LH Martin Institute
For Tertiary Education Leadership and Management

ERA 2012 (Part 1): University Responses and Performances Compared with ERA 2010

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The 2012 ERA exercise has resulted in some significant changes in the approach and performance of many universities compared with their 2010 ERA performance. Fewer Units of Evaluation were submitted for assessment at both the 2-digit and 4-digit discipline levels. Most Australian universities increased their overall excellence ratings, where they had the capacity to do so. It is surprising that quality standards have improved so much in such a short time period as a result of the limited changes in the data assessed. A re-examination of ERA guidelines and assessment processes before the 2015 exercise is warranted. Some 33 universities had more 4-digit units assessed at or above world standard in 2012 compared with 2010, while only two of 40 universities did not increase the percentage of units assessed as ≥3.

The evidence analysed supports the conclusion that most universities have been more strategic in defining their research profile for the 2012 round than previously. The University of Western Australia is an interesting case study. It submitted 22 fewer units of assessment at the 4-digit discipline level and received two less assessments at or above world standard, but achieved 100 percent of its ratings at or above world standard in 2012 compared with 76 percent in 2010. Another example is the University of Western Sydney increasing the number of UoE submissions by nine and outcomes at or above world standard by 18 for an overall 68 percent excellence rating up from 41 percent for ERA 2010.

How the data are used for funding allocations to ensure that Australia maintains a few universities among the elite top 100 international universities warrants a serious policy debate.

Introduction

The second round of the Excellence in Research for Australia (ERA) evaluations was conducted in 2012 substantially following the methodology adopted for the 2010 round. The Australian Research Council (ARC) did make some operational changes while seeking to maintain consistency and comparability between the 2010 and 2012 rounds. In this paper the outcomes for universities at both the 2-digit and 4-digit Field of Research (FoR)

discipline levels are examined with a particular focus on the changes since 2010. In a subsequent paper the changes in research profiles and performance for the discipline codes are examined.

There were five main areas where methodological changes occurred in the presentation of data for the Unit of Evaluation (UoE) compared with 2010. 1. Eligible staff were to be employed at March 2010 and be at least 0.4 FTE or identified by institution affiliation in the publication by-line. This change provided the opportunity for some universities to realign their academic staff profile through recruitment and reclassification of staff. 2. Attributions for applied measures, such as patents, were extended to eligible researchers, not only to their institutions. This change provided more details about the impact of research outputs from an institution and its members. 3. The low volume threshold for all peer reviewed disciplines and for citation analyses was increased to 50 apportioned weighted outputs. This change had an impact by decreasing the number of 4-digit UoEs presented for assessment by some universities. 4. The prescriptive journal and conference ranking indicators (A* to C) were no longer used as a guide to quality, but an ordering by descending frequency of publication was used. This approach provided more discretion to the Research Evaluation Committees. 5. Interdisciplinary research was more directly recognised by allowing institutions to code an article to a different FoR to that to which the journal was coded, provided more than 66% of the article was appropriate for the alternative FoR code. This change provided considerably more discretion to institutions when preparing their UoE submissions to strengthen some 4-digit FoRs and eliminate others. Furthermore, the research output suites for evaluation were advanced two years; for example, research outputs related to the period 2005 to 2010 instead of 2003 to 2008 were evaluated. Effectively two in six years of research output data were different.

The Australian Bureau of Standards has developed a research classification system known as the Australian and New Zealand Standard Research Classification (ANZSRC) (1) to describe the research currently undertaken in Australia and New Zealand. Some 22 two- and 157 four-digit field of research codes were identified. The ERA assessments were made using these codes. The 2-digit FoR discipline codes are given in appendix 1. As previously, a rating scale of from 1 (*well below* world standard) to 5 (*well above* world standard) was used. The 2012 assessment diversity and quality data for universities at the two-digit code level are presented in appendix 2 using the data provided by the ARC (2), listed according to the average score. A similar analysis involving the 4-digit codes aggregated to the appropriate 2-digit code was conducted, in view of the fact that there is too much data to provide succinctly analyses for all the 4-digit codes. The number of codes aggregated to the 2-digit discipline level varies from three to eighteen. These data are presented in appendix 3. Universities are listed according to their overall 2-digit performance shown in appendix 2. ANU was the university with the highest average rating at both the 2-digit and 4-digit level. For completeness, the corresponding 2010 data are given in appendix 4 and 5. For the 2010 exercise three of the 2-digit FoRs (10, 11 and 12) were split to accommodate classification into different cluster groups and then presented separately at the 2-digit discipline level.

University Research Diversity

The number of 2-digit FoR discipline UoEs varied widely across the institutions. The diversity for 2012 is shown in figure 1.

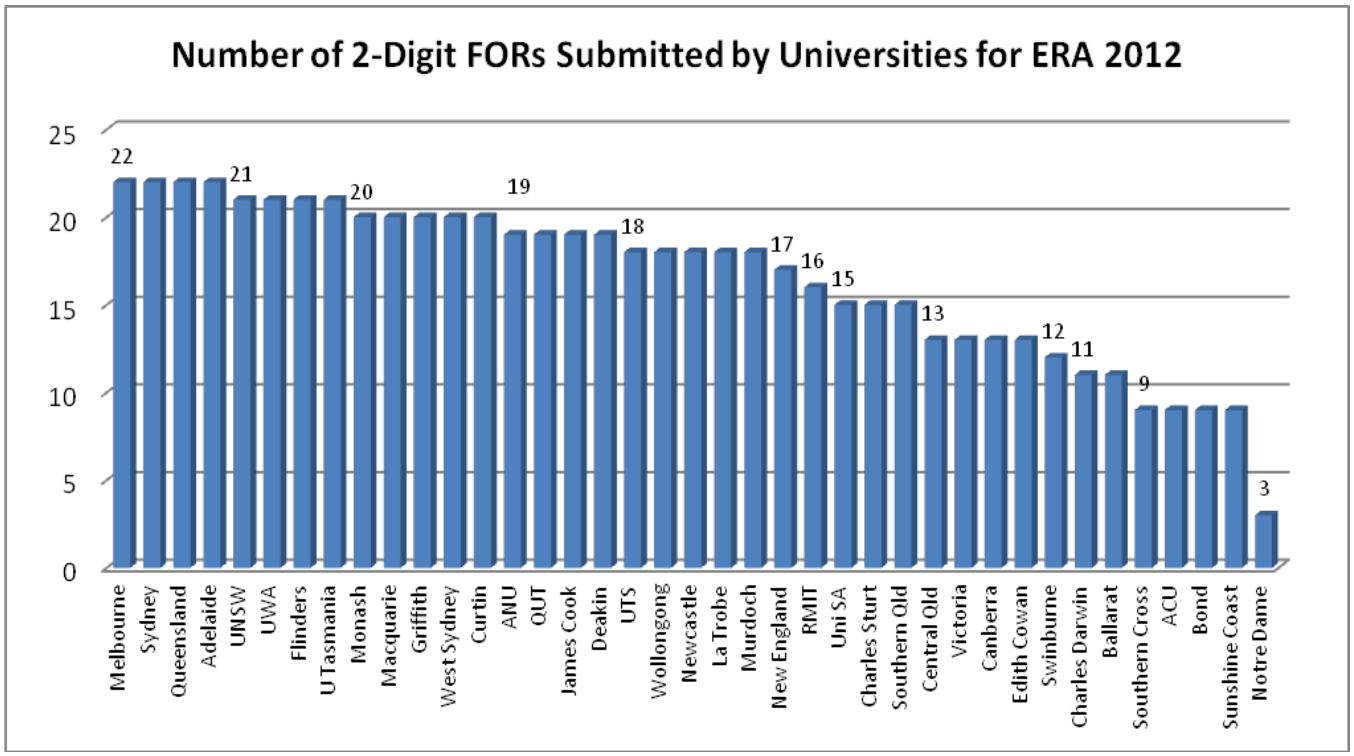

Figure 1: Number of 2-Digit FoRs submitted by universities for ERA 2012 evaluation

Four universities (Melbourne, Sydney, Queensland and Adelaide) made submissions in all 22 FoRs and 22 of 40 institutions made submissions in at least 18 (80%) of the FoRs, similar to the 2010 result.

When one considers the breadth of the UoEs submitted for assessment at the 4-digit level the variation is much greater. The outcomes are shown in figure 2. Sydney had more UoEs assessed (99) than any other university. Of the possible maximum 157 4-digit UoEs only five universities (Sydney, Melbourne, Queensland Monash and UNSW) made submissions in more than 88 FoRs (>56%), substantially more than other universities. This outcome highlights the comprehensiveness of the research activities at these universities. Griffith with 60 4-digit FoRs made the most submissions among the non-Go8 universities. There were a total of 1681 UoEs assessed at the 4-digit level at an average of 42 UoEs (27% of maximum possible) per university. Using 18 2-digit UoE and 50 4-digit UoEs as a guide to breadth and depth of research activity (but not quality) 17 universities satisfy these criteria. If the number of 4-digit units for evaluation is increased to 60 (38% of the maximum possible) Griffith is the only non-Go8 university to reach this threshold.

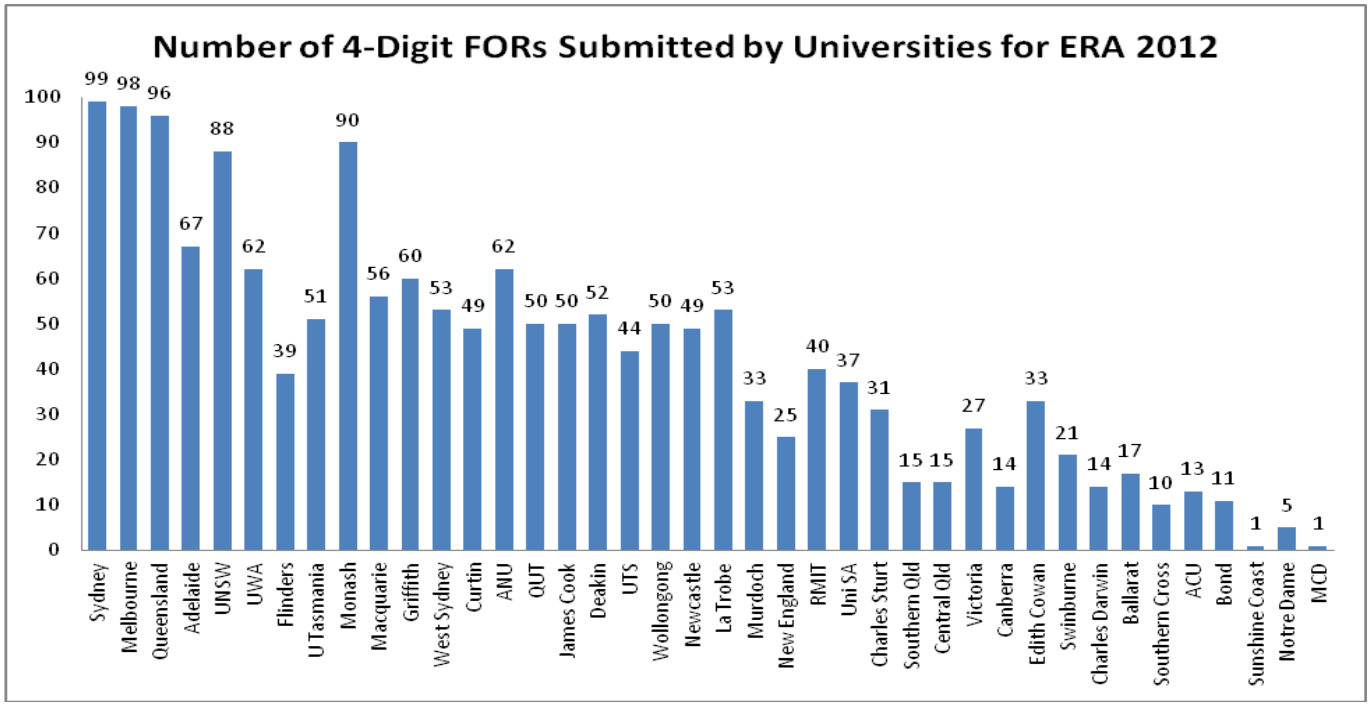

Figure 2: Number of 4-Digit FORs submitted by universities for 2012 ERA evaluation

There has been a significant reduction in the number of 2-digit UoEs submitted by universities between the two ERA exercises, from 697 in 2010 to 642 in 2012. The availability of three fewer 2-digit codes is a significant factor. Correspondingly, the number of 4-digit UoEs assessed decreased from 1738 to 1681, with the same number of 4-digit codes being available for both rounds. The changes can be partly attributed to the increased low volume threshold to 50 apportioned weighted outputs and to some universities not making as many submissions in 4-digit FoRs where they scored below world standard (<3) in the 2010 round. The number of UoE submission changes by universities at the 4-digit discipline level between the two ERA round is presented in figure 3. Universities are listed according to their overall quality of performance.

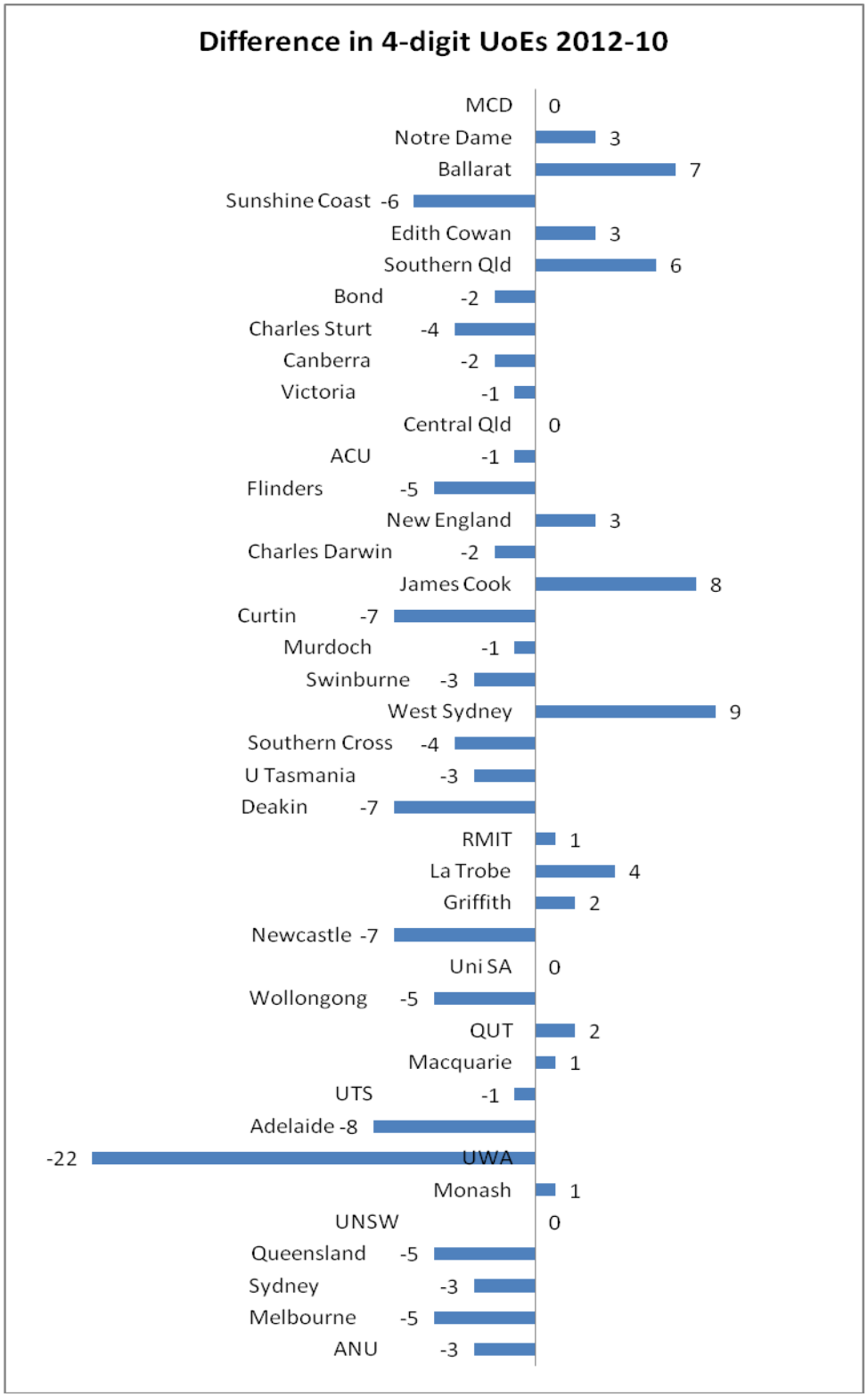

Figure 3: Difference in the number of 4-digit discipline units submitted by universities for assessment from the 2010 to the 2012 ERA rounds

The majority of the universities, 23 of 40, submitted fewer units for evaluation. The stand out university was the University of Western Australia where the number of 4-digit UoEs assessed was decreased by 22, from 84 to 62. The university was not assessed in 23 FoRs where they scored 3 or less in 2010 and they added one additional FoR for assessment in 2012. Nine other universities that reduced their number of UoEs for assessment by five or more were Melbourne, Queensland, Adelaide, Wollongong, Newcastle, Deakin, Curtin, Flinders and Sunshine Coast. Four universities, Western Sydney, James Cook, Southern Queensland and Ballarat increased the number of UoEs submitted for assessment by six or more. The largest percentage decreases in evaluations made were for Sunshine Coast (-86%), Southern Cross (-28.6%) and UWA (-26.1%), while the largest increases were Notre Dame (150%), Southern Queensland (66%) and Western Sydney (20%). These changes were from a low base with the exception of UWA and Western Sydney (see figure 2).

Universities clearly gained experience from the first round and were more strategic in their approach to the 2012 ERA exercise.

University 2012 and 2010 ERA Ratings

In the previous section it was noted that there were fewer 2-digit and 4-digit UoEs assessed in 2012 compared with 2010. The number of ratings for universities in categories 1 to 5 was also very different as shown in appendices 2 to 5. The percentage of scores in each category for the 2012 and 2010 2-digit evaluations and the 4-digit evaluations are shown in figure 4. At the two digit level the percentage of UoEs at or above world standard (≥3) increased from 59% to 74%, while at the 4-digit level the percentage increased from 68% to 80%.

These are very significant changes.

It is reasonable to conclude that several universities made major refinements to their 2012 submissions learning from the 2010 experience. The difference in the quality of the two years research outputs (2009-10 instead of 2003-4) is unlikely to solely account for the significant improvement in the ratings relative to world standards. The capacity for institution to recode articles to FoRs that were different to the journal coding was evidently strategically important for universities to optimise their performance.

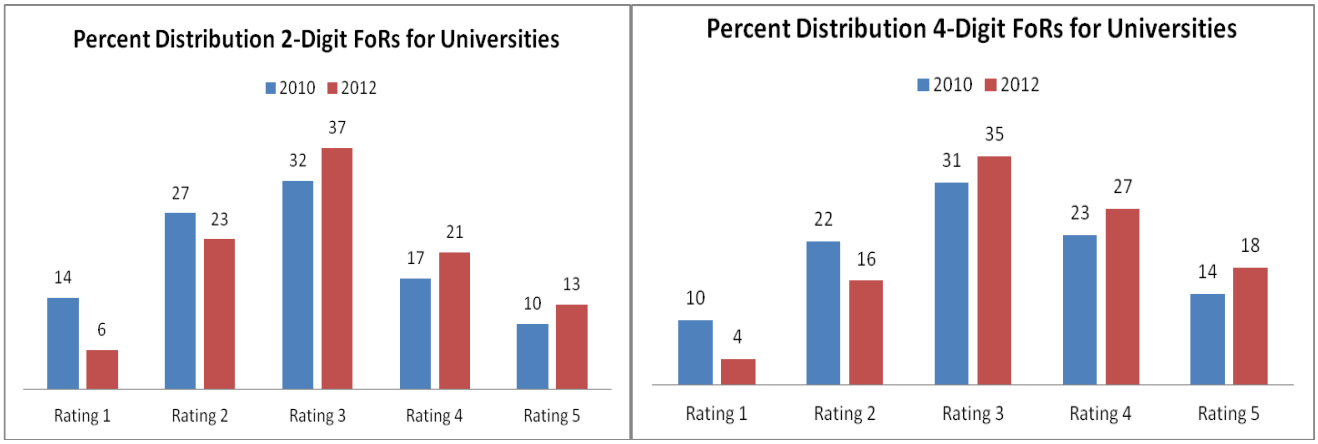

Figure 4: Percentage Distribution of Ratings for 2-digit and 4-digit UoEs from the 2010 and 2012 ERA Exercises

The ERA rating performance scales may differ somewhat between FoRs such that direct comparisons between disciplines are not readily possible. It is however possible to examine the performance of individual universities in terms of the number and the percentage of UoEs in which they were assessed at or above world standard. The relevant percentage data for 2012 are presented in appendices 2 and 3 and summarised in figure 5.

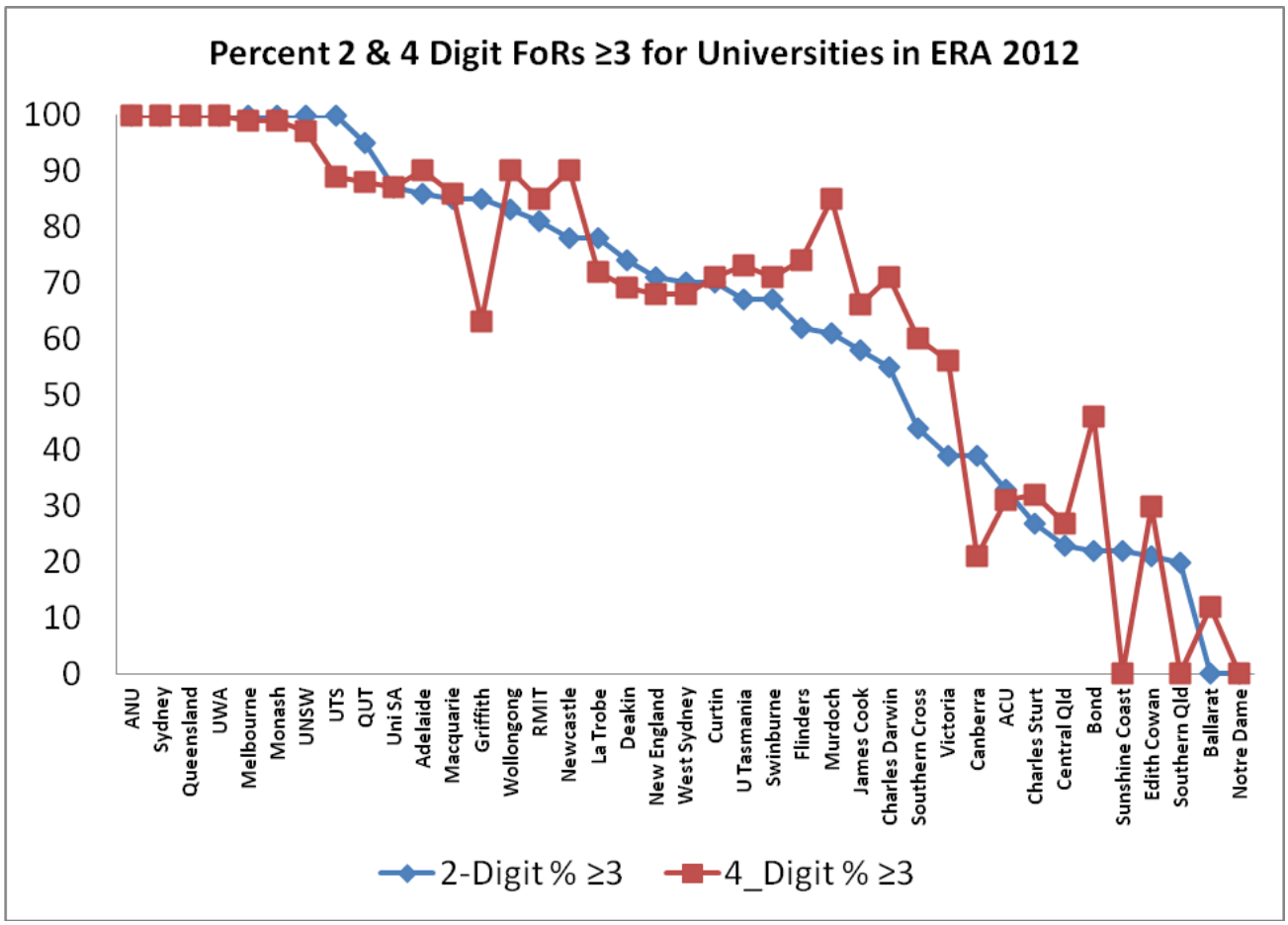

Figure 5: The percentage of 2012 2- and 4- digit FoRs assessed at or above world standard for Australian Universities

Eight universities had all of their 2-digit FoRs rated ≥3, while four of these universities (ANU, Sydney, Queensland and UWA) also had all of their 4-digit FoRs rated ≥3. For a small number of universities (UTS, Griffith, Canberra, Sunshine Coast) the 2-digit performance was significantly superior, in percentage terms, to the 4-digit performance (**blue dot** above the **red dot**), but for many universities the 4-digit performance was superior to the 2-digit performance. Murdoch (61% 2-digit and 85% 4-digit ≥3) and Bond (22% 2-digit and 46% 4-digit ≥3) are standout examples. The results indicate a higher assessed quality of research outcomes in the specialist discipline areas compared with the more generalist discipline area.

The quantity of research output as well as the quality of that performance is important in determining the contribution that a university makes to the national research effort. The number of UoEs submitted by universities for evaluation at the 2-digit and 4-digit levels was discussed in the earlier section (see figures 1 and 2). The number of 3, 4 and 5 ratings received by each university in 2012 at the 4-digit FoR level, based on the data in appendix 3, is presented in figure 6. Universities receiving more than 10 ratings ≥3 are shown.

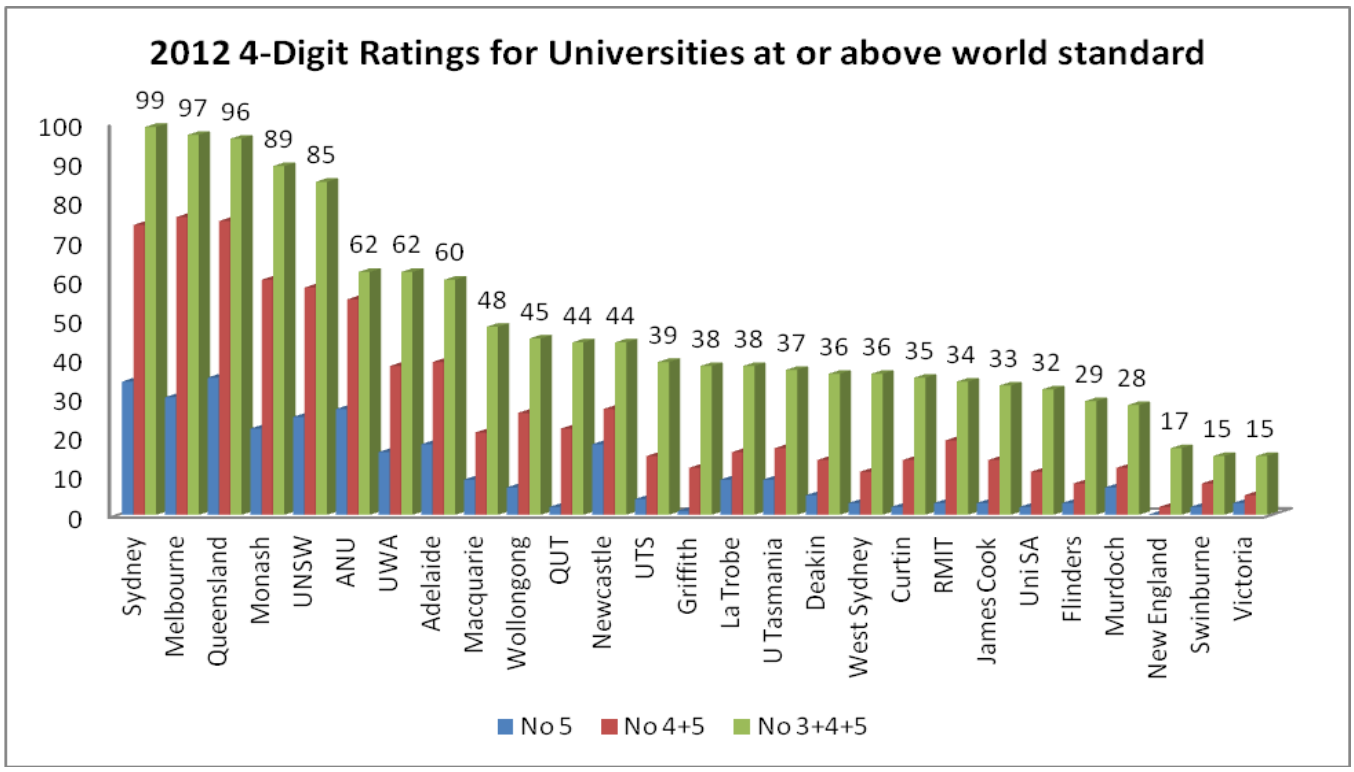

Figure 6: Four-digit FoR ratings at or above world standard for Australian universities

Sydney received the highest number of 4-digit rating with 99 UoEs at or above world standard. Melbourne (97) and Queensland (96) were close behind. The Go8 universities were the top ranked universities, but ANU (62), UWA (62) and Adelaide (60) were well behind the other five Go8 universities in terms of quantity, but not quality (see figure 5). Five universities had between 40 and 50 excellent UoEs and another 10 universities had between 30 and 40 excellent submissions. The findings highlight the fact that there is a significant gap in the breadth of quality discipline coverage between the top five universities and the remainder.

The absolute changes in the quality of performance by universities from 2010 to 2012 is also important from the viewpoint of the progress being made to increase the excellence of the research activities undertaken by Australian universities. One measure is the change in the number of 4-digit discipline units assessed at or above world standard from the 2010 ERA round to the 2012 round. The changes are presented in figure 7.

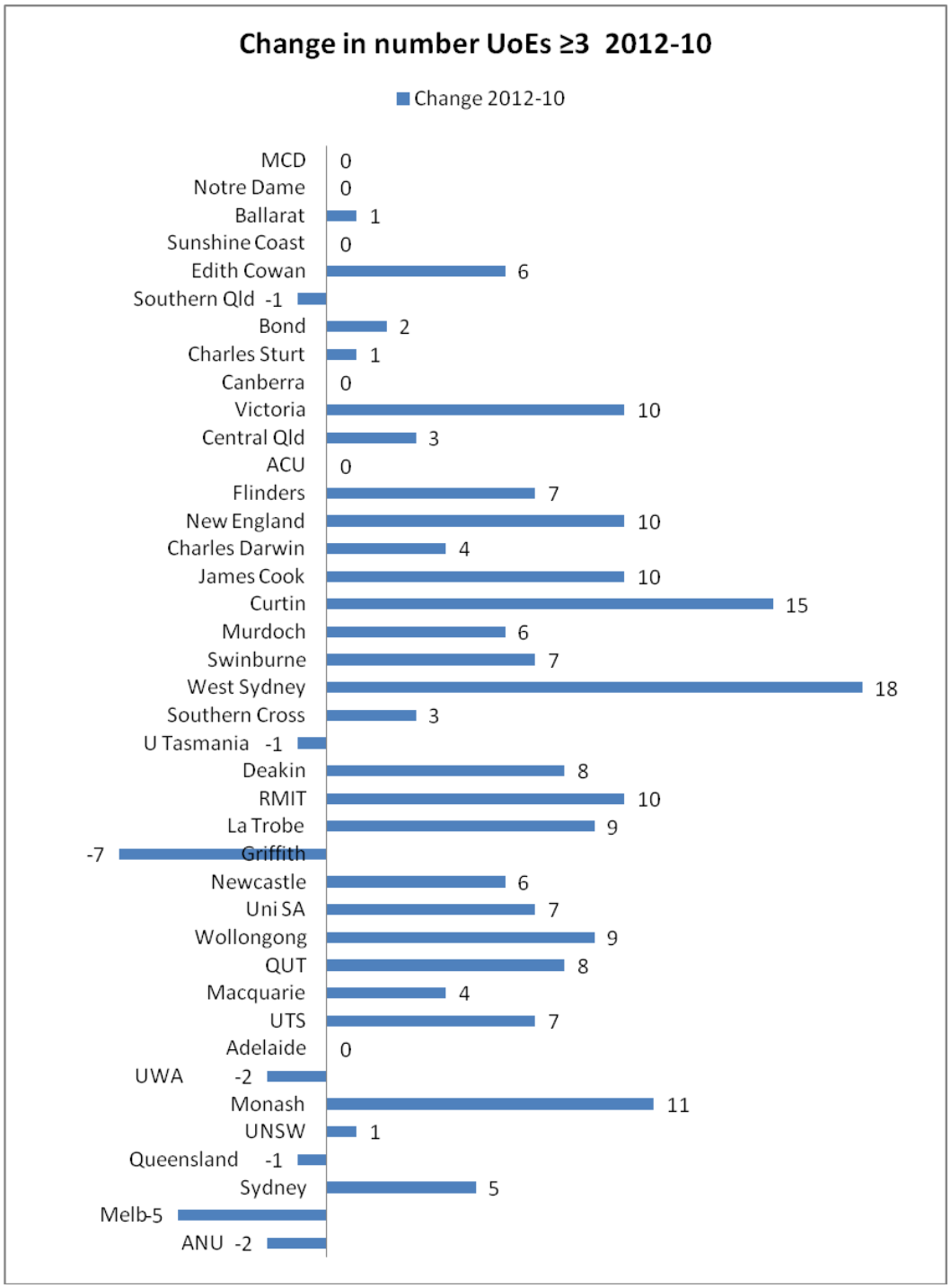

Figure 7: Change in the number of 4-digit discipline units assessed as ≥3 from 2010 to 2012

The majority of universities increased the number of 4-digit units assessed as ≥3 - seven universities by ten or more units. Western Sydney and Curtin were the main improvers. The decision by Western Sydney to submit more UoEs (figure 3) was vindicated. Monash was the best improver among the Go8 universities. Seven universities had a reduced number of units assessed at ≥3. Four of these were Go8 universities. These results must be viewed in the context of a university's overall excellence performance presented in figure 6.

Another perspective is the percentage changes in the 2-digit and 4-digit FoR discipline performances ≥3 of universities from 2010 to 2012. These data are presented in figure 8. The **blue bars** represent a superior performance in 2012 compared with 2010, while the **red bars** represent an inferior performance in 2012. Some universities, especially most of the Go8 universities, had a performance close to 100% in 2010; consequently, there was limited scope for improvement.

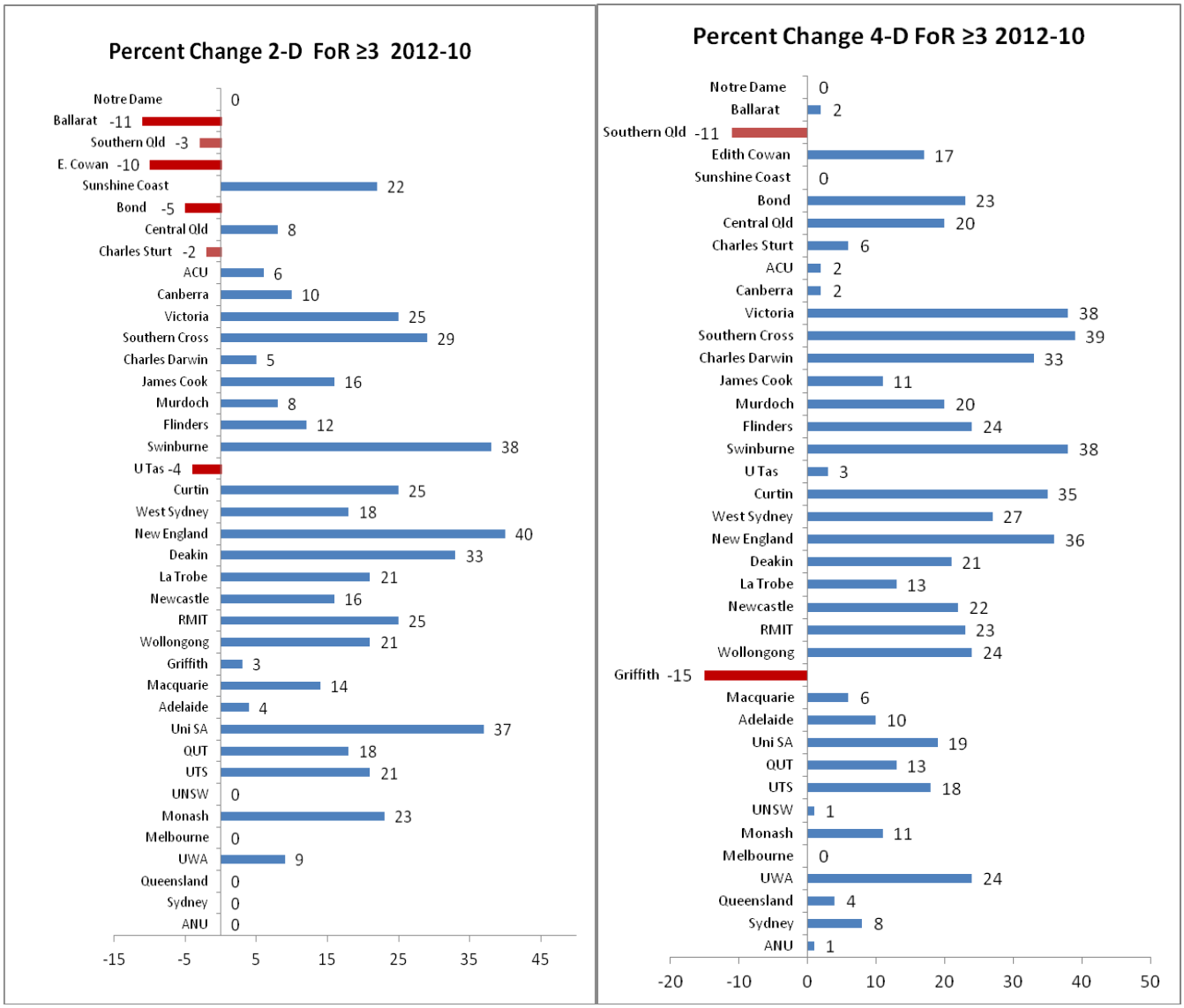

Figure 8: Difference in Percentage of 2-Digit and 4-Digit FoR disciplines assessed at or above world standard for universities in 2012 compared with 2010

It is striking that most universities overwhelming improved their excellence performance in percentage terms in 2012 compared with 2010 at both levels **(blue bars)**. The results are stronger for many universities than the absolute changes reported in figure 7 because of the reduced number of units offered for assessment. At the 2-digit level some 20 universities improved their performance by 10 percentage points or more, while at the 4-digit level 24 universities similarly improved their performance by 10 percentage points or more. Swinburne, Victoria, New England and Southern Cross were among the main improvers. These universities submitted fewer 4-digit UoEs for evaluation (figure 2) and had on average two or less 4-digit UoEs for each 2-digit UoEs submitted. Of the Go8 universities Monash and UWA were the two that had capacity for improvement and did so. UWA had fewer 4-digit units assessed at ≥3 (figure 7), but increased its percentage by 24% to 100% because 22 fewer UoEs were assessed in 2012. Monash had more units assessed at ≥3 and also improved its excellence percentage. Six universities (Ballarat, Southern Queensland, Edith Cowan, Bond, Charles Sturt and Tasmania) had an inferior performance at the 2-digit FoR level in 2012, while two universities (Southern Queensland and Griffith) had an inferior performance at the 4-digit FoR level. It is surprising that overall quality standards have improved so much in such a short time period with limited changes in the data sets available.

It is very clear that many universities learnt from the 2010 ERA exercise and modified their approach to submissions presentation, by adopting a more strategic approach.

The 2012 average quality ratings for all universities at the 2-digit and 4-digit levels are shown in the final column of the tables in appendices 2 and 3 respectively. The changes from 2010 are also shown. Caution needs to be exercised in interpreting these numbers since the discipline standards may be different. Overall, ANU received the highest average quality score at both the 2-digit and 4-digit levels. Six universities had an average score above 4 at the two-digit level and four universities had an average score above 4 at the four digit level. These are impressive results. At the 2-digit FoR level all universities with the exception of Edith Cowan improved their average score compared with 2010. At the 4-digit level three universities, Melbourne, Griffith and Southern Queensland were the only universities not to improve their average quality score. The university averages are consistent with the overall improvement in the rating of FoR disciplines discussed earlier.

Conclusion

The 2012 ERA assessment has resulted in most universities adopting a more strategic approach to defining their research profile and discipline strengths compared to the 2010 ERA round. Universities have responded to the exercise in ways that are consistent with government policies to encourage universities to be more selective and concentrate their research investments in areas of greatest strength. The extent of research quality improvement by many universities between the two rounds is difficult to reconcile. A re-examination of the ERA guidelines and assessment processes is warranted. The 2012 ERA exercise highlights that all universities have some excellent research strengths, but breadth as well as excellence is confined to a small number of universities.

The maintenance of a few Australia universities among the elite top 100 international universities will require more targetted research funding to those universities. The ERA outcomes provide a valuable guide to informed

decision-making. How the data are used for funding allocations requires a serious policy debate. Governments in a number of developed and developing countries have policies for differential research funding to their leading research-led universities. Australia should learn from these policy initiatives.

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References

1. Australian and New Zealand Standard Research Classifications http://www.arc.gov.au/era/ANZSRC.htm.
2. Australian Research Council, ERA outcomes, http://www.arc.gov.au/era/era_2012/outcomes_2012.htm

Appendix 1

Discipline Field of Research (FoR) two-digit codes and the number of four-digit FoR disciplines in each category.

FoR CODE	FOR Discipline Title	Number of 4-Digit FoR Disciplines in Category
01	Mathematical Sciences	6
02	Physical Sciences	7
03	Chemical Sciences	8
04	Earth Sciences	7
05	Environmental Sciences	4
06	Biological Sciences	9
07	Agricultural and Veterinary Sciences	8
08	Information and Computing Sciences	8
09	Engineering	16
10	Technology	8
11	Medical and Health Sciences	18
12	Built Environment and Design	6
13	Education	4
14	Economics	4
15	Commerce, Management ,Tourism and Services	8
16	Studies in Human Society	9
17	Psychology and Cognitive Sciences	3
18	Law and Legal Studies	3
19	Studies in Creative Arts and Writing	6

20	Language, Communication and Culture	6
21	History and Archaeology	4
22	Philosophy and Religious Studies	5
		Total number 157

Appendix 2

The number and quality of 2012 ERA ratings for universities submitting at the Two-Digit FoR level listed according to the overall average rating.

University	Number FoR	2-Digit FoR Discipline Ratings					Total	Percent 3+4+5	Average Rating
		No 1	No 2	No 3	No 4	No 5	3+4+5	(%Change 2012-10)	(%Change 2012-10)
ANU	19	0	0	3	4	12	19	100 (0)	4.47 (0.09)
Melbourne	22	0	0	1	11	10	22	100 (0)	4.41 (0.08)
Sydney	22	0	0	1	12	9	22	100 (0)	4.36 (0.53)
Queensland	22	0	0	2	12	8	22	100 (0)	4.27 (0.11)
UNSW	21	0	0	3	11	7	21	100 (0)	4.19 (0.15)
Monash	20	0	0	5	7	8	20	100(23)	4.15 (0.70)
UWA	21	0	0	9	10	2	21	100(9)	3.67 (0.03)
Adelaide	22	0	3	7	9	3	19	86(4)	3.55 (0.00)
UTS	18	0	0	13	2	3	18	100(21)	3.44 (0.50)
Macquarie	20	0	3	9	5	3	17	85(14)	3.40 (0.16)
QUT	19	0	1	12	5	1	18	95(18)	3.32 (0.22)
Wollongong	18	0	3	8	6	1	15	83(21)	3.28 (0.56)
Uni SA	15	0	2	9	3	1	13	87(37)	3.20 (0.59)
Newcastle	18	1	3	9	2	3	14	78(16)	3.17 (0.45)
Griffith	20	0	3	12	5	0	17	85(3)	3.10 (0.10)
La Trobe	18	0	4	11	1	2	14	78(21)	3.06 (0.44)
RMIT	16	0	3	9	4	0	13	81(25)	3.06 (0.45)
Deakin	19	0	5	10	2	2	14	74(33)	3.05 (0.64)

U Tasmania	21	0	7	7	7	0	14	67(-4)	3.00 (0.19)
Southern Cross	9	1	4	1	1	2	4	44(29)	2.89 (1.04)
West Sydney	20	1	5	10	4	0	14	70(18)	2.85 (0.37)
Swinburne	12	2	2	5	2	1	8	67(38)	2.83 (0.60)
Murdoch	18	0	7	8	2	1	11	61(8)	2.83 (0.19)
Curtin	20	0	6	13	0	1	14	70(25)	2.80 (0.16)
James Cook	19	1	7	7	3	1	11	58(16)	2.79 (0.32)
Charles Darwin	11	1	4	4	2	0	6	55(5)	2.64 (0.30)
New England	17	3	2	11	1	0	12	71(40)	2.59 (0.28)
Flinders	21	2	6	12	1	0	13	62(12)	2.57 (0.13)
ACU	9	0	6	3	0	0	3	33 (6)	2.33 (0.42)
Central Qld	13	3	7	1	0	2	3	23(8)	2.31 (0.77)
Victoria	13	2	6	5	0	0	5	39(25)	2.23 (0.53)
Canberra	13	3	5	5	0	0	5	39(10)	2.15 (0.01)
Charles Sturt	15	3	8	3	1	0	4	27(-2)	2.13 (0.25)
Bond	9	2	5	1	1	0	2	22 (-5)	2.11 (0.20)
Southern Qld	15	3	9	3	0	0	3	20 (-3)	2.00 (0.00)
Edith Cowan	13	4	6	3	0	0	3	21(-10)	1.92 (-0.14)
Sunshine Coast	9	4	3	1	1	0	2	22 (22)	1.89 (0.44)
Ballarat	11	2	9	0	0	0	0	0(-11)	1.82 (0.26)
Notre Dame	3	2	1	0	0	0	0	0(0)	1.33 (0.030
TOTALS 2012	**642**	**40**	**145**	**237**	**137**	**83**	**472**	**71%**	**2.95**
TOTALS 2010	**697**	**97**	**189**	**227**	**115**	**69**	**411**	**59%**	**2.8**

Appendix 3

The number and quality 2012 ERA ratings for universities submitting at the Four-Digit FoR level listed according to the average overall Two-Digit Rating achieved.

University	Number FoR	4-Digit FoR Discipline Ratings					Total	Percent 3+4+5	Average Rating
		No 1	No 2	No 3	No 4	No 5	3+4+5	(%Change 2012-10)	(%Change 2012-10)
ANU	62	0	0	7	28	27	62	100 (1)	4.32 (0.08)
Melbourne	98	0	1	21	46	30	97	99 (0)	4.07 (-0.12)
Sydney	99	0	0	25	40	34	99	100 (8)	4.09 (0.40)
Queensland	96	0	0	21	40	35	96	100 (4)	4.15 (0.15)
UNSW	88	0	3	27	33	25	85	97 (1)	3.91 (0.11)
Monash	90	0	1	29	38	22	89	99(11)	3.90 (0.28)
UWA	62	0	0	24	22	16	62	100(24)	3.87 (0.64)
Adelaide	67	1	6	21	21	18	60	90(10)	3.73 (0.36)
UTS	44	0	5	24	11	4	39	89(18)	3.32 (0.43)
Macquarie	56	1	7	27	12	9	48	86(6)	3.38 (0.01)
QUT	50	0	6	22	20	2	44	88(13)	3.36 (0.28)
Wollongong	50	1	4	19	19	7	45	90(24)	3.54 (0.65)
Uni SA	37	0	5	21	9	2	32	87(19)	3.21 (0.32)
Newcastle	49	0	5	17	9	18	44	90(22)	3.82 (0.80)
Griffith	60	2	20	26	11	1	38	63 (-15)	2.82 (-0.20)
La Trobe	53	2	13	22	7	9	38	72(13)	3.15 (0.29)
RMIT	40	0	6	15	16	3	34	85(23)	3.40 (0.63)
Deakin	52	2	14	22	9	5	36	69(21)	3.01 (0.39)

U Tasmania	51	2	12	20	8	9	37	73(3)	3.20 (0.29)
Southern Cross	10	0	4	1	1	4	6	60(39)	3.5 (1.43)
West Sydney	53	2	15	25	8	3	36	68(27)	2.90 (0.50)
Swinburne	21	1	5	7	6	2	15	71(38)	3.14 (1.03)
Murdoch	33	0	5	16	5	7	28	85(20)	3.42 (0.42)
Curtin	49	3	11	21	12	2	35	71(35)	2.98 (0.62)
James Cook	50	7	10	19	11	3	33	66(11)	2.86 (0.22)
Charles Darwin	14	0	4	6	3	1	10	71(33)	3.07 (0.76)
New England	25	1	7	15	2	0	17	68(36)	2.72 (0.36)
Flinders	39	1	9	21	5	3	29	74(24)	3.00 (0.41)
ACU	13	1	8	4	0	0	4	31 (2)	2.23 (0.09)
Central Qld	15	4	7	1	0	3	4	27(20)	2.40 (0.87)
Victoria	27	3	9	10	2	3	15	56(38)	2.74 (0.99)
Canberra	14	1	10	3	0	0	3	21(2)	2.14 (0.21)
Charles Sturt	31	5	16	9	1	0	10	32(6)	2.19 (0.25)
Bond	11	1	5	3	2	0	5	46 (23)	2.55 (0.62)
Southern Qld	15	8	7	0	0	0	0	0 (-11)	1.47 (-0.20)
Edith Cowan	33	10	13	9	0	1	10	30(17)	2.06 (0.29)
Sunshine Coast	1	0	1	0	0	0	0	0 (0)	2.0 (0.86)
Ballarat	17	5	10	2	0	0	2	12(2)	1.82 (0.42)
Notre Dame	5	3	2	0	0	0	0	0(0)	1.40 (0.40)
MCD	1	0	0	1	0	0	1	100 (0)	3.0
TOTALS 2012	**1681**	**67**	**266**	**583**	**457**	**308**	**1348**		
TOTALS 2010	**1738**	**170**	**389**	**547**	**393**	**239**	**1179**		

Appendix 4

The number and 2010 ERA quality ratings for universities submitting at the Two-Digit FoR level listed according to the 2012 Two-digit average rating.

University	Number FoR	2-Digit FoR Discipline Ratings					Total	Percent 3+4+5	Average Rating
		No 1	No 2	No 3	No 4	No 5	3+4+5	%	
ANU	21	0	0	3	7	11	21	100	4.4
Melbourne	24	0	0	4	8	12	24	100	4.3
Sydney	24	0	0	9	10	5	24	100	3.8
Queensland	24	0	0	3	14	7	24	100	4.2
UNSW	23	0	0	5	12	6	23	100	4.0
Monash	22	1	4	4	10	3	17	77	3.5
UWA	22	0	2	9	6	5	20	91	3.6
Adelaide	22	1	3	8	4	6	18	82	3.5
UTS	19	0	4	13	1	1	15	79	3.0
Macquarie	21	0	6	9	1	5	15	71	3.2
QUT	22	2	3	9	7	1	17	77	3.1
Wollongong	21	3	5	8	5	0	13	62	2.7
Uni SA	18	2	7	7	1	1	9	50	2.6
Newcastle	21	1	7	10	3	0	13	62	2.7
Griffith	22	1	3	14	3	1	18	82	3.0
La Trobe	21	3	6	9	2	1	12	57	2.6
RMIT	18	1	7	8	2	0	10	56	2.6
Deakin	22	3	10	6	3	0	9	41	2.4
U Tasmania	21	2	4	11	4	0	15	71	2.8

Southern Cross	13	5	6	1	1	0	2	15	1.9
West Sydney	21	3	7	9	2	0	11	52	2.5
Swinburne	17	4	8	3	1	1	5	29	2.2
Murdoch	17	1	7	7	1	1	9	53	2.7
Curtin	22	2	10	8	1	1	10	45	2.5
James Cook	19	3	8	5	2	1	8	42	2.5
Charles Darwin	12	3	3	5	1	0	6	50	2.3
New England	16	1	10	4	1	0	5	31	2.3
Flinders	18	1	8	9	0	0	9	50	2.4
ACU	11	4	4	3	0	0	3	27	1.9
Central Qld	13	8	3	2	0	0	2	15	1.5
Victoria	14	6	6	2	0	0	2	14	1.7
Canberra	14	3	7	3	1	0	4	29	2.1
Charles Sturt	17	7	5	5	0	0	5	29	1.9
Bond	11	4	4	3	0	0	3	27	1.9
Southern Qld	13	4	6	2	1	0	3	23	2.0
Edith Cowan	16	4	7	5	0	0	5	31	2.1
Sunshine Coast	9	5	4	0	0	0	0	0	1.4
Ballarat	9	5	3	1	0	0	1	11	1.6
Notre Dame	6	4	2	0	0	0	0	0	1.3
MCD	1	0	0	1	0	0	1	100	3.0
TOTAL	**697**	**97**	**189**	**227**	**115**	**69**	**411**	**59**	**2.8**

Appendix 5

The number and quality 2010 ERA ratings for universities submitting at the Four-Digit FoR level listed according to the overall 2012 two-digit average rating.

University	Number FoR	4-Digit FoR Discipline Ratings					Total	Percent 3+4+5	Average Rating
		No 1	No 2	No 3	No 4	No 5	3+4+5	%	
ANU	65	0	1	13	20	31	64	99	4.25
Melbourne	103	0	1	20	40	42	102	99	4.19
Sydney	102	2	6	35	38	21	94	92	3.69
Queensland	101	0	4	20	49	28	97	96	4.00
UNSW	88	1	3	28	37	19	84	96	3.80
Monash	89	1	10	27	35	16	78	88	3.62
UWA	84	1	19	35	18	11	64	76	3.23
Adelaide	75	6	9	27	17	16	60	80	3.37
UTS	45	0	13	25	6	1	32	71	2.89
Macquarie	55	1	10	24	8	12	44	80	3.36
QUT	48	1	11	23	9	4	36	75	3.08
Wollongong	55	7	12	19	14	3	36	66	2.89
Uni SA	37	1	11	17	7	1	25	68	2.89
Newcastle	56	2	16	24	7	7	38	68	3.02
Griffith	58	3	10	30	13	2	45	78	3.02
La Trobe	49	3	17	16	10	3	29	59	2.86
RMIT	39	1	14	18	5	1	24	62	2.77
Deakin	59	8	23	15	9	4	28	48	2.63
U Tasmania	54	4	12	26	9	3	38	70	2.91

Southern Cross	14	4	7	2	0	1	3	21	2.07
West Sydney	44	7	19	13	3	2	18	41	2.41
Swinburne	24	8	8	6	1	1	8	33	2.13
Murdoch	34	3	9	12	5	5	22	65	3.00
Curtin	56	9	27	13	5	2	20	36	2.26
James Cook	42	7	12	14	7	2	23	55	2.64
Charles Darwin	16	5	5	2	4	0	6	38	2.31
New England	22	1	14	5	2	0	7	32	2.36
Flinders	44	4	18	15	6	1	22	50	2.59
ACU	14	3	7	3	1	0	4	29	2.14
Central Qld	15	8	6	1	0	0	1	7	1.53
Victoria	28	14	9	3	2	0	5	18	1.75
Canberra	16	5	8	2	1	0	3	19	1.94
Charles Sturt	35	14	12	6	3	0	9	26	1.94
Bond	13	5	5	2	1	0	3	23	1.92
Southern Qld	9	4	4	1	0	0	1	11	1.67
Edith Cowan	30	12	14	3	1	0	4	13	1.77
Sunshine Coast	7	6	1	0	0	0	0	0	1.14
Ballarat	10	7	2	1	0	0	1	10	1.40
Notre Dame	2	2	0	0	0	0	0	0	1.00
MCD	1	0	0	1	0	0	1	100	3.0
Totals	**1738**	**170**	**389**	**547**	**393**	**239**	**1179**		