The Secretariat
Review of Australia's Higher Education Sector
Canberra

18 December 2022

Submission to Consultation Process

Priorities for the Accord - Review of Australia's Higher Education system.

We thank you for the opportunity to provide this submission. We offer the following comments to encourage more focus concerning one of the matters listed in the Terms of Reference (ToR).

We argue that the item "Investment and Affordability" in the ToR is of great significance, and this matter is of high priority in the Review. This aspect of the Review is critical as the funding mechanisms are fundamental to the existence and, arguably, "health" of the higher education sector. This, in turn, impacts many of the other matters listed in the ToR. For example, the ability to establish an effective program to support students with disabilities or students who come from first nations communities is dependent, in large part, on the ability of universities to fund such programs from education budgets.

In addition to the implications of the issues surrounding funding mechanisms, we urge the Review Panel to prioritise an examination of the availability of data in respect of funding, including, but not limited to, the funding and costs of education and research within universities.

In this submission and to provide context, we present an abbreviated history of tuition funding and, in particular, the fee pricing arrangements for Australia's higher education system (see Section 1).

Following the historical context, we offer key observations that we believe are important to understanding the priorities needed to fulfil the objectives of the ToR. These include matters of affordability for both students and taxpayers (Sections 2 and 3).

We look forward to the opportunity for a more fully developed submission that deals with the substantive issues addressed in the Review.

Please note that the views expressed in this submission are of the two individual authors and do not necessarily reflect the views of any institution with which they are affiliated.

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This submission is divided into four sections. They are:

(1) A brief history of aspects of higher education funding arrangements;
(2) The reasoning behind the need for the calibration of student tuition fees;
(3) Cost measurement in universities and data transparency; and
(4) Concluding comments and recommendations.

Section 1: A Brief History of Aspects of Higher Education Funding Arrangements

This brief history commences when university (and other higher education provider) tuition fees were abolished in 1974 by the then Labor Government of Prime Minister Gough Whitlam. The motivation for this policy position was to provide access to a wider range of Australians than previously, particularly those from less financially privileged backgrounds. There have been several analyses of the access consequences of the initiative (see, for example, Warburton 2021). Interestingly, there is no evidence that this fee abolition policy had any measurable effects[1].

The period from 1974 to 1986 was the era of so-called "free" higher education for Australians, which finished with the introduction of the Higher Education Administration Charge (HEAC) in 1986. HEAC was a token level of $250 (in 1986 dollars) per student, which applied to all (part and full-time) domestic students and signalled the end of the tuition-free period. No justification was forthcoming concerning the reasons HEAC was implemented.

The key university tuition fee event was the Report of the Wran Committee on higher education financing in 1988. This Report set the scene for the Higher Education Contribution Scheme (HECS, now known as HECS-HELP), which entailed the reintroduction of tuition fees to be accompanied and facilitated by the adoption of an arrangement known as an Income-Contingent Loan (ICL) scheme. The reintroduction of tuition was justified with reference to the regressive nature of a no-charge system and to provide finances for the government to expand university enrolments.

In place of so-called "free" higher education, the Wran Committee recommended a three-tiered student contribution pricing structure ostensibly motivated solely by costs associated with the provision of teaching, with the most expensive courses (for example, medicine, dentistry and veterinary science) priced at $3,000 per full-time year (in 1989 dollars), with a middle tier of $2,500 (for example, for engineering and applied science) and $1,500 for other fields (including business and law).

The Report did not explain its decision concerning differential prices except for stating that: "Where possible, charges should reflect course costs provision so that those who take high-

[1] This is not surprising, for two reasons: relatively few students paid fees before they were abolished, with around 75-80 per cent of students receiving Commonwealth or Teacher's College Scholarships that excused tuition charges, and the fact that the vast majority of school students from poorer backgrounds left school at around age 14 or 15 and thus were not eligible for a university place anyway (see Wran Committee Report, 1988).

cost courses pay more than those choosing lower cost courses." (Wran Committee Report, 1988). One of the authors of this submission (Bruce Chapman) had written an options paper for the Minister, John Dawkins (which led to the establishment of the Wran Committee) on methods and arrangements related to tuition fee reintroduction (Chapman, 1987).

Chapman was a consultant to the Wran Committee and was present at all meetings surrounding HECS. During those discussions, there was no consideration of different relative prices being set outside the rationale of costs. At the time, the reasoning behind setting charges at around 25 per cent of course costs[2] was that this seemed to be about the level of Australian fees before 1974 and was also the price being charged in US public colleges in the late 1980s.

However, when HECS was introduced in 1989, differential prices were eschewed, with the government announcing instead the same price of $1,800 for each full-time year of university irrespective of the course studied[3]. This equivalence remained in place (in real terms) until the then Coalition government announced a three-tier pricing system in 1996, taking effect in 1997.

In this policy revision, the new prices were set with apparent reliance on a hybrid of rationales involving both course costs and expected lifetime incomes of graduates from different courses. For example, the study of law, which was seen as inexpensive to teach given the absence of costs such as laboratory facilities, was priced at the highest level, and nursing, which is relatively expensive to teach, was priced at the lowest level[4]. No explanation was forthcoming for the pricing policy changes, and differential prices have remained since then.

A further change occurred in 2004 with the then Coalition Government allowing public universities to charge a 25 per cent premium to the fee if they chose to do so[5]. All universities except the Australian National University (ANU) did so immediately, with ANU following shortly thereafter. Other than changes to cluster categorisation[6], there were no important reforms until significant price restructuring was enacted in 2021.

In June 2020, the then Education Minister Dan Tehan announced: "... we will address the misalignment between the cost of teaching a degree and the revenue that a university receives to teach it. We will reform the system so that the student contribution and the Commonwealth contribution actually equals the cost of teaching that degree." (National Press Club address, June 2020). This policy statement laid bare the importance of costing university teaching distinct from other costs – notably costs of research.

In this 2021 revision, known as the "Jobs Ready Graduate Package" (JRGP), the then Minister justified the changes with reference to alleged Australian labour market shortages

[2] The levels were calculated on a very unsophisticated basis: around 25 per cent of total annual university recurrent costs.
[3] Bruce Chapman's view is that this was because the Minister believed that the new policy required extensive public explanation and education and that the simpler the parameters of HECS the easier this would be.
[4] This pricing occurred in the absence of any evidence that students who studied law took up employment in the law as opposed to other work (including public sector administration, not-for-profit organisations, and the like).
[5] For analysis of this initiative, see Beer and Chapman (2004).
[6] Several courses, such as commerce and computing science were allowed to be placed in the highest priced tier, again with no explanation.

and needs. The price changes resulted in a doubling of HECS fees for humanities and also involved significant HECS fee decreases for a number of fields of education (FoE), including science, technology, engineering and medical (STEM) courses. However, a key point in respect of many of these fee changes is that there was and has continued to be little transparency regarding the true rationale for the revisions to the tuition fees charged.

Outcomes from the 2021 tuition fee changes in terms of higher education student profile (EFTSL in the various FoEs, including but not limited to the social sciences and humanities), as well as student preferences as observed in student applications (through various state agencies), are empirical issues. While the matter of outcomes of the JRGP is not a focus of this submission, we note that for a variety of compelling reasons considered in Chapman and Khemka (2021), Daly and Lewis (2021) and Holden (2020), there is little doubt the initiative has not had the effects said to motivate the changes.

The principal conclusion in respect of the history of HECS prices is clear: in none of the situations when prices were introduced or changed over the last 35 years has there been a compelling and transparent explanation of the reasons behind the reforms. Except for the most recent (2020) announcements, tuition charges were announced but not justified, nor were reasons for them elucidated other than limited and generalised comments referring to the cost of teaching. In respect of these most recent changes, while there might have been some clarity for the considerable variations introduced, many higher education experts are of the view that the reasoning behind this reform was largely misinformed, producing outcomes almost entirely inconsistent with the stated objectives.

Section 2: Why is knowing the Rationale for and implications of Prices Crucial?

2.1 Institutional context

Australian public universities are mostly funded by government outlays. However, because of the existence of HECS-HELP arrangements, significant revenues flow back to the government as loans are repaid over time through payments collected through income tax arrangements. For undergraduate domestic students, the government set tuition prices, and for graduate courses, the government allows the institutions to set whatever price they choose, with all revenues being collected depending on students' future incomes.

What is clear from Section 1 is that governments have made limited or no attempts to explain tuition fee pricing decisions. By extension, this raises a critical issue for policy analysis related to research funding. This arises because funding to universities is, essentially, a zero-sum process; that is to say, all outlays not used to support the teaching of students are implicitly residual financial resources for research[7]. This reasoning assumes that other costs, including overheads, are largely associated with and can be allocated to the two key outputs of universities of teaching and research. Put another way, if students pay more than the true costs of teaching, they are then implicitly cross-subsidising non-teaching (i.e., essentially research) activities.

[7]We discuss below the notion that the two key ‘outputs’ or ‘products’ of universities are teaching and research. This is consistent with the criteria outlined by the sector’s regulator (TEQSA), which sets out the requirements for the provider category ‘university’. Unlike some other nations, Australian regulation requires that universities engage in both education and research.

2.2 Should student tuition fees be used to cross-subsidise other activities, including research?

It is important to establish that with respect to higher education financing everywhere, governments typically have a potent financial instrument in the form of a monopoly over student loans. This effective monopoly situation is particularly significant in countries with ICLs, such as is the case for Australia in the form of HECS-HELP, because all the evidence points strongly to the conclusion that student choices are not influenced by even significant changes in ICL debts[8]. The implication is that, if they chose to do so, Australian governments could easily set tuition prices higher, even much higher, than the true costs of teaching without significantly affecting student demand for places.

This needs to be seen as a very important issue, and one that we hope the Review Panel will take up seriously and thoughtfully. It is, in our view, an issue of the highest priority in the Review.

Leading from this one can pose questions on whether or not it is appropriate for students (and graduates during the HECS-HELP repayment phase) to be asked to subsidise activities other than teaching - including research. Such payments may include research related to the field of study of their education or research in another field.

There are some complicating factors, such as assuming that academics who are research-active might be more skilled in teaching[9]. Beyond that, there does not seem to be a case that can be made easily that vindicates a price-setting scenario involving students cross-subsidising research; that would seem, from basic principles of public finance, to be the responsibility of government. The issue is of particular public policy significance where cross-subsidies from tuition fees to non-teaching activities are opaque or hidden.

We highlight the significance of our concern by posing the following question: if it is considered appropriate for students to contribute financially to university finances in excess of the associated teaching costs, why stop there; why not have students/graduates help pay for other government services, such as defence or parliamentary pension? That is, by implication, we are arguing that there is no basis for domestic university students, more than other taxpayers, to contribute to the costs of services unrelated to their teaching.

We stress that our concern is with respect to the setting of prices for domestic students. While there is little doubt that international student revenues involve considerable cross-subsidies for the funding of research in Australian universities, this is not an issue for our submission. Our arguments relate only to domestic student prices, including, very importantly, universities having the licence to charge whatever price they choose for graduate courses. It is quite credible to suggest that, in many cases, the associated revenues result in cross-subsidies for research.

We believe that understanding these costing and funding issues is fundamental to developing an informed view and proper policies with respect to the setting of the "right" levels of both absolute and relative tuition fee levels for Australian domestic university students. Coupled

[8] See Chapman (2014).

[9] We have no evidence on this issue but do not believe it is of sufficient importance to justify much more than a small aspect of students' contribution to research.

with this is the fraught area of discourse and evidence related to uncovering what the true costs of teaching actually are, and it is this topic to which we now turn.

Section 3: Cost Measurement in Universities and Data Transparency

It is clear that since its establishment, HECS has been a key part of Australian higher education policy. HECS payments and payments under the Commonwealth Grant Scheme (CGS) make up the vast bulk of revenue to universities for the provision of domestic undergraduate education.

As noted, there has been an absence of clear justification for the setting of domestic tuition fee price levels. There is, however, an implicit assumption that the funding provided to universities for education services covers the costs incurred in providing these activities. There is now some evidence that this has not always been so and that there has been a drift away from the alignment of revenues and costs. As noted above, the 2020 Dan Tehan announcement highlighted the goal of correctly aligning the sum of student and government contributions to teaching costs.

However, without transparency concerning what the 'true' costs actually are, the ability to correct any presumed misalignment is not possible. A core argument in this submission is that there is a compelling case to provide valid, reliable and transparent data regarding costs incurred by universities to provide their key 'deliverables' – education and research.

As noted by the Productivity Commission in late 2022, there is a need to benchmark[10] the costs in universities. They expressly argue that there is a need to perform benchmarking in respect of the costs of teaching, stating, "…benchmarking the cost of provision between providers is an important safeguard, where benchmarking analysis — with reference to providers in other jurisdictions — also provide a helpful basis to inform prices…." (PC, 2022, p 68). The PC then goes on to reference higher education costing programs in the US and UK. In respect of one of these programs, the PC notes that this "shows the level of detail that can be revealed through a costing exercise, which can provide significant value for universities' understanding of their costs, as well as increasing accountability" PC, 2022, p68).

Gathering this cost data to make it publicly available requires universities to be clear about the time involved in the currently 'invisible costs' associated indirectly with non-teaching activities. These activities include, for instance: the preparation of research grant applications, refereeing articles and books for publication, the writing of references for colleagues' appointments and promotions, conference organisation, attendance and administration of seminars and visiting lectures. While this might seem to be very detailed and perhaps not of great importance, it is critical to an understanding of the 'true' costs of universities, including teaching costs. Without taking these types of activities into account, there is a very real possibility that these costs will be treated as a residual and, therefore, implicitly deemed to be

[10] The Oxford dictionary defines benchmarking as "something that can be measured and used as a standard that other things can be compared with". The PC offers multiple definitions including: "a measure, or reference point, of performance used for goal setting or to compare performance between similar entities" and "a standardised method for collecting and reporting critical operational data in a way that enables relevant comparisons of performance among different entities. It can also involve comparing information over time" PC Report of Performance Benchmarking of Australian Business Regulation, 2006.

part of teaching costs. In turn, these will likely be recouped, unfairly in our view, from students.

Many would agree that there is a strong interplay between teaching and research costs, and this issue is discussed in greater detail below. The PC concluded that "despite previous government commitments, data on the cost of delivering research is deficient. Undertaking a cost exercise for research is essential to improving cost estimates of both research and teaching, as well as providing a basis to understand appropriate funding levels for research" (PC, 2022, p 68).

3.1 The Challenges faced by Universities in Cost Estimation

While there are compelling arguments to provide transparent costs of teaching and research within universities to the public, there are significant challenges in doing this in a valid and reliable way. While these challenges are not insurmountable, there is a need to move away from conventional thinking and look at cost at a whole-of-sector level for the reasons explained below.

We submit that there is a critical issue of high priority for the Review to consider. We are convinced that the current approach to cost estimation will underestimate the costs of research and overestimate the costs of education. If this is indeed the case, prices set may well involve cross-subsidies from students to fund activities other than education – most likely research.

A core issue is that significant validity and reliability challenges exist regarding key elements of the processes presently used to measure costs. These challenges are at two levels. First, there are questions in respect of the approach taken to measure costs and secondly, there are structural issues in how one can measure 'true' costs in entities such as universities. We turn to the latter of these first.

The costs in universities of education and research are subject to an insidious problem known in accounting and finance circles as the "joint and common cost problem ". We argue that using conventional accounting techniques will not solve the joint and common cost problem found in universities. But before we get to this, a preliminary discussion, including some simplified illustrations, will prove useful.

The joint and common cost problem occurs when two (or more) related but distinct outputs are produced by an input (or two or more inputs) that are shared to produce the outputs. This occurs in universities because of the unavoidable structural arrangement where shared inputs (academic staff, laboratories, libraries, utilities etc.) are used to produce the two (distinct) key outputs.

To illustrate the complications, let us consider a simple example from another sector, the oil and gas industry. Oil and gas outputs are often extracted from the same well, so there is a single set of costs to be shared between two distinct but related products or outputs - oil and gas.

The key question is: How can one partition the costs between these two outputs in a valid and reliable way? In this example, put simply, what proportion of the costs of the well relate to producing gas? What proportion of the costs is attributable to oil? The answer to these questions very often matters as the market for oil might be very different from the market for

gas. There may be different commercial arrangements for each of the two products or differing levels of regulation or price controls.

At the individual oil/gas producer level, it is difficult, if not impossible, to estimate the costs of these two distinct products without making allocation assumptions. One can partition or allocate the costs based on the relative volume to each of the oil and gas outputs. That is, the assumption is that the relative difference in weight is valid to partition the costs incurred. Perhaps costs could be allocated based on weight, but is the use of a weight assumption preferable to an assumption concerning volume? Or perhaps relative revenue should be used?

We reiterate that the allocation decision is crucial to determine, amongst other things, product profitability, tax owing to governments, executive bonuses, and the like. Consequently, ensuring that the assumptions used to allocate costs are valid is of considerable and far-reaching importance.

These cost allocation decisions are crucial, yet on what basis and by whom these decisions are made is usually opaque. More importantly, it is often the case that there is little evidence that these allocations are tested (and periodically retested) based on empirical data. Again, we observe the PC's observation that benchmarking here is important[11].

3.2 Cost allocation based on assumptions and using surveys

Sometimes, those in accounting roles are required to make these allocation assumptions. And while this is executed in good faith, the way this is conventionally done is highly imperfect because of the need to use allocation assumptions. These assumptions are largely if not exclusively, taken at the individual institution level (as would be the case for individual oil and gas producers). They do not involve empirical whole-of-sector testing. As noted below, a key reason these allocations may, and likely do, result in cost estimation errors is due to the way these assumptions are made. In part, this is because the allocation assumptions use data drawn from surveys. More on the use of survey data is below.

Assumptions made in the cost allocation process are not the only issue. A core part of the methodology used to estimate the cost of education comprises surveys at the individual institution level. This use, in turn, often results in data being collected at the individual academic staff level. Often, a key part involves surveying academic staff about the time taken to complete various teaching and research activities, which is likely to lead to unintended but significant measurement errors.

A key issue here is that there is some evidence that in estimating the costs of research, individual academics will unknowingly tend to focus only on the costs of *successful* research. Even then, underestimates of costs are likely[12]. Understandably individual academic staff might tend to push to the back of their mind the time used in respect of unsuccessful grant applications or rejected articles.

The reality is that the "true" full cost of research includes a wide range of activities that are not "top of mind". These can extend to supporting the research work of other researchers,

[11] See footnote 7.

[12] One element not fully discussed here is that the activity ‘research’ will likely include an element of private benefit for individual academics not present in their education activities. This is so because research, more than teaching, will more likely lead to employment (academic) and/ or promotion.

commenting on the draft work of colleagues, supporting the editorial process of research journals and reviewing research grant applications for the ARC and NHMRC, etc. The time spent submitting articles to research journals, dealing with the comments of reviewers and editors, attending research conferences, and resubmission of papers are all part of the cost of conducting research. It is often these tasks that result in academic staff being 'time poor'.

There is also a range of administrative and leadership tasks that are part of the full cost of research. These include roles such as Associate Dean – Research, Deputy Vice-Chancellor Research, Faculty or School Research Committee membership and many other activities correctly classified as 'research'. All of the above, and more, are part of the 'full cost' of research[13].

To conclude thus far, we argue that for understandable reasons, the use of (1) the survey approach to collect data and (2) assumptions in the cost allocation process will likely yield an underestimate of the costs of research. In turn, this will impact the estimates of the costs of teaching. This leads to the question: How can the validity and reliability cost estimation process be strengthened?

3.3 Empirical cost estimation

To help answer this, we first turn to another example to illustrate the key principle. This time the example is the meat retailing industry.

Assume for this simplified example that the carcass of beef cattle comprises only two types of meat: fillet steak and beef suitable for producing hamburgers. Let us also assume that the cost of the carcass is $2000, that it weighs 200 kg and that 10% of the weight is fillet steak (20 kg) and 90% is hamburger meat (180 kg). One might ask: What is the cost per kilo of fillet steak, and what is the cost of hamburger meat?

One might be tempted to say that, without any further data and without making any cost allocation assumptions, the cost of each type of meat is $10 per kilo ($2,000 divided by 200kg) but would this be valid? In this simple example, it is easy to see that there is something amiss. Surely, the cost of fillet steak is not the same as hamburger meat.

However, if one were to survey an individual butcher, a survey response with no assumptions or guesses would have little data to work with other than $10 per kilo. But we will all recognise that this is not likely to be valid because the retail price of the two is not equal.

At an individual butcher level, one is unlikely to be able to authoritatively conclude the valid cost of each of the two types of meat or outputs without imposing assumptions with respect to splitting the $2,000 cost. Unless, of course, there is more data.

[13] As an ancillary task of undertaking a research project that led to a scholarly publication in 2021, one of the authors (Keith Houghton) tracked the full cost of conducting the research, which included: developing the research motivation, collecting the data, analysing the data, writing and rewriting components of the research paper, integrating contributions for co-authors, responding to co-authors' comments, submitting the final paper and dealing with reviewers' comments. The total 'full cost' came to a little over $400,000. This did not include the cost of co-authors, nor did it include conference attendance, or resubmission to a second journal if there had been a rejection by the first journal. The conclusion is that scholarly research, even without laboratory and similar costs, is expensive and easily underestimated.

To illustrate this further, what if a second butcher purchased a 220kg carcass with 40 kg of fillet steak and 180 kg of hamburger meat? Let us assume that this second carcass costs $2800. In this situation, we can begin to estimate the cost of each of the two types of meat (outputs) with some degree of precision. This can be achieved without the need to survey or make allocation assumptions. The key is that by considering multiple organisations with variability between the two products, we can estimate each product's underlying costs.

It is the above that is critical to being able to estimate the cost of hamburger meat as distinct from the cost of fillet steak. With this example involving multiple data points, we can deduce that hamburger meat costs $6.667 per kg and fillet steak $40.00 per kg.[14]

Similarly, there is variability between Australian universities in respect of their research/education intensity mix. The key is that a robust approach using empirical evidence as it arises in reality (as opposed to survey data and accounting allocation assumptions) could be used to estimate costs.

By taking a high-level or "whole-of-sector" perspective – a helicopter view, if you will - one can begin to estimate the actual cost of education in a way that is distinct from the cost of research. For want of a better label, one might see this as an empirical or 'big data' approach. And, importantly, with such a big data approach to cost estimation, one can obtain independently verifiable cost estimates based on actual inputs and outputs.

An example of this approach, using US data, was recently published by Australian and US authors[15]. Using this type of empirical approach, the study showed differential teaching costs depending on such factors as the research/education intensity mix of the campus. It also found that what was described as 'high quality' research (published in 'elite' scholarly journals) costs a multiple of non-elite scholarly research.

Section 4: Concluding Remarks

For the reasons outlined above, we ask that the Review Panel consider the following three observations that will, we argue, impact the priorities of the ToR.

We observe that there is a need for governments to:

(1) Provide justifications based on sound economic reasoning for the setting of, and changes to HECS-HELP prices, given that there is no clear case for domestic students to cross-subsidise research activities;
(2) Reconsider allowing universities to have an unconstrained license to determine tuition fees for graduate courses where FEE-HELP is available;
(3) Ensure that there are transparent and reliable estimates of the costs of education and the costs of research; and
(4) Discontinue reliance on survey-based cost estimates or estimates involving cost allocation assumptions since either approach will likely provide sub-optimal data.

[14] Carcass 1: 180kg x $6.667 + 20kg x $40 equals $2000; Carcass 2; 180kg x $6.667 + 40kg x $40 equals $2800.
[15] See: Houghton, K., N. Bagranoff, C. Jubb (2021).

With this cost and related data available, important questions, both for the Review and public policy more broadly, can be answered with a degree of rigour and precision.

We look forward to the opportunity to offer a more fully developed submission that deals with the substantive issues addressed in the Review when there is a call for further submissions.

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Keith Houghton is a graduate of the Universities of Western Australia and Melbourne and of the London School of Economics and Political Science. He has served as a professor of the University of Melbourne (as Fitzgerald Professor) and the Australian National University (as Dean of Economics and Commerce). This includes roles as a member or chair of university-level committees responsible for finance, budgets, audit, and risk management. He has served as a Member of the Australian Auditing and Assurance Board. He currently holds positions at Research Coaching Australia and the Higher Education and Research Group.