# On the Robustness of Alternative Rankings Methodologies: Australian and New Zealand Economics Departments, 1988-2002

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**Abstract**

Just as friendly arguments based on an ignorance of facts eventually led to the creation of the definitive Guinness Book of World Records, any argument about university rankings has seemingly been a problem without a solution. To state the obvious, alternative rankings methodologies can and do lead to different rankings. This paper evaluates the robustness of rankings of Australian and New Zealand economics teaching departments for 1988-2002 and 1996-2002 using alternative rankings methodologies, and compares the results with the rankings obtained by Macri and Sinha (2006). In the overall mean rankings for both 1988-2006 and 1996-2002, the University of Melbourne is ranked first, followed by UWA and ANU.

**Keywords**: University rankings, Citations, Economics departments, Journal rankings, Alternative methodologies.

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## I. Introduction

Records are made to be broken but rankings exercises are made to be debated. For a variety of pecuniary and non-pecuniary reasons, ranking economics departments has a long standing tradition, particularly in the USA. However, in recent years there has been a renewed interest in rankings worldwide. This is not surprising given that in many countries significant university funding is dependant upon research output. Consequently, selecting appropriate and consistent methods of assessing and quantifying this output is required. The importance of such research, particularly since the 1990s, has assumed greater importance as governments in countries such as the UK, Australia and New Zealand have sought to allocate highly competitive and scarce research funds on the basis of some form of "measurable" output.[1] Furthermore, the ranking of economics departments can be extremely useful for prospective graduate students and academic staff or faculty members, who may be interested in the quality of the research environment of a particular institution (see, for example, McAleer, 2005).

There are three main objectives to this paper. First, using the Towe and Wright (1995) methodology (which will be explained in Section 3), 25 Australian and 7 New Zealand economics teaching departments are ranked on the basis of the number of pages published in journal articles listed on the ECONLIT database for the periods 1988-2002 and 1996-2002. Second, using the Towe and Wright

[1] Quirke (2005) discusses the importance of research rankings for funding purposes. The UK, New Zealand, Hong Kong, Germany and the Netherlands have developed research assessment exercises that allocate research funds on the basis of stated criteria. At present, Australia is developing a Research Quality Framework (RQF), which will be based upon overseas experiences.

(1995) methodology, and adjusting for journal quality using the Gibson (2000) weights, 25 Australian and 7 New Zealand economics teaching departments are ranked for the periods 1988-2002 and 1996-2002. Third, the robustness of these results are compared for the periods 1988-2002 and 1996-2002 with the rankings in Macri and Sinha (2006), which ranks 25 Australian and 7 New Zealand economics teaching departments on a total and per capita basis, using journal articles included in the ECONLIT database. In their rankings exercise, Macri and Sinha (2006) use two criteria, one based on citations and the other on perceptions of journal quality. The important issue is whether a finer gradation of quality weights, which are applied in Macri and Sinha (2006), significantly alters the rankings of the Towe and Wright (1995) and Gibson (2000) adjusted quality rankings.

This paper has several important and distinguishing features. First, the data are for the longest period for a study undertaken for economics departments on the basis of the Towe and Wright (1995) methodology. Second, this is the first international rankings exercise that ranks economics departments on the basis of the Towe and Wright (1995) methodology and adjusts for the quality of journal articles using the Gibson (2000) weights. Third, this is the first international comparison that uses the Towe and Wright methodology to rank economics departments on a per capita basis. Apart from Macri and Sinha (2006), previous multi-country studies have provided only total university-wide or institutional rankings. Fourth, in order to account for differences in journal formats, we adjust and standardize all the ECONLIT (the database of the American Economic Association) journals in which Australian and New Zealand academic

economists have published to an American Economic Review (*AER*) page equivalent.[2] Towe and Wright (1995) do not account for differences in journal formats for a large portion of their sample in ranking Australian economics and econometrics departments, which they acknowledge may bias their results upwards. In adopting the Towe and Wright methodology, Gibson (2000) attempts to correct for this major shortcoming by accounting for differences in journal formats for approximately 84 per cent of the sample in ranking New Zealand economics departments. For the remaining 16 per cent of journals, Gibson (2000) uses a mean correction factor. In this paper, we adjust all journals in which Australian and New Zealand academic economists have published to their *AER* equivalent.

The paper is organized as follows. Section 2 provides an overview of the literature on rankings.[3] Section 3 outlines the Towe and Wright (TW) (1995) and Gibson (2000) methodologies, and Section 4 discusses the database used for the rankings exercise. Section 5 presents the rankings results and compares the rankings with those reported in Macri and Sinha (2006) using different criteria. Section 6 gives some concluding comments.

## II. Literature Review

The rankings research can be traced back to the work of Fusfeld (1956), who ranked departments on the basis of paper presentations at the American Economic Association annual meetings for the period 1950-54. In the 1960s,

[2] The American Economic Review *(AER)* equivalent is computed as follows: The average number of words per page of *AER* is approximately 760. A journal with an average number of words per page of 380 is then given a weight of 0.5.
[3] See Macri and Sinha (2006) for a comprehensive survey on alternative rankings methodologies.

there were several studies that provided the impetus in the ranking of economics departments (see, for example, Cleary and Edwards, 1960; Yotopoulos, 1961). Many studies since then have ranked economics departments on the basis of a "core" number of journals (see, for example, Niemi, 1975; Moore, 1973; Hirsch et al., 1984; Graves et al., 1982; Conroy and Dusansky, 1995; Scott and Mitias, 1996; Pomfret and Wang, 2003; Dusansky and Vernon, 1998; and Kalaitzidakis et al., 1999, 2003).

In order to draw attention to the pitfalls of relying solely on "core journals", Liebowitz and Palmer (1984) use the Social Science Citation Index (SSCI) to develop an iterative weighting procedure to capture the relative importance of citations and rank more than 100 journals in terms of age, quality and size which are, in turn, used to rank economics departments in the USA. The study has provided the framework for many rankings exercises over the last two decades for measuring the quality of research on the basis of impact-adjusted citations per article (see, for example, Laband, 1985; Gibbons and Fish, 1991; Dusansky and Vernon, 1998; Coupe, 2003; Laband and Piette, 1994; Kalaitzidakis et al., 2001, 2003; Macri and Sinha, 2002, 2006; Sinha and Macri, 2002, 2004; King, 2001). It is important to note that the studies by Macri and Sinha, (2002, 2006) and Sinha and Macri (2002, 2004) also rank economics departments on the basis of perceptions of journal quality.[4]

[4] The journals were ranked on the basis of a survey. Furthermore, surveys are used quite regularly to rank universities. For example, for the USA the *US News and World Report* provides rankings of economics departments. These rankings are based on two types of data: expert opinion about program quality and statistical indicators that measure the quality of a school's faculty, research, and students and the National Research Council Report (NRC) on US university departments. Thursby (2000) examines research in economics departments on the basis of the NRC study.

In terms of worldwide studies, Coupe (2003) employs a number of existing performance measures from the literature to rank economic departments and individual economists worldwide. Bairam (1994) ranks the "top 30" worldwide institutions on the basis of the largest number of pages published in the "top 5" journals for the period 1985-1990. It is important to note that none of the international studies, such as Kalaitzidakis et al. (2003) and Coupe (2003), ranks economics departments per se as they rank economics publications on a university-wide basis. Therefore, strictly speaking none of these studies has produced rankings on a per capita basis. However, Macri and Sinha (2006) is the first international study to rank economics departments on a total and per capita basis. We will now discuss the framework of Towe and Wright (1995) and Gibson (2000).

## III. Towe and Wright (1995) and Gibson (2000) Methodologies

Towe and Wright (1995) rank Australian teaching economics and econometrics departments on the basis of the number of pages published in journals listed on the ECONLIT database for the period 1988-93. Towe and Wright classify journals into four groups to reflect their differing impacts. It can be seen from Table 1, as reproduced from Towe and Wright (1995), that Groups 1-3 comprise 71 journals constituting the "core" journals in economics. Group 4 consists of all other journal articles appearing in the ECONLIT database.[5] Towe and Wright (1995) standardized the journals included in Groups 1-3 according to their *AER* equivalent lengths. However, for Group 4 journals, in which most Australian academics typically publish, page counts were not standardized, which may

[5] These journals are selected on the basis of Diamond (1989), Leibowitz and Palmer (1984), Laband and Piette (1994) and Hill and Murphy (1994).

significantly influence the results. In terms of their overall rankings, Towe and Wright summed the number of pages published across all of the groups with equal weights. The major disadvantage of this procedure is that it eliminated any premium for quality.

It is worth noting that there are some important differences between the rankings of journals in Towe and Wright (1995) and in Kalaitzidakis, Mamuneas and Stengos (2003). The *Journal of Econometrics* is in Group 2 in Towe and Wright (1995), and hence is not in the leading 12 journals in Group 1, whereas Kalaitzidakis et al. (2003) rank it at number 6. *Econometric Theory* and *Journal of Business and Economic Statistics* are in Group 3 in Towe and Wright (1995), and hence are not in the leading 35 journals in Groups 1-2, whereas Kalaitzidakis et al. (2003) rank these two journals at numbers 7 and 11, respectively. There are several other significant discrepancies between these two sets of journal rankings.

Adopting the Towe and Wright (1995) methodology, Bairam (1996, 1997) ranked 7 New Zealand economics departments for the period 1988-1995. He also restricted his rankings exercise to journals that were included in the ECONLIT database. However, he acknowledged that "given that more than 65% of the Australian output and 75% of the New Zealand output are in group 4 journals, using unweighted page counts could cause "measurement error" problems" (Bairam, 1996, p. 230, footnote 4). In terms of the overall rankings, Bairam, like Towe and Wright, aggregated the number of pages across all groups and also eliminated any premium for quality.

In an important study, Gibson (2000) adopted a similar rankings methodology to that of Towe and Wright (1995) and Bairam (1996, 1997). However, Gibson adjusted for the page size of the majority of the ECONLIT journals in all of the groups in which academic economists in New Zealand universities published. Gibson also used regression analysis to calculate the weights of the groups of journals for their perceived quality, features that are missing from Towe and Wright (1995) and Bairam (1996, 1997). The quality weights Gibson (2000) calculated for Groups 1-4 were 1, 0.64, 0.34 and 0.05, respectively.

## IV. Data Collection

In this paper we rank 25 Australian economics teaching departments and 7 New Zealand economics departments. The rankings are limited to economics departments with at least 8 full time academic staff members. However, virtually all teaching economics departments have at least 8 academic staff members. The omissions from the list are the Australian Defence Force Academy (which has a joint Department of Economics and Management, with few economists) and Edith Cowan University (which has a School of Accounting, Finance and Economics, with few economists). No economics department in New Zealand universities is excluded from this paper.

Academic staff members holding the rank of lecturer and above are considered. We consider only teaching economics departments. However, we exclude three economists in teaching departments, namely John Quiggin (Federation Fellow of the Australian Research Council, University of Queensland), Steve Dowrick (Australian Professorial Fellow of the Australian Research Council, Australian National University), and Murali Agastya (Australian Research Fellow of the

Australian Research Council, University of Sydney) because they do not have any teaching obligations in their current appointments and more importantly, are not fully funded by their respective universities. We also exclude visiting staff, PhD students, adjunct faculty, visiting scholars and part-time academic staff from the academic staff lists.

The following university economics departments (with abbreviations used in parentheses) are included in the rankings exercise: Adelaide, Australian National University (ANU, Department of Economics, Faculties only), Auckland, Canberra, Canterbury, Curtin University of Technology (Curtin), Deakin (all campuses), Flinders, Griffith, La Trobe, Lincoln, Macquarie, Massey, Melbourne, Monash (all campuses), Murdoch, Newcastle, Otago, Queensland, Queensland University of Technology (QUT), Royal Melbourne Institute of Technology University (RMIT), Sydney, Tasmania, New England (UNE), New South Wales (UNSW), University of Technology, Sydney (UTS), Western Australia (UWA), University of Western Sydney (all campuses) (UWS), Victoria, Victoria University of Wellington (VUW), Waikato, and Wollongong. The academic staff lists for these universities were obtained in August 2003. For most universities, the lists were collected from the relevant departments' home pages. In some cases, additional information was sought from the Heads of Departments.

We use the ECONLIT database as of August 2003 to collect the publications data. As information regarding journal articles are entered into the ECONLIT database with a lag, some 2002 journal publications might not be included in our

database. Following a long tradition in the literature, we use only journal articles in our rankings. We exclude book reviews. We adopt the stock approach, which involves collecting the publications data for the existing academic staff members going back in time (in our case, 1988). The logic is that when an academic staff member moves to a different university, the human capital is fully portable. In fact, the new university would typically employ the individual on the basis of past academic achievements.

Since Australian and New Zealand academic economists have published in approximately 500 ECONLIT journals, adjusting for the journal formats was an enormous task. We were meticulous in tracing the publications record of academic staff in economics departments at 32 universities back to 1988. In some cases, the authors published with a combination of first names, middle names, or the initials of first names. Careful checking resolved any problems. In total, we examined the publication record of 663 academics. The year 1988 was selected as the starting date for the sample period because it was the year in which the ECONLIT database began including the affiliation(s) of the author(s).

Some universities included in the paper have multiple campuses. For any individual university, all campuses are considered. For the following universities, we use data for the joint Department of Economics and Finance: Curtin, La Trobe, QUT, RMIT, UTS and UWS. For some universities, economics departments are categorized under different names. These universities are as follows (with the names of the departments in parentheses): Flinders (Business Economics), Massey (Applied and International Economics), and Victoria

(Applied Economics). We do not rank econometrics departments. At present, there are two Departments of Econometrics and Business Statistics in Australia, namely at the University of Sydney and Monash University. If all of these academics were to be included as part of an economics department, of which they are not members, this would leave open the possibility of including anyone who publishes in an economics or econometrics journal (including mathematicians, statisticians, political scientists, finance specialists, and so on) in economics departmental rankings. This would lead to rankings of economics in universities rather than economics departments. Moreover, it would be impossible to determine per capita rankings as it would be extremely difficult to determine the appropriate denominator for the exercise. Similarly, research centres and research departments (for example, those at ANU) are excluded from the rankings for similar reasons regarding per capita rankings.

## V. Rankings Results

In this section, we present the rankings of Australian and New Zealand economics departments using a variety of rankings methods. Table 1 contains a list of journals considered in the Towe and Wright (1995) study. American Economic Review (*AER*) Equivalent is calculated as follows:

$$\text{American Economic Review } (AER) \text{ Equivalent} = (P)(1/n)(CF)(Q),$$

where P is the number of pages, n is the number of authors for a paper, CF is the conversion factor, and Q is an index of quality (otherwise referred to as weights in this paper).

Table 2 gives the results of applying the Towe and Wright (1994) methodology for ranking Australian and New Zealand economics departments on a per capita basis for 1988-2002. For Group 1 journals, UNSW is the leader followed by Sydney, ANU and Canterbury (equal third) and Melbourne, in that order. For Group 2 journals, ANU is the leader, followed by Melbourne, UNSW, UWA and Sydney. For Group 3 journals, Melbourne is the leader, followed by UWA, La Trobe, Murdoch and Tasmania. For Group 4 journals, La Trobe is the leader, followed by Melbourne, Queensland, UWA and Adelaide. The results are somewhat different when all four groups are aggregated, such that Melbourne occupies the number one position, followed by UWA, La Trobe, Queensland and Adelaide.

Table 3 gives the results of applying the Towe and Wright (1995) methodology for ranking Australian and New Zealand economics departments on a per capita basis for 1996-2002. For Group 1 journals, ANU is the leader, followed by UNSW, Melbourne, Monash and Waikato. For Group 2 journals, ANU is again the leader, followed by Melbourne, UNSW, UWA and Waikato. For Group 3 journals, Melbourne is the leader, followed by Murdoch, UWA, La Trobe and Tasmania. For Group 4 journals, La Trobe is the leader, followed by Queensland, Adelaide, UWA and Melbourne. When all four groups are combined, Melbourne is the leader, followed by UWA, La Trobe, Queensland and Adelaide. In this category, the top five departments are the same as for 1988-2002.

Table 4 gives the results of the per capita rankings when the Towe and Wright

methodology is adjusted according to the Gibson journal quality weights for 1988-2002. For Group 1 journals, UNSW is at the top, followed by Sydney, ANU and Canterbury (equal third), and Melbourne. For Group 2 journals, ANU occupies the lead position, followed by Melbourne, UNSW, UWA and Sydney. For Group 3 journals, Melbourne is the leader, followed by UWA, La Trobe, Murdoch and Tasmania. For Group 4 journals, La Trobe moves to the number one position, followed by Melbourne, Queensland, UWA and Adelaide. For the combined category, Melbourne tops the list, followed by UWA, ANU, UNSW and La Trobe.

The rankings on the basis of the Towe and Wright methodology and Gibson weights on a per capita basis for 1996-2002 are given in Table 5. For Group 1 journals, ANU is in the number one position, followed by UNSW, Melbourne, Monash and Waikato. For Group 2 journals, ANU again tops the list, followed by Melbourne, UNSW, UWA and Waikato. For Group 3 journals, Melbourne is in the number one position, followed by Murdoch, UWA, La Trobe and Tasmania. For Group 4 journals, La Trobe occupies the lead position, followed by Queensland, Adelaide, UWA and Melbourne. In the combined category, Melbourne occupies the first place, followed by UWA, ANU, UNSW and Murdoch.

In Table 6, we compare the results of the per capita rankings in Macri and Sinha (2006) with those using the Towe and Wright methodology with and without Gibson weights for the combined category for 1988-2002. Taking the mean of these rankings, we find that Melbourne occupies the lead position, followed by

UWA, ANU, La Trobe and Queensland.

In Table 7, we compare the results of the per capita rankings in Macri and Sinha (2006) with those using the Towe and Wright methodology with and without Gibson weights for the combined category for 1996-2002. Again, taking the mean of these rankings, we find Melbourne to be in first place, followed by UWA, ANU, La Trobe and Adelaide. Queensland now occupies the sixth position, having been displaced by Adelaide, which had a mean ranking of seven in Table 6. Overall, from Tables 6-7 it is clear that Melbourne, UWA and ANU are the three leading economics departments in Australia and New Zealand in terms of per capita rankings.

Finally, Tables 8 and 9 give the correlation matrix for the alternative rankings for 1988-2002 and 1996-2002, respectively. For both periods, rankings based on the numbers of publications (denoted as Number) are very highly correlated with the rankings based on Mason, Steagall and Fabritius (1997) (MSF) and Towe and Wright (TW). The rankings based on MSF weights are also highly correlated with rankings based on TW weights and TW adjusted by Gibson weights. For the period 1988-2002, but not 1996-2002, the KMS rankings are highly correlated with the rankings using the LP weights.

**VI. Conclusion**

This paper evaluated the robustness of rankings of 25 Australian and 7 New Zealand economics teaching departments for 1988-2002 and 1996-2002 using different rankings methodologies, and compared the results with the rankings

obtained in Macri and Sinha (2006). Australian universities were generally found to dominate the rankings, regardless of which methodologies were used. In the overall mean rankings for both 1988-2006 and 1996-2002, the University of Melbourne was ranked first, followed by UWA and ANU.

**Table 1. Towe and Wright (1995) Journal Groupings**

| | Group 1 |
|---|---|
| 1 | American Economic Review |
| 2 | Econometrica |
| 3 | Economic Journal |
| 4 | International Economic Review |
| 5 | J. of Economic Theory |
| 6 | J. of Finance |
| 7 | J. of Financial Economics |
| 8 | J. of Political Economy |
| 9 | Quarterly J. of Economics |
| 10 | Rand J. of Economics |
| 11 | Review of Economics and Statistics |
| 12 | Review of Economic Studies |

| | Group 2 |
|---|---|
| 13 | American Economic Review P&P |
| 14 | Brookings Papers on Econ. Act. |
| 15 | Canadian J. of Economics |
| 16 | Economic Inquiry |
| 17 | Economica |
| 18 | Economic Letters |
| 19 | European Economic Review |
| 20 | J. of American Statistical Assoc. |
| 21 | Journal of Business |
| 22 | Journal of Development Economics |
| 23 | J. of Econometrics |
| 24 | J. of Economic Literature |
| 25 | J. of Human Resources |
| 26 | J. of International Economics |
| 27 | J. of Labor Economics |
| 28 | J. of Law and Economics |
| 29 | J. of Mathematical Economics |
| 30 | J. of Monetary Economics |
| 31 | J. of Money, Credit and Banking |
| 32 | J. of Public Economics |
| 33 | J. of the Royal Statistical Society |
| 34 | Oxford Economic Papers |
| 35 | Scandinavian J. of Economics |

| | Group 3 |
|---|---|
| 36 | American J. of Agricultural Economics |
| 37 | Australian Economic Papers |
| 38 | Cambridge J. of Economics |
| 39 | Carnegie – Rochester C.S on Public P. |
| 40 | Econometric Reviews |
| 41 | Econometric Theory |
| 42 | Economic Dev. & Cultural Change |
| 43 | Economic History Review |
| 44 | Economic Record |
| 45 | Explorations in Economic History |
| 46 | History of Political Economy |
| 47 | Industrial and Labor Relations Review |
| 48 | International J. of Industrial Org. |
| 49 | IMF (UN) Staff Papers |
| 50 | J. of Business & Economic Statistics |
| 51 | J. of Comparative Economics |
| 52 | J. of Economic Behav & Organization |
| 53 | J. of Economic History |
| 54 | J. of Economic Perspectives |
| 55 | J. of Financial Intermediation |
| 56 | J. of Health Economics |
| 57 | J. of Industrial Economics |
| 58 | J. of International Money & Finance |
| 59 | J. of Post Keynesian Economics |
| 60 | J. of Regional Science |
| 61 | J. of Urban Science |
| 62 | Kyklos |
| 63 | Land Economics |
| 64 | Manchester School of Economics & S.S. |
| 65 | National Tax Journal |
| 66 | Oxford Bulletin of Econ & Statistics |
| 67 | Public Choice |
| 68 | Review of Income and Wealth |
| 69 | Scottish J. of Political Economy |
| 70 | Southern Economic Journal |
| 71 | Weltwirtschaftliches Archiv |

| Group 4 |
|---|
| All remaining ECONLIT journals |

**Table 2. Rankings of Economics Departments Per Capita for Australia and New Zealand Using TW Weights, 1988-2002**

| University | Group 1 | Group 2 | Group 3 | Group 4 | Groups 1-4 |
|---|---|---|---|---|---|
| Adelaide (18)[a] | 0.96 [b] (12) [c] | 3.37 (13) [d] | 11.91 (10)[e] | 61.66 (5)[f] | 77.90 (5)[g] |
| ANU (15) | 2.81 (3) | 19.08 (1) | 9.28 (17) | 37.82 (11) | 68.99 (7) |
| Auckland (25) | 1.55 (8) | 6.01(6) | 6.69 (20) | 27.88 (18) | 42.13 (19) |
| Canberra (11) | 0 (22) | 0.23 (27) | 6.26 (21) | 18.71 (26) | 25.20 (27) |
| Canterbury (14) | 2.81 (3) | 4.40 (9) | 12.98 (8) | 25.25 (20) | 45.44 (16) |
| Curtin (20) | 0.17 (18) | 0.68 (20) | 9.23 (18) | 34.70 (13) | 44.78 (17) |
| Deakin (14) | 0.31 (16) | 0 (29) | 5.81(23) | 16.78 (29) | 22.90 (29) |
| Flinders (13) | 0 (22) | 0 (29) | 9.45 (16) | 17.00 (28) | 26.45 (26) |
| Griffith (9) | 2.13 (7) | 0 (29) | 5.82 (22) | 25.02 (21) | 32.97 (22) |
| La Trobe (18) | 0.60 (14) | 2.43 (15) | 22.93 (3) | 69.28 (1) | 95.24 (3) |
| Lincoln (12) | 0 (22) | 0 (29) | 10.88 (13) | 21.28 (24) | 32.16 (23) |
| Macquarie (25) | 0 (22) | 1.61(19) | 11.04 (12) | 31.49 (17) | 44.14 (18) |
| Massey (18) | 0.24 (17) | 1.81(17) | 1.22 (30) | 38.11 (10) | 41.38 (21) |
| Melbourne (39) | 2.58 (5) | 10.61(2) | 41.16 (1) | 67.54 (2) | 121.89 (1) |
| Monash (30) | 1.42 (11) | 3.29 (14) | 15.52 (6) | 31.82 (16) | 52.05 (12) |
| Murdoch (9) | 1.46 (10) | 1.65 (18) | 21.36 (4) | 46.66 (8) | 71.13 (6) |
| Newcastle (12) | 0 (22) | 0.37 (25) | 5.45 (25) | 49.43 (7) | 55.25 (10) |
| Otago (12) | 0 (22) | 3.73 (11) | 6.80 (19) | 42.99 (9) | 53.52 (11) |
| Queensland (41) | 1.53 (9) | 4.59 (8) | 10.69 (14) | 67.27 (3) | 84.08 (4) |
| QUT (23) | 0.17 (18) | 0.34 (26) | 5.10 (26) | 17.66 (27) | 23.27 (28) |
| RMIT (31) | 0 (22) | 0.38 (24) | 0.91 (32) | 23.96 (31) | 11.49 (31) |
| Sydney (19) | 3.01 (2) | 6.60 (5) | 11.58 (11) | 26.22 (19) | 47.41 (15) |
| Tasmania (9) | 0 (22) | 3.72 (12) | 18.46 (5) | 36.22 (12) | 58.40 (9) |
| UNE (20) | 0 (22) | 0.49 (23) | 12.31 (9) | 51.72 (6) | 64.52 (8) |
| UNSW (38) | 3.50 (1) | 9.88 (3) | 15.38 (7) | 22.25 (23) | 51.03 (13) |
| UTS (32) | 0.13 (20) | 0.64 (22) | 2.98 (29) | 14.82 (30) | 18.57 (30) |
| UWA (15) | 2.44 (6) | 7.72 (4) | 29.38 (2) | 64.14 (4) | 103.68 (2) |
| UWS (35) | 0.10 (21) | 2.21 (16) | 5.49 (24) | 20.37 (25) | 28.17 (25) |
| Victoria (36) | 0 (22) | 0.05 (28) | 1.09 (31) | 10.07 (32) | 11.21 (32) |
| VUW (24) | 0.36 (15) | 0.66 (21) | 5.07 (27) | 23.96 (22) | 30.05 (24) |
| Waikato (9) | 0.78 (13) | 5.04 (7) | 4.11 (28) | 32.18 (15) | 42.11 (20) |
| Wollongong (17) | 0 (22) | 4.35 (10) | 10.09 (15) | 33.00 (14) | 47.44 (14) |

Note: [a] Numbers in parentheses are academic staff numbers (from the rank of Lecturer and above) in each Australian and New Zealand economics department, August 2003.[b] *AER* adjusted pages per capita. [c, d, e f] Numbers in parentheses show the rankings for Group 1, 2, 3, 4, respectively. [g] Numbers in parentheses show the rankings by total Groups 1-4 pages published per capita. TW = Towe and Wright weights.

**Table 3. Rankings of Economics Departments Per Capita for Australia and New Zealand Using TW Weights, 1996-2002**

| University | Group 1 | Group 2 | Group 3 | Group 4 | Groups 1-4 |
|---|---|---|---|---|---|
| Adelaide (18)[a] | 0 [b] (12) [c] | 3.05 (6) [d] | 6.02 (12) [e] | 43.46 (3) [f] | 52.51 (5) [g] |
| ANU (15) | 2.10 (1) | 8.53 (1) | 5.84 (14) | 22.56 (14) | 39.02 (9) |
| Auckland (25) | 0 (12) | 1.73 (12) | 3.14 (23) | 17.32 (19) | 22.17 (20) |
| Canberra (11) | 0 (12) | 0.23 (23) | 2.84 (24) | 11.73 (28) | 14.79 (28) |
| Canterbury (14) | 0.65 (7) | 2.76 (7) | 10.10 (6) | 21.29 (16) | 34.78 (10) |
| Curtin (20) | 0.17 (10) | 0.48 (19) | 4.38 (15) | 25.12 (11) | 30.14 (15) |
| Deakin (14) | 0.31 (9) | 0 (26) | 4.33 (16) | 12.07 (27) | 16.71 (26) |
| Flinders (13) | 0 (12) | 0 (26) | 3.39 (21) | 6.86 (31) | 10.25 (30) |
| Griffith (9) | 0 (12) | 0 (26) | 2.48 (25) | 11.15 (29) | 13.63 (29) |
| La Trobe (18) | 0 (12) | 2.09 (11) | 14.82 (4) | 46.21 (1) | 63.12 (3) |
| Lincoln (12) | 0 (12) | 0 (26) | 6.99 (8) | 13.31 (25) | 20.30 (22) |
| Macquarie (25) | 0 (12) | 0.11 (25) | 4.07 (18) | 21.8 (15) | 25.96 (17) |
| Massey (18) | 0 (12) | 1.41 (14) | 0.36 (30) | 29.41 (7) | 31.17 (12) |
| Melbourne (39) | 1.27 (3) | 7.07 (2) | 26.38 (1) | 42.15 (5) | 76.86 (1) |
| Monash (30) | 0.98 (4) | 1.36 (15) | 6.51 (9) | 20.25 (17) | 29.08 (16) |
| Murdoch (9) | 0 (12) | 1.65 (13) | 19.06 (2) | 27.22 (10) | 47.92 (6) |
| Newcastle (12) | 0 (12) | 0.37 (21) | 0 (32) | 23.29 (13) | 23.66 (19) |
| Otago (12) | 0 (12) | 2.60 (9) | 3.76 (20) | 27.56 (9) | 33.91 (11) |
| Queensland (41) | 0 (12) | 2.76 (7) | 6.00 (13) | 44.86 (2) | 53.61 (4) |
| QUT (23) | 0 (12) | 0.13 (24) | 3.35 (22) | 14.25 (22) | 17.72 (25) |
| RMIT (31) | 0 (12) | 0.38 (20) | 0.91 (29) | 8.95 (30) | 10.23 (31) |
| Sydney (19) | 0.74 (6) | 1.21 (16) | 4.29 (17) | 18.89 (18) | 25.11 (18) |
| Tasmania (9) | 0 (12) | 2.14 (10) | 10.44 (5) | 28.32 (8) | 40.88 (7) |
| UNE (20) | 0 (12) | 0 (26) | 6.20 (11) | 33.10 (6) | 39.30 (8) |
| UNSW (38) | 1.58 (2) | 6.41 (3) | 8.79 (7) | 14.15 (23) | 30.92 (13) |
| UTS (32) | 0 (12) | 0.51 (18) | 1.56 (27) | 13.42 (24) | 15.48 (27) |
| UWA (15) | 0.37 (8) | 5.05 (4) | 15.15 (3) | 43.20 (4) | 63.76 (2) |
| UWS (35) | 0.10 (11) | 0.36 (22) | 3.94 (19) | 16.79 (20) | 21.17 (21) |
| Victoria (36) | 0 (12) | 0 (26) | 0.31 (31) | 6.60 (32) | 6.90 (32) |
| VUW (24) | 0 (12) | 0.66 (17) | 1.36 (28) | 16.79 (20) | 18.80 (24) |
| Waikato (9) | 0.78 (5) | 4.08 (5) | 2.43 (26) | 23.43 (12) | 30.71 (14) |
| Wollongong (17) | 0 (12) | 0 (26) | 6.39 (10) | 12.74 (26) | 19.13 ( 23) |

Note: [a] Numbers in parentheses are academic staff numbers (from the rank of Lecturer and above) in each Australian and New Zealand economics department, August 2003.[b] *AER* adjusted pages per capita. [c, d, e f] Numbers in parentheses show the rankings for Group 1, 2, 3, 4, respectively. [g] Numbers in parentheses show the rankings by total Groups 1-4 pages published per capita. TW = Towe and Wright weights.

**Table 4. Rankings of Economics Departments Per Capita for Australia and New Zealand Using TWAG Weights, 1988-2002**

| University | Group 1 | Group 2 | Group 3 | Group 4 | Groups 1-4 |
|---|---|---|---|---|---|
| Adelaide (18)[a] | 0.96 [b] (12) [c] | 2.16 (13) [d] | 4.05 (10) [e] | 3.09 (5) [f] | 10.26 (12) [g] |
| ANU (15) | 2.81 (3) | 12.21 (1) | 3.16 (17) | 1.90 (11) | 20.08 (3) |
| Auckland (25) | 1.55 (8) | 3.85 (6) | 2.28 (20) | 1.40 (18) | 9.09 (13) |
| Canberra (11) | 0 (22) | 0.15 (27) | 2.13 (21) | 0.94 (26) | 3.22 (27) |
| Canterbury (14) | 2.81 (3) | 2.82 (9) | 4.42 (8) | 1.27 (20) | 11.32 (9) |
| Curtin (20) | 0.17 (18) | 0.44 (20) | 3.14 (18) | 1.74 (13) | 5.49 (19) |
| Deakin (14) | 0.31 (16) | 0 (29) | 1.98 (22) | 0.84 (29) | 3.13 (28) |
| Flinders (13) | 0 (22) | 0 (29) | 3.22 (16) | 0.85 (28) | 4.07 (24) |
| Griffith (9) | 2.13 (7) | 0 (29) | 1.98 (22) | 1.26 (21) | 5.37 (20) |
| La Trobe (18) | 0.60 (14) | 1.56 (15) | 7.80 (3) | 3.47 (1) | 13.43 (5) |
| Lincoln (12) | 0 (22) | 0 (29) | 3.70 (13) | 1.07 (24) | 4.77 (21) |
| Macquarie (25) | 0 (22) | 1.03 (19) | 3.76 (12) | 1.58 (17) | 6.37 (18) |
| Massey (18) | 0.24 (17) | 1.16 (17) | 0.42 (30) | 1.91 (10) | 3.73 (25) |
| Melbourne (39) | 2.58 (5) | 6.79 (2) | 14.00 (1) | 3.38 (2) | 26.75 (1) |
| Monash (30) | 1.42 (11) | 2.11 (14) | 5.28 (6) | 1.60 (16) | 10.41 (11) |
| Murdoch (9) | 1.46 (10) | 1.06 (18) | 7.27 (4) | 2.34 (8) | 12.13 (7) |
| Newcastle (12) | 0 (22) | 0.24 (25) | 1.86 (25) | 2.48 (7) | 4.58 (22) |
| Otago (12) | 0 (22) | 2.39 (11) | 2.32 (19) | 2.15 (9) | 6.86 (17) |
| Queensland (41) | 1.53 (9) | 2.94 (8) | 3.64 (14) | 3.37 (3) | 11.48 (8) |
| QUT (23) | 0.17 (18) | 0.22 (26) | 1.74 (26) | 0.89 (27) | 3.02 (29) |
| RMIT (31) | 0 (22) | 0.25 (24) | 0.31 (32) | 0.51 (31) | 1.07 (31) |
| Sydney (19) | 3.01 (2) | 4.23 (5) | 3.94 (11) | 1.32 (19) | 12.50 (6) |
| Tasmania (9) | 0 (22) | 2.38 (12) | 6.28 (5) | 1.82 (12) | 10.48 (10) |
| UNE (20) | 0 (22) | 0.31 (23) | 4.19 (9) | 2.59 (6) | 7.09 (15) |
| UNSW (38) | 3.50 (1) | 6.33 (3) | 5.23 (7) | 1.12 (23) | 16.18 (4) |
| UTS (32) | 0.13 (20) | 0.41 (22) | 1.02 (29) | 0.75 (30) | 2.31 (30) |
| UWA (15) | 2.44 (6) | 4.94 (4) | 9.99 (2) | 3.21 (4) | 20.58 (2) |
| UWS (35) | 0.10 (21) | 1.42 (16) | 1.87 (24) | 1.02 (25) | 4.41 (23) |
| Victoria (36) | 0 (22) | 0.03 (28) | 0.37 (31) | 0.51 (31) | 0.91 (32) |
| VUW (24) | 0.36 (15) | 0.42 (21) | 1.73 (27) | 1.20 (22) | 3.71 (26) |
| Waikato (9) | 0.78 (13) | 3.23 (7) | 1.4 (28) | 1.61 (15) | 7.02 (16) |
| Wollongong (17) | 0 (22) | 2.78 (10) | 3.43 (15) | 1.65 (14) | 7.86 (14) |

Note: [a] Numbers in parentheses are academic staff numbers (from the rank of Lecturer and above) in each Australian and New Zealand economics department, August 2003. [b] *AER* adjusted pages per capita. [c, d e, f] Numbers in parentheses show the rankings for Group 1, 2, 3, 4, respectively. [g] Numbers in parentheses show the rankings for the total in Groups 1-4. TWAG = Towe and Wright Adjusted by Gibson weights.

**Table 5. Rankings of Economics Departments Per Capita for Australia and New Zealand Using TWAG Weights, 1996-2002**

| University | Group 1 | Group 2 | Group 3 | Group 4 | Groups 1-4 |
|---|---|---|---|---|---|
| Adelaide (18)[a] | 0 [b] (12) [c] | 1.95 (6) [d] | 2.05 (12) [e] | 2.18 (3) [f] | 6.18 (9) [g] |
| ANU (15) | 2.10 (1) | 5.46 (1) | 1.99 (14) | 1.13 (14) | 10.68 (3) |
| Auckland (25) | 0 (12) | 1.11 (12) | 1.07 (23) | 0.87 (19) | 3.05 (17) |
| Canberra (11) | 0 (12) | 0.15 (23) | 0.97 (24) | 0.59 (28) | 1.71 (26) |
| Canterbury (14) | 0.65 (7) | 1.77 (7) | 3.44 (6) | 1.07 (16) | 6.93 (7) |
| Curtin (20) | 0.17 (10) | 0.31 (19) | 1.49 (15) | 1.26 (11) | 3.23 (16) |
| Deakin (14) | 0.31 (9) | 0 (25) | 1.48 (16) | 0.61 (27) | 2.40 (23) |
| Flinders (13) | 0 (12) | 0 (25) | 1.16 (21) | 0.35 (31) | 1.51 (28) |
| Griffith (9) | 0 (12) | 0 (25) | 0.85 (25) | 0.56 (29) | 1.41 (29) |
| La Trobe (18) | 0 (12) | 1.34 (11) | 5.04 (4) | 2.32 (1) | 8.70 (6) |
| Lincoln (12) | 0 (12) | 0 (25) | 2.38 (8) | 0.67 (25) | 3.05 (17) |
| Macquarie (25) | 0 (12) | 0.07 (25) | 1.39 (18) | 1.09 (15) | 2.55 (20) |
| Massey (18) | 0 (12) | 0.90 (14) | 0.13 (30) | 1.48 (7) | 2.51 (21) |
| Melbourne (39) | 1.27 (3) | 4.53 (2) | 8.97 (1) | 2.11 (5) | 16.88 (1) |
| Monash (30) | 0.98 (4) | 0.87 (15) | 2.22 (9) | 1.02 (17) | 5.09 (12) |
| Murdoch (9) | 0 (12) | 1.06 (13) | 6.48 (2) | 1.37 (10) | 8.91 (5) |
| Newcastle (12) | 0 (12) | 0.24 (21) | 0 (32) | 1.17 (13) | 1.41 (29) |
| Otago (12) | 0 (12) | 1.67 (9) | 1.28 (20) | 1.38 (9) | 4.33 (13) |
| Queensland (41) | 0 (12) | 1.77 (7) | 2.04 (13) | 2.25 (2) | 6.06 (10) |
| QUT (23) | 0 (12) | 0.09 (24) | 1.14 (22) | 0.72 (22) | 1.95 (24) |
| RMIT (31) | 0 (12) | 0.25 (20) | 0.31 (29) | 0.45 (30) | 1.01 (31) |
| Sydney (19) | 0.74 (6) | 0.78 (16) | 1.46 (17) | 0.95 (18) | 3.93 (14) |
| Tasmania (9) | 0 (12) | 1.37 (10) | 3.55 (5) | 1.42 (8) | 6.34 (8) |
| UNE (20) | 0 (12) | 0 (25) | 2.11 (11) | 1.66 (6) | 3.77 (15) |
| UNSW (38) | 1.58 (2) | 4.10 (3) | 2.99 (7) | 0.71 (23) | 9.38 (4) |
| UTS (32) | 0 (12) | 0.33 (18) | 0.53 (27) | 0.68 (24) | 1.54 (27) |
| UWA (15) | 0.37 (8) | 3.23 (4) | 5.15 (3) | 2.16 (4) | 10.91 (2) |
| UWS (35) | 0.10 (11) | 0.23 (22) | 1.34 (19) | 0.84 (20) | 2.51 (21) |
| Victoria (36) | 0 (12) | 0 (25) | 0.11 (31) | 0.33 (32) | 0.44 (32) |
| VUW (24) | 0 (12) | 0.42 (17) | 0.47 (28) | 0.84 (20) | 1.73 (25) |
| Waikato (9) | 0.78 (5) | 2.62 (5) | 0.83 (26) | 1.18 (12) | 5.41 (11) |
| Wollongong (17) | 0 (12) | 0 (25) | 2.18 (10) | 0.64 (26) | 2.82 (19) |

Note: [a] Numbers in parentheses are academic staff numbers (from the rank of Lecturer and above) in each Australian and New Zealand economics department, August 2003.[b] *AER* adjusted pages per capita. [c, d, e, f, g] Numbers in parentheses show the rankings for Group 1, 2, 3, 4, respectively. [f] Numbers in parentheses show the rankings for the total in Groups 1-4. TWAG = Towe and Wright Adjusted by Gibson weights.

**Table 6. Macri and Sinha (2006), TW and TWAG Per Capita Rankings, 1988-2002**

| University | Number | LP | KMS | MSF | TW[a] | TWAG[b] |
|---|---|---|---|---|---|---|
| Adelaide | 5 | 13 | 12 | 7 | 5 | 12 |
| ANU | 10 | 2 | 1 | 4 | 7 | 3 |
| Auckland | 21 | 5 | 5 | 17 | 19 | 13 |
| Canberra | 25 | 31 | 29 | 27 | 27 | 27 |
| Canterbury | 15 | 6 | 6 | 15 | 16 | 9 |
| Curtin | 19 | 20 | 27 | 20 | 17 | 19 |
| Deakin | 29 | 21 | 23 | 29 | 29 | 28 |
| Flinders | 28 | 23 | 25 | 26 | 26 | 24 |
| Griffith | 26 | 8 | 9 | 22 | 22 | 20 |
| La Trobe | 2 | 14 | 11 | 3 | 3 | 5 |
| Lincoln | 22 | 30 | 28 | 23 | 23 | 21 |
| Macquarie | 18 | 18 | 20 | 18 | 18 | 18 |
| Massey | 20 | 24 | 19 | 21 | 21 | 25 |
| Melbourne | 1 | 1 | 3 | 1 | 1 | 1 |
| Monash | 13 | 9 | 8 | 11 | 12 | 11 |
| Murdoch | 6 | 19 | 21 | 6 | 6 | 7 |
| Newcastle | 12 | 27 | 30 | 13 | 10 | 22 |
| Otago | 8 | 12 | 16 | 12 | 11 | 17 |
| Queensland | 4 | 11 | 10 | 5 | 4 | 8 |
| QUT | 27 | 28 | 26 | 28 | 28 | 29 |
| RMIT | 32 | 29 | 32 | 32 | 31 | 31 |
| Sydney | 17 | 7 | 7 | 14 | 15 | 6 |
| Tasmania | 9 | 17 | 17 | 10 | 9 | 10 |
| UNE | 7 | 25 | 22 | 9 | 8 | 15 |
| UNSW | 11 | 4 | 4 | 8 | 13 | 4 |
| UTS | 30 | 22 | 18 | 30 | 30 | 30 |
| UWA | 3 | 3 | 2 | 2 | 2 | 2 |
| UWS | 23 | 26 | 24 | 25 | 25 | 23 |
| Victoria | 31 | 32 | 31 | 31 | 32 | 32 |
| VUW | 24 | 10 | 13 | 24 | 24 | 26 |
| Waikato | 14 | 15 | 15 | 19 | 20 | 16 |
| Wollongong | 16 | 16 | 14 | 16 | 14 | 14 |

Notes: [a,b] The rankings are for Groups 1-4 from Tables 2 and 4, respectively. Number denotes number of publications, LP = Laband and Piette, KMS = Kalaitzidakis, Mamuneas and Stengos, MSF = Mason, Steagall and Fabritius, TW = Towe and Wright, and TWAG = Towe and Wright Adjusted by Gibson weights, respectively.

**Table 7. Macri and Sinha (2006), TW and TWAG Per Capita Rankings, 1996-2002**

| University | Number | LP | KMS | MSF | TW [a] | TWAG [b] |
|---|---|---|---|---|---|---|
| Adelaide | 5 | 10 | 6 | 6 | 5 | 9 |
| ANU | 12 | 2 | 3 | 7 | 9 | 3 |
| Auckland | 22 | 6 | 5 | 19 | 20 | 17 |
| Canberra | 25 | 31 | 29 | 28 | 28 | 26 |
| Canterbury | 11 | 9 | 8 | 9 | 10 | 7 |
| Curtin | 16 | 14 | 20 | 15 | 15 | 16 |
| Deakin | 27 | 24 | 18 | 26 | 26 | 23 |
| Flinders | 30 | 29 | 27 | 30 | 30 | 28 |
| Griffith | 28 | 30 | 28 | 29 | 29 | 29 |
| La Trobe | 1 | 15 | 10 | 3 | 3 | 6 |
| Lincoln | 18 | 25 | 25 | 22 | 22 | 17 |
| Macquarie | 17 | 23 | 26 | 17 | 17 | 20 |
| Massey | 14 | 18 | 16 | 16 | 12 | 21 |
| Melbourne | 2 | 1 | 1 | 1 | 1 | 1 |
| Monash | 15 | 8 | 11 | 14 | 16 | 12 |
| Murdoch | 6 | 20 | 24 | 4 | 6 | 5 |
| Newcastle | 19 | 19 | 32 | 20 | 19 | 29 |
| Otago | 9 | 13 | 15 | 11 | 11 | 13 |
| Queensland | 4 | 12 | 12 | 5 | 4 | 10 |
| QUT | 26 | 26 | 23 | 25 | 25 | 24 |
| RMIT | 31 | 21 | 31 | 31 | 31 | 31 |
| Sydney | 20 | 5 | 7 | 18 | 18 | 14 |
| Tasmania | 7 | 16 | 14 | 8 | 7 | 8 |
| UNE | 8 | 28 | 21 | 12 | 8 | 15 |
| UNSW | 13 | 3 | 4 | 10 | 13 | 4 |
| UTS | 29 | 17 | 17 | 27 | 27 | 27 |
| UWA | 3 | 4 | 2 | 2 | 2 | 2 |
| UWS | 21 | 22 | 19 | 21 | 21 | 21 |
| Victoria | 32 | 32 | 30 | 32 | 32 | 32 |
| VUW | 23 | 7 | 13 | 24 | 24 | 25 |
| Waikato | 10 | 11 | 9 | 13 | 14 | 11 |
| Wollongong | 24 | 27 | 22 | 23 | 23 | 19 |

Notes: [a,b] The rankings are for Groups 1-4 from Tables 3 and 5, respectively. Number denotes number of publications, LP = Laband and Piette, KMS = Kalaitzidakis, Mamuneas and Stengos, MSF = Mason, Steagall and Fabritius, TW = Towe and Wright, and TWAG = Towe and Wright Adjusted by Gibson weights, respectively.

**Table 8. Correlation Matrix for Rankings, 1988-2002**

| | Number | LP | KMS | MSF | TW | TWAG |
|---|---|---|---|---|---|---|
| Number | 1 | | | | | |
| LP | 0.554 | 1 | | | | |
| KMS | 0.562 | 0.964 | 1 | | | |
| MSF | 0.971 | 0.672 | 0.678 | 1 | | |
| TW | 0.979 | 0.603 | 0.598 | 0.986 | 1 | |
| TWAG | 0.863 | 0.790 | 0.795 | 0.933 | 0.886 | 1 |

Note: Number denotes number of publications, LP = Laband and Piette, KMS = Kalaitzidakis, Mamuneas and Stengos, MSF = Mason, Steagall and Fabritius, TW = Towe and Wright, and TWAG = Towe and Wright Adjusted by Gibson weights, respectively.

**Table 9. Correlation Matrix for Rankings, 1996-2002**

| | Number | LP | KMS | MSF | TW | TWAG |
|---|---|---|---|---|---|---|
| Number | 1 | | | | | |
| LP | 0.564 | 1 | | | | |
| KMS | 0.622 | 0.892 | 1 | | | |
| MSF | 0.975 | 0.667 | 0.708 | 1 | | |
| TW | 0.985 | 0.613 | 0.671 | 0.989 | 1 | |
| TWAG | 0.887 | 0.700 | 0.795 | 0.942 | 0.900 | 1 |

Note: Number denotes number of publications, LP = Laband and Piette, KMS = Kalaitzidakis, Mamuneas and Stengos, MSF = Mason, Steagall and Fabritius, TW = Towe and Wright, and TWAG = Towe and Wright Adjusted by Gibson weights, respectively.

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