



MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

The performance of New Zealand universities in international rankings



This report forms part of a series called Supporting the tertiary education system.

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SUMMARY

Despite being subject to much criticism, international university rankings are attracting more coverage, are proliferating, and appear to be here to stay. Most countries and universities at the very least monitor the results of the rankings when they are published. Many universities strive to improve their rankings.

In this study, we examine the performance of New Zealand universities in the ‘big three’ university rankings: the Quacquarelli Symonds (QS) World University Rankings, the Times Higher Education (THE) World University Rankings, and the Academic Ranking of World Universities (ARWU).

In the high-profile QS ranking, there has been a downward trend in the rankings for the top-placed New Zealand universities. However, all of our universities are currently placed in the QS top 500, something not achieved by the Australian, Canadian or United Kingdom university systems. Also, the performance of New Zealand universities in the QS subject-level rankings tend to be higher than in other rankings.

In the THE and ARWU rankings, the picture was mixed. For example, the University of Auckland has remained relatively stable in both the ARWU and the THE rankings over time. While the University of Otago (and the University of Canterbury more recently) has been improving in the ARWU, Massey University and Victoria University of Wellington (VUW) have dropped in ranking in recent years. Both of the latter universities have also exhibited recent falls in THE ranking.

We also compare the rankings of New Zealand universities with Australian universities. One New Zealand university, the University of Auckland, was placed among the Australian Group of Eight (G8) universities in all three rankings, while the University of Otago was placed just outside the G8, but above other Australian universities. The remaining listed New Zealand universities were generally spread among the remaining non-G8 universities.

The performance of the Australian universities in the rankings, especially the non-G8 universities, suggests that wider trends are impacting on the Australasian universities. For example, all the listed Australasian universities dropped in the QS rankings between 2007 and 2013. The rise of universities from Asian countries in the rankings is one factor in displacing the Australasian universities.

1 INTRODUCTION

Although controversial, international university rankings are now an established part of the higher education landscape, with considerable attention placed on them when they are published. In particular, the rankings generate considerable media interest and increasingly feature in debates about the international education market and public policy making.

Until recently, the most prominent rankings systems were the Quacquarelli Symonds (QS) and the Academic Ranking of World Universities (ARWU). In recent years the QS and ARWU have been joined by a third: the Times Higher Education (THE) rankings.¹ There have also been offshoots of these rankings, with subject-level and newer university rankings appearing.²

A previous Ministry of Education report³ examined the performance of New Zealand universities in two of the rankings. Given that four years have passed since that report appeared and with the emergence of another major ranking to join the other two, it is timely to update the performance of New Zealand universities in the three major international rankings – QS, THE and ARWU.

When the university rankings are published, there is often a short-term focus on how the rankings have changed from the previous year. In this study, we examine longitudinal data from the rankings to get a longer-term view on how New Zealand universities have tracked over time.

To benchmark the performance of New Zealand universities, we compare our performance with that of the Australian universities to see if any trends in New Zealand university performance are mirrored by our closest neighbour.

The structure of this report is as follows:

- In section 2 we present a background on the three rankings examined in this study.
- In section 3 we present the ARWU rankings.
- In section 4 we present the results of the QS rankings.
- In section 5 we present the THE rankings.
- In section 6 we summarise performance in each of the rankings in 2013.
- Finally, in section 7 we present a conclusion.

¹ Originally published under the Times Higher Education banner, the QS rankings attempted to take a wider view of university performance and included measures to capture reputation and teaching performance in universities. In 2009, THE and QS severed their relationship and THE set up its own rankings while QS continued to publish rankings under its own banner.

² For a description of all the rankings systems that are currently published, see Rauhvargers (2013).

³ Smart (2010).

2 BACKGROUND

History of the rankings

Of the three rankings we analyse in this study, the oldest is the ARWU. This ranking (originally called the Shanghai Jiao Tong rankings) was created by the Shanghai Jiao Tong University in China to benchmark its own performance against other universities.

A year after the ARWU rankings emerged, the QS rankings were first published. Originally published under the Times Higher Education (THE) banner, the QS rankings attempted to take a wider view of university performance and included measures to capture reputation and teaching performance in universities. In 2009, THE and QS severed their relationship and THE set up their own rankings, while QS continued to publish rankings under its own banner.

Of the three rankings, the system that draws the greatest attention in New Zealand is the QS rankings. There are a number of possible reasons for the interest generated by QS. First, the QS rankings generally rank New Zealand universities higher than the two other rankings. For example, the University of Auckland is currently ranked 94 by QS, 164 by THE, and 207 by ARWU. In addition, the QS rankings publish single rankings down to place 400, while the other two rankings publish lower rankings in bands. This means that it is easier to identify changes in rankings by universities. Finally, although the THE rankings cover similar territory to the QS rankings, they have only been around in their current configuration for four years, so the QS rankings have the advantage of having been published for a longer time, allowing for greater trend analysis.

International university rankings are important because they attract interest – they are important because people think they are important. They are also one of the only ways people can access information on the relative performance of individual universities from different countries. And because they provide a shorthand view of performance, they may be an influence on student flows and, possibly, flows of contestable funding. While there may be doubts about their intrinsic value, most countries and most universities now at least monitor the rankings.

General criticisms of the rankings⁴

There are some general criticisms of the three rankings we examine in this study. A key criticism that applies to all three is that weightings applied to individual components used to generate the final rankings are arbitrary. Other rankings, such as the Leiden rankings, only publish performance measures individually and do not attempt to produce an overall weighted ranking.

Also, the QS and THE rankings rely on surveys of academics and employers. These surveys have been criticised as measuring perceptions rather than actual performance. For example, the University of Melbourne suggested that overseas media exposure of planned funding cuts to universities in Australia impacted on its academic reputation survey score and led to a fall in its ranking.⁵ Response rates in the QS academic survey used to be extremely low, though QS has worked to lift response rates, as a result of criticism of its survey.

The methodology of the QS and THE is thought to favour English language universities over other universities, in part because of their emphasis on recruiting international students.

⁴ For additional discussion of criticisms of each of the rankings see Group of Eight (2012) and Rauhvargers (2013).

⁵ See <http://www.theaustralian.com.au/higher-education/local-unis-head-south-in-new-ranking/story-e6frcjx-1226731762634>.

Outside of the top 50 universities, differences in the overall scores of the listed universities used to rank them tend to be small. So even a small change in overall score may result in a larger change in ranking than for universities more highly ranked.

3 ACADEMIC RANKING OF WORLD UNIVERSITIES

Introduction

The first Academic Ranking of World Universities (ARWU) results were published in 2003 and were developed initially as a benchmarking exercise for the Shanghai Jiao Tong University. It has a specific focus on identifying which universities have elite research performance.

In New Zealand, the ARWU rankings tend to have the lowest profile of the ‘Big 3’ ranking systems. One possible reason for this is that no New Zealand university is in the top 100. A second reason may be that the ARWU rankings are focused solely on research. The ARWU does not publish individual rankings outside of the top 100, and so movements between years are not visible to the media and public. Also, only five New Zealand universities have been listed in the top 500.

In this analysis, we focus mostly on the ARWU results between 2007 and 2013. This is a period when five New Zealand universities were consistently listed in the top 500 and the methodology has remained stable. The detailed results for each of the five listed New Zealand universities over the period 2003 to 2013 are presented at the end of this report.

The Academic Ranking of World Universities methodology

The ARWU considers universities that produce a significant number of indexed journal articles. More than 1,000 universities are actually ranked, but only rankings of the top 500 are published.

The ARWU measures the research performance of universities against four broad criteria: quality of education, quality of faculty, research output and per capita performance. It identifies concentrations of quality research rather than measuring research performance per academic staff member. The six indicators of performance used to determine the final ARWU rankings are listed in Table 1, along with their weightings.

Table 1
ARWU indicators

Criteria	Indicator	Code	Weight
Quality of education	Number of alumni winning Nobel Prizes or Fields Medals	Alumni	10%
Quality of faculty	Number of faculty winning Nobel Prizes or Fields Medals	Award	20%
	Number of highly-cited faculty in 21 broad subject categories	HiCi	20%
Research output	Number of papers published in <i>Nature</i> or <i>Science</i>	N&S	20%
	Number of papers indexed in <i>Science Citation Index Expanded</i> and <i>Social Science Citation Index</i> (weighting of 2 for papers in social science index)	Pub	20%
Per capita performance	Per academic measure of the previous five measures	PCP	10%
Total			100%

Source: www.shanghairanking.com

It is important to note that only the last of the six measures takes into account the size of the university. Also, the bibliometric measures used in the ARWU favour universities with a strong focus on the sciences and medicine. Some of the measures favour the very elite institutions. For instance, it is highly unlikely that a New Zealand university would be able to employ a Nobel Prize winner as US and European universities generally capture these people. That measure creates a bias towards elite US and European universities, beyond the general bias of rankings systems towards universities in the US and towards very elite institutions.

The ARWU does not publish the individual rankings of universities outside of the top 100, although it does graph them on the page dedicated to each university on the ARWU website. As all New Zealand universities are outside of the top 100, we have derived individual rankings using the raw data published by the ARWU and using its methodology. For those Australian universities ranked outside of the top 100, we have used a similar approach. However, these should not be seen as representing official ARWU rankings.

What do the ARWU component scores mean?

To calculate each component score, each university receives a score in proportion to the performance of the top-placed university, with the top university being assigned a score of 100. This means that the component score represents performance *relative* to the top-performing institution. This is different from the QS and THE approach, which assigns scores relative to the mean performance of all institutions being considered.

After the weightings are applied, the weighted score is then normalised so that the top-performing university is assigned a score of 100.

Results

The universities ranked in the 2013 ARWU top five are listed in Table 2. In first place in 2013 was Harvard University, followed by Stanford University.

Table 2

Top five universities in ARWU

Ranking		University
2013	2012	
1	1	Harvard University (USA)
2	2	Stanford University (USA)
3	4	University of California, Berkeley (USA)
4	3	Massachusetts Institute of Technology (USA)
5	5	University of Cambridge (UK)

Source: www.shanghairanking.com

The official published ARWU rankings are presented in Table 3. As noted above, for universities placed outside of the top 100 (including all the listed New Zealand universities) the published rankings are in bands. This means that there is little apparent movement between years. In 2013, the University of Auckland slipped from the 151-200 band to the 201-300 band, although this marked a return to a band in which it had been placed between 2004 and 2011.

Table 3

Official ARWU overall ranking bands for New Zealand universities

University	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Auckland	201-250	202-301	203-300	201-300	203-304	201-302	201-302	201-300	201-300	151-200	201-300
Otago	351-400	202-301	301-400	201-300	305-402	201-302	201-302	201-300	201-300	201-300	201-300
Canterbury	NR	NR	401-500	401-500	403-510	402-503	402-501	401-500	401-500	401-500	401-500
Massey	351-400	404-502	401-500	401-500	305-402	303-401	402-501	401-500	401-500	401-500	401-500
VUW	NR	NR	401-500	401-500	403-510	402-503	402-501	401-500	401-500	401-500	401-500

Note: NR = not ranked.

Source: www.shanghairanking.com

The estimated individual rankings in Table 4 were derived by the Ministry of Education from the underlying data using the ARWU methodology. The derived rankings showed that one of the five New Zealand universities listed in the ARWU improved its ranking in 2013 (the University of Canterbury). The University of Auckland was the top-ranked New Zealand

university (207) followed by the University of Otago (237). The improvement by the University of Canterbury in 2013 stands apart from the falls exhibited by the other four listed universities.

Table 4
Estimated ARWU overall rankings for New Zealand universities

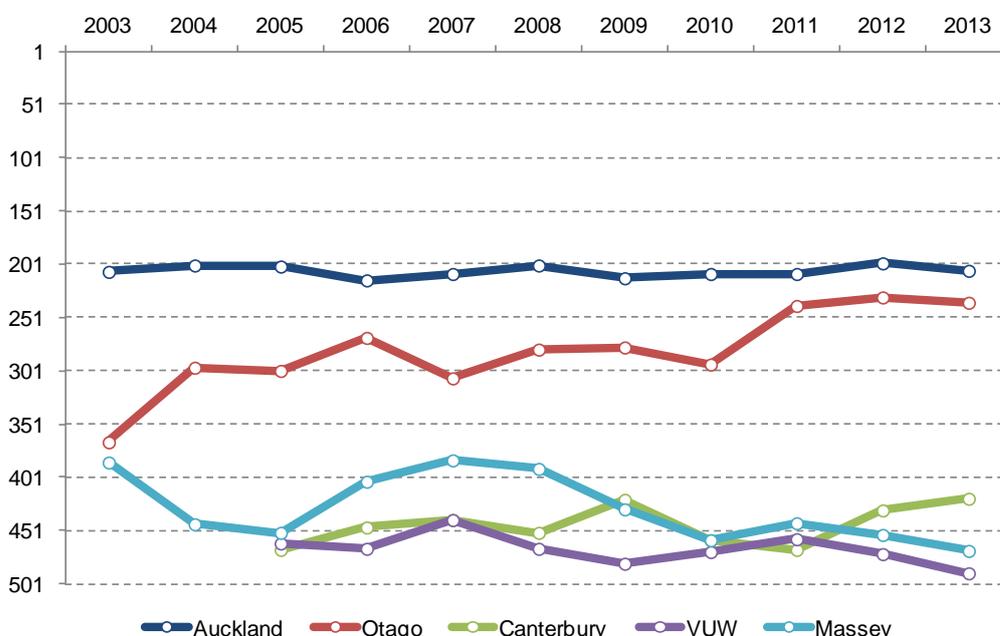
University	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2012-13	2006-13
Auckland	208	202	203	216	210	202	214	210	210	200	207	↓ 7	↑ 9
Otago	368	298	301	270	308	281	279	295	240	232	237	↓ 5	↑ 33
Canterbury	NR	NR	469	448	441	453	422	460	469	432	421	↑ 11	↑ 27
Massey	387	445	453	405	385	393	431	460	444	455	470	↓ 15	↓ 65
VUW	NR	NR	463	468	441	468	482	471	459	473	491	↓ 17	↓ 22
NZ average	n/a	n/a	378	361	357	359	366	379	364	358	365	↓ 7	↓ 4

Note: The ARWU does not publish the individual rankings of universities that are outside of the top 100, although it does graph them on the page dedicated to each university on the ARWU website. The rankings for these universities are reported in blocks, with the universities ranked in alphabetical order. As all of the New Zealand universities are ranked outside of the top 100, the methodology used to determine the rankings in the ARWU has been applied by the Ministry of Education to the published raw data to generate the derived rankings for the New Zealand universities. The raw data is available at www.shanghai ranking.com.

The estimated rankings of the New Zealand universities are presented in Figure 1. Since 2005, when there were five listed New Zealand universities, the ranking of the University of Auckland has remained relatively stable, while the Universities of Otago and Canterbury have a higher ranking in 2013 than in 2005. The ranking for Massey University and Victoria University of Wellington is lower in 2013 than in 2005.

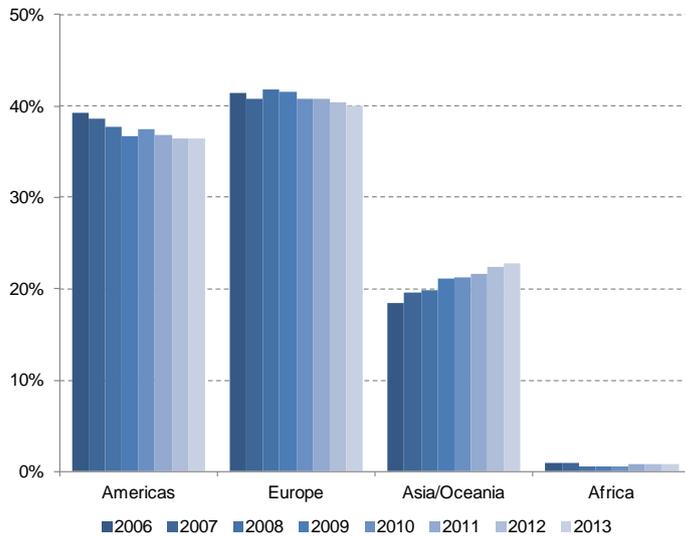
If the recent downward trend in ranking performance of Massey University and Victoria University of Wellington continues, this may place them at risk of dropping out of the ARWU top 500 in future years.

Figure 1
Estimated ARWU overall rankings for New Zealand universities



The regional share of universities in the ARWU top 500 is presented in Figure 2. This shows that the regional distribution of the universities in the ARWU top 500 is changing over time. The share of universities in the top 500 from the Americas has declined from 39 percent in 2006 to 36 percent in 2013. Conversely, the share of universities from the Asia/Oceania region has grown from 18 percent in 2006 to 23 percent in 2013.

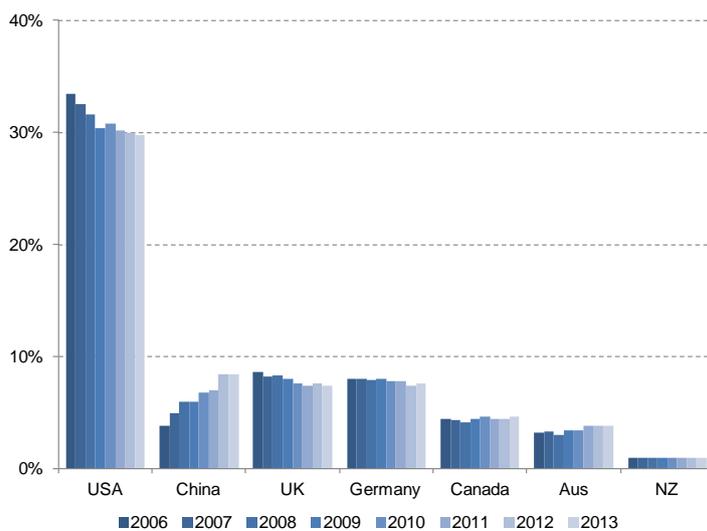
Figure 2
Share of ARWU top 500 universities by region



Source: www.shanghairanking.com

Figure 3 presents the share of universities in the ARWU top 500 for selected countries. This shows that the proportion of universities in the top 500 from the US has been decreasing, as has the share by UK universities.

Figure 3
Share of ARWU top 500 universities by selected countries

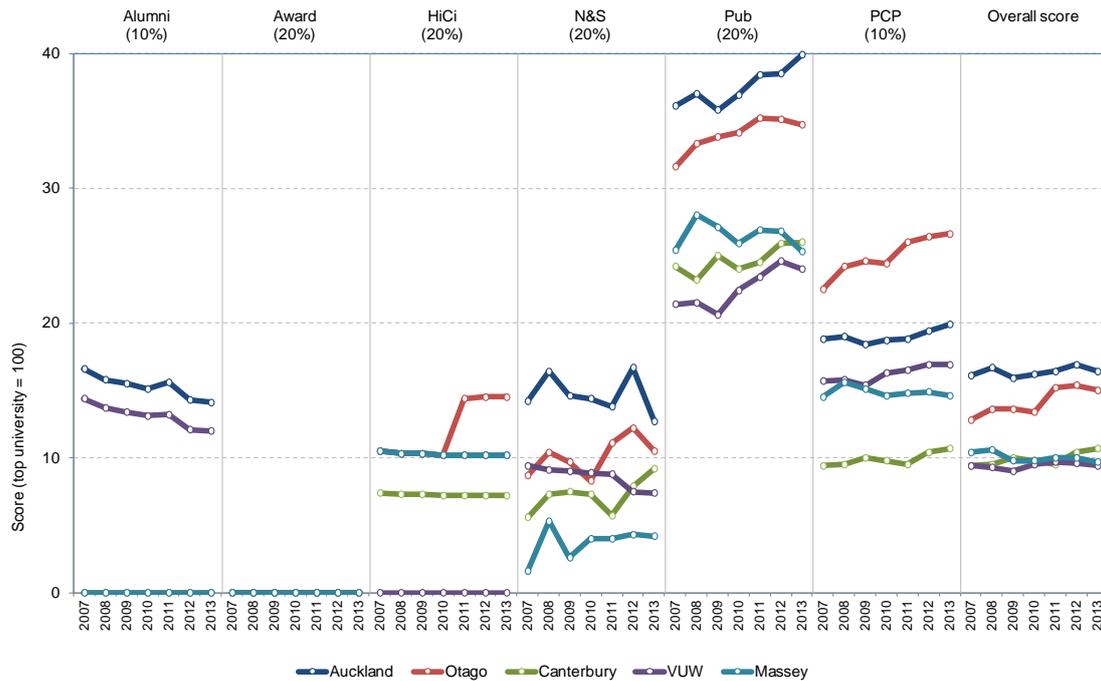


Source: www.shanghairanking.com

Between 2006 and 2012, the share of Chinese universities in the ARWU top 500 increased from 3.8 percent to 8.4 percent. Also, the share of Australian universities increased from 3.2 percent to 3.8 percent. The New Zealand share remained unchanged.

The ARWU component scores for each listed New Zealand university between 2007 and 2013 are presented in Figure 4 (component scores for each of the New Zealand universities are presented in Table 16 in the Appendix). As discussed earlier, these component scores represent the performance of a university relative to the top-performing university in that measure.

Figure 4
ARWU component scores and overall score at New Zealand universities



Notes: 1. Although it does not show in the graph above, the University of Auckland has the same performance as Massey University in the highly-cited category. 2. The weighting for the component scores is in brackets under the component name.

Source: www.shanghairanking.com

The best component measure for the New Zealand universities is the publication component. It is also the one component that has generally displayed an improving trend over time. The worst component for New Zealand universities is the award measure, which counts the number of Nobel Prize winners on staff. As New Zealand universities have no Nobel Prize winners, they all score zero for this measure. It is worth 20 percent of the overall score.

A feature of Figure 4 is that generally the listed New Zealand universities exhibit higher performance in the per capita measure than in the overall score. This shows that once size of faculty is taken into account, New Zealand universities arguably perform better than the overall score indicates.

An Australian comparison

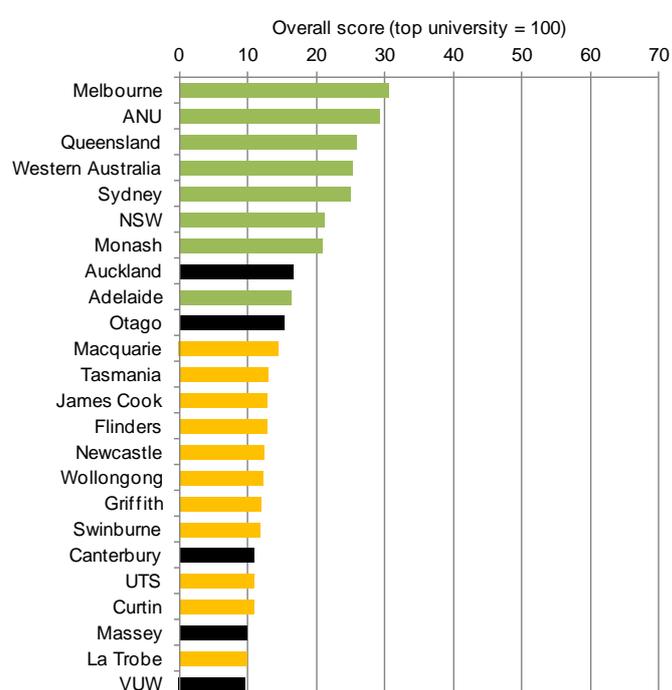
As well as the five New Zealand universities, 19 Australian universities appeared in the 2013 ARWU rankings. The performance of the New Zealand and Australian universities is compared in Figure 5, which presents the overall score used to determine the final rankings. This overall score reflects the performance of each university relative to the top-performing university (Harvard), which has a score of 100.

In 2013, the University of Auckland was placed amongst, and the University of Otago was placed just after, the G8 universities, with the University of Canterbury, Massey University and Victoria University of Wellington lower placed among the non-G8 Australian universities. This is similar to the QS and THE positioning of New Zealand universities in the Australasian region.

This partly reflects that the ARWU performance measures are mostly based on totals, with no account of the size of university, and the New Zealand universities are smaller than most Australian universities. In addition, universities with medical schools tend to do better in bibliometric measures of research output. The seven bottom-placed Australasian universities (three of which are New Zealand universities) do not have medical schools.

Figure 5

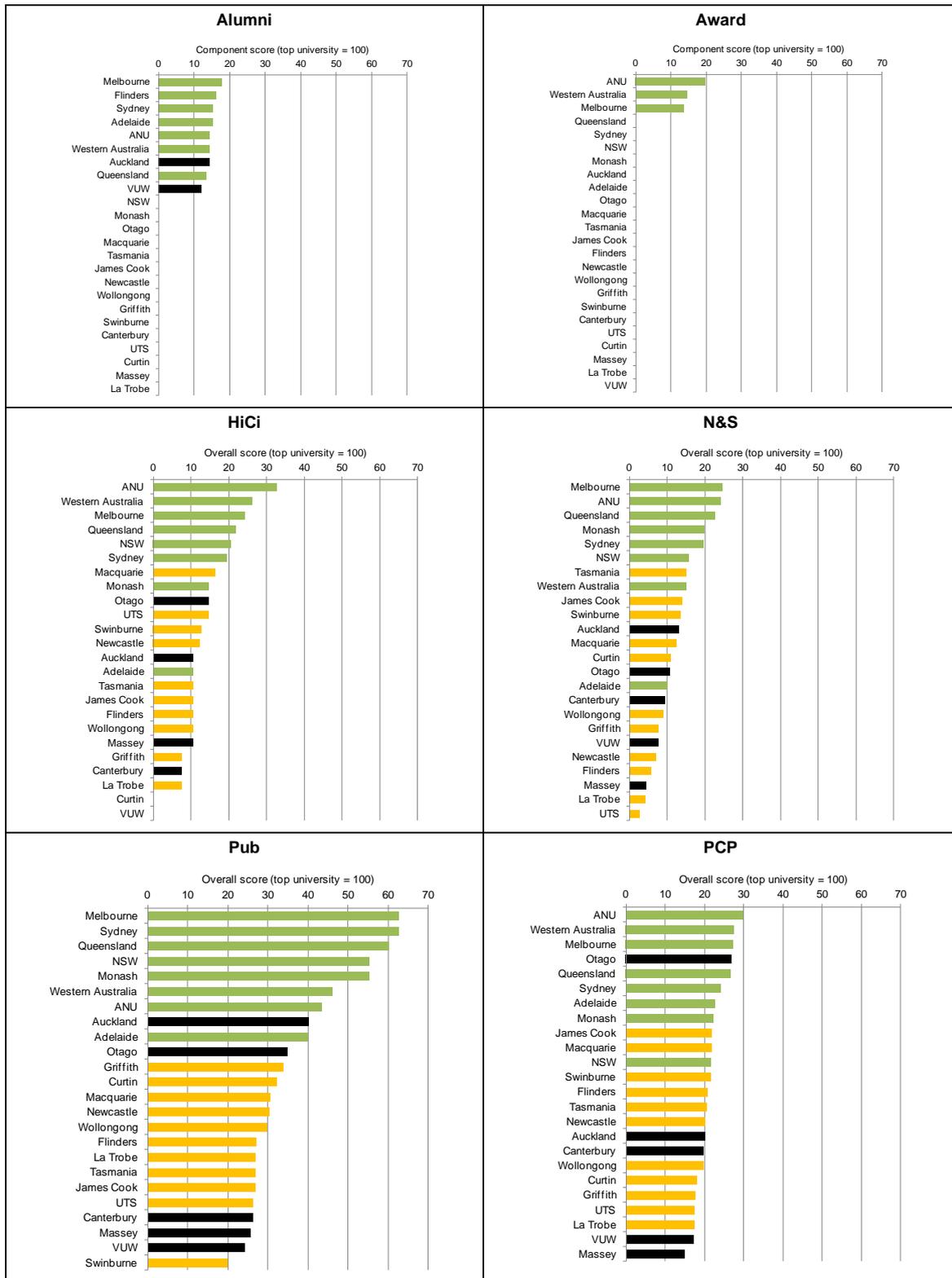
ARWU overall score for Australasian universities 2013



Notes: 1. New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars. 2. ANU=Australian National University, NSW=University of New South Wales, UTS=University of Technology, Sydney, VUW=Victoria University of Wellington.

The scores of the Australasian universities in each of the six component measures are presented in Figure 6. Compared with Australian universities, the University of Auckland performed relatively well in three of the component scores: alumni receiving awards (Alumni), the number of articles in *Nature* or *Science* (N&S) and the number of indexed journal publications (Pub). The University of Otago performed well compared with its Australian counterparts in the per capita component (PCP).

Figure 6
ARWU component scores for Australasian universities 2013



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

The Pearson correlation coefficients for the Australasian universities in the ARWU are presented in Table 5. A Pearson correlation coefficient shows the degree of linear association between two measures. A value of 1 indicates there is a perfect positive linear relationship between the two variables, with a value of -1 showing perfect negative correlation. A value of 0 indicates there is no linear correlation between the measures.

Excluding the per capita measure, the highest correlations were between: the number of indexed journal publications (Pub) and the number of publications in *Nature* or *Science* (N&S) (0.78), and the number of staff receiving awards (Award) and the number of highly cited researchers (HiCi).

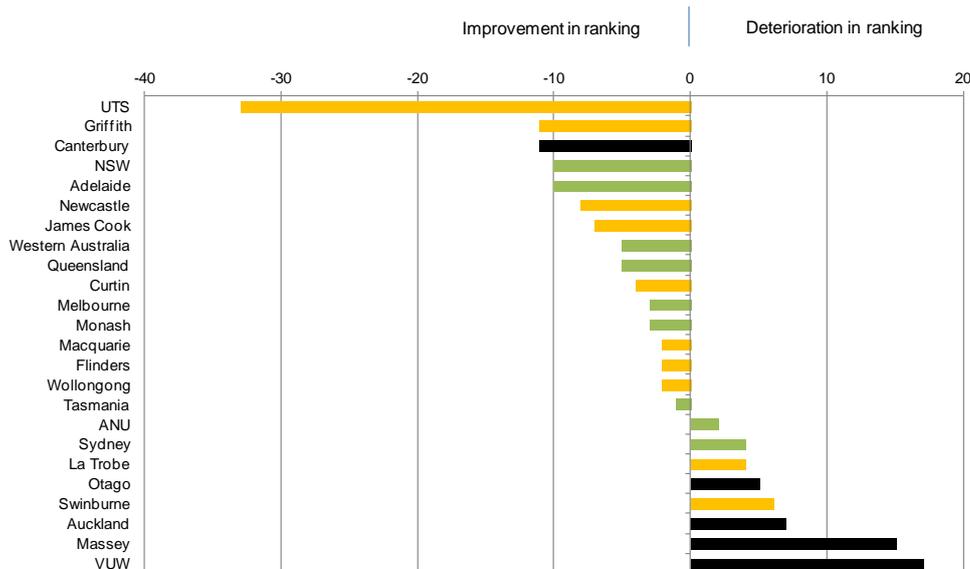
Table 5
Pearson correlation coefficients for the six ARWU component scores for Australasian universities 2013

	Alumni	Award	HiCi	N&S	Pub
Award	0.50				
HiCi	0.41	0.73			
N&S	0.44	0.55	0.70		
Pub	0.52	0.36	0.64	0.78	
PCP	0.52	0.67	0.82	0.80	0.64

Note: N = 24.

Figure 7 presents the change in overall ranking between 2012 and 2013 for the Australasian universities in the 2013 ARWU. This shows that the University of Technology, Sydney achieved the highest improvement in ranking of the Australasian universities, while Victoria University of Wellington exhibited the largest drop in overall ranking. Four of the five universities to suffer the largest drop in ranking were New Zealand institutions.

Figure 7
Change in ARWU overall ranking 2012-2013



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

The change in average component score for the listed New Zealand and Australian universities is presented in Figure 8. This shows that, on average, the Australian universities increased the number of articles they published in *Nature* or *Science* and increased the number of indexed publications. This compares with falls, on average, for the listed New Zealand universities in these components.

Figure 8
Change in average ARWU component score 2012-2013

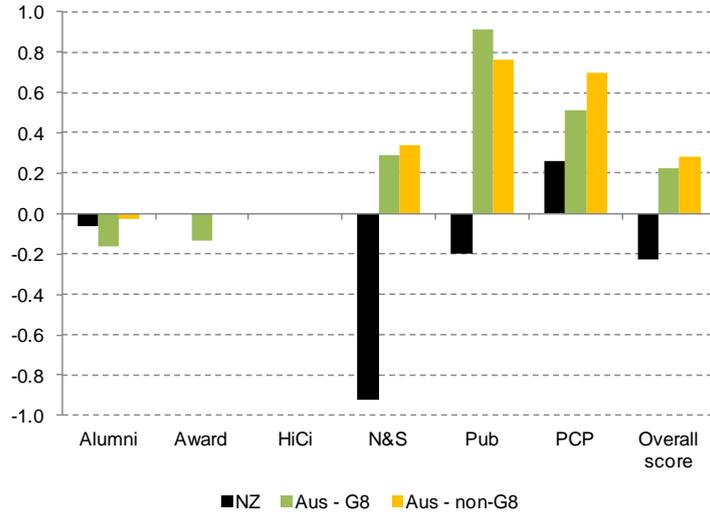
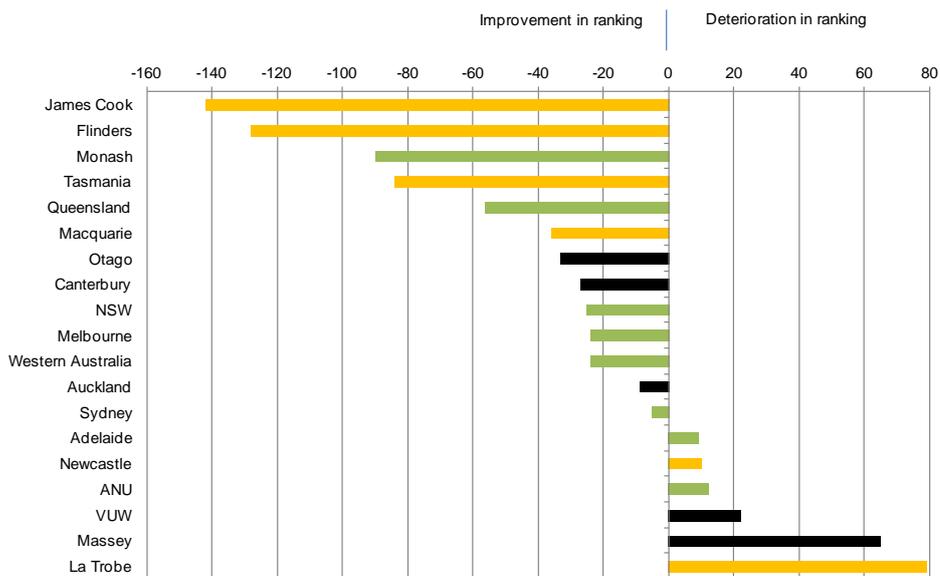


Figure 9 presents changes in ranking over a longer period of time, between 2006 and 2013. Over the longer term, the average change in ranking achieved by New Zealand universities was a drop of three places, which is affected by the significant drop in places by Massey University. This compares with an improvement in ranking of 36 places for all Australian universities and 25 for Australian G8 universities.

Figure 9
Change in ARWU overall ranking 2006-2013



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

4 QUACQUARELLI SYMONDS WORLD UNIVERSITY RANKINGS

Introduction

The Quacquarelli Symonds (QS) World University Rankings were first produced by QS for the Times Higher Education top 200 rankings in 2004. In 2009, QS and the THE parted ways and QS continued to produce the rankings under its own banner, using much the same methodology.

In recent years, QS has widened the rankings it publishes to include subject and faculty-level rankings, along with publishing the top 50 universities under 50 years old.

The QS methodology

Currently, QS considers over 2,000 institutions for its World University Rankings and publishes rankings for the top 800. The measures (and their weightings) used by QS to generate the 2013/14 QS World University Rankings are presented in Table 6.

Table 6
Component measures used in QS World University Rankings

Component	Definition	Weighting
Academic reputation	A survey of academics that asks respondents to identify universities they consider best in research. The survey results are subject to weighting by QS and survey respondents cannot vote for their own institution. In 2013/14, there were around 62,000 respondents in the survey.	40%
Employer reputation	A survey of employers where respondents are asked to identify institutions they consider to have high-quality graduates. The survey results are subject to weighting by QS.	10%
Faculty to student ratio	The number of full-time equivalent (FTE) students per equivalent full-time faculty.	20%
Citations per faculty	The number of citations over the last five years divided by the number of FTE faculty. The SCOPUS dataset is used to count the citations.	20%
International faculty	The proportion of faculty members that are of a foreign nationality.	5%
International students	The proportion of students that are of a foreign nationality.	5%

Source: QS Quacquarelli Symonds (www.topuniversities.com)

The surveys of academics and employers contribute 40 percent and 10 percent of the overall score used to determine the rankings, respectively. The high weightings QS applies to these measures has been criticised as it is argued this represents a measure of *perceived* performance rather than *actual* performance (Marginson, 2007). In addition, the response rate of the surveys has not been stable over time. In 2008, there were 6,500 responses in the academic survey, compared with over 62,000 in 2013.

There are also measures to capture the quality of teaching – measured by the number of students per faculty, the logic being that smaller class sizes result in better quality teaching. QS acknowledges that this measure is not comparable with a classroom assessment of learning, but argues that it is the only globally available proxy measure of teaching performance and that class sizes and teaching quality are highly correlated. However, the link between student to staff ratios and teaching quality has been criticised in the literature (Marginson, 2007). Further, in using this measure, QS does not take into account the discipline mix of a university, which can influence its student to staff ratio.

QS uses citations per faculty member to measure the research performance of universities. However, different rates of citation among subject areas mean that universities with a medical school and with a focus on the sciences are advantaged in this measure.

Finally, there are two measures of globalisation: the proportion of international faculty at an institution and the proportion of international students at an institution. QS considers that a higher proportion of international faculty and students indicates that a university is a desirable destination. These measures favour universities in English-speaking countries, as international students prefer to study in English, the *lingua franca* for commerce and for research.

What do the QS component scores mean?

Before 2007, QS calculated component scores by assigning the top-performing university 100 points and then assigning scores to other institutions proportionately. So an institution with half the performance of the top university in a measure was assigned a score of 50.

Since 2007, QS has normalised the component scores by converting the raw data to z scores from the normal distribution. A z score is calculated by dividing the difference between the actual value for an institution and the mean by the standard deviation. The z score is then converted into a cumulative probability. A cumulative probability of 95 percent would indicate that 95 percent of the time a randomly selected institution will perform below the level of that institution.

The assigned weightings are then applied to the component scores to arrive at a raw overall score. A final score is then recalculated so that the top university is assigned a score of 100.

The advantage of using z scores is that it makes the scores of the different component measures more comparable and also reduces the impact of outliers.

This means that the component score assigned to an institution is *relative* to the *mean* value of all universities that are considered by QS. So if the mean for all universities changes, then the score it gets assigned will change even if the *absolute* level of performance of an institution in a component measure remains unchanged.

Results

The top five universities in the 2013/14 QS World University Rankings are shown in Table 7, along with their ranking from the previous year. US and UK universities generally dominate the top of the QS rankings.

Table 7
Top five universities in QS World University Rankings

Ranking		University	Country
2013	2012		
1	1	Massachusetts Institute of Technology	United States
2	3	Harvard University	United States
3	2	University of Cambridge	United Kingdom
4	4	University College London	United Kingdom
5	6	Imperial College London	United Kingdom

Source: QS Quacquarelli Symonds (www.topuniversities.com)

The QS rankings for the New Zealand universities are presented in Table 8. The rankings of New Zealand universities since 2004 are presented in this table, but as the scoring system used by QS changed significantly in 2007, we concentrate on trends from that period onwards.

In 2013, all of New Zealand's universities were listed in the QS top 500 for the first time. This was something not achieved by the Australian, Canadian or United Kingdom university systems.

In terms of individual university performance, the University of Auckland was the top-ranked New Zealand university (94), followed by the University of Otago (155), the University of Canterbury (238), Victoria University of Wellington (265=), Massey University (343=), the University of Waikato (405=), Auckland University of Technology (477=) and Lincoln University (481). This was the first year Lincoln University was listed in the top 500.

Table 8

QS World University Rankings for New Zealand universities

University	Year										Change in ranking		
	2004	2005	2006	Change in scoring methodology	2007	2008	2009	2010	2011	2012	2013	2012-13	2007-13
Auckland	67	52	46			50	65	61=	68	82	83	94	↓ 11
Otago	114	186	79		114=	124=	125	135	130	133	155	↓22	↓41
Canterbury			333		188=	186=	188	189	212	221	238	↓ 17	↓50
VUW			222		234	227=	229=	225	237	237	265=	↓ 28	↓31
Massey	108	188	213		242	283	299	302	329=	308	343=	↓35	↓101
Waikato			340		319=	378=	314=	316=	357	374	405=	↓31	↓86
AUT										451-500	477=		
Lincoln											481		

Notes: 1. In the 2012 press release QS stated that AUT was placed 500= in the 2012 rankings. In the 2013 rankings it has officially ranked AUT as 451-500 in 2012. 2. The 2013 rankings for the University of Waikato, Auckland University of Technology and Lincoln University have been derived from the underlying data. 3. AUT=Auckland University of Technology.

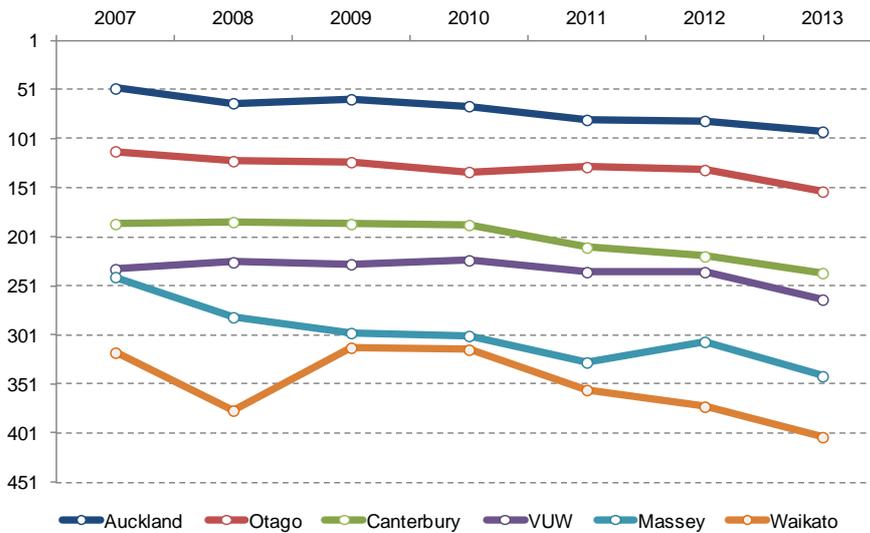
Source: QS Quacquarelli Symonds (www.topuniversities.com)

Between 2012 and 2013, the overall ranking of the University of Auckland dropped by 11 places, the University of Otago dropped by 22 places, the University of Canterbury dropped by 17 places, Victoria University of Wellington dropped by 28 places, Massey University by 35 places, and the University of Waikato dropped 31 places. As mentioned above, Lincoln University was listed in the top 500 for the first time.

Figure 10 presents the rankings of the New Zealand universities listed in the QS top 450 from 2007 onwards. Between 2007 and 2013, all New Zealand universities listed in the QS top 400 exhibited a drop in overall ranking. The largest drop in ranking was by Massey University (101 places), while Victoria University of Wellington had the smallest drop in ranking (31 places). It is hard to say what the impact of the Canterbury earthquakes was, but the drop in ranking by the University of Canterbury coincides with the earthquakes, an event that led directly to the loss of many international students and may have affected the university's reputation.

If the current trend continues, there is a risk of the University of Auckland dropping out of the top 100 ranked universities in the next year.

Figure 10
Ranking of New Zealand universities in QS World University Rankings



Note: QS made a substantial change to the way it calculated scores for components in 2007, so we have restricted our analysis to the period from 2007 onwards. We have also restricted the data to universities that were listed in the QS top 450.

Source: QS Quacquarelli Symonds (www.topuniversities.com)

In 2013, the New Zealand universities were displaced by a mix of universities – from Europe, the US, the UK, Asia and South America. For instance, of the 33 universities that displaced Auckland and Otago, 14 were from continental Europe, eight from North America, five from the UK and three from Asia. None was from Australia.

In Figure 11 we show the number of universities in the QS top 200 by selected country between 2007 and 2013. Since 2007, the US has seen a decline in the number of universities in the top 200 places. Canada and Australia have also had a decline in the number of universities in the top 200. New Zealand dropped from three universities to two in the top 200. In contrast, South Korea exhibited a notable increase in universities in the QS top 200.

Figure 11
Number of universities in top 200 in QS World University Rankings by selected countries

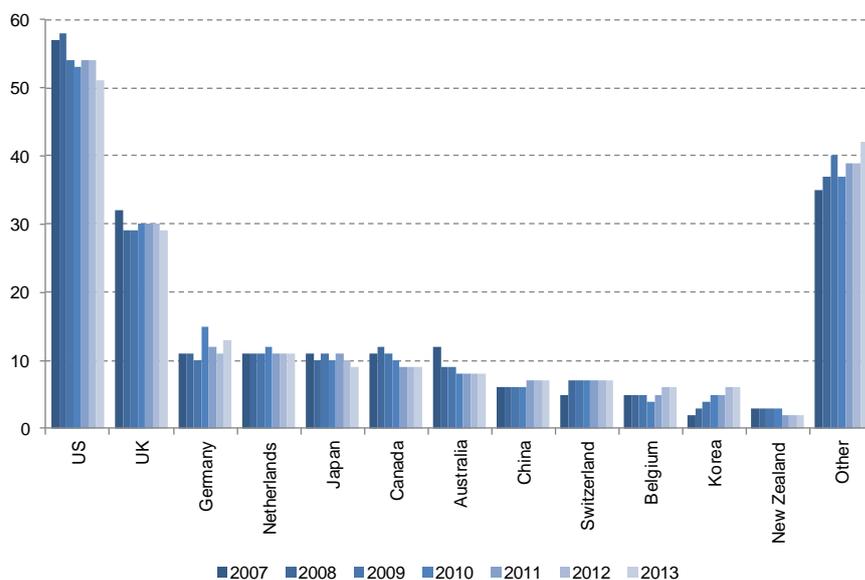
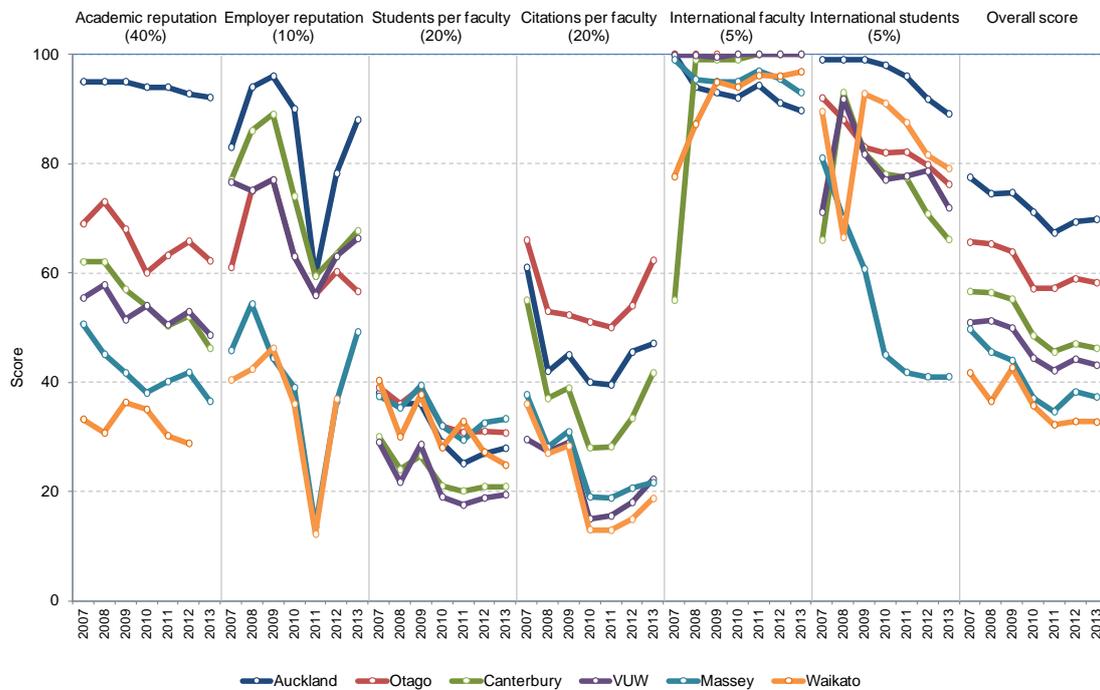


Figure 12 presents the six component scores and overall scores for six New Zealand universities between 2007 and 2013 (the data is also presented in Table 17 in the Appendix). As discussed earlier, the component scores in Figure 12 represent the performance of a university *relative* to the average performance of all institutions considered by QS in that measure.

Figure 12
QS component scores



Notes: 1. The component scores in the graph above represent the *relative* performance of a university to the mean value for all institutions that QS considers in that component. 2. The weighting for the component scores is in brackets under the component name.

Source: QS Quacquarelli Symonds (www.topuniversities.com)

Figure 12 shows that the component New Zealand universities generally perform best in international faculty. They also generally perform well in the international student component. However, both of these components have a relatively low weighting of 5 percent.

New Zealand universities receive lower scores in the student per faculty component and also the citations per faculty measure. These components are both weighted at 20 percent. In the all-important academic reputation measure (with a weighting of 40 percent), the University of Auckland is the best performer by some margin, with a large gap to the remaining New Zealand universities.

Since 2007, there has been a general decline in the international student component scores, especially by Massey University. Also declining over that period has been the academic reputation score. The student per faculty score generally declined between 2007 and 2010, but has since stabilised.

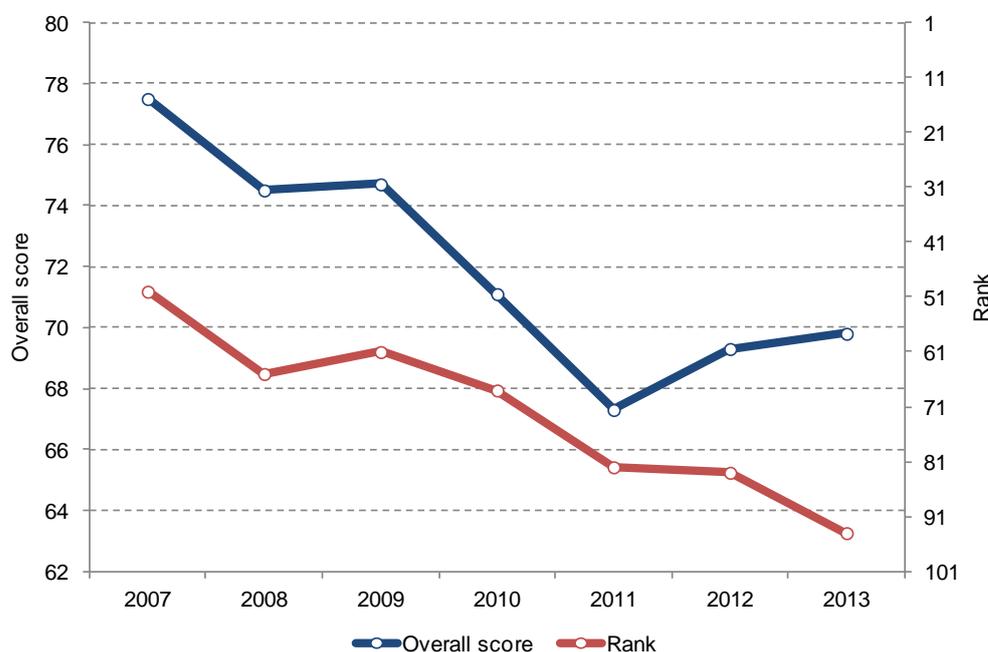
In recent years there have been general improvements in the citations per faculty score for New Zealand universities but this positive change has not as yet flowed through into the academic reputation score for those universities (which is largely based on research reputation).

Although the employer survey score has also increased substantially for most New Zealand universities in the last two years, the volatility in this component over the last five years would

appear to be the result of a significant increase in responses from employers impacting on the stability of the scores.

In terms of the overall score, although the decline in scores between 2007 and 2011 has been halted in recent years, this has not stopped the slide in ranking and helps to illustrate the relative nature of the component scores. Figure 13 compares the overall score and ranking received by the University of Auckland between 2007 and 2013. Although the direction of the change in the overall score and ranking was in sync between 2007 and 2011, the overall score and ranking have moved in opposite directions since 2011. This shows that, despite the improvement in score by the University of Auckland, it declined in ranking as other universities around it improved their overall score to a greater extent.

Figure 13
QS overall score and ranking for University of Auckland



Source: QS Quacquarelli Symonds (www.topuniversities.com)

We analyse the relationship between change in overall score and change in rank in more detail later in this section.

An Australian comparison

In this section we compare the performance of New Zealand universities in the QS World University Rankings with groupings of Australian universities. We have split the Australian listed universities into two groups: members of the research-intensive Group of Eight (G8)⁶ universities, and non-G8 universities.

In Table 9 we present the overall rankings of the listed Australasian universities since 2007, sorted by overall ranking in 2013. In 2013, the University of Auckland ranked eighth out of the Australasian universities. It was ranked above one of the Australian G8 research-intensive universities, the University of Adelaide. That was the same relative position as in 2012. Likewise, Otago was the 10th of the Australasian universities in 2012 and 2013, while

⁶ The following universities are members of the Group of Eight: University of Queensland, University of New South Wales, University of Sydney, University of Melbourne, Monash University, University of Western Australia, University of Adelaide and the Australian National University.

Canterbury (11th among Australasian universities) and Victoria University of Wellington (13) held their place among the Australasian universities. Of the 24 Australian universities listed in both 2012 and 2013, eight rose in rank and 14 dropped.

Table 9

QS World University Rankings for Australasian universities (sorted by 2013 ranking)

University	Country	2007	2008	2009	2010	2011	2012	2013
ANU	Australia	16	16	17	20	26	24	27
Melbourne	Australia	27	38	36=	38	31	36	31
Sydney	Australia	31	37	36=	37	38	39	38
Queensland	Australia	33=	43	41	43	48	46	43
NSW	Australia	44	45	47=	46	49	52	52
Monash	Australia	43	47	45	61	60	61	69=
West Australia	Australia	64	83=	84	89	73	79	84
Auckland	NZ	50	65	61=	68	82	83	94
Adelaide	Australia	62	106=	81	103	92	102	104=
Otago	NZ	114=	124=	125	135	130	133	155
Canterbury	NZ	188=	186=	188	189	212	221	238
Macquarie	Australia	168=	182	189	220	211	233	263
VUW	NZ	234	227=	229=	225	237	237	265=
UTS	Australia	259=	234	232	257	268	284	272
Wollongong	Australia	199	207=	251	267=	269	264	276=
QUT	Australia	195=	212	244=	289	267	281	279=
Curtin	Australia	235	232	244=	274	258	258	284=
RMIT	Australia	200=	206	223=	224	228	246	291=
Newcastle	Australia	215	286	266=	256	291	268	298
South Australia	Australia	291	303=	295=	281	256=	293	341=
Griffith	Australia	309=	325=	291=	323	346	368	341=
Massey	NZ	242	283	299	302	329=	308	343=
James Cook	Australia		401-500	355=	354=	352	362	351
Deakin	Australia	374=	396=	355=	362	401-450	401-450	380=
La Trobe	Australia	205=	242=	241=	286=	317	375	390=
Tasmania	Australia	264=	291=	326=	320	343	357	401=
Waikato	NZ	319=	378=	314=	316=	357	374	405=
Bond (private)	Australia						380	423
Flinders	Australia	351=	273	254=	251	299	342	438
Charles Darwin	Australia							473=
AUT	NZ						451-500	477=
Lincoln	NZ							481
Swinburne	Australia		401-500	401-500	401-450	401-450	451-500	485=
Murdoch	Australia		401-500	401-500	451-500	501-550	401-450	

Notes: 1. In 2013, the individual rankings for Australasian universities officially ranked in bands between 401 and 500 have been derived from the underlying data. 2. QUT=Queensland University of Technology.

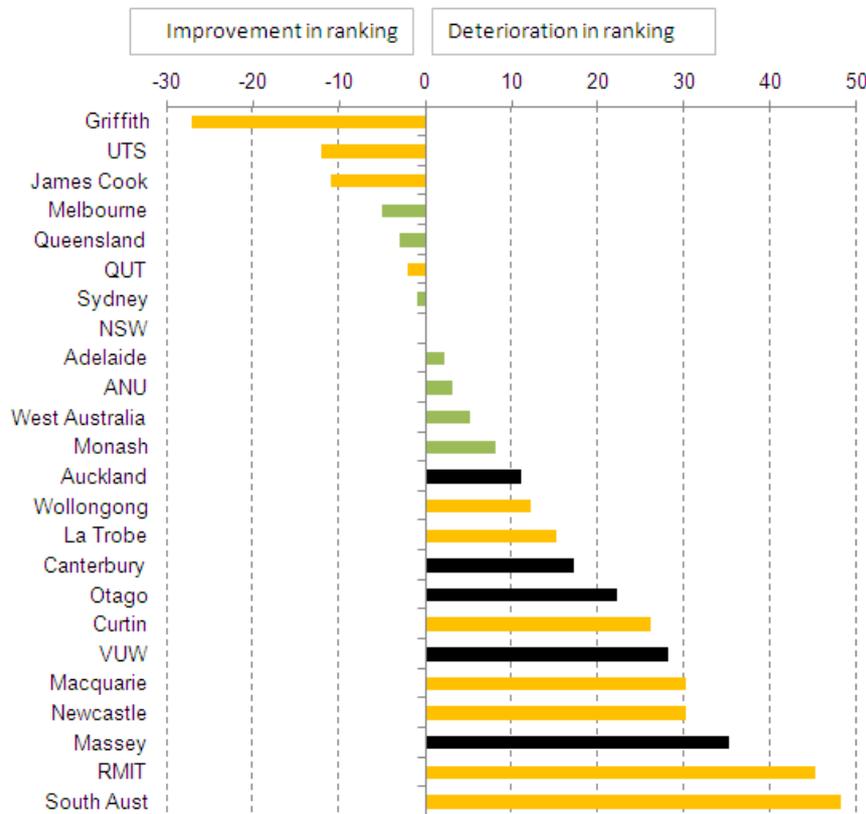
Source: QS Quacquarelli Symonds (www.topuniversities.com)

Figure 14 presents the change in ranking between 2012 and 2013 for those universities that were ranked within the top 400 (and so received an individual ranking) in both years.

Among these universities, the biggest improvement in ranking was by Griffith University, which rose 27 places. The biggest drop was exhibited by the University of South Australia, which dropped 48 places. The scale of the change in ranking reflects the starting position of the universities. Higher-ranked universities have a wider dispersion in terms of their overall score, so they will not shift as many places as a university that starts off at a lower score. This is why

the non-G8 universities tend to exhibit greater shifts in ranking each year compared with the G8.

Figure 14
Change in QS ranking among Australasian universities listed in top 400 in both 2012 and 2013

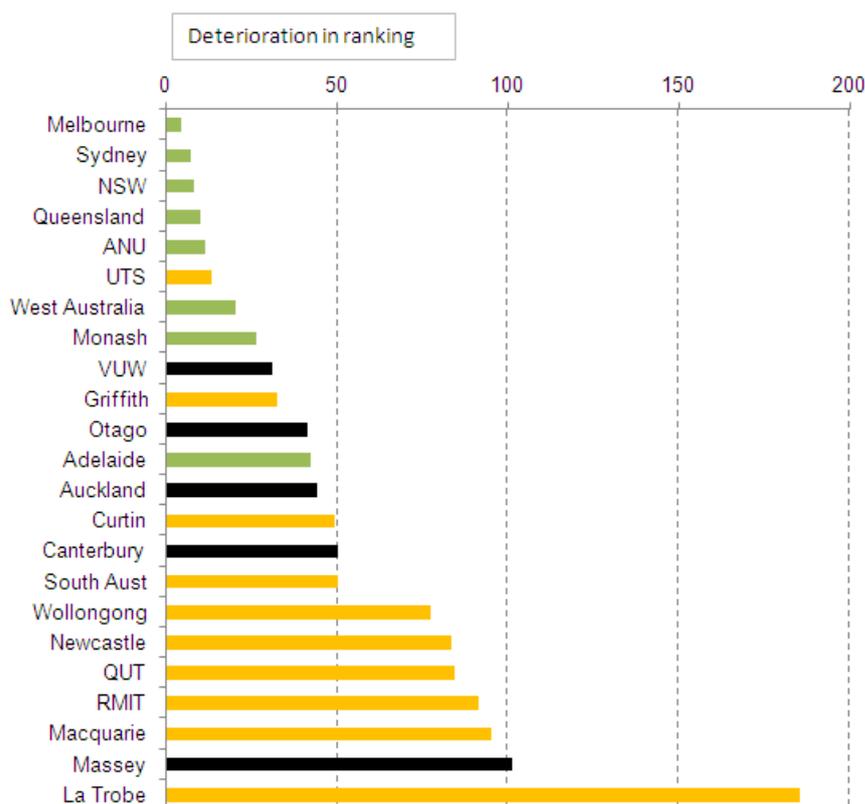


Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Figure 15 presents the change in ranking among Australasian universities that were listed in the top 400 in both 2007 and 2013. This shows some large changes in rankings over that time. Notably, all Australasian universities listed in the top 400 in both 2007 and 2013 dropped in ranking, with the falls by New Zealand universities generally in the middle range (apart from Massey University).

The falls by the G8 universities were generally the smallest among Australasian universities. Victoria University of Wellington had the smallest drop in ranking of the listed New Zealand universities, while the University of Auckland and the University of Otago fell a similar number of places to one of the G8 universities – the University of Adelaide. The remaining seven G8 universities all exhibited smaller falls in ranking than the University of Auckland.

Figure 15
Change in QS ranking among Australasian universities listed in top 400 in both 2007 and 2013

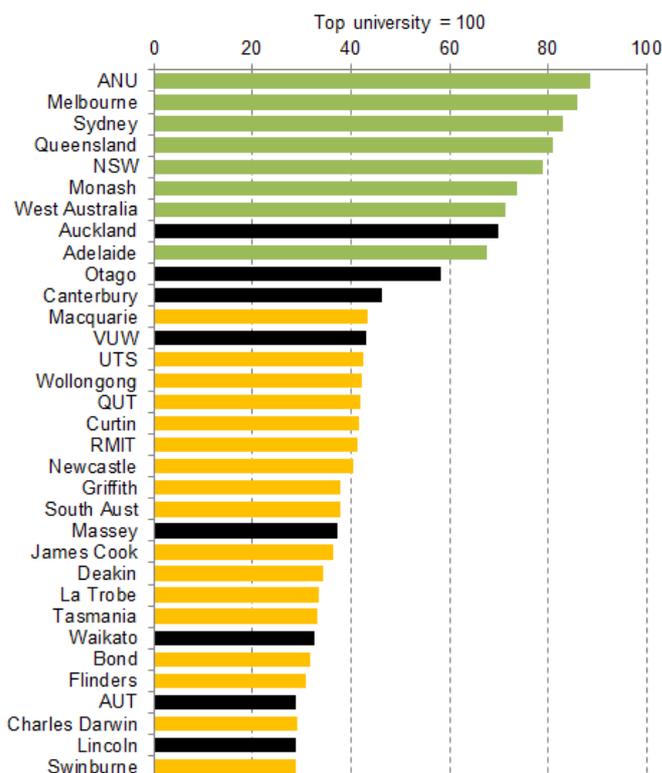


Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

We now look at the individual component scores to see where the New Zealand universities perform relative to the listed Australian universities. The overall score used to generate the 2013 QS rank is presented in Figure 16.

The University of Auckland sits among the G8 universities in terms of overall score, while the University of Otago has a score around halfway between the lowest G8 university and the highest non-G8 university. The step down in score between the University of Otago and the University of Canterbury is noticeable. The University of Otago is at the edge of the G8 group, while the University of Canterbury and Victoria University of Wellington are clearly lower, even if they look good among the non-G8 universities.

Figure 16
 QS overall score 2013



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: QS Quacquarelli Symonds (www.topuniversities.com)

Figure 17 presents the QS component scores of Australasian universities in 2013. The listed Australasian universities generally perform the best in the international faculty component score. New Zealand universities do especially well in this component, with the University of Otago, Victoria University of Wellington and the University of Canterbury attaining a score of 100.

With the exception of Lincoln University, the New Zealand universities were situated in the bottom half of listed Australasian universities in the faculty per student component score. Also, the New Zealand universities were located in the bottom half of Australasian universities in the international students score.

Figure 17
 QS component scores of Australasian universities 2013

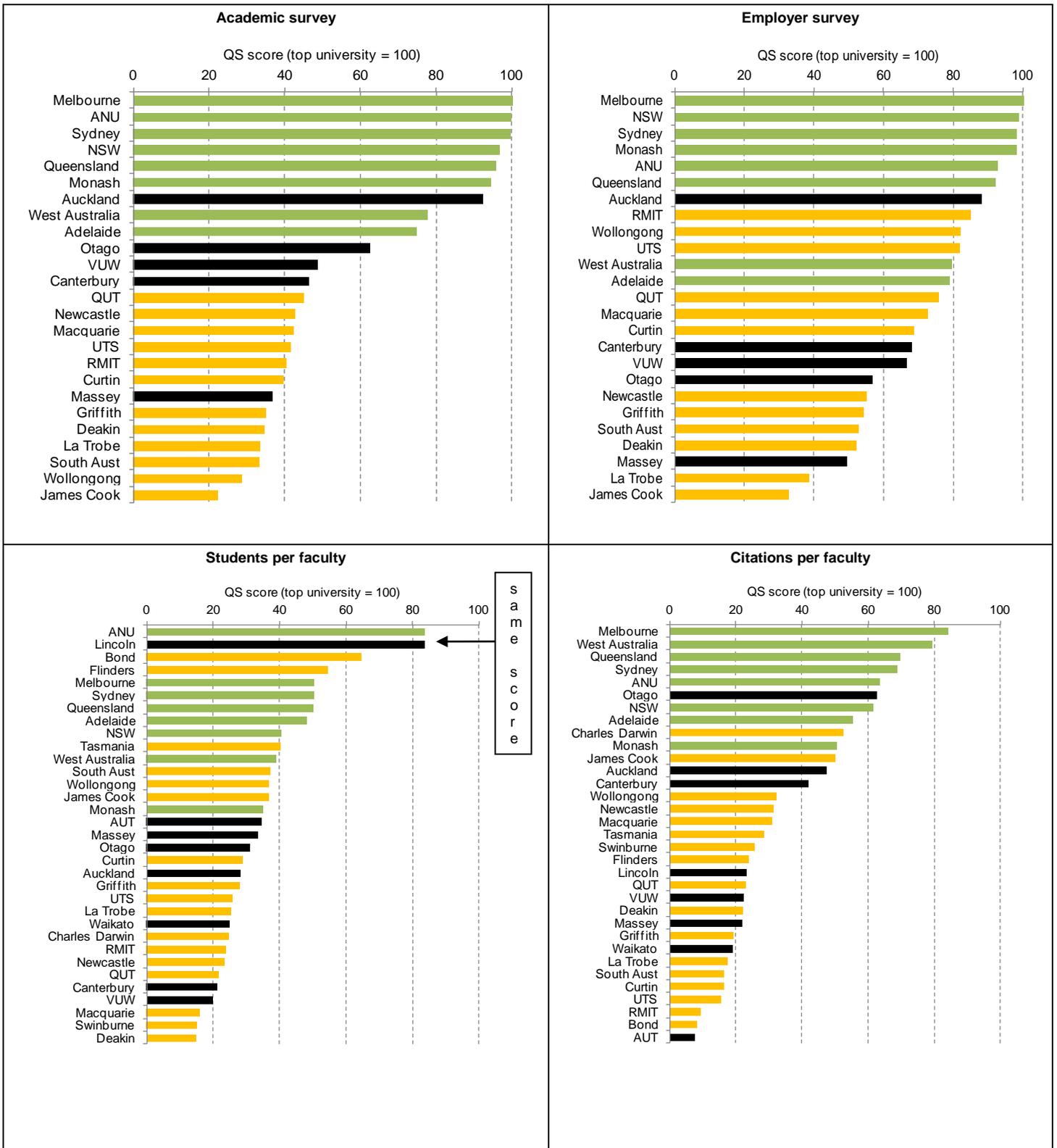
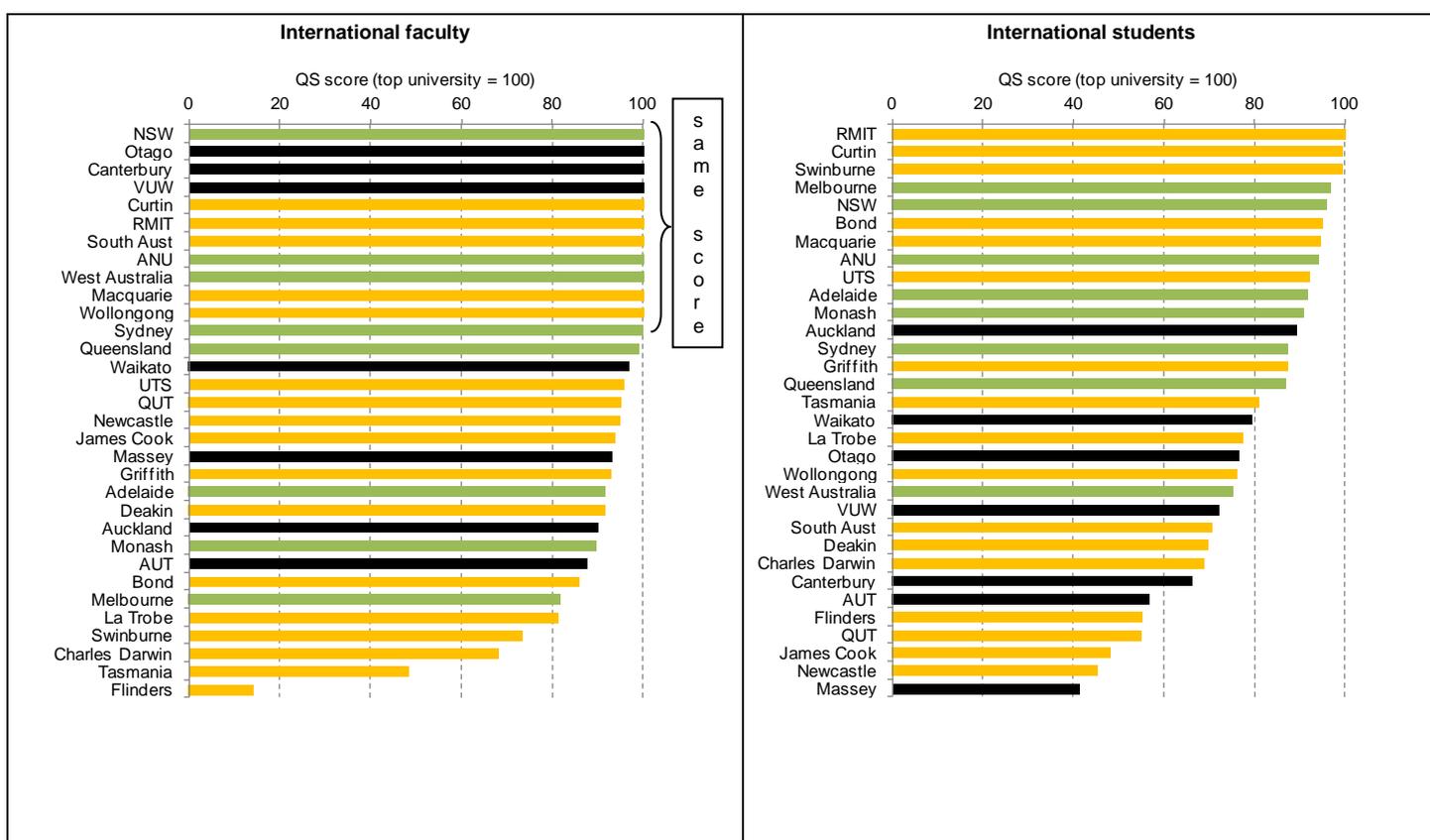


Figure 17 continued: QS component scores of Australasian universities 2013



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: QS Quacquarelli Symonds (www.topuniversities.com)

In Table 10 we present Pearson correlation coefficients for the six QS component measures for Australasian universities in 2013. The results show that the components with the highest degrees of correlation are academic reputation and citations per faculty (0.81). The relatively high correlation between the citations per faculty measure and the academic reputation measure is to be expected, given that the latter component measure captures perceptions of research performance by the universities.

Earlier, we observed that the recent improvement in the citations per faculty score by New Zealand universities had not been matched by an increase in their academic reputations score, despite the academic reputation survey being focused on perceptions of research performance. However, the corresponding correlation coefficient for the two component measures for the Australasian universities was 0.70 in 2010. So the higher correlation in 2013 suggests that the academic reputation scores appear to be moving towards a greater alignment with the citations per faculty scores. Other components with relatively high correlation are: academic and employer reputation (0.80), and students per faculty and citations per faculty (0.65).

The components with very low correlation scores are: international faculty and citations per faculty (-0.03), and international students and international faculty (0.04).

Table 10

Pearson correlation coefficients of component scores for Australasian universities in QS top 400 2013

	Academic reputation	Employer reputation	Students per faculty	Citations per faculty	International faculty
Employer reputation	0.80				
Students per faculty	0.65	0.47			
Citations per faculty	0.81	0.52	0.65		
International faculty	-0.06	0.15	0.06	-0.03	
International students	0.50	0.66	0.29	0.21	0.04

Note: N = 25.

The average change in component scores between 2012 and 2013 for New Zealand, Australian G8 and Australian non-G8 universities are presented in Figure 18. Note that this data is based on universities that had published data on each of the component scores in each year. All G8 universities, the top five-ranked New Zealand universities, and 11 non-G8 universities are included in this analysis.

Both the New Zealand universities and the non-G8 universities experienced a fall in their academic reputation score. Commenting on the non-G8 Australian university drop, an Australian rankings expert (Tony Sheil, from Griffith University) indicated that in his view the fall in academic reputation score of the Australian universities was likely to be a result of:

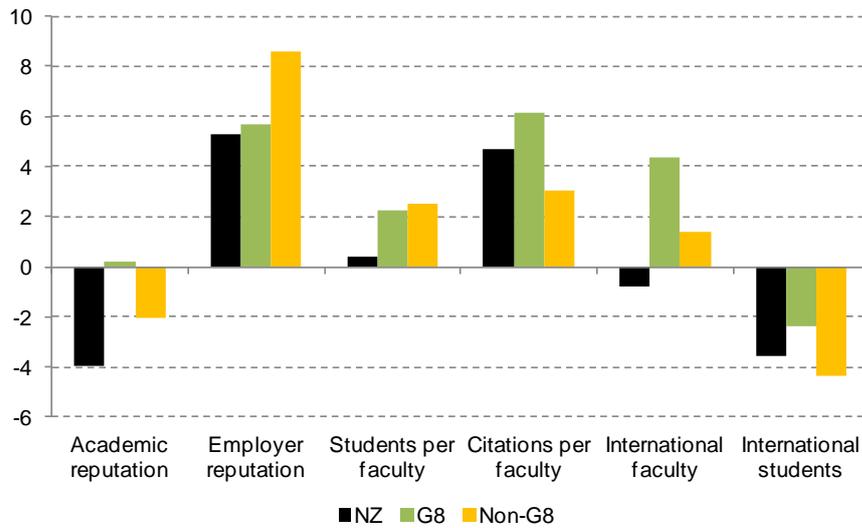
...increases to the academic survey population, better representation within that survey from across the globe and inclusion of more universities in the ranking...so the simple fact is that many Australian universities enjoyed a competitive advantage on the QS rankings in the early years until the rest of the world cottoned on.⁷

This may also be a factor in the drop in academic reputation scores by New Zealand universities.

The largest gains by New Zealand and non-G8 universities were made in the employer reputation survey. This measure has been subject to considerable variation since 2010. For example, the University of Auckland employer survey score went from 90 in 2010 to 59 in 2011 before increasing to 78 in 2012 and 88 in 2013. As mentioned earlier, the volatility in the employer survey would appear to be the result of a significant increase in responses from employers impacting on the stability of the scores.

⁷ Non-G8 universities lose ground in rankings, *The Australian*, www.theaustralian.com.au/higher-education/non-go8-unis-lose-ground-in-rankings/story-e6frgcjx-1226716353110#mm-premium.

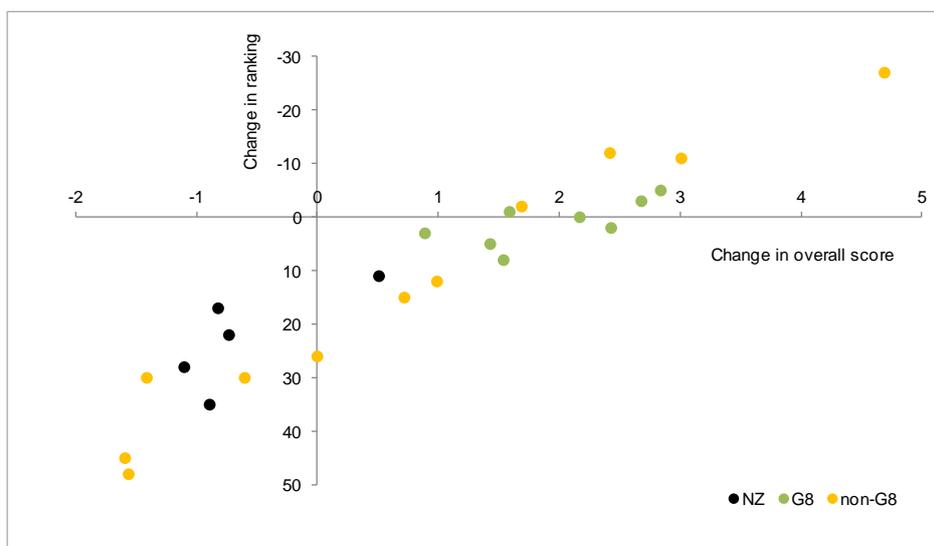
Figure 18
Average change in component scores for Australasian universities 2012-2013



Earlier, we discussed how even when a university increases its overall score it can still decline in rank because of the relative nature of the measure. We now explore this in more depth by comparing the change in overall score and change in ranking for Australasian universities between 2012 and 2013.

Figure 19 shows the change in score and change in rank of Australasian universities between 2012 and 2013. In Figure 10, the change in ranking is on the vertical axis. On that axis a minus symbol indicates an improvement in ranking. The change in overall score is on the horizontal axis. Figure 10 shows that seven universities increased their overall score but still lost ground in the rankings as other universities increased their score at a faster rate.⁸ In fact, Figure 19 suggests that just to maintain its rank an Australasian university would have needed to improve its overall score by around two points in 2013.

Figure 19
Change in score and rank for Australasian universities 2012-2013



⁸ Note also that universities that had a reduction in score went down in the rankings.

Subject-level rankings

Although only one New Zealand university (the University of Auckland) made it into the top 100 universities overall, the performance of New Zealand universities is better when the unit of measurement is at the subject level. For example, although only one New Zealand university (University of Auckland) was placed in the QS top 100 overall in 2013, there were 51 instances of subjects at New Zealand universities being placed in the top 100 in the 2014 QS subject rankings.

5 TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS

Introduction

The Times Higher Education (THE) World University Rankings have been produced by Thomson Reuters for Times Higher Education since 2010. Before this, the THE rankings were produced by QS.

The THE rankings attempt to capture a number of broad areas of performance and have additional features the other two rankings do not have. This includes a measure of income sourced from industry.

The Times Higher Education methodology

In compiling the rankings, THE excludes universities that do not teach undergraduates, teach in a narrow subject area, or produce fewer than 1,000 indexed articles over five years.

The five broad component measures used to determine the 2013/14 THE rankings are presented in Table 11, along with the specific measures used to generate a score for each of these components.

Table 11

Descriptions of components used to determine THE World University Rankings 2013/14

Broad component	Specific measures within component
Teaching (30%)	Reputational survey of academics (15%) PhD awarded/academic staff (6%) Staff to student ratio (4.5%) Institutional income/academic staff (2.25%) PhDs awarded/undergraduate degrees awarded (2.25%)
Research (30%)	Reputational survey of academics (18%) Research income/academic staff (6%) Scholarly papers/academic and research staff (6%)
Citations (30%)	Citation impact (normalised average citations per paper) (30%)
Industry income (2.5%)	Research income from industry/academic staff (2.5%)
International outlook (7.5%)	International academic staff/total academic staff (2.5%) International students/total students (2.5%) Scholarly papers with one or more international co-authors/total scholarly papers (2.5%)

Note: The weighting for the components is in brackets.

As with the QS rankings, a significant proportion of the THE ranking (33 percent) is based on surveys of academics and so may capture perceptions rather than actual performance. Surveys risk bias against countries outside of North America and Europe and against non-English-speaking universities.

The THE rankings system is the only one of the three rankings systems that normalises for citation and publication performance between different subject areas when assessing research performance. This removes one of the most obvious distortions in the other two major ranking systems.

Although the THE World University Rankings have been published for four years, the methodology was changed significantly in the second edition. Therefore, we focus only on the results from the second edition onwards in this study.

What do the THE component scores mean?

Like the QS rankings, the THE rankings use z scores to normalise component scores (with the exception of the academic survey). For each component measure, a university receives a cumulative probability score. For example, a score of 95 for an institution indicates that 95 percent of the time a randomly selected institution will perform below the level of that institution. The final overall score used to determine the rankings is calculated by multiplying each component score by its weighting. In 2013/14, the top overall score (94.9) was achieved by the California Institute of Technology.

This means that the component score assigned to an institution is *relative* to the *mean* value of all universities that are considered by the THE. So even if the *absolute* level of performance of an institution in a component measure remains unchanged, if the mean for all universities changes then the score it is assigned will change. This means that if the overall mean increases, the score of a university would decrease.

Results

The top five universities are listed in Table 12 below. The California Institute of Technology retained its number one ranking from the previous year. As can be seen, universities from the US and the UK occupy all of the top five places.

Table 12

Top five universities in THE World University Rankings

Ranking 2013/14	Ranking 2012/13	Institution	Country
1	1	California Institute of Technology	US
2	4	Harvard University	US
2	2	University of Oxford	UK
4	2	Stanford University	US
5	5	Massachusetts Institute of Technology	US

Source: www.timeshighereducation.co.uk/world-university-rankings/

The 2013/14 THE World University Rankings for New Zealand universities are presented in Table 13. Note that Times Higher Education does not publish individual rankings for universities outside of the top 200.⁹

Table 13

Rankings of New Zealand universities in THE World University Rankings

University	2010/11	Change in methodology	2011/12	2012/13	2013/14	Change 2012/13-2013/14
Auckland	145=		173=	161	164=	down 3 places
Otago	226-250	201-225	226-250	226-250	no change	
VUW	226-250	251-275	251-275	276-300	down	
Canterbury	226-250	301-350	301-350	301-350	no change	
Waikato	401+	301-350	301-350	301-350	no change	
Massey	276-300	351-400	351-400		down	

Source: www.timeshighereducation.co.uk/world-university-rankings/

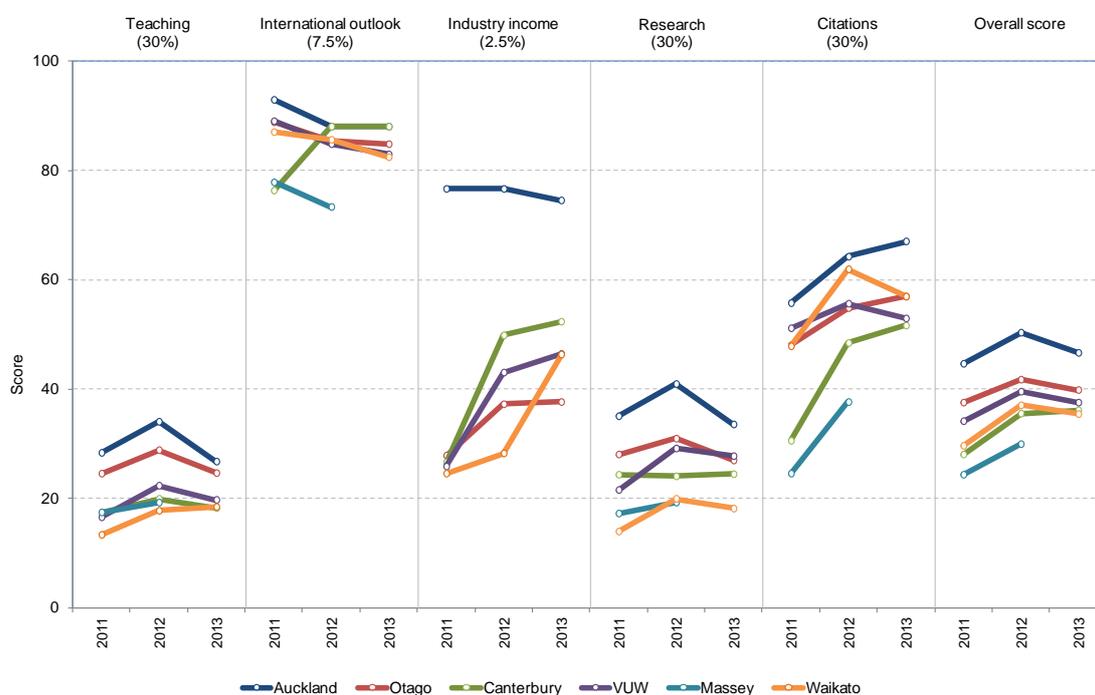
In 2013/14, the top-performing New Zealand university was the University of Auckland, ranked 164=. This was followed by the University of Otago (226-250). In 2013/14, the University of

⁹ It is not possible to determine the individual ranking of the New Zealand universities outside of the top 200 from the underlying data.

Auckland fell three places in the rankings,¹⁰ while Victoria University of Wellington fell one ranking band. Massey University fell outside of the top 400 in 2013/14. Of the six New Zealand universities listed in the THE top 400 in 2012/13, three had a decrease in ranking, while the ranking of the remaining listed New Zealand universities remained unchanged.

Figure 20 presents the individual component scores of each New Zealand university and their overall score and ranking (the data is also presented in Table 18 in the Appendix). As discussed above the component score in Figure 20 represents the performance of a university *relative* to the average performance of all institutions considered by the THE in that measure. (Note that there are no component scores for Massey University in 2013/14 as it was ranked outside of the top 400.) The overall score allows us to rank the New Zealand universities. So although the Universities of Canterbury and Waikato are in the same published band in the THE rankings, Canterbury actually achieved a slightly higher overall score (36.1) than Waikato (35.4).

Figure 20
THE component scores (component weightings in brackets)



Note: Although not reported in the graph above, Massey University had an industry income score of 66 in 2012.

Source: www.timeshighereducation.co.uk/world-university-rankings/

As with the QS ranking, New Zealand universities performed well in the THE international outlook measure. However, this component has a relatively low weighting of 7.5 percent. The second-best component score in general is the citations score. The worst-performing components for the New Zealand universities are the teaching component and the research component. These are also the two components that are determined largely by a survey of academics.

Since 2011, there has been an improvement in the citations score and also the industry income score, while there was a general decline in teaching and research component scores.

¹⁰ Of the seven universities that moved ahead of the University of Auckland in 2013/14, three were from the US, two from France, and one each from Ireland and the UK.

In 2013/14, just one of the New Zealand universities (Canterbury) improved its overall weighted score. Although Auckland exhibited a drop in overall score, this only resulted in a drop of three places in ranking. This suggests other universities in the top 200 also dropped in score and once again illustrates the relative nature of the scores.

An Australian comparison

In Table 14 we present the rankings of all the Australasian universities that have been listed in the THE top 400. The order of the universities listed in the top 400 is based on their overall score in 2013/14.

The University of Auckland was ranked seventh out of 23 listed Australasian universities in 2013/14. It was ranked above two Australian Group of Eight (G8) universities, while, as with the QS rankings, the University of Otago sits at the bottom of the G8 list but above all the listed Australian non-G8 universities. The remaining New Zealand universities are ranked among the non-G8 universities.

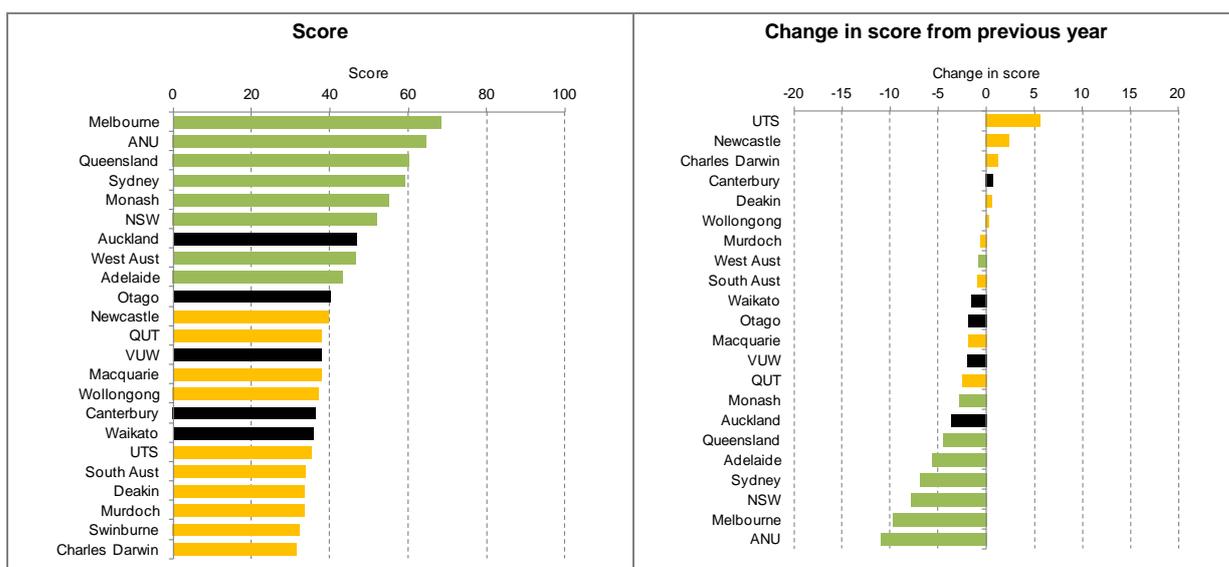
Table 14
Rankings of Australasian universities in THE World University Rankings

Country	Institution	2010	2011	2012	2013
Aus	Melbourne	36	37	28	34
Aus	ANU	43=	38=	37	48
Aus	Queensland	81=	74	65=	63=
Aus	Sydney	71	58	62=	72
Aus	Monash	178=	117=	99=	91
Aus	NSW	152=	173=	85	114=
NZ	Auckland	145=	173=	161	164=
Aus	West Aust	n/a	189=	190=	168
Aus	Adelaide	73=	201-225	176	201-225
NZ	Otago	226-250	201-225	226-250	226-250
Aus	Newcastle	276-300	276-300	276-300	251-275
Aus	QUT		276-300	251-275	276-300
NZ	VUW	226-250	251-275	251-275	276-300
Aus	Macquarie	226-250	226-250	251-275	276-300
Aus	Wollongong	251-275	251-275	301-350	276-300
NZ	Canterbury	226-250	301-350	301-350	301-350
NZ	Waikato		301-350	301-350	301-350
Aus	UTS			351-400	301-350
Aus	South Aust	301-350	351-400	301-350	301-350
Aus	Deakin	351-400	351-400	351-400	301-350
Aus	Murdoch			301-350	301-350
Aus	Swinburne		351-400	401+	351-400
Aus	Charles Darwin		301-350	351-400	351-400
Aus	Tasmania	276-300	301-350	351-400	
Aus	Flinders		351-400	351-400	
NZ	Massey	276-300	351-400	351-400	
Aus	Curtin	351-400	351-400		
Aus	Griffith	351-400	351-400		
Aus	La Trobe	301-350	351-400		

Source: www.timeshighereducation.co.uk/world-university-rankings/

The overall score attained by Australasian universities in the THE top 400 in 2013/14 is presented in Figure 21. In 2013/14, most Australasian universities had a reduction in score. The University of Canterbury was one of the few Australasian universities to improve its overall score in 2013/14. Most of the G8 universities in particular had significant drops in score.

Figure 21
Overall score of Australasian universities in THE top 400 2013/14

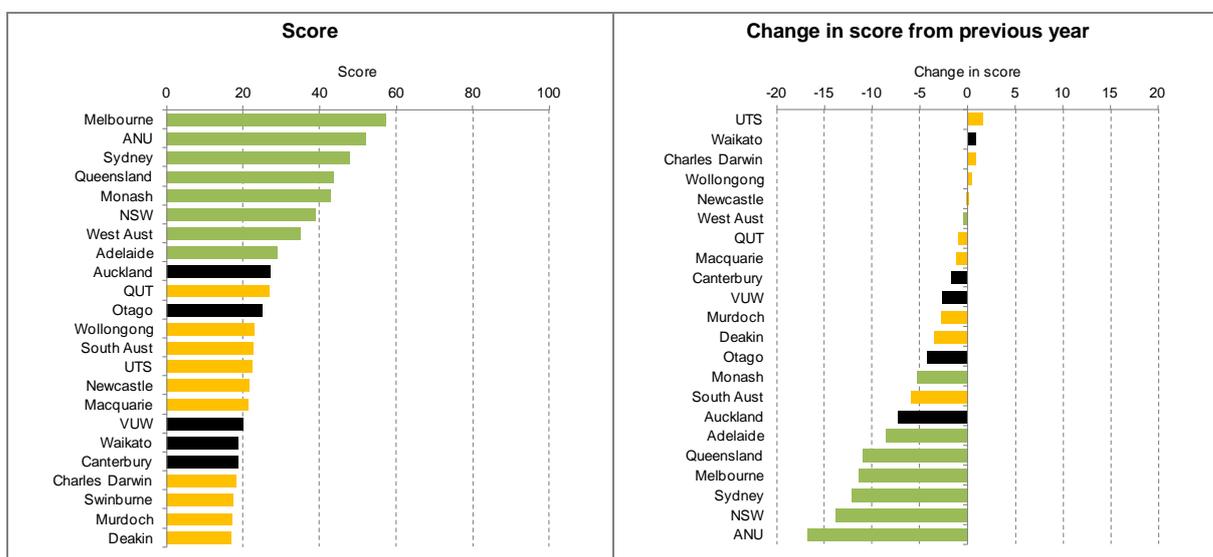


Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: www.timeshighereducation.co.uk/world-university-rankings/

In 2013/14, the highest-placed New Zealand university in the teaching component score was the University of Auckland (see Figure 22). Once again, most Australasian universities exhibited a drop in score, although the University of Waikato was one of the few Australasian universities to show an improvement in score.

Figure 22
Teaching score of Australasian universities in THE top 400 2013/14

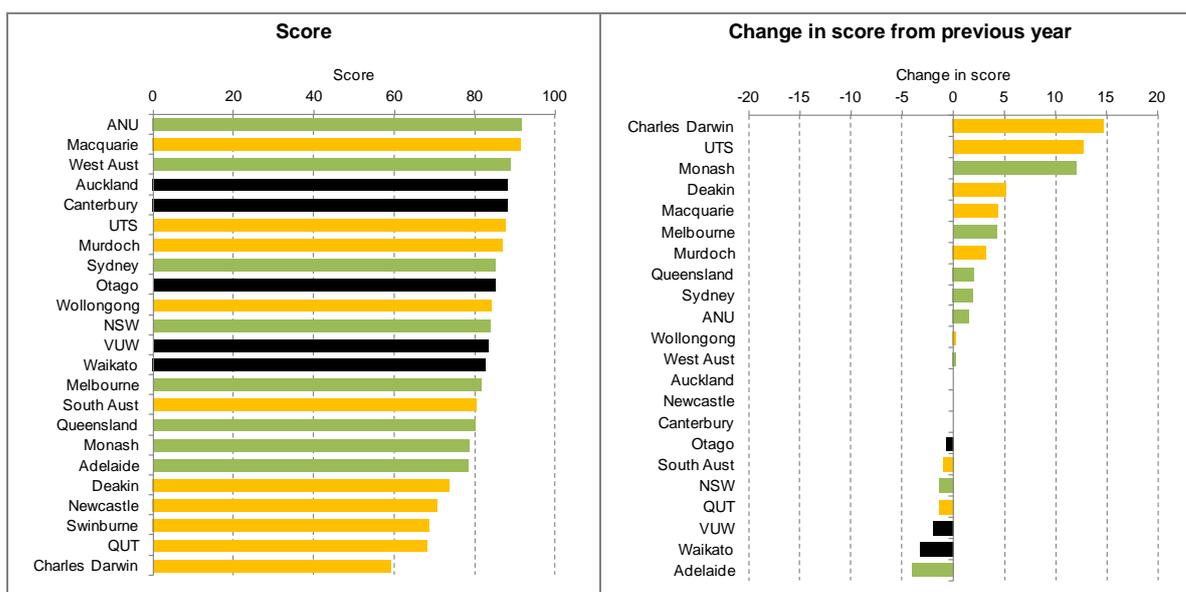


Note: New Zealand universities are identified by the black bars, Australian the Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: www.timeshighereducation.co.uk/world-university-rankings/

The Universities of Auckland and Canterbury attained the same score in the international outlook score and were placed fourth equal of the Australasian universities (see Figure 23). Of the six Australasian universities to exhibit a drop in this component score, three were New Zealand universities.

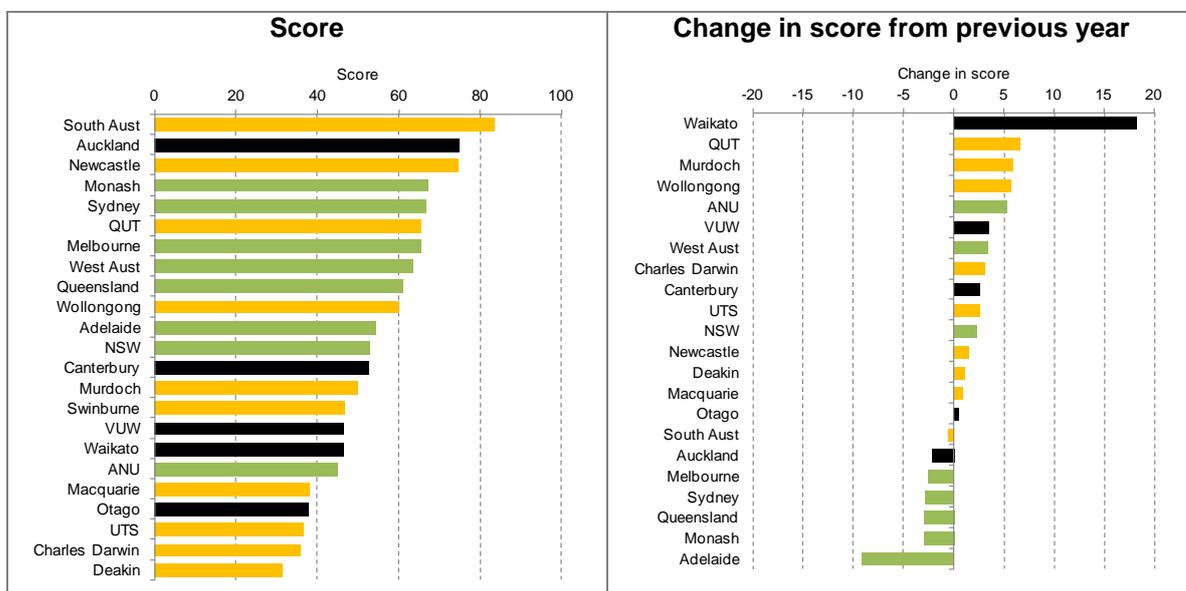
Figure 23
International outlook score of Australasian universities in THE top 400 2013/14



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.
Source: www.timeshighereducation.co.uk/world-university-rankings/

The University of Auckland is ranked second of the Australasian universities in terms of industry income per academic staff (see Figure 24). The University of Waikato exhibited the largest increase in score in this component by an Australasian university by some margin.

Figure 24
Industry income score of Australasian universities in THE top 400 2013/14

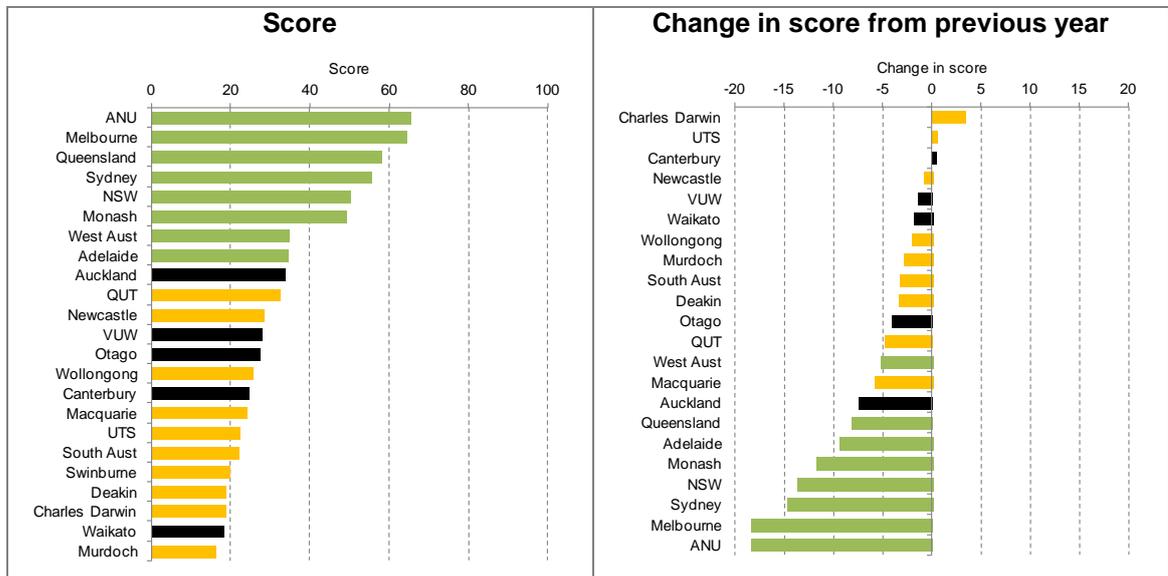


Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.
Source: www.timeshighereducation.co.uk/world-university-rankings/

In the research component score, the University of Auckland is the top-placed New Zealand university, but all G8 universities were placed above it (see Figure 25). Almost all Australasian universities exhibited a drop in this component score in 2013/14. The G8 universities exhibited the largest drops of the Australasian universities, with the University of Auckland showing the

largest drop by a New Zealand university. The University of Canterbury was one of three Australasian universities to show an increase in score.

Figure 25
Research score of Australasian universities in THE top 400 2013/14

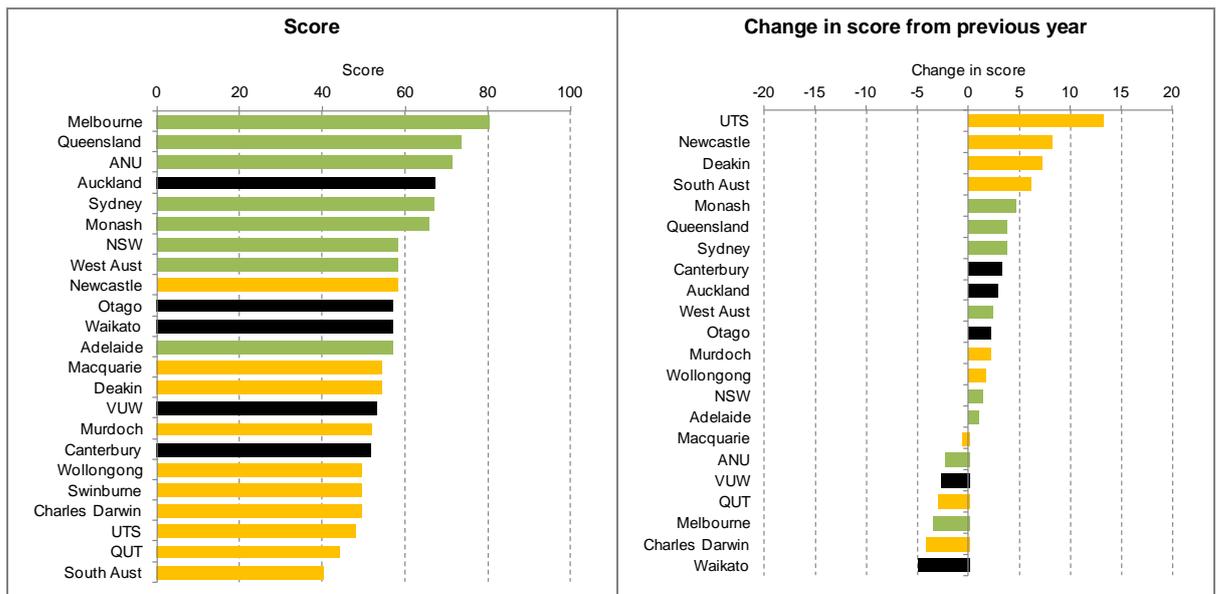


Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: www.timeshighereducation.co.uk/world-university-rankings/

In terms of the citation score, the University of Auckland is placed fourth among Australasian universities and is above five G8 universities (see Figure 26). Both the Universities of Otago and Waikato were placed above one of the G8 universities. The University of Waikato exhibited the largest drop in this component score among Australasian universities.

Figure 26
Citations score of Australasian universities in THE top 400 2013/14



Note: New Zealand universities are identified by the black bars, the Australian Group of Eight (G8) universities by the green bars and Australian non-G8 universities by gold bars.

Source: www.timeshighereducation.co.uk/world-university-rankings/

In Table 15 we present the Pearson correlation coefficients for the five THE component scores for Australasian universities. The highest correlation is between: research and teaching (0.98), research and citations (0.83), and teaching and citations (0.81). The lowest correlation is between international outlook and industry income (0.01).

Table 15

Pearson correlation coefficients for Australasian universities' component scores in THE top 400 2013

	Teaching	International outlook	Industry income	Research
International outlook	0.26			
Industry income	0.34	0.01		
Research	0.98	0.24	0.33	
Citations	0.81	0.29	0.18	0.83

Note: N = 23.

6 CONCLUSION

Over time, international university rankings have been attracting greater attention and appear to be here to stay. They simplify – or oversimplify – complex questions of institutional performance. Their importance derives from the public’s, the universities’ and governments’ interest in them; they cannot be ignored. They are important, ultimately, because people think they are important.

In this study we have taken a longer-term view of the placing of New Zealand universities in the three main rankings. The picture this presents is mixed. In the high-profile QS rankings, there has been a downward trend in the rankings for the top-placed New Zealand universities. However, all of our universities are currently placed in the QS top 500, something not achieved by the Australian, Canadian or United Kingdom university systems. Also, the performance of New Zealand universities in the QS subject-level rankings tends to be higher than in the overall rankings.

In the THE and ARWU rankings, the picture is mixed. For example, the University of Auckland has remained relatively stable in both the ARWU and the THE rankings over time. While the University of Otago (and the University of Canterbury in recent years) has been improving in the ARWU, Massey University and Victoria University of Wellington have dropped in ranking in recent years. Both of the latter universities have also exhibited recent falls in THE ranking.

The performance of the Australian universities in the rankings, especially the non-G8 universities, suggests that wider trends are impacting on the Australasian universities. In particular, the rise in rankings of universities from Asia appears to be having a displacement effect on the Australasian universities.

APPENDIX A COMPONENT SCORES

Table 16
ARWU component scores for New Zealand universities

University	Component	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
University of Auckland	Alumni		17.8	17.7	17.1	16.6	15.8	15.5	15.1	15.6	14.3	14.1
	Award	0	0	0	0	0	0	0	0	0	0	0
	HiCi	14.5	12.4	11.1	10.9	10.5	10.3	10.3	10.2	10.2	10.2	10.2
	N&S	16.3	15.3	16.3	14	14.2	16.4	14.6	14.4	13.8	16.7	12.7
	Pub	35.3	35.3	33.9	35.9	36.1	37	35.8	36.9	38.4	38.5	39.9
	PCP	16.5	16	17.5	18.2	18.8	19	18.4	18.7	18.8	19.4	19.9
	Overall		17.6	16.7	16.2	16.1	16.1	16.7	15.9	16.2	16.4	16.9
University of Otago	Alumni		0	0	0	0	0	0	0	0	0	0
	Award	0	0	0	0	0	0	0	0	0	0	0
	HiCi	0	12.4	11.1	10.9	10.5	10.3	10.3	10.2	14.4	14.5	14.5
	N&S	11.3	9.8	11.8	11.1	8.7	10.4	9.7	8.3	11.1	12.2	10.5
	Pub	30.4	33.9	31.8	33.8	31.6	33.3	33.8	34.1	35.2	35.1	34.7
	PCP	10.4	12.5	15.1	24.5	22.5	24.2	24.6	24.4	26	26.4	26.6
	Overall		11.1	13.0	12.8	14.0	12.8	13.6	13.6	13.4	15.2	15.4
University of Canterbury	Alumni			0	0	0	0	0	0	0	0	0
	Award			0	0	0	0	0	0	0	0	0
	HiCi			7.9	7.7	7.4	7.3	7.3	7.2	7.2	7.2	7.2
	N&S			5.4	5.4	5.6	7.3	7.5	7.3	5.7	7.9	9.2
	Pub			23.9	23.7	24.2	23.2	25	24	24.5	25.9	26
	PCP			10.9	16.9	17.1	17	18.3	17.6	17.3	18.6	19.5
	Overall			8.8	9.3	9.4	9.5	10.0	9.8	9.5	10.4	10.7
Massey University	Alumni		0	0	0	0	0	0	0	0	0	0
	Award	0	0	0	0	0	0	0	0	0	0	0
	HiCi	10.3	8.7	7.9	7.7	10.5	10.3	10.3	10.2	10.2	10.2	10.2
	N&S	6.4	7.2	7.2	7.1	1.6	5.3	2.6	4	4	4.3	4.2
	Pub	23.3	22.5	23.6	26.9	25.4	28	27.1	25.9	26.9	26.8	25.3
	PCP	10	8.6	11	14.8	14.5	15.6	15.1	14.6	14.8	14.9	14.6
	Overall	10.7	8.9	9.1	10.1	10.4	10.6	9.8	9.8	10.0	10.0	9.7
Victoria University of Wellington	Alumni			15.4	14.8	14.4	13.7	13.4	13.1	13.2	12.1	12
	Award			0	0	0		0	0	0	0	0
	HiCi			0	0	0	0	0	0	0	0	0
	N&S			8.1	9.5	9.4	9.1	9	8.9	8.8	7.5	7.4
	Pub			22	19.6	21.4	21.5	20.6	22.4	23.4	24.6	24
	PCP			11	15	15.7	15.8	15.4	16.3	16.5	16.9	16.9
	Overall			8.9	9.0	9.4	9.3	9.0	9.5	9.7	9.6	9.4

Source: www.shanghairanking.com

Table 17

QS component scores for New Zealand universities

University	Component	2007	2008	2009	2010	2011	2012	2013
University of Auckland	Academic reputation	95	95	95	94	94	92.8	92.1
	Employer reputation	83	94	96	90	59.4	78.2	88
	Students per faculty	38	36	36	29	25.1	27	27.9
	Citations per faculty	61	42	45	40	39.5	45.5	47.1
	International faculty	100	94	93	92	94.3	91.1	89.7
	International students	99	99	99	98	96	91.8	89.1
	Overall score	77.5	74.5	74.7	71.1	67.3	69.3	69.8
University of Otago	Academic reputation	69	73	68	60	63.2	65.8	62.2
	Employer reputation	61	75	77	63	55.9	60.2	56.6
	Students per faculty	39	36	38.9	32	30.8	31	30.7
	Citations per faculty	66	53	52.3	51	50	54	62.3
	International faculty	100	100	100	100	100	100	100
	International students	92	88	83	82	82.1	79.8	76.2
	Overall score	65.6	65.3	63.8	57.1	57.2	58.9	58.2
University of Canterbury	Academic reputation	62	62	57	54	50.3	52	46.2
	Employer reputation	77	86	89	74	59.4	63.4	67.7
	Students per faculty	30	24	26.5	21	20.1	20.9	20.9
	Citations per faculty	55	37	38.9	28	28.2	33.4	41.7
	International faculty	55	99	99	99	100	100	100
	International students	66	93	82	78	77.4	70.8	66.1
	Overall score	56.6	56.4	55.2	48.5	45.5	47	46.2
Victoria University of Wellington	Academic reputation	55.4	57.8	51.4	54	50.5	52.9	48.6
	Employer reputation	76.6	75.1	77	63	55.9	63	66.3
	Students per faculty	29	21.7	28.6	19	17.5	18.8	19.4
	Citations per faculty	29.5	27.3	28.9	15	15.5	18	22.2
	International faculty	99.8	99.8	99.5	100	100	100	100
	International students	71.1	91.8	81.7	77	77.7	78.6	71.9
	Overall score	50.9	51.2	49.9	44.4	42.1	44.2	43.1
Massey University	Academic reputation	50.6	45.1	41.7	38	40.1	41.8	36.5
	Employer reputation	45.8	54.3	44.4	39	13.5	36.4	49.2
	Students per faculty	37.4	35.3	39.4	32	29.4	32.5	33.3
	Citations per faculty	37.7	28.1	30.9	19	18.8	20.6	21.6
	International faculty	99	95.4	95	95	96.9	95.5	93
	International students	81	70	60.7	45	41.8	41	41
	Overall score	49.7	45.5	43.97	37	34.6	38.2	37.3
University of Waikato	Academic reputation	33.2	30.7	36.3	35	30.2	28.8	n/a
	Employer reputation	40.4	42.4	46.2	36	12.2	36.9	n/a
	Students per faculty	40.3	30	37.7	28	32.8	27.2	24.8
	Citations per faculty	36	27	28.3	13	12.9	14.9	18.7
	International faculty	77.6	87.2	94.9	94	96.1	96	96.8
	International students	89.5	66.5	92.8	91	87.5	81.6	79.1
	Overall score	41.7	36.5	42.64	35.7	32.2	32.8	32.7
Auckland University of Technology	Academic reputation						21.3	n/a
	Employer reputation						49	n/a
	Students per faculty						42.1	34.4
	Citations per faculty						6.1	7.3
	International faculty						n/a	87.5
	International students						50.7	56.5
	Overall score						25.9	28.9
Lincoln University	Academic reputation							n/a
	Employer reputation							n/a
	Students per faculty							83.4
	Citations per faculty							23.1
	International faculty							n/a
	International students							n/a
	Overall score							28.8

Note: We only present scores from 2007 in this table. QS used a different scoring system before 2007.

Source: QS Quacquarelli Symonds (www.topuniversities.com)

Table 18

THE Component scores for New Zealand universities

University	Measures	2011/12	2012/13	2013/14
University of Auckland	Teaching	28.3	34	26.7
	International outlook	92.9	88	88
	Industry income	76.6	76.6	74.5
	Research	35	40.9	33.5
	Citations	55.7	64.2	67
	Overall score		44.6	50.3
University of Otago	Teaching	24.5	28.8	24.6
	International outlook	88.8	85.4	84.8
	Industry income	27.8	37.2	37.6
	Research	28	30.9	26.9
	Citations	48	54.8	56.9
	Overall score		37.5	41.7
Victoria University of Wellington	Teaching	16.5	22.3	19.7
	International outlook	89	84.8	82.9
	Industry income	25.8	43	46.4
	Research	21.5	29.1	27.7
	Citations	51.1	55.6	52.9
	Overall score		34.1	39.5
University of Canterbury	Teaching	17.3	19.9	18.2
	International outlook	76.3	88	88
	Industry income	26.6	49.8	52.3
	Research	24.3	24	24.4
	Citations	30.5	48.4	51.6
	Overall score		28.0	35.5
University of Waikato	Teaching	13.3	17.7	18.4
	International outlook	87	85.6	82.4
	Industry income	24.5	28.2	46.3
	Research	13.9	19.9	18.1
	Citations	47.8	61.9	56.9
	Overall score		29.6	37.0
Massey University	Teaching	17.4	19.2	n/a
	International outlook	77.8	73.3	n/a
	Industry income		66	n/a
	Research	17.2	19.2	n/a
	Citations	24.5	37.6	n/a
	Overall score		24.3	29.9

Notes: 1. Top overall score (94.9) was achieved by California Institute of Technology. 2. Massey University did not supply industry income information in 2011/12.

Source: www.timeshighereducation.co.uk/world-university-rankings/

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MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga