



Australian Government  
Department of Education and Training

# Performance-based funding for the Commonwealth Grant Scheme

Discussion paper



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# Performance-based funding scheme

## Introduction

The demand driven system has led to expanded opportunities for students, but it also resulted in a rapid escalation in public expenditure. Starting in 2009, the then government relaxed restrictions on the number of Commonwealth supported places (CSPs) it would fund. Consequently, from 2009 to 2017, annual taxpayer funding of public universities via the Commonwealth Grants Scheme (CGS) increased by 71 per cent, reaching \$7.0 billion. Total base funding for teaching and learning, including CGS subsidies and student contributions which are mainly deferred through the Government's HECS-HELP scheme, increased 73 per cent to \$11.9 billion. This rate of growth was not financially sustainable and did not significantly address large equity issues in attainment.

Funding in 2018 and 2019 was capped at 2017 levels to address this issue. From 2020, funding for bachelor-level places will grow in line with population growth in the 18-64-year-old age bracket, with universities being able to access this funding if they meet specified performance requirements.

Australians expect their taxpayer-funded public universities to deliver quality higher education. It is expected that universities continue to recruit from both regional and metropolitan areas, and from both low socio-economic status (SES) and high SES areas. The disparity in attainment between students from metropolitan areas and those who live in rural, regional and remote areas or come from areas of low SES disadvantage must be addressed. It is also expected that university students are satisfied with their experience, that they complete their qualifications, and that they are employed after they graduate. A performance-based funding scheme will ensure universities' objectives align with those of their students, the Government and the public.

The current system already offers universities some performance incentives. For example, retaining a student results in further CGS payments and student contributions. Additionally, the Government has responded to concerns regarding university admission practices, student retention and graduation rates through the introduction of new transparency guidelines for admissions, expansion of the Quality Indicators for Learning and Teaching (QILT) website and public release of retention and completion data at the individual university level.

Nevertheless, the Government considers that the incentive for universities to focus on the outcomes that matter most to students should be strengthened. The Government recognises that the CGS, as a direct financial incentive, is the most important lever the Government has to drive university behaviour. The Government wants to ensure high performance at universities by linking funding growth to performance and equity requirements.

The Government recognises that performance measures can be challenging and will need to reflect a balance between a broad range of priorities and endeavours undertaken by universities.

Nevertheless, the CGS is the largest grant provided by the Commonwealth for higher education by a considerable margin, and in the light of the public policy interest in university equity, admissions, attrition, and student outcomes, it is appropriate to introduce a level of monetary accountability for universities' use of public funds in this area.

### **Purpose of this paper**

This discussion paper provides an introduction to the notion of performance-based funding and outlines the rationale driving the need for it in Australia's higher education system. This paper then presents the design principles that have been developed to ensure effective development of such a system. The legislative and technical basis for linking funding to performance targets is also discussed, as well as key implementation considerations. Finally, the paper presents key consultation questions for higher education stakeholders to consider and respond to. The Department of Education and Training regards responses to these questions and the discussion paper an important part of the consultation process.

## **Rationale**

### **Ensuring quality in the higher education sector**

The performance-based funding (PBF) scheme will promote quality in Australian higher education. The demand driven approach to funding higher education heralded a system that saw growth in the sector principally through quantity. By ensuring a link between funding growth and performance, the sector will now see that further growth occurs when quality is demonstrated.

Ideally, higher quality and efficient providers would be rewarded with greater market share, leading to an overall increase in the quality of the sector. However, the market for Commonwealth-supported higher education does not behave as a conventional market. For instance, a HELP scheme designed to ensure student fees do not lead to up-front barriers to study leads to low price sensitivity for students. With higher education considered an experience good (a good whose quality is difficult to assess in advance), students may not necessarily choose the best quality product for them, limiting the capacity for the market to see improvements in quality.

In such a distorted market, governments have intervened by regulating standards, student numbers, and fees. Furthermore, QILT has gone some way to addressing potential information asymmetries by providing some information regarding university performance. A stronger link between quality and funding will go further towards ensuring higher education achieves a high standard of quality across the entire sector and is affordable and sustainable for both students and taxpayers.

### **Incentivising improvement at poorer performing universities**

Overall, Australian universities compare well with their international peers, but at times this masks considerable differences between institutions. For instance, the Higher Education Standards Panel report into *Improving retention, completion and success in higher education* (2017) identifies the following three public universities as having significantly higher adjusted attrition rates in 2014 compared to 2005: University of Tasmania, Federation University of Australia, and Swinburne University of Technology. As the report notes, while the adjusted attrition rate for all Table A and B providers increased between 2005 and 2014 (from 15.04 per cent to 15.18 per cent), excluding these three universities from the calculation actually shows that attrition has reduced from 14.97 per cent to 13.63 per cent.

Nevertheless, university performance is more than just attrition and it is important to acknowledge that performance by universities can also vary across indicators. For instance, all three of these universities mentioned above actually have very good graduate employment outcomes: Federation University Australia's employment rate was 4th highest, Swinburne University of Technology's was 7th highest and University of Tasmania's rate was 12th highest (out of 41 universities). Additionally, Swinburne University of Technology exhibits the 8th highest student satisfaction (out of 41 universities), according to the QILT student experience survey.

It is important to ensure all universities achieve the level of performance in teaching and learning appropriate to the level of public investment they receive. Linking government funding to performance will encourage improvement for all universities across all performance measurements.

### **Ensuring efficient spending of public funding**

Australians expect their public universities to be managed efficiently, while providing value for money and minimising administrative costs. Universities must ensure they are demonstrably using the substantial taxpayer and private funds they receive in the most efficient and effective way possible and to maximise the public and private benefits of their funding for bachelor students.

Linking funding growth to performance will not only encourage universities to provide a better student experience and quality teaching, but also encourage universities to introduce new and more efficient initiatives to improve their performance, support student retention and boost graduate employment outcomes.

## Design

The Australian Government has previously operated performance funding for higher education teaching and learning. In 1991, *Performance Indicators in Higher Education* were published, with less than 10% of total government funds serving as incentive funding for outstanding performance. In 2003, the government announced the establishment of performance-based funding for Australia's higher education institutions through the *Learning and Teaching Performance Fund* (LTPF). The LTPF provided additional funding to the institutions that performed best on a number of measures including graduate outcomes, student experience, progression and attrition. A review (DEEWR 2008) found that the LTPF had increased university attention to learning and teaching, and encouraged the development of standardised tools to collect data on the student experience.

Following the 2008 *Review of Australian Higher Education* (Bradley Review), the government announced the cessation of the LTPF and the introduction of new performance funding arrangements. Performance measures to be used under the new *Reward Funding* scheme were to include participation and social inclusion, student experience and quality of learning outcomes. By the time of the closure of the scheme in 2014, participation and social inclusion were the sole determinants of Reward Funding. Over the period that Reward Funding operated equity performance measures such as the proportion of students from a low socio-economic background improved due to the added focus placed on them by the Government and institutions themselves.

Throughout both iterations of performance funding, there was intense debate concerning the appropriate measures to tie to university funding, and the extent to which measures should take into account the individual circumstances of universities. The Government acknowledges the importance of learning from previous experiences and working with the sector to develop satisfactory measures to inform the PBF scheme from 2020 onwards.

Since 2015, with the availability of the QILT website, and the recent publication of completion rates by university, institutional performance information as encapsulated by numerical measures has become more publicly accessible. Universities undertake their own internal studies of performance, and have advertised their success on QILT measures when results are favourable. Similarly, the Government is determined to take advantage of this kind of data to drive accountability and a high quality student experience.

### **International moves to implement performance-based funding**

Australia is not the only country to link public higher education funding to performance measures. A number of other jurisdictions operate such arrangements for their teaching and learning funds, both for government grants and student fees.



## Examples of performance-based funding in higher education

### ***The Teaching Excellence and Student Outcomes Framework (UK)***

*The Teaching Excellence and Student Outcomes Framework (TEF) was introduced to measure teaching quality and student outcomes across higher education in the UK in 2016. An independent review panel uses evidence from core measures, considering supplementary measures alongside evidence from provider submission to determine a provider's TEF rating: Bronze, Silver or Gold. Providers achieving a TEF rating will maintain their fees in line with inflation. In its first full year of assessment from 2017-2018, ratings are awarded at provider-level with no differential financial incentives. The final design of subject-level TEF for full implementation will be based on the second subject-level pilot and an independent review.*

### ***Performance-Linked Funding (New Zealand)***

*The New Zealand Government implemented performance-linked funding in 2012 to promote continuous improvement in educational performance. A maximum of 5% of a Student Achievement Component funded tertiary education organisation's (TEO) funding is contingent on the TEO's performance in the previous year(s) against the educational performance indicators (EPIs). The EPIs are weighted differently for the three grouped New Zealand Qualifications Framework levels: Level 1-3, Level 4-7 (non-degree), and Level 7-8. Those TEOs performing above the upper performance threshold will be allocated the full amount of reserved funding. For TEOs below the lower threshold, all of the reserved funding will be withheld. A portion of the reserved funding is withheld for TEOs whose performance scores fall between the upper and lower thresholds.*

### ***Performance-Based Funding Models (US)***

*To date, 32 states have a performance-based funding model in place based on performance indicators; many states are reconsidering their existing enrolment-based funding models to align with state goals and priorities (National Conference of State Legislatures, 2015). In Tennessee, under the current formula-driven funding model, after a base amount is set aside for operational support, 100% of state funding is allocated based on a university's weighted outcomes (National Conference of State Legislatures, 2015). Moreover, universities can obtain a 5.45% bonus if they perform well compared to the other universities on particular metrics set by the state. In Louisiana, the formula-based funding model comprise a performance component (15% of base appropriations) and a potential bonus (10% raise in tuition fee) for good performance (de Boer et al., 2015).*

## Design Principles

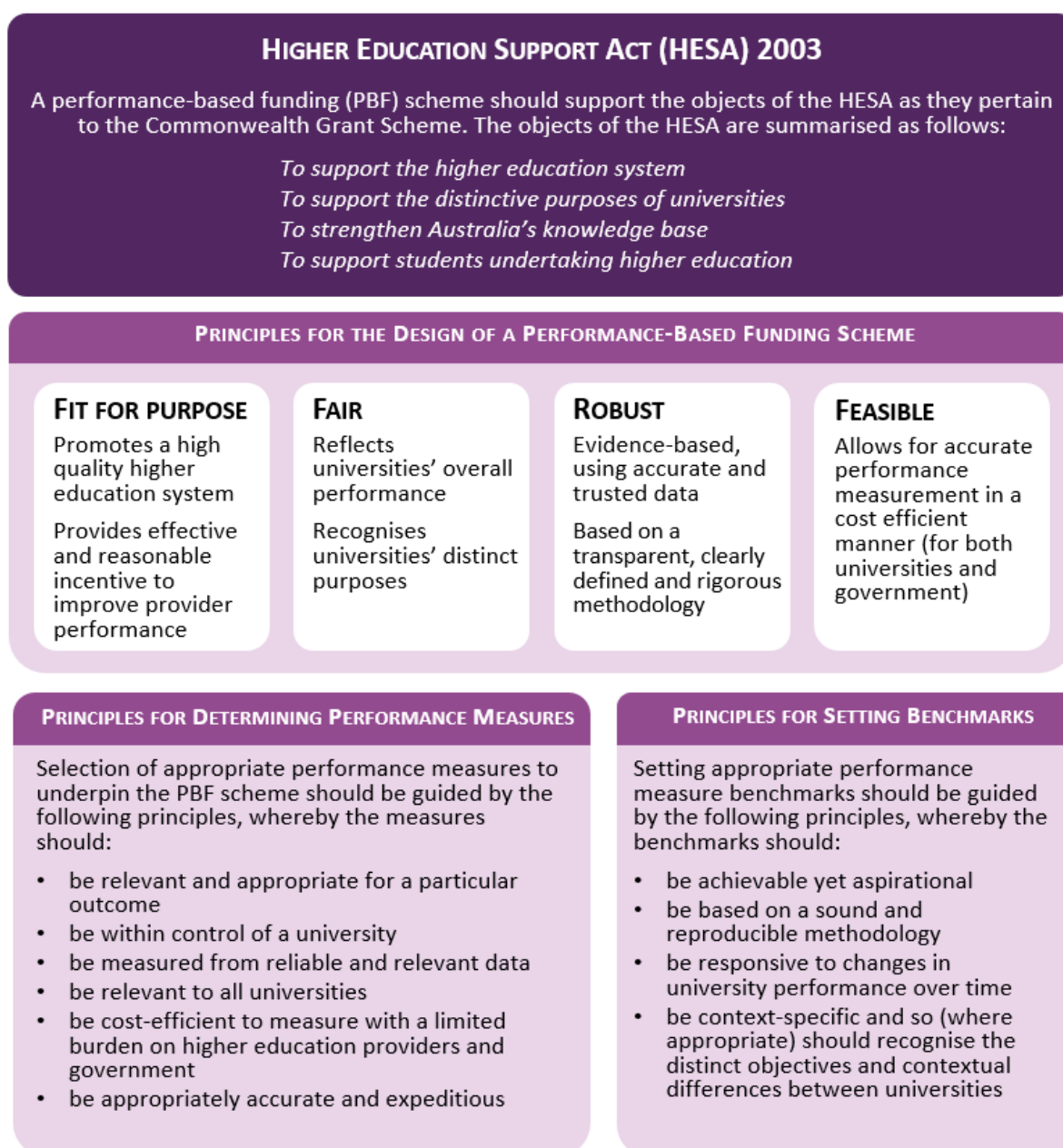
The objects of the *Higher Education Support Act 2003* (HESA) provide a framework for assessing what we want from Australia's higher education sector and how providers are performing. To this end, the PBF scheme must support the objects of the HESA (as they relate to the CGS).

The overall scheme design must not only support the objects of the HESA, but should also encourage universities to improve their performance and the quality of the whole sector. It should be fair and reflect the variety of providers (and provider missions) in the sector, should be well-formed and evidence-based, and should be cost-efficient (for both universities and the Australian Government).

The performance measures themselves should be appropriate and relevant to driving improved university performance, should be within control of universities, and should be straightforward to measure. The measure benchmarks that universities must achieve to receive performance funding should be achievable yet aspirational, should be set according to a sound methodology, and should take into account a university’s mission and unique student cohort.

A summary of the principles framework for the PBF scheme for the CGS is presented in the figure below.

**Figure 1 - Performance funding scheme principles framework**



## Process and Implementation

### Legislative and technical basis

The HESA provides the Minister for Education with authority to set a maximum basic grant amount (MBGA) in a provider’s funding agreement for non-designated courses of study (30-27(1)(a)(ii)). Each Table A provider’s funding agreement for 2018–20 provides that:

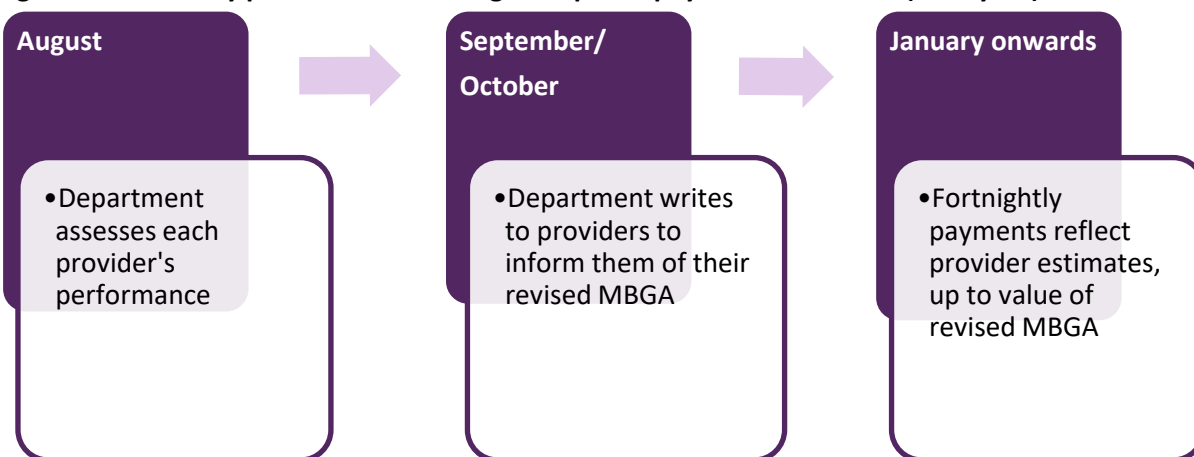
*For 2020, the maximum basic grant amount [is that specified for 2018]. Should the university meet its specified performance targets, the university will be advised in writing prior to the commencement of 2020 a revised maximum basic grant amount that will include an additional allocation based on projected national population growth in the 18 to 64 year old age bracket.*

The growth rate in the MBGA will be derived from the ABS population projections (ABS 3222.0) for 18 to 64 year olds, rounded to two decimal places. Over the decade to 2030, the ABS currently projects population growth of between 1.1 and 1.2 per cent per year in this age bracket. This currently equates to about \$70 million in additional funding per year across the sector.

### Payments and timing

A key principle of the PBF scheme is that the performance element for each university will be predictable and determined prior to the academic year in which it is paid. Assuming the university takes advantage of the additional allocation, the PBF element will form part of the university’s fortnightly CGS payments, up to the value of the revised MBGA.

**Figure 2 - University performance funding – Proposed payment timeframe (each year)**



## Consultation Questions

The Government intends to consult with the sector on the best possible design of the performance funding system. On the basis of the principles framework presented, the Government seeks comment on the following questions.

### 1. How should the PBF scheme be implemented?

Additional funding to universities in 2020 for meeting their performance targets will be added to their MBGA. However, decisions need to be made regarding the PBF amounts for universities from 2021 onwards.

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

The maximum amount of funding an institution receives is based on population growth of 18-64 year olds. While the national population growth rate for this age range could be applied to each university, another option would be to apply a more local or regional population growth for each university. For example, if population growth in Victoria is 2.2 per cent, compared to 1.0 per cent in Tasmania (based on ABS 2018 March data), universities in Victoria could be eligible for 2.2 times the funding an institution in Tasmania could possibly receive. Note that for such an approach, the total PBF amount could not exceed that defined by the national population growth rate (i.e. around \$70m each year).

Is a more regional-based population growth more appropriate?

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

While the PBF in 2020 will be added to a university's MBGA, in 2021 a consideration remains as to whether to continue to add subsequent years' PBF amount to a university's MBGA, or whether to keep it separate, such that the amount of funding at risk under the PBF scheme would grow each year (\$70m in 2021, \$140m in 2022, \$210m in 2023 etc.). Such a policy would provide greater flexibility for the system to respond to changes in demand in the future.

What are the benefits to each option?

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

Possible measures drawing on current performance-based funding models are shown in the table below.

**Table 1 - Potential performance measures**

Student experience	Graduate outcomes	Equity <sup>1</sup>
<ul style="list-style-type: none"> <li>• First-year student attrition<sup>2</sup>/retention<sup>3</sup></li> <li>• Student completion<sup>4</sup> within six years</li> <li>• Overall student satisfaction<sup>5</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Full-time employment rate<sup>6</sup></li> <li>• Full-time further study<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Participation by students from low SES, regional/remote or Indigenous background</li> </ul>

See **Appendix 1** for further discussion of potential measures for the PBF scheme. While these measures may refer to a wider body of students than those studying in the non-designated bachelor places linked to PBF (including students studying sub-bachelor and postgraduate courses, and all those in medical places), the majority of these students will be in non-designated bachelor courses.

In addition to the measures outlined here, further measures of performance could become available in future as the Government pursues its accountability and transparency agenda. For example, it will be possible to obtain a more detailed view of HELP debts not expected to be repaid (DNER), including the level of DNER incurred at each university, and among different disciplines.

## 3. How should the PBF scheme be designed?

A basic approach to a PBF scheme would identify key performance measures and award PBF to those universities that meet benchmarks set for each measure. Examples of alternative options and variations on this approach are described below.

To reflect sector diversity and to account for the varied missions and student profiles of different universities a PBF scheme could include an element of choice by allowing universities to select measures. The concept of core (compulsory) measures and supplementary measures would strike a balance between maintaining comparability across universities, while allowing them to be rewarded for meeting measures that align with their mission.

<sup>1</sup> The assessment process of TEF (UK) looks at the extent to which a provider achieves positive outcomes for disadvantaged groups. The ethnicity dimension is used in PLF (NZ) to monitor the achievement of groups of interest to the sector and government

<sup>2</sup> Supplementary metric adopted in TEF (UK)

<sup>3</sup> Core EPI adopted in PLF (NZ), and performance component in Tennessee and Louisiana (US)

<sup>4</sup> Course/qualification completion rate is core Educational Performance Indicator adopted in PLF (NZ), and performance component in Tennessee and Louisiana (US)

<sup>5</sup> Core metric adopted in PLF (NZ)

<sup>6</sup> Employment and highly skilled employment are core metrics adopted in TEF (UK), and performance component in Louisiana (US)

<sup>7</sup> Core metric adopted in TEF (UK)

To drive improvements for specific equity groups, performance measures could be set that reward participation by equity group students (such as low SES students, students from regional or remote areas or Indigenous students). Alternatively, performance measures could be set specifically for equity group students, universities are rewarded for meeting attrition rate, student satisfaction or graduate outcome benchmarks for specific equity groups.

#### **4. How should performance measure benchmarks be set?**

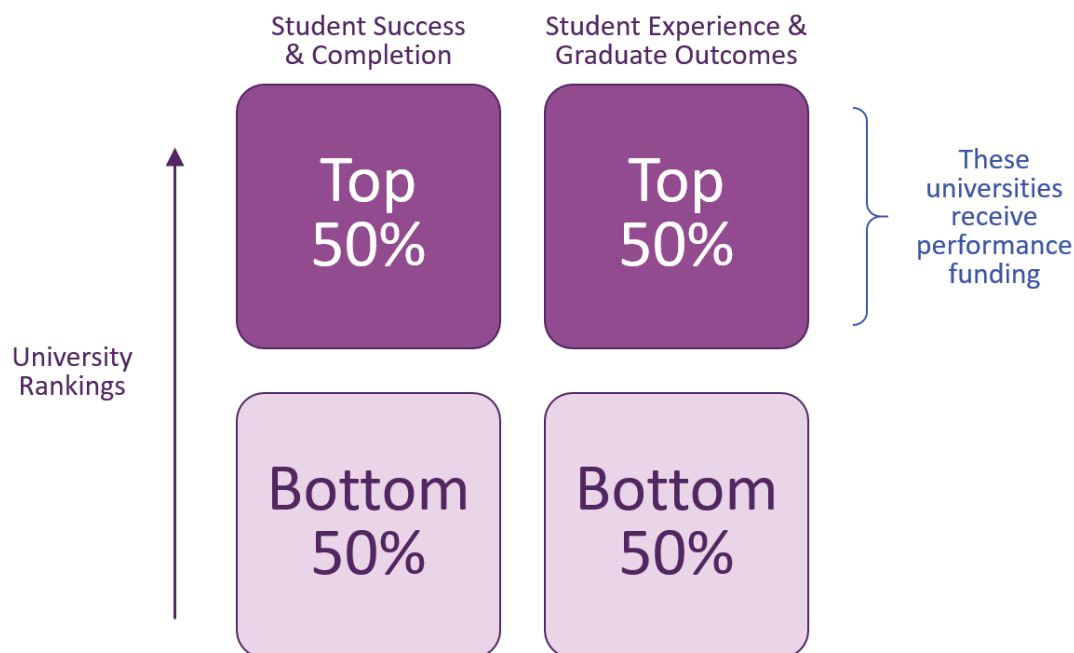
At its simplest level of operation, a PBF scheme would require universities to demonstrate a minimum acceptable level of performance every year across the selected measures in order to grow their CGS funding. The performance would be measured by statistics compiled by the Department of Education and Training and surveys conducted for the QILT website.

The need to take account of the diversity of student cohorts and institutional missions has been the most frequently expressed concern about the PBF scheme, particularly from universities with regional campuses and higher proportions of low SES students. The Government recognises that this need is genuine, and is interested in how a PBF scheme can fairly account for this diversity. For example, a university's attrition rate could be assessed against its own rolling average, rather than its peers. However, each university does not exist in a vacuum, but as part of a wider network of universities that often share characteristics. Taking no account of peer performance may not be a helpful way to encourage the sector-wide accountability the Government is seeking. Various methods for setting benchmarks can be found at **Appendix 2**.

Further, in the case of first-year attrition, the influence of student backgrounds on institutional performance may be overstated. A recent analysis of attrition rates found that, after controlling for student characteristics, institutions with low attrition still had below average rates, and institutions with high attrition still had above average rates. By far the largest influence on attrition was the institution attended. The analysis concluded, "controlling for student characteristics appears to make very little difference to the relative performance of institutions in terms of measured attrition rates" (Department of Education and Training 2017, 73). While this analysis does not capture all the factors that may influence attrition, including those that are difficult to measure (such as motivation and resilience), it does highlight that attrition relates more to which university a student goes to rather than the student's characteristics and, by extension, indicates that universities should have significant control over their student attrition rates.

Another approach could involve a performance measure ranking process, whereby universities are required to be ranked in the top 50 per cent for at least one of a range of performance measures. This approach could offer an element of choice for universities. For example, universities ranked in the top 50 per cent for measures of student experience and graduate outcomes and/or ranked in the top 50 per cent of rankings for student success and completion would be entitled to an increase in their MBGA. A summary of this approach is presented in the figure below.

**Figure 3 - PBF benchmarking through a ranking approach**



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

If universities do not meet their performance requirements, their funds at stake could be “pooled” and redistributed among successful universities. One simple way to achieve this would be to pro-rata any “pooled” funding amongst those institutions that meet their performance requirements.

To drive further improvements in performance it would also be possible to set “stretch” targets in addition to the minimum requirements in each domain. Universities that meet stretch targets would have part of the unallocated funds added to their MBGA proportionally.

For example, consider a system of four universities and a funding model linked solely to first-year attrition. A university that achieves an attrition rate equal to its average attrition rate over the past 10 years achieves the minimum standard, while a university that achieves its lowest attrition rate in the last 10 years achieves the stretch target (see **Example Scheme A at Appendix 2**). In the outcomes below, University A achieves the minimum but not the stretch, University B achieves neither, and Universities C and D achieve both.

**Table 2 – redistribution of PBF funding – illustrative example**

	Base PBF at stake	Successful at minimum standard?	Successful at stretch target?	Total additional MBGA allocated
University A	\$1,800,000	Yes	No	\$1,800,000
University B	\$2,000,000	No	No	N/A
University C	\$800,000	Yes	Yes	\$1,720,000
University D	\$950,000	Yes	Yes	\$2,030,000

Because University A is successful at the minimum standard, it receives growth in its MBGA equal to estimated 18 to 64 age population growth (but is not eligible for “pooled” funds). University B does not meet either requirement, so its potential \$2 million in MBGA growth is pooled for distribution to Universities C and D. The total base PBF allocation among the two successful stretch recipients is \$1.75 million (= \$800,000 plus \$950,000), shared on a pro rata basis (46/54) per cent between Universities C and D. University C receives 46 per cent of \$2 million (\$920,000) while University D receives 54 per cent (\$1,080,000). University C receives a total increase in its MBGA of \$1.72 million (= \$800,000 plus \$920,000) while University D receives an increase of \$2.03 million (= \$950,000 plus \$1,080,000).

A further option would be to add any of the unallocated performance funding to the funding available through the reallocation of designated places (see “Reallocation of Commonwealth supported places for enabling, sub-bachelor and postgraduate courses” paper). This would have the benefit of providing further opportunity for the expansion of offerings in these courses, which have not had the benefits of demand driven funding in recent years.

## **6. How much “lag” is acceptable between PBF data and the funding year?**

Because the performance allocation will be fully determined prior to the funding year, any data to determine that element must be available prior to that year as well. In practice, this means that the 2020 PBF scheme would largely be based on 2018 data (and earlier years for some retention measures), since that will be the most recent data available when determinations are made in the second half of 2019. This delay may influence which measures are most appropriate to include in the PBF scheme.

## **7. How should the PBF scheme be regulated?**

There are a number of options for regulating the PBF scheme. The Government could amend the *Commonwealth Grant Scheme Guidelines* to include the PBF requirements; as the *CGS Guidelines* are a disallowable instrument, Parliament would have oversight of the design of the performance formula. From 2021, the Government could also set out the performance requirements in each university’s CGS funding agreement or other agreements.

## **Submissions**

Please send submissions to the Department of Education and Training at [HEReform@education.gov.au](mailto:HEReform@education.gov.au). The closing date for submissions is 15 February 2019 at 5pm.



## Appendix 1 – Potential measures for performance-based funding

Measures	Availability	Background	Comments
<p><i>QILT</i>  <a href="http://www.qilt.edu.au">http://www.qilt.edu.au</a></p> <ul style="list-style-type: none"> <li>• Student Experience Survey (SES)</li> <li>• Course Experience Questionnaire (CEQ)</li> <li>• Graduate Outcomes Survey (GOS), including Longitudinal (GOS-L)</li> <li>• Employer Satisfaction Survey (ESS)</li> </ul>	2-4 months after reference year	<p>The QILT surveys are conducted annually on behalf of the Department of Education and Training. Each includes a number of elements; for example, the SES surveys students on skills development, learner engagement, teaching quality, student support, learning resources, and overall educational experience.</p> <p>Student and graduate satisfaction with their university is generally high, but varies significantly by discipline and there is room for improvement. For example, graduates had a relatively low level of satisfaction with the quality of teaching they received (GOS 2017, 57).</p> <p>After a peak of 85.2 per cent in 2008, the full-time recent graduate employment rate declined to 68.1 per cent in 2014, and (using a different methodology) was only a little higher at 71.8 per cent in 2017 (GOS 2017, 6). Universities are not responsible for the broader economic conditions that affect graduate employment. Nevertheless, improving their job prospects is a primary reason why students study for a degree, and graduate jobs underpin the sustainability of Australia's HELP schemes.</p>	<p>QILT provides a variety of measures that could be used for PBF. The Government is interested in measures that indicate university teaching is providing what students require and expect, including the knowledge and skills they need to secure full-time employment. Metrics could include</p> <ul style="list-style-type: none"> <li>• Satisfaction with teaching quality and overall quality of educational experience (SES, GOS)</li> <li>• Full-time employment rates (GOS/GOS-L)</li> <li>• Overall employer satisfaction with graduates (ESS)</li> </ul>
<p><i>Attrition, retention, success and completion</i>  <a href="https://www.education.gov.au/student-data">https://www.education.gov.au/student-data</a> (Section 15 in Selected Higher Education Statistics – 2017 Student Data)  <a href="https://www.education.gov.au/completion-rates-cohort-analyses">https://www.education.gov.au/completion-rates-cohort-analyses</a></p> <ul style="list-style-type: none"> <li>• Attrition: proportion of domestic students who commence a bachelor course in a reference year who do not return the following year.</li> </ul>	Success: 7-8 months after reference year	Following the introduction of the demand-driven system, universities chose to increase the number of students they admitted each year.	Universities that receive public funds and choose to admit students who incur a HECS-HELP debt have an obligation to ensure those students have the best chance of a positive outcome from their course.

Measures	Availability	Background	Comments
<ul style="list-style-type: none"> <li>Retention: proportion of domestic students who commence a bachelor course in a reference year and continue the following year.</li> <li>Success: proportion of domestic bachelor units of study in a reference year that were passed.</li> <li>Completion: proportion of domestic bachelor students who commenced a degree up to nine years before the reference year and have completed.</li> </ul>	<p>Attrition and retention: 19-20 months after reference year</p> <p>Completion: varies</p>	<p>While first-year attrition generally remained stable in response to this behaviour, there were a number of universities that rapidly increased enrolments and maintained attrition rates well above the sector average. Between 2009 and 2016, seven universities had attrition rate increases of more than 30 per cent, and three universities had increases of more than 50 per cent.</p>	<p>As first year students are most at risk of leaving, attrition may be a focus for PBF. To ensure a fairer scheme, the metric would use adjusted attrition (i.e. taking into account the student's CHESSN to accommodate those who transferred).</p> <p>While universities have argued that students who leave and come back more than a year later should not be counted in attrition data, there is a strong correlation between first year attrition and completion. Further, from a public policy perspective it is preferable that students complete within a reasonable timeframe and maintain continuous contact with their institution.</p> <p>It is also preferable that funding linked to performance is provided as soon as possible after action. For example, rewarding universities on the basis of a 6 or 9 year completion rate would mean providing the funding 7 to 10 years after the students in that cohort are first enrolled.</p>
<p><i>Equity</i>  <a href="https://www.education.gov.au/student-data">https://www.education.gov.au/student-data</a> (Section 16 in Selected Higher Education Statistics – 2017 Student Data)</p>	<p>7-8 months after reference year</p>	<p>This category includes the representation of students from a low SES background, non-English speaking background, students with a disability, Indigenous students, and regional and remote students (as defined by ASGS).</p> <p>Students from these equity groups continue to be underrepresented in higher education compared to the general population.</p>	<p>The PBF formula could either use rates of representation among the wider student body, or ratios as compared to a suitable benchmark (see the Notes tab of the data spreadsheets).</p>

Measures	Availability	Background	Comments
<p><i>Student repayment of DNER</i>                      Institutional DNER rates                      Proportion of HELP debt repaid by a graduating cohort 5 years after graduation.</p>	<p>Total DNER for an institution would include repayments from all students that have attended that institution</p>	<p>With the Government moving towards linking Australian Tax Office, Australian Government Actuary and Department of Education and Training data, it is developing the capacity to examine the repayment characteristics of different cohorts of students. It may be possible to determine the repayment performance of graduates from different institutions and reward those institutions whose graduates best repay their HELP debts.</p>	<p>HELP debt currently stands at \$55 billion, with about a quarter of new debt never expected to be repaid. It is important that institutions consider student’s repayment potential to ensure HELP continues to be sustainable into the future.                      The database on which this indicator would be based is still being developed and the feasibility and reliability of indicators such as DNER by institution is still to be tested.                      Level of debt repayment is influenced by a number of factors, in particular the economy and labour market. This, in addition to the time between first enrolling students and measuring any performance, means that institutional performance may only play a minor role in determining repayment rates.                      The level of HELP repayments is strongly linked to the employment outcomes of graduates – those graduates who are employed in higher paying positions will have a better rate of repayment. Employment outcomes of graduates may therefore be a good proxy for repayment performance.</p>

## Appendix 2 – Example Formulae

The following examples show how the PBF formula could account for the variable circumstances of the student cohort at each university, using attrition as an example. One example compares a university against its own historical performance, while the others adjust the attrition rate to achieve a fairer comparison with other universities.

- A. Compare an institution’s attrition to its own performance over the past 10 years.
- B. Compare an institution’s attrition to a sector benchmark, with target cohorts weighted by the number of students (e.g. part-time, mature age, and low SES).
- C. Compare institutional “modified” attrition rates to actual rates, based on a regression analysis of each university’s rate in order to isolate the effect of its own performance from characteristics of its student cohort.

Examples are provided for sample universities. Attrition refers to domestic commencing bachelor adjusted attrition rates.

*The following are examples of how elements of the PBF requirements could operate from 2020. They are not intended to be formal proposals and their function is to assist the consultation process.*

### Example Scheme A: 10 Year Average

Under this example, an institution’s most recent first-year attrition rate would be compared against its attrition rates over the past 10 years. If the institution’s most recent adjusted attrition rate is:

<b>Lower or equal to (to one decimal place)</b>	the institution’s <i>lowest</i> attrition rate in the last 10 years	<b>The institution satisfies</b>	the minimum and stretch PBF requirements
	the institution’s <i>average</i> attrition rate over the past 10 years		the minimum PBF requirement only

If neither condition is satisfied, the institution does not meet the PBF attrition standard.

For assessing performance in the reference year 2016, **Institution A** has the following first-year adjusted attrition rates for the years 2007–16 (%):

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
18.5	17.9	19.5	20.2	22.4	24.7	19.4	20.1	19.9	20.0

In 2016, **Institution A**’s attrition rate was 20.0%. Over the ten years to 2016, the lowest attrition rate it achieved in any year was 17.9% in 2008. Since the 2016 result is higher than the 2008 result, the institution does not meet the stretch requirement. However, the institution’s average attrition over the past ten years was 20.26%. Because the 2016 result was lower than the average, the institution meets the minimum standard for funding growth.

### Example Scheme B: Weighted Average

Under this example, each institution’s adjusted attrition would be compared to the national average, with target cohorts weighted by the size of the cohort to allow a fairer comparison. If an institution’s overall weighted attrition is lower than the benchmark weighted average, the institution satisfies both the minimum and stretch PBF requirements. If the weighted attrition is equal (to one decimal place) to the national benchmark, the institution satisfies the minimum requirement only. If it is higher than the national benchmark, the institution does not meet the PBF attrition standard.

**Institution B** has 100 total students and the following attrition profile (assume students are allocated to single cohorts for this example):

Cohort	Actual attrition	Students	Weighted avg attrition	National avg attrition	Benchmark weighted avg
Low SES	25%	20	5%	21%	4.2%
External	30%	20	6%	40%	8%
Other	12%	60	7.2%	15%	9%
Overall		100	18.2%		21.2%

Weight each cohort’s actual attrition by the number of students in the cohort (e.g. for low SES,  $0.25 \times 0.2 = 0.05$ ) to achieve a weighted average, and sum to achieve an overall weighted average for **Institution B**. Then weight the national average attrition for each cohort by the number of students at **Institution B** (e.g. for low SES,  $0.21 \times 0.2 = 0.042$ ) and sum to achieve a benchmark weighted average.

**Institution B**’s weighted average attrition of 18.2% is lower than the benchmark of 21.2%, so **Institution B** satisfies both the minimum and stretch requirements.

### Example Scheme C: Regression Analysis

Under this example, the Department of Education and Training would perform regression analysis on each institution’s attrition rate to calculate a “modified” attrition rate, and compare the two. There are a number of ways that regression analysis can be performed, such as ordinary least squares (OLS) and logit estimation (see Department of Education and Training 2017, Appendix D).

Without regression, measuring the influence of institutions on attrition is confounded by student characteristics. For example, inspection of attrition rates shows many institutions with high attrition also tend to have a high proportion of external students. On the other hand, many institutions with lower attrition tend to have selective intakes of more academically able students. Regression techniques permit calculation of “modified” attrition rates for each institution to allow for the influence of student characteristics. For example, knowing external students have higher attrition, a benchmark is calculated for external attrition and the difference between the actual result and the benchmark can be identified as the institutional effect. This achieves the same conceptual adjustment as Example Scheme B but with more robust techniques. Note, however, that incorporating regression techniques adds considerably to the complexity of the scheme.

If the institution's actual attrition is lower than its "modified" rate, the institution is performing better than its cohort suggests, and satisfies both the minimum and stretch requirements for PBF. If its actual attrition is equal to its "modified" rate (to one decimal place), the institution satisfies the minimum requirement only. If its actual attrition is higher than its "modified" rate, the institution does not meet the minimum attrition standard for PBF.

**Institution C** has an actual attrition rate in 2016 of 16.0%. After regression analysis, **Institution C's** "modified" attrition rate is 17.2%. **Institution C** satisfies both the minimum and stretch requirements.

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