

Submission on the Performance-Based Funding for the Commonwealth Grant Scheme

Thank you for the opportunity to provide this feedback. We believe Australia is well-placed to re-evaluate our performance-based funding (PBF) model for Australian universities given Australia's comprehensive data collections. We further believe it is an opportune time for the Australian Government to consider a robust PBF model due to our leadership in the area of production economics and the additional benchmarking opportunities afforded by the UK's Teaching Excellence Framework (TEF) and their open data.

Collaborators Honorary Professor Knox Lovell and Ms Le Hoa Phan (The University of Queensland), Dr Boon L. Lee (Queensland University of Technology), Professor Jill Johnes (University of Huddersfield, UK) and Professor Geraint Johnes (Lancaster University, UK), believe that PBF for the Commonwealth Grant Scheme should consider the multilevel nature of student data, as well as the resources, strategies, and supports universities put in place to help their students to attain higher education qualifications.

In this submission, we build-upon the methods outlined in the PBF Discussion Paper by advocating that the Australian Government adopt a production economics approach to the management and delivery of performance-based funding for the Commonwealth Grant Scheme. We firstly respond to the questions posed in the PBF Discussion Paper then outline some additional recommendations. We believe our approach is likely to provide Australian universities with fit for purpose and fair performance funding, while being robust and feasible for the Australian Government to administer.

Responses to Consultation Questions

1. How should the PBF Scheme be implemented?

- **Consideration 1: how to grow a university's PBF amount from 2021**

We advocate a regional-based approach to the growth of PBF to ensure that there are equitable allocations of funding. This will help to account for regions with potentially higher population growth with increased competition for students (e.g. Brisbane, Melbourne, and Sydney) where there are higher populations and higher numbers of universities. This will further allow for adjustments where populations might decline.

- **Consideration 2: how to treat a university's PBF amount from 2021**

As the PBF approach we are advocating in this submission relies on a pool of funds to be made available for redistribution, we believe that future PBF amounts should be kept separate from a university's MBGA so that it incentivizes sector-wide shifts in performance.

2. What performance measures should the PBF scheme draw on?

In the first instance, performance measures should reflect the aspirations of national interests, while giving universities agency to identify their own areas of improvement and enhancement. Acknowledging the complexities associated with the measurement of performance related to teaching and learning, as discussed by Coaldrake and Steadman (2016)¹, we believe that performance measures for the PBF should include those currently available through the higher education statistics. These measures as comparable to the UK's TEF datasets.

In addition to the currently available data, we recommend the Government consider the following variables that may be used as measures of performance in future:

¹ Coaldrake, P. and Steadman, L. (2016). *Raising the stakes: Gambling with the future of universities*. Second edition. St Lucia: University of Queensland Press.

- Later years' attrition: Although first year attrition contributes to considerable economic inefficiencies for the Government, universities, and students, we believe there is merit in tracking later years' attrition. Later years' attrition will help to evaluate whether universities are monitoring their students' progress through to completion. We are concerned that later years' attrition will pose a greater economic burden for students who have accrued more debt than those who have left in their first year.
- Over enrolment: Due to our experience with student data and threats from contract cheating, we believe the Government should monitor the ratio of students who are over-enrolled per year. We understand that not all Australian University place a cap on the number of enrolments students can have in a semester. Based on a semester system, we believe that an acceptable maximum number of units (components that contribute to an award) per year, per student is eight units. Accordingly, based on a trimester system, an acceptable maximum is 12 units.

3. How should the PBF scheme be designed?

Our recommended approach aims to encourage universities to take steps to enhance their own institutional quality in the first stage, as well as contributing to further sector-wide shifts in quality in the second stage. This two-stage approach acknowledges that a robust and equitable PBF model requires both quantitative and qualitative evidence of achievements that are further informed by objective and value-added independent judgements. It further aims to guard against well-known risks associated with PBF systems that may cultivate practices intent on "gaming the system". As safeguard for the PBF model, we propose the two-stage approach that is summarised below.

As background, we take a higher education production economics approach. Production economics is a well-established and researched field of economics with foundations in engineering and manufacturing. Over the years, further research into its applicability to not-for-profit sectors has led to developments in methods, including Data Envelopment Analysis (DEA)² and Stochastic Frontier Analysis (SFA)³; further coupled with other statistical and machine learning methods. When applied to the higher education context and in its simplest form, the higher education production function for teaching and learning for a university uses inputs (e.g. students, staff, or funding) to produce outputs (e.g. completions, graduate outcomes and satisfaction). Due to the complex nature of the higher education production function, variables beyond the control of universities (often referred to as environmental, exogenous, or random effect variables) are also considered.

Stage 1:

Building on the examples outlined in the PBF Discussion Paper, universities are given the opportunity to self-select key performance indicators (KPI) from a designated pool pre-specified by the Government. The pool of KPIs available for selection should be based on historic evidence identifying areas needing improvement or enhancement for each individual university; identifiable through below sector-average performance. The pool should also provide universities with enough flexibility to allow them to be agents of their own self-improvement or enhancements. The self-selection process should be structured like an Australian Research Council Grant Opportunity (ARCGO) process whereby each university is required to outline strategies to address their selected KPIs with budget justifications at a maximum of 30% of available PBF funding for an individual university. Then with approval from the Government, each university is given funding to implement their self-improvement/enhancement strategies. This approach, thus, leverages the successes from the ARCGO, Learning and Teaching Performance Fund, and UK TEF.

² Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2(6), 429-444. [https://doi.org/10.1016/0377-2217\(78\)90138-8](https://doi.org/10.1016/0377-2217(78)90138-8)

³ Kumbhakar, S. C. & Lovell, C. A. K. (2000). *Stochastic Frontier Analysis*. Cambridge, UK: Cambridge University Press.

For example, based on the findings from Higher Education Standards Panel's⁴ analyses of the factors that contributed to higher attrition rates, a pool of KPIs specified by the Government for the University of Tasmania could include targets related to a yearly reduction of domestic first year attrition. A year after implementation of the self-improvement/enhancement strategies, individual PBF funding is then awarded to universities that have met their targets once reviewed by an independent panel of peers. Guidelines should also be developed to help the review panel in making their recommendations as to whether a university should be awarded no performance-based funding, an additional 20%, 30%, or a maximum of 40% of their allocated PBF funding. Where institutional funds are not allocated in this first stage, those funds are redistributed to the available pool for distribution in the second stage.

Stage 2:

To encourage sector-wide shifts in performance and enable the Government to focus the sector on the achievement of socially and economically valued targets that may be refined to meet labour market trends, the remaining funding (at a minimum of 30% of the available funding per institution with the additional pool of unallocated Stage 1 funding) is distributed to universities estimated as best-practice performers when benchmarked against all peers. For this stage, benchmark peers are all Australian universities eligible for PBF allocations. Variables included as inputs and outputs should be articulated by the Government at least 18 months prior to the allocation of funds. This lead-in time provides universities with sufficient time to evaluate their priorities and select Stage 1 targets that have been considered against the sector-wide targets. As Stage 2 provides funding against sector peers, this stage can be implemented yearly or every three or five years. For example, 2020 sector-wide targets focused on undergraduate outcomes for students from Low socio-economic status (SES) and indigenous backgrounds could include the following variables:

- Inputs – Total enrolments (these may be weighted by undergraduate students' backgrounds or study modes, as required), total staffing, and total funding.
- Outputs – Total completions, research income (or other research outputs that acknowledge that universities also contribute to research), and student satisfaction through QILT data.
- Environmental variables – Participation ratio of undergraduate Low SES and Indigenous students.

Based on the listed variables, a two-stage DEA⁵ or Network DEA⁶ method can then be used to estimate the best-practice performers given the listed variables. Best-practice universities could then be rewarded for their performance through equal or percentage ratio redistributions of the available funds.

4. How should performance measure benchmarks be set?

As previously described, performance benchmarks should be set in two stages: at University-Government agreed levels to encourage improvements in the first stage; and at the sector-wide, best-practice performance benchmarking in the second stage.

5. Should the PBF funding of unsuccessful universities be redistributed?

PBF funding of unsuccessful universities should be added to a pool for redistribution in the second-stage of our approach. This design helps to focus universities on self-improvement and enhancement while helping to shift sector-wide performance.

6. How much "lag" is acceptable between PBF data and the funding year?

Our approach provides the Government with flexibility in that Stage 1 PBF data and funding can be

⁴ Higher Education Standards Panel (2017). *Improving retention, completion and success in higher education*. Department of Education & Training. https://docs.education.gov.au/system/files/doc/other/final_discussion_paper.docx

⁵ Simar, L., & Wilson, P. W. (2011). Performance of the Bootstrap for DEA Estimators and Iterating the Principle. In W. W. Cooper, L. M. Seiford, & J. Zhu (Eds.), *Handbook on Data Envelopment Analysis* (pp. 241-271). New York, NY: Springer.

⁶ Färe R., Grosskopf S., Whittaker G. (2007). Network DEA. In J. Zhu & W.D. Cook (Eds), *Modeling Data Irregularities and Structural Complexities in Data Envelopment Analysis* (pp. 209-240). Boston, MA: Springer.

annual, with the individual PBF funding component (at the maximum of 40%) provided in a subsequent year. If the Government adopts the use of later years' attrition as a performance measure (along with other longer-term measures), then an acceptable lag period of up to three or five years will allow the Government to track sector-wide shifts after three or five years. This will then provide a broader view of the higher education production process across the sector. A three or five year lag will further allow universities to track their progress against the sector wide trends in order to make adjustments as needed to improve their performance for the Stage 2 round of PBF.

7. How should the PBF scheme be regulated?

In our approach, we have advocated the formulation of an independent panel of peers to evaluate whether a university should be awarded their Stage 1 PBF. We further understand that the formulation of TEQSA has led to considerable burdens for the sector. Consequently, we believe that the PBF scheme should be regulated by the Government with advice provided by the panel of peers.

Additional Recommendations: Extension of Recommended Approach with International Benchmarking

To ensure that the Australian methodology is robust according to international peers, data from Australian universities could be further benchmarked against the UK. Given the implementation of the UK's TEF, the performance of Australian universities could be benchmarked against UK universities to test the robustness of our sector-wide progress for Stage 2 in our outlined approach. To be able to complete this benchmarking, the selections of variables would need to meet the aims of the benchmarking activity as well as being subject to data availability. Additional PBF could be subsequently provided to Australian universities that demonstrate year-on-year positive shifts when benchmarked against the UK. This would require modification of the recommended two-stage approach into a three-stage approach, whereby a minimum amount is reserved for international benchmarking outcomes.

As an added incentive for universities and adopting the UK's TEF incentive, best-practice performers can be given the authority to increase their fees, for example above 2% of existing fee schedules, for courses *not* listed as National Priorities under the Higher Education Support Act 2003. This helps to address recurrent debates about fee deregulations while adding an additional incentive that is not reliant on Government funding.

Summary of Benefits

1. The approach we have outlined affords Australian universities the opportunity to focus on self-enhancement in the first stage, while contributing to sector-wide shifts in performance related to national priorities.
2. The multi-stage distribution of PBF provides universities multiple opportunities to acquire PBF.
3. The addition of international benchmarking extends Australia's commitment to ensuring that our universities stay internationally competitive.

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