



Commentary

on issues of higher education and research

University Rankings: What is happening and why?

Over the last twenty years, the ranking of universities¹ has become big business. Although rankings are only a proxy for quality (and “quality” itself has no universally agreed definition), they are nonetheless important to many groups in the tertiary sector. The decline in the rankings of New Zealand universities must therefore be of real concern.

Although it can be argued that rankings are fundamentally flawed because they attempt to measure something that cannot be measured – the relative quality of universities across the world - they are important to many different groups in the sector:

- International students and their families use rankings, along with other factors such as the costs of tuition and living, to determine the best value for money offered by different universities at which they might study
- Some governments provide scholarships for studies abroad only to students admitted to a highly ranked university²
- Anecdotally, New Zealand students look to rankings when deciding whether to study at home or at more highly ranked universities overseas (e.g. on the east coast of Australia)

- Alumni, especially in Asia, take great interest in rankings as a measure of how their *alma mater* is progressing
- International universities and university networks use rankings to determine which are the leading universities in a particular country that they might wish to collaborate with
- Donors look to rankings as an indicator of quality and prestige when making decisions about gifts (e.g. endowments).³

Thus, whether we like it or not, rankings have a real impact on important decisions in the international university sector, decisions that impact significantly on the New Zealand universities.

The drivers of international rankings

Two main ranking systems⁴ – the QS World University Rankings (QS) and the Times Higher Education World University Rankings (THE) – are of particular interest to those who might make decisions relevant to New Zealand universities. Others such as the Academic Ranking of World Universities (also known as the Shanghai Rankings) have a more specialised research emphasis and therefore tend to be of more narrow interest.

These ranking systems have largely the same drivers, although the weighting given to each varies. An overview of the parameters that contribute to the QS and THE systems is provided in Table 1. Typically, each university receives a score for the parameters relevant to the particular ranking system, the scores are weighted and summed, and

Table 1: Drivers of ranking systems (2017 methodology)

Category	Input parameters	Contribution to overall score	
		QS	THE
Reputation	Surveys of other academics and of employers of graduates	50%	33%
Teaching and learning	Degrees (especially doctorates) awarded per academic; student numbers per academic (inverse ⁵)	20%	12.75%
International	Proportions of international students, staff and co-authored publications	10%	7.5%
Research output	Citation impact of research papers; citations and publications per academic	20%	36%
Income	Research income; industry income; total income per academic	0%	10.75%

then universities are ranked on their overall score. It is important to appreciate that ranking systems measure relative rather than absolute performance. As a result, a university may improve its performance yet simultaneously decline in the rankings if other universities are improving in the ranking parameters more quickly.

Trends in rankings among New Zealand universities

Because the ranking systems rely on qualitative (e.g. reputational) as well as quantitative data, and because they from time to time modify the weightings of the various parameters contributing to the overall score, there can be some instability of rankings in the short term. It is therefore important to focus on long-term trends.

Figure 1 shows the rankings of New Zealand universities in the QS system over the last 10 years. Rankings have declined over that period in four of the five top-ranked universities (Auckland from 50 to 82; Otago 114 to 151; Canterbury 188 to 214; Massey 242 to 292) and improved in one (Victoria, 234 to 219). On the other hand, rankings have tended to remain constant or improve in the three lowest-ranked universities, some of which only entered the top 500 in recent years.

In the THE system, only universities ranked in the top 200 are given an individual ranking, while the remainder are placed in bands. As Table 2 shows, the University of Auckland has fallen from 145th to 192nd place since 2010. All but two of the other New Zealand universities (Otago, AUT) have fallen by at least one 50-rank band during the same period.

Rankings and funding – how do we compare internationally?

As Figures 2 and 3 – derived independently using data from different ranking systems – show, high rankings tend to be associated with higher levels of income per student. This is unsurprising – a higher level of investment per student allows universities to have smaller classes, better supported students, a greater value of scholarships to attract top students, more productive and internationally recognised (and expensive) academics, and better quality facilities for teaching and research – all things that will lead to improvements in the indicators on which the rankings are based.

As is evident from the graphs, New Zealand universities (indicated by black diamonds) have some of the lowest incomes per student of the world's top-ranked universities. However, relative to their low level of resources, they perform creditably

Figure 1: Rankings of New Zealand universities in the QS ranking system 2007 to 2017

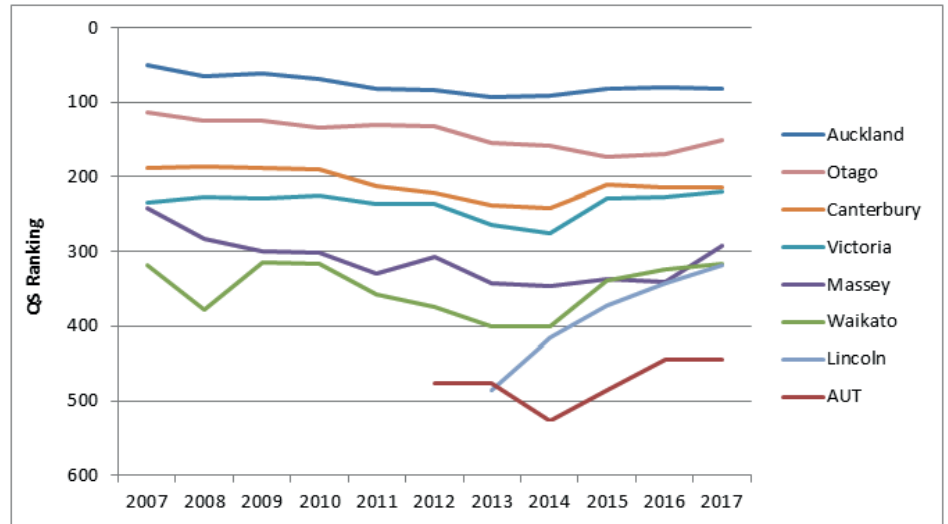


Table 2: Rankings of New Zealand universities in the Times Higher ranking system 2010-2017⁶

	2010	2011	2012	2013	2014	2015	2016	2017
Auckland	145	173	161	164	175	172	165	192
Otago	226-250	201-225	226-250	226-250	251-275	201-250	201-250	201-250
Victoria	226-250	251-275	251-275	276-300	276-300	351-400	351-400	401-500
Canterbury	226-250	301-350	301-350	301-350	301-350	401-500	351-400	351-400
Waikato		301-350	301-350	301-350	351-400	401-500	401-500	351-400
Massey	276-300	351-400	351-400			501-600	401-500	401-500
Lincoln							401-500	501-600
AUT						601-800	501-600	401-500

Figure 2: QS ranking (2016) and institutional income per Equivalent Full-Time Student (EFTS, 2013) for the global top 400 QS-ranked universities. Black diamonds represent the five New Zealand universities ranked in the top 400⁷

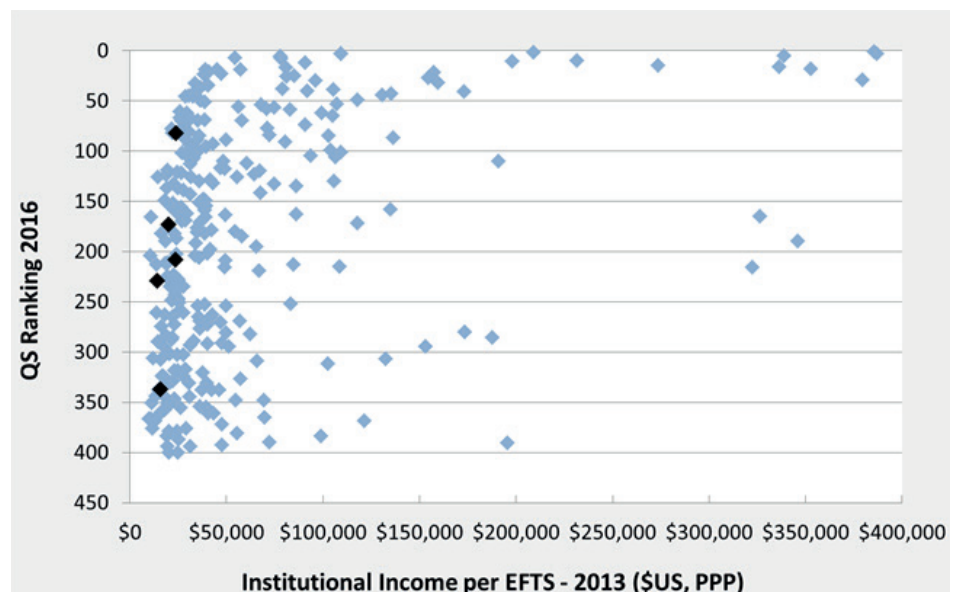


Figure 3: Times Higher (THE) University ranking (2016) and institutional income per Equivalent Full-Time Student (EFTS, 2013) for the global top 200 THE-ranked universities. The University of Auckland, the only New Zealand university in the top 200 in 2016, is shown as the black diamond⁸

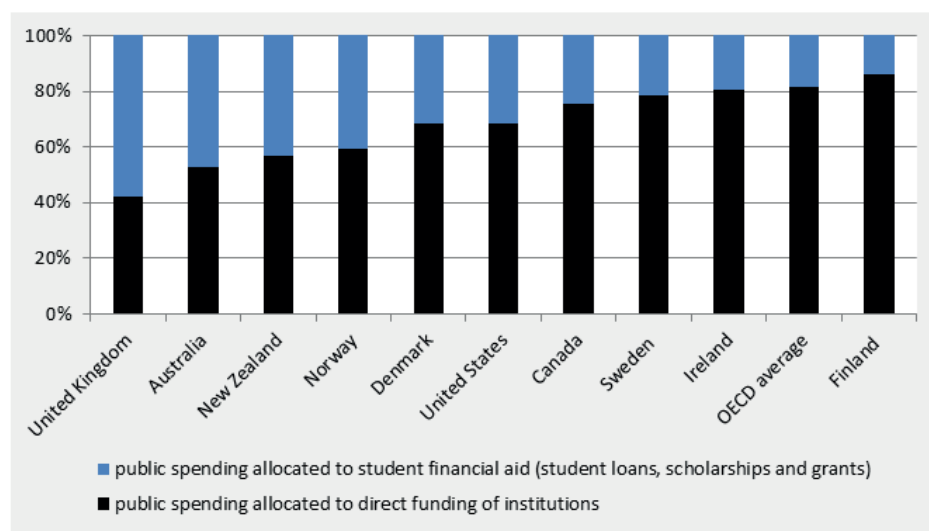


in the rankings. In fact, very few universities achieve higher rankings than New Zealand universities on lower income per student. For example, in the QS ranking only one institution, Trinity College Dublin, has a higher ranking but lower income per student than the University of Auckland. In the case of Otago, the other New Zealand university in the QS top 200, only six universities have a higher ranking but lower income per student.⁹

Considering the top 200 in the THE system, in which only the University of Auckland figures, there are nine such universities.¹⁰ Common to all of these higher-ranked universities on less income per student is the fact that they are long-established European universities that score very well in the reputation parameters contributing to the rankings.

We can thus conclude that New Zealand has one of the world's most efficient university systems as measured by quality (ranking) relative to cost. That our university system is efficient and high-performing, but struggling with under-funding, is also supported by the U21 ranking of national higher education systems.¹¹ In this ranking system, developed by experts at Melbourne University, the performance of a country's university system as a whole is assessed rather than that of individual universities. In 2017, New Zealand ranked 15th overall, down from 14th the previous year. Worryingly, we fell five places on the resources indicator, which is attributed to a reduction in government funding as a share of GDP. Meanwhile, New Zealand actually improved its performance on the other three indicators that make up the ranking system – environment, output and connectivity.¹²

Figure 4: Distribution of public spending on tertiary education on student financial aid and direct funding of institutions (2014)¹⁴



What New Zealand has not done is to invest actively in its universities to improve their quality and rankings. By contrast, Jamil Salmi, a global tertiary education expert, points to the success of excellence initiatives where governments have invested heavily in support of their top universities with a view to strengthening their contribution to economic and societal development. Universities in China, Saudi Arabia, France and Israel have all climbed significantly in their rankings as a result of additional funding through these excellence initiatives.¹³

The challenge of maintaining a country's universities amongst the top in the world is sometimes written off as being just a small country problem, but that is not the case. Denmark, Sweden, Finland, Singapore, Switzerland, Ireland, Belgium and Hong Kong, all countries with populations not vastly different to that of New Zealand, each have at least one, and typically several, universities ranked higher than the highest of the New Zealand universities.

Why do our universities spend so little per student?

When the decline in rankings becomes a cause for public comment, governments typically respond, "But we are spending more in the university system". In New Zealand that has certainly been true, but the expenditure has been primarily through government funding an increased number of students. It has not been through an increased investment per student which, as we have seen, is what drives rankings.

Given that New Zealand's universities are not profit-motivated, their expenditure and income are highly correlated (the difference being their required minimum operating surplus, typically around 3% of revenues, which is reinvested into capital development). Thus the reason they spend so little on their students (and other activities) is that their income is so low. In excess of two-thirds of their revenue is controlled by government, which sets the tuition subsidy per student, limits fee increases and controls public investment in research. In short, the public policy environment in New Zealand precludes the universities expending more per student, and thus raising quality because it severely constrains the ability of universities to raise revenues. As Figure 4 shows, New Zealand is amongst the countries with the lowest proportion of public spending going directly to institutions as opposed to student financial aid (loans and grants). This is a situation about to be exacerbated by the new Government's policy of providing a year of free tertiary education.

To put it simply, universities do not increase revenues per student, and therefore expenditure per student, and therefore quality and rankings (certainly not at the rate of their competitors) because they are not permitted to, at least with respect to their domestic sources of income. Universities could prioritise pursuing revenue sources that are not controlled by government (e.g. international fee revenue, by substituting international students for domestic students), but this would potentially be at odds with their role as domestic public institutions.

Conclusions

The tension between accessibility, quality and cost of a university education is not a new one. In New Zealand, most of the debate about funding of universities and about student finance has focused on how to reduce the cost of education to students rather than on how to give them access to world-class tertiary education. Issues of price (to the student and to the government) have dominated issues of quality.

Universities, through their roles as educators and knowledge creators, play a unique and vital function in supporting knowledge-driven

economic growth. If we in New Zealand wish to maintain the quality of our universities and indeed maximise their contribution to society, then we must be prepared to invest more heavily in them. As is demonstrated by the gradual decline in the rankings of our universities, the current situation is unsustainable. We must as a nation come to grips with the fact that the country cannot have, simultaneously, high participation rates, heavily constrained levels of government subsidy, low tuition fees and high quality. Something has to give.

¹The ranking of subjects/disciplines is a further complication that will not be dealt with here.

²Salmi, J. and Alenoush S. (2007), "League Tables as Policy Instruments: Uses and Misuses". *Higher Education Management and Policy*. 19(2). Available: <http://dx.doi.org/10.1787/hemp-v19-art10-en>

³Salmi, J. (2009). *The Challenge of Establishing World-Class Universities*. Washington DC: The World Bank.

⁴QS - <https://www.topuniversities.com/university-rankings>; Times Higher - <https://www.timeshighereducation.com/world-university-rankings>

⁵Low numbers of students per staff member (effectively smaller classes) improve rankings.

⁶Prior to 2015 THE published rankings only for universities in the top 400. There have been some changes to the THE methodology over the years. Between 2010 and 2011 there was a methodological change, and again between 2015 and 2016 there were significant changes to the underlying data.

⁷All 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.

⁸All Times Higher ranking data in this paper are from Times Higher. Retrieved from: <https://www.timeshighereducation.com/world-university-rankings>; Income per student data from Clarivate Analytics (n.d). Retrieved from: (Formerly Thompson Reuters), Institutional Profiles (Insites) data.

⁹Free University of Berlin, Pierre and Marie Curie University, Ghent University, University Catholique of Louvain, Humboldt University of Berlin and University of Barcelona.

¹⁰Trinity College Dublin, Humboldt University of Berlin, Stockholm University, University Catholique of Louvain, Autonomous University of Barcelona, Ghent University, Pierre and Marie Curie University, Free University of Berlin and University of Vienna.

¹¹Williams, R., Leahy, A. and Jensen, P. (2017). *U21 Rankings of National Higher Education Systems 2017*. Melbourne Institute of Applied Economic and Social Research, University of Melbourne. Available: <http://www.universitas21.com/article/projects/details/152/u21-ranking-of-national-higher-education-systems-2017>

¹²"Environment" evaluates the regulatory environment with respect to autonomy in areas of budgets and degree offerings, and appropriate diversity and competition between institutions, and external monitoring. "Output" evaluates research

output and its impact, stock of graduates and researchers, quality of universities and employability of graduates. "Connectivity" evaluates the strength of links between the higher education system and the rest of society (including businesses), and education and research connections domestically and internationally.

¹³Salmi, J. (2016). *Excellence Initiatives to Create World-Class Universities: Do They Work?* Available: <http://tertiaryeducation.org/>

¹⁴OECD (2017). *Education at Glance 2017: OECD Indicators. Table B2.3 Expenditure on educational institutions as a percentage of GDP, by source of funding and level of education (2014)*.

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
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