Parliamentary Budget Office

Policy costing

Collaboration premium	
Party:	Australian Labor Party
Summary of proposal: The proposal is to include a collaboration premium of an additional 10 per cent in the calculation of research and development (R&D) tax offsets. This premium rate would be applied to expenditures for R&D undertaken in collaboration with public universities or Commonwealth Government-funded research organisations (such as the Commonwealth Scientific and Industrial Research Organisation), and to the costs of employing new science, technology, engineering and mathematics (STEM) PhD or equivalent graduates in their first three years of employment to conduct R&D. The collaboration premium rate would be applied to eligible expenditure in addition to the existing calculation of a company's R&D offset. The proposal would apply to companies from income years on or after 1 July 2019.	

Costing overview

The proposal would be expected to decrease the fiscal and underlying cash balances by $170 million over the 2019-20 Budget forward estimates period. This impact is entirely due to a decrease in revenue.

A breakdown of the impact of the proposal over the 2019-20 Budget forward estimates period is provided at Attachment A. The proposal would be expected to have an ongoing impact that extends beyond the 2019-20 Budget forward estimates period.

Departmental costs have not been included as the proposal would not be expected to significantly increase the work of the Australian Taxation Office.

The estimates of the proposal are sensitive to the high degree of uncertainty as to what the current level of collaborative R&D expenditure is, how it would grow and what the actual behavioural response by companies would be to the introduction of a collaboration premium rate. The data sources used to estimate the current levels of collaborative R&D expenditure do not perfectly capture this expenditure and have had to be adjusted so that this proposal could be costed.

Table 1: Financial implications ($m)[(a)(b)]

	2019–20	2020–21	2021–22	2022–23	**Total to 2022–23**
Fiscal balance	-	-40	-60	-70	**-170**
Underlying cash balance	-	-40	-60	-70	**-170**

(a) A positive number represents an increase in the relevant budget balance; a negative number represents a decrease.
(b) Figures may not sum to totals due to rounding.
- Indicates nil.

Key assumptions

The Parliamentary Budget Office has made the following assumptions in costing this proposal.

- All R&D funding received by public universities or Commonwealth Government-funded research organisations from businesses would be eligible for the collaboration premium rate.
  - These funding amounts exclude fees paid to these organisations by businesses for the hire or use of their equipment and facilities. For example, the purchase of 'beam time' on the Australian Synchrotron from the Australian Nuclear Science and Technology Organisation would not be eligible expenditure, but the cost to a business of contracting the Australian Nuclear Science and Technology Organisation to use the Australian Synchrotron to perform the research would be eligible expenditure.
- As a result of the proposal, in 2019-20 there would be a 25 per cent increase in expenditure on collaborative R&D activities. This would not represent new R&D expenditure, but rather a shift from non-collaborative to collaborative R&D expenditure.
  - The fact that Australia has one of the lowest rates of collaboration in the Organisation for Economic Cooperation and Development would suggest that there is significant room to increase business spending on collaborative R&D. However this increase would be somewhat limited by non-financial factors preventing greater collaboration. In the Australian Bureau of Statistics (ABS) publication *Innovation in Australian Business* (ABS Cat. No. 8158.0), innovative businesses list numerous non-financial reasons for this low amount of collaboration, such as lack of time or expertise. Less than half of businesses that perceive a barrier to collaboration list financial factors as a reason.
  - Following the 25 per cent increase in expenditure on collaborative R&D in 2019-20, the level of eligible expenditure would remain constant over the 2019-20 Budget forward estimates period.
- Approximately 43 per cent of STEM PhD or equivalent graduates are employed in the private sector.
  - Half of STEM PhD or equivalent graduates who are employed in the private sector are working in R&D activities.
  - Approximately 80 per cent of these graduates would be full-time-equivalent employees.
- Eligible graduates would have an average salary of $83,000 in 2019-20 and their salaries would grow in line with average weekly earnings projections.

- Eligible expenditure on STEM PhD or equivalent graduates would increase over the first three years of the proposal. This would be because in each of the first three years a new PhD cohort would finish their studies and their employment costs would become eligible for the collaboration premium rate.
- About 95 per cent of the additional non-refundable R&D tax offset would be used to reduce the company tax of affected businesses. Two-thirds of the additional non-refundable R&D tax offset would be used in the same year the related expense is incurred and about a quarter would be used over the following three years. The remaining additional non-refundable R&D tax offset would not be used as it would apply to non-taxable businesses.

Methodology

The eligible expenditure on collaboration in R&D activities with public universities was identified as the amount of funding received from businesses for R&D conducted by universities in the ABS survey *Research and Experimental Development, Higher Education Organisations, Australia, 2016*, (ABS Cat. No. 8111.0).

The eligible expenditure on collaboration in R&D activities with Commonwealth Government-funded research organisations was identified as the amount of funding received from businesses for R&D conducted by Commonwealth Government-funded research organisations in the ABS survey *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2016-17*, (ABS Cat. No. 8109.0) plus a 10 per cent gross up to account for relevant expenditure not included in the dataset.

The eligible expenditure on STEM PhDs or equivalent graduates in their first three years of employment was based on an estimate of the number of students who graduate from Australian universities with STEM PhDs each year, the proportion of STEM PhD recipients who are employed in the private sector, the assumed proportion who would be working in R&D, the proportion who would be working on a full-time-equivalent basis, and their assumed earnings.

The eligible expenditure amounts were then summed together and this total was increased by the assumed behavioural response to the proposal.

The total amount of additional R&D tax offset available was calculated by applying the specified premium percentage to the total eligible expenditure on R&D activities. These figures were adjusted to account for the timing of company tax payments, the carry-forward of offsets, and the clawback due to changes in dividends and franking credits.

All estimates have been rounded to the nearest $10 million.

Data sources

The Australian Taxation Office provided the de-identified company tax return data for the 2016-17 financial year.

Commonwealth of Australia, 2018. *Budget 2018-19*, Canberra: Commonwealth of Australia.

Commonwealth of Australia, 2018. *2019 Pre-election Economic and Fiscal Outlook*, Canberra: Commonwealth of Australia.

ABS, *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2016-17*, ABS Cat. No. 8109.0, 5 July 2018.

ABS*, Research and Experimental Development, Higher Education Organisations, Australia, 2016*, ABS Cat. No. 8111.0, 22 May 2018.

ABS, *Innovation in Australia Business*, 2016-17, ABS Cat. No. 8158.0, 19 July 2018.

Department of Education and Training, 2015. *International Students Studying Science, Technology, Engineering and Mathematics (STEM) in Australian Higher Education Institutions*, Commonwealth Government: Canberra.

Graduate Careers Australia, 2015*. Postgraduate Destinations 2015: A report on the work and study outcomes of recent higher education postgraduates*, Graduate Careers Australia: Melbourne.

Office of the Chief Scientist, 2014*. Benchmarking Australian Science, Technology, Engineering and Mathematics*, Commonwealth Government: Canberra.

Office of the Chief Scientist, 2016. *Australia's STEM Workforce: Science, Technology, Engineering and Mathematics*, Commonwealth Government: Canberra.

Attachment A – Collaboration premium – financial implications

Table A1: Collaboration premium – Fiscal and underlying cash balances ($m)[(a)(b)]

	2019–20	2020–21	2021–22	2022–23	**Total to 2022–23**
Revenue	-	*-40*	*-60*	*-70*	***-170***
Total – revenue	**-**	**-40**	**-60**	**-70**	**-170**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.