Analysis of costs and savings of Proposed Reforms to Higher Education

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Introduction

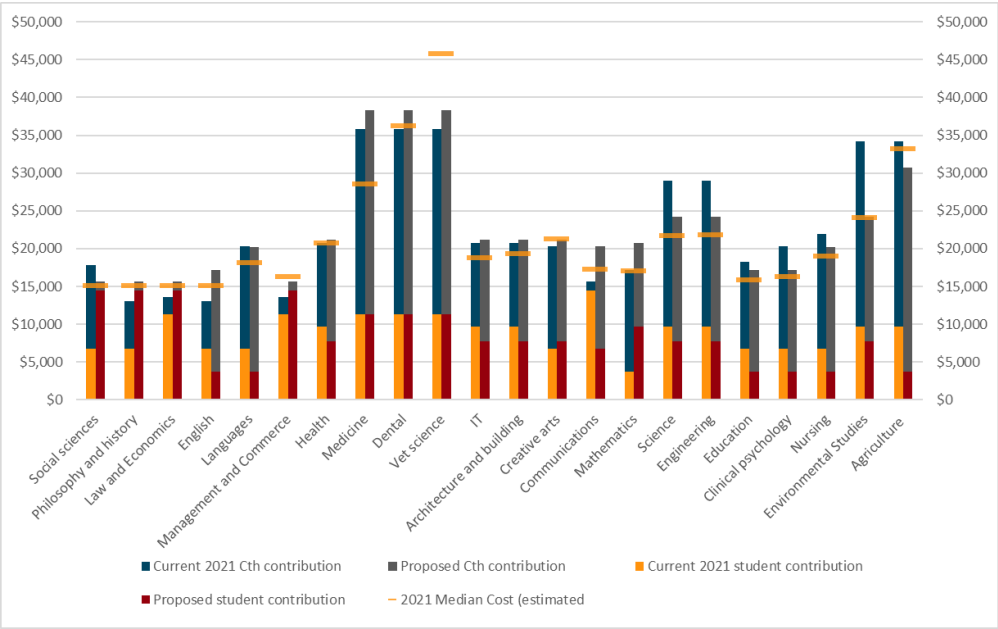
The Australian Government recently announced a Higher Education Reform Package that has the overarching objective of incentivising students to "make more job-relevant decisions about their education"[1]. The proposed reforms includes changes to both student and Commonwealth contributions to higher education fees across subject disciplines, with STEM, Health and Science targeted. The reform package also includes an additional 39,000 student places by 2023 in order to meet the expected demand resulting from poorer labour market opportunities as a result of COVID-19.

The consequences of these reforms mean that we will see a number of fields affected by increases or decreases in total funding relative to previous Commonwealth and student contributions and to current typical costs, in line with the government's objective "to better align the cost and revenue of a university degree[2]" (Figure 1). Most courses will have lower total funding overall relative to current median costs, with the exception of Medicine and Agriculture. Medicine will now receive total contributions that are $9,474 above the cost of delivering a typical course, compared to $7,248 previously. While the Commonwealth contribution to Agriculture increases by $2,554, total funding for agriculture now falls below the typical delivery cost by $2,549.

While total funding from both student and Commonwealth contributions will be closer to the median cost for most courses, student contributions have increased substantially for a number of courses. This includes the Society and Culture disciplines, which comprise of Law and Economics, History and Sociology and Philosophy and History.

We also consider the impact of the proposed changes on universities. Student preferences under the HECS system also mean that the most likely behavioural response will be from universities in response to the total funding received. This has the potential to impact on both the number of places offered and the quality of Australian universities.

Figure 1: Proposed and Current Student and Commonwealth Contributions compared and median course cost



Source: Bankwest Curtin Economics Centre calculations from various data sources including Deloitte Access Economics and Department of Education, Skills and Employment. Notes: Median cost has been uprated to 2021 estimates. Students numbers are held constant.

[1] https://ministers.dese.gov.au/tehan/job-ready-graduates-power-economic-recovery

[2] Ibid.

Impact on Universities and Potential Responses

This section considers the revenue received by universities in the context of the median or typical costs faced to deliver courses (Figure 1). While international full fee paying students generally pay more than the cost of delivering their units of study, in a number of fields revenue from domestic students is below the cost of delivery. In typical years, differences between cost and total revenue from domestic students were able to be supplemented by this surplus revenue from international students, allowing some variance to emerge between the cost of delivery and total funding for particular fields.

In some fields, the share of international students is particularly high, making up 44 per cent of IT and Management and Commerce disciplines, 53 per cent in Food Hospitality and Personal Services and 34 per cent in Engineering and Related Technologies (Table 1). The higher density of international students within these fields has enabled universities to redistribute funds to fields where total revenue did not cover costs.

In this way, revenue from international students allows Australian universities the potential to offer more facilities and higher quality courses to Australian students than they would otherwise be able to, particularly in fields where funding does not cover costs. Quality includes the facilities that students access and benefits from higher quality academics and research programs. In particular, teaching surpluses from both domestic and international students are also used to subsidise research[3] which supports both learning and the rankings of Australian universities. The benefit from high quality research by Australian universities is particularly important for Higher Degree by Research students[4]. Due to border closures in the wake of COVID-19, contributions per domestic student can no longer be supplemented to the same degree by surplus revenue from international students.

Table 1: International student Composition

	Total International	Male Total	Female Total	Total enrolments	International students (%)
Natural and Physical Sciences	15,763	51,169	53,535	104,704	15%
Information Technology	25,314	47,447	10,028	57,475	44%
Engineering and Related Technologies	28,250	69,728	14,368	84,096	34%
Architecture and Building	6,350	16,328	12,144	28,472	22%
Agriculture Environmental and Related Studies	1,530	5,549	6,392	11,941	13%
Health	23,487	47,470	142,436	189,906	12%
Education	2,667	19,171	58,974	78,145	3%
Management and Commerce	114,485	132,595	125,939	258,534	44%
Society and Culture	21,711	83,703	157,979	241,682	9%
Creative Arts	12,204	30,934	49,579	80,513	15%
Food Hospitality and Personal Services	190	99	260	359	53%
Total	248,499	465,358	591,458	1,056,816	24%

Source: Bankwest Curtin Economics Centre calculations from various data sources including Deloitte Access Economics and Department of Education, Skills and Employment. Notes: Median cost has been uprated to 2021 estimates. Students nubmers are held constant.

A standard business response to reduced funding is to undertake cost cutting measures. For universities this could include reducing research activities and reducing the quality and variety of courses offered, especially where total contributions are below cost. Conversely an improvement in course quality may transpire where total contributions are greater than costs. Some universities may implement both academic and professional staff cuts. This could be expected to reduce research outputs, the number of research faculty and stature of researchers in Australian universities and potentially reduce the

[3] Norton, A., and Cherastidtham, I. (2015), The cash nexus: how teaching funds research in Australian universities, November, Grattan Institute; Productivity Commission (2017), University Education, Shifting the Dial: 5 year Productivity Review, Supporting Paper No. 7, Canberra.

[4] Lindsay, R., Breen, R. and Jenkins, A. (2002) 'Academic Research and Teaching Quality: the views of undergraduate and postgraduate students', Studies in Higher Education, vol. 27, no. 3.

benefits that spill over to students from being taught by leading academics in their fields. Reductions in quality may persist beyond the border closures if it takes time for international students to return or for Australian universities to attract skilled academics back when they decide to do so in future.

The government has announced an additional 39,000 domestic university places by 2023, due to expected increases in demand triggered by the pandemic. But this will not replace the lost revenue from international students because it is both much smaller than the international cohort and offers universities less revenue than international students.

In many cases, the proposed changes bring revenue per student closer to the underlying costs, allowing Australian universities to maintain current teaching activities (Figure 1). However, this is highly dependent upon current cost structures being able to be maintained. In particular, Vet Science and Agriculture will not receive enough revenue to cover costs, with Agriculture particularly affected by the proposed changes.

Where revenue currently exceeds costs and the proposed changes reduce revenue closer to costs, this affects the quality that universities *could have offered*. While one of the stated goals of the Federal Government is to focus on Science and Engineering, the proposed changes of contributions actually provide less support for these fields than the current structure. This also affects Environmental Studies.

Jobs of the Future: Missing the Target?

One of the stated goals of the proposed changes is to target skills for jobs of the future by reducing student contributions in fields of study where employment opportunities are expected to be.

While productivity growth is often thought to be related to STEM fields, the greatest areas of employment growth have been and will likely continue to be in jobs which are difficult to automate. These occupations typically require more interpersonal skills, which may be more supported by courses in Society and Culture. Such skills are also more transferable when jobs and tasks are disrupted by automation. While increased total funding for Management and Commerce, Philosophy and History, and Law and Economics may improve their quality, the proposed changes reduce Commonwealth funding even though these fields are likely to provide many of the transferable skills necessary for the future of work. This change is therefore inconsistent with the government's stated intentions.

BCEC's Future of Work in Australia report noted the rising number of career transitions people are expected to make throughout their careers, as well as the increasing complexity within existing roles and occupations[5]. This suggests the need for on-going education, reskilling and *transferable skills*. Our report also noted the expansion of jobs in the service economy and that work that is becoming more "feminised", driven by increased in demand in fields women concentrate in such as Health Care, Social Assistance and Education. The Government's focus on providing greater Commonwealth support for Health, Nursing, Psychology and Education degrees could therefore be seen as consistent with their stated policies, but as pointed out recently, growth in these sectors has increased without any financial incentives for students.[6]

However, skill shortages are evident in a number of these occupations, particularly nursing, and are likely to continue as the pressures of our ageing population become more apparent. In our recent report on the health sector, BCEC found that the full-time equivalent workforce of registered nurses in aged care facilities in Australia was 85 per cent of required levels in 2016 and for enrolled nurses it was only 38 per cent of required levels[7]. The shortages were filled by personal care workers who made up 131 per cent of the required levels.

Whether a reduction in student contributions is the right policy instrument to encourage more Nursing graduates and to fill the skills shortages in the labour market is debatable.[8] Even if lower course costs do

[5] Cassells R, Duncan A, Mavisakalyan A, Phillimore J, Seymour R and Tarverdi Y (2018), 'Future of Work in Australia: Preparing for tomorrow's world', Bankwest Curtin Economics Centre, Focus on the States Series, Issue #6, April 2018.

[6] https://andrewnorton.net.au/2020/06/28/financial-influences-on-job-seeking-university-applicants/

[7] Bond-Smith, S, Duncan A, Mavisakalyan A, Seymour R and Tarverdi Y (2018), 'To Health and Happiness: WA's Health Industry Future', Bankwest Curtin Economics Centre, Focus on Industry Series, Issue #3, December.

[8] Norton (2020) argues that student interest and entry requirements are likely to play a greater role in enrolment growth.

encourage more students to enrol in Nursing degrees, the sector faces significant worker retention problems[9], which require policy to be focussed on employment conditions in order to resolve current and future skill shortages.

Overall, while some of the proposed changes appear consistent with targeting skills that are likely to be in demand in the future, many are not and other policy levers may have more impact

Applying a gender lens to the proposed changes

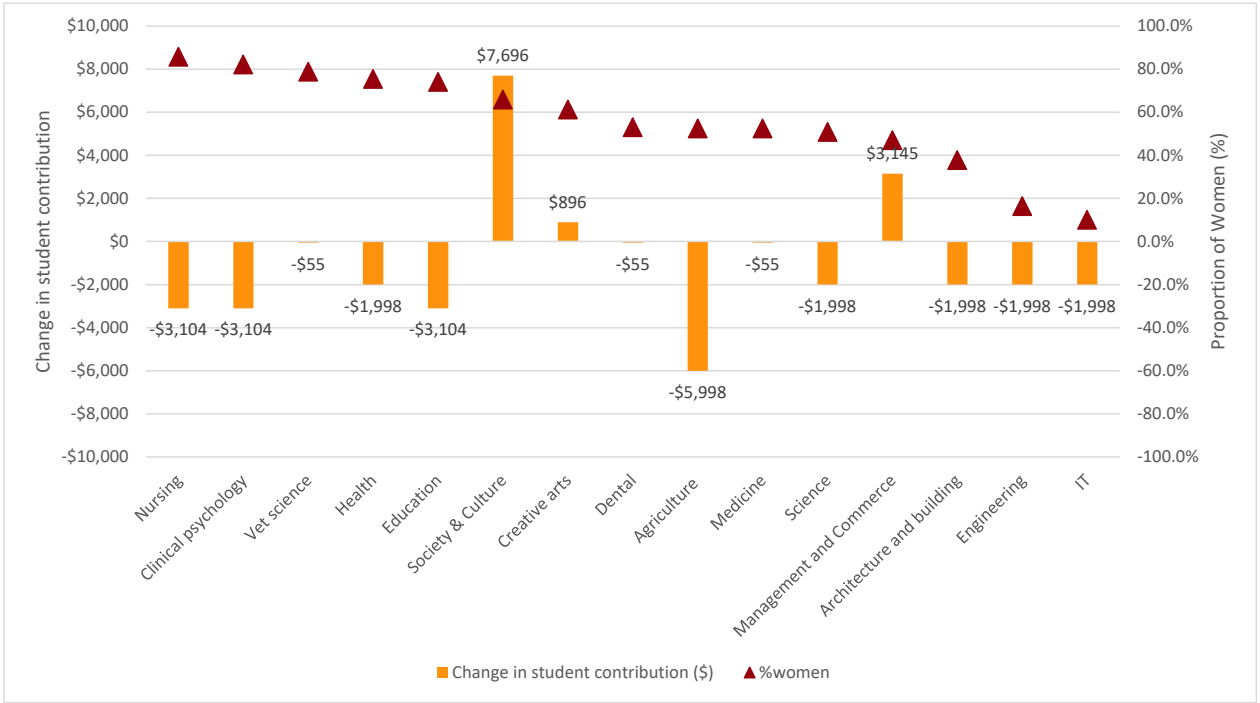
While the proposed changes affect men and women similarly overall, this research brief shows that the proposals imply a transfer between fields where more women are enrolled.

The increase in student contributions for Society and culture courses will be $7,696 which is the highest dollar value increase across all course fields (See Figure 2). In this category women make up two-thirds of enrolments. Other disciplines with high female enrolment include Nursing and Clinical Psychology, both have more than 80 per cent women, and both facing a proposed decrease in student contributions of $3,104.

The greatest decrease in student contributions is in Agriculture, with a decrease of $5,998 where student enrolment is relatively balanced with 53 per cent women and 47 per cent men. Fields with more male students face proposed decreases in student contributions. IT and Engineering are both more than 80 per cent male and Architecture and building is more than 60 per cent male. These three fields have a proposed decrease in the student contribution of $1,998 per year.

The overall impact on per student contributions by gender is relatively similar. This is due to decreases in student contributions in some fields with more female enrolments such as Clinical Psychology and Nursing, and by the increases of $3,145 in Management and Commerce where there are large numbers of students of both genders.

Figure 2: Proposed change in student contributions ($) by share of women in field of study



Source: Bankwest Curtin Economics Centre calculations from various data sources including Deloitte Access Economics and Department of Education, Skills and Employment Notes: Median cost has been uprated to 2021 estimates. Students nubmers are held constant.

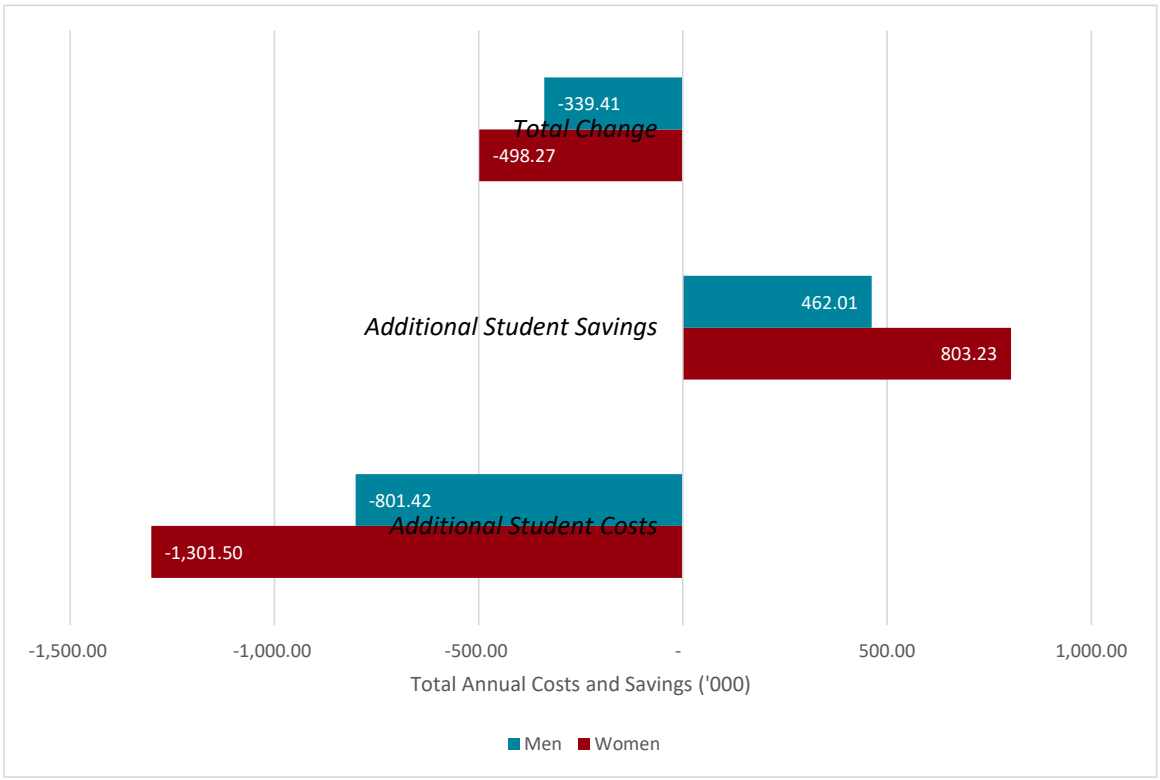
Deloitte (cited in Norton) did not find a link between lower course costs and increased Nursing enrolments.

[9] See for example Roche et al (2014) 'The rate and cost of nurse turnover in Australia; Nursing Workforce Sustainability, Improving Nurse Retention and Productivity (2014); HW2025 (2012);

Total Student Costs and Savings

Women make up 60 per cent of domestic enrolments in Australian universities. So while the additional contributions per student are similar between genders, overall women are paying a greater share of the proposed changes. Combining the proposed new student contribution costs and savings, we can see that overall young women will be paying an additional $498m (half a billion) each year towards their education, and young men an additional $339 million if the current education patterns and costs remain the same. The largest additional student costs would come from Society and Culture, where women make up around two-thirds of total students. Women studying subjects in this field including Economics, Law, and Philosophy and History will now be paying an additional $1billion each year and covering 96 per cent of their course costs instead of 45 per cent. This is by far the highest student contribution.

Figure 3: Total Annual Student Costs and Savings by field of study and gender



Source: Bankwest Curtin Economics Centre calculations from various data sources including Deloitte Access Economics and Department of Education, Skills and Employment Notes: Median cost has been uprated to 2021 estimates. Students nubmers are held constant.

The proposed changes increase student contributions for 240,809 women and 168,531 men (Table 1). Average additional costs for a female student enrolled in fields facing an increase in student contributions is $5,405 compared to average reductions for a female student enrolled in fields facing a decrease in contributions of $2,404. Average annual additional costs for men in fields with increased student contributions are $4,755 compared to average savings in fields with decreased student contributions of $2,158.

While a greater number of women and men attract savings than the number of women and men who face greater costs, the overall impact of the proposed changes is that both genders will be worse off due to the size of the additional costs students will now face. Notably, fields that are facing greater costs and have a larger share of women enrolled lose out by a greater margin than fields facing greater costs and have a larger share of men.

Table 1: Costs and Savings by gender

	Women No.	Men No.	Women Average annual cost/savings	Men per person
Costs	240,809	168,531	-$5,405	-$4,755
Savings	334,100	214,052	$2,404	$2,158
Total	574,809	382,583	-$867	-$887

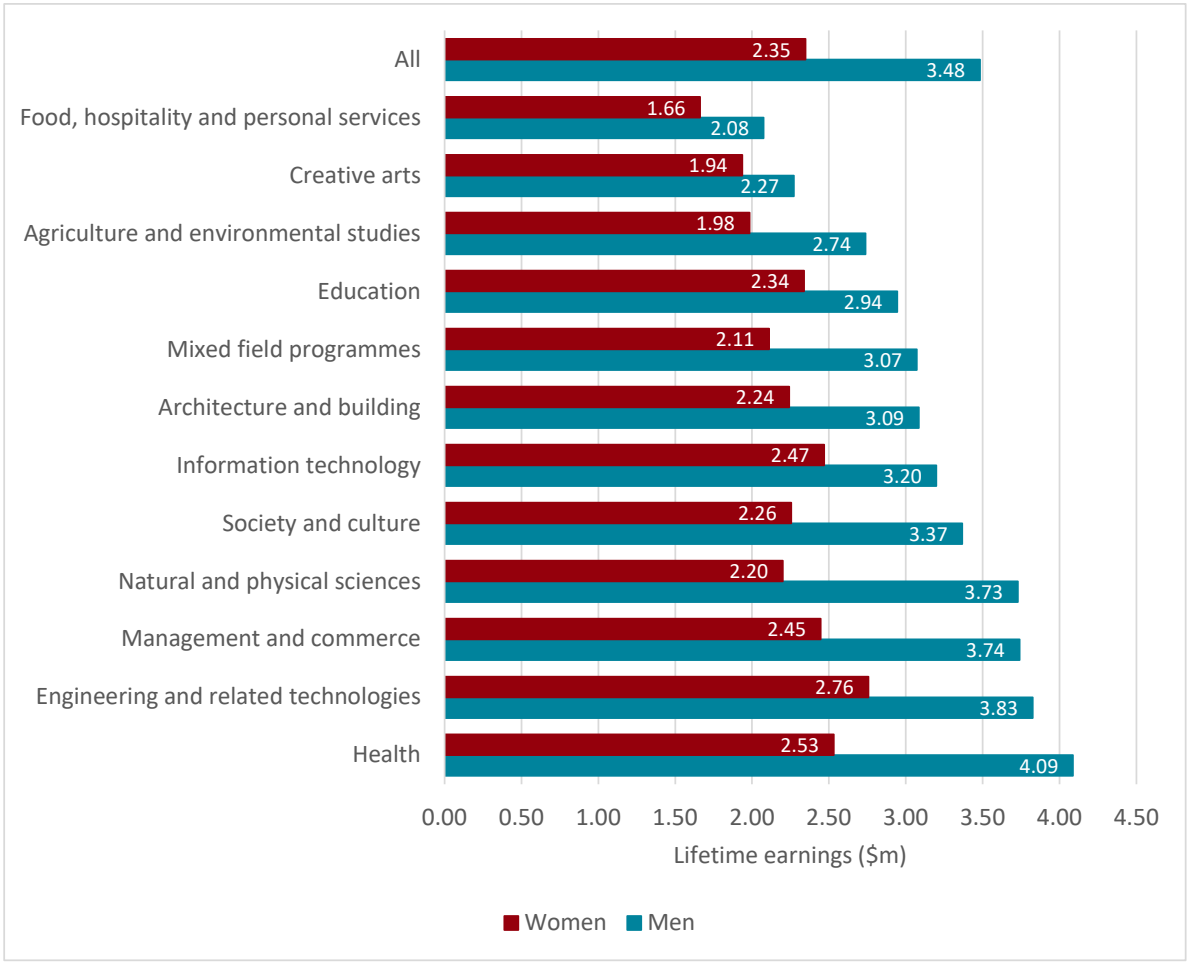
Source: Bankwest Curtin Economics Centre calculations from various data sources
Notes: Calculations hold constand costs and student numbers

Young women are more likely to make the decision to go on to university than young men, but despite this receive lower returns from university education than men. Women with a Humanities degree will earn around $1.11 million less than their male peers over their lifetime.

Even in their first year in the workforce after graduating, young women are faced with the reality that they will start on salaries that are lower than their male peers – around $3,200 per year less. If they have graduated in Architecture and Building this extends to $10,000.

While there are a number of factors impacting these outcomes, the stark reality is that women will not have the same resources available to them to pay down their student debt. This means that higher student fee contributions in fields where women are concentrated, like the Humanities, will eat away further into returns, which are already lower for women.

Figure 4: Lifetime earnings by field of study and gender



Source: Bankwest Curtin Economics Centre calculations from latest ABS Survey of Income and Housing

Concluding remarks

Will changes in costs change behaviour of prospective students?

The reforms imply that students will be incentivised to choose courses with lower fees, or to not enrol altogether. However, the implementation of HECS did not reduce access to university and expanded the diversity of students in higher education[10] Students tend to choose fields of study based on interests and capabilities, as well as what may be expected of them, rather than the price of education[11]. The HECS system largely reduces the role of costs in these decisions for most groups. This is because by design the HECS system allows students to delay paying costs until they are earning.

However, changes to student contributions, which have seen some courses reach 96 per cent of total costs and others fall to 11 per cent may result in changes to subject preferences. Just how much these new cost structure incentivises future students moving into the targeted job-relevant disciplines will remain to be seen.

Overall the proposed changes are highly disruptive to the operation of universities who are already grappling with major disruptions due to decreased international student demand. These impacts have resulted in significant job losses in the sector and a number of universities announcing pay cuts or wage freezes.

The proposed new funding model represents a fall in total funding of almost $900m across the sector based on current student enrolments and course selections. This comprises of a decrease of more than $1.7b in Commonwealth funding and an increase in student contributions of more than $800m. Granted, the government has committed to an additional 39,000 domestic places over three years. However, even if all of the 39,000 additional placements the government is proposing were to begin in 2021 and all enrolled in courses that attracted the highest dollar value contribution from government (a highly unlikely scenario) this would only cost the government just over $1billion per year. The sector would still be facing an overall decrease in government investment if the proposed changes in its current form were to go ahead.

Further, the proposed changes are significantly more costly for young Australian women than men given the disciplines that women currently concentrate in. Women already face poorer outcomes in the labour market in respect of the wages they can command and research has shown that it can take longer to pay off their HECS debt particularly when caring for children[12].

Our analysis also shows that the proposed changes are not always consistent with the government's stated aims to support STEM and skills for future work. A balanced approach would consider a greater emphasis on student electives in Society and Cultural courses, even for STEM students, to better prepare Australian graduates for the jobs of the future and sustain funding for Science and Engineering.

[10] Chapman, Bruce, and Ryan, Chris (2005) The access implications of income-contingent charges for higher education: lessons from Australia, Economics of Education Review, Volume 24, Issue 5, Pages 491-512.

[11] Forrest and Scobie, '25 Years of LSAY Research from the Longitudinal Surveys of Australian Youth, NCVER

[12] Payne A and Percival R (2008) What price the clever country? The costs of tertiary education in Australia AMP.NATSEM Income and Wealth Report 21