Spring 5-1-2005

Movement of Economics Professors among Top Research Universities in the US

Benjamin E. Resnick

Movement of Economics Professors among Top Research Universities in the US

This project is intended to take survey of the individuals employed by the top economics departments in the US and answer the question "Where have these people come from?" The faculty that makes up the leading programs in the country clearly represents many of the top minds in the field today. And these individuals command a great deal of respect and recognition within the intellectual community. Along with this respect comes a great influence over current research and theory. In order to best grasp who is shaping the modern intellectual landscape of economics, it seems appropriate to try to answer not only questions about who these individuals are, but also how they arrived in their current position. Other attempts to categorize the economics PhD market within academia have been made, but these endeavors often focus on those entering the job market more than those moving within it. Siegfried and Stock[1] have done significant research to examine initial placements of economics PhD's and the effect of their field of interest on that placement. But their studies were limited to newly minted PhD's within a year, and failed to consider others moving within the job market. Deck, Collins and Curington[2] presented similar analysis of placements of newly minted PhD's with a series of annual surveys. These wide reaching surveys also attempted to estimate wages offered to both newly minted PhD's entering the job market as well as those moving between institutions. However, in their studies Deck, Collins and Curington did not show from where individuals moved, just their final destination. While the movement and clearing prices of the market are of great significance, there still seems to be an unexplained

[1] Siegfried, John, Stock, Wendy. "The Labor Market for New Ph.D. Economists in 2002." *American Economic Review Papers and Proceedings.* 94(2) (May 2004): 272-285.
[2] Deck, Katherine, A., Jeffery T. Collins, and William P. Curington. "Survey of the Labor Market for New Ph.D. Hires in Economics 2003-2004."

element of the job market for economics PhDs that discusses how a finite number of individuals moves between a set of unique institutions.

In order to explain that movement more clearly, first a data set must exist. There does not exist any database of economics professors across the country that provides their institution by year, research interests, publications and PhD information (institution and date earned) therefore, in order to continue this inquiry one must be created. The final form of the data collection process initiated was to generate panel data for all professors at the top sixteen economics institutions from 1993-2003. In this panel, the individual unit of observation is the professor, and time is represented across the panel in increments of one year.

The initial step to begin a discussion of professors at the top research institutions in the US is to determine exactly which institutions are at the top. One option would be to create a ranking system based on a set of criteria associated with top performance among researchers. However, this would be both time consuming and redundant since many other research efforts have provided rankings. Therefore, it is efficient in terms of time to simply select a ranking and build off of previous results. While there many rankings exist, one of the most highly regarded and reliable is the most recent publication from the National Research Council (1995)[3]. The NRC rankings will be truncated to generate a list of the top sixteen US economics departments that will ultimately compose the data set.

The unit of observation for this project is individual professors. Each professor currently working at a top sixteen institution has entries for their location, tenure status

---

[3] See appendix A for the complete 1995 NRC ranking.

and publications[4] for each year from 1993-2003. Those currently in the top sixteen were

determined by individual department websites. The data on each agent over the time

span has been collected from the professor's curriculum vita, or a similar resume and list

of publications when a CV is unavailable. Not all individuals at the top sixteen

institutions post their CV's to the web, so for some agents, data is missing. A discussion

of the nature of the missing data follows later.

In creating the data set, a number of challenges coding variables have arisen.

Some of these problems were unique circumstances not covered by the current data set

and were noted separately. Others required additional assumptions that have been made

during the data collection process. Those problems and assumptions are detailed below.

For some individuals their gender isn't clear from their name or biographical information

provided on their personal websites. In those instances, internet name databases were

consulted to determine the gender associated with the name. Former institutions where

agents worked from 1993-2002 could lie outside the NRC ranking: such as previous

positions teaching either abroad or in an unranked program (ex. being a member of the

faculty in the Sloan School of Management instead of in the economics department at

MIT), working in the private or working for the government. The data was then coded to

reflect that individuals other than newly minted PhDs enter the job market during the

time span. There is also corresponding problem for those exiting the data set. Should an

agent have worked at a top twenty-five institution since 1993, but left the set of observed

schools before the date of data collection; either by retiring or accepting a job abroad, in a

non-academic environment or at a an institution not ranked included in the NRC ranking,

---

[4] See appendix B for a codebook containing the complete list of the data collected and the associated
variable names

then he or she will not be listed on departments' current websites. Thus some professors teaching at the top sixteen institutions from 1993 to 2002 are unobserved. Another set of individuals that are unobserved are those individuals listed on department websites but without CV's available on the web are not entered. Those missing can be treated similar to a response rate, however, it should be noted that those not entered do not appear to be random. Anecdotally, it seems that certain types individuals are less likely to publish their CV's to the web. Often times those individuals who are more established within economics are the ones who do not have a CV available on the web. Typically these individuals are older professors, often times in major research positions or with significant accomplishments already to their name (ex. Nobel Prize winners typically do not have a CV published to the web). This trend seems plausible because those agents have recognition on name alone and would not need to make a CV readily available in order to garner attention from the economics community as a whole. Missing information from these individuals may alter the data to make it seem that movement between institutions is more frequent than it is in practice. Because it seems that in general, individuals without information available on the web often times do not move between institutions and have been at their current employment for the entire length of the sample, if not longer.

A number of other observations made during the data collection process that have not been integrated into the current analysis, but could be used again at a later date. The first of these is information on publications by individuals in each year of the data set has been collected. The publications variables measure the number of articles the professor's CV or website identifies as being published in peer reviewed journals. The publications

are counted by the year they were printed, not the year authored. No pending articles were counted. Some agents identify themselves with more than one research interest, or have interests that combine multiple fields within economics. The values entered are not specific to which journal each article appears in. In some sense, not all journals are created equal, so the count of publications in each year may not accurately reflect the quality of contribution to the intellectual community by an individual. Also, it should be noted that publications were only counted on the date which they were first published. Along with reprinted articles, chapters in books and published comments were not counted. As long as the journal of publication was peer reviewed the publication was counted, regardless of language of the publication.

Another type of information not used in the current analysis is categorical information on the research interest of the individuals. Professors have been sorted into a research field depending on which they list first. For example, a professor who lists his research interests as: "Industrial organization, applied econometrics, and microeconomics" will be classified as an Industrial organization economist, despite having interests in three different fields. Other cases arise in which it is difficult to determine an individual's primary research field; the assumptions made in those specific cases are explained in the codebook (appendix B). When considering publications by those in a certain field, given the way professors are sorted into fields, it is possible that a professor's current research could be different from his classification. For example, a self-identified econometrician could be doing applied work in international economics, and while his publication count includes research published in journals on international economics, he is classified as an econometrician. From the current coding it is

impossible to tell the nature of individual publications. So for that example individual a publication could be either a theoretical development of a new econometric technique or an application where the end result is of more interest to those of another field.

Further information on each individual's role at their institution during each year of the data set was gathered as well. Although not used in the current data set, documentation of a professor's tenure status (full, associate or assistant) was recorded. However, those individuals in non-tenure positions (such as lecturers and research fellows) as well as those who are listed as emeritus as of 2003 are not entered. These groups were excluded for two reasons, one intuitive and practical. First, individuals in both groups will not have the same mobility between institutions as typical tenure track professors. Second, both groups appear to have a much higher tendency to not publish CV's to the web, and thus no information could be gathered on them, even if desired. Further qualitative information exists identifying for each year if an individual professors held any additional positions at their institution; Dean of a college, position within the department (ex. Department Chair), research chair, director of an academic program or named research position.

Aside from missing information, there is a censoring issue associated with only gathering a list of faculty from 1993-2003 in 2003. Therefore, this analysis will serves mainly as a census of those *currently* teaching at one of the top sixteen institutions who publish their CV on the web. The data provided can be used to describe where the current set of individuals came from, but may not serve as an accurate predictor of more general mobility in the market. Generalizations about any results gathered from this data set to the larger set of those teaching at the top sixteen institutions in general should be

made cautiously. The subset collected in relation to all those teaching at top sixteen institutions is not gathered randomly. Instead, those missing often share common traits as discussed above which could make them likely to have different results over the time period, namely to be less mobile.

There are also other shortcomings associated with the data set. First, the decision to examine the top sixteen schools is relatively arbitrary. There is nothing to indicate that there is a significant difference in hiring practice between schools sixteen and seventeen or below. Sixteen was selected only as a mater of practicality. It was the largest sample size that could be split into quartiles that could be collected within a reasonable time. The second serious limitation of this data set is a missing variable. Since many of the top programs are not publicly funded, data on individual professors' salaries is not readily available. This project does not have the time nor the resources to attempt to undertake any sort of survey to acquire this information, thus it is not a part of the data. Not having this information makes any sort of modeling unrealistic. Without information about price within the market, it does not seem to be possible to make any meaningful predictions about movement within the job market because too much of movement between jobs most often depends on salaries offered. A possible consequence of omitting a variable that would seem to have a causal effect on professors' movement between institutions would be to throw off any regressions attempted on the data set. Omission of a variable with a great deal of impact on what is attempted to be observed will in the very least decrease measures of goodness of fit like R^2, adjusted R^2 and the SSR of the model. It is also possible that the expectation of the residuals associated with each observation will be nonzero. If this is the case, all estimates obtained from the analysis could be biased and

all tests of significance that follow will be invalid. Therefore no efforts to model the movement within the job market should be made from this data set.

Instead, the most that can be done is to draw a set of generalizations that describe the individuals teaching at the top sixteen schools in 2003. These descriptive values seem to identify some trends over time of both professors in general and some subsets of the group. Typically, the first quartile hires only within the first quartile, taking individuals from outside rarely (appendix C). Thus a great majority of the turnover at Harvard, Chicago, MIT and Stanford seems to be movement between institutions, or when one school hires a newly minted PhD from another program within the first quartile. The second quartile retains many of it's own as well, and those it brings in from outside are split between hires from the first quartile and below the second quartile.

One commonality shown within the data set is a tendency for the variance to decrease over time. This makes sense because the data being examined is a look back from the present. By 2003 nearly everyone should be in their current quartile (a few exceptions occur for those individuals listed on department websites at the time of collection but not scheduled to start teaching until the 2004-2005 academic year). Not surprisingly, in a given year the standard deviation associated with a quartile increases as the quartile increases. This suggests that the top four programs are able to get the best in the job market whenever they would like, and staff themselves almost entirely from within the top four (appendix D), while on the other hand the last quartile is able to attract some employees from the twelve schools ranked above it but must also staff from sources outside the top sixteen.

When considering only those faculty members minted during the entire data (receiving their PhD in 1993 or earlier) results were similar. The average ranking of those teaching in both quartiles three and four in 2003 was lower in 1993. This increase in rank over time seems to suggest that both of these quartiles added to their staff by hiring from the top two quartiles. Quartiles one and two had means in 1993 very close to their final outcomes in 2003. These values accompanied by small standard deviations suggest that of those faculty minted on or before 1993, who are in the top two quartiles stay in their quartile. Senior faculty in all four quartiles had smaller standard deviations than their respective quartile when both junior and senior faculty members were included with a lone exception for quartile two in 2003. This result is not troubling because the mean in 2003 for quartile two is within .025 of the quartile's rank, so only a handful of professors were not in the quartile. The movement of the top quartile's senior members over time (appendix F) shows that most members who moved into the top quartile came from outside the top sixteen schools, and only 8.3% of those minted in or before 1993 who moved into the top quartile came from the second, third or fourth quartile combined. Interestingly, a parallel result can be drawn for those minted in or before 1993 who were teaching in the fourth quartile at the end of the sample (appendix G). Only 5.9% of senior faculty in quartile four came from the top three quartiles. The rest either resided in the fourth quartile during the entire time period or came from outside the top sixteen. This seems to suggest that once given faculty positions in the top three quartiles, professors are rarely willing to move down to lesser ranked institutions. This lack of downward movement among senior faculty also appears to suggest that a great deal of the downward mobility observed among junior and senior faculty combined (appendix C)

was initial placements of newly minted PhD's from top twelve programs willing to move down into the fourth quartile for .

A final application of this census is to observe the movement of faculty at a more detailed level; by following the movements of the top ranked and sixteenth schools- Harvard and Cal- San Diego. More than half of those teaching at Harvard by the end of the data set were already there in 1993 (appendix H). Only 12.8% of those teaching at Harvard came from outside the first and second quartile. By contrast, UC San Diego gathered 60% of its faculty from outside the fourth quartile (and none from the third quartile) (appendix I). Again suggesting a downward trend in mobility of newly minted PhD's down from the top two quartiles to take initial placements in lower quartiles. It is possible that this downward placement may hold true for newly minted PhD's from the third and fourth quartiles as well, but the information to illustrate if this is in fact the case has not been collected since the composition of the faculties of schools ranked outside the top sixteen was not gathered. Unlike Harvard, UCSD drew a majority of its current faculty from outside, rather than retention-having 40% of its current faculty in 1993.