NZの国立大学の資金配分システム事例
SACとPBRFについて

2012年10月

PERFORMANCE LINKED FUNDING

Performance-linked funding applies to Student Achievement Component (SAC) funded Tertiary Education Providers and to Industry Training Organisations.

Performance-linked funding is one of a number of approaches intended to improve educational outcomes for students and employers and improve value for taxpayers' money.

Performance-linked funding will be targeted to encourage all Tertiary Education Providers and ITOs to reach an acceptable standard of educational performance.

The TEC publishes performance information annually for all SAC-funded TEOs and ITOs.

Tertiary Education Providers and ITOs also have to define performance commitments as part of their Investment Plans. These performance commitments encompass the Government's priorities in the Tertiary Education Strategy 2010–15, for example, achievement for young people at higher levels of study.

KEY FEATURES OF THE PERFORMANCE-LINKED FUNDING FRAMEWORK FOR THE SAC FUNDED SECTOR

The performance of each SAC funded TEO will be measured at four grouped New Zealand Qualifications Framework (NZQF) levels: 1 - 2, 3 - 4, 5 - 6 and 7 - 8. In order to create a level playing field, performance-linked funding treats all providers in each grouped qualification level the same.

TEOs performing above the 50th percentile in each grouped qualification level will continue to receive 100 percent of their funding.

A maximum of 5% of a TEO's funding in 2012, at each of the grouped qualification levels, will be based on the provider's performance in 2011 against up to four of the following Educational Performance Indicators:

Qualification completion rate: this measures successful qualification completions as a proportion of total enrolments in a given year.

Course completion rate: this measures successful course completions as a proportion of course enrolments in a given year.

KEY FEATURES OF THE PERFORMANCE-LINKED FUNDING FRAMEWORK FOR THE SAC FUNDED SECTOR

Retention (completion/continuation): this measures the proportion of students in a given year that complete a qualification, or re-enrol at the same organization in the following year.

Progression: this measures the proportion of students who progress to a higher level of study after completing a qualification in the previous year.

These performance indicators have been selected for performance-linked funding as they are a good indication of a TEO's performance in relation to the educational achievement of its learners. Longer term, it may be possible to include other outcomes, such as students' success in the labour market.

PBRFとは？

The primary goal of the PBRF is to ensure that excellent research in the tertiary education sector is encouraged and rewarded. This entails assessing the research performance of eligible TEOs and funding them on the basis of this performance. Between 2004 and 2007 the PBRF progressively replaced the current EFTS (equivalent full-time student) "top-up" funding for research.

The Government's main aims for the PBRF are to:

• increase the average quality of research

• ensure that research continues to support degree and postgraduate teaching

• ensure that funding is available for postgraduate students and new researchers

• improve the quality of public information about research output

• prevent undue concentration of funding that would undermine research support for all degrees or prevent access to the system by new researchers, and

• underpin the existing research strengths in the tertiary education sector.

THE THREE ELEMENTS OF THE PBRF

The PBRF is a "mixed" performance-assessment regime because it employs both peer review processes and performance measures. The three assessment elements are:

1: a "Quality Evaluation" measure: this is a periodic assessment of the research performance of eligible TEO staff, undertaken by expert peer review panels. The fi rst round was completed in 2003 and the second, a partial round, was held in 2006. The next full round of the Quality Evaluation takes place in 2012. This element makes up 60 percent of the fund.

2: a postgraduate "research degree completions" (RDC) measure: this is a measurement of the number of PBRF eligible postgraduate research-based degrees completed in participating TEOs, assessed on an annual basis. This element makes up 25 percent of the fund.

3: an "external research income" (ERI) measure: this is a measurement of the amount of income for research purposes received by participating TEOs from external sources, assessed on an annual basis. This element makes up 15 percent of the fund.

基準1：THE QUALITY EVALUATION MEASURE

The Quality Evaluation measure accounts for 60 percent of the total funds allocated through the PBRF each year. The Quality Evaluation process uses expert peer-review panels to assess research quality based on material contained in individual researchers' Evidence Portfolios. Previous Quality

Evaluations were held in 2003 and 2006, and the scores from the latter are currently used in the funding calculation. The next Quality Evaluation will be held in 2012.3 30. Funding in relation to the Quality Evaluation is based on:

- **quality categories assigned to Evidence Portfolios (EPs)**
- **funding weightings for the subject area to which EPs have been assigned; and**
- **Full-Time Equivalent (FTE) status PBRF-eligible staff as at the date of the PBRF Census**

(with the qualifications as outlined below in the section "FTE status of staff").

FUNDING FORMULA FOR QUALITY EVALUATION MEASURE

The funding formula for the proportion of the quality measure allocated to each TEO is:

$$\frac{\Sigma \text{ TEO } [(\text{numerical quality score}) \times (\text{FTE status of researcher}) \times (\text{funding weighting for relevant subject area})]}{\Sigma \text{ all TEOs } [(\text{numerical quality score}) \times (\text{FTE status of researcher}) \times (\text{funding weighting for relevant subject area})]} \times \textbf{total amount of funding available for the Quality Evaluation component of the PBRF}$$

QUALITY CATEGORIES

The PBRF funding generated through the staff who articipate in the Quality Evaluation is determined by the quality category assigned to their EP by the relevant peer review panel. These quality categories are then given a numerical weighting known as a 'quality weighting'. The quality weightings used in the 2006 Quality Evaluation are outlined below.

Quality Category	Quality Weighting
A	5
B	3
C	1
C (NE)	1
R	0
R (NE)	0

FUNDING WEIGHTING FOR SUBJECT AREAS

Subject-area weightings are based on an EP's primary subject area of research. The current funding weightings for subject areas are shown below

Subject areas	Funding category	Weighting
Māori knowledge and development; law; history, history of art, classics and curatorial studies; English language and literature; foreign languages and linguistics; philosophy; religious studies and theology; political science, international relations and public policy; human geography; sociology, social policy, social work, criminology and gender studies; anthropology and archaeology; communications, journalism and media studies; education; pure and applied mathematics; statistics; management, human resources, industrial relations, international business and other business; accounting and finance; marketing and tourism; and economics.	A, I, J	1
Psychology; chemistry; physics; earth sciences; molecular, cellular and whole organism biology; ecology, evolution and behaviour; computer science, information technology, information sciences; nursing; sport and exercise science; other health studies (including rehabilitation therapies); music, literary arts and other arts; visual arts and crafts; theatre and dance, film and television and multimedia; and design.	B, L	2
Engineering and technology; agriculture and other applied biological sciences; architecture, design, planning, surveying; biomedical; clinical medicine; pharmacy; public health; veterinary studies and large animal science; and dentistry.	C, G, H, M, Q	2.5

FULL-TIME EQUIVALENT STATUS OF STAFF

The FTE status of each staff member is also a factor in the formula. Funding is generated in proportion to FTE status (as supplied by TEOs in the PBRF Census: Staffing Return). Four particular considerations apply to FTE calculations, as follows:

- When staff were concurrently employed at two TEOs during the year before the Census date in 2006, they generated an FTE entitlement for each organisation based on their FTE status in their employment agreement with each TEO.

- For most staff, the FTE that applied was the FTE status in the week of 12 June 2006 to 16 June 2006. (The PBRF Census date for the 2006 Quality Evaluation was 14 June 2006.) However, if staff had changed their employment status within the TEO during the previous 12 months, their FTE status was their average FTE over the period (for example six months at 0.5 FTE and six months at 1 FTE = 0.75 FTE).

- When a staff member started employment in the 12-month period before the census and was previously not employed by a participating TEO, then (providing they have an employment agreement of one year or more) their FTE status was as their employment agreement stated it to be at the census.

- When a staff member left one participating TEO to take up a position in another participating TEO in the 12 months before the census, both TEOs had a proportional FTE entitlement.

基準2：EXTERNAL RESEARCH INCOME

The external research income (ERI) measure accounts for 15 percent of the total funds allocated through the PBRF each year. ERI is included as a performance measure in the PBRF on the basis that it provides a good proxy for research quality. The underlying assumption is that external research funders are discriminating in their choice of who to fund, and that they will allocate their limited resources to those they see as undertaking research of a high quality.

ERI is defined as the total research income received by a TEO (and/or any wholly-owned subsidiary), excluding income from:

- **TEO employees who receive external research income in their personal capacity (i.e. the external**

research income is received by them and not their employer)

- **controlled trusts**
- **partnerships**
- **joint ventures.**

EXTERNAL RESEARCH INCOME

Only income for work that has actually been undertaken may be included in the ERI calculation.

A complete description of inclusions and exclusions is given in the PBRF Guidelines 2006 (Chapter Five) along with guidance on the status of joint or collaborative research.

TEOs that participate in the ERI measure submit returns to the TEC showing the amount of PBRF-eligible ERI they have earned. This amount represents their total PBRF-eligible ERI for the 12 months ending 31 December of the preceding year. A declaration signed by the TEO's Chief Executive, as well as an independent audit opinion, is provided to the TEC to support each ERI calculation. If the total ERI is less than $200,000, the TEO is permitted to submit its worksheets in lieu of an independent audit opinion.

FUNDING FORMULA FOR EXTERNAL RESEARCH INCOME MEASURE

The ERI measure is calculated as a weighted three-year rolling average. The formula used to calculate the ERI measure for 2009 is:

$$\frac{\Sigma\,[(\text{ERI for TEO 2005} \times 0.15) + (\text{ERI for TEO 2006} \times 0.35) + (\text{ERI for TEO 2007} \times 0.5)]}{\Sigma\,[(\text{Total ERI for all TEOs 2005} \times 0.15) + (\text{Total ERI for all TEOs 2006} \times 0.35) + (\text{Total ERI for all TEOs 2007} \times 0.5)]} \times \textbf{total}\ \text{amount of funding available for the ERI component of the PBRF}$$

The formula used to calculate the ERI measure for 2010 is:

$$\frac{\Sigma\,[(\text{ERI for TEO 2006} \times 0.15) + (\text{ERI for TEO 2007} \times 0.35) + (\text{ERI for TEO 2008} \times 0.5)]}{\Sigma\,[(\text{Total ERI for all TEOs 2006} \times 0.15) + (\text{Total ERI for all TEOs 2007} \times 0.35) + (\text{Total ERI for all TEOs 2008} \times 0.5)]} \times \textbf{total}\ \text{amount of funding available for the ERI component of the PBRF}$$

基準3：RESEARCH DEGREE COMPLETIONS

The research degree completions (RDC) measure accounts for 25 percent of the total funds to be allocated through the PBRF each year. The use of RDC as a performance measure in the PBRF serves two key purposes:

• It captures, to some degree, the connection between staff research and research training – thus providing some assurance of the future capability of tertiary education research; and • It provides a proxy for research quality. The underlying assumption is that students choosing to

undertake lengthy, expensive and advanced degrees (especially doctorates) will tend to search out departments and supervisors that have excellent reputations in the relevant fields for high quality research and research training.

59. To be eligible for the RDC measure, research-based postgraduate degrees (for example Masters and Doctorates) must be completed within a TEO and must meet the following criteria:

• the degree has a research component of 0.75 Equivalent Full-Time Student (EFTS) value or more;

• the student who has completed the degree has met all compulsory academic requirements by 31 December of the relevant year; and

• the student has completed the course successfully.

RESEARCH DEGREE COMPLETIONS

Since early 2010, the TEC and PBRF-participating TEOs have been working to reduce compliance costs and improve the transparency of the data underpinning the RDC measure. This work has led to:

- **an agreed transition-path to using the SDR to count RDC, removing a manual corrections process**
- **the introduction of agreed RDC business rules.**

61. 2009 PBRF allocations are the last to use RDC data that has been supplied using a manual process outside the SDR. 2011 indicative allocations have been calculated using RDC data directly extracted from the SDR, and 2010 funding wash-ups that are scheduled for July 2011 will also use this approach.

FUNDING FORMULA FOR RESEARCH DEGREE COMPLETIONS MEASURE

The RDC measure is calculated as a weighted three-year rolling average. The formula used to calculate the number of research degree completions for each TEO is:

RDC= [(research component weighting) x (cost weighting for relevant subject area) x (equity weighting)]

The funding formula for the proportion of the RDC measure allocated to each TEO in 2009 is:

$$\frac{\Sigma\,[(\text{RDC for TEO 2005} \times 0.15) + (\text{RDC for TEO 2006} \times 0.35) + (\text{RDC for TEO 2007} \times 0.5)]}{\Sigma\,[(\text{Total RDC for all TEOs 2005} \times 0.15) + (\text{Total RDC for all TEOs 2006} \times 0.35) + (\text{RDC for all TEOs 2007} \times 0.5)]} \times \textbf{total}\ \text{amount of funding available for the RDC component of the PBRF}$$

The funding formula for the proportion of the RDC measure allocated to each TEO in 2010 is:

$$\frac{\Sigma\,[(\text{RDC for TEO 2006} \times 0.15) + (\text{RDC for TEO 2007} \times 0.35) + (\text{RDC for TEO 2008} \times 0.5)]}{\Sigma\,[(\text{Total RDC for all TEOs 2006} \times 0.15) + (\text{Total RDC for all TEOs 2007} \times 0.35) + (\text{Total RDC for all TEOs 2008} \times 0.5)]} \times \textbf{total}\ \text{amount of funding available for the RDC component of the PBRF}$$

FUNDING FORMULA AND ALLOCATIONS

The funding formula for the RDC component includes weightings for:

- **the funding category of the subject area (a cost weighting);**
- **Ma - ori and Pacific student completions (an equity weighting); and**
- **the volume of research in the degree programme (a research-component weighting).**

Table below shows the cost weighting (for the subject area), which is the same as that applied in the Quality Evaluation part of the PBRF and is determined by the course's Student Achievement Component funding category as set down in the course register.

Student Achievement Component - Funding Category	Weighting
A, I , J	1
B, L	2
C, G, H, M, Q	2.5

配分結果

PBRF QE allocation								
TEO name	2004	2005	2006	2007	2008	2009	2010	2011
Auckland University of Technology	$210,721	$505,984	$1,553,528	$3,390,225	$3,805,474	$3,921,882	$4,107,649	$4,108,163
Lincoln University	$297,108	$713,415	$2,190,408	$3,861,572	$4,334,554	$4,467,147	$4,678,741	$4,679,326
Massey University	$1,325,959	$3,183,899	$9,775,564	$18,017,865	$20,224,767	$20,843,440	$21,830,726	$21,833,456
University of Auckland	$3,015,170	$7,240,038	$22,229,174	$33,443,196	$37,539,456	$38,687,782	$40,520,297	$40,525,364
University of Canterbury	$1,177,932	$2,828,456	$8,684,243	$13,118,260	$14,725,038	$15,175,475	$15,894,288	$15,896,276
University of Otago	$2,158,243	$5,182,379	$15,911,520	$27,758,620	$31,158,612	$32,111,749	$33,632,779	$33,636,984
University of Waikato	$690,105	$1,657,082	$5,087,760	$7,896,033	$8,863,172	$9,134,295	$9,566,957	$9,568,154
Victoria University of Wellington	$869,633	$2,088,167	$6,411,324	$12,049,109	$13,524,934	$13,938,659	$14,598,889	$14,600,714

PBRF RDC allocation								
TEO	2004	2005	2006	2007	2008	2009	2010	2011
Auckland University of Technology	$66,028	$136,773	$519,782	$1,610,426	$2,031,786	$1,747,509	$2,750,001	$3,297,160
Lincoln University	$151,212	$330,007	$1,046,292	$1,288,303	$1,996,892	$2,111,036	$1,847,373	$1,805,332
Massey University	$704,195	$1,633,511	$4,723,206	$8,977,919	$9,958,596	$9,953,870	$8,553,337	$8,097,302
University of Auckland	$880,778	$2,546,391	$9,081,237	$17,533,849	$18,941,949	$17,952,070	$18,880,667	$19,688,355
University of Canterbury	$610,146	$1,694,895	$4,679,754	$5,748,401	$5,954,158	$7,105,856	$8,628,278	$8,231,019
University of Otago	$893,745	$1,791,331	$4,819,082	$7,199,552	$9,861,896	$10,479,672	$10,729,964	$10,603,094
University of Waikato	$390,257	$815,826	$2,549,434	$3,693,500	$4,485,196	$4,289,982	$4,272,878	$3,979,003
Victoria University of Wellington	$402,076	$900,734	$2,796,146	$4,883,820	$3,687,545	$4,905,701	$5,727,470	$5,543,847

PBRF ERI allocation								
TEO	2004	2005	2006	2007	2008	2009	2010	2011
Auckland University of Technology	$15,678	$46,347	$185,475	$436,671	$668,257	$750,737	$723,069	$701,081
Lincoln University	$109,043	$306,603	$1,131,131	$1,886,049	$1,971,119	$2,019,161	$2,096,185	$1,997,286
Massey University	$307,913	$789,690	$2,429,127	$4,015,882	$4,390,980	$4,553,416	$4,632,232	$4,732,732
University of Auckland	$887,860	$2,220,465	$7,060,909	$11,753,204	$13,036,694	$13,159,165	$13,843,535	$13,743,207
University of Canterbury	$183,372	$429,558	$1,046,716	$1,756,910	$2,154,017	$2,432,052	$2,608,402	$3,011,603
University of Otago	$676,647	$1,476,666	$4,287,490	$7,198,166	$7,888,479	$8,031,620	$8,584,062	$8,279,778
University of Waikato	$136,564	$332,408	$1,023,833	$1,707,052	$1,817,980	$1,826,897	$1,788,248	$1,820,769
Victoria University of Wellington	$159,203	$337,801	$1,055,790	$1,897,384	$2,436,084	$2,642,736	$2,890,712	$2,944,408

効果計測：MAKING AN IMPACT

（This report analyses the bibliometric performance of New Zealand universities between 1994 and 2007 using data from Thomson Reuters. The report also examines the impact of the Performance-Based Research Fund (PBRF) on the academic impact of research by staff at New Zealand universities, as measured by citations per publication. In addition, the report compares the bibliometric performance of New Zealand universities with Australian universities.

Author(s): Warren Smart, Tertiary Sector Performance Analysis & Reporting, Ministry of Education

Date Published: March 2009

効果計測：MAKING AN IMPACT

Summary of key findings

• The share of world indexed publications produced by New Zealand university authors has increased since the PBRF was introduced.

• The share of world indexed citations by New Zealand university research has increased since the PBRF was introduced.

• The overall relative academic impact of research has increased since the PBRF was introduced.

• Between 2003 and 2007, the relative academic impact of New Zealand university research was higher than the Group of Eight (G8) research universities in Australia in three out of 10 broad subject areas.

• Between 2003 and 2007, the relative academic impact of New Zealand university research was higher than the Non-G8 Australian universities in eight out of 10 broad subject areas.

効果計測：WHAT WE GET FOR WHAT WE SPEND

This report synthesises the inputs, outputs and outcomes of the Government's tertiary education expenditure over the period 2006 to 2010 in eight key funds. In total, these funds distributed around $4.6 billion to providers and students in 2010.

Author(s): Tertiary Sector Performance Analysis

Date Published: February 2012

効果計測：WHAT WE GET FOR WHAT WE SPEND

Student Achievement Component (SAC) ($1,909 million in 2010)

Total SAC funding has increased in real terms between 2006 and 2010. This has been driven by a moderate increase in the number of funded equivalent full-time students (EFTS) and increases in funding rates.

Actual delivered EFTS increased by just 0.9 percent in 2010, with over-delivery in the system dropping to 4.4 percent in 2010, compared with 5.1 percent in 2009.

The value of successful course-level study increased in 2010 due to a mix of continued over-delivery and the improvement in the percentage of successful course-level study.

The five-year completion rate of students who studied SAC-funded qualifications on a full-time basis continued to increase in 2010.

Between 2006 and 2010, an increasing proportion of SAC-funded qualifications awarded were to students aged under 25 and studying at level 4 or higher. The proportion of Māori or Pasifika students completing SAC-funded qualifications at level 4 or higher dropped slightly in 2010.

People with tertiary qualifications continued to enjoy higher earnings premiums and a higher likelihood of employment than people with school level or no qualifications.

効果計測：WHAT WE GET FOR WHAT WE SPEND

Performance-Based Research Fund (PBRF) ($250 million in 2010)

There was a substantial increase in PBRF funding (including research top-ups) between 2006 and 2010 in real terms.

Although dropping slightly in 2010, the amount of external research income earned per staff member is significantly higher than in 2006.

The volume of research degree completions per staff member has continued to rise over time.

Postgraduate qualification completion rates have continued to improve.

The rate of citation of indexed publications by authors from New Zealand tertiary education institutions has improved over time.