articles, early in their careers. A belief held by many is that the top 5 journals are biased in favor of students and faculty associated with certain elite programs (Garrity and McKenzie, 1978). As evidence, Wu (2004) recently demonstrated that between 2000 and 2003 more than 40 percent of pages published in the Quarterly Journal of Economics were authored by faculty associated with one of four institutions while Siegfried (1994) and Laband (1985) previously demonstrated that a large fraction of articles published in the *Journal of Political Economy* were authored by individuals associated with the University of Chicago. It should be noted that based on their analysis of citations and other measures of article quality, Laband and Piette (1994) conclude that editorial "favoritism" actually increases efficiency by allowing editors to more easily identify high quality papers that merit publication in their journals. Our data allow us to add to this literature by focusing on the specific link between student and advisor rather than the more general current program and graduation program affiliations examined in the work cited above. In this light, a natural question might be whether students working with dissertation advisors associated in an editorial capacity with one of

the top 5 journals observe statistical advantages in publishing over students not working with such advisors.

We start our analysis by asking whether there are across-the-board productivity differences associated with having a dissertation advisor that served in an editorial capacity at a given top 5 journal. In the work that follows, we define editorial capacity as being listed in the journal's front matter as either an editor, and associate editor, or an assistant editor. We note that such a breakdown does not exist for the *Journal of Political Economy*, as that journal lists four to six editors in "cooperation with other members of the Department of Economics and the Graduate School of Business at the University of Chicago and outside referees." Looking at the data, overall roughly 23 percent of our students worked with an advisor serving on at least one top 5 editorial board during our observed time frame. Publication rates are higher for students working with top 5 editorial board members, with 76 percent of such students publishing at least one article and 30 percent publishing at least one top 5 article, as opposed to 66 and 12 percent, respectively, for students not working with top 5 editorial board members.

Table 4 starts to quantify the effect of working with a top 5 editorial board member by presenting results that add categorical variables indicating the number of years that a student's advisor served in a given editorial capacity at each of the top 5 journals between 1990 and 2002. Note that the regressions still control for the advisor's rank and the program reputation tier. Overall then, the results suggest that students working with advisors who served in an editorial capacity at the *QJE* observe a statistically significant advantage across all four metrics while students working with advisors who served in editorial capacities at the remaining top 5 journals do not. While

not speaking directly to the issue of favoritism, these results suggest that *QJE* board members may be choosing to work with the most productive graduate students.

3.4 Does Working With a Top 5 Editorial Board Member Affect the Likelihood of Publishing in the Specific Top 5 Journals?

To move our focus toward the issue of favoritism, the final question we consider is whether the above results change if we choose to focus on the number of articles published in each specific top 5 journal instead of the top 5 journals as a group. While we do not propose a specific test of undue favoritism versus the capturing of higher quality articles, our results should shed light on the issue. Namely, in the case of pure undue favoritism we would expect students to only see statistical advantages in publishing articles in the journal at which their advisor serves on the editorial board. To the contrary, if individuals see statistical advantages in publishing in top 5 journals other than the ones on whose editorial boards their advisors serve then we would tend to reject the conclusion of pure undue favoritism

Table 5 begins our analysis by presenting summary statistics on the mean number of articles published in each of the different top 5 journals by students with advisors serving in editorial capacities at each of those different journals. Overall, students working with advisors serving on at least one top 5 editorial board appear much more likely to publish in each top 5 journal than students not working with such an advisor. Turning to the specific editorial boards on which the advisor served, students with advisors serving on the *QJE*, *RE Stat*, and *Econometrica* boards each average the most articles in those respective journals while with advisors on the *QJE* board also average

the most AER and JPE papers. The differences are most pronounced for the number of QJE and AER articles, with students of QJE board members averaging nearly twice as many QJE articles and nearly 2/3 more AER articles than the students belonging to the next highest groups. At the same time, students with advisors on the RE Stat board average the second most Econometrica articles while students with advisors on the Econometrica board average the second most RE Stat articles. In other words, it appears that the likelihood of publishing in a specific top 5 journal might depend on the nature of the subject matter. Namely, because Econometrica and RE Stat are the most quantitative in nature, it is not surprising that students working with advisors serving on those boards are most likely to publish in those journals. It is potentially notable, however, that students working with QJE board members dominate in all three of the more general top 5 journals.

Table 6 empirically assesses the relationship between the top 5 editorial board service of a student's dissertation advisor and his or her early career publications in each specific top 5 journal. Note that due to a lack of variation in the number of *Econometrica* articles published by students in our sample, we are unable to estimate the productivity function for such articles. The results contained in table 6 tend to reject the idea of pure undue favoritism. Namely, while we find that, all else equal, students working with *QJE* and *RE Stat* board members publish statistically more articles in those journals we do not find that students working with *AER* board members are statistically more likely to publish in the *AER*. Moreover, we find that students working with *QJE* board members publish statistically more *AER* articles and that the estimated premium is nearly 70 percent larger than the estimated premium for *QJE* articles. Similarly, we find that

students working with *Econometrica* board members publish both significantly more *JPE* and significantly more *RE Stat* articles than otherwise similar students and that the estimated *RE Stat* premium is slightly large for *Econometrica* board member advisees than for *RE Stat* board member advisees. In summary, the fact that statistically significant differences in the number of articles published in specific top 5 journals are not observed strictly for students working with advisors serving on the journal's editorial board suggests that editors are not choosing to publish articles written by their former students simply because they are their former students.

4. Conclusions

We ask whether students who coauthor peer-reviewed papers with their dissertation advisors are more productive in their early careers than otherwise similar students who do not. We find that, holding important observable characteristics constant, students who coauthor with their advisors publish significantly more total articles, top 5 articles, total pages and quality-weighted pages. Hence, it appears that coauthoring with dissertation advisors is a potentially important signal of early career research productivity.

This result is potentially important for the following reason. Published research is an important determinant of a Ph.D.-granting department's professional reputation (for example Thursby, 2000 and Smyth, 1999). Hence, when making hiring decisions an important question is how to identify which potential hires are most likely to be productive researchers. Our findings suggest hiring departments may be able to better

predict a student's likelihood for early career success by considering whether the student's advisor chose to coauthor at least one publishable paper with the student.

Notes

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. Dissertation Abstracts represents original academic research from over 1,000 universities throughout the world. It is the most comprehensive information resource covering doctoral dissertations and master's theses, including content from a number of ProQuest dissertation print publications, including: Comprehensive Dissertation Index; Dissertation Abstracts International; Masters Abstracts International; American Doctoral Dissertations. Records include abstracts, authors, advisors, titles, institutions, degrees, dates, author-assigned subjects and descriptors, number pages and availability information. Subjects covered include agriculture & food science, architecture, art, bioscience and biotechnology, business, chemistry, economics, education, history, geoscience, law and political science, mathematics, music, pharmaceuticals, psychology, social science, veterinary sciences, zoology and more."

- To make sure that we do not include students writing on economic topics but belonging to different academic disciplines, we cross-reference our list with the "Doctoral Dissertations in Economics Annual List" published each December in the *Journal of Economic Literature*.
- We estimated all models with smaller samples of years without significant differences in the results.
- The database contains information on articles published in more than 700 journals, including all the major field and general interest economics journals. In other words, while some publications may not be contained in *Econlit*, they are likely published in more obscure, less-respected journals, or as Coupe (2003, p. 1310) puts it "one can claim with a slight exaggeration, first, that if one is not in *Econlit*, one did not do academic research in economics and second, that these journals together form the 'economics literature'."
- The Top 5 journals are the American Economic Review, Econometrica, the Journal of Political Economy, the Quarterly Journal of Economics, and the Review of Economics and Statistics.

- This ranking is based on a weighted-average of eleven different historically utilized metrics of research productivity. By calculating a weighted average of these metrics, each of which was developed in response to perceived weaknesses in previous methodologies, Coupe is hoping to avoid the complaint that "we were disadvantaged by the specific weighting scheme."
- 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.
- This feeling is similar to that of Kingston and Smart (1990, p. 149) who suggest that such a categorical approach is preferable to a linear specification when comparing graduates of different quality colleges because "it is likely that differences throughout most of the academic hierarchy are inconsequential [which would imply only a small overall effect of program rank] … but that going to an elite school does make a difference."
- Tier 1 programs are Harvard, Chicago, M.I.T., Stanford, Princeton, and Yale. Tier 2 programs are UC Berkeley, Pennsylvania, Northwestern, Minnesota, UCLA, Columbia, Michigan, Rochester, and Wisconsin. Tier 3 programs 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.
- According to author affiliation statistics in Wu (2004), among the 25 programs that publish more than 1 percent of all articles in the AER, 22 are top-ranked economics programs and 3 are members of the Federal Reserve system.
- An important estimation concern is that our productivity measures are truncated at 0 due to the fact that many students have not published, especially within top 5 journals. Hence, OLS estimation would result in biased and inconsistent parameters estimates. Truncated count data models are normally estimated as either a Poisson or a Negative Binomial, both of which account for the skewed distributions of the dependent variables (Cameron and Trivedi, 1998). A well-known problem with the Poisson distribution is the presumed equality of the conditional mean and variance functions. The data in our analysis fail tests of overdispersion for each productivity measure, suggesting that the assumption of equidispersion is violated

and that the Poisson is not the correct distribution. As a result, we estimate each of our productivity functions with the Negative Binomial regression model, as that distribution accounts for the skewness of the data without requiring equality between the conditional mean and variance.

References

- Buchmuller, Thomas C., Dominitz, Jeff, and Hansen, W. Lee (1999) "Graduate Training and the Early Career Productivity of Ph.D. Economists," *Economics of Education Review* 18(1): 65-77.
- Cameron A.C. and P.K. Trivedi (1998) *Regression Analysis and Count Data* (Cambridge: Cambridge University Press).
- Collins, Jeffery T., Cox, Richard G., and Stango, Victor (2000) "The Publishing Patterns of Recent Economics Ph.D. Recipients," *Economic Inquiry* 38(2): 358-67.
- Coupe, Tom (2003) "Revealed Performances: Worldwide Rankings of Economists and Economics Departments, 1990-2000," *Journal of the European Economic Association* (1)6: 1309-45.
- Davis, Joe C., Huston, John H., and Patterson, Debra M. (2001) "The Scholarly Output of Economists: A Description of Publishing Patterns," *Atlantic Economic Journal* 29(3): 341-49.
- Durden, Garey C. and Perri, Timothy J. (1995) "Coauthorship and Publication Efficiency," *Atlantic Economic Journal* 23(1): 69-76.
- Endersby, James W. (1996) "Collaborative Research in the Social Sciences: Multiple Authorship and Publication Credit," *Social Science Quarterly* 77(2): 375-92.
- Gerrity, Dennis M. and McKenzie, Richard B. (1978) "The Ranking of Souther Economics Departments: New Criterion and Further Evidence," *Southern Economic Journal* 45(2):608-614.
- Hamermesh, Daniel S. and Oster, Sharon M. (2002) "Tools or Toys? The Impact of High Technology on Scholarly Productivity," *Economic Inquiry* 40(4): 539-55.
- Hilmer, Michael J. and Hilmer, Christiana E. (2005) "So You Want to Hire a Future Star? Student-Advisor Matching and Early Career Productivity for Economics Ph.D.s," Unpublished Manuscript.
- Hogan, Timothy D. (1981) "Faculty Research Activity and the Quality of Graduate Training," *Journal of Human Resources* 16(3): 400-415.
- Laband, David N. (1985) "An Evaluation of 50 'Ranked' Economics Departments-By Quantity and Quality of Faculty Publications and Graduate Student Placement and Research Success," *Southern Economic Journal* 52(1): 216-240.

- Laband, David N. and Tollison, Robert D. (2000) "Intellectual Collaboration," *Journal of Political Economy* 108(3): 632-62.
- Sauer, R (1988) "Estimates of the Returns to Quality and Coauthorship in Economic Academia," *Journal of Political Economy*, 96(4): 855-866.
- Scott, L. and Mitias, P. (1996) "Trends in Rankings of Economics Departments in the U.S.: An Update," *Economic Inquiry* 34: 378-400.
- Siegfried, John J. (1994) "Trends in Institutional Affiliation of Authors Who Publish in the Three Leading General Interest Economics Journals," *Quarterly Review of Economics and Finance* 34(4): 375-386.
- Siegfried, John J. and Stock, Wendy (2001) "So You Want to Earn a Ph.D. in Economics? How Long Do You Think It Will Take?" *Journal of Human Resources* 36(2): 364-378.
- Smyth, David J. (1999) "The Determinants of the Reputations of Economics Departments: Pages Published, Citations and the Andy Rooney Effect." *American Economist* 43(2): 49-58.
- Thursby, Jerry G. (2000) "What Do We Say about Ourselves and What Does It Mean? Yet Another Look at Economics Department Research," *Journal of Economic Literature* 38(2): 383-404.
- Wu, Steven (2004) "Recent Publishing Trends at the AER, JPE, and QJE." Unpublished manuscript.

Table 1
Summary Coauthor with Advisor Statistics Overall and By Program Tier and Advisor Rank

| | | <u>Total Articles</u> | | | Top 5 Articles | | |
|--|-------------------|---------------------------|--|--|---------------------------|--|--|
| | | | Publish | Publishers Only | | Publishers Only | |
| | Obs. | Percent Who Publish | Percent Who Publish With Advisor | Percent of Articles With Advisor | Percent Who Publish | Percent Who Publish With Advisor | Percent of Articles With Advisor |
| All Students | 1,888 | .681 | .209 | .413 | .164 | .145 | .743 |
| Program Tier: | | | | | | | |
| Tier 1 Tier 2 Tier 3 | 523 740 625 | .780 .660 .622 | .157 .201 .275 | .328 .395 .481 | .291 .128 .102 | .086 .211 .188 | .613 .762 .854 |
| Advisor Rank: Star Lower ranked Unranked | 535 571 782 | .778 .674 .619 | .233 .195 .200 | .340 .390 .505 | .292 .166 .074 | .152 .147 .121 | .628 .812 1.000 |

Table 2 Summary Research Productivity Measures By Program Tier and Advisor Rank (Standard Deviation)

| | Total Articles | Top 5 Articles | Total Pages | AEQ Pages |
|---|--------------------------------------|------------------------------------|--|--|
| Publish With Advisor Do Not Publish With Advisor | 7.015 (5.533) 5.767 (5.717) | .717 (1.773) .452 (1.232) | 86.037 (75.627) 75.650 (75.912) | 25.112 (35.251) 18.716 (30.605) |
| Tier 1 Students: | (3.717) | (1.232) | (13.312) | (30.003) |
| Publish With Advisor | 8.953 | 1.531 | 122.801 | 44.248 |
| Do Not Publish With Advisor | (6.548) 6.651 (6.188) | (3.081) .907 (1.797) | (96.375) 94.675 (87.784) | (50.298) 29.570 (39.128) |
| Tier 2 Students: | | , | , | , |
| Publish With Advisor | 6.959 (5.266) | .592 (1.014) | 83.981 (66.824) | 21.478 (26.563) |
| Do Not Publish With Advisor | 5.400 (5.199) | .251 (.797) | 68.618 (66.869) | 15.326 (25.936) |
| Tier 3 Students: | (01100) | (** * *) | (00100) | (=====) |
| Publish With Advisor | 5.907 | .364 | 65.931 | 16.994 |
| Do Not Publish With Advisor | (4.801) 5.195 (5.696) | (.745) .174 (.522) | (60.214) 62.167 (67.265) | (26.319) 10.162 (18.697) |
| Star Advisors: | | | | |
| Publish With Advisor | 8.557 | 1.340 | 113.587 | 39.546 |
| Do Not Publish With Advisor | (6.288) 6.561 (6.032) | (2.653) .740 (1.431) | (88.638) 88.215 (83.885) | (44.371) 26.141 (33.415) |
| Lower ranked Advisors: | (0.00-) | (*****) | (00100) | (001110) |
| Publish With Advisor | 7.053 (4.893) | .667 (1.070) | 85.723 (64.213) | 32.499 (28.349) |
| Do Not Publish With Advisor | 6.252 (6.001) | `.481 [′] (1.459) | `82.018 [°] (80.436) | 21.638 (35.316) |
| Unranked Advisors: | _ , | ·/ | ,, | |
| Publish With Advisor | 5.443 | .134 | 58.731 | 8.174 |
| Do Not Publish With Advisor | (4.752) 4.724 (5.035) | (.342) .191 (.679) | (58.406) 60.193 (61.433) | (13.327) 10.254 (20.506) |

Table 3
Marginal Effects for Negative Binomial Regressions Controlling for Publishing with Dissertation
Advisor

| | Total | Top 5 | Total | AEQ |
|-----------------------------|-----------|-----------|-----------|-----------|
| | Articles | Articles | Pages | Pages |
| Publish With Advisor | 2.0843** | .7959** | 24.9255** | 8.1139** |
| | (.3692) | (.2528) | (6.8575) | (2.4623) |
| Advisor Rank: | | | | |
| Star | 1.1800** | .1933** | 16.8204** | 6.9724** |
| | (.2762) | (.0417) | (5.2158) | (1.8713) |
| Lower ranked | .1740** | .1315** | 6.9590* | 4.9114** |
| | (.0686) | (.0341) | (4.2118) | (1.4617) |
| Program Rank: | | | | |
| Tier 1 | .9999** | .2359** | 21.0740** | 8.1078** |
| | (.2843) | (.0484) | (5.7595) | (2.1219) |
| Tier 2 | .1140 | .0125 | 4.6668 | 2.2342** |
| | (.2163) | (.0260) | (3.9278) | (1.2139) |
| Individual Characteristics: | | | | |
| Years Since Ph.D. | .2187** | .0083 | 1.9947* | .3385 |
| | (.0647) | (.0066) | (1.1654) | (.3374) |
| International Student | 4473** | 0661** | -1.6580 | .0289 |
| | (.1855) | (.0192) | (3.3785) | (.9900) |
| Male | .8625** | .0304 | 10.4586** | 1.3499 |
| | (.1970) | (.0204) | (3.5067) | (1.0625) |
| Student's First Job: | | | | |
| Research Position | 3.9294** | .2472** | 54.5352** | 13.9492** |
| | (.2142) | (.0252) | (4.1819) | (1.4047) |
| pseudo-R2 | .0619 | .1540 | .0204 | .0309 |
| Log-Likelihood | -4,381.68 | -1,100.39 | -8,198.65 | -4,689.80 |
| Alpha | 1.109 | 2.313 | 3.059 | 6.585 |
| | (.054) | (.279) | (.107) | (.298) |

Notes: Value listed in the column heading is the dependent variable. Standard errors in parentheses. **, * significant at 5 and 10 percent levels. Regressions also include binary dummy variables indicating the field in which the student's dissertation was written (correspond to fields listed in December *JEL*).

Table 4
Marginal Effects for Negative Binomial Regressions Controlling for Dissertation Advisor's
Editorial Service at Top 5 Journals

| | Total | Top 5 | Total | AEQ |
|------------------------------|----------|----------|----------|---------|
| | Articles | Articles | Pages | Pages |
| AER Editorial Board | .0336 | .0090 | .6519 | .5493 |
| | (.0738) | (.0071) | (1.3082) | (.3741) |
| QJE Editorial Board | .1304** | .0137** | 2.0683* | .5726* |
| | (.0594) | (.0048) | (1.1125) | (.3136) |
| RE Stat Editorial Board | 0301 | .0029 | 2533 | .0287 |
| | (.0469) | (.0040) | (.8738) | (.2365) |
| Econometrica Editorial Board | .0911 | .0078 | 1.6449 | .4631 |
| | (.0659) | (.0054) | (1.2617) | (.3549) |
| (Continued) | | | | |

Table 4 (Continued)

| | Total | Top 5 | Total | AEQ |
|-----------------------------|----------|----------|-----------|-----------|
| | Articles | Articles | Pages | Pages |
| Publish With Advisor | 2.0759** | .1717** | 24.9560** | 8.0730** |
| | (.3664) | (.0444) | (6.8189) | (2.4353) |
| Advisor Rank: | | | | |
| Star | 1.0580** | .1845** | 14.4701** | 5.8174** |
| | (.2799) | (.0428) | (5.2213) | (1.7913) |
| Lower ranked | .4766** | .1165** | 5.5092 | 4.1309** |
| | (.2325) | (.0342) | (4.1642) | (1.3933) |
| Program Rank: | | | | |
| Tier 1 | .8770** | .2130** | 18.4200** | 6.6342** |
| | (.2878) | (.0485) | (5.6929) | (1.9836) |
| Tier 2 | .0818 | .0229 | 3.9260 | 1.8157 |
| | (.2160) | (.0270) | (3.8982) | (1.1829) |
| Individual Characteristics: | | | | |
| Years Since Ph.D. | .2309** | .0135** | 2.1945* | .4392 |
| | (.0647) | (.0068) | (1.1672) | (.3349) |
| International Student | 4720** | 0606** | -2.1320 | 0465 |
| | (.1856) | (.0197) | (3.3726) | (.9771) |
| Male | .8366** | .0201 | 10.0896** | 1.2397 |
| | (.1978) | (.0223) | (3.5239) | (1.0544) |
| Student's First Job: | | | | |
| Research Position | 3.9272** | .2411** | 54.4046** | 13.9613** |
| | (.2119) | (.0252) | (4.1786) | (1.4014) |
| pseudo-R2 | .0627 | .1467 | .0207 | .0317 |
| Log-Likelihood | -4377.77 | -1094.64 | -8195.73 | -4686.02 |
| Alpha | 1.1020 | 2.2393 | 3.0479 | 6.5359 |
| | (.0539) | (.2735) | (.1065) | (.2965) |

Notes: Value listed in the column heading is the dependent variable. Standard errors in parentheses.**, * significant at 5 and 10 percent levels. Regressions also include binary dummy variables indicating the field in which the student's dissertation was written (correspond to fields listed in December *JEL*).

Table 5
Mean Publications in Each Top 5 Journal for Students With Advisors Serving on Top 5 Editorial Boards

| | Obs. | AER Papers | JPE Papers | QJE Papers | REStat Papers | Econometrica Papers |
|--|-------|---------------|---------------|---------------|------------------|------------------------|
| Advisor on At Least One Editorial Board: | | | | | | |
| Yes | 432 | .308 | .113 | .171 | .146 | .056 |
| No | 1,456 | .080 | .036 | .021 | .041 | .031 |
| Capacity in Which Advisor Served: | | | | | | |
| AER Editorial Board | 110 | .227 | .064 | .046 | .100 | .036 |
| QJE Editorial Board | 90 | .500 | .167 | .344 | .111 | .033 |
| RE Stat Editorial Board | 176 | .301 | .085 | .182 | .176 | .063 |
| Econometrica Editorial Board | 119 | .168 | .151 | .059 | .135 | .093 |

Table 6
Marginal Effects for Negative Binomial Regressions Controlling for Dissertation
Advisor's Editorial Service at Top 5 Journals

| | AER | JPE | QJE | RE Stat | |
|------------------------------|----------|----------|----------|----------|--|
| | Articles | Articles | Articles | Articles | |
| AER Editorial Board | .0022 | 0014 | 0008 | .0014 | |
| | (.0029) | (.0019) | (.0015) | (.0025) | |
| QJE Editorial Board | .0039** | .0012 | .0023** | .0011 | |
| | (.0018) | (.0010) | (.0008) | (.0018) | |
| RE Stat Editorial Board | 0009 | 0003 | .0010 | .0034** | |
| | (.0017) | (.0010) | (.0007) | (.0013) | |
| Econometrica Editorial Board | .0001 | .0025** | .0002 | .0036** | |
| | (.0022) | (.0010) | (.0008) | (.0017) | |
| (Continued) | | | | | |

Table 6 (Continued)

| | AER | JPE | QJE | RE Stat |
|-----------------------------|----------|----------|----------|----------|
| | Articles | Articles | Articles | Articles |
| Publish With Advisor | .0609** | .0123 | .0054 | .0565** |
| | (.0204) | (.0075) | (.0057) | (.0174) |
| Advisor Rank: | | | | |
| Star | .0734** | .0207** | .0188** | .0331** |
| | (.0222) | (.0102) | (.0094) | (.0146) |
| Lower ranked | .0550** | .0169* | .0100 | .0147 |
| | (.0187) | (.0088) | (.0073) | (.0121) |
| Program Rank: | | | | |
| Tier 1 | .0860** | .0087 | .0560** | .0230* |
| | (.0270) | (.0077) | (.0234) | (.0137) |
| Tier 2 | .0129 | 0034 | .0099 | .0033 |
| | (.0134) | (.0057) | (.0084) | (.0104) |
| Individual Characteristics: | | | | |
| Years Since Ph.D. | .0053* | .0002 | .0020 | .0022 |
| | (.0030) | (.0015) | (.0013) | (.0026) |
| International Student | 0354** | 0136** | 0012 | 0222** |
| | (.0094) | (.0052) | (.0036) | (.0082) |
| Male | .0030 | .0074 | .0045 | 0045 |
| | (.0099) | (.0047) | (.0037) | (.0093) |
| Student's First Job: | | | | |
| Research Position | .0761** | .0474** | .0203** | .0364** |
| | (.0130) | (.0084) | (.0058) | (.0091) |
| pseudo-R2 | .1795 | .1749 | .2168 | .1304 |
| Log-Likelihood | -579.44 | -322.37 | -279.61 | -399.70 |
| Alpha | 2.1023 | 1.5499 | 3.4528 | .5571 |
| | (.4346) | (.6744) | (1.0944) | (.4723) |

Notes: Value listed in the column heading is the dependent variable. Standard errors in parentheses. **, * significant at 5 and 10 percent levels. Regressions also include binary dummy variables indicating the field in which the student's dissertation was written (correspond to fields listed in December *JEL*).