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Beauty, Brains and Connections: Which Characteristics Predict Success in the Economics Ph.D. Junior Job Market?

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Abstract

This paper adds to the literature that forecasts job placements for new economics Ph.D.s by creating one of the most unbiased forecasting models of job placement for a broad sample of job candidates to date. We use data gathered from the curriculum vitas (CVs) of Ph.D. students in the 2011 junior job market from the NBER's listing of all economics Ph.D.-granting programs worldwide. We obtained CV information from 1,010 of the 1,120 Ph.D. students listed, attractiveness ratings for 837 of the candidates, and complete placement information for 849 of the job candidates. The most important predictors for success on the junior job market are high-quality publications and candidates' undergraduate- and graduate-level institutions of study, as both are positively correlated with better job placement. Other strong predictors of candidate job placement are the amount of time spent teaching, time spent as a teaching assistant (TA), time taken to complete Ph.D. studies, and being Asian or Black. Each of these variables is positively correlated with *worse* placements for candidates. There is some evidence that advisor rank is related to job placement—an excellent advisor, in terms of publication record, is positively correlated with better job placement. We also find some evidence that attractive, White, female candidates place at better institutions.

Keywords: Job placement; Candidate; Ph.D. program; Graduate school.

JEL codes: J24; J44; I23.

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I. Introduction

The market for junior job candidates is rife with uncertainty. Candidates do not know which schools will agree to interview them, let alone offer them a job, and economics departments do not know which candidates will accept their job offers. The entire process is costly for both the potential employer and the potential employee. The average graduate student in the 2011 junior job market spent 5.7 years in graduate school, forgoing years of experience and higher earnings. Economics departments that fail to correctly predict their hiring prospects may take on a less than ideal candidate or may be left with an open faculty position.[4] Both sides of the labor market are burdened by the costs of travel, application completion and review, and interview time. Moreover, neither job candidates nor the hiring committees of economics departments have many resources in the existing literature for better predicting the level of their eventual match and for attempting to reduce these costs.

Research predicting the placement of junior job market candidates is sparse, and much of the research that exists uses data for graduates from a few select programs. In general, the literature for the junior economics Ph.D. job market finds that candidates from top-ranked programs are more likely to find employment at both another top-ranked academic program and in the nonacademic sector.[5] Stock and Allston (2000) surveyed 897 job candidates who participated in the economics job market in 1995-1996 and applied to at least one of the economics departments at Kansas State University, Weber State University, and Murray State University. Of those surveyed, 20.6 percent responded and complete information was available for 158 individuals. A higher percentage of candidates from the top-ranked programs found academic positions, and these candidates were more likely to find those jobs

[4] Ehrenberg, Rizzo, and Condie (2003) estimate that the typical start-up cost for a new assistant professor in the sciences is between $300,000 and $500,000. So, departments have a significant interest in hiring junior faculty that they expect will become successful members of the department.

[5] See Barbezat (1992) and McMillen and Singell (1994) for some of the earliest research focusing on job market candidates earning their degrees before 1990.

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at higher-ranked institutions. Individuals from top departments with jobs in academia also tended to have lighter teaching loads. In addition, candidates from top programs had the propensity to receive higher salaries both inside and outside of academia. Their estimates indicate that even after controlling for observed differences in research, teaching, and other observed qualifications that may differentiate candidates, there was a positive return to program rank for both the number of interviews obtained and the initial salaries of candidates in the sample. At the interview stage, candidates from the top programs tended to receive higher returns to research-related characteristics, but relatively lower returns to teaching-related characteristics than their counterparts from lower-ranked programs. The authors found similar (although statistically insignificant) impacts on annual salary.

Siegfried and Stock's (1999) work uses data from questionnaires distributed to individuals awarded Ph.D.s between July 1996 and June 1997, and these students' thesis advisors. They identified the degree recipients by using the list of American and Canadian Ph.D. dissertations awarded in economics reported in the December 1997 *Journal of Economic Literature*. Siegfried and Stock (1999) have direct survey responses from 454 Ph.D. earners and some information about 155 of the non-respondents from the students' thesis advisors. Together, the two samples cover almost two-thirds of the Ph.D.s awarded in 1996-1997. The authors grouped economics graduate programs into five "tiers."[6] Employment outcomes deteriorate modestly with an increase in tier, with the idiosyncratic exception of Tier 4 programs, whose graduates are comparable to Tier 1 graduates in terms of obtaining full-time permanent appointments; that said, Tier 4 graduates are less likely to be employed in academia and they are more likely to earn lower salaries. Both academic and nonacademic salaries are highest for graduates of Tier 1 programs and fall steadily with the rank of the Ph.D.-granting programs.

[6] The construction of these tiers is based on the method used by Hansen (1991), which employs 1993 National Research Council rankings for quality of graduate faculty (Goldberger, Maher, and Flattau, 1995).

Stock and Siegfried (2004) update their previous work using a new survey of the 2001-2002 class of economics Ph.D.s. The authors received 398 usable graduate responses, including 121 responses from thesis advisors of graduates who did not return the survey themselves; these responses yielded at least partial information for 519 of the roughly 850 economics Ph.D.s granted that year. Siegfried and Stock (1999) find that starting salary is significantly and positively related to the Ph.D. institution's rank. Larger fractions of the top-tier graduates found a full-time permanent job, and both academic and nonacademic salaries fell with the rank of the Ph.D.-granting program. There is no significant difference among the fields of specialty in the proportion of graduates who secure academic appointments. Labor economists, however, seem to have the greatest difficulty securing full-time permanent jobs, while industrial organization economists have the least difficulty.

Krueger and Wu (2000) use 344 students who applied for admission to a top economics department in 1989, tracking the job placement of those students in 1996 and 1999. The authors were able to find the job placements of two-thirds of the sample and were particularly confident that they found all applicants hired by the top 25 economics departments. Krueger and Wu (2000) find that Graduate Record Exam (GRE) scores and the prominence of reference letter writers for graduate school admission are statistically significant predictors of applicants' subsequent job placement.

Athey, Katz, Krueger, Levitt, and Poterba (2007) use a sample of 1,029 graduate students enrolled at the top five economics Ph.D. programs (as of the 1993 National Research Council's rankings)[7] to predict program and placement outcomes. Athey et al. (2007) find that first-year microeconomics and macroeconomics grades, as well as undergraduate university rank, are statistically significant predictors of student job placement.

[7] The top five economics departments in 1993, according to the National Research Council, were Harvard University, the Massachusetts Institute of Technology, Princeton University, Stanford University, and the University of Chicago.

Hilmer and Hilmer (2007) posit that the relative prominence of a student's advisor is likely a more informative indicator of his or her research potential than the relative reputation of the program from which he receives his or her Ph.D. The authors use a sample of students receiving their Ph.D.s from top-ranked agricultural economics programs between 1987 and 2000 to find that the relative research productivity of a student's dissertation advisor is positively related to the student's early career research productivity. Hilmer and Hilmer (2007) base the advisor productivity ranking on the total number of articles and author-weighted pages published in all peer-reviewed journals, core agricultural and resource economics journals, and the top 36 economics journals.

Hilmer and Hilmer (2012) extend this literature to look at early-career publishing success using a sample of approximately 3,000 recipients of Ph.D.s between 1990 and 1993. The authors find that working with a prominent advisor, publishing while in graduate school, and coauthoring with the advisor are significant determinants of early-career publishing. In addition, their work indicates that these later-graduate study signals dramatically improve the ability to forecast which students become successfully published faculty members. Hilmer and Hilmer (2012) highlight the importance of students' graduate school work as an indicator of career success, which suggests that these characteristics may be important components for predicting success on the junior job market.[8]

In this paper, we add to the literature that forecasts the job placements for new economics Ph.D.s by presenting results from the most recent and complete sample of job market candidates. We use data gathered from the CVs of Ph.D. students in the 2011 junior job market from the NBER's listing of all economics Ph.D.-granting programs worldwide. We were able to obtain CV information from 1,010 of

[8] Other work extends the literature in the other direction, and examines determinants of Ph.D. program completion. See Grove, Dutkowsky, and Grodner (2007) for a forecasting model of economics Ph.D. program completion using a sample of 78 students at Syracuse University.

the 1,120 Ph.D. students listed on NBER's webpage.[9] In addition, we were able to download the photographs available online for 837 of the candidates. By using department websites and contacting departments directly, we compiled complete placement information for 849 of the job candidates. Because the information is gathered from students' CVs and Ph.D.-granting departments, we have minimized the response bias involved with surveying students. Accordingly, we can create one of the most unbiased forecasting models of job placement for a broad sample of job candidates to date. [10]

Specifically, we gather the type and coauthors of each published or revise and resubmit (R&R) piece of work, advisor identity, work as a teaching assistant (TA), work as an research assistant (RA), teaching experience, industry work experience, undergraduate and Ph.D. institution, years in the Ph.D. program, name, citizenship, and gender. From the job candidates' photographs we are able to determine gender, race, and attractiveness ratings.

Our results indicate that the most important predictors for success on the junior job market for economics Ph.D.s are high-quality publications and candidates' undergraduate- and graduate-level institutions of study; both are positively correlated with better job placement for candidates. Other strong predictors of candidate job placement are the amount of time spent teaching, time spent as a TA, time taken to complete Ph.D. studies, and being Asian or Black. Each of these variables is positively correlated with *worse* placements for candidates. There is some evidence that advisor rank is related to job placement—an excellent advisor, in terms of publication record, is positively correlated with better job placement. We find some evidence that attractive, White, female candidates place at better institutions, although those estimates are less precise in comparison to some of the other variables. The

[9] Available at http://www.nber.org/candidates/.
[10] Only 34.5 % of these students graduated from a Ph.D. program ranked in the top 20 in the world, highlighting the importance of sampling students from all Ph.D. programs to create an accurate model of job market placement.

other variables included in the analysis, such as U.S. citizenship, semesters spent as an RA, and years of professional experience have little predictive power with regard to job placement.

The remainder of the paper is organized as follows: Section II discusses the job candidate data we collect and the placement ranking systems we employ; Section III addresses our identification strategy; Section IV reviews our results; and Section V presents our conclusions.

II. Data

We used the NBER's list of Ph.D.-granting economics departments and each of those departments' websites to collect all of the available CVs and photographs of 2011 junior job market candidates in November and December 2010. The NBER listed 148 graduate programs granting economics Ph.D.s worldwide. For those departments without job market candidates listed, we attempted to contact the placement directors to obtain the CVs of students on the job market. From these CVs and photographs, we gathered demographic information about a job candidate's gender and nationality, work experience, educational history, attractiveness ratings, and academic work. From August 2011 to March 2012, we gathered the initial placement data for those on the 2011 junior job market by using department websites and contacting placement directors directly. We have complete placement information for 849 of the job market candidates.

Table 1 shows summary statistics for the job candidates in our database. We were able to determine the number of semesters a job candidate spent working as a TA, RA, or instructor for all of the candidates for whom we collected a CV, or 1,010 individuals in total. We assumed that each course listed represented one semester of work unless specific years or semesters were indicated. Given the possibility of serving as a TA for multiple classes in one semester, job candidates were able to have spent more measured semesters as a TA than they actually spent in graduate school. The average

number of semesters spent as a TA was 5.6, with a standard deviation of 3.97. The average number of semesters spent as an RA was 2.45, with a standard deviation of 3.97, and the average number of semesters spent teaching was 2.64, with a standard deviation of 3.54. We were also able to determine the number of years spent working in a nonacademic environment for all of these candidates. We chose to round this number up to the nearest year uniformly for all candidates because many CVs only included years instead of specific months of employment. The average job candidate had 1.67 years of business experience. The minimum number of years was 0 and the maximum was 46.

The vast majority of job candidates' CVs indicated the year of entry into their current Ph.D. program. In order to calculate the years to Ph.D. completion, we simply subtracted that year from 2011. Of the 1,004 job candidates who listed the year of entry into their Ph.D. program, the average job candidate had been in their current Ph.D. program for 5.7 years. The maximum number of years was 12 and the minimum was 2. Graph D-1 in Appendix D shows the distribution for years to Ph.D. completion for all job candidates in our database. Five hundred eighty-three candidates also included their citizenship information on their CV. Of these, 26.2% were U.S. citizens.

We follow Hamermesh and Biddle's (1994) methodology in order to obtain attractiveness ratings through surveys of graduate students. A total of 837 Ph.D. job candidates' photographs were available on their personal (although publicly viewable) websites. We downloaded all of the photos and put each of them into a PowerPoint file containing 837 slides (one for each photo). We paid a total of 10 graduate students $200 each to rate the attractiveness level of each individual in the photos. In order to correct for order bias in the rankings, we randomized the order of the photos for each of the students being surveyed. Of the 10 surveyed students, 5 were female, 8 were White, 1 was Black, and 1 was Hispanic. Their ages ranged between 26 and 34 years old, with the average age being 29.1. We instructed the students to rate each individual's level of attractiveness on a scale of:

1=Strikingly Handsome or Beautiful

2=Above Average for Age (Good Looking)

3=Average for Age

4=Below Average for Age (Quite Plain)

5=Homely

Appendix A shows a complete list of the instructions. The average rating was 2.96, with a standard deviation of 0.56. Evaluators viewed females as slightly more attractive overall; females had an average rating of 2.81, while males had an average rating of 3.03. The maximum rating was 4.7 and the minimum was 1.4.

In addition to overall attractiveness ratings, the photos allowed us to categorize each candidate according to their race. With these photos and the race information some candidates included on their CVs, we categorized 850 candidates into four races: White, Black, Asian, and Other. There were a total of 487 Whites, 22 Blacks, 224 Asians, and 117 individuals in the Other category. Whites had the lowest overall ratings (that is, they were rated the most attractive), with an average attractiveness rating of 2.84. Other, Blacks, and Asians had average ratings of 2.99, 2.88, and 3.22, respectively.

Like Athey et al. (2007), we use the ranking of the top 200 worldwide economics departments, based on faculty publications in elite journals, from Kalaitzidakis, Mamuneas, and Stengos (2003) to determine the rank of an individual's graduate and undergraduate institution of study. This ranking is an extension of the ranking system development by Scott and Mitias (1996) and used by Krueger and Wu (2000).

Similar to Athey et al. (2007) and Krueger and Wu (2000), we give students who found placement in business school jobs a rank equal to their placement university's economics department

ranking plus five. (A lower rank signifies a more prestigious job placement.) In addition, we give candidates who accepted non-tenure track jobs or postdoctoral positions a rank equal to their placement university's economics department ranking plus 15.[11] We give the World Bank, International Monetary Fund (IMF), and Federal Reserve Board a ranking equivalent to the 40th best economics department. We give students who placed in other nonacademic jobs, academic jobs at unranked institutions, or who did not accept any job offer a rank of 200, the worst rank we gave, and treated them as censored observations in much of the analysis. Ranking economics departments is an inherently subjective task. Various rankings, however, are often highly correlated when they use the same general technique. Dusansky and Vernon (1998) found that the Pearson correlation coefficient between the Scott and Mitias (1996) ranking and seven other economics department rankings ranged from 0.71 to 0.85. The 20 top economics departments using the Kalaitzidakis et al. (2003) ranking overlap substantially with the National Research Council's (NRC) ranking of the top 20 departments. Krueger and Wu's (2000) results were not sensitive to the NRC ranking system.[12]

We were able to find placement information for 849 of the job candidates on the 2010-2011 junior job market. Table 2 shows the job placement information for these candidates. Of these candidates, 122 remained in graduate school or did not accept any job offer (perhaps because they received no job offers). Fifty-four of the job candidates accepted jobs at the World Bank, IMF, or Federal Reserve Board. Four hundred twenty-nine of the job candidates found employment in an economics department, of which 42 were non-tenure-track positions, while 224 found non-university jobs. Fifty-seven accepted postdoctoral positions. Of all of the candidates who found a placement, 271

[11] This particular rank adjustment was not performed by Athey et al. (2007) or Krueger and Wu (2000). We thank David Henderson for this recommendation.

[12] We also use McPherson's (2012) rankings of the top 240 U.S. economics departments. This ranking system has the advantage of allowing us to assign uncensored ranking of more of the students with U.S. placements, but restricts the analysis to only those job candidates who obtained their undergraduate, graduate, and job placements in the U.S. We believe that this restricted sample, however, is mostly too small to allow us to draw many conclusions. We include the results of our analysis using the McPherson (2012) rankings in Appendix C.

took positions outside of the United States. Overall, the mean Kalaitzidakis et al. (2003) placement ranking was 152.15, with a standard deviation of 72.58. A total of 7.07% of the job candidates placed at institutions ranked in the top 20 and 21.67% placed at institutions ranked in the top 50 of worldwide economics departments.

A total of 1,010 candidates had information about publications and R&Rs included on their CVs. We categorize each of the publications and R&Rs by the different journal quality ratings, which is consistent with Combes and Linnemer (2010). Summary statistics of these quality ratings are shown in Appendix B in Tables B-1 and B-2. Combes and Linnemer (2010) use the designation of AAA, AA, A, B, C, and D in their ranking of economic journals. The AAA designation includes the top five journals (*Quarterly Journal of Economics*, *American Economic Review*, *Journal of Political Economy*, *Econometrica*, and *Review of Economic Studies*); AA describes journals ranked 6 through 20; A consists of journals ranked 21 through 102; B is the category for 103 through 258; C is for journals ranked 259 through 562; and D is for journals ranked 563 through 600. We categorize any publications or R&Rs outside the top 600 in a category defined as Other. In addition, the rankings do not include some of the newer journals relevant to economists, such the *American Economic Journals* (AEJs). We believe that the Other category should not include these journals and therefore we can only make an assumption regarding their quality. We give an AA ranking to all of the AEJs.[13] We categorize all other journals outside the top 600 (besides the AEJs) as Other.

Hiring committees will likely consider the number of authors listed for each article when determining the quality of a publication. For example, a published, coauthored article with two people should not hold the same weight as an article published in a similarly ranked journal with five coauthors. To account for this problem, we use an adjustment factor similar to the one outlined in Sauer (1988) for

[13] We thank Bob McNab for this recommendation.

coauthored publications. As such, we weight coauthored publications with $n \geq 2$ as $2/n$, where n is the total number of authors. In addition, given the low number of publications and R&Rs in some of the categories, we use a condensed version of these articles by listing AAA and AAs as "high-tier," A and Bs as "mid-tier," and C, D, and Others as "low-tier" publications.

Table 3 shows summary statistics for the number of sole- and adjusted, coauthored publications and revise and resubmit articles for Ph.D. job candidates in the 2011 class. The average number of sole-authored publications was 0.01 in high-tier journals, 0.04 in mid-tier journals, and 0.20 in low-tier journals. Adjusted coauthored publication averages for candidates are 0.04 in high-tier journals, 0.10 in mid-tier journals, and 0.31 in low-tier journals.

A total of 338 of the 1,010 candidates with publication information provided on their CVs, or 33.5%, had at least one sole- or coauthored publication in any category. One hundred eight-six candidates had at least one sole- or coauthored publication in the economic journals categorized as AAA, AA, A, B, C, or D. Therefore, 18.42% of Ph.D. candidates in the 2011 class had a publication in an economic journal while on the market. The average number of publications for all categories, including sole- and adjusted, coauthored work was 0.69. The median number of publications (for all of the combined categories) for all candidates was 0.

Most of the candidates state their main advisor on their CV. Some of the candidates, however, did not specifically list this information and instead listed a number of references. We make the assumption that the first person listed in the reference section is the main advisor for these candidates. A total of 971 job candidates had advisor information described on their CVs.

In order to rank each candidate's advisor, we use Research Papers in Economics (RePEcs)[14] author rankings as shown in the complete RePEc database, IDEAS (2012).[15] Zimmermann (2009) describes the methodology of the rankings, which is mainly based on citation counts. Unfortunately, the author rankings available online to the public only contain information about the top 10% of authors. Therefore, we made a special data request to the author of the rankings to receive the full set of author data.[16] The full set of author rankings includes rankings on a total of 30,551 authors. If an advisor's name did not appear in the RePEc rankings, we give that advisor a rank of 30,551.

The average advisor ranking was 9,008.68, with a standard deviation of 12,169.93. A total of 52 candidates had an advisor ranked in the top 100; 288 candidates had an advisor ranked in the top 1,000; and a total of 715 candidates had an advisor ranked in the top 10,000. There were 232 candidates whose advisor was ranked below 15,275 (categorized as in the bottom half of the rankings). Lastly, we gave a total of 225 advisors the rank of 30,551.

III. Identification Strategy

We use a variety of econometric approaches and datasets to forecast the job placement of economics Ph.D. candidates in the 2011 junior job market. Our initial estimation strategy follows Athey et al. (2007) by using an ordinary least squares (OLS) model, where the dependent variable is the rank of each candidate's first job as a function of several predictor variables. This forecasting model is

$$Placement_{i,t+1} = \alpha + \boldsymbol{\beta}' \boldsymbol{x_{i,t}} + \varepsilon_i, \quad (1)$$

[14] RePEc is a collaborative effort of volunteers in 75 countries to enhance the dissemination of research in economics and related sciences. The heart of the project is a decentralized bibliographic database of working papers, journal articles, books, books chapters, and software components.
[15] IDEAS is a RePEc service hosted by the Economic Research Division of the Federal Reserve Bank of St. Louis.
[16] We received the full set of rankings in a text file from Zimmerman (2011). We are not permitted to share the entire author rankings due to confidentiality issues.

where *Placement* is the rank of candidate *i*'s first job placement as measured in Kalaitzidakis et al. (2003) in 2011 (with the year formally denoted at *t + 1*). The vector $\boldsymbol{x_{i,t}}$ includes several predictor variables as gathered from the CVs and photos of Ph.D. candidates in late 2010, denoted as year *t*. The predictor variables include advisor rank, number of semesters spent as a TA and RA, total number of semesters teaching their own class, U.S. citizenship status, undergraduate and graduate school ranking as measured in Kalaitzidakis et al. (2003), gender, attractiveness rating, race, number of adjusted, coauthored and sole-authored publications, number of adjusted, coauthored and sole-authored R&R articles, number of adjusted, coauthored and sole-authored books and book chapters, number of years spent in Ph.D. studies, and years of professional experience.

Given that Equation (1) is a forecasting model, it is important that readers do not interpret the coefficients as the causal effect of the right-hand side variables on job placement. The use of OLS to determine causal inferences, with regard to the predictor variables' effect on job candidate placement, brings up obvious endogeneity concerns such as omitted variable bias in the regression analysis. In order to determine causality, many researchers would prefer some type of a randomized experiment in their research design. This type of research design, however, is beyond the scope of this study. That said, the endogeneity concerns do not render this forecasting model a useless exercise.

The forecasting model here simply presents a way for readers to make a rough approximation for where graduating Ph.D. candidates are likely to place. For example, if a White, female Ph.D. candidate is graduating this coming year from Harvard University with one high-tier, sole-authored publication (along with several other predictor variables as shown on her CV), at what type of institution do we expect her to place? The estimated coefficients resulting from Equation (1) provide readers with an approximate way to predict what type of job placement this hypothetical job candidate will receive. In this way, departments will be better able to determine if they are "over-shooting" in trying to hire a

particularly good job candidate; similarly, Ph.D. candidates on the market will be better able to decide if they are a correct fit in high- (or low-) standing economics departments.

As a secondary estimation strategy, we use the probit model

$$Top_{i,t+1} = \gamma + \boldsymbol{\theta}'\boldsymbol{x_{i,t}} + \nu_i \quad (2)$$

to predict the placement of job candidates in similar fashion to Krueger and Wu (2000) and Athey et al. (2007). The dependent variable, Top, for this model is equal to 1 if the applicant obtained a top job and 0 otherwise. We define a top job in two ways: an excellent job has a ranking of 20 or less and a good job has a ranking of 50 or less. The vector of predictor variables in Equation (2), $\boldsymbol{x_{i,t}}$, are the same as those used in Equation (1).

IV. Results

OLS Regression Results

Table 4 depicts OLS regression results from Equation (1), which uses author-collected data about job candidates merged with information on program rank from Kalaitzidakis et al. (2003). Two striking characteristics stand out in the results shown in Table 4. The first is the large significant predictive value for high-tier (top 20) publications on job candidate placement and the second is the similarly strong predictive value resulting from the candidates' undergraduate- and graduate-level institutions.

The coefficients for the number of sole-authored, high-tier publications are negative and significant at a 5% significance level in three of the four specifications, illustrating that the number of high-tier, sole-authored publications predict superior job placement for Ph.D. candidates (remember, a lower-ranked placement is better in the Kalaitzidakis et al. (2003) ranking system). The coefficients' size ranges in value from –38.8 to –55.1, with an average of –49.1. Therefore, each sole-authored

publication in the top 20 journals predicts a better placement by roughly 49 departmental ranks, in comparison to an otherwise identical candidate with no sole-authored, high-tier publications.

In addition to sole-authored, high-tier publications, the results show the strong predictive value of adjusted, coauthored, high-tier publications. All of the coefficients for the number of adjusted, coauthored, high-tier publications are significant at a 1% significance level. The coefficients are slightly higher than those from sole-authored publications and range in value from –56.8 to –64.4, with an average of –60.2. The R&R adjusted, coauthored, high-tier article coefficients also have a significant predictive value on placement in three of the four specifications. These R&R coefficients each have an average predictive value equal to –25.1 across the four specifications.

A candidate's middle-tier work is also, at times, a significant predictor of job placement. The estimated coefficients for coauthored, middle-tier publications are significant at the 5% level in three of the four specifications, with the last specification being significant at the 1% level. These coefficients, though smaller than the estimated coefficients for coauthored, high-tier publications, also predict superior job placement for Ph.D. candidates. They range in magnitude from –15.1 to –39.6, with an average of –22.8. Perhaps surprisingly, sole-authored, middle-tier R&Rs actually predict worse job placement. These coefficients are significant at the 5% level in two of the specifications, with the other two being significant at the 10% level. They range in value from 31.2 to 49.7, with an average of 40.3. Our results show that the remainder of the publication and R&R coefficients has, for the most part, no significant predictive power for placement. In addition, we find no significant predictive value for any of the sole- and coauthored book and book chapter coefficients.

Institutional ranking has a strong predicted value for eventual job placement at both the undergraduate and graduate level. We find that higher-ranked graduate institutions predict better job

placement, with the coefficients ranging in value from 0.266 to 0.305. These coefficients suggest that job candidates can expect an increase in eventual job placement rank by roughly three spots for every Ph.D. institution rank increase of 10. We discover a similarly strong finding when analyzing the undergraduate-level coefficients, although the predictive value is less profound. The undergraduate estimates range in value from 0.115 to 0.158. All eight of the undergraduate and graduate institution coefficients are significant at a 1% significance level.

The only race coefficient that has any significant predictive power is the Asian race coefficient. All else equal, being Asian predicts a worse job placement by about 13 ranks. The coefficients for the Asian race variable are significant at a 5% significance level in two of the three specifications for which it is included. Readers should note, however, that all of the race coefficients' signs are positive, indicating that being White (the omitted race category) predicts better-quality job placement, albeit imprecisely. The coefficients for male and attractiveness rating indicate similar results. The male coefficients are all positive, with values ranging from 2.62 to 3.43. The attractiveness rating coefficients are also positive, with values ranging between 4.56 and 5.47. None of the coefficients for the male and attractiveness ratings are significant at any standard significance level. Although the results for the race, gender, and attractiveness ratings are rather imprecise, they do show a trend that being female, White, and attractive has a positive influence on the quality of job placement.

Ph.D. candidates with low quality advisors and those who have spent relatively long periods of time completing their Ph.D. studies typically have worse placements than others. The coefficients for each of these variables are rather imprecise, however, with only one of the coefficients being significant at the 5% level.

The only other coefficients showing any level of significance are those associated with teaching and time spent as a TA. The number of semesters spent teaching and as a TA tends to predict worse placement, as these coefficients are positive in all of the specifications and significant in all but one. The estimated coefficients for TA and semesters teaching average 1.81 and 2.59, respectively. Other variables, such as U.S. citizenship, semesters spent as an RA, and years of professional experience have little predictive power with regard to job placement.

Probit Regression Results

Table 5 shows the probit regression results from Equation (2). The model uses two different dependent variables: a dummy for Excellent Job (top 20 economics departments) and a dummy for Good Job (top 50 economics departments). Columns (1) – (4) show the model using Excellent Job, while columns (5) – (8) show the model using Good Job. In both of these models, we omit several explanatory variables due to a lack of variation among candidates who actually earn an excellent or good job. In fact, only 7.07% of candidates place at an excellent job and 21.67% place at a good job.

As with the results using the OLS model (1), there is a significant predictive value for high-tier publications on job candidate placement and a significant predictive value to the rank of candidates' undergraduate- and graduate-level institutions of study.

The estimated marginal effects for the number of sole-authored, high-tier publications are positive and significant at a 5% significance level in three of the four specifications, with Good Job as the outcome variable. The marginal effects of having a sole-authored, high-tier publication range from 0.22 to 0.42, with an average of 0.34. Thus, having a sole-authored, high-tier publication predicts an increase in the probability that a candidate will obtain a good job by about 34%. None of the estimated

coefficients for the sole-authored, high-tier job variable in the model with Excellent Job are significant at the usual significance levels.

Coauthored, high-tier publications have significant positive coefficients for all of the specifications for both dependent variables. In addition, coauthored, high-tier R&Rs have significant coefficients in three of the four specifications in the Good Job model. In the Good Job model, the average marginal effect for coauthored, high-tier publications is 0.28 and the average marginal effect for coauthored, high-tier R&Rs is 0.15. The coefficients for both types of papers predict an increase in a graduate's probability of accepting a good job, although R&Rs, as expected, have slightly less impact. The estimated marginal effects for these types of papers are of a lower magnitude in the model with Excellent Job as the dependent variable; and, these lower marginal effects represent a smaller % increase over the average candidate's likelihood of obtaining a top job. The average marginal effect for coauthored, high-tier publications is 0.05 and the average marginal effect for coauthored, high-tier R&Rs is 0.02. Again, the coefficients for R&Rs have slightly less predictive value for a candidate's probability of obtaining a top job than do publications.

The estimated coefficients of sole-authored, high-tier R&Rs are negative across all specifications. Therefore, the point estimates predict that a candidate with a sole-authored, high-tier R&R is actually less likely to accept a good or excellent job than an identical candidate without an R&R. None of the coefficients are significant at any level except in the first specification of the Good Job model. A candidate's middle-tier work is also a significant negative predictor in the likelihood of obtaining a good job placement. The estimated coefficients for sole-authored, middle-tier publications and R&Rs are negative across every specification for which they are included. The coefficients for middle-tier publications are only statistically significant, however, in two of the eight specifications. On the other hand, the estimated coefficients for sole-authored, middle-tier R&Rs are significant at a 1%

significance level in every specification in the model predicting good job placement. The estimated marginal effects range in magnitude from –0.15 to –0.20, with an average of –0.17. The estimated marginal effects of sole-authored book chapters show some positive and statistically significant predictive values in the Good Job model. The change in signs for the coefficients between the Excellent and Good Job models, however, and lack of significance in the other specifications, make the results somewhat unclear in their interpretation. The remainder of the publication and R&R coefficients largely shows no predictive power from the variables on placement.

Like the OLS regression results, institutional ranking has relatively strong predictive power for eventual job placement at the undergraduate and graduate level. Higher-ranked graduate institutions predict better job placement, with average estimated marginal effects of –0.0009 and –0.0021 for the Excellent and Good Job models, respectively. We can interpret the average marginal effect for the Excellent Job model as predicting an increase in the likelihood of obtaining an excellent job placement by about 0.9 % for every Ph.D. institution rank increase of 10. The undergraduate average estimated marginal effects are –0.00004 and –0.00069 for the Excellent and Good Job models, respectively. Seven of the eight graduate institution coefficients in the two models are significant at a 1% significance level, with the other being significant at the 5% level. Three of the four undergraduate institution coefficients in the Good Job model are significant at a 1% significance level, with the last being significant at the 5% level. All of the undergraduate institution coefficients are insignificant at the conventional significance levels in the Excellent Job model.

The number of semesters spent teaching and as a TA, years spent completing the Ph.D., and being Black all tend to predict worse placement. The average estimated marginal effects for Teaching are –0.009 and –0.024 for the Excellent and Good Job models, respectively, and are statistically significant in various degrees across all of the specifications in which they are included. The point

estimates for the TA variable are all negative and have an average value of –0.0061. Only one of the four specifications for which the TA variable is included, however, is significant at any level.

All four of the coefficients for the Years to Complete Ph.D. variable are negative, with two of the four specifications showing statistical significance at the 1% level, both in the Good Job model. The point estimates for Years to Complete Ph.D. average –0.0074 in the Excellent Job model and –0.0680 in the Good Job model. In the Good Job model, the estimated marginal effects of being Black average –0.14, with two of the three specifications showing significance at the 5% level. In other words, our model predicts that a candidate who is Black has a 14% less chance of obtaining a good job than a White candidate, all else being equal.

Similar to the OLS model, the predicted marginal effects show that White, attractive females tend to place at better institutions. In addition, the predicted marginal effects suggest that candidates with high quality advisors tend to place at better institutions as well, along with U.S. citizens. None of the coefficients for these variables, however, show any level of significance. The Semesters as RA and Years of Professional Experience variables show little predictive power with regard to placement.

V. Conclusions

This study uses a unique dataset compiled by the authors to forecast the initial job placement of new economics Ph.D. graduates in the 2010-2011 junior job market. We gathered job candidate information from the CVs and photographs available online for Ph.D. candidates from the NBER's worldwide list of economics Ph.D. graduate programs. The collected data from the CVs and photographs includes demographic information about job candidates' gender and nationality, attractiveness ratings, work experience, educational history, and academic work. In addition, we gathered initial job placement data by using department websites and personally contacting placement

directors. We assembled total placement information for 849 job market candidates. This study is therefore able to use one of the most comprehensive databases assembled to date to provide summary statistics about economics Ph.D. job candidates and to forecast their initial job placement.

Our results indicate that the most important predictors of success in the junior job market for Ph.D. candidates are high-quality publications and the quality of their undergraduate- and graduate-level institutions of study. We determine that those candidates who have studied at highly ranked institutions and published in high-tier journals typically place at better institutions, in comparison to other individuals. In addition, we find some suggestive evidence that attractive, White females, with high-quality advisors, place at better institutions. We find that the biggest *negative* predictors of placement for candidates are the amount of time spent teaching and working as a TA.

The findings from this study are useful in several ways. First, aspiring Ph.D. job candidates can now draw upon empirical evidence showing the importance of institutional rankings and the production of high-quality research during their graduate studies. We suggest that undergraduate advisors and placement directors in graduate school counsel young scholars as to the importance of these two characteristics. If the young scholar's goal is to eventually place at a highly ranked department, then they should focus on gaining entrance to highly ranked, graduate-level institutions and should produce high-quality research. It may also be beneficial for aspiring economists to work with high quality advisors, in terms of publication record, in order to place at better institutions after graduate school. Similarly, these Ph.D. students should place less emphasis on teaching if their goal is to place at a highly ranked department; clearly this focus should change if individual candidates prefer placement at schools that are more focused on teaching and are, typically, lower ranked.

Obviously, gender, race, and attractiveness are more difficult for an individual to influence in comparison to some of the other variables mentioned in this study. It may be helpful for candidates, for example, to practice good personal hygiene and to dress nicely to assist with future job prospects when on the job market. Some of the suggestive evidence in this study indicates that this behavior might be somewhat helpful in their search for a high-quality job placement.

The summary statistics and forecasting model we present in this study also provide hiring committees with a useful tool in determining if they are "over-shooting" in their pursuit of hiring job candidates. Lower-ranked departments should be aware that it is very difficult to hire candidates that have numerous high-quality publications and come from highly ranked institutions of study. We advise lower-ranked institutions to refrain from "putting all of their eggs in one basket;" that is, lower-ranked institutions should go beyond interviewing only these types of candidates, as they are not liable to succeed in attracting these candidates to their institution. These departments should use a more diversified interviewing approach. Higher-ranked departments, however, can take on more risk in the interviewing process; these types of departments are more likely to attract candidates with high-quality publications and who have graduated from highly ranked institutions of study. Thus, highly ranked institutions can interview more of these high-caliber candidates and worry less about being able to fill their open positions. The authors of this study would advise hiring committees to use the forecasting model presented here as a rough way to approximate the eventual placement of the individuals that they are interviewing.

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Table 1: Summary Statistics for Job Candidates

	Observations	Mean	Standard Deviation	Minimum	Maximum
U.S. Citizen	583	0.2624	0.4403	0	1
Semesters as RA	1,010	2.4475	3.9726	0	24
Semesters as TA	1,010	5.5500	3.9747	0	20
Semesters Teaching	1,010	2.6446	3.5357	0	24
Advisor Rank (in thousands)	971	9.0087	12.1699	0.002	30.551
Years to Complete Ph.D.	1,004	5.6733	1.1265	2	12
Years of Professional Experience	1,010	1.6678	2.8323	0	46
Attractiveness Rating	837	2.9632	0.5603	1.400	4.700
Male	1,008	0.6736	0.4691	0	1
White	850	0.5729	0.4949	0	1
Black	850	0.0259	0.1589	0	1
Asian	850	0.2635	0.4408	0	1
Other Race	850	0.1376	0.3447	0	1
Undergraduate Institution Rank	1,003	157.2512	70.7131	1	200
Graduate Institution Rank	1,120	64.7196	66.4293	1	200

Note: Institution ranking is taken from Kalaitzidakis et al. (2003).

Table 2: Summary Statistics for Job Placements

	Observations	Mean	Standard Deviation	Minimum	Maximum
World Bank, IMF, or Federal Reserve Board	849	0.0636	0.2442	0	1
Economics Department	849	0.5053	0.5003	0	1
Non-Tenure Track	849	0.0495	0.2170	0	1
Non-university	849	0.2638	0.4410	0	1
Non-U.S.	849	0.3192	0.4664	0	1
Post-Doc	849	0.0671	0.2504	0	1
No Placement	849	0.1437	0.3510	0	1
Excellent (Top 20) Placement	849	0.0707	0.2564	0	1
Good (Top 50) Placement	849	0.2167	0.4123	0	1
Placement Rank	849	152.15	72.5770	1	200

Note: Placement ranking is taken from Kalaitzidakis et al. (2003).

Table 3: Summary Statistics for Publications

	Observations	Mean	Standard Deviation	Minimum	Maximum
Solo Authored High-Tier Publication	1,010	0.0099	0.1086	0	2
Solo Authored Mid-Tier Publication	1,010	0.0366	0.2127	0	2
Solo Authored Low-Tier Publication	1,010	0.1970	0.8802	0	14
Solo Authored High-Tier R&R	1,010	0.0158	0.1326	0	2
Solo Authored Mid-Tier R&R	1,010	0.0257	0.1584	0	1
Solo Authored Low-Tier R&R	1,010	0.0040	0.0628	0	1
Solo Authored Book	1,010	0.0129	0.1292	0	2
Solo Authored Book Chapter	1,010	0.0257	0.2425	0	6
Adjusted Coauthored High-Tier Publication	1,010	0.0375	0.1840	0	2
Adjusted Coauthored Mid-Tier Publication	1,010	0.1003	0.3477	0	3.67
Adjusted Coauthored Low-Tier Publication	1,010	0.3113	0.8822	0	9.8
Adjusted Coauthored High-Tier R&R	1,010	0.0310	0.1802	0	2
Adjusted Coauthored Mid-Tier R&R	1,010	0.0353	0.1776	0	1.5
Adjusted Coauthored Low-Tier R&R	1,010	0.0084	0.0805	0	1
Adjusted Coauthored Book	1,010	0.0326	0.2089	0	3
Adjusted Coauthored Book Chapter	1,010	0.0419	0.2464	0	4
Total Number of Solo and Adjusted Coauthored Publications Combined	1,010	0.6927	1.4912	0	15

Note: Publication categories taken from Combes and Linnemer (2010).

Table 4: Predicting the Placement Rank of Ph.D. Candidates

	(1)	(2)	(3)	(4)
U.S. Citizenship				2.13655
				(9.11916)
Semesters as RA			0.67026	-0.35289
			(0.73410)	(0.99741)
Semesters as TA			2.10892***	1.51242
			(0.74185)	(0.98280)
Semesters Teaching			2.58910***	2.58799**
			(1.00576)	(1.30856)
Advisor Rank			0.24862	0.08050
(in thousands)			(0.23514)	(0.31272)
Years to Complete Ph.D.			4.57179	7.68433**
			(2.92437)	(3.86305)
Years of Professional			0.14501	0.03780
Experience			(1.19327)	(1.65438)
Attractiveness Rating		5.47405	5.33392	4.55556
		(5.34073)	(5.36812)	(7.03069)
Male		2.62081	2.78243	3.42570
		(6.10360)	(6.05996)	(8.18956)
Black		25.69217	24.30635	32.31804
		(18.4503)	(18.27429)	(26.62812)
Asian		14.42021**	14.51393**	9.62516
		(6.88381)	(6.88836)	(9.23887)
Other Race		7.99439	5.16446	11.20476
		(8.29117)	(8.30263)	(10.99445)
Undergraduate Institution	0.15823***	0.13688***	0.11535***	0.15804***
Ranking	(0.03325)	(0.03804)	(0.03829)	(0.05405)
Graduate Institution	0.26564***	0.27731***	0.26719***	0.30528***
Ranking	(0.04018)	(0.05097)	(0.05557)	(0.08198)
Sole-Authored High	-51.71916**	-55.12307**	-50.85955**	-38.77345
Tier Publications	(21.53115)	(22.73899)	(22.40333)	(30.84291)

Sole-Authored Middle	15.62377	19.45537	18.98107	42.91133**
Tier Publications	(12.15847)	(13.85235)	(13.70498)	(17.77217)
Sole-Authored Low	-2.95319	-5.81983	-4.23629	-6.58018
Tier Publications	(3.27989)	(5.12040)	(5.11900)	(7.30922)
Sole-Authored High	27.23270*	25.10989	25.19956	14.90661
Tier R&Rs	(16.13901)	(17.48430)	(17.25433)	(20.65388)
Sole-Authored Middle	31.21772**	37.38222*	43.07587**	49.71535*
Tier R&Rs	(15.86605)	(20.39079)	(20.17675)	(25.92295)
Sole-Authored Low	21.99291	44.69294	-19.08588	-14.76038
Tier R&Rs	(38.70597)	(50.67576)	(69.56529)	(73.68479)
Sole-Authored Books	17.22575	23.36743	6.67972	22.98674
	(18.40851)	(31.05239)	(31.47981)	(37.68380)
Sole-Authored Book	0.42800	1.22532	-1.22919	19.21599
Chapters	(9.20222)	(21.49377)	(21.37427)	(28.54954)
Adjusted Coauthored	-61.37498***	-58.18702***	-56.82295***	-64.39592***
High Tier Publications	(12.95126)	(14.26024)	(14.07570)	(17.93248)
Adjusted Coauthored	-15.08704**	-19.29880**	-17.10862**	-39.62644***
Middle Tier Publications	(6.99514)	(7.98227)	(7.93545)	(11.10899)
Adjusted Coauthored	0.03133	0.74670	0.70000	-3.20930
Low Tier Publications	(2.772)	(3.22232)	(3.19828)	(4.77427)
Adjusted Coauthored	-35.44573***	-30.86427**	-26.18823*	-7.75550
High Tier R&Rs	(12.56977)	(13.72142)	(13.54966)	(20.42549)
Adjusted Coauthored	3.10755	0.85857	-0.56671	6.279154
Middle Tier R&Rs	(13.57087)	(15.84408)	(15.60112)	(22.39686)
Adjusted Coauthored	12.55899	10.42392	2.81342	10.72113
Low Tier R&Rs	(26.55383)	(28.91648)	(28.60071)	(36.96717)
Adjusted Coauthored	11.71494	16.31495	19.30823	18.96669
Books	(13.44399)	(15.08496)	(14.94986)	(19.59307)
Adjusted Coauthored	-14.13699	-9.46435	-5.97442	-6.67397
Book Chapters	(12.57941)	(14.56107)	(14.87039)	(19.65554)
Constant	118.72890***	95.92027***	53.07427**	32.85733
	(5.78181)	(15.65508)	(21.65260)	(28.32999)

Number of Observations	786	646	633	398
R^2	0.186	0.182	0.217	0.218

The symbols *** indicate statistically significant at the one percent level, ** at the five percent level, and * at the ten percent level. Ranking is taken from Kalaitzidakis et al. (2003).

Table 5: Predicting Top Job Placement for PhD Candidates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excellent Job (Top 20 Departments)				Good Job (Top 50 Departments)			
U.S. Citizen				0.01165				0.05683
				(0.02457)				(0.06070)
Semesters as RA			-0.00183	-0.00292			-0.00246	0.00262
			(0.00140)	(0.00322)			(0.00427)	(0.00636)
Semesters as TA			-0.00103	-0.00311			-0.01048**	-0.00992
			(0.00110)	(0.00304)			(0.00470)	(0.00684)
Semesters Teaching			-0.00486*	-0.01344**			-0.02351***	-0.02488**
			(0.00279)	(0.00580)			(0.00758)	(0.01032)
Advisor Rank			-0.00038	-0.00078			-0.00104	-0.00021
(in thousands)			(0.00032)	(0.00080)			(0.00139)	(0.00198)
Years to Complete Ph.D.			-0.00498	-0.00989			-0.05149***	-0.08458***
			(0.00440)	(0.01207)			(0.01908)	(0.02862)
Years of Professional			-0.00019	-0.00146			0.00179	0.00629
Experience			(0.00136)	(0.00445)			(0.00737)	(0.01096)
Attractiveness Rating		-0.00403	-0.00460	-0.01320		-0.00577	-0.00261	0.00046
		(0.00633)	(0.00648)	(0.01828)		(0.03354)	(0.03295)	(0.04742)
Male		-0.00897	-0.00860	0.00229		-0.04782	-0.04253	-0.02965
		(0.00931)	(0.00919)	(0.02117)		(0.03952)	(0.03868)	(0.05605)
Black		omitted	omitted	omitted		-0.15263**	-0.13671**	-0.12743
						(0.06658)	(0.06054)	(0.12214)
Asian		-0.00756	-0.00898	-0.01499		-0.04661	-0.05011	0.00611
		(0.00706)	(0.00725)	(0.02113)		(0.03954)	(0.03792)	(0.06031)
Other Race		-0.00149	0.00237	0.00320		-0.06221	-0.03669	-0.04183
		(0.00808)	(0.00972)	(0.02842)		(0.04574)	(0.04723)	(0.06957)
Undergraduate Institution	-0.00004	-0.00003	-0.00001	-0.00009	-0.00072***	-0.00074***	-0.00058***	-0.00071**
Ranking	(0.00004)	(0.00004)	(0.00004)	(0.00013)	(0.00018)	(0.00022)	(0.00021)	(0.00034)
Graduate Institution	-0.00067***	-0.00098***	-0.00073***	-0.00109**	-0.00189***	-0.00221***	-0.00218***	-0.00228***

Ranking	(0.00024)	(0.00033)	(0.00025)	(0.00044)	(0.00031)	(0.00043)	(0.00045)	(0.00065)
Sole-Authored High Tier Publications	0.00739	0.00955	0.00873	0.08683	0.38055**	0.41725**	0.35278**	0.22180
	(0.01607)	(0.01957)	(0.01920)	(0.09314)	(0.15911)	(0.17688)	(0.16421)	(0.22569)
Sole-Authored Middle Tier Publications	-0.00603	-0.00746	-0.01091	-0.01144	-0.11936	-0.14291	-0.15286*	-0.28119**
	(0.01165)	(0.01459)	(0.01546)	(0.04145)	(0.08110)	(0.09067)	(0.08977)	(0.13397)
Sole-Authored Low Tier Publications	0.00115	0.00123	-0.00197	omitted	0.00847	0.01335	0.00457	-0.03563
	(0.00554)	(0.00729)	(0.00713)		(0.02600)	(0.03550)	(0.03414)	(0.06762)
Sole-Authored High Tier R&Rs	-0.02340	-0.02843	-0.03184	-0.08207	-0.16234*	-0.15664	-0.16410	-0.14398
	(0.01848)	(0.02209)	(0.02329)	(0.05857)	(0.09503)	(0.10606)	(0.10095)	(0.12791)
Sole-Authored Mid Tier R&Rs	omitted	omitted	omitted	omitted	-0.14665***	-0.16847***	-0.16536***	-0.19900***
					(0.04009)	(0.05294)	(0.03414)	(0.05615)
Sole-Authored Low Tier R&Rs	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Sole-Authored Books	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Sole-Authored Book Chapters	0.00859	0.01378	0.03046	omitted	-0.18192	-0.15599**	-0.14222**	omitted
	(0.01456)	(0.03781)	(0.06138)		(0.14470)	(0.06378)	(0.05821)	
Adjusted Coauthored High Tier Publications	0.03737*	0.05047*	0.05018*	0.07578**	0.26520***	0.26356***	0.24779***	0.32386***
	(0.02089)	(0.02610)	(0.02605)	(0.03817)	(0.07045)	(0.08054)	(0.07797)	(0.10880)
Adjusted Coauthored Mid Tier Publications	0.00240	0.00293	0.00211	0.01136	0.02452	0.05301	0.02955	0.12558
	(0.00703)	(0.00904)	(0.00833)	(0.02482)	(0.04125)	(0.04947)	(0.04759)	(0.07871)
Adjusted Coauthored Low Tier Publications	0.00036	0.00015	-0.00051	0.00270	0.00791	0.00543	0.00475	0.01144
	(0.00282)	(0.00350)	(0.00353)	(0.01321)	(0.01659)	(0.01975)	(0.01915)	(0.03167)
Adjusted Coauthored High Tier R&Rs	0.02481	0.02688	0.02090	0.02348	0.18267**	0.18738**	0.15419*	0.09186
	(0.01639)	(0.01811)	(0.01569)	(0.04176)	(0.07241)	(0.08322)	(0.07966)	(0.12380)
Adjusted Coauthored Mid Tier R&Rs	-0.02648	-0.03438	-0.03752	-0.05485	-0.01106	0.00763	0.01357	-0.10951
	(0.02786)	(0.03417)	(0.03513)	(0.09212)	(0.08267)	(0.09761)	(0.09108)	(0.15902)
Adjusted Coauthored Low Tier R&Rs	omitted	omitted	omitted	omitted	-0.03375	-0.00071	0.02197	-0.06949
					(0.17217)	(0.19426)	(0.18380)	(0.30348)
Adjusted Coauthored Books	-0.00375	-0.00325	-0.00552	omitted	-0.22299	-0.24511	-0.24650	omitted
	(0.01539)	(0.01812)	(0.01771)		(0.14436)	(0.15921)	(0.15438)	
Adjusted Coauthored Book Chapters	omitted	omitted	omitted	omitted	0.10096	0.07614	0.07695	0.13386
					(0.07138)	(0.08772)	(0.08846)	(0.12363)
Number of	721	585	575	334	775	638	626	378

Observations								
Pseudo-R^2	0.267	0.274	0.329	0.239	0.166	0.160	0.206	0.177

Marginal effects are shown. Marginal effects of standard errors are in parentheses. Ranking is taken from Kalaitzidakis et al. (2003). The symbols *** indicate statistically significant at the one percent level, ** at the five percent level, and * at the ten percent level.

Appendix A:

Attractiveness Survey Instructions:

1. Goal:

The goal of this project is to obtain attractiveness ratings on a total of 837 individuals for which we have photos in our database.

2. Tasks for participants:

You should have received a USB thumb drive with one PowerPoint and one excel file saved inside. The PowerPoint file should include 837 slides, with each containing one photo of each individual in our database. The excel spreadsheet contains two columns titled Slide Number and Attractiveness Rating. Your job is to rate each individual's level of attractiveness on a scale of:

1=Strikingly Handsome or Beautiful
2= Above Average for Age (good looking)
3=Average for Age
4=Below Average for Age (Quite Plain)
5=Homely

The column titled Slide Number in the excel spreadsheet corresponds to the slide number in the PowerPoint file. Rate each photo in the PowerPoint file on its attractiveness level and put the corresponding value in the column titled Attractiveness Rating in the excel spreadsheet. Please only use integer values (i.e. don't use numbers with decimals such as 5.2 or 4.76 – only use whole numbers such as 1 or 4) when you are rating the individuals. Also, DO NOT rearrange the photos in the PowerPoint file or the slide numbers in the excel file. This would compromise the validity of the study, since we would have no way of matching the individuals to their corresponding ratings. PLEASE, PLEASE go through and rate each and every photo even if they are blurry (for the blurry photos, just give the rating to the best of your ability). It does us no good if participants don't go through the photos and simply mark random numbers down to the corresponding slides. We trust that you will do your best to rate each and every photo to your fullest ability.

The entire task should take no more than two weeks to complete (the total time shouldn't take more than a day, but you don't have to complete it all at once). Please save the completed excel spreadsheet on the same USB thumb drive after all 837 individuals have been rated and return the thumb drive to the administrator. The administrator should mark down your race, gender, age, and contact information (e.g. email address) BEFORE the project has started.

3. Tasks for administrator:

Make sure to include exactly five men and five women in the analysis. All of them should be graduate students. It would be nice if we had a mix of races in the group doing the analysis, but it is not required. Please remember to mark down each participant's race, gender, age, and email address when you initially hand out the thumb drives. I will give you exactly ten thumb drives that have the required files

already saved onto them. The task shouldn't take more than a day to complete, but I will give them a total of two weeks to complete it in full. This way they can work on it in their free time if need be.

4. Place of Performance

Each participant may work on the project at home and at their own pace as long as it is completed within the required two week deadline.

5. Cost:

Total project cost is $2000.

Each participant will be paid $200 (so $2,000 in total for all 10 participants) to complete the ratings on all 837 individuals. Each participant will be paid after completion of the entire task.

6. Classification

Unclassified.

Appendix B:

This appendix breaks down the high, mid, and low-tier publications listed in Table 3 from the regular text. The tables show the original groupings of publications, which are based on Combes and Linnemer (2010). We chose to simplify the breakdown of tiers due to the vast number of categories in Combes and Linnemer.

Table B-1: Job Candidate Summary Statistics – Publications – Solo Authored

Characteristic	Mean
Solo Authored AAA	0.00 (min = 0, max = 1)
	(0.04)
Solo Authored AA	0.01 (min = 0, max = 2)
	(0.10)
Solo Authored A	0.02 (min = 0, max = 2)
	(0.17)
Solo Authored B	0.01 (min = 0, max = 2)
	(0.13)
Solo Authored C	0.01 (min = 0, max = 1)
	(0.11)
Solo Authored D	0.00 (min = 0, max = 1)
	(0.04)
Solo Authored Book	0.01 (min = 0, max = 2)
	(0.13)
Solo Authored Book Chapter	0.03 (min = 0, max = 6)
	(0.24)
Solo Authored Other	0.18 (min = 0, max = 14)
	(0.87)
Solo Authored AAA R&R	0.00 (min = 0, max = 1)
	(0.04)
Solo Authored AA R&R	0.01 (min = 0, max = 1)
	(0.12)
Solo Authored A R&R	0.01 (min = 0, max = 1)
	(0.11)
Solo Authored B R&R	0.01 (min = 0, max = 1)
	(0.11)
Solo Authored C R&R	0.00 (min = 0, max = 1)
	(0.03)
Solo Authored D R&R	0.00 (min = 0, max = 0)
	(0)
Solo Authored Other R&R	0.00 (min = 0, max = 1)
	(0.05)

Note: Proportion of sample is measured for the sample with non-missing values for the particular characteristic. Standard deviations of means are reported in parentheses. All 1,010 candidates have non-missing values.

Table B-2: Job Candidate Summary Statistics – Publications – Coauthored

Characteristic	Mean	Adjusted Mean
Coauthored AAA	0.01 (min = 0, max = 1) (0.10)	0.01 (min = 0, max = 1) (0.09)
Coauthored AA	0.04 (min = 0, max = 2) (0.21)	0.03 (min = 0, max = 2) (0.16)
Coauthored A	0.08 (min = 0, max = 4) (0.31)	0.06 (min = 0, max = 3) (0.26)
Coauthored B	0.05 (min = 0, max = 2) (0.24)	0.04 (min = 0, max = 2) (0.20)
Coauthored C	0.04 (min = 0, max = 2) (0.22)	0.03 (min = 0, max = 2) (0.19)
Coauthored D	0.01 (min = 0, max = 2) (0.12)	0.01 (min = 0, max = 1.5) (0.10)
Coauthored Book	0.04 (min = 0, max = 3) (0.24)	0.03 (min = 0, max = 3) (0.21)
Coauthored Book Chapter	0.05 (min = 0, max = 4) (0.28)	0.04 (min = 0, max = 4) (0.25)
Coauthored Other	0.34 (min = 0, max = 14) (1.12)	0.27 (min = 0, max = 8.43) (0.84)
Coauthored AAA R&R	0.01 (min = 0, max = 1) (0.11)	0.01 (min = 0, max = 1) (0.09)
Coauthored AA R&R	0.02 (min = 0, max = 2) (0.16)	0.02 (min = 0, max = 2) (0.15)
Coauthored A R&R	0.03 (min = 0, max = 1) (0.16)	0.02 (min = 0, max = 1) (0.14)
Coauthored B R&R	0.01 (min = 0, max = 1) (0.12)	0.01 (min = 0, max = 1) (0.10)
Coauthored C R&R	0.00 (min = 0, max = 1) (0.03)	0.00 (min = 0, max = 1) (0.03)
Coauthored D R&R	0.00 (min = 0, max = 0) (0)	0.00 (min = 0, max = 0) (0)
Coauthored Other R&R	0.01 (min = 0, max = 1) (0.10)	0.01 (min = 0, max = 1) (0.07)

Note: Proportion of sample is measured for the sample with non-missing values for the particular characteristic. Standard deviations of means are reported in parentheses. All 1,010 candidates have non-missing values.

Appendix C:

In this appendix we use McPherson's (2012) rankings of the top 240 U.S. economics departments to replicate Tables 4 and 5. Like the Kalaitzidakis et al.'s (2003) rankings, McPherson's ranking system is based on the number of pages published per year by a department. However, the "pages published" literature exhibits considerable heterogeneity in terms of which programs and journals the rankings include. This heterogeneity limits the extent to which one might consider the rankings comparable. Of course, even with identical methodology it is not possible to design perfectly comparable rankings over time given that the profession's assessment of the relative quality of journals is not static, and that new journals come into being. McPherson's approach includes publications by individuals affiliated with each institution, by faculty members in the economics departments at each institution, and by alumni of each doctoral program. He does not restrict his measure of pages published to pages published in top journals. This strand of the literature offers the singular advantage of ranking the top 240 U.S. programs, rather than the more limited focus on the top 50 or top 100 programs used in other rankings, allowing us to assign an uncensored rank to a higher proportion of the U.S. job placements. In this ranking system, of course, we exclude students who come from or have placement at a non-U.S. institution. For those students who have a U.S. placement, we assign a rank of 240, the worst rank we give, to those students who placed either in non-university jobs, at universities whose economics programs are unranked, or who did not accept any job offer.

We prefer the Kalaitzidakis et al. data as it includes ratings for all undergraduate and graduate level institutions worldwide. The number of observations in each of the regressions using the McPherson data is significantly lower than the Kalaitzidakis et al. data, because the McPherson data only include candidates trained and placed at U.S. institutions. Readers will notice several omitted variables in the McPherson results, such as Sole-Authored Low-Tier R&Rs and the race dummy variable Black. We dropped these variables due to a lack of variation among the sample of candidates.

These problems aside, we do find some similar trends in the McPherson (2012) and Kalaitzidakis et al. (2003) results. In particular, the McPherson results show a strong positive connection between the rank of the undergraduate institution, as well as coauthored high-tier publications, and R&Rs and eventual job placement.

Table C-1: Predicting the Placement Rank of PhD Candidates

	(1)	(2)	(3)	(4)
U.S. Citizen				-33.429
				(23.736)
Semesters as RA			1.801	-0.755
			(1.702)	(2.501)
Semesters as TA			2.338	3.099
			(1.909)	(2.645)
Semesters Teaching			7.074**	6.092
			(2.915)	(3.776)
Advisor Rank			-0.094	-0.137
(in thousands)			(0.511)	(0.722)
Years to Complete PhD			1.462	14.319
			(7.374)	(11.500)
Years of Professional			4.636	1.774
Experience			(2.914)	(4.630)
Attractiveness Rating		-7.162	-5.149	-11.866
		(11.892)	(12.402)	(17.180)
Male		14.390	10.557	26.720
		(14.301)	(14.827)	(21.027)
Black		38.284	31.771	59.941
		(32.700)	(33.280)	(45.681)
Asian		31.400	31.610	28.033
		(19.589)	(20.318)	(28.701)
Other Race		-10.899	-12.065	-13.694
		(22.036)	(22.664)	(30.729)
Undergraduate Institution	0.201***	0.236***	0.220***	0.134
Ranking	(0.063)	(0.073)	(0.076)	(0.108)
Graduate Institution	0.150	0.057	-0.203	-0.198
Ranking	(0.165)	(0.220)	(0.259)	(0.450)
Sole-Authored High	15.364	33.418	38.903	247.300*
Tier Publications	(75.644)	(79.384)	(79.464)	(148.673)
Sole-Authored Middle	-16.079	-9.720	-7.774	-30.553
Tier Publications	(32.909)	(34.911)	(36.074)	(56.637)
Sole-Authored Low	-4.375	-10.003	-11.907	-3.778
Tier Publications	(6.011)	(15.570)	(16.244)	(43.876)
Sole-Authored High	47.912	40.898	41.499	-24.652
Tier R&Rs	(37.736)	(39.661)	(39.841)	(55.496)
Sole-Authored Middle	-19.134	-31.197	-18.650	0.216
Tier R&Rs	(36.408)	(41.679)	(42.139)	(45.110)
Sole-Authored Low	93.139	94.888	omitted	omitted

Tier R&Rs	(90.291)	(102.504)		
Sole-Authored Books	28.156	omitted	omitted	omitted
	(47.655)			
Sole-Authored Book	10.495	19.134	14.359	68.408
Chapters	(44.467)	(46.797)	(47.062)	(69.649)
Adjusted Co-Authored	-70.895**	-77.085***	-68.167**	-44.242
High Tier Publications	(27.479)	(28.952)	(29.001)	(41.631)
Adjusted Co-Authored	-12.744	-2.701	-5.141	1.053
Middle Tier Publications	(14.291)	(17.586)	(17.639)	(24.666)
Adjusted Co-Authored	-5.013	-6.534	-3.562	-3.953
Low Tier Publications	(5.465)	(6.243)	(6.355)	(10.773)
Adjusted Co-Authored	-49.162*	-59.865**	-45.318	2.019
High Tier R&Rs	(25.695)	(27.617)	(28.705)	(53.154)
Adjusted Co-Authored	3.662	-16.539	-5.458	-38.080
Middle Tier R&Rs	(32.593)	(41.105)	(41.079)	(81.669)
Adjusted Co-Authored	99.849	88.132	79.421	86.612
Low Tier R&Rs	(69.597)	(72.833)	(73.783)	(92.863)
Adjusted Co-Authored	-20.918	-12.518	-10.249	142.463
Books	(48.646)	(55.552)	(55.522)	(151.12)
Adjusted Co-Authored	-35.671	-34.365	-50.513	-10.288
Book Chapters	(26.107)	(32.037)	(33.833)	(46.130)
Constant	158.876***	165.433***	122.874**	95.95
	(9.360)	(35.519)	(51.461)	(77.731)
Number of Observations	278	228	220	134
R^2	0.140	0.163	0.205	0.212

The symbols *** indicate statistically significant at the one percent level, ** at the five percent level, and * at the ten percent level. These estimates use the McPherson (2012) Rankings.

Table C-2: Predicting Top Job Placement for PhD Candidates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excellent Job (Top 20 Departments)				Good Job (Top 50 Departments)			
U.S. Citizen				omitted				0.039
								(0.039)
Semesters as RA			0.000	0.001			-0.011	-0.002
			(0.004)	(0.001)			(0.007)	(0.006)
Semesters as TA			-0.012**	-0.001			-0.018**	-0.011
			(0.006)	(0.002)			(0.008)	(0.008)
Semesters Teaching			-0.015	-0.000			-0.048***	-0.018
			(0.010)	(0.001)			(0.016)	(0.013)
Advisor Rank			-0.002	-0.000			-0.000	0.000
(in thousands)			(0.001)	(0.000)			(0.002)	(0.002)
Years to Complete PhD			-0.007	-0.004			-0.045	-0.065
			(0.021)	(0.008)			(0.034)	(0.041)
Years of Professional			0.004	-0.000			-0.011	-0.006
Experience			(0.007)	(0.001)			(0.012)	(0.011)
Attractiveness Rating		-0.029	-0.008	-0.000		0.041	0.060	0.079
		(0.035)	(0.030)	(0.001)		(0.054)	(0.049)	(0.053)
Male		-0.006	0.002	0.004		-0.101	-0.051	-0.052
		(0.045)	(0.035)	(0.008)		(0.074)	(0.066)	(0.074)
Black		omitted	omitted	omitted		omitted	omitted	omitted
Asian		-0.079***	-0.059**	-0.001		-0.176***	-0.133***	-0.069
		(0.029)	(0.025)	(0.004)		(0.043)	(0.037)	(0.044)
Other Race		0.104	0.091	0.018		0.106	0.115	0.115
		(0.102)	(0.093)	(0.048)		(0.119)	(0.119)	(0.154)
Undergraduate Institution	-0.000**	-0.001***	-0.001**	-0.000	-0.001***	-0.002***	-0.001***	-0.001*
Ranking	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Graduate Institution	-0.002***	-0.002	-0.001	-0.000	-0.001	-0.001	-0.000	-0.001

Ranking	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Sole-Authored High Tier Publications	omitted	omitted	omitted	omitted	0.076 (0.361)	0.030 (0.378)	0.011 (0.297)	omitted
Sole-Authored Middle Tier Publications	-0.029 (0.040)	-0.066** (0.032)	-0.047* (0.025)	omitted	-0.056 (0.109)	-0.105 (0.100)	-0.078 (0.074)	-0.020 (0.083)
Sole-Authored Low Tier Publications	0.018 (0.020)	0.079 (0.057)	0.051 (0.045)	omitted	0.000 (0.041)	0.093 (0.082)	0.091 (0.075)	omitted
Sole-Authored High Tier R&Rs	0.044 (0.130)	0.347 (0.396)	0.513 (0.459)	0.980*** (0.084)	-0.208 (0.152)	-0.244 (0.200)	-0.245 (0.168)	0.487 (0.475)
Sole-Authored Middle Tier R&Rs	0.101 (0.169)	0.134 (0.223)	0.107 (0.190)	0.006 (0.020)	0.012 (0.166)	0.008 (0.203)	-0.057 (0.109)	-0.047 (0.034)
Sole-Authored Low Tier R&Rs	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Sole-Authored Books	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Sole-Authored Book Chapters	0.118 (0.176)	0.063 (0.171)	0.026 (0.125)	omitted	0.041 (0.194)	-0.039 (0.166)	0.011 (0.180)	omitted
Adjusted Co-Authored High Tier Publications	0.130** (0.057)	0.215*** (0.076)	0.155** (0.067)	0.006 (0.014)	0.265*** (0.100)	0.339*** (0.114)	0.245** (0.096)	0.137 (0.088)
Adjusted Co-Authored Middle Tier Publications	0.009 (0.031)	0.018 (0.068)	-0.005 (0.055)	0.002 (0.005)	0.031 (0.059)	0.057 (0.094)	0.050 (0.075)	0.030 (0.048)
Adjusted Co-Authored Low Tier Publications	0.005 (0.012)	-0.006 (0.021)	-0.006 (0.016)	-0.012 (0.026)	0.003 (0.023)	-0.021 (0.032)	-0.029 (0.028)	-0.307*** (0.115)
Adjusted Co-Authored High Tier R&Rs	0.108* (0.062)	0.238** (0.115)	0.152 (0.096)	omitted	0.208* (0.119)	0.312* (0.169)	0.130 (0.132)	-0.004 (0.118)
Adjusted Co-Authored Middle Tier R&Rs	0.027 (0.069)	0.029 (0.118)	0.037 (0.079)	omitted	-0.051 (0.155)	-0.048 (0.219)	-0.052 (0.166)	omitted
Adjusted Co-Authored Low Tier R&Rs	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Adjusted Co-Authored Books	0.093 (0.100)	0.121 (0.159)	0.071 (0.125)	omitted	0.105 (0.200)	0.093 (0.248)	0.079 (0.217)	omitted
Adjusted Co-Authored Book Chapters	0.067 (0.055)	0.125 (0.084)	0.080 (0.070)	-0.000 (0.004)	0.073 (0.108)	0.156 (0.147)	0.201* (0.120)	0.139 (0.124)
Number of	271	213	206	90	273	215	208	117

Observations								
Pseudo-R^2	0.289	0.316	0.374	0.487	0.185	0.230	0.332	0.408

Marginal effects are shown. Marginal effects of standard errors are in parentheses. The symbols *** indicate statistically significant at the one percent level, ** at the five percent level, and * at the ten percent level. These estimates use the McPherson (2012) Rankings.

Appendix D:

Graph D-1: Years to Ph.D.