# Research output at US economics departments 

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#### Abstract

Using curricula vitae and EconLit, we examine the publication records of nearly 2000 academic economists. We consider the probationary period and the years between tenure and promotion to professor. Faculty tenured at top programmes average 3.44 articles in top-ten journals (and 8.75 total articles). The quality of faculty members' publications decreases with programme ranking; the quantity of publications does not differ much among top-100 programmes. Those promoted to professor generate fewer top-ten and total articles. There is some evidence that females produce fewer top-ten and total journal articles than males at many programmes.


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## I. Motivation

Measuring research output in any academic discipline is a matter of considerable interest. While most academic institutions value teaching, research and service, many place special emphasis on scholarship. Administrators at all sorts of institutions are keen to hire and retain productive researchers. Measuring research output is not without difficulties, but in many respects it is simpler than measuring contributions to teaching and service.

Liner and Sewell (2009) surveyed chairs of American PhD-granting economics programmes regarding research expectations for tenure and promotion. An average of 1.62 single-authored articles in top-ten journals and 2.54 articles in the next 16 journals were reported as the requirements for tenure; the comparable figures are 3.52 and 3.18 for promotion to professor. This approach has its limitations, including a low response rate - just over 30 chairs participated. Furthermore, there may be substantial differences in promotion and tenure standards according to departmental rankings.

[^0]This article takes a different approach. Information on research output is widely available in the Curricula Vitae (CVs) that faculty members maintain and through electronic bibliographies such as EconLit. Our data include refereed articles published by academic economists, allowing us to present a more comprehensive picture of the publication records of successful tenure and promotion candidates. Our work also involves substantially more academic institutions than Liner and Sewell (2009) had considered.
It must be noted that we know only what successful candidates' records look like, not the entire distributions of probationary faculty members and faculty members between tenure and promotion. Furthermore, we cannot know whether an individual's record was barely adequate or whether it greatly exceeded the standard. We cannot completely consider the extent to which superior teaching or service might substitute for research output, as these contributions are difficult to quantify from individuals' CVs. Nevertheless, our results may be useful as a rough benchmark of research productivity norms.

## II. Data

Dietz et al. (2000) discuss the use of CVs as data sources, describing this avenue as having a great deal of potential for research. Normally, academic economists maintain CVs that include information on positions held, dates of tenure and promotion, publications and numbers of co-authors, etc. Furthermore, CVs of most academic economists are available online. This facilitates the collection of data on output of journal articles during the probationary period and during the period between tenure and promotion.

Our data comprise only tenured faculty members who earned their doctorates in 1980 or later since promotion and tenure standards of the distant past may not be comparable with those more recent. We generally define the probationary period as the seven years up to and including the year tenure was granted. For individuals tenured early, we include any articles that may have been published prior to the doctorate. Another issue involves publication lags in our discipline. An article accepted for publication may not appear in print for many months. However, it is common for the tenure (or promotion) process to begin in the year prior to the granting of tenure or promotion. For this reason, we chose to include publications in the year of tenure (or promotion), but not in the subsequent year. Results discounted for co-authorship are available from the authors.

Information from 308 institutions is included in the analysis. This comprises 1939 individuals who were awarded tenure and 1080 individuals who were promoted to professor. CVs were collected between 2011 and 2012. In some cases, online CVs were not current. We therefore supplemented our publication data with EconLit. In this manner, our data are complete through the end of 2011.
Because tenure and promotion standards vary according to programme quality, we rely on the ranking of American institutions according to pages published in the top-50 journals in economics between 1994 and 2009, created by McPherson (2012). Following earlier work, this ranking divides 240 programmes into four quality tiers. Adopting the terminology from professional baseball, there are 19 schools in the 'major leagues', 30 in 'AAA', 50 in ' AA ' and the remaining 141 in ' A '. In addition to these 240 top research programmes, we include 68 other programmes that offer graduate degrees or were previously ranked in the top 240 .

We account for the quality of research output by using several recent rankings of economics journals Kalaitzidakis et al. (2003), Engermann and Wall (2009), Kodrzycki and Yu (2006) - as well as the
widely used but older ranking by Laband and Piette (1994). We divide peer-reviewed journals into four quality tiers: the top-ten journals, the next 40 journals, the next 50 journals and all other peer-reviewed journals.

Our data include information on 358 individuals tenured at major league programmes, 353 from AAA programmes, 379 from AA programmes, 688 from A programmes and 161 from unranked programmes. Regarding promotion to full professor, our data comprise 237, 213, 219, 332 and 79 individuals from major league, AAA, AA, A and unranked programmes, respectively.

## III. Results and Discussion

The results are broadly similar regardless of the journal ranking that is used; the results presented in Table 1 are based on the Kalaitzidakis et al. (2003) ranking; comparable results involving the other journal rankings are available from the authors. As shown in Table 1, probationary faculty at major league programmes average 3.44 top-ten publications. The averages for AAA, AA, A and unranked programmes are 2.16, 1.10, 0.51 and 0.24 , respectively. These averages are statistically different from each other, with confidence levels generally above $99 \%$. These figures are similar to those of Liner and Sewell (2009) but are more specific and complete.

As one moves down the programme rankings, faculty production tends to shift towards articles outside the top tiers. In addition, the total number of articles produced by major league, AAA, AA, A and unranked programmes is $8.75,8.20,8.98,7.23$ and 6.50, respectively, indicating that the total number of articles produced for tenure does not differ greatly according to programme ranking, especially within the top 100 .

Our data also allow us to examine the research productivity of successful candidates for promotion to professor. Table 2 presents the averages by ranking of programmes. One interesting finding is that the quality of the productivity observed for this second promotion is generally less than that observed for tenure candidates. The average number of top-ten articles is $2.42,1.77,0.62,0.19$ and 0.00 for the major league, AAA, AA, A and unranked programmes, respectively. Compared to the probationary years, more total articles are produced during this period in programmes outside the major league category. The same pattern of shifting towards publication in lowerranked journals as one moves down the programme ranking that was observed with the successful tenure candidates is repeated here.

Table 1. Articles for tenure

|  | Kalaitzidakis et al. (2003) ranking |  |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| Programme ranking | Gender | Top-10 | Next 40 | Next 50 | Other journals | Total articles |
| Major leagues | Female | 2.55 | 2.55 | 0.55 | 1.82 | 7.48 |
|  | $n=56$ | $(1.94)$ | $(2.27)$ | $(1.08)$ | $(1.48)$ | $(3.32)$ |
|  | Male | 3.61 | 2.67 | 0.52 | 2.19 | 8.99 |
|  | $n=302$ | $(2.36)$ | $(2.50)$ | $(0.97)$ | $(2.92)$ | $(5.10)$ |
|  | Total | 3.44 | 2.65 | 0.53 | 2.13 | 8.75 |
|  | $n=358$ | $(2.33)$ | $(2.47)$ | $(0.99)$ | $(2.75)$ | $(4.89)$ |
| AAA | Female | 1.43 | 3.02 | 0.64 | 2.18 | 7.27 |
|  | $n=56$ | $(1.57)$ | $(2.48)$ | $(1.14)$ | $(2.18)$ | $(3.62)$ |
|  | Male | 2.30 | 2.90 | 1.01 | 2.16 | 8.37 |
|  | $n=297$ | $(1.91)$ | $(2.23)$ | $(1.60)$ | $(2.01)$ | $(3.73)$ |
|  | Total | 2.16 | 2.92 | 0.95 | 2.16 | 8.20 |
|  | $n=353$ | $(1.88)$ | $(2.27)$ | $(1.54)$ | $(2.04)$ | $(3.73)$ |
|  | Female | 0.92 | 2.21 | 1.23 | 3.68 | 8.03 |
|  | $n=71$ | $(1.18)$ | $(1.89)$ | $(1.48)$ | $(2.78)$ | $(4.00)$ |
|  | Male | 1.14 | 3.08 | 1.31 | 3.67 | 9.20 |
|  | $n=308$ | $(1.51)$ | $(2.42)$ | $(1.49)$ | $(3.44)$ | $(5.23)$ |
|  | Total | 1.10 | 2.92 | 1.30 | 3.67 | 8.98 |
|  | $n=379$ | $(1.46)$ | $(2.36)$ | $(1.49)$ | $(3.32)$ | $(5.04)$ |
|  | Female | 0.50 | 1.13 | 1.09 | 3.87 | 6.60 |
|  | $n=179$ | $(1.00)$ | $(1.27)$ | $(1.22)$ | $(3.90)$ | $(4.11)$ |
|  | Male | 0.51 | 1.54 | 1.26 | 4.13 | 7.44 |
|  | $n=509$ | $(1.04)$ | $(1.81)$ | $(1.41)$ | $(3.51)$ | $(4.69)$ |
|  | Total | 0.51 | 1.44 | 1.22 | 4.06 | 7.23 |
|  | $n=688$ | $(1.03)$ | $(1.69)$ | $(1.36)$ | $(3.61)$ | $(4.56)$ |
|  | Female | 0.27 | 0.45 | 0.76 | 3.64 | 5.12 |
|  | $n=33$ | $(0.76)$ | $(0.87)$ | $(0.97)$ | $(3.34)$ | $(4.37)$ |
|  | Male | 0.23 | 0.96 | 0.86 | 4.81 | 6.86 |
|  | $n=128$ | $(0.73)$ | $(1.37)$ | $(1.23)$ | $(4.59)$ | $(5.43)$ |
|  | Total | 0.24 | 0.86 | 0.84 | 4.57 | 6.50 |
|  | $n=161$ | $(0.74)$ | $(1.29)$ | $(1.18)$ | $(4.38)$ | $(5.26)$ |

Note: Standard deviations in parentheses.

Female faculty members tend to publish fewer top-ten articles during their probationary periods than males, differences that are statistically significant for major league and AAA programmes. Women also publish significantly fewer total articles at programmes of all ranks. Women promoted at major league, AAA and A programmes publish significantly fewer top-ten articles than males in the years between tenure and promotion; there is no difference in total articles. These differences may suggest that to retain relatively scarce female faculty members, many departments are willing to trade off some scholarly productivity, especially in top journals. Ginther and Khan (2004) discuss several reasons as to why women are less likely to receive tenure and these may also explain our results. Females may have maternity and child-rearing constraints that are more binding. Additionally, it may be that women do not receive as many teachingload and service reductions or may find fewer
networking opportunities. Part of the difference may be that females are more likely to substitute higher-quality teaching or service for publications, data not typically part of an academic CV.

## IV. Conclusions

Beyond the work of Liner and Sewell (2009), there is very little comparative information on research output needed for promotion and for tenure in US economics departments. Using CVs, our work is able to greatly expand the scope of their work. Individual faculty members and administrators may find our results helpful. These results help define the range of quantity and quality of publications in which successful candidates for tenure and for promotion operate. Having an idea of the dimensions of this range would be helpful to individuals eager to see how their records measure up. Similarly, these results may allow

Table 2. Articles for promotion to professor

| Programme ranking | Kalaitzidakis et al. (2003) ranking |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gender | Top-10 | Next 40 | Next 50 | Other journals | Total articles |
| Major leagues | Female | 1.74 | 2.26 | 0.35 | 2.06 | 6.41 |
|  | $n=34$ | (1.60) | (2.06) | (0.60) | (1.86) | (3.52) |
|  | Male | 2.53 | 1.96 | 0.34 | 1.96 | 6.78 |
|  | $n=203$ | (2.07) | (1.96) | (0.82) | (2.48) | (4.57) |
|  | Total | 2.42 | 2.00 | 0.34 | 1.97 | 6.73 |
|  | $n=237$ | (2.02) | (1.97) | (0.79) | (2.40) | (4.43) |
| AAA | Female | 0.74 | 3.13 | 0.39 | 2.83 | 7.09 |
|  | $n=23$ | (0.96) | (2.38) | (0.78) | (3.21) | (3.58) |
|  | Male | 1.89 | 3.30 | 0.95 | 2.66 | 8.81 |
|  | $n=190$ | (1.92) | (2.76) | (1.52) | (3.31) | (5.14) |
|  | Total | 1.77 | 3.28 | 0.89 | 2.68 | 8.62 |
|  | $n=213$ | (1.87) | (2.72) | (1.46) | (3.29) | (5.02) |
| AA | Female | 0.35 | 2.74 | 1.71 | 5.38 | 10.18 |
|  | $n=34$ | (1.41) | (2.59) | (1.78) | (4.45) | (6.46) |
|  | Male | 0.67 | 3.04 | 1.40 | 5.41 | 10.51 |
|  | $n=185$ | (1.17) | (2.47) | (1.56) | (4.85) | (6.02) |
|  | Total | $0.62$ | 2.99 | 1.45 | 5.40 | 10.46 |
|  | $n=219$ | $(1.21)$ | (2.48) | (1.60) | (4.78) | (6.08) |
| A | Female | 0.01 | 1.18 | 0.88 | 5.37 | 7.45 |
|  | $n=67$ | (0.12) | (1.34) | (1.08) | (7.80) | (7.93) |
|  | Male | 0.24 | 1.35 | 1.24 | 5.58 | 8.41 |
|  | $n=265$ | (0.67) | (1.73) | (1.46) | (4.62) | (5.38) |
|  | Total | 0.19 | 1.32 | 1.17 | 5.54 | 8.21 |
|  | $n=332$ | (0.61) | (1.65) | (1.40) | (5.40) | (5.98) |
| Unranked | Female | 0.00 | 0.56 | 1.56 | 4.11 | 6.22 |
|  | $n=18$ | (0.00) | (0.62) | (2.23) | (5.53) | (7.54) |
|  | Male | 0.00 | 0.66 | 1.05 | 6.33 | 8.03 |
|  | $n=61$ | (0.00) | (0.93) | (1.20) | (5.84) | (5.90) |
|  | Total | 0.00 | 0.63 | 1.16 | 5.82 | 7.62 |
|  | $n=79$ | (0.00) | (0.86) | (1.50) | (5.81) | (6.31) |

Note: Standard deviations in parentheses.
programmes and institutions to evaluate individual candidates more consistently and fairly.

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