



Commentary

on issues of higher education and research

November 2017 | Issue 7

International Rankings: Income versus Quality in New Zealand and Australia

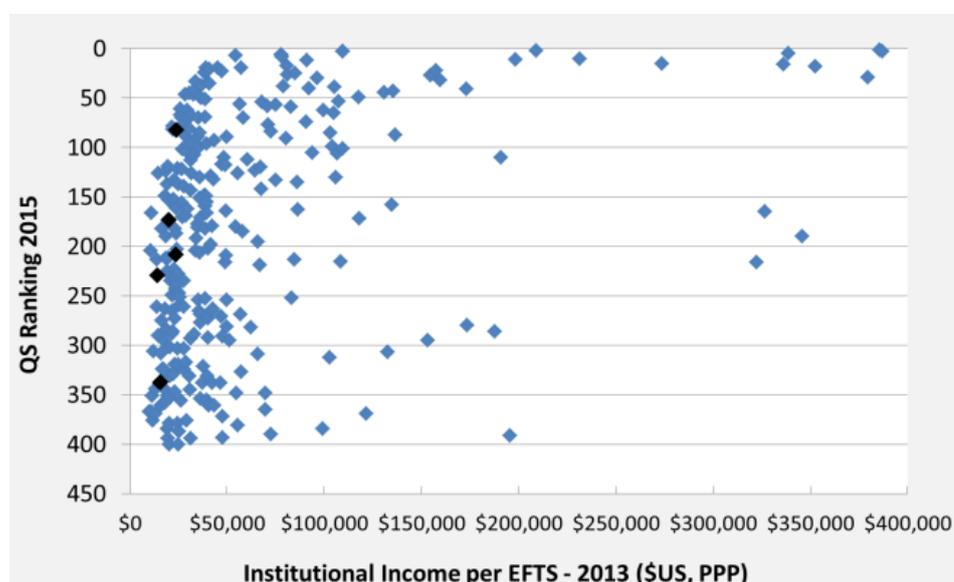
Universities compete in a global market for students, and an important determinant of students' university choice is the perception of institutional quality. While the robustness of university rankings is debated,¹ they are nonetheless the only readily available, internationally comparable measures of university quality.²

In general, higher rankings are associated with higher income per student (Figure 1), presumably because well-resourced universities are better able to invest in the things that drive high rankings (e.g. high-quality academics). One study³ found that on average universities climb one rank by increasing expenditure per student by 3%-7%. Yet, as Figure 1 shows, New Zealand universities have among the lowest levels of income per student of their peer institutions. Few universities have a lower income per student but higher ranking than our top five universities, which suggests that our university system is efficient with respect to quality, relative to cost.

The Australian universities are our nearest competitors for international students, and indeed for New Zealand's best domestic students. They are also the universities against which we most commonly compare ourselves, so it is of interest to examine rankings and income per student in the two systems, and to understand what drives differences in income levels.

Two comparisons have been made: all New Zealand universities versus all Australian universities ranked in the top 500 of QS; and the University of Auckland versus Group of Eight universities.^{5,6}

Figure 1: University ranking (2015) and institutional income per Equivalent Full-Time Student (EFTS, 2013) for the global top 400 QS-ranked universities. Black diamonds represent the New Zealand universities⁴



Key findings

- NZ universities have some of the lowest levels of income per Equivalent Full-Time Student (EFTS) globally, yet achieve comparatively good rankings
- All NZ universities are ranked in the top 500 (QS) compared with 58% of Australian universities
- When comparing NZ vs Australian QS500 universities:
 - Domestic tuition income per domestic EFTS is lower for the NZ universities by US\$3,054 (27%). The gap is driven by higher Australian domestic fee income and government tuition income (in that order)
 - Mean income per total EFTS (domestic and international) is lower by US\$3,739 (20%) for the NZ universities
 - International fee income is the main contributor to the difference in the level of income per EFTS, but research income is also a key contributor.
- When comparing the University of Auckland vs the Group of Eight universities:
 - Domestic tuition income per domestic EFTS is lower by US\$3,774 (33%) for Auckland, with both government tuition funding and domestic fee income being higher in Australia
 - The University of Auckland's income per total EFTS is lower by US\$7,416 (34%) than the mean income of the Group of Eight universities and it ranks lower by 18 places in the QS rankings
 - International fee income accounts for half the higher level of income per EFTS in the Group of Eight universities
 - "Other income" (investment income, donations and bequests, non-government grants, and other non-course fees and charges) and research income also make significant contributions to the higher income per EFTS in the Group of Eight universities.

New Zealand universities versus Australian universities

While all New Zealand universities were ranked in the top 500 of the QS ranking system in 2016, 16 (42%) of Australia's universities were ranked outside the top 500 or not ranked at all (four universities were outside the lowest band of 700-800). A number of Australian universities were previously polytechnics and achieved university status only in the late 1980s and 1990s. Such "newcomers" tend to rank lower than older, more established universities. This means that there was greater variation in the Australian data with respect to both income per EFTS and rank, such that mean rank of the New Zealand universities was higher than that of their Australian peers, even though mean income per student was lower (Figure 2).⁷

Because the lowest ranked Australian universities are so different to those in New Zealand, we examine here only the institutions in the two systems that rank in the top 500.

Figure 3 again shows the positive relationship between ranking and income per student, albeit on a much narrower scale. The Australian universities ranked in the top 500 in 2016 (henceforth "Australian QS500 universities") had a mean ranking about 50 places better than that of the New Zealand universities and a mean income per student about 20% (US\$3,700) higher.

The difference in mean income per student between the New Zealand and Australian QS500 universities is analysed in Table 1. For the average domestic student, the government subsidy was a little higher (US\$690) and the tuition fee income appreciably (US\$2,364) higher in Australia, leading to an overall greater level of domestic tuition income per Australian domestic student of US\$3,054 (27%).

This difference was diluted to US\$471 (US\$10,309 vs \$9,839) when comparisons were made on a "total EFTS" basis because the Australian QS500 universities had a larger proportion of international students - 28% compared to 12% for New Zealand universities.¹⁰ They also had higher fee income per international student - US\$ 16,277 vs \$15,819.

The "per total EFTS" comparison shows that the US\$3,739 (20%) greater average per student income in the Australian universities was accounted for largely by the greater level of international fees income and research income. "Other income" was also higher for the Australian universities, but its contribution to the overall difference was small. "Other government income" (principally the Performance Based Research Fund in New Zealand) was the only category in which income per student of New Zealand universities exceeded that of their Australian peers.

Figure 2: QS rankings and institutional income per EFTS - all New Zealand and Australian universities⁸

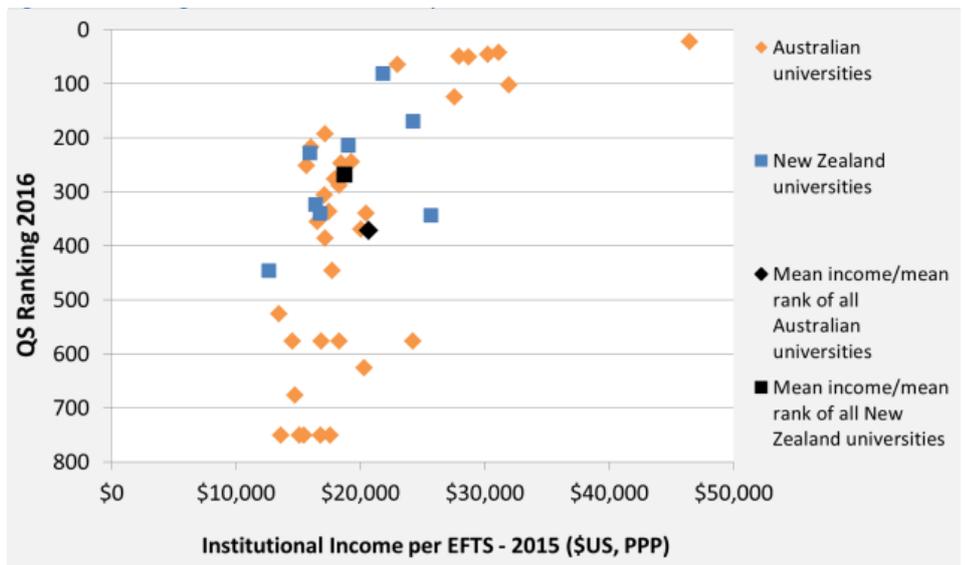


Figure 3: QS rankings and institutional income per EFTS - all New Zealand and Australian QS500 universities⁹

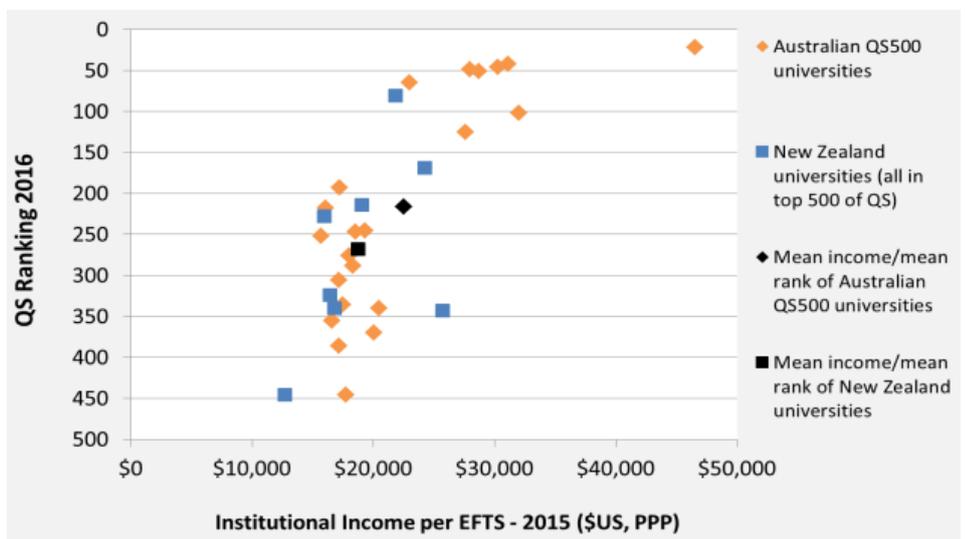


Table 1: 2015 Income sources per EFTS (domestic, international, total) for all New Zealand and Australian QS500 universities

	Income Stream	All New Zealand universities	All Australian universities ranked in the top 500 of QS in 2016	\$ difference Australia vs New Zealand
		US\$ PPP	US\$ PPP	
Per domestic EFTS	Government Tuition Funding	\$7,055	\$7,745	\$690
	Domestic Fee Income	\$4,114	\$6,478	\$2,364
	Total Domestic Tuition Income	\$11,169	\$14,223	\$3,054
Per international EFTS	International Fee Income	\$15,819	\$16,277	\$457
Per total EFTS	Total Domestic Tuition Income	\$9,839	\$10,309	\$471
	International Fees Income	\$1,885	\$4,479	\$2,594
	Other Government Income ¹¹	\$1,438	\$662	-\$776
	Research Income	\$2,760	\$3,970	\$1,210
	Other Income	\$2,829	\$3,069	\$240
	Total Revenue		\$18,750	\$22,489

The University of Auckland versus Group of Eight universities

Within the Australian university system, the highest-ranking universities make up the Group of Eight. The University of Auckland is the only New Zealand university with an international ranking that matches rankings within that group, and for that reason we compared the University of Auckland with the Group of Eight universities.

Figure 4 shows that within the top ranked universities in Australasia, the positive relationship between QS ranking and institutional income per EFTS was also apparent. The mean income per student of the Group of Eight universities was 34% higher than that of the University of Auckland and the mean QS ranking 18 points higher.

Table 2 shows the analysis of mean income per student for Auckland and the Group of Eight. Differences in domestic tuition income per domestic student were similar to, but higher than those for QS500 universities in Table 1 (US\$3,774 for the Group of Eight vs Auckland comparison as opposed to US\$3,054 for the New Zealand vs Australia QS500 universities). These differences were again diluted on a “per total EFTS” basis by the greater proportion of international EFTS in the Group of Eight (30%) compared to the University of Auckland (12%). International fee income per international EFTS was 10% higher in in the Group of Eight universities than at the University of Auckland.

At US\$7,416 per total EFTS, the difference in income per student between the University of Auckland and the Group of Eight was about twice the difference between the New Zealand and Australian QS500 universities (US\$3,739). This difference was largely accounted for by the greater difference in international fees income, research income and “other income”. The Group of Eight universities had a larger level of “other income” including investment income, donations and bequests, non-government grants, and other non-course fees and charges e.g. student accommodation. “Other income” in particular was a much greater driver of the variation between the University of Auckland and the Group of Eight universities, than it was for the previous comparison.

What the analysis has shown and what it means

This analysis shows that in the Australasian university sector there is a positive relationship between institutional income per student and QS rankings. This mirrors the income and rankings relationship seen among the top 400 institutions globally (Figure 1). As Jo Ritzen, former president of Maastricht University in the Netherlands put it, “Money matters when you want to be ranked high as a university”.¹³

The analysis presented here shows that there is a large difference in the total level of income per EFTS between New Zealand and Australian universities. This is especially so when comparing the University of Auckland with the mean of the

Figure 4: QS rankings and institutional income per EFTS – University of Auckland and Group of Eight universities¹²

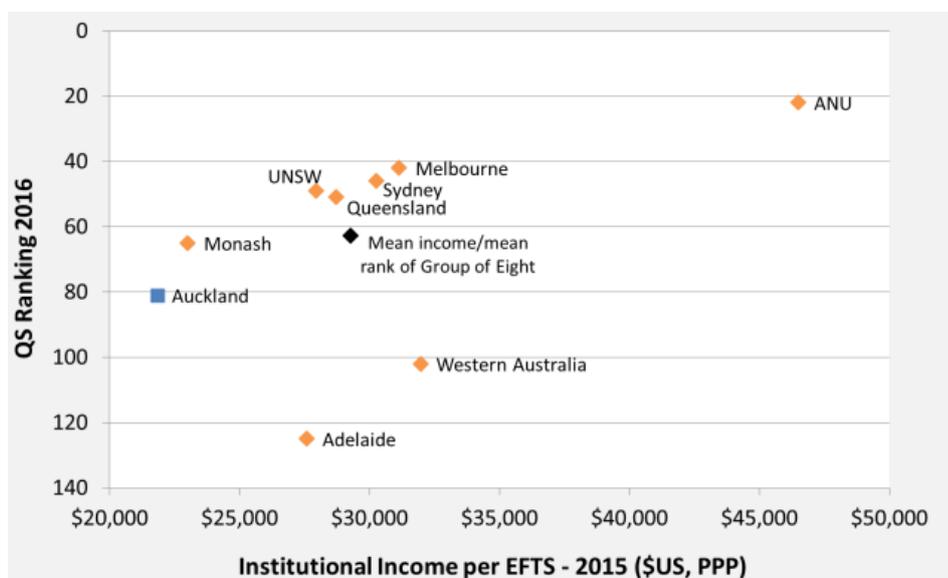


Table 2: 2015 Income sources per EFTS (domestic, international, total) for the University of Auckland and Group of Eight universities

	Income Stream	University of Auckland	Group of Eight universities	\$ difference Australia versus New Zealand
		US\$ PPP	US\$ PPP	
Per domestic EFTS	Government Tuition Funding	\$7,604	\$8,527	\$923
	Domestic Fee Income	\$3,939	\$6,791	\$2,851
	Total Domestic Tuition Income	\$11,543	\$15,317	\$3,774
Per international EFTS	International Fee Income	\$18,290	\$20,194	\$1,904
Per total EFTS	Total Domestic Tuition Income	\$10,207	\$10,692	\$485
	International Fees Income	\$2,117	\$6,098	\$3,981
	Other Government Income	\$1,735	\$1,256	-\$480
	Research Income	\$5,138	\$6,441	\$1,303
	Other Income	\$2,631	\$4,758	\$2,127
	Total Revenue	\$21,829	\$29,245	\$7,416

Group of Eight universities, where the difference of US\$7,416 per EFTS equates to a total revenue shortfall for Auckland of US\$248 million, or about NZ\$344 million annually – representing just under a third of Auckland’s annual budget (in 2015, the year examined).¹⁴

It is a popularly held view among some government officials and Ministers that the main reason for Australian universities’ higher income per EFTS is their larger proportion of international fee-paying students. That is partly true, but even if New Zealand universities increased their international student numbers to Australian proportions (by substituting for domestic students), that would only reduce the gap in income per student from US\$3,739 (20%) to US\$2,991 (15%) for the “all New Zealand and Australian QS500” comparison, and from US\$7,416 (34%) to US\$6,173 (27%) for the “University of Auckland and Group of Eight” comparison. There are clearly a number of other important factors that have to be addressed.

Whether we consider all the universities ranked above 500 in the QS system or just the Group of Eight universities, the Australian institutions enjoyed a higher domestic income per EFTS by 20-33% (US\$3-4,000). This reflects principally the effect of higher domestic student fees, but it is also driven by a higher government tuition subsidy in Australia.

Research income and “other income” also consistently contributed to the income gap between New Zealand and Australian universities. “Other income” was particularly important in driving the income differences between the University of Auckland and the Group of Eight universities.

In conclusion, it is clear that at all levels, other than when we include the very lowly ranked universities, the Australian university system enjoys higher rankings which are correlated with, and likely supported by, higher levels of funding for domestic students, research income and

“other income” sources. Control of the first two revenue streams is, in both countries, largely in the hands of government. What follows from strong domestic funding is a virtuous cycle in which well-supported universities are able to attract large numbers of international students who bring many advantages, but among them revenue streams that raise income per student, and with it rankings, even further than would otherwise be possible.

Acknowledgements:

The authors thank Associate Professor Ian Marshman and Professor Frank Larkins (University of Melbourne), and Heather Kirkwood and Chris Whelan (Universities New Zealand) for their insightful comments on earlier versions of this paper. All remaining errors and omissions are the sole responsibility of the authors.

¹Altbach, P.G. and Hazelkorn, E. (2017). *Why most universities should quit the rankings game*. *University World News*, 8 January 2017, Issue No: 442. Retrieved from: <http://www.universityworldnews.com/article.php?story=20170105122700949>

²Marconi, G and Ritzen, J. (2015). *Determinants of international university rankings score*. *Applied Economics*, 47:57, 6211-6227. Retrieved from: <http://www.tandfonline.com/doi/full/10.1080/00036846.2015.1068921?src=recsys&>

³Ibid.

⁴All QS ranking data in this paper are from QS Quacquarelli Symonds. Retrieved from: www.topuniversities.com; Income per student data from Clarivate Analytics (n.d). Retrieved from: (Formerly Thompson Reuters), *Institutional Profiles (Insites)* data. All income data in this paper, unless otherwise specified, are expressed in US dollars at purchasing power parity (PPP). World Bank Conversion factors for 2015 used to conduct the PPP conversion. Available: <http://data.worldbank.org/indicator/PA.NUS.PPP?locations=NZ> (PPP conversion factor, GDP (LCU per international \$))

⁵The financial and EFTS data for universities from this graph onwards in this paper were sourced from: New Zealand - Tertiary Education Commission (TEC) (2016). *TEI financial information by year*. Retrieved from: <http://www.tec.govt.nz/New Zealand/funding/funding-and-performance/performance/financial>. Australia - Department of Education and Training. *EFTS data: All Student Load*. Retrieved from: <https://docs.education.gov.au/node/38123>. *Financial data: Finance publication 2015*. Retrieved from: <https://docs.education.gov.au/documents/finance-publication-2015>. All income and EFTS data are from 2015.

⁶The analysis has not attempted to control for any difference in the student mix (disciplines, qualifications, levels), although this impacts on the cost of provision and therefore on each university's overall financial position.

⁷The all New Zealand versus all Australian comparison (i.e. including those universities outside the QS500) still showed that mean income was higher among Australian universities by 11%.

⁸Refer to endnotes 4 and 6.

⁹Refer to endnotes 4 and 6.

¹⁰The proportion of international students at the University of Auckland is closer to 15% if student EFTS are viewed by residency status rather than by funding source as is the case in the data sourced from the TEC i.e. international research postgraduate students for whom some TEC funding is received are counted as domestic students. In the TEC data international doctorate students and international masters research students are excluded.

¹¹“Other Government Income” includes the Performance Based Research Fund (PBRF) for New Zealand universities and, for the Australian universities it includes the income/grants that are reported as part of the Education research category in the universities' financial reporting (similar in intent to the PBRF). For further details, refer to the technical supplement to this Commentary, which includes further details on data and methodology. It is available at www.auckland.ac.nz/commentary

¹²Refer to endnotes 4 and 6.

¹³Ritzen, J. (2010, p.42). *A Chance for European Universities*. Amsterdam University Press.

¹⁴US\$248 converted at the exchange rate of US\$1 = NZ\$1.39. Obtained from xe.com on 12 June 2017.

Commentary is produced on an occasional basis by the Office of the Vice-Chancellor at the University of Auckland, and brings together some of the research-based evidence relevant to current issues in higher education and research.

Corresponding author: Lise Eriksen l.eriksen@auckland.ac.nz
To subscribe or find out more, email: commentary@auckland.ac.nz
Commentary is also available online: www.auckland.ac.nz/commentary

This material may be freely cited, copied and disseminated, with attribution to 'Commentary, The University of Auckland'.



THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND