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Research Output in

New Zealand Economics Departments 2000-2006

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Abstract

This paper considers the research productivity of New Zealand based economics departments over the period 2000 to 2006. It examines journal based research output across departments and individuals using six output measures. We show that Otago and Canterbury performed consistently well over the period, with Otago generally the highest ranked department. The measures used place different emphasis on 'quality' versus 'quantity'. Which measure is used has a significant influence on the rankings of Auckland, Victoria and Waikato. The controversy surrounding the inclusion of 'visitors' and the influence of research stars is considered. Rankings of the leading individual researchers are provided.

Keywords

economics departments
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JEL Codes

A19, C81, J24.

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1. Introduction

In this paper we explore the research productivity of New Zealand's university-based economics departments over the period 2000 to 2006. In doing so, we examine research output across departments and among individual researchers. Our findings suggest that there is a surprising degree of stability in departmental rankings across the six output measures employed in this study. There are differences in rankings based on the relative weights given to quality and quantity dimensions of output; this is especially so for Auckland, Victoria and Waikato. However, Otago and Canterbury perform well under all our output weighting schemes, with Otago being the overall 'winner' under our preferred method of defining active researchers. The issue of 'who is in, and who is out' is of critical importance, especially for Auckland. We explore this matter in some depth, and in a more general manner, we address the role of research stars in the New Zealand setting. The paper concludes with a discussion of the performance of individual researchers.[1]

2. Literature Review

Economists have had a long-standing interest in matters of productivity and the efficiency of resource use, and therefore, it is not surprising that there is extensive literature on the relative performance of economics departments, especially with respect to research output. Much of the early work was carried out in the USA, and the starting point for the present day measurement approach is generally deemed to be the pioneering work of Liebowitz and Palmer (1984). This was the first work to generate a set of weights based on citation counts. It should be noted that Liebowitz and Palmer went well beyond merely counting citations for various journals: they adjusted for self-citations, age and size of journal, and developed a method for weighting citations to generate a set of impact factors.

Liebowitz and Palmer's work was updated by Laband and Piette (1994) to generate rankings for 106 journals based on 1990 citation counts. They extended Liebowitz and Palmer's approach by adjusting for page size differences between journals. The LP weighting scheme is still used for output weighting purposes (Sinha, Macri and McAleer, 2007; Macri and Sinha, 2006; Coupe, 2003), and is sometimes said to constitute the 'gold standard'. An alternative weighting scheme was developed by Mason, Steagall and Fabritius (1997). They surveyed economics department chairs at 965 universities in the USA in late 1992 and early 1993; they received replies from 216 heads, and used the resulting information to construct a set of weights for 157 journals. This reputations-based weighting scheme also continues to be used today (Sinha, Macri and McAleer, 2007; Macri and Sinha, 2006; Coupe, 2003).

Since the mid-1990s, research ranking studies have been undertaken in a number of countries and regions (for an excellent review of such studies, see Macri and Sinha, 2006).

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[1] The database used is available from http://wms soros.mngt.waikato.ac.nz/personal/tressler.

However, aside from the USA, the most extensive work has taken place in Australia. For purposes of this paper, we shall focus on the Australian literature, since much of the output measurement work for New Zealand has resulted from research by Australian- based authors or by New Zealand researchers using Australian work as a departure point. It is generally agreed that the first major work in Australia was undertaken by Harris (1988); he attempted to measure departmental research output by constructing a set of arbitrary weights covering a wide range of outputs: books, monographs, journal articles, and conference papers.[2] Harris (1990) followed up this work by extending his methodology to include citation counts. Although his work was pioneering in nature, and extensive in scope, it was properly criticized for being based on a set of highly arbitrary weights, and for not adequately reflecting quality differences between journal articles.

Subsequently, Towe and Wright (1995) utilized the work of Laband and Piette (1994), Diamond (1989), Hall (1987), and Hill and Murphy (1994), to construct a four-tier weighting scheme. Towe and Wright somewhat arbitrarily placed 12 journals in Group 1, 11 journals in Group 2, and 48 journals in Group 3. All other journals listed in the 1994 *EconLit* data base were assigned to an 'other' category, and deemed to be Group 4 journals. It should be noted that Towe and Wright derived page correction factors for all 71 journals in Groups 1 to 3; that is, they standardized journal page size relative to an average *AER* page. They then derived total and per capita output rankings for 23 Australian economics and 5 econometric departments for various combinations of their 4 quality groupings. Towe and Wright consider rankings over various combinations of quality groups without giving weights to the different groups.

The first major rankings study of New Zealand university-based economics departments was carried out by Bairam (1996). He utilized Towe and Wright's (1995) above-described four-tier ranking system, and defined relevant research output as being all refereed papers published between 1988 and 1995 in journals listed in the *EconLit* data base as at 31 December 1995. Bairam constructed estimates of total and per capita output for all seven economics departments, utilizing various combinations of his output categories.[3] Aggregating across all four categories, he found Otago and Victoria to be the leading departments in terms of per capita output, followed, in order, by Auckland, Lincoln, Massey, Waikato and Canterbury. Bairam found substantial variation in individual output within and between departments. For instance, between the years 1988 and 1995, only 62 percent of New Zealand's academic economists published one or more pages in any of his Group 1 to Group4 journals. Bairam also found that in two departments, the median publication rate was zero; that is, more than half the staff had not published a single page over the relevant time period in any of the 400 plus journals under review.

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[2] Harris (1998) developed a complex weighting scheme covering a wide range of outputs. For example, he arbitrarily allocated 10, 6 and 3 points to articles appearing in 1st, 2nd and 3rd tier journals. He also granted 35 points to research books and 15 points to 'second rank books', and so on.

[3] There are now eight university-based economics departments in New Zealand. The Auckland University of Technology (AUT) was granted university status in 2000.

Bairam's work was strongly criticized by Gibson (2000). He pointed out that although Bairam adjusted for page size differences for Towe and Wright's 71 explicitly ranked journals, he failed to do so for publications in all other journals. It should be noted that according to Bairam (1996), 77% of all publications by New Zealand economists, over the relevant time period, were in 'other' journals. Since, Towe and Wright's Group1 to Group3 journals displayed, on average, fewer words per page than a representative page in the *AER*, it was likely that Group4 journals would also do so. This led Gibson to suggest that Bairam's approach might have seriously overstated total output and have ultimately influenced departmental rankings. Gibson then proceeded to demonstrate the validity of his argument by deriving page correction factors for 97 Group4 journals. He found the average Group4 publication to contain 0.72 as many words as an average *AER* page. The impact of this adjustment to output is significant: Gibson found that Bairam's approach overstates total published pages by 27 percent, with the impact on individual departments ranging from 12 to 38 percent.

Gibson also pointed out that Bairam derived his overall rankings by implicitly giving all journal articles equal weight. Gibson addressed this problem by constructing a set of weights, using an ordered-logit model in which academic rank is regressed against journal publication data and other control variables using New Zealand-specific data.[4] He estimated the relevant weights for Group1 to Group4 publications to be 1.0; 0.64; 0.34; and 0.05, respectively. Utilizing this weighting scheme (henceforth called **Gibson**) and his extended list of page correction factors, Gibson found Canterbury to be New Zealand's most productive economics department over the period 1996 to 1998. The others, in rank order, were Victoria, Waikato, Otago, Lincoln, Auckland and Massey.

In a rather contentious paper, King (2001) strongly criticized Bairam (1997) and Gibson (2000) for employing, in his view, an inappropriate output weighting scheme, and for failing to include long-term visiting staff in the analysis. First, let us look at the weighting scheme selection issue. King adopted Laband and Piette's citation-based system, and applied it to four different sets of journals: Scott and Mitias' (1996) five 'core' journals; Conroy et al, (1995) and Dusansky and Vernon's (1998) eight 'Blue Ribbon' journals; the eight 'Blue Ribbon' journals plus the New Zealand Economic Papers; and all *EconLit* referenced publications over the 1990-1999 period. His results were dramatically different from those found by Bairam and by Gibson: King found that Auckland ranked first on 27 of his 32 measures, and that Otago, the leader according to Bairam's (1996) analysis, was generally found to be in the bottom half of the pack. Victoria, the leader in Gibson's (2000) ranking scheme, fared better, generally occupying second or third place in the King rankings. King also took exception to the prevailing approach used by almost all researchers in this area, including Bairam and Gibson, of excluding visiting staff from the study. He demonstrated that in the New Zealand environment, the decision to include or exclude such staff does

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4   This approach appears to be unique in the literature on department research rankings. Rather than using direct evidence of journal quality or impact, e.g. reputation or citations, Gibson uses information revealed by promotions and hiring decisions.

matter given the presence of at least one world class economist (Peter Phillips) in this category.

Daziel, Cullen and Saunders (2002) criticised King's work. In addition to finding a number of data collection problems, they focussed on the relevance of the Laband and Piette weighting system to the New Zealand environment. They pointed out that an output measurement scheme that took into account publications in only five or eight journals had little relevance to the New Zealand scene. For example, based on calculations by Daziel, et al. (p. 116), under King's most restrictive journal list, only 11 relevant articles were published by those economists holding a 'regular' appointment over the period 1990 to 2000.[5] Furthermore, they suggest that King's one effort to expand the list was, at best, a token effort. In his attempt to broaden Laband and Piette's list of relevant journals, King gave all 'other' journals a weighting of 0.001; that is, 1000 pages in any of these 'other' journals equalled one page in the *AER*. Daziel, Cullen and Saunders pointed out that under King's comprehensive weighting scheme, 80% of total publications generated only 4% of total output; for all other schemes, these papers were totally ignored in the output calculation.[6]

Although we largely agree with Daziel, Cullen and Saunders' critique of King's paper, we wish to note that King made an important overall contribution to the New Zealand economics departments ranking debate. In addition to demonstrating clearly the importance of the weighting scheme selection process, he made two other significant contributions to the New Zealand rankings literature. First, he drew attention to the matter of determining what to include and exclude from the analysis. That is, should one count, or not count, non-permanent staff such as international visitors, or those holding primary appointments overseas but part-time, long-term contracts in New Zealand? Most researchers have ignored these issues by restricting the analysis to permanent staff (in a North American setting, these people would hold a tenured or tenure track appointment); however, King demonstrated that, in the New Zealand setting, this approach is problematic. We shall return to this issue later on in this paper. Second, King drew attention to the matter of regional publications. Journal articles with a small country focus and orientation are not as likely to be cited as articles with a theoretical or big country focus. Thus, everything else being equal, it is reasonable to argue that citations-based weighting schemes or those based on the international reputation of

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[5] For purposes of this study, a 'regular' appointment is one akin to a tenure or tenure track position in a North American setting. Such an appointment carries significant property rights with respect to job security and benefits. Following convention, we include anyone holding such an appointment, at the Lecturer to Professor level, and currently (15 April 2007) occupying at least a 0.25 FTE position within an economics department (study leaves are considered to part of the normal workload). This means that traditional part-time staff hired to teach a course or two and those holding full-time teaching positions without research responsibilities, such as tutors, are excluded from the sample. As we shall see later in this paper, the role of academic visitors is a contentious one within the New Zealand context. We have used the term 'visitor' to refer to any academic holding a 'regular' appointment outside New Zealand, who was listed as having a short or long-term relationship with a New Zealand economics department during the 2006-2007 academic year (as per a departments website as at 15 April 2007).

[6] For King's Core5 and Blue Ribbon8 schemes, the proportion of total publications (by full-time staff) receiving a zero weighting is much higher than 80%; it is probably in excess of 95%, but King does not provide information on the overall article or page counts.

journals will be biased against New Zealand's researchers who focus on regional matters. In order to adjust for this bias, King added the *New Zealand Economic Papers (NZEP)* to Laband and Piette's (1994) list of relevant journals. In his analysis, King assigned *NZEP* pages various weights, ranging from 0.001 to 1.0 of an equivalent *AER* page.

Aside from a short response by King (2002) to Dalziel, Cullen and Saunders' (2002) critique,[7] the only other New Zealand- focussed studies found were written by Macri and Sinha, and in one instance, with McAleer[8]. In Macri and Sinha (2006), the authors carried out an extensive examination of departmental research output in all economics departments in Australia and New Zealand. Following tradition, they restricted research output to papers published in journals listed in *EconLit* at the time of the study, with the relevant time period being 1988 to 2002. It should also be noted that they expanded Towe and Wright's (1995), and Gibson's (2000), list of page correction factors to cover in excess of 500 journals. Macri and Sinha estimated the number of size-adjusted pages per department and per capita by using three distinct weighting schemes, two of which are citations- based and the other perceptions-based. For citations-based schemes they use weights derived by Laband and Piette (1994) (**LP** weights), and an updated version of the same developed by Kalaitzidakis, Manumeas and Stengos (2003) (**KMS** weights). As previously noted, **LP** weights were based on citations counts in 1990, while **KMS** weights are based on 1998 citations counts for articles published during 1994 and 1998. For their perceptions-based scheme, Macri and Sinha utilized the weights developed by Mason, Steagall and Fabritius (1997) (**MFS** weights); recall that they are based on a 1993 survey of economics department chairs in the USA.

In Sinha, Macri and McAleer (2007), the authors used the same database and general methodology as denoted above, however they added two additional weighting schemes to their repertoire: first, an unweighted summation of size and share adjusted pages in *EconLit* listed journals; and second, a scheme based on Towe and Wright's (1995) classification system and Gibson's (2000) weighting scheme. It will be shown in the following section that we have also utilized these schemes and have labelled them **Equal** and **Gibson**, respectively. In a related study, Sinha and Macri (2007) limited their analysis to professors only, and given the small number of such appointments in New Zealand in August 2003 (the census date for this study), and the relatively large number of appointments at that level in more recent time, the results of their analysis have limited relevance to the current rankings debate.[9] It should be noted that the methodology employed in this paper is virtually identical to that utilized in the previously described paper by Macri and Sinha (2006).

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[7] King's reply added little to the debate; it was mainly a vehicle for reaffirming prior arguments.
[8] They have written three papers based, in part, on New Zealand data: Macri and Sinha (2006), Sinha and Macri (2007), and Sinha, Macri and McAleer (2007).
[9] Sinha and Macri (2007) do not provide a listing of the number of Professors at each institution, but they do note that many institutions have only one such appointment at the time of the study (August 2003). In recent time a number of appointments have been made at this level in New Zealand economics departments. For example, in August 2003 Waikato had zero appointments at the Professorial level, but at the time of our study (April 2007) it had five such appointments.

It is important to note that Macri, Sinha and McAleer did not address New Zealand-only issues and rankings. This means that no attention was given to the role of visitors such as Peter Phillips, or the need to capture the importance of New Zealand-focussed research. Macri and Sinha's (2006) overall per capita ranking of New Zealand's economics departments over the period 1988 to 2002 is as follows: Canterbury was first, followed closely by Otago and Auckland; Waikato occupied fourth position, followed by Victoria, Massey and Lincoln.[10] In Sinha, Macri and McAleer (2007), the authors did not formally derive an overall ranking of Australian and New Zealand economics departments, but a mean-ranking can easily be constructed from the data presented. The New Zealand rankings, for the period 1996-2002, changed very little: in fact, the rankings remain the same save for Otago and Auckland changing places. Although they did not discuss the variation of output by individual researchers across and within departments, Macri and Sinha (2006) did produce a list of the top producers for each of their three primary output measures and for each of two time periods.

3. Methodological Issues

As indicated above, a number of important assumptions must be made in order to appropriately estimate departmental outputs and rankings. Although we have adopted the prevailing definition of output, it is nevertheless a contentious issue. That is, we have defined relevant research output to consist only of refereed articles published in the *EconLit* database. Obviously, this approach ignores many other forms of research activity such as books, monographs, conference papers, etc. However, refereed papers are generally deemed to be the industry standard in judging research performance for hiring, promotion and merit-pay decisions.[11]

Using 15 April 2007 as our reference date, we searched each department's website for core staff listings from the rank of Lecturer to Professor.[12] As shown in Table 1, there were 130 economists on staff at the eight university economics departments at that date, with Auckland having the largest department (26 members) and AUT the smallest (6 members).[13] We then collected information on all papers published by these economists in *EconLit* listed journals (as at 15 April 2007) for the period 1 January 2000 to 31 December 2006. In all, we

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[10] AUT is not ranked in this study, undoubtedly because it did not hold university status throughout the study period.

[11] The regression analysis in Gibson (2000) does suggest that books influence promotions decisions. His regression results suggest that a book is equivalent to 5-6 pages in a Group One journal in terms of its impact on academic rank.

[12] On two occasions we wrote to departmental chairs asking for additions or deletions to the list we prepared from each department's website as at 15 April 2007. It should also be noted that by core staff, we mean permanent staff akin to what, in North American, would be called tenured or tenure track appointments. All such staff members were included in the study unless they were explicitly listed as being on long-term leave or held less than 0.25 ETF appointment

[13] At this point it is important to stress that the unit under consideration in this study is economics departments per se, not all economists at each university. This is an important distinction between our study and the New Zealand government's Performance Based Research Funding (PBRF) exercise.

determined that 101 of the nation's 130 economists had published a total of 590 papers in 244 of the 1217 possible journals.

All 590 publications were attributed to each researcher's home institution as at 15 April 2007, regardless of place of employment at the time the work was written or published. This approach, known as the Stock method of attribution, is widely used for both practical and theoretical reasons. First, it is obviously easier to attribute all output to a researcher's current institution than it is to determine where the work was actually performed. More importantly; we are interested in each department's current research potential and this is generally agreed to be best measured by its stock of research undertaken by current members of the department. The alternative approach, the Flow method of attribution, provides a measure of past performance but may say little about current capability, especially if the institution has lost its best researchers. In a world of small departments, as is the norm in New Zealand, this can be an important issue, and one that is avoided by the Stock approach.

Table 1. Summary Information by Department 2000-2006

	Number of Staff	Number of Papers	Share Adjusted Papers	Share Adjusted Pages	Share Adjusted Papers/Capita	Share Adjusted Pages/Capita
Auckland	26	82	54.9	717.3	2.1	27.6
AUT	6	10	6.2	77.0	1.0	12.8
Canterbury	16	79	49.4	636.0	3.1	39.8
Lincoln	12	60	31.6	379.4	2.6	31.6
Massey	16	67	45.1	503.7	2.8	31.5
Otago	17	107	64.4	871.8	3.7	51.3
Victoria	22	72	42.7	611.4	1.9	27.8
Waikato	15	113	77.6	896.4	5.2	59.8
Total/Average	130	590	46.5	586.6	2.8	35.3

Notes: Staff numbers are from department websites, April 2007.
Publication data is from *EconLit*; see text for details.

We have also followed prevailing practice by adopting the 'share-adjusted and size-adjusted page' as our unit of output. This means that multiple authored papers have shares allocated on the basis of the 1/n rule where n is the number of authors. It also means that page size differences for 171 journals have been addressed by applying correction factors (CF) derived by Towes and Wright (1995) and Gibson (2000). For papers in all other EconLit referenced journals (69 in number), we have used the average value derived by Gibson for his Group4 journals: more explicitly, pages in such journals are assumed to contain 0.72 as many words as a standard *AER* page. [14]

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[14] Unfortunately, a discussion of the possible error introduced by this estimation process involves a brief discussion of work carried out later in this paper. In the following section of this paper, we select six weighting schemes. In one case, 100 percent of the papers in journals receiving a page-

At this point we shall return to a matter that is almost universally ignored in the output measurement literature, but is of empirical and political significance in the New Zealand scene: the role of visiting academics. As noted, all studies reviewed for purposes of this paper (save for King (2001)) focussed on permanent staff; that is, staff members holding what would be called in the North American setting, tenured or tenure track appointments. In general, we have adopted this approach and agree that it is the best measure of a department's long-run staffing level. The argument against attempting to measure the output of part-time, non-resident academics is that it is extremely difficult to do so in a non-controversial manner. For instance, is the share of a 'visiting' researcher's output to be assigned to his/her department to be based on the percentage of the individual's income attributable to New Zealand sources, or on the percentage of time devoted to his/her New Zealand university, or on some other allocation mechanism?[15] It is clear that any estimation process is fraught with problems, and that game-playing behaviour by administrators may be encountered. However, the New Zealand dilemma is somewhat unique; and it is largely attributable to the presence of Peter Phillips, a truly world class researcher, who has spent part of each year, over the past decade or so, at the University of Auckland's economics department. In order to address this issue, we shall proceed by calculating departmental output for our core staff ('regular') and then doing so separately for various levels of contribution from Phillips.[16] At this point, it should be noted that the inclusion or exclusion of Phillips does matter a great deal to Auckland's rankings.

4. Weighting Schemes

Before we discuss the selection of weighting schemes, one additional qualification is in order. As mentioned previously, citations-based schemes are thought to be biased against researchers performing policy-oriented and applied work related to New Zealand issues. This is really a small country versus a big country or big region issue; for instance, a paper discussing labour policy issues in the New Zealand context, is likely to experience fewer hits and citations than one dealing with a similar issue in a USA or EU or UK setting (everything

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size estimate are assigned the lowest possible weighting. In three other cases, between 90 and 96 percent of papers in such journals receive a zero weighting, and, hence, do not have any impact on departmental output measures. In fact, the only case in which our page-size correction procedure might have a material impact on total output occurs when we assume that all journals are of equal value.

[15] See footnote 4 for a discussion of the meaning of a 'Visiting academic'.

[16] It must be acknowledged that other departments, such as Waikato and Victoria, have on-going relationships with off-shore economists. There are undoubtedly others, and that is the problem: we do not know who they are, and even if we did, the nature of the on-going relationship is not likely to be in the public domain. Other objections exist. For example, Dalziel, Cullen and Saunders (2002, p.115) point out that Victoria and Canterbury have active programs to bring in distinguished scholars on an annual basis. Presumably these academics meet with graduate students, present seminars, and contribute towards the department's research mission in a variety if ways. Indeed, it is quite likely that all departments in New Zealand bring in distinguished scholars on a regular basis. Although Dalziel, Cullen and Saunders did not say so explicitly, the implication is that expansion of the list of relevant researchers to include part-time, non-resident academics is an open invitation to game-playing activity.

else being equal).[17] In order to adjust for this probable bias, we will follow King's (2001) approach and give explicit weighting to all papers published in the *NZEP*. [18] For purposes of this study, we have done so by giving all pages published in the *NZEP* the same weighting as that received by *Economic Record* pages under all weighting schemes. Of course, we have adjusted for page size differences between the two journals.[19]

In the literature review section of this paper, we noted the wide range of weighting schemes used by scholars in this area of research. Our intention is not to construct or invent new schemes, but to use a range of schemes from the literature to demonstrate the importance of the selection process and to help explain some of the controversy surrounding economics department rankings in New Zealand. At the risk of being overly simplistic, it can be said that most attempts to rank economics department use one or more of three basic approaches: all journals are considered to be of equal importance; journals are ranked on the basis of perceived quality differences (reputational weights); or journals are ranked on citation counts subject to various adjustments.   We have selected measures to cover all three basic approaches and we have added a scheme based, in part, on econometric modeling.

Although much maligned, the judgement that all journals are of equal value provides an estimate of output quantity; we label this weighting scheme as **Equal**.[20] For a perceptions-based scheme we have selected the work of Mason, Steagall and Fabritius (1997). This scheme, henceforth denoted as **MSF**, is based on a 1993 survey of US economics department chairs. Respondents were asked to rank journals on the basis of 'four' for the best to 'zero' for the worst (non-integer values were acceptable). The resulting vector of weights lists explicit values for 157 journals, with the *AER* having a weight of 3.83 and the *Economic Record* (and thus the *NZEP*) a weight of 2.21.

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[17] It should be noted that the key element of our citations based weighting schemes is not based on citations per article, but on citations per journal. Therefore, our citations bias argument is an indirect one. The argument is as follows: articles with a regional focus are primarily of interest to regional journals; therefore, small country journals are less likely to experience high volume citations than large country journals containing articles of similar quality. Another argument in support of the small country citation-count bias is that journal editors now increasingly compete in an international rankings game that is primarily citations-based. Therefore, it is reasonable to assume that expected citations counts may enter the article selection process. If so, papers with a policy focus on issues of relevance to distant and small nations are not likely to be as attractive as papers, of equal technical merit, addressing home country or home region issues.

[18] Others have used this approach to account for regional issues. For example, Harris (1988, p. 104) included both the *Economic Record* and *the Australian Economic Papers* in his list of top-tier journals, and Kalaitzidakis, Mamuneas and Stengos (1999) arbitrarily added the *European Economic Review* to their core journals list. A somewhat different approach to addressing the issue was taken by Pomfret and Wang (2003); they acknowledged the importance of six Australian journals by considering them to be a separate category for output determination purposes.

[19] This adjustment is important since an average page in the *Economic Record* is 1.2 the size of a standard *AER* page, whereas the *NZEP* is much smaller, at 0.66 of a standard *AER* page.

[20] It should be noted that although this measure implies that all journals are of equal value, pages in each journal have been adjusted for size differences. Sinha, Macri and McAleer (2007) utilized a similar weighting scheme but they have labelled it differently- 'Towe and Wright'.

We have selected two 'pure' citations-based schemes. Although many such studies rely on the estimates of Laband and Piette (1994), we have resisted doing so for two reasons. First, although the work is methodologically sound, it is rather dated (1990 citations counts); and second, Laband and Piette's framework has been updated by Kalaitzidakis, Mamuneas and Stengos (2003), using 1998 citations counts, to yield the **KMS** scheme, with explicit weights for 143 journals. We have selected their most sophisticated scheme that adjusts for the age and size of the journal, as well as self-citations and journal impact. The **KMS** scheme yields a substantial difference in weights between the best and the lesser journals. For example, after adjusting for page size differences, a page in the *AER* holds the same weight as 13 pages for the 30th ranked journal (*International Journal of Economics*), 34 pages in the *Economic Record,* and 62 pages in the *NZEP*.

We have selected a second pure citations-based scheme derived by Coupe (2003). Although his methodology is similar to that of Kalaitzidakis, Mamuneas and Stengos, his work is based on a more recent time period (2000 as opposed to 1998), and covers a broader range of journals (273 as opposed to 143). This scheme is labelled **CoupeIF** to reflect the fact that we have selected Coupe's Impact Factor scheme. Although the **CoupeIF** and **KMS** schemes rely on impact factors, they yield somewhat different journal rankings and relative weightings.[21] For instance, **CoupeIF**'s top ranked journal is the *Journal of Economic Literature (JEL)* rather than the *AER*. Under **CoupeIF,** a researcher publishing in the *Economic Record* and the *NZEP* must contribute 17.3 and 31.5 pages, respectively, to equal one page in the *JEL.*

Two additional weighting schemes are utilized in this study; one relies and a mixture of citation counts and arbitrary categorization; and the other uses econometric modelling to derive a set of weights for each of its groupings. First, let us discuss a scheme developed by Gibson (2000). In deriving this scheme (**Gibson**), Gibson utilized Towe and Wright's four-tier classification system, which in turn was partially based on Liebowitz and Palmer's citation-based weighting scheme, and on a healthy mix of arbitrariness to allocate 71 journals into three categories; all other EconLit journals were allocated to a fourth group. As previously noted, Bairam (1996) used this scheme in his pioneering study of New Zealand's economics departments. This work was extended by Gibson in two ways. First, page-adjustment factors were calculated for 97 Group 4 journals, covering virtually all the 'other' journals carrying work published by New Zealand's academic economists over the 1996 to 1998 period.

Second, Gibson utilized ordered-logit analysis of academic rank regressed on journal publications and other control variables to construct a set of weights for journals in each of the four groupings. The weight for the top group (12 journals) was normalized at 1.0, and the coefficients for the remaining three groups were estimated to be 0.64, 0.34 and 0.05, respectively. This meant that researchers publishing in all but the leading 71 journals needed to generate twenty pages of output to equal that of one in a Group1 publication. Since the

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[21] The impact factor is generally the number of citations articles in a journal receive over a given time period divided by the number of papers published by the journal over the time period.

Economic Record is deemed to be a Group3 journal, a standardized page in it, and hence the *NZEP*, carry a weighting of 0.34 of a standardized page in a top tier journal. It should be noted that a major advantage of the **Gibson** scheme is that the weights reflect the implicit values placed by New Zealand-based promotions and hiring committees on their academic staff's research portfolios.[22]

The sixth and final scheme to be employed in the analysis is denoted as **Bauwens,** and is based on a study of Belgium universities' economics departments by Bauwens (1998). He ranked journals based on the product of raw citation counts and impact factors, and then used an arbitrary decision process to assign all ranked journals to one of four groups.[23] All other *EconLit* referenced journals are allocated to a fifth group. Bauwen assigned Group1 journals a weight of 5, Group2 a weight of 4, and so on. This means that one standardized page published in a Group1 journal, such as the *AER* and the *JEL*, is equal in weight to five such pages in a Group5 journal. It should be noted that the *Economic Record*, and, by assumption, the *NZEP*, are to be found in Bauwens' Group 4.[24]

To recapitulate, we have arbitrarily selected six weighting schemes to broadly represent the spectrum of approaches used in measuring research output in economics departments. All schemes are inherently subjective, some more so than others, but this cannot be avoided. In addition to the highly restrictive assumption that only refereed journal articles count, one must also make explicit decisions with respect to the range and type of journals to include in the analysis, and on how to weight papers in each of the selected journals. As noted by most researchers in this area of study, there is no single measure that captures all dimensions of output. With this caveat, we will proceed to establish rankings for each economics department in New Zealand under each of our six selected weighting schemes. It will be shown that much of the controversy surrounding prior ranking studies of New Zealand's economics departments can be explained by the nature of the work performed within each department.

5.   Departmental Rankings

As noted earlier, at 15 April 2007, there were 130 economists holding 'regular' appointments at one of the eight university-based economics departments in New Zealand. The departments are relatively small by international standards, with core staffing levels ranging from six at Auckland University of Technology (AUT) to 26 at the University of Auckland.

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[22] This scheme was previously utilized by Neri and Rodgers (2006) and Sinha, Macri and McAleer (2007). It should be noted that Sinha, Macri and McAleer denoted the scheme as 'Towe and Wright AND Gibson' giving explicit recognition to the fact that Gibson utilized Towe and Wright's (1995) four tier journal classification system in his estimation process.

[23] Bauwens' (1998) weighting scheme was utilized by Coupe (2003), and, indirectly, Lubrano et al. (2003). Bauwens has also used his weighting scheme to provide periodic rankings of Belgium university economics departments. For details, see his website at
www.core.ucl.ac.be/econometrics/bauwens/rankings.

[24] It should be noted that the *NZEP* is actually assigned to Bauwens' Group5 ('other' journals), but in keeping with our basic assumption of equality between the *Economic Record* and the *NZEP*, we have assigned the latter to Group4.

As shown in Table 1, over the 2000 to 2006 period, economists at Waikato produced more share-adjusted journal articles and share-adjusted pages, both in total and per capita terms, than any other economics department in New Zealand. On per capita terms, Waikato is followed by Otago and Canterbury, albeit at a distance. Interestingly, the economics departments at two of the country's well established universities, Auckland and Victoria, perform rather poorly on these measures. Their production rate for share-adjusted papers per capita, and share-adjusted pages per capita, is less than half that of Waikato's. It should be noted at this point that the economics department at AUT ranks last in virtually every single measure presented in this study; however, AUT is a new entrant on the scene, and must be given time to build up its staff to effectively compete with its more established peers.

From this point forward, we shall focus solely on the 'share and size-adjusted page' as the relevant unit of output. Recall that our primary objective is to assess the productivity differences between departments. Therefore, we must also adjust for departmental size differences; that is, all results are presented in per capita terms. With this qualification in mind, we now turn our attention to measuring the impact of each of the six weighting schemes on departmental output and rankings. Our basic results are presented in Tables 2 and 3. Based on the admittedly arbitrary assumption that all six of our weighting schemes are of equal validity, we aggregate the rankings to generate overall results as shown in Table 3. The overall winner is unambiguously Otago, followed by Canterbury and Waikato. In the middle tier we find Auckland and Victoria in a virtual tie for fourth place, and further back we find Lincoln and Massey, and AUT.

Table 2. Departmental Output, Weighted Pages per Capita 2000-2006

Various Weighting Schemes

	EQUAL	Gibson	KMS	MSF	CoupeIF	Bauwens
Auckland	27.6	8.3	264.2	41.3	12.0	62.6
AUT	12.8	1.6	11.2	5.6	2.3	17.8
Canterbury	39.8	7.4	141.5	46.6	16.8	72.2
Lincoln	31.6	4.0	41.8	18.5	7.0	50.1
Massey	31.5	3.6	28.7	17.2	3.3	44.2
Otago	51.3	11.7	151.9	67.4	16.6	104.3
Victoria	27.8	6.7	150.0	31.3	23.3	69.0
Waikato	59.8	7.2	55.4	41.3	14.4	102.8
Average	35.3	6.3	105.6	33.7	12.0	65.4

Note: See Section 4 of the text for an explanation of each weighting scheme.

Table 3. Departmental Rankings, Weighted Pages per Capita 2000-2006
Various Weighting Schemes

	EQUAL	Gibson	KMS	MSF	CoupeIF	Bauwens	Total Points	Overall Rank
Otago	2	1	2	1	3	1	10	1
Canterbury	3	3	4	2	2	3	17	2
Waikato	1	4	5	3	4	2	19	3
Auckland	7	2	1	3	5	5	23	4
Victoria	6	5	3	5	1	4	24	5
Lincoln	4	6	6	6	6	6	34	6
Massey	5	7	7	7	7	7	40	7
AUT	8	8	8	8	8	8	48	8

Otago and Canterbury, our first and second place departments, display great strength on all six of our weighting schemes. For example, Otago is first on three measures, second on two, and third on one scheme. Waikato, the third place overall performer, displays more variability: its results range from first to fifth, with its first place ranking occurring when we explicitly assign equal weight to all journals (**Equal**) and fifth when we utilize our most aggressive citation-based scheme (**KMS**). The reverse situation applies to Auckland and Victoria: these institutions finish in seventh and sixth place, respectively, under the **Equal** scheme (no adjustment for quality differences between journals), but improve substantially under our two pure citations-based schemes, with Auckland being first under the **KMS** scheme and Victoria first under the **CoupeIF** weighting scheme. However, it should be noted that under **KMS,** Otago finished ahead of Victoria, and under **CoupeIF**, Auckland finished fifth behind Victoria, Canterbury, Otago and Waikato.

A review of the departmental rankings reveals a substantial degree of stability between measures. First, note that, with one exception, AUT always finishes last; and aside from the **Equal** results, Lincoln and Massey always finish in sixth and seventh place, respectively. However, the scheme used to measure output does matter to some departments, especially for Auckland, Victoria and Waikato. Crudely put, what is at play here is the matter of quantity versus quality. It is apparent that Waikato researchers are the most active in New Zealand, but based on some of our weighting schemes, especially those based largely on citation counts, many of their publications carry little weight in the overall calculation. On the other hand, under certain weighting schemes, researchers at Auckland and Victoria can be characterized as low volume, but high quality producers. Once again, it should be noted that researchers at Otago and Canterbury tend to do well on all counts; they are active publishers in, on average, 'good' quality journals. This issue deserves more attention, since it is at the heart of the rankings debate.

Perhaps the best way of looking at the quality/quantity trade-off is to look at each of the five differential weighting schemes (obviously, **Equal** is excluded from this exercise), and ask the following question: what proportion of total publications for each department are either given non-zero weights (this applies to **KMS, MSF** and **CoupeIF** schemes) or are

published in all but the lowest quality group (this applies to the **Gibson** and **Bauwens** schemes). The answer to this question is to be found in Table 4. It is apparent that Auckland and Victoria lead the pack, with one exception: under the reputation-based weighting scheme (**MSF**), Victoria places fourth. On the other hand, Waikato finishes last under the **Gibson** scheme (the only time throughout our study that AUT is not in eighth place), and between fourth and sixth on all other measures. Note that Otago always finishes in second or third place, but Canterbury displays more variation in results with rankings between second and fifth. Clearly, for some institutions, the type of weighting scheme employed does matter.[25]

Table 4. Percent of Departmental Papers Ranked by Various Weighting Schemes, 2000-2007

	Gibson	KMS	MSF	CoupeIF	Bauwens
Auckland	47.6	63.4	51.2	64.6	64.4
AUT	20.0	30.0	10.0	40.0	20.0
Canterbury	29.1	45.6	48.1	49.4	40.0
Lincoln	23.3	43.3	25.0	43.3	33.3
Massey	19.4	34.3	20.9	37.3	25.4
Otago	38.3	59.8	47.7	72.0	51.4
Victoria	40.3	70.8	37.5	81.9	66.7
Waikato	17.7	34.5	28.3	52.2	41.6
Average	30.7	47.7	37.3	58	46.6

Note: For Gibson and Bauwens weighting schemes, the figures presented represent the percentage of papers placed in all but their lowest quality group. For KMS, MSF and CoupeIF weighting schemes, the data represents the percentage of papers receiving a non-zero weighting.

Table 5. Percentage Distribution of Publications 2000-2006
Gibson Weighting Scheme

	Group 1	Group 2	Group 3	Group 4
Auckland	6.1	13.4	28	52.4
AUT	0	0	20	80
Canterbury	2.5	8.9	17.7	70.9
Lincoln	0	3.3	20	76.7
Massey	0	1.5	17.9	80.6
Otago	0	15	23.4	61.7
Victoria	4.2	9.7	26.4	59.7
Waikato	0	4.4	13.3	82.3
Total	1.7	8.3	20.7	69.3

Note: Group 1 is the highest quality category, Group 2 the next highest quality category, and so on.

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[25] The data in Table 4 is based on the percentage of papers meeting threshold values. The quality issue can also be explored by looking at the percentage of journals, holding papers written by New Zealand economists, which are explicitly included in each of our weighting schemes (excluding Equal). The results are as follows: 19.2% (Gibson); 36.4% (KMS); 28.9% (MSF); 48.1% (CoupeIF); and 38.5% (Bauwens).

As noted above, three of our weighting schemes (**KMS, MSF** and **CoupeIF**) adopt an either/or approach: some *EconLit* publications are given a non-zero weighting while others are totally ignored (implicitly given a weight of zero). However, **Gibson** and **Bauwens** employ a differentiated (albeit arbitrary) weighting scheme that assigns all journals in the EconLit data base (1217 journals as at 15 April 2007) to one of four and five groupings, respectively. This approach allows us to look at the quality/quantity issue in a somewhat more rigorous fashion. First, let us look at this issue through the lens of the **Gibson** scheme. As shown in Table 5, only 1.7 % of our core 590 publications fall into the highest quality grouping. More specifically, the results for Auckland and Victoria are 6.1% and 4.2%, respectively (first and second place), while all others, with the exception of Canterbury at 2.5%, failed to produce a single Group 1 publication. The results can be looked at usefully from a different perspective. Overall, 69.3% of all publications are to be found in **Gibson's** 'lowest quality group', with Auckland having the fewest at 52.4% and Waikato the most at 82.3%.

Table 6. Percentage Distribution of Publications, 2000-2006
Bauwens Weighting Scheme

	Group 1	Group 2	Group 3	Group 4	Group 5
Auckland	2.4	13.4	22	25.6	36.6
AUT	0	10	0	10	80
Canterbury	3.8	7.6	11.4	20.3	60
Lincoln	0	6.7	10	16.7	66.7
Massey	0	3	17.9	17.9	74.6
Otago	0	6.5	31.8	13.1	48.6
Victoria	5.6	9.7	23.6	27.8	33.3
Waikato	0	9.7	13.3	18.6	58.4
Total	1.5	8.3	17.3	19.5	53.4

Note: Group 1 is the highest quality category, Group 2 is the next highest quality category, and so on.

In Table 6, the results of a similar exercise employing **Bauwens** weights are presented for review. Note that the results differ to some degree, especially for Waikato. Whereas under the GIBSON approach Waikato had the highest percentage of 'lowest ranked' papers, it now ranks fifth at 58.4%. We also find that Victoria and Auckland switch places with Victoria having the smallest percentage of papers in the 'lowest ranked' category at 33.3 percent, followed by Auckland at 36.6%. Victoria has the highest percentage of Group1 papers. It is also interesting to note that Otago continues to display solid and consistent results regardless of the weighting measure employed: it has a significantly higher percentage of its total publications placed in Bauwens' middle category than any other department, and has the third fewest papers in the 'lowest ranked' category.

Before concluding this section, we must return to an issue raised by King (2001) that has special relevance to Auckland: the treatment of 'visiting' staff, and in particular, the

treatment of Peter Phillips. Although other departments have academic visitors, Phillips' case is unique in that he is undoubtedly among the very elite of economists on a world-wide basis. For example, he was ranked as the #1 economist in the world on selected measures of output by Coupe (2003) and as the world's foremost econometrician, once again on selected measures, by Cribari-Neto et al. (1999), Baltagi (2003) and Baltagi (2007).[26] Therefore, we shall consider the impact of adding all or some proportion of Phillips' publications to Auckland's total output to both demonstrate the possible impact on Auckland's rankings and, more generally, to shed light on the 'regular/visitor' debate.

In order to measure Phillips' impact on Auckland's rankings, see Table 7. In this table we show Auckland's performance under each of our six weighting schemes, and under four different assumptions. We provide the data from our core data set (excluding Phillips) and then we bring sequentially, 10, 40 and 100 percent of Phillips' share adjusted output into the analysis. The rationale for including 10% of Phillips' output is provided by King (2001) who states that based on discussions between King and Phillips, 10% was thought to be a reasonable allocation of Phillips' time. The 40% figure is based on correspondence with the departmental chair who stated that Phillips held a 40% appointment in the department.[27] Finally, we have included all of Phillips' output in order to demonstrate the impact of a true 'star' upon the New Zealand scene.

Table 7. Auckland's Economics Dept. Ranking, Weighted Pages per Capita 2000-2006
Various Weighting Schemes

	EQUAL	Gibson	KMS	MSF	CoupeIF	Bauwens	Total Points	Overall Rank
Phillips: 0 %	7	2	1	3	5	5	23	4
Phillips: 10 %	6	2	1	2	5	4	20	3
Phillips: 40%	4	1	1	2	2	3	13	2
Phillips: 100%	3	1	1	1	1	1	8	1

Note: Phillips refers to Peter Phillips, and the percentage figure following his name indicates the percentage of his personal output that is attributed to Auckland's total output.

Under King's assumption that 10% of Phillips' output should be included in Auckland's total, it is apparent that the impact on departmental rankings is mildly positive, and Auckland moves from 4th overall into a tie with Waikato for third place. However, if we now bring 40% of Phillips' output into play, the impact is significant: Auckland improves its rankings on all six measures (with the exception of KMS, for which it held 1st position under the core assumption set). In fact, the improvement is substantial enough to push Auckland into second place from its 0% Phillips position of fourth. If we adapt the extreme position of including 100% of Phillips' share-adjusted work in Auckland's output, the department now occupies third place in total unadjusted output compared to 7th under our core assumption set,

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[26] This is not meant to slight other part-time academics with off-shore permanent appointments; it is just that Phillips is a special case- he is truly an international star.

[27] Source: e-mail from Tim Maloney to John Tressler, 17 July 2007.

and holds first place in all other rankings, and, obviously, undisputed top ranking overall. It is remarkable that one person could have such an impact on the rankings of any nation's economics departments.

6. Individual Results

Before proceeding to examine research output at the individual researcher level, recall that on 15 April 2007, there were 130 economists on 'regular' appointments in New Zealand university-based economics departments; however, over the period 2000-2006, only 101 (77%) of them can be considered to be active researchers[28]. In Table 8 we present information on the distribution of output among all academic staff members as measured by each of our six weighting schemes. What is clear is that output is highly skewed; for example, the top 10% of researchers generate between 40 to 62% of total output across our weighting schemes. Expanding the study group to cover the first quartile generates similar results: this group generates between 67 and 88% of share adjusted pages ; and expanding the analysis to include the top fifty percent of researchers yields estimates ranging from 92 to 99% of total output. Rephrased, over the 2000-2006 period, fifty percent of economists produced virtually all the refereed journal articles published in EconLit referenced journals.

Table 8. Distribution of Output, Weighted Pages per Capita 2000-2006
Various Weighting Schemes

	EQUAL	Gibson	KMS	MSF	CoupeIF	Bauwens
Share of Total Output/Excluding Phillips						
% Attrib. To Top 10%	40.4	46.4	62.3	46.9	53.7	40.3
% Attrib to Top 25%	66.9	75.1	87.9	74.7	79.0	67.3
% Attrib. To Top 50%	91.7	95.6	98.5	96.1	97.3	92.4
% Attrib. Bottom 25%	0.2	0.1	0.0	0.0	0.0	0.1
% Attrib. To Overall Top3: (Fielding, Guthrie, Gibson)	12.9	19.9	14.3	21.2	27.1	16.6
Share of Total Output/ Including Phillips						
% Due Entirely to Phillips	10.0	23.8	57.6	23.1	23.2	16.8
% Due to Overall Top 4 (Phillips, Fielding, Guthrie, Gibson)	21.6	39.0	63.7	39.4	44.1	30.6

Note: Total staff = 131

Another way of considering the concentration issue is to examine the contribution of New Zealand's top three producers excluding Peter Phillips (David Fielding, Otago; Graeme Guthrie, Victoria and John Gibson, Waikato). Between them, over the period 2000 to 2006,

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[28] At this point, we must stress, once again, that our definition of countable research is highly restrictive: only refereed papers in journals listed in *EconLit* count. In contrast there were deemed to be 165.75 full-time equivalent eligible staff in the 2006 PBRF Round, and 84% of them were judged to be research active. That is, they were rated as C or C(NE) or higher.

they accounted for 13 to 27% of New Zealand's aggregate output. If we include Phillips in the analysis, the estimates increase to 22% and 66%, respectively. Surely this degree of concentration should be cause for concern, as is the finding that one quarter of all academic economists did not publish a single page between 2000 and 2006, in any one of 1217 journals under review.

Following recent practice, we will now present our Hall of Fame. In Table 9 we display the top twenty producers (excluding Peter Phillips) based on a simple aggregation of rank across all six weighting schemes (that is, we assume all schemes are of equal value). The results are of interest in at least three respects. First, as suggested above, three economists stand out as having research outputs substantially above all others; they are David Fielding, Graeme Guthrie and John Gibson. Indeed, in four of our six measures they occupy the top three positions, in another they hold three out of the top four positions, and only under the KMS scheme does their dominance diminish as they occupy positions ranging second to eleventh.[29]   Second, it should be noted that six of the nation's eight economics departments place people in the top twenty. Although Auckland has the most researchers on the list (6), Canterbury and Otago have a higher percentage of staff in the top twenty (25.0% and 23.5%, respectively, compared to 23.1% at Auckland). Waikato is a close fourth with 20.0 percent of its staff in the top twenty group, followed by Victoria at 9.1, and Massey at 6.3. Lincoln and AUT are not represented in the top twenty.

Outside the four or five top researchers the rankings show substantial variability. The attitudes to journal quality implicit in weighting schemes have a significant impact.[30] To illustrate, in the 2006 Programme Based Research Funding (PBRF) evaluations, 11.38 FTE staff received a rank of A. Ignoring the ranking based on EQUAL, and leaving out Phillips, there are only four individuals that are common to the top 11 in all five ranking schemes.[31] This suggests that any ranking of individuals in terms of research performance is likely to be significantly influenced by views on journal quality.

Table 9 is also of interest because it sheds further light on the role of a genuine research star, Peter Phillips. If we were to include all Phillips' share-adjusted output in our analysis, we would find that Phillips ranks number one in every single indicator employed in this study. Even if we deem all journals to be of equal value (**Equal**), he is still the leading producer in New Zealand over the 2000 to 2006 period. Furthermore, we found that Phillips' absolute level of production was substantially higher than that of any other economist in the

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[29]   In a recent study of Swedish academics, Henrekson and Waldenstrom (2007) found the KMS weighting scheme to be an outlier among a number of other weighting schemes. According to Henrekson and Waldenstrom (p.4), 'In particular, the journal rankings of KMS appear to be an outlier among the available measures. Its distribution of performances is the most skewed, and its rankings of scholars corresponds the least with the rankings of other measures'.   Our findings, with respect to both departmental and individual rankings, are consistent with those of Henrekson and Waldenstrom.

[30]   Except perhaps for EQUAL, it could be argued that all represent reasonable attempts to weight journal quality.

[31]   The four are Fielding (Otago), Guthrie (Victoria), Gibson (Waikato) and Sul (Auckland).

country. For example, under the **KMS** weighting scheme, Phillips' output exceeded that of all other economists combined. More explicitly, consider each of our six weighting schemes: **Equal, Gibson, KMS, MSF, CoupeIF and Bauwens**. For each of these measures, the ratio of Phillips' output to that of the leading 'regular' economist (under that measure) was 1.44; 3.61; 9.46; 3.50; 1.79; and 3.22, respectively. Given these results, it is easy to understand why the issue of who to include in studies of this sort can be very controversial.

Table 9. Rankings of Individual Economists
Various Weighting Schemes, 2000-2006

Family Name	First Name	Univ.	Equal	Gibson	KMS	MSF	CoupeIF	Bauwens	Total Points	Final Rank
Phillips	*Peter A. C.*	*A*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Guthrie	Graeme	V	4	2	2	3	1	3	15	1
Fielding	David	O	2	1	8	1	2	1	15	1
Gibson	John	W	3	3	11	2	3	2	24	3
Sul	Donggyu	A	25	7	7	6	9	8	62	4
Guender	Alfred V.	C	9	4	13	12	17	9	64	5
Woodfield	Alan E.	C	13	12	21	11	4	13	74	6
Oxley	Les	C	6	14	34	4	14	7	79	7
McDermott	C. John	V	12	5	16	37	8	6	84	8
Han	Chirok	A	46	6	1	10	7	15	85	9
Haug	Alfred A.	O	16	13	4	17	22	14	86	10
Knowles	Stephen	O	19	16	26	5	19	12	97	11
Holmes	Mark	W	1	8	38	26	20	4	97	11
McCann	Philip	W	5	24	48	21	5	5	108	13
Thorsnes	Paul	O	37	23	12	16	12	10	110	14
Reed	W. Robert	C	28	22	14	8	23	19	114	15
Ryan	Matthew	A	20	21	5	27	27	17	117	16
Maloney	Tim	A	21	9	32	9	34	22	127	17
Chaudhuri	Ananish	A	31	17	10	22	25	28	133	18
Bandyopadhyay	Debasis	A	17	11	35	13	44	23	143	19
Engelbrecht	Hans-Jurgen	M	18	25	36	7	43	20	149	20

Note: A (Auckland), AUT (Auckland University of Technology), C (Canterbury), L (Lincoln), M (Massey), O (Otago) V (Victoria) and W (Waikato).

7.   Conclusions

 Our core results ('regular' staff only) suggest that Otago's economics department had the best performance over the period 2000-2006, followed by Canterbury and Waikato. Although Otago and Canterbury displayed relatively consistent results across the six weighting schemes, Waikato's results varied widely.   In general, the more selective the scheme, the lower Waikato's ranking. On the other hand, the fourth and fifth place finishers, Auckland and Victoria, respectively, like Waikato, displayed widely variable results depending upon the weighting scheme employed, but unlike Waikato, the more selective the

weighting scheme, the better they performed. The remaining departments exhibited consistent results across all weighting schemes. In fact, ignoring the **Equal** scheme, Lincoln, Massey and AUT were sixth, seventh and eighth, respectively, on every single measure.

Although we can say that weighting schemes do matter, the consistency of the results is surprising. And where variation does occur, it is explainable. Auckland and Victoria have a number of economists publishing in highly ranked international journals, but their impact is generally outweighed by relatively more prolific researchers at Otago, Canterbury and Waikato who tend to publish more policy-oriented and field-related work, often in less recognized journals. All this suggests the need for more up-to-date weighting schemes to reflect changes in the profession. However, the growing tendency to use citation-based schemes is bound to lead to an on-going debate, in any small country setting, about the bias towards theoretical articles and those that address 'big rather than small' country issues. In particular, Lincoln and Massey can be said to be disadvantaged by impact-adjusted citation schemes, [32] given their focus on agricultural and resource issues with particular relevance to the New Zealand economy.

In addition to the standard analysis that focuses on 'regular' staff only, we shed some light on the controversy surrounding the 'visitor' versus 'regular' appointment debate. This can be rephrased as the 'who is in and who is out' problem. Our results demonstrated that in the New Zealand context this is a real issue, especially for Auckland. The inclusion of Peter Phillips in the Auckland staff list was shown, under various assumptions, to boost Auckland's overall rating from fourth (core assumption set: Phillips excluded) to third (10% of Phillips' output), and then to second place (40% of Phillips' output). Clearly, the definition of relevant staff is of great importance in developing credible departmental rankings.

Our findings also suggest that many New Zealand university-based economists generate very little, if any, research output (at least in journal article form). We demonstrated this result in various ways, but it can be captured by noting that half of the total staff complement produces between 92 and 99% of total output under our selected weighting schemes, and that a quarter of country's 130 economists holding 'regular' appointments did not produce a single page of output over the 2000-2006 period, in any of the 1217 journals listed in the *EconLit* data base. This issue can be addressed also by considering the hypothetical inclusion of Peter Phillips in the New Zealand data base. Recall that Phillips alone generated between 10 and 58% of the nation's total output of share-adjusted pages. Regardless of how one looks at the matter, it should be cause for concern on the part of university administrators.

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[32] The primary rationale for this argument is presented in end-note 16, above. However, the bias noted here may be even more serious since the more sophisticated impact factor schemes, such as that developed by Liebowitz and Palmer (1984), and updated by Laband and Piette (1994) and Kalaitzidakis, Mamuneas and Stengos (2003), give greater weight to citations appearing in highly ranked journals than in lower ranked ones. By and large, regional field journals fall in the latter category.

Finally, we wish to stress two of the critical assumptions that underline our analysis. First, we have restricted relevant research output to refereed papers published in one of the 1217 journals included in the *EconLit* database. Therefore, those economists who publish primarily in other vehicles such as books, monographs and conference papers are severely disadvantaged by us and by virtually all others doing work in this area. Second, we must stress that the weighting scheme selection process is subjective; no single scheme is able to capture all dimensions of output. However, we selected a wide range of schemes based on all the prevailing approaches (including those based on perceptions and citations).

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