

Publishing Behavior of Individuals and Most Prolific Authors in the Economics Literature

Kee H. Chung*

Memphis State University

Raymond A. K. Cox

Central Michigan University

Albert A. Okunade

Memphis State University

This paper examines the publication behavior of individuals and identifies the most prolific authors in the top 20 economics journals. This study finds that the majority of authors (57.7 percent) published only once in these journals from 1963 to 1988, while 11.5 percent of these authors contributed more than five times. Among the articles published by these authors, 68.1 percent are single authored, 27.3 percent are biauthored, and 4.4 percent are triauthored. The average percentage of one time authors (72.5) for individual journals is greater than that (57.7) for all 20 journals as a whole, suggesting that authors tend to diversify their publications across different journals. The rankings of top economists reinforce the notion that quantity is not always quality. Three of the top 50 economists won Nobel prizes, while four of the second 50 won Nobel prizes. Large numbers of Nobel Laureates are not ranked. Last, this paper finds that the top three graduate programs have produced more than 50 percent of the top 100 scholars, indicating strong institutional dominance in the production of the most prolific writers.

INTRODUCTION

Various aspects of the production and distribution of the economics literature have been studied. Siegfried (1972), Niemi (1975), Davis and Papanek (1984), Hirsch *et al.* (1984), Blair *et al.* (1986), Laband (1986a, 1986b), and Tschirhart (1989) investigate institutional contributions to economics journals and their impact on the reputation of academic departments. Sun (1975) and Laband (1985) document the doctoral origins of authors. The relative quality of economics journals and their impact on the economics literature are examined by Moore (1972), Hawkins *et al.* (1973), Bush *et al.* (1974), Odagiri (1977), and Liebowitz and Palmer (1984), and others. Finally, Tuckman and Leahey (1975), Tuckman *et al.* (1977), Hamermesh *et al.* (1982), Diamond (1986), and Sauer (1988) measure the monetary value of research outputs.

This study examines the publication behavior of individuals and identifies the most prolific authors in major economics journals (along with the authors' doctoral origins and current academic affiliations). While the publication behavior and ranking of economics departments previously have been studied using different criteria, there is scanty evidence

*The authors are grateful to N. Gregory Mankiw, Howard P. Tuckman, Michael Gootzeit, four anonymous referees, and the editor (Scott M. Fuess, Jr.) for their helpful comments on earlier versions of this paper. They also wish to thank J. Forjan, Y. Kang, M. McCorry, G. Miller, B. Pray and D. Lafrain for their able research assistance.

on individual contributions to the literature. The knowledge of the publication behavior of individuals can serve many useful purposes. For instance, if it is assumed that the publishing behavior of individuals is stable over time, it will help assess the likelihood of multiple publications by individuals in the future. In addition, such knowledge provides valuable information about the implicit strategies of economic researchers in selecting their research outlets, the behavioral aspects of joint work (i.e., co-authored paper), and the relationship between the publication count and an author's stage in the career cycle.

Quandt (1976) and Medoff (1989) identify the top economists using citation counts. Although citation-based ranking has several advantages over that based on journal publications, the former is nonetheless limited.¹ This study reports the ranking of economists based on the number of journal publications from 1963 to 1988. Ranking based on journal publication counts is by no means superior to the one using citation counts.² Rather, the goal in this research is to provide some supplementary information on the rankings of economists and thus to complement the studies of Quandt (1976) and Medoff (1989). Hansen and Weisbrod (1972) previously identify top performers in the economics literature based upon article publications for the 1886-1965 time period. The present study, covering the 1963-1988 period, together with the study by Hansen and Weisbrod, provide considerable evidence regarding the most prolific contributors to the economics literature during the last century.

DATA DESCRIPTION

Data for this study came from 20 leading economics journals, as given in Liebowitz and Palmer (1984). They find that articles appearing in a small core of journals account for the majority of references in the economics literature.³ According to their study, articles in the tenth ranked journal received 15.99 percent of the impact-adjusted citations of the first ranked journal; this figure is 9.59 percent for the 20th ranked journal, and 4.20 percent for the 30th ranked journal. Authorship for all contributions as reported in the *Journal of Economic Literature* is compiled for each of these 20 top journals for the last 26 years, 1963 (inaugural year of *Journal of Economic Literature*) through 1988.⁴

¹There are many limitations to using citation counts in evaluating research output of individuals. First, the main data source of the citation analysis, the *Social Sciences Citation Index*, credits only the first author in a co-authored paper. Second, citation counts may not reflect the contribution of authors as the relative importance of citations in different journals tends to differ. This makes the value of citations in major economics journals greater than that in lesser-known journals. Furthermore, self-citations count as much as do the citations of others. Third, the citation-based rankings tend to overstate the contribution of authors publishing controversial papers and survey articles because such works are more likely to be cited. Finally, the citation method may be inappropriate for comparing the contribution of authors for a given period because citations reflect work done over the course of a career and thus will overestimate the contribution of individuals who have published from much earlier periods. See Davis and Papanek (1984) and Medoff (1989) for the discussion of pros and cons of the citation-based and publication-based ranking methods.

²It should be noted, however, that Moore (1973) finds that the number of publications in the top journals is correlated strongly with the rating of the program by the American Council on Education (ACE).

³See Liebowitz and Palmer (1984, pp. 78-82) for the detailed description of different ranking procedures.

⁴Although the first volume of *Journal of Economic Literature* (the journal was called *Journal of Economic Abstracts* from 1963 to 1968) was published in 1963, the journal began to carry authorship information in 1966. Thus, authorship information for the publications from 1963 to 1965 is obtained

Table 1 shows the total number of papers in each journal, the number of authors contributing to each journal, and the proportion of authors by the number of papers.⁵ The size of the data base and the voluminous contributions in the 20 top economics journals are reflected in the table. These journals published 27,598 papers by 13,576 authors in the 26 years studied. Among these papers, 68.1 percent are single authored, 27.3 percent are biauthored, and 4.4 percent are triauthored papers. Among the contributing authors, 57.7 percent published once—only 11.5 percent published more than five times in the 20 journals. The number of papers written by one time authors is 6,115. Among these, 59.4 percent (3,634 papers) are single authored, 33.1 percent (2,025 papers) are biauthored, and 7.2 percent (440 papers) are triauthored. The low proportion (59.4 percent) of single authored papers for the papers written by one time authors as compared to that (68.1 percent) for the entire sample may reflect the fact that many of these one time authors are graduates who shared the authorship of papers resulting from dissertation research with their thesis advisors.

Because the authors who entered the profession earlier are likely to have more publications than late comers, the frequency distribution of publications for the entire study period is calculated for those who published during the first half (1963-1975) of the study period. During the entire study period these authors (6,228 authors) published 17,290 papers in the 20 journals; 12,480 (72.2 percent) are single authored, 4,182 (24.2 percent) are biauthored, and 595 (3.4 percent) are triauthored. The proportion of single authored papers for these authors is greater than that (68.1 percent) for the entire sample, suggesting that economists tend to write more single authored articles as they become more experienced and scholarly mature. Among 6,228 authors, 3,104 (49.8 percent) authors published one paper, 988 (15.9 percent) authors published two papers, 509 (8.2 percent) authors published three papers, 307 (4.9 percent) authors published four papers, 230 (3.7 percent) authors published five papers, and 1,090 (17.5 percent) authors appeared more than five times in the 20 journals. The proportion (50.2 percent) of authors with multiple publications among these authors is greater than that (42.3 percent) for the entire sample, reflecting that these authors have had more time to publish than have recent graduates.

Percentages of one time authors range from 64.9 for the *Journal of Financial Economics* to 81.5 for the *Journal of Economic Literature* for the entire sample. The higher average percentage (72.5) of a single publication for individual journals compared to that (57.7) of all 20 journals as a whole suggests that authorship is concentrated among top scholars, but that individual authors tend to diversify their publications by publishing across different journals.

The diversification of publishing outlets by these authors may be attributable to several factors. First, the marginal return to an additional article in the same journal may be less than that of a first article in other journals with comparable reputation (Schweser, 1983). Second, academic colleagues may view continuous authorship of papers by an individual in one journal as favoritism by that journal's editor. Third, spreading publica-

directly from each journal. For journals created after 1963 the study periods are respective inaugural years to 1988. Main papers, short papers (notes), comments, and replies are included in the data.

⁵In the case of multiple authorship, the normal count is used, i.e., each author of an article receives full credit. The data are aggregated for $n > 10$ for succinctness.

Table 1—Frequency Distribution of Authors by Number of Publications, 1963-1988

Journal	Number of Papers	Number of Authors	Frequency Distribution in %									
			1	2	3	4	5	6	7	8	9	>9
<i>American Economic Review</i>	4,465	3,324	67.5	16.3	6.8	3.2	2.8	1.3	0.7	0.4	0.3	0.8
<i>Journal of Political Economy</i>	2,074	1,743	71.3	16.8	6.4	2.5	1.3	0.9	0.4	0.2	0.1	0.3
<i>Econometrica</i>	2,222	1,741	68.0	16.0	7.0	3.2	1.5	1.6	1.1	0.6	0.3	0.8
<i>Journal of Monetary Economics</i>	809	651	73.4	15.1	5.2	1.8	1.2	1.1	0.5	0.6	0.2	0.9
<i>Journal of Economic Theory</i>	1,279	1,005	67.9	15.9	6.9	4.0	2.7	1.2	0.5	0.4	0.2	0.4
<i>Review of Economic Studies</i>	1,324	1,147	73.1	14.9	6.0	3.1	1.1	0.6	0.6	0.3	0.2	0.1
<i>International Economic Review</i>	1,232	1,165	75.9	13.7	5.2	3.0	1.0	0.7	0.2	0.2	0.1	0.1
<i>Bell Journal of Economics</i>	740	767	75.6	15.3	4.7	2.2	1.3	0.8	0.1	0.0	0.0	0.0
<i>Journal of Finance</i>	2,582	1,998	65.4	17.0	6.8	3.9	2.6	1.3	0.7	0.5	0.5	1.4
<i>Journal of Econometrics</i>	833	752	71.4	14.9	6.1	2.4	2.5	0.5	0.8	0.3	0.3	0.8
<i>Scandinavian Journal of Economics</i>	738	637	78.3	11.0	6.3	1.3	1.4	0.9	0.5	0.2	0.0	0.2
<i>Brookings Papers</i>	425	241	65.6	16.2	4.1	3.3	2.5	2.5	1.2	1.2	0.8	2.5
<i>Journal of Public Economics</i>	799	767	74.3	14.7	6.1	2.6	0.7	0.5	0.5	0.0	0.4	0.1
<i>Journal of Financial Economics</i>	392	365	64.9	17.8	7.7	4.1	2.5	1.4	0.8	0.5	0.0	0.3
<i>Review of Economics & Statistics</i>	2,083	2,137	73.4	18.0	5.2	1.6	0.9	0.3	0.2	0.1	0.0	0.1
<i>Journal of American Statistical Association</i>	1,835	1,776	75.1	14.4	5.2	2.3	1.1	0.7	0.5	0.2	0.2	0.3
<i>Quarterly Journal of Economics</i>	1,339	1,279	77.1	15.1	5.0	1.5	0.6	0.2	0.2	0.1	0.1	0.2
<i>Journal of Human Resources</i>	771	807	77.4	14.5	3.3	2.7	1.4	0.6	0.0	0.0	0.0	0.0
<i>Journal of Economic Literature</i>	312	287	81.5	11.5	6.3	0.3	0.0	0.0	0.0	0.0	0.0	0.3
<i>Economics Journals</i>	1,344	1,223	73.6	17.1	5.2	2.5	0.8	0.2	0.2	0.3	0.0	0.2
All Journals	27,598	13,576	57.7	16.4	7.1	4.4	2.9	2.0	1.7	1.2	1.1	5.4

tions among many top journals may reflect the author's implicit strategy of seeking professional recognition across a broad spectrum of the professional readership audience. Last, akin to the diversified portfolio theory in finance, it may be that the risk of rejection an author faces when submitting an additional paper to the same top journal rises as submissions increase. That is, the paper may receive favorable evaluation by the reviewers while the editor's strategy may be to broaden the scope of authorship. This scenario makes it more likely for an editor to be less inclined to publish another article by the same author, especially if the first paper had not enhanced the journal's professional image or ranking through citation by others (Laband *et al.*, 1990).

The table also shows that the journals with narrower fields or selection processes (e.g., *Journal of Financial Economics*, *Journal of Finance*, and *Brookings Papers*) exhibit higher percentages (i.e., 35.1 percent, 34.6 percent, and 34.4 percent) of authors with multiple publications. The percentage of authors with multiple publications among the journals with broad audiences and relatively open selection processes appears to be correlated highly with the number of papers that the journal publishes in a given year. For instance, *American Economic Review*, which published 171.7 papers per year, and *Econometrica*, which published 85.5 papers per year, exhibit large percentages of authors with multiple publications.⁶ In contrast, the journals with smaller numbers of papers per year (e.g., *International Economic Review* with 47.4 papers per year, *Bell Journal of Economics* with 38.9 papers per year, *Scandinavian Journal of Economics* with 28.4 papers per year, and *Journal of Economic Literature* with 12.0 papers per year) exhibit smaller percentages of authors with multiple publications. The percentage of authors with multiple publications appears to depend also on journal-specific policies regarding notes, comments, and replies. The journals (e.g., *Journal of Political Economy*, *Journal of Monetary Economics*, *International Economic Review*, and *Journal of Economic Literature*) that rarely publish notes, comments, and replies exhibit lower percentages of authors with multiple publications than do the journals (e.g., *American Economic Review*, *Econometrica*, and *Journal of Economic Theory*) that devote considerable space to such papers.

Finally, it is interesting to note that journals known for exhibiting higher institutional concentrations (e.g., *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economics and Statistics*) among their authors do not exhibit higher individual concentrations among their contributors. Siegfried and Zak (1979) report that, during the 1970-1974 period, 8.4 percent, 14.1 percent, and 11.1 percent of pages in the *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economics and Statistics* are accounted for by faculty members from Chicago, Harvard, and Harvard, respectively, whereas the proportional contributions of these faculty members to other prominent economics journals (e.g., *American Economic Review* and *Econometrica*) are substantially smaller (i.e., 3.8 percent from Harvard and 2.7 percent from Chicago for *American Economic Review* and 5.2 percent from Harvard and 3.8 per-

⁶The average number of papers per year is calculated by dividing the total number of papers in Table 1 by (1989 - the journal's inaugural year) for *Bell Journal of Economics*, *Brookings Papers*, *Journal of Economic Theory*, *Journal of Econometrics*, *Journal of Financial Economics*, *Journal of Human Resources*, *Journal of Public Economics*, and *Journal of Monetary Economics*; and dividing the total number of papers in Table 1 by 26 for all other journals.

cent from Chicago for *Econometrica*). Contrary to their high institutional concentrations among their contributors, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economics and Statistics* exhibit a low proportion of authors with multiple contributions.

MOST PROLIFIC AUTHORS AND THEIR INSTITUTIONAL AFFILIATIONS

The authors appearing most frequently in major economics journals, along with their doctoral origins and current academic affiliations are listed in Table 2. The primary sources of information on their doctoral origins and current employers are the *National Faculty Directory* (1989), *Dissertation Abstracts International* (1989), and *Directory of Members* (1990). For authors not listed in these sources, their most recent publications were traced to identify their current employers and either university catalogs or current employers were used to identify their doctoral origins.

The number of adjusted appearances takes into account co-authorship, i.e., an author earns fractional credit, $1/n$, for a co-authored paper with n authors. The adjusted appearances may be interpreted usefully in the context of a recent empirical finding by Sauer (1988, p. 855) that "an individual's (monetary) return from a co-authored paper with n authors is approximately $1/n$ times that of a single-authored paper." For total appearances, the leading contributors are Joseph E. Stiglitz (104), Martin S. Feldstein (99), Paul A. Samuelson (70), William J. Baumol (62), and Franklin M. Fisher (57). Martin S. Feldstein (83.0) heads the list for adjusted appearances, followed by Joseph E. Stiglitz (72.0), Paul A. Samuelson (64.7), Peter C. Fishburn (47.0), and Franklin M. Fisher (46.7). When the proportion of multiple-authored papers among the papers written by the top 100 authors are compared with that of the entire sample, the former (52.2 percent) is greater than the latter (31.9 percent), suggesting that these top contributors may have achieved the large number of appearances partly through co-authorships.

The rankings of economists seem to reinforce the notion that quantity is not always quality. Three of the top 50 economists won Nobel prizes. Four economists of the second 50 won Nobel prizes. Many Nobel Laureates are not ranked.⁷ This result should not come as a surprise once it is recognized that winning a Nobel prize requires a significant landmark contribution to the field and worldwide professional recognition in addition to publishing in top journals. Furthermore, many non-U.S. and non-British Nobel Laureates published their works in journals other than those indexed by the *Journal of Economic Literature*. As a result, their contributions are not captured by publication counts in the current research's top 20 journals.⁸ In addition, it should be noted that the data analyzed here span the 1963-1988 period and omit pre-1963 as well as post-1988 contributions. In any case, the inability of the quantitative scoring method to capture all of the Nobel

⁷It is particularly interesting to note that Nobel Laureates such as Herbert A. Simon (in 1978), Lawrence Klein (in 1980), Gerard Debreu (in 1983), Merton H. Miller (in 1990), and Ronald Coase (in 1991) are not included in the top 100 list.

⁸Cases in point include Nobel winners such as Gunnar Myrdal (Sweden), L. Kantorovich (the former U.S.S.R.), Bertil Ohlin (Sweden), Maurice Allais (France), and Trygve Haavelmo (Norway).

Table 2—100 Most Prolific Authors in 20 Major Economics Journals, 1963-1988

Rank	Author	Appearance		Ph.D From	Current Employer
		Total	Adjusted		
1	J.E. Stiglitz	104	72.0	MIT	Stanford
2	M.S. Feldstein	99	83.0	Oxford	Harvard
3	P.A. Samuelson*	70	64.7	Harvard	MIT
4	W.J. Baumol	62	44.9	London S. Eco.	Princeton
5	F.M. Fisher	57	46.5	Harvard	MIT
6	P.C. Fishburn	53	47.0	Case Western	AT&T
7	S.J. Turnovsky	50	34.0	Harvard	U. of Washington
8	R.J. Gordon	46	44.0	MIT	Northwestern
9	R.E. Hall	46	42.0	MIT	Stanford
10	P. Schmidt	46	32.5	Michigan St.	Michigan St.
11	E.F. Fama	45	36.3	Chicago	Chicago
12	A. Zellner	44	33.3	UC Berkeley	Chicago
13	L.H. Summers	44	30.7	Harvard	Harvard
14	R.J. Barro	42	35.0	Harvard	Harvard
15	P.A. Diamond	42	33.7	MIT	MIT
16	A.H. Meltzer	42	28.7	UCLA	Carnegie Mellon
17	J.J. Laffont	42	23.7	Harvard	U. of Toulouse
18	V.L. Smith	41	33.8	Harvard	Arizona
19	T.J. Sargent	40	29.8	Harvard	Stanford
20	D.W. Jorgenson	39	26.3	Harvard	Harvard
21	F. Modigliani*	39	26.3	New Sch. Soc.	MIT
22	R.E. Quandt	38	23.3	Harvard	Princeton
23	H.G. Johnson	37	33.3	Harvard	Deceased
24	A.S. Blinder	37	29.0	MIT	Princeton
25	G.A. Akerlof	37	26.7	MIT	UC Berkeley
26	S.A. Ross	37	25.3	Harvard	Yale
27	E. Sheshinski	37	21.8	MIT	Hebrew
28	A. Razin	37	19.3	Chicago	Tel Aviv
29	E.S. Phelps	36	28.8	Yale	Columbia
30	E. Helpman	36	24.3	Harvard	Tel Aviv
31	H. Levy	36	24.0	Hebrew	Florida
32	J.N. Bhagwati	36	22.8	MIT	Columbia
33	R.A. Pollak	35	26.3	MIT	Pennsylvania
34	G.C. Chow	34	31.0	Chicago	Princeton
35	T. Amemiya	34	29.8	Johns Hopkins	Stanford
36	J.A. Hausman	34	20.0	Oxford	MIT
37	D. Levhari	34	18.5	MIT	Hebrew
38	A.K. Sen	33	31.3	Cambridge	Harvard
39	P.C. Phillips	32	28.5	London S. Eco.	Yale
40	R.C. Fair	32	28.3	MIT	Yale
41	S. Fischer	32	27.7	MIT	World Bank
42	G.S. Maddala	32	20.8	Chicago	Florida
43	R.J. Zeckhauser	32	20.0	Harvard	Harvard
44	S.J. Grossman	32	19.0	Chicago	Pennsylvania
45	C. Blackorby	32	15.7	Johns Hopkins	British Columbia
46	R.M. Solow*	31	24.1	Harvard	MIT
47	A.K. Dixit	31	23.7	MIT	Princeton
48	D.J. Aigner	31	21.5	UC Berkeley	UC Irvine
49	V.K. Smith	31	20.8	Rutgers	UNC Raleigh
50	J. Whalley	31	20.8	Yale	Western Ontario
51	J.R. Green	31	19.5	Rochester	Harvard
52	E.J. Mishan	30	30.0	Chicago	City U. London
53	J. Tobin*	30	27.8	Harvard	Yale
54	R. Schmalensee	30	26.8	MIT	MIT
55	M.L. Wachter	30	23.3	Harvard	Pennsylvania
56	T.J. Wales	30	19.0	MIT	British Columbia
57	B.M. Friedman	29	26.0	Harvard	Harvard
58	J.L. Stein	29	25.0	Yale	Brown
59	D.P. Baron	29	24.0	Indiana	Stanford
60	L.F. Lee	29	22.2	Rochester	Minnesota
61	R. Roll	29	21.9	Chicago	UCLA
62	M. Kurz	29	21.7	Yale	Stanford

Table 2 (continued)—100 Most Prolific Authors in 20 Major Economics Journals

Rank	Author	Appearance		Ph.D From	Current Employer
		Total	Adjusted		
63	J.M. Buchanan*	29	21.5	Chicago	George Mason
64	I. Friend	29	17.0	American U.	Deceased
65	M.C. Kemp	29	16.3	Johns Hopkins	South Wales
66	R.H. Litzenberger	29	15.6	North Carolina	Pennsylvania
67	B.C. McCallum	28	27.5	Rice	Carnegie Mellon
68	G.J. Stigler	28	26.0	Chicago	Deceased
69	W.E. Diewert	28	21.8	UC Berkeley	British Columbia
70	O.D. Hart	28	20.3	Princeton	MIT
71	M.L. Weitzman	27	26.0	MIT	Harvard
72	B. Balassa	27	24.3	Yale	Johns Hopkins
73	E.E. Leamer	27	23.3	Michigan	UCLA
74	Z. Griliches	27	21.5	Chicago	Harvard
75	J.A. Frenkel	27	20.8	Chicago	Chicago
76	S. Rosen	27	20.8	Chicago	Chicago
77	K. Brunner	27	15.8	Zurich	Rochester
78	R.H. Haveman	27	15.2	Vanderbilt	Wisconsin
79	W. Poole	26	25.0	Chicago	Brown
80	J.M. Griffin	26	22.0	Pennsylvania	Texas A & M
81	R.B. Wilson	26	21.3	Harvard	Stanford
82	R. Sato	26	19.3	Johns Hopkins	NYU
83	P.K. Pattanaik	26	17.7	U. of Delhi	UC Riverside
84	B.G. Malkiel	26	16.9	Princeton	Princeton
85	E. Burmeister	26	16.5	MIT	Virginia
86	A. Sandmo	25	23.5	Norwegian Sch.	Norwegian Sch.
87	J. Conlisk	25	21.7	Stanford	UC San Diego
88	A.B. Abel	25	21.5	MIT	Pennsylvania
89	R. Dornbusch	25	21.2	Chicago	MIT
90	N.G. Mankiw	25	16.3	MIT	Harvard
91	H.S. Rosen	25	16.2	Harvard	Princeton
92	O.C. Ashenfelter	25	15.8	Princeton	Princeton
93	J.H. Dreze	25	15.7	Columbia	Louvain
94	P.S. Dasgupta	25	13.8	Cambridge	Stanford
95	J. Tirole	25	13.4	MIT	MIT
96	E.J. Elton	25	13.0	Carnegie Mellon	NYU
97	R. Eisner	24	21.0	Johns Hopkins	Northwestern
98	R. Lucas, Jr.	24	20.8	Chicago	Chicago
99	G.A. Calvo	24	19.8	Yale	IMF
100	K.J. Arrow*	24	19.2	Columbia	Stanford

*Nobel Laureates

Laureates as prolific authors may reflect the need to incorporate the qualitative aspects of rankings.

The results in Table 2 also show a high concentration of schools from which the most productive authors received their doctoral degrees. Twenty of the top 100 contributors graduated from Harvard, 20 from MIT, 15 from Chicago, six from Yale, and five from Johns Hopkins. The top three schools produce more than half (i.e., 55) of the top 100 scholars, and the top 20 schools listed in Blank (1991) account for three-fourths (75) of the top 100. This result is consistent with previous findings regarding the high concentration of research output among the graduates of a small number of economics programs. For example, Hirsch *et al.* (1984) report that the top 25 programs account for 55 percent of total published pages in the 24 leading economics journals from 1974 to 1983. Moreover, Hogan (1986) reports that the combined total graduates of the top four graduate

programs account for 43 percent of the total pages in three leading journals from 1970 to 1979.

The high contribution achieved by the graduate programs of Harvard, MIT, and Chicago in the production of outstanding economists may imply that these institutions provide an educational environment for graduate study that is particularly conducive to the production of prolific scholars. Alternatively, it could reflect the fact that the reputations of these institutions enable them to attract graduate students with outstanding potentials. It is natural for students to select the most prestigious of graduate schools in the hope that it will enhance their employment probabilities in the various post-Ph.D. job markets. At any rate, the above observation strongly suggests that consistent production of prolific researchers in economics could be enhanced by directing the prospective (and capable) students to these schools for their doctorate degrees in economics.

In contrast to the high concentration of the origins of their doctoral degrees, current affiliations of these top 100 scholars are somewhat less concentrated. For instance, 11 of the 100 contributing scholars are at Harvard, ten are at MIT, nine are at Stanford, eight are at Princeton, five are at Chicago, and five are at Pennsylvania. The top three employers (Harvard, MIT, and Stanford) have 30 of the top 100 scholars.

Finally, the top 20 of the most prolific authors in each of the 20 journals are investigated. (The results are available on request from the authors.) Heading the lists are Joseph E. Stiglitz in *American Economic Review*, *Review of Economic Studies*, and *Quarterly Journal of Economics*; Martin S. Feldstein in *Journal of Political Economy*, *Journal of Public Economics*, and *Review of Economics and Statistics*; and Peter C. Fishburn in *Econometrica* and *Journal of Economic Theory*. Paul A. Samuelson contributed 12 articles in *Journal of Economic Literature*, which reveals his substantial impact on modern economics.

SUMMARY AND CONCLUDING REMARKS

This study finds that the majority of authors (57.7 percent) published only once in the top 20 economics journals, while 11.5 percent of authors contributed more than five times. The greater average percentage (72.5) of one time authors for individual journals compared to that (57.7) for all 20 journals as a whole suggests that authors tend to diversify their publications across different journals. The proportion of single authored papers written by one time authors is lower than that for the entire sample, suggesting that some one time authors may be graduate students of top scholars who shared the authorship of papers resulting from dissertation research. Empirical results also suggest that economists tend to write more single author articles as they become more experienced and scholarly mature.

Journals with narrower fields or selection processes exhibit higher percentages of authors with multiple publications. Among the journals with broad audiences and relatively open selection processes, the percentage of authors with multiple publications appears to be a function of the number of papers that the journal publishes in a given year. The rankings of top economists reinforce the notion that quantity is not always quality. Three of the top 50 economists won Nobel prizes, while four of the second 50 won Nobel prizes. Many Nobel Laureates are not ranked. This paper finds that the top

three graduate programs have produced more than 50 percent of the top 100 scholars, indicating strong institutional dominance in the production of the most prolific writers.

Some important caveats are in order. The rankings of individuals and institutions presented in this study may not reflect the true contributions of individuals or institutions. Any such evaluation would have to go beyond the counting of articles in a selected number of journals. The type of articles published in different journals may differ. Even the articles published in the same journal may have different qualities and contributions to the literature. Because this study makes no attempt to assess the quality or length of articles or their contribution to the economics literature, the rankings presented in this study should be interpreted with some caution. It would be safe to say that the rankings presented in this paper reflect the most frequent contributors in the past and provide some indication regarding the publication pattern among individuals in the future. For example, this study predicts that less than 12 percent of all publishing economics researchers are likely to publish six or more papers in these journals for the next 25 years and less than 0.8 percent are likely to publish 25 or more papers.

REFERENCES

1. Blair, Dudley W., Rex L. Cottle, and Myles A. Wallace, "Faculty Ratings of Major Economics Departments by Citations: An Extension," *American Economic Review*, 76 (March 1986), pp. 264-267.
2. Blank, Rebecca M., "The Effects of Double-Blind Versus Single-Blind Reviewing: Experimental Evidence from the American Economic Review," *American Economic Review*, 81 (December 1991), pp. 1041-1067.
3. Bush, Winston C., Paul W. Hamelman, and Robert J. Staaf, "A Quality Index for Economic Journals," *Review of Economics and Statistics*, 56 (February 1974), pp. 123-125.
4. Cabell, David W.E., *Cabell's Directory of Publishing Opportunities in Business and Economics* (Beaumont, TX: Cabell Publishing Company, 1988).
5. Davis, Paul, and Gustav Papanek, "Faculty Ratings of Major Economics Departments by Citations," *American Economic Review*, 74 (March 1984), pp. 225-230.
6. Diamond, Author M., Jr., "What Is a Citation Worth?" *Journal of Human Resources*, 21 (Spring 1986), pp. 200-215.
7. *Directory of Members* (Tampa, Florida: Financial Management Association, 1990).
8. *Dissertation Abstracts International* (Ann Arbor, Michigan: Universal Microfilms, 1989).
9. Hamermesh, Daniel S., George E. Johnson, and Burton A. Weisbrod, "Scholarship, Citations, and Salaries: Economic Rewards in Economics," *Southern Economic Journal*, 49 (October 1982), pp. 472-481.
10. Hansen, W. Lee, and Burton Weisbrod, "Toward a General Theory of Awards, or, Do Economists Need a Hall of Fame?" *Journal of Political Economy*, 80 (March/April 1972), pp. 422-431.
11. Hawkins, Robert G., Lawrence S. Ritter, and Walter Ingo, "What Economists Think of Their Journals," *Journal of Political Economy*, 81 (July/August 1973), pp. 1017-1032.
12. Hirsch, B.T., R. Austin, J. Brooks, and J.B. Moore, "Economics Departmental Rankings: Comment," *American Economic Review*, 74 (September 1984), pp. 822-826.
13. Hogan, Timothy D., "The Publishing Performance of U.S. Ph.D. Programs in Economics During the 1970s," *Journal of Human Resources*, 21 (Spring 1986), pp. 217-229.
14. Laband, David N., "An Evaluation of 50 'Ranked' Economics Departments: By Quantity and Quality of Faculty Publications and Graduate Student Placement and Research Success," *Southern Economic Journal*, 52 (July 1985), pp. 216-240.

15. _____, "A Ranking of the Top U.S. Economics Departments by Research Productivity of Graduates," *Journal of Economic Education*, 17 (Winter 1986a), pp. 70-76.
16. _____, "A Ranking of the Top U.S. Economics Departments by Research Productivity of Graduates: Reply," *Journal of Economic Education*, 17 (Fall 1986b), pp. 311-314.
17. Laband, David N., Michael T. Maloney, and Robert E. McCormick, "The Review Process in Economics: Some Empirical Findings," *Review of Economics and Statistics*, 72 (February 1990), pp. V-XVII.
18. Liebowitz, Stanley J., and John P. Palmer, "Assessing the Relative Impacts of Economics Journals," *Journal of Economic Literature*, 22 (March 1984), pp. 77-88.
19. Medoff, Marshall H., "The Ranking of Economists," *Journal of Economic Education*, 20 (Fall 1989), pp. 405-415.
20. _____, *National Faculty Directory* (Detroit, Michigan: Gale Research, 1989).
21. Moore, William J., "The Relative Quality of Economics Journals: A Suggested Rating System," *Western Economic Journal*, 10 (June 1972), pp. 156-169.
22. Moore, William J., "The Relative Quality of Graduate Programs in Economics, 1958-1972: Who Published and Who Perished," *Western Economic Journal*, 11 (March 1973), pp. 1-23.
23. Niemi, Albert W., Jr., "Journal Publication Performance During 1970-1974: The Relative Output of Southern Economics Departments," *Southern Economic Journal*, 42 (July 1975), pp. 97-106.
24. Odagiri, Hiroyuki, "Demand for Economics Journals: A Cross Section Analysis," *Review of Economics and Statistics*, 59 (November 1977), pp. 493-499.
25. Quandt, Richard E., "Some Quantitative Aspects of the Economics Journals Literature," *Journal of Political Economy*, 84 (August 1976), pp. 741-755.
26. Sauer, Raymond D., "Estimates of the Returns to Quality and Coauthorship in Economic Academia," *Journal of Political Economy*, 96 (August 1988), pp. 855-866.
27. Schweser, Carl, "The Economics of Academic Publishing," *Journal of Economic Education*, 14 (Winter 1983), pp. 60-64.
28. Siegfried, John J., "The Publishing of Economic Papers and Its Impact on Graduate Faculty Ratings, 1960-1969," *Journal of Economic Literature*, 10 (March 1972), pp. 31-49.
29. Siegfried, John J., and Thomas A. Zak, "Institutional Inequality in the Publishing of Economics Papers, 1970-74," *Journal of Economic Education*, 10 (Spring 1979), pp. 23-29.
30. Sun, Emily, "Doctoral Origins of Contributors to the American Economic Review, 1960-72," *Journal of Economic Education*, 65 (Fall 1975), pp. 50-55.
31. Tschirhart, John, "Ranking Economics Departments in Areas of Expertise," *Journal of Economic Education*, 20 (Spring 1989), pp. 199-222.
32. Tuckman, Howard P., and Jack Leahey, "What Is an Article Worth?" *Journal of Political Economy*, 83 (October 1975), pp. 951-967.
33. Tuckman, Howard P., James H. Gapinski, and Robert P. Hagemann, "Faculty Skills and the Salary Structure in Academe: A Market Perspective," *American Economic Review*, 67 (September 1977), pp. 692-702.