Grattan Institute submission to the consultation on performance funding

Andrew Norton

February 2019

Recommendations

- The legal basis of performance funding should be in the Commonwealth Grant Scheme Guidelines. This would increase certainty around total funding and performance indicators and avoid universities with falling enrolments not receiving funding.
- Success in each year's performance funding should be permanently incorporated into the university's maximum basic grant amount. Not doing so would increase the risk that the number of student places will decline significantly.
- Due to the problems likely to be caused by fewer places, universities in faster-growing regions should receive more funding. However, 18-64 year old population trends are not a reliable guide to needs, as more than three-quarters of commencing undergraduates are 25 or younger.
- A university should not be rewarded or penalised twice for outcomes on highly-correlated indicators.
- Universities should have some choice in performance indicators, to align with their mission and avoid indicators with contradictory policy responses.
- Universities do not have enough control over long-term student debt repayment for this to be a performance indicator.
- Language spoken at home is not a reliable equity indicator and should not be used in performance funding.
- Students living in the lowest 50 per cent of regions by socioeconomic status, rather than the lowest 25 per cent, should be counted as low SES. This would reward universities for reducing educational disadvantage in areas outside the lowest 25 per cent.
- Reasons for a plateau in student satisfaction with teaching should be investigated to identify indicators that could be improved.

1 Doubts about higher education performance funding

This submission does not favour linking student-related funding to performance indicators.

This chapter sets out some general reasons why performance funding is unlikely to be helpful in improving student and university performance. However, the expert panel cannot change the decision to implement performance funding. The following chapter contains specific scheme design suggestions within current policy constraints.

1.1 Performance funding policy goals and problems

Performance funding is one policy for dealing with 'principal-agent' problems – in higher education, to encourage the 'agents' (universities) to act more in line with the views or interests of the 'principals', the government and students who fund universities.[1]

Arguably, universities are prone to principal-agent problems because the priorities of academic staff do not align strongly with those of students or governments. Left to themselves, universities would focus on knowledge-for-its-own-sake research rather than teaching or more applied research. In the early 1990s this was how universities operated. Student satisfaction with teaching was very low (Figure 1) and most research was basic research.[2] Countervailing policies, incentives and pressures can widen and rebalance university priorities. This has been a central theme of higher education policy for the last thirty years.[3] Student-related performance funding schemes have occasionally been one of the countervailing policies.

However, the record of student-related performance funding schemes is mixed at best. Evaluations of performance funding schemes often fail to find clear evidence of positive effects, and they often come with negative side-effects.[4] Lessons can be learned to maximise the positive and minimise the negative aspects of performance funding. But the nature of higher education means that good policies are hard to design. Problems include:

- the multi-faceted nature of 'performance', with students wanting different things from their studies;
- the difficulties of measuring performance, including no direct indicators of a major objective, learning gain;
- the propensity of universities to 'game' the system by manipulating indicators;
- the complexities of making higher education institutions fully accountable for performance which is co-produced by students, and often significantly influenced by other factors, such as school performance, cultural attitudes to

[1] Dougherty, *et al.* (2016), p. 32-32.
[2] Norton, *et al.* (2018), p. 43
[3] Norton (2015).
[4] Dougherty, *et al.* (2016). Coaldrake and Stedman (2016), chapter 5. Kelchen (2018), chapter 5.

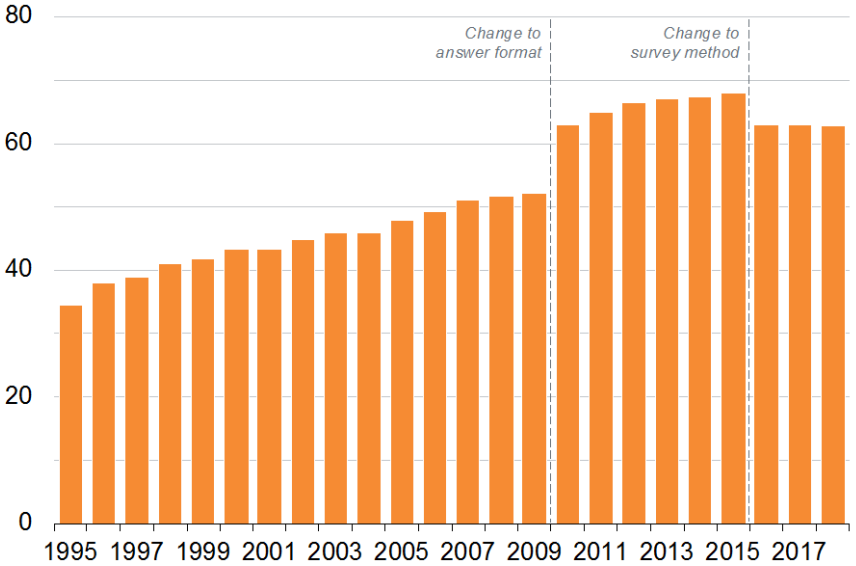
education, the state of the economy, government and family income support, and employer interests and attitudes;

- universities are decentralised organisations with academic staff who expect significant autonomy and a strong union, which can make it hard to implement change and lead to over-use of instruments the central administration can control, such as admissions;

- to encourage universities to make changes they would not otherwise make the incentives need to be significant and sustained.

Many of the warning signs for failure are present with the current proposed scheme.

Figure 1: Graduate satisfaction with teaching has improved significantly since the mid-1990s, but has now stabilised
Per cent



Note: Uses the 'good teaching' scale in the Course Experience Questionnaire.
Sources: GCA (1995-2016); Department of Education and Training (2019)

1.1.1 Weak financial incentives

Performance funding schemes do not always rely entirely on financial incentives. Credible and well-publicised schemes can have reputational effects as well. These may be more powerful than financial incentives, as universities are concerned about status as an end it itself, while money is only a means to other ends.

But universities must still evaluate the overall benefits of success in performance funding, including added income and better outcomes, compared to its costs, both the direct costs of changed policies and practices, and the opportunity costs of diverting resources from other activities.

For this performance funding scheme, the final incentives are weak. Some universities may not be eligible to receive them, even if they meet their performance targets (section 2.1). The $70 million a year promised across the university sector is very small. Even on 2016 funding levels, $70 million would be only 0.02% of university revenue. With an international student boom, the proportion of total university income will be less than that by 2020.

Some universities may be reluctant to forgo even small sums of money. But they have another way of dealing with the current funding freeze on the Commonwealth Grant Scheme. Instead of targeting revenue, universities could target costs by enrolling fewer students. By progressively reducing how many student places they offer, universities would maximise revenue per student and total funding.

This can happen because:

- Every year, each university will receive the lesser of a) the Commonwealth contribution rate multiplied by the number of full-time-equivalent student places or b) the maximum Commonwealth grant amount.
- Commonwealth contribution rates continue to be indexed to CPI inflation.
- Each year the university will need to deliver fewer places to get its maximum grant.

Table 1 illustrates the process. In this hypothetical example, a university enrolled 100 full-time-equivalent nursing students in 2017. Under demand-driven funding, it received the Commonwealth contribution rate for nursing, $14,113, multiplied by their 100 places. The university's Commonwealth payment for nursing was just over $1.4 million.

Table 1: Universities can provide fewer student places but still receive their maximum Commonwealth grant

Year	Commonwealth contribution, nursing	Minimum student places for maximum Commonwealth Grant Scheme funding	Maximum Commonwealth Grant Scheme funding
2017	$14,113	100.0	$1,411,300
2018	$14,324	98.5	$1,411,300
2019	$14,596	96.7	$1,411,300
2020	$14,888	94.8	$1,411,300
2021	$15,186	92.9	$1,411,300
2022	$15,489	91.1	$1,411,300

Notes: Real nursing Commonwealth contributions 2017-2019, indexed at an estimated CPI of 2 per cent 2020-2022.

In 2018 the Commonwealth payment was frozen at 2017 levels, but the Commonwealth contribution rate was indexed using CPI to $14,324. Now the university could provide only 98.5 nursing student places and still get its maximum payment. In 2019, the university could get all its funding by providing 96.7 places. By 2022, the university could deliver 91.1 places and still get its

maximum grant. Performance funding would not reverse this process, but would slow it from 2020 onwards (for as long as indexation of the maximum grant is below that of the Commonwealth contribution, reducing places makes financial sense).

As quality is one of the goals of the performance funding policy, maximising per student funding may help maintain the quality of education for the students who are admitted.

However, a quality over quantity approach would mean that the penalty for a university's poor performance would fall heavily on the prospective students in its catchment area.

1.1.2 The performance funding policy lacks long-term credibility

For universities to introduce reforms they would not otherwise make to receive performance funding, they need to believe that the policy will last long enough for their success to be rewarded.

The history of Australian performance funding gives little reason for confidence in policy stability. Previous schemes suffered from both changing criteria and the money being abolished when the government hit fiscal problems.[5]

The current legal basis for performance funding is weaker than it was in previous iterations. For 2020, the funding agreements signed by universities promise a population-growth based increase in funding if they meet specified performance targets.

Although the consultation paper and expert panel are designed to create a process around setting the target, legally they can be set according to ministerial whim.

Performance funding beyond 2020 has no current legal basis. It is just a political commitment, made by a previous minister in a government facing an election by May 2019. The Opposition is not committed to performance funding, giving universities further reason to doubt that the performance funding scheme would last long enough to reward them.

1.1.3 Performance indicators can have contradictory policy implications for universities

University student admission policies are a key lever for receiving performance funding. This is the case both because student co-production of higher education is important, and because admissions are more easily controlled by university administrations than many of the other potential ways of improving performance on the indicators. But admissions decisions that improve outcomes on one indicator may make them worse on others.

Employment outcomes are a common performance indicator, and on the potential list for this latest Australian scheme. Grattan Institute research in 2016 found that universities had introduced a range of policies to enhance graduate employability, including general curriculum changes, subjects or online modules that focus on cultivating employability skills, and work experience outside the

[5] Coaldrake and Stedman (2016), chapter 5.

university. Employers favour graduate applicants who have worked for them previously.[6]

Although 'employability' measures can help graduates secure available jobs, employment depends heavily on the labour market. Some fields of education have much better labour markets than others. Re-weighting enrolments to these fields is something a university could do to improve overall employment rates. But degrees that do well on employment don't always do well on other indicators. For example, engineering graduates generally do well in the labour market but have weak performance on other potential criteria such as attrition and student satisfaction.[7]

Another potential set of performance indicators concern participation by equity groups. The three groups mentioned are low SES, regional/remote and Indigenous. All these groups have relatively high rates of attrition, another proposed indicator.[8] On Grattan Institute analysis, a student coming from a low SES or regional/remote area only slightly increases risk of attrition after controlling for other factors.[9] However, low SES students are over-represented in groups with more significant risk factors such as low ATAR and part-time study. A university that does better on participation performance risks doing worse on attrition performance.

1.1.4 Improved performance can be hard to detect in the short term

One some indicators, Australian universities have achieved substantial and lasting improvements. Student satisfaction with teaching is an example (Figure 1, page 4). But over the shorter term, year-to-year variations in results may not reflect any real change in the university's performance.

For example, it is usual for attrition rates to move up and down. Over the last four years, only one university has had a consistent attrition trend. All the others have had better and worse years.[10] This may reflect changes in university performance, but could also be due to slight changes in the risk profile of the commencing cohort, fluctuating labour market alternatives to higher education, or random factors.

When the indicator is based on a statistical sample of students, such as employment rates or student satisfaction levels, we cannot be sure that small year-to-year changes are real. This is because the survey can only reliably say that the true result is within a range. These ranges can overlap from year to year. Only sustained, statistically significant changes reliably demonstrate improved performance.

[6] Norton (2017), p. 96.
[7] Department of Education and Training (2018a); Cherastidtham, *et al.* (2018), chapter 4.
[8] Department of Education and Training (2018a)
[9] Cherastidtham, *et al.* (2018), p. 40-41.
[10] Department of Education and Training (2018c), table 15.1.

1.2 Universities should not do anything they were not already planning to do

The general problems with student-related performance funding and the specific problems with the proposed scheme suggest that universities should not do anything that they were not already planning to do.

This does not mean that there will be no pressures for change. Universities respond to bad outcomes for mission and reputational reasons, because fewer students can mean less revenue, and because of attention from TEQSA.

We can see in recent history that these pressures have had an impact. The consultation paper mentions three universities with substantially worse attrition in 2014 than 2005. But by 2016 two of these three had substantially improved their attrition results on their worst year, dramatically so in one case. Both these two institutions had radically changed their scale (in percentage terms, the greatest and third-greatest growth in domestic bachelor-degree enrolments 2008-2017) and nature of what they offer students. Attrition declined as they learned from early mistakes.

It is quite likely that performance on some of the indicators will improve regardless of university actions. At least in the short-term, labour market trends mean that graduate employment outcomes should improve (although a recession would send them into reverse, regardless of what universities do).[11] Apparent declining demand from mature-age students should reduce attrition rates, independently of any university efforts to increase retention.[12]

However, these same demand factors mean that equity indicators are likely to trend down. Mature-age students are more likely to be low SES, regional or Indigenous than school-leaver students. Applications from equity group members have declined at a greater rate than the overall applications trend.[13] The improved labour market that improves graduate outcomes may also provide work alternatives to some equity group members who might otherwise decide to study.

Also, a decline in the number of student places is likely to affect low SES applicants disproportionately, due to their lower average prior academic performance. This is what happened last time the number of student places was reduced.[14]

[11] Norton (2019).
[12] Department of Education and Training (2018d), p. 12. Cherastidtham*, et al.* (2018).
[13] Department of Education and Training (2018d), p. 29-39.
[14] Norton (2016), p. 199.

2 Design issues with the proposed performance funding policy

For the reasons outlined in chapter 1, the proposed performance funding policy is unlikely to be successful. However, this is not a very useful observation for the expert panel, which has a shorter-term task of coming up with a least-bad version of performance funding.

2.1 Legal basis of performance funding

As noted in section 1.1.2, the performance funding scheme has a weak legal basis in funding agreements between the government and the universities. The indicators and rewards can be set and changed by the minister, increasing the risk that, as has happened previously, the indicators will change too often to be the basis of university strategies. The funding agreements provide for money in 2020 but not later years, increasing the risk that, as has happened previously, not all the promised performance money will be paid.

There is a further uncertainty for universities facing weak current demand from students.[15] They may not be eligible for funding even if they achieve their performance indicators. This is because currently there is no performance fund. All that is happening is that the government is promising to pay universities for a larger proportion of student places actually delivered.

As noted in section 1.1.1, under the *Higher Education Support Act 2003,* the university will receive for bachelor degree places the lesser of a) the Commonwealth contribution rate multiplied by the number of full-time-equivalent student places or b) its maximum basic grant amount, as set out in its funding agreement.[16] For universities with declining student numbers, the amount calculated under (a) could be less than (b), which if successful under performance funding would be their previous maximum basic grant amount plus 1 per cent. These universities would only receive (a), effectively their old demand driven funding amount.

Both the uncertainty and non-payment problems could be alleviated if, as the consultation paper suggests, the Commonwealth Grant Scheme Guidelines were used to establish a separate performance fund. This can be done under a separate provision of the Act.[17]

While the CGS Guidelines do not guarantee stability of performance criteria or payment, they would make it more difficult for the government to change its mind. Changes to the guidelines

[15] Commencing domestic undergraduate numbers were down by 1.8 per cent for the first semester of 2018 compared to 2017: Department of Education and Training (2018b). Reports of tertiary admissions centre applications for 2019 suggest that this trend is continuing: Williams (2019); Shankar (2018); UAC (2019); Rose (2019).

[16] Section 33-5(5), *Higher Education Funding Act 2003*.

[17] Section 33-1(1)(b)(v), *Higher Education Funding Act 2003*. The performance fund could possibly also be established under the Other Grants provisions of the *Higher Education Support Act 2003*, using the provisions related to quality and equality of opportunity: section 41-10 and section 41-45. However, this is not favoured as it breaks the link with funding students and because of the uncertainty created by the minister's power to vary grants under section 41-45(1D).

are subject to disallowance by either the House of Representatives or the Senate.

By separating performance funding from the issue of whether nominal funding entitlements exceed the maximum basic grant amount, universities could then be paid even if their enrolments are falling.

2.2 Status of 2021 funding in 2022 and beyond

The consultation paper asks whether success in 2021 performance funding should be added to a university's maximum basic grant amount, or put into a cumulative performance fund that would increase each year. (This option would require the CGS Guidelines legal option.)

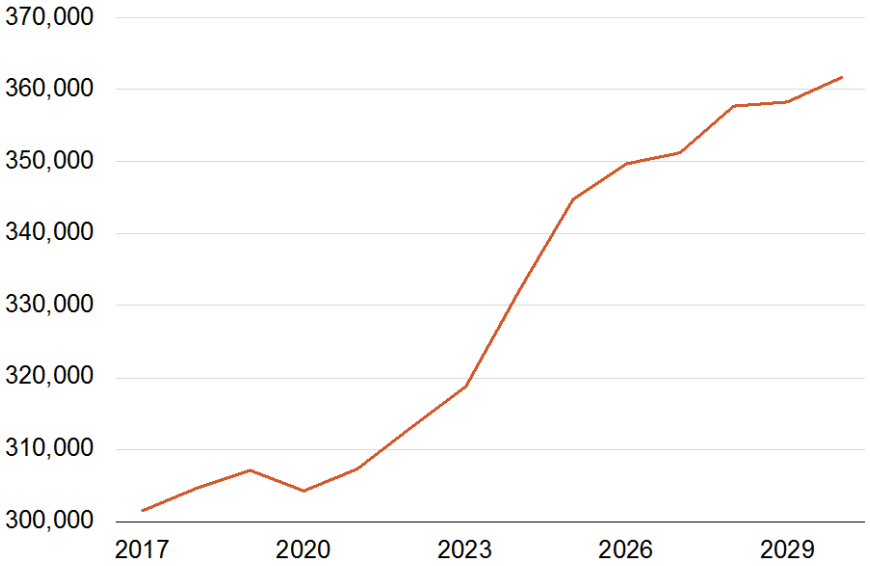
A cumulative fund would respond to the issue raised in section 1.1.1, that the amount of money on offer is just too low to provide an incentive to do anything.

However, the policy should be to incorporate each year's performance funding into the university's maximum basic grant amount.[18] If the money continues to be contingent, the university will not use it to increase enrolments, which may be unfunded in subsequent years. As with any funding that is unlikely to be recurrent, it should only be spent on expenses that are also not recurrent.

The lack of an incentive to supply student places is a major medium-term policy problem. While demand for higher education is weak right now, a baby-boom generation will start arriving at university in the mid-2020s (Figure 2). At that point, a falling number of student places will be a far more important issue than small movements in the chosen performance indicators. Although locked-in performance funding would not necessarily stop a decline in student places, it could slow the rate of decline. In the Table 1 nursing example, the potential drop in student places by 2022 would be 5.6 per cent instead of nearly 9 per cent.

Figure 2: School-leaver demand for higher education will increase in the mid-2020s

Estimated 18-year-old population in Australia



Source: ABS (2018).

[18] This could be done despite the legal basis of the funding coming from the Commonwealth Grant Scheme Guidelines.

By linking funding to population growth, the government has given the impression that system capacity is on objective as well as system quality performance. But under its policy these goals are in significant tension.

2.3 Whether 18-64-year old population growth data is relevant

The consultation paper asks whether universities in states or regions with stronger population growth should receive more funding than states with lower population growth.

A consequence of population adjustment would be that for universities in states or regions with lower population growth the already small financial incentive for performance indicator improvement would shrink further.

A further complication is that population growth in the 18-64 age group may not reliably identify the areas of greatest need. More than three-quarters of commencing domestic undergraduates are aged 25 years or less, and more than 90 per cent are less than 40 years old.[19] Population increases or decreases in older age groups are not significant for undergraduate education.

Nevertheless, the expert panel should recommend population adjustment. This would acknowledge the issues that population growth presents for higher education policy and make a small contribution to minimising the otherwise disproportionate effect current policies will have in the 2020s on young people in fast-growing regions.

2.4 Double jeopardy or double dip indicators

The performance funding scheme should avoid highly-correlated indicators. These indicators reward or penalise universities twice for much the same success or failure. For example, retention and completion are highly correlated.[20] There are also potential issues with students who are members of multiple equity groups. The panel may need to form a view on whether universities should be rewarded several times for the same student.

2.5 An element of university choice in indicators

The consultation paper asks whether universities should have some choice in their indicators. This would be worthwhile for the reason suggested, alignment with the university's mission. It could also be used to avoid contradictory indicators (section 1.1.3).

2.6 Specific indicators

HELP repayment after 5 years (or some other period)

In the consultation paper, the Department seems to be leaning against HELP repayment rates as a performance indicator. However, the idea that universities should have 'skin in the game' through a link between their funding and HELP repayments has advocates.[21] 'Skin in the game' would discourage universities from enrolling students with poor repayment prospects, and

[19] Department of Education and Training (2018c), table 1.2.
[20] Harvey, *et al.* (2018), p. 42.
[21] Schwartz (2019); Tourky (2014).

possibly encourage universities to take an on-going interest in graduate outcomes.

But the disadvantages of using student debt repayment for performance funding far outweigh the advantages, for many reasons:

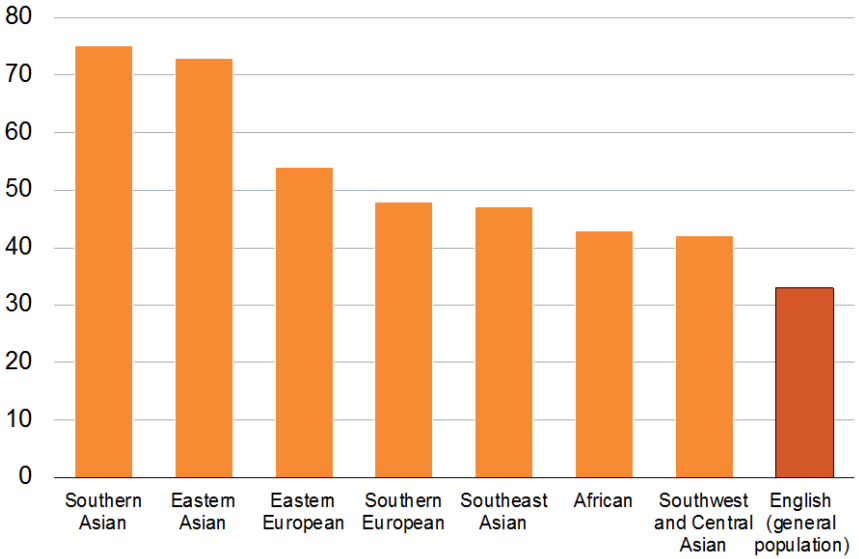
- universities have no control over the life decisions of their graduates;
- universities have no control over the economy, which significantly influences repayment levels;
- universities have little control over government policy on HELP thresholds and rates of repayment, which significantly influence repayment levels;
- government policy has historically encouraged universities to broaden their enrolments beyond low-risk groups of students; if this is to be reversed the policy intent should be clearly stated and debated;
- if applied retrospectively, it could penalise universities for decisions they would not have made had they known the rules (with the other performance indicators, universities are already aware of them and take them into account in decision making for reputational, regulatory, mission and market reasons)
- if applied prospectively, the consequences will be felt by the staff and students of the university many years in the future, most of whom would have had no opportunity to influence previous institutional policies;
- as noted in the consultation paper, medium-term HELP repayments are almost certainly highly correlated with short-term employment outcomes. If employment outcomes are also used, they would be double dip or double jeopardy indicators.

Equity indicators

In appendix 1, the consultation paper mentions the equity indicator students from a non-English speaking background who have arrived in the last 10 years. As Figure 3 shows, this indicator is not a proxy for educational disadvantage. It should not be used in performance funding.

Figure 3: University participation rates by language spoken at home, age 18-20, 2016

Per cent



Note: University participation is enrolment. Data only includes arrivals 2006-2015 other than the English-speaking population, which is all citizens.
Source: ABS (2017)

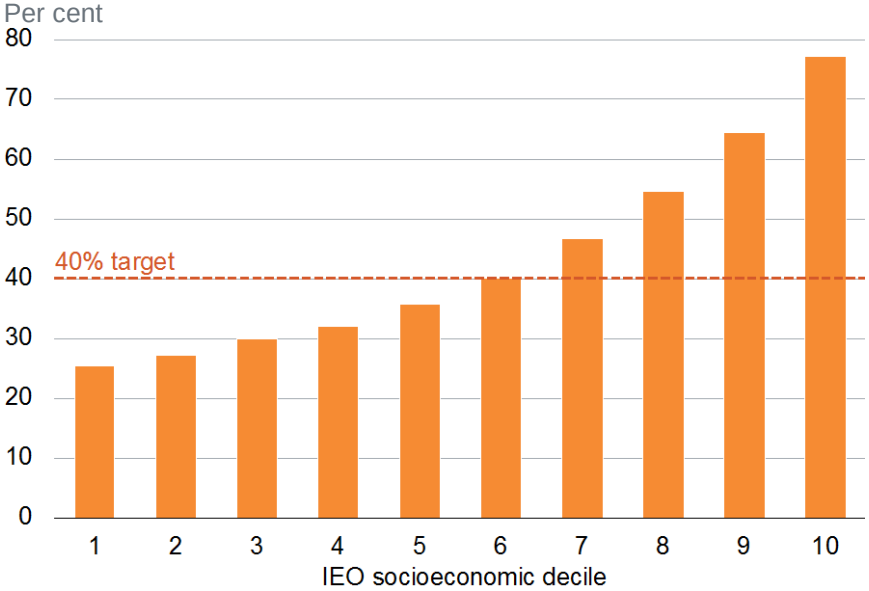
Unlike language spoken at home, SES is a strong indicator of educational advantage and disadvantage. However, there are long-standing issues with using current geographic SES measures for funding purposes.[22] Defining low SES by the lowest 25 per cent of regions by socioeconomic status is a too-narrow definition.[23] Although there is room for debate about exactly what constitutes educational disadvantage, there is a case for including the lowest 50 per cent of regions. As can be seen in Figure 4, young people who grew up in the areas classified as in the fifth decile by age 21 have attainment or participation that is less than half of their contemporaries in the top decile, and below the 40 per cent attainment target set by a previous government. By contrast, participation or attainment for young people in the fifth decile is only 10 percentage points above those in the lowest decile.

A consequence of the current SES definition for performance funding is that universities with catchment areas that are lower SES but in the second rather than first quartile will not have their successes (or failures) in addressing disadvantage properly recorded or rewarded by the current indicators. One option would to reclassify low SES from the lowest quarter to the lowest half of regions.

[22] Geographic proxies for a student's socioeconomic status can misclassify individuals: Cherastidtham and Norton (2018), p. 3-4. However, this should also not be used for funding purposes as it is too difficult for universities to identify disadvantage prior to enrolment.

[23] Coelli (2010).

Figure 4: University participation rates by age 21 by Index of Education and Occupation socioeconomic deciles



Notes: Participation includes higher education enrolment and attainment. The location is where the person lived five years previously at age 16, to better reflect their social background. The Index of Education and Occupation is one ABS measure of SES. Areas with few people with high levels of qualifications or in highly-skilled occupations and many people with no qualifications or in low-skilled occupations or unemployed are classed as low SES.
Source: ABS (2017)

If the government wanted to differentiate levels of disadvantage, an alternative scheme for funding purposes would be to give regions weightings based on their SES. The weighting could be zero for regions where participation is already at 40 per cent or above. Other regions could be weighted according to their distance from the 40 per cent target. In the 2016 census, that would mean weighting a student in the lowest decile as 1, a student in the second decile at .89, down to 0.30 for a student in the fifth decile, where attainment is approaching the target.[24]

Student satisfaction

Student satisfaction with teaching has improved significantly over the last 20 years. The Student Experience Survey, of current students, records higher levels of satisfaction than the Course Experience Questionnaire, of students who have completed. This is likely to reflect some different questions and a different way of calculating the results.[25] However, both have reached a plateau.

Some deeper analysis of the results could produce insights into why satisfaction has stopped improving. This could be used to better target the underlying cause than an overall satisfaction measure.

It is also clear that students are much less satisfied on some indicators than others. For example, less than half of undergraduates reported that careers advisors were available and

[24] The lowest decile is 14.49 per cent below the target attainment, and is weighted at 1. The second decile is 12.84 per cent below the target. 12.84/14.49=weighting of 0.89. The weighted numbers could be added up each year and compared with the institution's previous total or that of another institution.

[25] Norton, *et al.* (2018), p. 32-34.

only slightly more than half were satisfied with support services.[26] If it could be proved that these results signal real problems in some institutions, this would give them a clear objective for improvement.

[26] Social Research Centre/Department of Education and Training (2018), p. 92.

3 References

ABS (2017) *Census of population and housing, 2016, TableBuilder Pro, Cat. 2073.0*, Australian Bureau of Statistics

ABS (2018) *Population projections, Australia , 2017 (base) to 2066, Cat. 3222.0*, Australian Bureau of Statistics

Cherastidtham, I. and Norton, A. (2018) *Submission on the redevelopment and audit of the higher education data collection*, Grattan Institute

Cherastidtham, I., Norton, A. and Mackey, W. (2018) *University attrition: what helps and what hinders university completion?*, Grattan Institute from https://grattan.edu.au/wp-content/uploads/2018/04/University-attrition-background.pdf

Coaldrake, P. and Stedman, L. (2016) *Raising the stakes: Gambling with the future of universities (second edition)*, University of Queensland Press

Coelli, M. (2010) *The forgotten second quartile: parental income and youth post-secondary education in Australia*, Working paper number 1107, The University of Melbourne

Department of Education and Training (2018a) *Completion rates of domestic bachelor degree students: a cohort analysis, 2005-2017*, Department of Education and Training

Department of Education and Training (2018b) *Higher education first half year student summary time series*, Department of Education and Training

Department of Education and Training (2018c) *Students: Selected higher education statistics 2017*, Department of Education and Training

Department of Education and Training (2018d) *Undergraduate applications, offers and acceptances 2018*, Department of Education and Training

Department of Education and Training (2019) *2018 Graduate Outcomes Survey: national report*, Social Research Centre/Department of Education and Training

Dougherty, K., Jones, S., Lahr, H., Natow, R., Pheatt, L. and Reddy, V. (2016) *Performance funding for higher education*, John Hopkins University Press

GCA (1995-2016) *Graduate course experience questionnaire report*, Graduate Careers Australia

Harvey, A., Cakitaki, B. and Brett, M. (2018) *Principles for equity in higher education performance funding*, Centre for the Higher Education Equity and Diversity Research, La Trobe University

Kelchen, R. (2018) *Higher education accountability*, John Hopkins University Press

Norton, A. (2015) 'Keeping public priorities in public universities', *The Conversation,* 28 May, from https://theconversation.com/keeping-public-priorities-in-public-universities-40008

Norton, A. (2016) 'Equity and markets', in *Student equity in Australian higher education: Twenty-five years of A Fair Chance for All*, A. Harvey, M. Brett and C. Burnheim, Eds., Springer, p 183-206

Norton, A. (2017) *Universities and the evolving graduate labour market*, Centre for the Study of Higher Education, University of Melbourne

Norton, A. (2019) 'Graduate employment is up, but finding a job can still take a while', *The Conversation,* 11 January,

Norton, A., Cherastidtham, I. and Mackey, W. (2018) *Mapping Australian higher education 2018*, Grattan Institute

Rose, T. (2019) 'First-round university offers revealed', *Herald Sun,* 16 January, from https://www.heraldsun.com.au/news/special-features/news-in-education/vce/did-you-get-a-university-offer/news-story/f19e04d606dd50e62ada6da9a8793737

Schwartz, S. (2019) 'Make universities pay for picking poorly prepared students', *The Australian,* 29 January,

Shankar, D. (2018) 'Early WA university offers see high scorers, big dreams get first preferences', *WAToday,* 22 December,

Social Research Centre/Department of Education and Training (2018) *2017 Student Experience Survey national report*, Social Research Centre/Department of Education and Training

Tourky, R. (2014) 'Universities should have skin the HECS game', *Core Economics blog,* 30 May, from https://web.archive.org/web/20150510170119/http://economics.com.au/?p=9970

UAC (2019) 'Domestic undergraduate applications at 31 October 2018', *Universities Admission Centre media centre,* 16 January, from https://www.uac.edu.au/media-centre/statistics/app

Williams, T. (2019) 'Full list: almost 15,000 university offers for SA students', *The Advertiser,* 15 January, from https://www.adelaidenow.com.au/news/south-australia/full-list-almost-15000-university-offers-for-sa-students/news-story/5f82db18e78376c94656f32be1582b23