

Research Productivity in New Zealand

University Economics Departments:

Comment and Update

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Abstract

Bairam (1996, 1997) reports rankings of seven New Zealand university economics departments in terms of their publications in certain refereed journals for the 1988-95 period. These rankings may not be reliable because a correction for the different page sizes of various journals was applied to only one quarter of the output of the New Zealand economists under study and little account was made of differences in the professional impacts of journals. These shortcomings in the methodology used by Bairam are shown to affect the ranking of departments, using evidence from publications in the 1996-98 period. This paper also discusses other potential refinements in the methodology used to rank the research productivity of New Zealand economics departments.

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RESEARCH PRODUCTIVITY IN NEW ZEALAND UNIVERSITY ECONOMICS DEPARTMENTS: COMMENT AND UPDATE

I. Introduction

Ranking economics departments has been a long-standing, and occasionally controversial, concern of academics.¹ The most common measurement criterion for these rankings is the weighted number of pages published in a set of core economics journals, where the weights convert each journal's pages to *American Economic Review* (*AER*) equivalent length and also take account of the professional impact of each journal (Conroy and Dusansky, 1995). Properly done, such rankings can be a useful guide for graduate students and existing and potential faculty members who are interested in the quality of the research environment at particular institutions. Rankings may also have broader significance, as research funding becomes more contestable and as fees-paying students seek more information about the quality of the institution granting their degree.²

It is therefore timely that Bairam (1996, 1997) has recently ranked New Zealand economics departments, for the 1988-95 period. However, the simplified methodology used by Bairam, which was based on an earlier study by Towe and Wright (1995) for Australian universities, may make these rankings a misleading guide. In Bairam's study, economics journals were formed into four groups, which I call here the 'premier journals' ($n=12$), the 'second-tier journals' ($n=23$), the 'third tier journals' ($n=36$) and the 'unranked journals' (with ca. 350 in this group). The first simplifying assumption made by Bairam was that the variation in page sizes across the unranked journals could be ignored, so the correction factor for *AER*-equivalent pages was applied only to the three leading groups of journals. This assumption matters because few journals have as many words per page as the *AER* and the NZ economics departments studied had widely varying proportions of their total journal output in the unranked journals. Hence the total quantity of published research was likely overstated by Bairam, with the exaggeration more for some departments than for others.

Is this source of bias in Bairam's study likely to matter? The average of the page-size correction factors was 0.85 for the premier journals and 0.83 for the second- and third-tier journals, so if pages in unranked journals are of similar size, not applying page-size corrections may have overstated the total number of pages published by about 15 percent. In fact, the unranked journals could have fewer words per page than other journals because there may be less pressure by authors to publish in the unranked journals.³ Thus, the upward bias in Bairam's results may exceed 15 percent. This bias was unevenly distributed, because according to Bairam (1997), Massey and Waikato published over 85 percent of their pages in unranked journals in 1988-95, while less than 65 percent of pages published by Canterbury were in these journals. Hence, Bairam's method favoured Massey and Waikato at the expense of Canterbury.

The second simplification made by Bairam was to just calculate the (per capita) total number of pages published by each department for each group of journals, and an unweighted sum across all four groups of journals. The more sophisticated approach is to weight each page by the professional impact of the particular journal that it is published in and then use this to form a weighted sum of the pages published by a department. However, this is difficult to do for New Zealand economists because most journals that they publish in have not had professional impact factors calculated (Laband and Piette, 1994). Moreover, it would be difficult to calculate these impact factors because they are based on citation counts in the *Social Science Citation Index*, which excludes many of the journals published in by New Zealand economists. Nevertheless, some attempt must be made to weight journals, or at least groups of journals, because otherwise quantity is rewarded at the expense of quality.

In this paper I report new evidence on the publications of New Zealand economics departments, for the period 1996-98. In contrast to Bairam's original study, I correct for variation in page sizes for all groups of journals. This page size correction, which is a purely mechanical one, affects the ranking of departments (Section II). The second contribution of the paper is to implement a method of weighting groups of journals for differences in their perceived quality, which is then used to calculate a weighted sum of pages published by each department in 1996-98 (Section III). The final section of the paper presents some additional suggestions for improvements in the method used to rank the research productivity of New Zealand economics departments.

II. Converting All Journal Pages to Standard Length

The *EconLit* database was used to collect information on the articles published between January 1 1996 and December 31 1998,⁴ by the *current* (as at April 1999) academic staff in each economics department.⁵ Thus, the measure of output does not use the departmental affiliation at the time the article was submitted (a flow) but rather the affiliation at the time of assessment (a stock). This approach follows Bariam (1996, 1997), and Toye and Wright (1995), and is justified by the interest in the *current* composition of academic departments, rather than their past make-up (Conroy and Dusansky, 1995). Staff below the rank of lecturer were excluded, as were staff who spend less than one-half of their time attached to the department.⁶ The new second campus academic staff members (Tamaki and Albany) were also excluded, in keeping with the rules used by Bairam (1996). Details collected on each article included the number of pages, the number of co-authors (pages in each article are divided evenly between co-authors) and the title of the journal where published. The information from *EconLit* was also supplemented with recent publication lists supplied by heads of department, so as to include articles published in late 1998.

To calculate the page size correction factors for the unranked journals, I obtained three full-text pages from articles in recent issues of each journal. These pages were scanned and then imported into a word processor so that an automated word count could be made. The same method was applied to recent pages of the *AER*, and the ratio of words per page in the unranked journal to words per page in the *AER* was used as the page-size correction factor. With over 500 unranked journals now listed by *EconLit*, it was neither desirable nor necessary to form correction factors for all journals. Instead, the sample was restricted to journals that were readily available from the libraries of Auckland University and the University of Waikato (listed in Appendix Table 1). Over 84 percent of the pages published in unranked journals by NZ academics in the 1996-98 period are covered by the sample, while the mean correction factor for the unranked journals (0.72) is used for the remaining 16 percent of pages. The page-size correction factors for the three leading groups of journals are the same as those reported in Table 1 of Bairam (1996).⁷

Table 1 presents per capita pages published by each department in 1996-98, for each group of journals and the unweighted sum of pages across all four groups. There is a large gap in the publication performance between Canterbury and the other departments, with the dominance of Canterbury especially apparent in the ranked journals. There also appears to be considerable reshuffling of department ranks, compared with either the 1988-95 period or the 1992-95 sub-period, although the evidence for these earlier years comes from Bairam (1997), which does not correct for page-sizes of articles in the unranked journals and is for a longer period than the three-year period used here.

(Table 1 about here)

Table 2 presents the per capita pages when the unranked journals are not page-size corrected. These results are directly comparable with those reported by Bairam (1996, 1997), while the comparison of Table 1 and Table 2 shows the bias caused by Bairam ignoring the variation in page sizes across the unranked journals. The first effect of this bias is to partly obscure the substantial gap between Canterbury and the other departments. Second, total output of published pages is overstated by 27 percent, with the upward bias greatest for Massey (38 percent) and Auckland (35 percent) and least for Canterbury (12 percent). Third, and most importantly, the ranking of departments changes: Victoria and Auckland appear to have produced more per capita pages than Waikato when unranked journals are not page-size corrected, in contrast to the true situation shown by Table 1. A final point to note from comparing Table 2 with Bairam's results is the overall increase in publications by New Zealand university economists. Results in Bairam (1997) imply a per capita average of 3.8 pages per year in 1992-95, while the comparable measure for 1996-98 is 6.2 pages per year,⁸ a rise of 63 percent. One can only wish that productivity in other sectors had risen by so much.

(Table 2 about here)

III. Calculating Quality Weights for Journal Groups

Professional impact factors cannot be calculated for every journal that New Zealand university economists publish in, but it may be possible to form quality weights for the journal *groups* used in Bairam's study. Evidence can be found in the academic labour market, which appears to reward a page in a ranked journal more than it rewards a page in an unranked journal because some economists achieve high academic rank with a few articles in the premier journals, while others achieve the same by publishing many more articles in a wider range of journals. Thus, the relationship between some increasing measure of academic rank, y_j and the

total number of pages published in each group of journals, n_g ($g=1,2,3,4$) by academic j over their career is assumed to be:

$$y_j = \mathbf{a}_1 n_{1j} + \mathbf{a}_2 n_{2j} + \mathbf{a}_3 n_{3j} + \mathbf{a}_4 n_{4j} + \mathbf{b}'x_j + u_j \quad \mathbf{a}_1 > \mathbf{a}_2 > \mathbf{a}_3 > \mathbf{a}_4$$

where x_j is a vector of control variables and u_j is a random disturbance. Empirical estimates of the \mathbf{a}_g parameters can be used to show the rate at which the market rewards a page in, say, an unranked journal relative to a page in a premier journal. The ratio of these market reward factors gives a set of quality weights, to use when summing across the journal groups.

To implement the approach just described, the *EconLit* database was used to collect information on the articles published over the entire career by each current member of the departments included in Table 1. In some cases this meant going back as far as 1969, so it is likely that there is measurement error in these data because not all journals are listed by *EconLit* from their very first volume. This probably affects the unranked journals most and may cause the professional impact of a page in Group 4 journals to be overstated compared with a page in the Groups 1-3 journals. For example, if it takes 500 pages in Group 4 journals to become a Professor but only 250 of those pages are recorded in *EconLit*, then with a linear model the estimate of \mathbf{a}_4 could be overstated by a factor of two.

In addition to publication in refereed journals, academic rank is likely to depend on experience, qualifications, other research outputs, and achievements in teaching and service. The university *Calendars* were used to obtain information on how many years each economist had been with their current university, whether they held a PhD, and where that PhD was from. The quality of the PhD granting institution is measured by a binary variable, which equals 1 if the institution was listed by Bairam (1994) as one of the top thirty contributors to five premier

journals in economics.⁹ Although this is a crude measure, it was needed because there have been no other global rankings of economics departments since Hirsch *et. al.* (1984). The only other research outputs measured are books, with each book authored counting as 1.0, authorship of a monograph (<100 pages) was assumed equivalent to 0.6 books, editing a book without writing a chapter was given an equivalence of 0.3 books, and contributing a chapter to a book was given an equivalence of 0.15 books. These adjustments are obviously crude, but there are probably greater sources of error because *EconLit* has much less comprehensive coverage of books than of journal articles,¹⁰ and there is also neglect of any measure of the quality of books. When there are co-authors of books, each author is given $1/n$ of the total.

No information was obtained on achievements in teaching and service by the academics in the sample. It is difficult to determine what the direction of bias from this omission will be because it depends on the sign of the correlation between the omitted variables and the page counts of journal articles. This correlation could be negative, because practising to be a good teacher and writing articles both compete for the same time but the correlation could also be positive because active researchers can teach material that is at the forefront of the discipline and make their lectures more interesting by drawing on their own research results.

The first column of Table 3 reports ordered logit estimates of a model that attempts to explain the academic rank of New Zealand university economists in terms of the total number of (size-corrected) pages published in each group of journals over their career, plus the various control variables.¹¹ With an ordered logit model, the probability of observing outcome i (e.g., holding Professorial rank) corresponds to the probability that the estimated linear score function, plus random error, is within the range of *cut points* established for the outcome:

$$\Pr(\text{outcome}_j = i) = \Pr(k_{i-1} < \mathbf{a}_1 n_{1j} + \dots + \mathbf{a}_4 n_{4j} + \mathbf{b}_1 x_{1j} + \dots + \mathbf{b}_k x_{kj} + u_j \leq k_i)$$

where the \mathbf{a} and \mathbf{b} coefficients are estimated together with the cut points, k_1 , k_2 , and k_3 (StataCorp, 1999). These cut points give the required value of the score function needed to move from one academic rank to the next and it is the relative size of the \mathbf{a} coefficients determining the score function that is of interest.

All of the variables in the model are statistically significant at the 95 percent confidence level, except for the number of pages published in Group 4 journals, where the null hypothesis that these pages have no impact on academic rank cannot be rejected ($p < 0.20$). The ratio of the \mathbf{a} coefficients suggests that a page in a premier (i.e., Group 1) journal is 15-times more effective at raising one's academic rank than is a page in a Group 4 journal, while the ratios are nine and six for Group 2 and 3 journals relative to Group 4 journals. It also appears that 5-6 pages in Group 1 journals are equivalent to the impact of a book. The probability of holding a higher academic rank also rises with the number of years spent at the current university and is higher for PhD-holders, but surprisingly, is lower for academics with PhD's from ranked departments (conditional on research output, which is substantially higher for those from ranked departments).

(Table 3 about here)

In addition to the characteristics of individual academics, academic rank may also depend on characteristics of the institution that employs them. For example, some institutions may have to offer job applicants a higher academic rank to compensate for some drawbacks of the working environment. The second column of Table 3 reports ordered logit estimates of a specification that includes fixed effects for each university. These fixed effects are jointly

significant ($p < 0.03$) and inclusion of the fixed effects also alters the value of some of the \mathbf{a} coefficients. Therefore, it is the ratio of \mathbf{a} coefficients from this model which are used to determine the quality weights for journal groups. These weights are: Group 1 journals, 1.00; Group 2 journals, 0.64; Group 3 journals, 0.34; and Group 4 journals, 0.05.

As an aside, the model in Table 3 can be adapted to indicate the monetary value to an academic of publishing a (size-corrected) page in each of the journal groups. I approximated the salary scale in New Zealand universities with the following ranges: Lecturer, \$44,000-\$55,000; Senior Lecturer, \$55,001-\$74,000; Associate Professor, \$74,001-\$83,000; Professor, \$83,001-\$107,000.¹² The salary of each academic was regressed on their career page count for each group of journals, plus the control variables, using a maximum likelihood estimation technique for interval data that generalises the Tobit model (StataCorp, 1999). A page in a premier journal appears to raise the annual salary of an academic by \$330, while a page in an unranked journal raises their salary by only \$34.

Returning to the question of departmental rankings, the quality weights were used to calculate a weighted sum of the per-capita size-corrected pages published by each department in 1996-98. The input data for this calculation is reported in the first four columns of Table 1, while the weighted sum of per capita pages for each department is reported in Table 4. Adjusting for journal group quality and for page-size differences amongst the unranked journals has a major effect on departmental rankings, as can be seen from the last two columns in Table 4. Although Canterbury maintains its position as the leading publisher in per-capita terms, Otago falls from 2nd to 4th and Massey falls from 3rd to 7th, while Victoria, Waikato, and Lincoln all increase their rank by at least two places. For publications in the 1996-98 period, there is a correlation of only 0.32 between the departmental ranking using Bairam's method

and assumptions, and the ranking that adjusts for quality and page-size differences. Thus it possible that Bairam's ranking over the 1988-95 period is also unreliable.

(Table 4 about here)

IV. Other Potential Improvements in the Ranking Method

In this paper I have made two small improvements in the method used by Bairam (1996) to rank New Zealand economics departments by their research productivity. The first improvement corrects for variation in page sizes for all groups of journals, while the second estimates a set of quality weights for journal groups based on the observed effect of different types of publications on academic rank. However, several more improvements are needed before the publication rankings of university departments can be considered a reliable guide to the quality of the research environment at particular institutions. The areas that need future attention include: the universe of journals to base the rankings on and the place of new, high-quality journals in the ranking groups used by Bairam; the impact of part-time faculty, and adjunct and visiting Professors; and the appropriate timing and frequency of rankings so as to avoid distorting the results with the inclusion or exclusion of one or two active publishers.

Although *EconLit* has a fairly comprehensive coverage of economics journals there are some omissions and other inclusions which have affected the measured publications of departments. For example, New Zealand economists published in both *New Zealand Geographer* and *Australian and New Zealand Journal of Statistics* during the 1996-98 period but only the first journal is included in *EconLit*.¹³ Another example is a publication by a member of one of the departments in the *Journal of the Royal Statistical Society (Series B – Methodology)*, whereas *EconLit* only indexes *Series A – Statistics in Society*. Thus, there may need to be some agreement by Heads of Departments (or others in charge of rankings) on what journals to

include over and above those listed by *EconLit*. Similarly, there may need to be some amendments to the journal groups used by Bairaim because new, high quality journals such as the *Journal of Institutional and Theoretical Economics* or the *Journal of Economic Growth* automatically get placed in the unranked group, while *Australian Economic Papers* is considered a ranked journal, partly because Bairaim's journal groups were originally used for a study of Australian universities. A related concern is the need to include publications in books in the departmental rankings – it is evident from Table 3 that there is a non-trivial return to the publication of books so a method that excludes books may give biased rankings. However, as a practical matter it is more difficult to gather data on books, with quality being especially difficult to measure.

Part-time and visiting faculty, and especially Adjunct and Distinguished Alumni Professors who have a long term relationship with departments may have a large impact of the quality of the research environment, especially in helping to attract good graduate students and junior faculty. The rankings reported above make no allowance for this, mainly because of the practical problem of how to apportion the publications of academics who spend only a fraction of their time in the New Zealand department. Because there is variation across departments in the significance of these fractional appointments, some departments, such as Auckland, are adversely affected in the rankings.

Economics departments in New Zealand are very small, aside from Auckland and Victoria, so the movement of a single individual can make a noticeable impact on a department's ranking. For example, two active publishers left Massey in late 1998, so Massey's published output would be rather higher if the assessment date was April 1998 rather than April 1999. Thus, rather than using a 'snapshot' approach of measuring the publications of the academics on

hand at a particular point in time (i.e, April 1999), it might be better to measure the quantity of publications every year for the staff currently attached to each department and then present the results as a time series or use a moving average. This would enable trends in a department's research productivity to be more easily and reliably assessed.

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Table 1: Pages Published per Member, by Department and Journal Group, 1996-98
(all journal groups are page-size corrected to *AER*-equivalent pages)

	Group 1	Group 2	Group 3	Group 4	Groups 1-4
Canterbury (10)	1.36	6.22	10.52	7.60	25.71
Otago (12)	0.00	0.67	3.59	15.18	19.45
Massey (15)	0.00	0.49	0.00	14.64	15.12
Waikato (11)	0.77	0.23	5.91	6.68	13.59
Victoria (27)	0.53	3.00	1.99	8.04	13.56
Auckland (21)	0.00	0.21	2.51	9.25	11.97
Lincoln (12)	0.00	0.00	3.40	7.23	10.63
MEAN	0.34	1.53	3.34	9.72	14.92

Note: Numbers in parentheses are staff members (from the rank of Lecturer to Professor) in each New Zealand economics department, as at April 1999.

Departments are ranked by total Groups1-4 pages published per member.

Journal groupings are those defined by Bairam (1996) and discussed in the text.

Data source: Author's calculations from *EconLit* database.

Table 2: Pages Published per Member, by Department and Journal Group, 1996-98(Group 4 journals *not* page-size corrected to *AER*-equivalent pages)

	Groups 1-3	Group 4	Groups 1-4	Degree of upward bias
Canterbury (10)	18.10	11.20	29.30	1.14
Otago (12)	4.26	19.43	23.69	1.22
Massey (15)	0.49	20.33	20.82	1.38
Waikato (11)	6.91	9.08	15.99	1.18
Victoria (27)	5.52	12.15	17.67	1.30
Auckland (21)	2.72	13.45	16.17	1.35
Lincoln (12)	3.40	9.76	13.16	1.24
MEAN	5.21	13.68	18.89	1.27

Note: The “degree of upward bias” is the number of measured pages in Groups 1-4 when Group 4 journals are not page-size corrected relative to the number of pages in Groups 1-4 when all journals are page-size corrected.

Table 3: Determinants of Academic Rank of New Zealand University Economists

	Academic Rank in 1999 (ordered logit)		Salary Band (interval regression)
	(i)	(ii)	(iii)
Years with employer	0.1844 (0.0394)	0.2187 (0.0435)	849 (131)
Holds a PhD?	2.7721 (0.7550)	2.9128 (0.7997)	10974 (2653)
PhD from ranked department?	-1.7751 (0.5646)	-1.8000 (0.6505)	-4575 (2134)
<i>Career Publications</i>			
Group 1 Journals (pages)	0.1129 (0.0343)	0.1558 (0.0378)	329 (93)
Group 2 Journals (pages)	0.0682 (0.0196)	0.1001 (0.0235)	283 (72)
Group 3 Journals (pages)	0.0428 (0.0137)	0.0524 (0.0154)	170 (50)
Group 4 Journals (pages)	0.0075 (0.0058)	0.0078 (0.0064)	34 (24)
Books	0.6080 (0.3093)	0.6233 (0.3938)	1307 (1085)
<i>Fixed Effects</i>			
Canterbury	...	-2.0251 (0.9488)	-5895 (3292)
Lincoln	...	2.0064 (0.9681)	7114 (3289)
Massey	...	0.9255 (0.8601)	2930 (2918)
Otago	...	-0.3448 (0.8731)	-1024 (3234)
Victoria	...	0.7374 (0.7248)	1764 (2475)
Waikato	...	0.0925 (0.9183)	873 (3224)
Intercept	43491 (3484)
<i>Cut Points</i>			
Senior Lecturer	2.7551	3.6321	...
Associate Professor	7.0322	8.3311	...
Professor	9.0444	10.6284	...
Pseudo- R^2	0.37	0.44	...
Log-likelihood	-82.41	-74.20	-83.38
Zero-slopes χ^2 test	$\chi^2_{(8)}=98.3$	$\chi^2_{(14)}=114.7$	$\chi^2_{(14)}=107.2$

Note: Standard errors in (). $N=108$. The excluded dummy category is a person without a PhD at Auckland. The cut-points give the value that needs to be exceeded by the linear index (plus random error) to allocate the j th person to a particular academic rank.

Table 4: *AER*-equivalent Pages Published per Member, by Department, 1996-98

	Equivalent pages	Departmental Rank	Rank When Using Bairam Method and Assumptions ^a
Canterbury (10)	9.30	1	1
Victoria (27)	3.53	2	4
Waikato (11)	3.26	3	6
Otago (12)	2.41	4	2
Lincoln (12)	1.52	5	7
Auckland (21)	1.45	6	5
Massey (15)	1.04	7	3
MEAN	2.94		

Note: Equivalent pages correct for page-size differences between journals and differences in quality weights between groups of journals.

^aBased on results in Column 3 of Table 2, where group 4 journals are not page-size corrected and an unweighted sum of pages across journal groups is used (i.e., ignoring quality weights).

Appendix Table 1: Sample of Journals and Page-size Correction Factors (CF)

	<u>CF</u>		<u>CF</u>
<i>Agenda</i>	0.57	<i>International Journal of Forecasting</i>	0.92
<i>Agricultural Economics</i>	0.97	<i>International Journal of Social Economics</i>	0.70
<i>Annals of Regional Science</i>	0.64	<i>International Labour Review</i>	0.62
<i>Applied Economics</i>	1.17	<i>Int. Review of Applied Economics</i>	0.79
<i>Applied Economics Letters</i>	1.17	<i>International Trade Journal</i>	0.50
<i>Applied Financial Economics</i>	1.17	<i>Journal of Agricultural Economics</i>	0.79
<i>Asean Economic Bulletin</i>	0.82	<i>Journal of Applied Econometrics</i>	0.80
<i>Atlantic Economic Journal</i>	0.57	<i>Journal of Common Market Studies</i>	0.55
<i>Australian Bulletin of Labour</i>	0.59	<i>Journal of Conflict Resolution</i>	0.70
<i>Australian Economic History Review</i>	0.63	<i>Journal of Consumer Research</i>	1.22
<i>Australian Economic Review</i>	0.84	<i>Journal of Corporate Finance</i>	0.54
<i>Aust. J. Ag. and Resource Economics</i>	0.57	<i>Journal of Development Studies</i>	0.57
<i>Australian J. Agricultural Economics</i>	0.61	<i>J. Economic Dynamics and Control</i>	0.68
<i>Australian Journal of Management</i>	0.67	<i>Journal of Economic Growth</i>	0.75
<i>British Journal of Industrial Relations</i>	0.62	<i>Journal of Economic Issues</i>	0.66
<i>Bulletin of Economic Research</i>	0.62	<i>Journal of Economic Methodology</i>	0.62
<i>Bulletin of Indonesian Economic Studies</i>	0.58	<i>Journal of Economic Psychology</i>	0.51
<i>Business History</i>	0.63	<i>Journal of Economic Studies</i>	0.72
<i>Cato Journal</i>	0.55	<i>Journal of Economic Surveys</i>	0.66
<i>China Quarterly</i>	0.67	<i>Journal of Economics and Business</i>	0.72
<i>Contemporary Economic Policy</i>	0.92	<i>JZeitschrift fur Nationalokonomie</i>	0.57
<i>Demography</i>	1.26	<i>J. Environment Economics & Management</i>	0.74
<i>Developing Economies</i>	0.62	<i>J. Institutional and Theoretical Economics</i>	0.61
<i>Development and Change</i>	0.63	<i>Journal of Labor Research</i>	0.66
<i>Eastern Economic Journal</i>	0.62	<i>Journal of Macroeconomics</i>	0.63
<i>Ecological Economics</i>	0.84	<i>Journal of Population Economics</i>	0.63
<i>Economia Internazionale</i>	0.57	<i>Journal of Productivity Analysis</i>	0.62
<i>Economic Analysis and Policy</i>	0.61	<i>Journal of Regulatory economics</i>	0.86
<i>Economic and Industrial Democracy</i>	0.57	<i>Journal of Research in Islamic Economics</i>	0.55
<i>Economic Modelling</i>	0.70	<i>Journal of Socio-economics</i>	0.64
<i>Economic Notes</i>	0.58	<i>Kredit und Kapital</i>	0.51
<i>Economic Systems</i>	0.59	<i>Managerial and Decision Economics</i>	0.95
<i>Economic Systems Research</i>	0.63	<i>Metroeconomica</i>	0.50
<i>Economic Theory</i>	0.68	<i>National Institute Economic Review</i>	1.09
<i>Economics and Philosophy</i>	0.62	<i>New Zealand Economic Papers</i>	0.66
<i>Economy and Society</i>	0.72	<i>New Zealand Geographer</i>	1.14
<i>Environment and Planning (Series A)</i>	0.78	<i>Oxford Review of Economic Policy</i>	1.00
<i>European Review Agricultural Economics</i>	0.54	<i>Pacific Economic Bulletin</i>	0.74
<i>Feminist Economics</i>	0.61	<i>Population and Development Review</i>	0.66
<i>Finance and Development</i>	1.22	<i>Public Finance Quarterly</i>	0.50
<i>Games and Economic Behavior</i>	0.62	<i>Public Finance Review</i>	0.54
<i>History of Economics Review</i>	0.78	<i>Regional Studies</i>	1.11
<i>Hitotsubashi Journal of Economics</i>	0.71	<i>Review of Industrial Organization</i>	0.55
<i>Indian Economic Journal</i>	0.55	<i>Rev. Marketing & Agricultural Economics</i>	0.72
<i>Indian Economic Review</i>	0.75	<i>Small Business Economics</i>	0.97
<i>Industrial and Corporate Change</i>	0.58	<i>Urban Studies</i>	0.83
<i>Industrial Relations</i>	0.62	<i>World Bank Economic Review</i>	0.66
<i>Information Economics and Policy</i>	0.70	<i>World Development</i>	1.01
<i>International Economic Journal</i>	0.56	<i>World Economy</i>	0.68

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Notes

¹ Recent articles include Laband (1985), Harris (1988), Towe and Wright (1995) and Dusansky and Vernon (1998). Critical comments on the Dusansky and Vernon rankings have been made by Robert Feinberg, Zvi Griliches and Liran Einav in the “Correspondence” section of the *Journal of Economic Perspectives*, 12(4): 231-235.

² See, for example, the editorial in *The New Zealand Herald*, April 17-18, 1999.

³ For example, the *Review of Economics and Statistics* responded to the rising supply of manuscripts by changing its font, margins and page size from February, 1996, which raised the number of words per page by about 20 percent. Other responses of prestigious journals include increasing the number of issues per year (e.g., the *Economic Journal* in 1991 and again in 1999) and raising rejection rates closer to 100 percent (e.g., the rejection rate at the *American Economic Review* rose from 88 percent in 1991 to 93 percent in 1997).

⁴ Attention was restricted to articles that go through the normal refereeing process, so book reviews, conference reviews, software reviews and published interviews were excluded.

⁵ The School of Economics and Finance at Victoria University does not have separate departments, so Viv Hall kindly identified the staff who were “primarily economics”.

⁶ The question of whether Adjunct or Distinguished Alumni Professors should be included is discussed in Section IV.

⁷ The correction factor for the *Review of Economics and Statistics* is raised for articles published from February 1996, because of the change in format by that journal (see note 3).

⁸ Note that this estimate does not include the page-size correction for the unranked journals, to maintain comparability with Bairam's results.

⁹ The *American Economic Review*, *Econometrica*, the *Economic Journal*, the *Journal of Political Economy*, and *The Quarterly Journal of Economics*.

¹⁰ Additional evidence of publication in books was found from University Research Reports, library catalogues and the curriculum vitae of academics if published on the internet.

¹¹ An ordered probit model was also used and gave similar results, although with a lower value of the log-likelihood function. Ordered logit assumes that u_j is logistically distributed while ordered probit assumes that it is normally distributed.

¹² Unsystematic measurement error in dependent variables increases the variance of residuals but does not cause bias in coefficient estimates so inferences drawn from coefficient point estimates should be appropriate.

¹³ This increased the measured output of Lincoln, while decreasing that of Massey.