Postdoctoral Fellowships Technical Report

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1.1. Introduction

British Academy Postdoctoral Fellowships (PDFs) offer three academic years of funding for early career researchers in Social sciences, Humanities, the Arts for People and the Economy (SHAPE) disciplines. Awards are open to those: at an early stage of their career, holding a doctorate, and not currently in a permanent academic post. Anyone of any nationality who has a doctorate from a UK university is eligible. In addition to providing substantial financial support the programme aims to produce significant research outputs and develop a pipeline of talent within academia.

1.2. Impacts

There are various intended impacts of the PDF programme that create societal value for the UK. The PDF scheme is intended to facilitate the production of high-quality research, build valuable professional networks, improve research skills, and bolster PDFs' academic career progression. However, given the specificities of academic research, and research in SHAPE subjects, compared to other disciplines there are methodological difficulties associated with quantifying/monetising many of these impacts. Perhaps most notably, the outputs of SHAPE research do not always lead to patents or enhancement of the productivity of related industries in ways that have been observed in the analysis of other disciplines (and which have been shown to be amenable to monetisation in these other fields).[1]

In Phase 1 of this project an economic theory of change (TOC)[2] was developed, describing the channels through which the Academy's talent development activities, like the PDF programme, create societal value. This analysis identified the leveraged funding and wage premia impact channels as producing benefits that are monetisable, given the British Academy's current monitoring and evaluation data. Chapter 2 quantifies the catalytic effects of the PDF programme focusing on the value of follow-on research funding from non-governmental sources leveraged by, and attributable to, PDFs. Chapter 3 considers the role the PDF award plays in programme alumni's career progression within academia. British Academy monitoring data is used to compare the career trajectories of PDFs to the median earnings of SHAPE PhD recipients in the UK more generally.

The value for money of the PDF programme is estimated using the present value of costs (Academy expenditure) and the present value of benefits to derive net present values and benefit-cost ratios for this programme. These results are presented in Chapter 4.

[1] See, for example, a productivity-focused approach by Frontier Economics, Rates of return to investment in science and innovation, 2014: https://assets.publishing.service.gov.uk/media/5a7f02a840f0b62305b8490b/bis-14-990-rates-of-return-to-investment-in-science-and-innovation-revised-final-report.pdf

[2] See Appendix A on the Economic Theory of Change.

2. Leveraged Funding

2.1. Introduction

The PDF programme aims to produce high-quality SHAPE research and improve the research and grant-writing skills of its award holders. Together with the academic network and prestige of the programme the aim of the PDFs is to enhance alumni's' capacity to raise funds and deliver higher quality research. In this chapter, the ability to secure funding is taken as a proxy for PDFs' improved research and grant-writing skills. This chapter describes this report's approach to a net present value (NPV) analysis of the PDF programme costs, and in-scope leveraged funding benefits, before presenting the benefit-cost ratio (BCR) results.

2.2. Analysis

The cost-benefit calculation for leveraged funds depends on four components (see Appendix B on the Cost-benefit Calculation):

- Costs: equal to the British Academy's expenditure on PDFs (incurred over multiple years and thus discounted to a net present value) (1)
- Benefits, consisting of:
  - the real-terms value (in 2023/24 terms) of subsequent (in-scope) leveraged funds (2)
  - an adjustment for the additionality of those leveraged funds (3)
  - the timing of those future funds, which determines the final NPV by applying the standard Green Book discount rate of 3.5%[3] (4)

This section discusses the data available to inform the analysis, and how it feeds into the components above.

Data

Data were provided by the British Academy detailing the number and value of awards for the 2017-23 PDF cohorts. There is one cohort of new PDF awards per financial year. These data were extracted from the Academy's database on 09/11/2023.

Leveraged funding data for the PDF programme were collected as a part of an evaluation report completed in January 2019.[4] These data form the basis for the analysis in this chapter. The evaluation report included a survey of 112 PDFs, all of whom had received the first year of their funding between 2010 and 2015. Among its questions, the survey invited respondents to provide details of up to four research grants secured

[3] The Green Book and accompanying guidance: https://www.gov.uk/government/collections/the-green-book-and-accompanying-guidance-and-documents

[4] Cloud Chamber, *Postdoctoral Fellowship Scheme – Final Evaluation Report,* January 2019.

following the Fellowship.[5] As set out below, this information was used to inform an assessment of the average value of leveraged funding per award recipient as a consequence of the PDF award.

Financial data on the Academy's expenditures and the funds leveraged by PDFs were provided as originally spent/received i.e. in nominal values of the time (current prices), rather than accounting for inflation. This report takes 2023/24 as the relevant base year and inflates or deflates these figures as needed, into real terms.[6] All financial data are thus presented here in constant 2023/24 terms unless stated otherwise.

Costs

Each round of the PDF scheme provides three years of funding to around 50 PDFs per cohort (ranging between 36 and 85) early career researchers, with total funds distributed of £12-15m per cohort (see Table 2.1).[7]

Table 2.1: British Academy PDF Awards by Cohort

	2022/23	2023/24	2024/25	2025/26
Total awards	50	55	45	45
Total award value (£m)	12.8	14.2	15.1	14.8

Note(s): Award values adjusted to constant 2023/24 pounds (£).
Source(s): The British Academy.

The PDF is a multi-year fellowship scheme. The costs for each cohort are typically incurred over three academic years (thus overlapping four financial years). In the analysis, the constant (2023/24) costs are split over four financial years using the shares in Table 2.2 (based on the timing of academic years relative to financial years) and discounted accordingly.[8] Unless the timing of future schemes changes, these shares will be constant over time.

Table 2.2: Average Split of PDF Award by Financial Year

	Year 1	Year 2	Year 3	Year 4
Share of award value (%)	15%	33%	34%	18%

Source(s): The British Academy.

[5] The survey does not, therefore, necessarily provide a full account of all research funding secured since the Fellowship.

[6] This accounts for inflation and ensures that all financial data are comparable prior to the NPV analysis.

[7] There is some further variability to this range. The 2017, 2018, and 2019 cohorts were eligible to apply for costed extensions in light of the disruption from the pandemic and most were awarded additional funds (totalling £29.7m, £20.6m, and £20.4m respectively). In 2021 only £12m was spent on 36 PDF awards.

[8] The Green Book (2022) recommended rate for discounting as a part of NPV calculations is 3.5% pa.

The Academy has derived spending estimates for the 2024/25 and 2025/26 cohorts from the target numbers of PDFs per cohort and the maximum amount of funding each PDF might require. As in Table 2.1, the Academy aims to make 45 PDF awards in both the 2024/25 and 2025/26 cohort years. However, as a result of the ebb and flow of funding and the financial needs of individual PDFs – which may be less than the maximum possible award – the Academy is often able to exceed the target number of awards in a cohort. For both the 2022/23 and 2023/24 cohorts the target cohort sizes were also 45 PDFs, but the Academy was able to make 50 and 55 awards, respectively. The expenditure figures in Table 2.1 show that the Academy's expected real spend per PDF will rise from £260,000 in 2022/23 and 2023/24 to £340,000 and £350,000 in 2024/25 and 2025/26, respectively. This step change in the cost of a PDF reflects the Academy's *prospective budgeting* in 2024/25 and 2025/26, as distinct from their *actual spending* in 2022/23 and 2023/24. For the purposes of this report, and in consultation with the Academy, we have analysed the impacts if funds were allocated to 45 award holders in each of the next two years i.e. to reflect current Academy budgeting and plans. We also consider the case in which costs per PDF are lower than these plans (and closer to historical experience), as a sensitivity.

Leveraged Funds

As part of the survey responses for the 2019 evaluation, 35 respondents (out of a sample of 112) provided information about further funding secured since the Fellowship ended and the source(s) of that funding. However, the survey only asked respondents to report a maximum of four successful funding applications. The implication is that the benefits (leveraged funds) in this analysis are likely to be understated thus underestimating the return.

This report limits its focus to additional leveraged funds (on the basis of the available data) that can be classified as supplementary to those provided by the UK government. These sources include:

- UK sources that are not ultimately resourced by UK government funds (see Table 2.3 for the breakdown given in the evaluation report).
- International sources, which would similarly not be ultimately financed by the UK government.

Funds from the above two sources (non-government/private and international sources) are considered to be in scope for the impact calculation. While PDFs do obtain additional funding from UK government sources, such as UKRI (see Table 2.3), these funds amount to a transfer in Green Book (2022) terms, and have not been included in the value for money analysis. Funds from international sources are in scope because these represent funds not specifically committed by the UK to UK-based research.[9] In Table 2.3, while figures for leveraged funds are provided in separate breakdowns of funding over time and by funding source, a simultaneous breakdown of the two is not available.

Approximately 10% of each PDF cohort take up permanent academic positions outside of the UK after completing the programme. As this analysis aims to estimate the benefit of leveraged funds to the UK, any

[9] As defined, in-scope funds would also include, for example, funding through Horizon Europe and its predecessors, even if the UK has contributed funding. This is because the funding is not guaranteed to support UK research: research consortia must apply (compete) for funding and, if successful, the funds support UK research (have been leveraged). If UK researchers are unsuccessful, then the funding supports research in other countries instead: UK research does not take place. In contrast, if PDF alumni are unsuccessful in receiving UK funding (e.g. from UKRI) then UK research still takes place, just by other UK researchers: no new funding has been leveraged.

funds leveraged by PDF alumni based outside the UK are considered out of scope. The evaluation data available did not allow a detailed exploration of which leveraged funds can be attributed to PDF alumni based abroad. It is therefore assumed that 90% of the total in-scope leveraged funds remain in the UK. The other 10% are assumed to go to researchers outside the UK and are omitted from the present value of benefits calculations.

Table 2.3: Survey-Reported Leveraged Funding by Time Since End of Fellowship and Source (£m)

	Funding Sources	Years since fellowship ended			Total
		1-2 years	3-4 years	5-6 years	
UK	Foundation / trust	-	-	-	1.6
	Learned societies	-	-	-	1.5
	Non-profit	-	-	-	0.1
	Wider funder	-	-	-	0.0
	Private industry	-	-	-	0.1
	Institutional research grant	-	-	-	0.3
	UKRI	-	-	-	6.1
	Government	-	-	-	1.4
International	European	-	-	-	16.6
	Foreign-national research funder	-	-	-	1.8
Leveraged funds in scope (£m)		-	-	-	22.1
Leveraged funds not in scope (£m)		-	-	-	7.5
TOTAL (£m)		3.8	16.2	9.6	29.6
Share of leveraged funds in scope (%)					75%

Note(s): Rows in grey mark funding sources considered to be in scope for the leveraged-funding calculation. The breakdown by years is only available at aggregate level, as shown in the 'TOTAL' row.
Survey was conducted in 2019 and so all leveraged funds are, conservatively, assumed to be in 2019/20 terms and rebased in subsequent analysis to constant 2023/24 terms.
Source(s): British Academy Postdoctoral Fellowship Scheme Final Report January 2019.

In the absence of data that simultaneously report the source of funding and the time profile this report calculates the average leveraged funding per PDF on the assumption that award values are proportional to the number of PDFs in the sample in each award year. The award year and the number of award holders are grouped and mapped to each of the corresponding time periods (i.e. 1-2, 3-4 and 5-6 years since the end of the Fellowship). This yields a set of average leveraged funds estimates over time. To mitigate double counting across the years the estimate for the average funds leveraged after 1-2 years (post-Fellowship) is subtracted from that for after 3-4 years.[10]

[10] The average funds leveraged 5-6 years after completing the Fellowship are assumed to be the same as those estimated for the 3-4 year post-Fellowship period. Given limitations to the data on PDF alumni, this assumption was made as a conservative estimate of the leverage funds over that period, which are, in reality, likely to increase over time as researchers progress in their careers and become better equipped to win research funding.

Table 2.4: Estimated Total and In-Scope Leveraged Funds by Cohort (£m)

	Total Leveraged Funds Ten Years After Award	In-scope Leveraged Funds Ten Years After Award
2022/23	31.7	23.8
2023/24	34.9	26.2
2024/25	28.5	21.4
2025/26	28.5	21.4

Note(s): Leveraged funds by cohort are derived from the average leverage per respondent and the total number of awards in each cohort from Table 2.3.
Award values in constant 2023/24 pounds (£).
Source(s): Estimated from British Academy and British Academy Postdoctoral Fellowship Scheme Final Report January 2019.

As Table 2.3 shows, the survey figures from the evaluation are not broken down by individual cohort but, as part of the cost-benefit calculation, there needs to be a correspondence between the benefits (leveraged funds) and the costs. To do so, the leveraged funds (in scope) per cohort have been estimated based on the average leveraged funds (in scope) per PDF and the total number of awards provided in each cohort. Table 2.4 presents the total leveraged funds and total in-scope leveraged funds for the 2022/23 – 2025/26 cohorts ten years after their PDF awards (i.e. summing the leveraged funding values across the 1-2, 3-4, and 5-6 year periods).

The total leveraged funds are estimated from averages that are assumed to remain constant over time. Put another way, the results from the survey are assumed to be representative of more recent and future PDF cohorts. This does, however, extend to any inflation on both the costs and benefits side. Any per-fellowship increase in costs over time is already embedded in British Academy expenditure figures (in Table 2.1). However, from the evaluation alone, it is not straightforward to identify (or assume) any uprating in research funding over time. The implication is that future benefits may be understated because costs (from British Academy expenditure data / award values) have increased over time while the value of benefits is assumed unchanged. Without further adjustment this implies a declining benefit-cost ratio over time but, as the results below show, the impact is not especially large over the period considered.

Additionality

Even though the funds identified as in scope for this exercise may not be drawing in or displacing UK government resources from elsewhere, it is still possible that the aforementioned funds could have been secured in the absence of a PDF. This requires an assessment of the additionality of the PDFs: the extent to which award holders are able to leverage funds that would not otherwise have been secured had they not received a Fellowship.

It is not straightforward to isolate any further funds that could have been secured with or without British Academy PDF schemes. This requires consideration of factors such as the availability of alternatives, whether researchers might simply have applied for further funding anyway (possibly from other sources), whether other (non-PDF) researchers might still have secured those funds from a UK perspective, and the extent to which PDFs enhance research skills and the ability to write successful grant applications.

As discussed later, the final calculation is relatively more sensitive to the additionality assumption and, given the uncertainty, a range of values is considered, with additionality of 75% taken to be the central/main assumption (see Table 2.5).

Table 2.5: Additionality Assumptions

Additionality		Description	Comments
High	100%	PDFs are entirely additional in effect: no further funding could have been leveraged without the original grants.	Considered to be quite possible.
Central	75%	Three-quarters of the leveraged funds are additional. (One-quarter could have been secured regardless.)	Main estimate.
Low	50%	Low additionality: half the leveraged funds are additional. (Half would have been secured regardless.)	-
Very Low	25%	Low additionality: only one-quarter of the leveraged funds is additional. (Three-quarters would have been secured regardless.)	Considered implausible but tested nevertheless.

Based on the 2019 evaluation of PDFs, a majority of respondents agreed that the PDF helped to attract more funding opportunities and provided them with the resources and time to deliver high quality research outputs and follow-on grant applications. In particular, PDFs emphasised the role of the programme in establishing a track record of grant winning and successful delivery. For many award recipients the PDF is their first opportunity to manage a significant research project. The reputation of the programme, and competitive application process, are important signals to external funders. To this end PDFs were quoted as saying, “If you get funding from a good academic funder and produce something good in terms of publications – other funds can look at you, and know you are capable of managing a project” and “raising money allows you to raise more money… it rolls on from there.” The PDF programme integrates award holders into a broader network of research and funding opportunities. Networking events connect PDFs to potential future funding sources and enhance their professional profiles. Consultations with the British Academy confirmed that reports from more recent cohorts align with these qualitative data collected during the 2019 evaluation. Broadly, PDFs perceive the programme as having a direct and positive impact on their ability to leverage future funding. These qualitative reports, and the aims of the PDF programme, support an argument for ruling out the lower additionality levels of 25% and 50%.

It is also argued that without the British Academy fellowship, it is highly unlikely that researchers would remain in academia, hence no further funding would have been leveraged. This means that an additionality of 100% is quite possible.[11] However, it is still not straightforward to assume that all researchers would definitely have left academia had they not received funds from the British Academy. It is also difficult to evidence that the reported additional funding could not have been secured otherwise. As such, while a figure of 100% is not implausible it is not this report’s main estimate.

The 75% additionality assumption is near the mid-point of this viable range. Further testing of the sensitivity of the BCRs, presented in Section 2.3, identified the breakeven (BCR=1) levels of additionality for each cohort year as:

[11] In the context of a survey that only asked respondents for a maximum of four successful research grants, one might also argue that it is relatively more likely that listed grants are larger and/or more difficult to secure, supporting an additionality assumption towards the higher end. Note that, on such a basis, the additionality assumption may be lower were a full set of grant funding figures available, albeit applied to a larger (more complete) figure for leveraged funding.

- 72% for the 2022/23 cohort
- 72% for the 2023/24 cohort
- 94% for the 2024/25 cohort
- 92% for the 2025/26 cohort

The breakeven additionality levels for 2024/25 and 2025/26 are expected to decrease as, historically, actual spending per PDF is some way below maximum budgeted costs (see page 6). The 75% additionality assumption lies within the range of breakeven BCRs and does not produce an overly optimistic BCR estimate. This report therefore considers 75% additionality as the central/main assumption.

Timing

The timing of the leveraged funds is relevant because it affects the discount rates and, in turn, the present values of future costs and benefits that feature in the cost-benefit calculation. These considerations are applicable to both the duration of the PDF itself (the costs) and the subsequent time to secure additional funds thereafter (the benefits).

Each PDF award lasts four financial years (three academic years). The implication of this, as discussed earlier, is the need to discount costs over the course of the award period. Regarding benefits, based on the available survey data in the evaluation, the additional funds are split into time bands as follows: 1-2 years, 3-4 years and 5-6 years after the end of the award. An annual profile of leveraged funds can then be constructed for each of the three bands.

While the funds could have been secured in any year, a conservative assumption has been adopted, that the leveraged funds were secured at the end of the reported period in each case. That is, funds reported by those surveyed 5-6 years after their Fellowship are assumed to have been secured in years 5 and 6 following the Fellowship. In this regard, the calculation thus tends towards an underestimate compared to a case in which funds might have been secured earlier in the relevant period.

2.3. Results

Table 2.6 presents the estimates of the benefit-cost ratio (BCR) of the leveraged funding based on the available data and discussion above i.e. treating the costs and benefits principally in financial terms. Given the uncertainty of, and sensitivity to, the additionality assumption, three sets of BCRs are reported, testing the likely returns to PDFs in the next 1-2, 3-4 and 5-6 years, respectively. The estimates are based on figures for costs and leveraged funds as above, with the appropriate discount rates over time, covering: the duration of the funding and the period for an award recipient to secure additional funding after their fellowship (1-2, 3-4 and 5-6 years). These are benefits that would be realised (on the basis of the available data) within a ten-year period from the initial award.

Table 2.6: Estimated Benefit-Cost Ratios (BCRs) by Cohort by Time Since End of Fellowship

Time since fellowship	Scenarios	Additionality	2022/23	2023/24	2024/25	2025/26
1-2 years	High	100%	0.3	0.3	0.3	0.3
	Central	75%	0.3	0.3	0.2	0.2
	Low	50%	0.2	0.2	0.1	0.1
	Very Low	25%	0.1	0.1	0.1	0.1
3-4 years	High	100%	0.5	0.5	0.4	0.4
	Central	75%	0.4	0.4	0.3	0.3
	Low	50%	0.3	0.3	0.2	0.2
	Very Low	25%	0.1	0.2	0.1	0.1
5-6 years	High	100%	0.5	0.5	0.4	0.4
	Central	75%	0.4	0.4	0.3	0.3
	Low	50%	0.3	0.3	0.2	0.2
	Very Low	25%	0.1	0.1	0.1	0.1

Note(s): Leveraged funding figures are discounted over the course of the fellowship using the standard Green Book discount rate of 3.5%.
Leveraged funding values are in constant 2023/24 (£).
Source(s): British Academy calculations.

Using the central assumption of 75% additionality, the BCRs are estimated to be in the range 0.20-0.26, 0.31-0.41 and 0.29-0.38 for periods of 1-2, 3-4 and 5-6 years after fellowship, respectively. In the case of a medium-term impact (i.e. 3-4 years after fellowship), for every £1 of PDF funding, a further £0.31-0.41 of non-public funds is leveraged (in NPV terms): a total of £1.30-1.40 of research (including the value of the research funded directly by the PDF).

Table 2.7: Total Estimated Ten-year Leveraged Funding BCRs by Cohort

Time since PDF award	Scenarios	Additionality	2022/23	2023/24	2024/25	2025/26
10 years	High	100%	1.39	1.39	1.07	1.09
	Central	75%	1.04	1.04	0.80	0.81
	Low	50%	0.70	0.69	0.53	0.54
	Very Low	25%	0.35	0.35	0.27	0.27

Note(s): Leveraged funding figures are discounted over the course of the fellowship using the standard Green Book discount rate of 3.5%.
Leveraged funding value are in constant 2023/24 (£).
Source(s): British Academy calculations.

Table 2.7 summarises the total BCRs for the ten-year period following the award of a Postdoctoral Fellowship (i.e. the sum of the BCRs presented in Table 2.6). In the central case, the overall leveraged funding BCRs are in the range 0.80-1.04. Every £1 of PDF funding thus generates a further £0.80-1.04 (in NPV terms) of research funding over ten years from in-scope leveraged funds (75% of total funds leveraged) alone. This estimate does not include the role the PDF programme plays in supporting the British Academy's pipeline of talent development, or the returns to the research produced by PDFs following their awards. The BCR estimates in Table 2.7 only capture a narrowly-defined benefit of the PDF programme, that PDFs leverage sufficient additional funds to match 80%-104% of research costs in the central case and as much as 107%-139% of the programme costs in the high scenario. In the most pessimistic case (very low additionality of the award, of 25%), the PDF programme would have a BCR of 0.27-0.35 (Table 2.7).

The BCRs for the 2024/25 and 2025/26 cohorts are based on projected costs and cohort sizes from the British Academy's Delivery Plan. As mentioned in the discussion of the Academy's costs in Section 2.2, it is likely that, as has happened in previous years, the Academy will be able to support more than 45 PDFs in each year and that these BCRs will be higher. This report tested the sensitivity of the 2024/25 and 2025/26 BCRs to larger cohort sizes and found that, assuming 75% additionality, an additional five PDFs in each year would increase the 2024/25 BCR to 0.89 and the 2025/26 BCR to 0.91.

3. Wage Premia

3.1. Introduction

The PDF programme is considered a springboard for launching postdoctoral SHAPE researchers into a career in academia. Without the access to funding, professional networks, and mentorship of the fellowship, it is possible that many of the PDFs would not have progressed as rapidly in their careers or may not have pursued a career in academia at all. This chapter compares the earnings of PDF recipients over the ten-year period following their awards to a counterfactual cohort of SHAPE PhD recipients in the UK, whose earnings are derived from government Longitudinal Education Outcomes (LEO) data.[12] The methodology underpinning the value for money analysis is presented before reporting the consequent BCRs. These results have been derived from the PDF programme costs and discounted wage premia of the PDF cohort over and above a counterfactual case (representing the estimated benefits).

3.2. Analysis

The cost-benefit calculation for wage premia depends on four components (see Appendix B on the Cost-benefit Calculation):

- Costs: equal to the British Academy's expenditure on PDFs (incurred over multiple years and thus discounted to a present value) (1)
- Benefits, consisting of:
  - The real (£2023/24) value of subsequent wage premia (2) earned by PDFs defined as:
    - The wages earned by PDFs in the ten years following their awards (2.i)
    - The wages earned by a representative counterfactual cohort of SHAPE PhD holders in the UK (2.ii)
    - The sum of the annual present value differences between (2.i) and (2.ii) (the wage premia)
  - An adjustment for the additionality of those earnings differentials (3)
  - The timing of those future earnings, which determines the final net present values on the basis of the appropriate discount factors (4)

This section discusses the data available to inform the analysis, and how they feed into the components above.

Data

Data were provided by the British Academy detailing the number and value of awards for the 2017-23 PDF cohorts. These data were extracted from the Academy's database on 09/11/2023. Financial data on the Academy's expenditures and the funds leveraged by PDFs were provided in current prices (in pounds sterling). This analysis treats 2023/24 as the relevant base year and either inflates or deflates these figures

[12] See the LEO Postgraduate Outcomes dataset: Create your own tables, Table Tool – Explore education statistics – GOV.UK (explore-education-statistics.service.gov.uk)

accordingly. All financial data are thus presented here as constant 2023/24 values.

The Academy also provided career status monitoring data for current and former PDFs. The dataset spans the programme's inception in 1986 up to the latest 2023 cohort (the data were updated in October 2023). The data detail the year award recipients were appointed as PDFs and the various positions that they have progressed to in their careers.

To devise a representative pay scale for academic positions in the UK, this report considered the August 2023 single pay spine for higher education and support staff based on the final offer made during the conciliation talks in early 2023.[13] This national scale, which covers most higher education institutions in UK, is agreed by the five primary higher education trade unions.[14] This scale consists of spine points, ranging from 3 to 51, which represent different levels of seniority in academia and the corresponding annual salaries. The national pay spine was used to help define lower bounds for pay bands which were then extended by examining the pay scales of 12 universities of a variety of sizes, selectivity, and locations.[15] These universities are typical career destinations for past PDF recipients.

Government LEO data on the median earnings of SHAPE PhD holders in the UK three, five, and ten years after graduating were used to devise a counterfactual pay scale.[16] The median income reported from a list of 11 SHAPE subjects was taken as a proxy for SHAPE subjects more generally.[17]

Costs

The British Academy's spending on the PDF programme has already been described in the corresponding section of the previous chapter (Table 2.1). Each round of the PDF scheme provides three academic years of funding to around 50 PDFs per cohort (ranging between 36 and 85) of early-career researchers, with total funds of £15-20m per cohort (see Table 2.1). The same cost split over the four programme years is assumed as described in Table 2.2.

Wage Premia

The wage premia benefit is the additional earnings of Postdoctoral Fellows that can be attributed to the greater progression in their careers as a result of awards from the Academy, over and above what a counterfactual cohort of SHAPE PhD recipients in the UK would otherwise have received in the ten years following graduation.[18] The following sub-sections lay out the calculations of (2.i) PDF earnings and (2.ii) the counterfactual cohort's earnings over the same period. The discounted annual differences between (2.i) and (2.ii), with adjustments for additionality, represent the wage premia benefit (illustrated in the later Wage

[13] See: jnches-single-pay-spine-2023-24.pdf (unitetheunion.org)
[14] The unions are: UNISON, Unite, Educational Institute of Scotland, General and Municipal Workers' Union, and University College Union
[15] The universities included in this analysis were: University of York, Queen Mary University of London, Imperial College London, UCL, London School of Economics, Cambridge, University of Oxford, University of Edinburgh, University of Birmingham, University of Bristol, University of Warwick, University of Glasgow.
[16] See: https://explore-education-statistics.service.gov.uk/data-tables/leo-graduate-and-postgraduate-outcomes
[17] The median earnings for PhD holders in the following subjects were considered: Creative arts and design, Economics, English studies, History and archelogy, Languages and area studies, Media, journalism and communications, Performing arts, Philosophy and religious studies, Politics, Psychology, Sociology social policy, anthropology.
[18] Here the date of the PDF award is taken to correspond with the date that counterfactual candidates completed their PhDs.

Premia Calculation sub-section).

2.i PDF Earnings

Table 3.1 shows a subset of the British Academy career monitoring data. The rows correspond to different job categorisations (i.e. Professors, Readers, Senior lectures etc.) which are disaggregated by PDF cohort years (columns). The data were updated in September 2023 and describe the various job titles/career statuses of PDF alumni from each cohort at that time.

Table 3.1: Career Monitoring Data

PDF Cohort	Role Categorisation			
	2018	2019	2020	2021
(P) Professor	1	0	0	0
(R) Reader	0	0	0	0
(S) Senior lecturer	3	1	1	0
(L) Lecturer	23	17	6	3
(O) Other academic	15	11	0	0
(A) Academic-related	1	1	0	0
(F) Current PDFs	9	18	28	42
(E) Emeritus	0	0	0	0
(N) Non-academic (Known)	1	5	1	0
(U) Unknown	1	0	0	0
(D) Deceased	0	0	0	0

Note(s): COVID-19 restrictions prevented a number of PDFs from the 2018 and 2019 cohorts from completing their research, and the programme, in the standard 3 academic year period. The British Academy offers flexible support to its award recipients and this is accounted for in the wage premia analysis.
Source(s): British Academy.

From these career-tracking metrics, this report focuses on the academic roles of Professor, Reader, Senior Lecturer, Lecturer, and Other academic, as these positions form a linear track for career progression within academia. Two cohorts, and the distribution of PDFs across academic roles, have been grouped and mapped to each of the corresponding years since their PDF award to devise a representative career trajectory for each PDF cohort (Table 3.2). For example, Table 3.2 shows that ten years after being awarded the Fellowship 7% of the combined cohorts had progressed to the position of Professor, 1% had become Readers, and 37% were Senior Lecturers. The time horizon for the wage premia analysis is ten years from the PDF and so this cohort composition is taken from data on the 2013 and 2014 cohorts (approximately ten years prior to the data being extracted).

Table 3.2: PDF Career Progression

Years since award	Combined cohort years	Percent (%) of combined cohorts in each role				
		Professor	Reader	Senior lecturer	Lecturer	Other academic
Year 3	2020-21	0%	0%	1%	11%	0%
Year 4	2019-20	0%	0%	2%	26%	12%
Year 5	2018-19	1%	0%	4%	37%	24%
Year 6	2017-18	1%	0%	11%	43%	30%
Year 7	2016-17	1%	1%	15%	41%	32%
Year 8	2015-16	1%	3%	19%	33%	33%
Year 9	2014-15	4%	3%	30%	27%	24%
Year 10	2013-14	7%	1%	37%	20%	18%

Note(s): The data for two cohort years is mapped to each 'Year since award' in order to increase the sample class sizes and minimise the effects of yearly variations.
Source(s): British Academy.

Table 3.3 presents the pay scale for academic positions in the UK considered in this report. The lower and upper salary bounds for each position are the median values derived from twelve universities (see Appendix C on Academic Pay Scales). These universities are popular post-Fellowship locations for PDFs and vary in location and institutional ranking. The mid-band estimate is the main representative figure for each role, however, many PDFs go on to work at high paying London-based universities or highly ranked research institutions that provide elevated annual salaries across all positions, so these estimates are also included.[19]

[19] Top 5 university classification based on: Best universities in the UK 2024 - University Rankings (timeshighereducation.com)

Table 3.3: Academic Positions Pay Scale

	Academic Salary Estimates (£2023/24)				
	Lower Bound	Upper Bound	Mid-band estimate	London Universities	Top 5 Ranked Universities
(P) Professor	72,526	117,662	95,094	103,938	92,759
(R) Reader	61,458	77,358	69,408	73,913	71,587
(S) Senior Lecturer or Associate Professor	52,012	62,410	57,211	63,275	59,836
(L) Lecturer	45,332	54,394	49,863	55,086	52,503
(O) Other Academic	37,099	47,662	42,381	46,252	43,447

Note(s): The lower and upper bound estimates are derived from the median salaries for each position from group of 12 universities. The mid-band estimate is the mid-point between these bounds. The London universities estimate is the mid-point of the median lower and median upper bounds of the Queen Mary University of London, Imperial College, UCL, and LSE. Similarly, the top 5 universities estimate is the mid-point of the median lower and upper bounds of Oxford, Cambridge, UCL, LSE, Imperial College, and University of Edinburgh.
Source(s): Official university websites and the University Union single pay spine 2023-24.

The disaggregation of PDF cohorts by years since their awards described in Table 3.2 is then combined with the cohort sizes of more recent years (2022/23-2025/26 cohorts) and the academic positions pay scale to estimate future earnings for these cohorts over the next ten years. As an example, Table 3.4 presents the earnings of the 2022/23 – 2025/26 PDF cohorts, during the ten years following their awards, using the mid-band salary estimate. The mid-band salary figure is this report's main estimate.

Table 3.4: Estimated PDF Cohort Earnings by Years Since Awards: Mid-band Estimate

Cohort Year	PDF Cohort Earnings: Mid-band Estimate (£2023/24m)							
	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2022/23	0.31	0.97	1.60	2.09	2.18	2.25	2.37	2.32
2023/24	0.34	1.07	1.76	2.30	2.40	2.47	2.60	2.55
2024/25	0.28	0.87	1.44	1.88	1.96	2.02	2.13	2.09
2025/26	0.28	0.87	1.44	1.88	1.96	2.02	2.13	2.09

Note(s): Years 1 and 2 are not included as benefits (i.e. promotions and career progression) are assumed to begin in Year 3.
Source(s): British Academy.

2.ii Counterfactual Earnings

The PDF programme comes at an important time in PhD researchers' entry into academia in the UK and propelling them onto a progressive career path. Were it not for the Academy's support, some PDF recipients may still have gone on to have careers as academics while others would left academia altogether. As the counterfactual case (i.e., the wages of PDFs had they not received the PDF award) is uncertain, median earnings of SHAPE PhD holders in the UK are used as an estimate of this counterfactual.

LEO data describing the median earnings for SHAPE PhD recipients, by 11 academic subjects, were used to identify lower and upper salary bounds at the three-, five-, and ten-year marks following graduation (Table

3.5). The data in Table 3.5 are for 2019/20 because the latest available data are for 2020/21 and show various anomalies which we understand to be related to the COVID-19 period.

Table 3.5: Median Earnings by PhD Subjects and Years After Graduation, 2019/20

PhD Subject	Salary at Different Years After Graduation (£)		
	3 Years	5 Years	10 Years
Creative arts and design	31,500	30,000	35,100
Economics	47,900	45,800	50,100
English studies	29,300	31,100	37,000
History and archaeology	30,000	32,600	34,000
Languages and area studies	33,500	33,300	39,200
Media, journalism, and communications	28.900	36,200	38,400
Performing arts	27100	27,500	35,600
Philosophy and religious studies	31,100	33,700	38,800
Politics	37,000	39,200	47,900
Psychology	35,500	37,300	39,200
Sociology, social policy, and anthropology	35,100	39,200	41,400

Source(s): UK Government Explore Education Statistics: https://explore-education-statistics.service.gov.uk/data-tables/leo-graduate-and-postgraduate-outcomes

In Table 3.6, the data in Table 3.5 are inflated, using the ONS GDP deflator, to constant 2023/24 prices and the mid-points of the relevant bounds are used as representative annual earnings for counterfactual candidates three, five, and ten years after graduation. These median salary data are used to calculate this report's main estimate, though upper quartile values are also considered, to reflect a more conservative case, in which counterfactual earnings are higher. This more conservative counterfactual has been developed to address the argument that PDFs are a talented/high-achieving sub-set of PhD recipients and may have gone on to exceed median SHAPE earnings levels without the aid of the Fellowship.

Table 3.6: UK SHAPE PhD Holder Earnings

	SHAPE PhD Salary Estimates (£2023/24): 3 years after graduation		
	Lower Bound	Upper Bound	Mid-band estimate
Median SHAPE	30,427	53,781	35,368
Upper Quartile	40,645	73,542*	46,820

	SHAPE PhD Salary Estimates (£2023/24): 5 years after graduation		
	Lower Bound	Upper Bound	Mid-band estimate
Median SHAPE	30,877	51,423	37,838
Upper Quartile	43,564	64,672	46,034

	SHAPE PhD Salary Estimates (£2023/24): 10 years after graduation		
	Lower Bound	Upper Bound	Mid-band estimate
Median SHAPE	38,175	56,251	43,564
Upper Quartile	49,645	67,816	55,016

Note(s): ** Upper quartile earnings in the underlying survey appear unusually high for those reporting three years after graduation, and are due to the survey responses from Economics PhD graduates. The estimate is included here for completeness and serves to raise counterfactual earnings in the sensitivity analysis only. This lowers estimated PDF impacts in this supplementary analysis.*

Source(s): *UK Government Explore Education Statistics: https://explore-education-statistics.service.gov.uk/data-tables/leo-graduate-and-postgraduate-outcomes*

The median SHAPE salary estimates are multiplied by the number of PDFs in the 2022/23, 2023/24, 2024/25, and 2025/26 cohorts to calculate the total counterfactual cohort earnings at the three-, five-, and ten-year points following completion of their PhDs. Linear interpolation is used to estimate the cohort earnings for the intervening years. The counterfactual cohort earnings for the main salary estimate, over the course of the ten years following graduation, are shown in Table 3.7.

Table 3.7: Counterfactual Cohort Earnings: Median SHAPE Earnings - Mid-band Estimate (£m)

Cohort Year	Counterfactual Cohort Earnings: Median SHAPE Earnings – Mid-band Estimate (£2023/24m)							
	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2022/23	0.22	0.74	1.26	1.37	1.48	1.59	1.70	1.81
2023/24	0.24	0.81	1.38	1.50	1.63	1.75	1.87	1.99
2024/25	0.20	0.66	1.13	1.23	1.33	1.43	1.53	1.63
2025/26	0.20	0.66	1.13	1.23	1.33	1.43	1.53	1.63

Source(s): *UK Government Explore Education Statistics: https://explore-education-statistics.service.gov.uk/data-tables/leo-graduate-and-postgraduate-outcomes*

Wage Premia Calculation

Table 3.8 presents the discounted annual wage premia benefits calculated using the main salary estimates for both PDF and counterfactual cohorts.[20] The additionality assumption of 90% is explained in the following

[20] For the PDF cohort this is the mid-band salary estimate and for the counterfactual cohort this is the median SHAPE PhD holder annual earnings.

section and is taken to be the most appropriate attribution level.

Table 3.8: Wage Premia: 90% Additionality and Main Salary Estimates

Cohort Year	Wage Premia: 90% Additionality and Main Salary Estimates							
	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2022/23	0.1	0.2	0.3	0.7	0.6	0.6	0.6	0.5
2023/24	0.1	0.2	0.3	0.7	0.7	0.7	0.7	0.5
2024/25	0.1	0.2	0.3	0.6	0.6	0.5	0.5	0.4
2025/26	0.1	0.2	0.3	0.6	0.6	0.5	0.5	0.4

Note(s): Values in constant 2023/24 pounds (£) rounded to one decimal place.
Wage premia values discounted using the standard Green Book rate (3.5%).
Source(s): British Academy & UK Government Explore Education Statistics: https://explore-education-statistics.service.gov.uk/data-tables/leo-graduate-and-postgraduate-outcomes

Additionality

Given the length of the PDF programme, magnitude of the financial support PDFs receive, the prestige of the award, and the programme's career catalysing aims it was thought that a large proportion of any wage differential between the PDF and counterfactual cohorts would be attributable to the Postdoctoral Fellowship. A higher range of additionality assumptions than were developed for leveraged funds (i.e. 100%, 90%, 80%, 70%) were therefore considered. From discussions with the British Academy, 90% was taken to be the central/main estimate (see Table 3.9).

Table 3.9: Additionality Assumptions

Additionality		Description	Comments
High	100%	PDFs are entirely additional in effect: the entirety of the wage premium can be attributed to the PDF award	Considered to be possible.
Central	90%	90% of the wage premia are additional. (10% would have been earned regardless.)	Main estimate.
Low	80%	Low additionality: 80% of the wage premia are additional. (20% would have been earned regardless.)	Plausible but toward the lower end of a reasonable range
Very Low	70%	Low additionality: 70% of the wage premia are additional. (30% would have been secured regardless.)	Considered less plausible but tested nevertheless.

Timing

As is the case for leveraged funding, the timing of wage premia benefits and the programme costs is relevant because it affects the discount rates and, in turn, the net present values of future impacts that feature in the cost-benefit calculation. Each PDF award lasts four financial years (three academic years). The implication of this, as discussed earlier, is the need to discount costs over the course of the award period.

Wage premia benefits are assumed to emerge three years after the fellowship award. According to Academy career monitoring data it is at this stage that the first PDFs receive promotions (see the 2021 cohort in Table 3.1). While it can be argued that since wage premia would persist through the course of a

award recipient's career, this report restricts its focus to the ten years following the PDF award only. This decision is motivated by the limited time span of the LEO data (which only covers a ten-year period) as well as a conservative approach to additionality. Beyond the first ten years of PDF alumni's careers it becomes increasingly difficult to attribute wage premia benefits directly to the PDF award.

3.3. Results

This section presents the main estimates for the benefit-cost ratios (BCRs) of the wage premia, earned over the ten years following the PDF award, based on the available data and the preceding discussion. Given the sensitivity of the BCRs to different earnings assumptions, BCR results for different PDF and counterfactual salary assumptions are provided in Appendix D (Wage Premia BCRs for Different Salary Assumptions). The rows of each table display the BCRs by different additionality assumptions with the central choice (90%) highlighted in grey.

Table 3.10, referred to as the Central Case, is the main set of results. In Table 3.10 the mid-band estimate is used for PDF salaries and the median SHAPE PhD earnings are chosen for the counterfactual. The BCRs for the 2022/23-2025/26 cohorts, assuming 90% additionality, are in the range 0.18-0.23. The wage premia benefit serves as a useful proxy for skills development and research quality, however, it does not capture the value of the research produced by award recipients. These BCRs should thus be understood as capturing a sub-set of the PDF programme benefits primarily related to the development of academic skills and talent in the UK. Even when a more conservative additionality assumption, of 70% is considered, PDFs are still realising 14%-18% of PDF programme costs in additional earnings alone.

Table 3.10: Estimated Benefit-Cost Ratios by PDF cohort: Central Case

Salary Estimates	Additionality	Benefit-Cost Ratios			
		Cohort: 2022/23	**Cohort: 2023/24**	**Cohort: 2024/25**	**Cohort: 2025/26**
Central Case: **PDF Cohort:** Mid-band salary estimate **Counterfactual Cohort:** Median SHAPE PhD salary (mid-band)	100%	0.26	0.26	0.20	0.20
	90%	0.23	0.23	0.18	0.18
	80%	0.21	0.21	0.16	0.16
	70%	0.18	0.18	0.14	0.14

Note(s): Wage premia values discounted using the standard Green Book rate (3.5%).
The salary estimates used in calculating these BCRs are the main options for this report.
Source(s): British Academy.

The lower BCRs observed for the 2024/25 and 2025/26 cohorts also relate to the use of Academy-predicted spending and cohort sizes as described previously (see Section 2.3Results) i.e. assuming maximum costs. If the Academy were able to support larger than stipulated cohorts, of 50 PDFs in the 2024/25 and 2025/26 years, within the budget presented in Table 2.1, then the BCRs rise to 0.20 in the respective central cases.

4. Combined Costs and Benefits

The first row (1) of Table 4.1 shows the present value of annual costs of the PDF programme. The benefits (2) are the combined present values of the leveraged funding and wage premia benefits, accrued by PDFs over the ten years following the PDF awards, using this report's central case additionality and salary assumptions by PDF cohort year. These central assumptions are:

- 75% additionality for leveraged funding benefits
- 90% additionality for wage premia benefits
- PDFs earn the mid-band salary estimate
- Counterfactual candidates earn the median SHAPE PhD salary in the UK

These costs and benefits are expressed in constant 2023/24 millions of pounds and have been discounted at the standard Green Book rate of 3.5%. The present value of benefits is in the range £14.1m – 17.1m and the present value of costs is in the range £12.2m – 14.3m.

The net present values of the combined leveraged funding and wage premia benefits (2 - 1) are shown in the third row of Table 4.1. The NPVs are positive for the 2022/23 and 2023/24 cohorts indicating that the ten year present value benefits exceed the PDF programme costs. The lower (and slightly negative) NPVs for the 2024/25 and 2025/26 cohorts arise from the use of Academy-budgeted cost figures, which represent the maximum cost per PDF rather than, say, the lower historical average. As stated in Section 2.2, the outturn BCR of these years may well be higher.

The central case BCRs are calculated as the ratio of combined present value benefits and programme costs (2 / 1) in Table 4.1. While the benefits considered here are only a sub-set of those generated by PDFs, and the Academy's talent programmes more broadly, the BCRs show that these returns alone exceed the costs of the PDF programme. The 2022/23 and 2023/24 cohorts are estimated to realise leveraged funding and wage premia benefits that exceed programme expenses by approximately 30%. For the 2024/25 and 2025/26 cohorts benefits are in line with costs (the former falling 1% below costs). However, as has been noted in the costs and results sections for both the leveraged funding and wage analyses (see Sections 2.3 Resultsand 3.3) the BCRs for these years may well be higher if costs per researcher are closer than is currently assumed to those in previous years.

Table 4.1: Combined Central Case Ten-year Costs, Benefits, NPVs, and BCRs

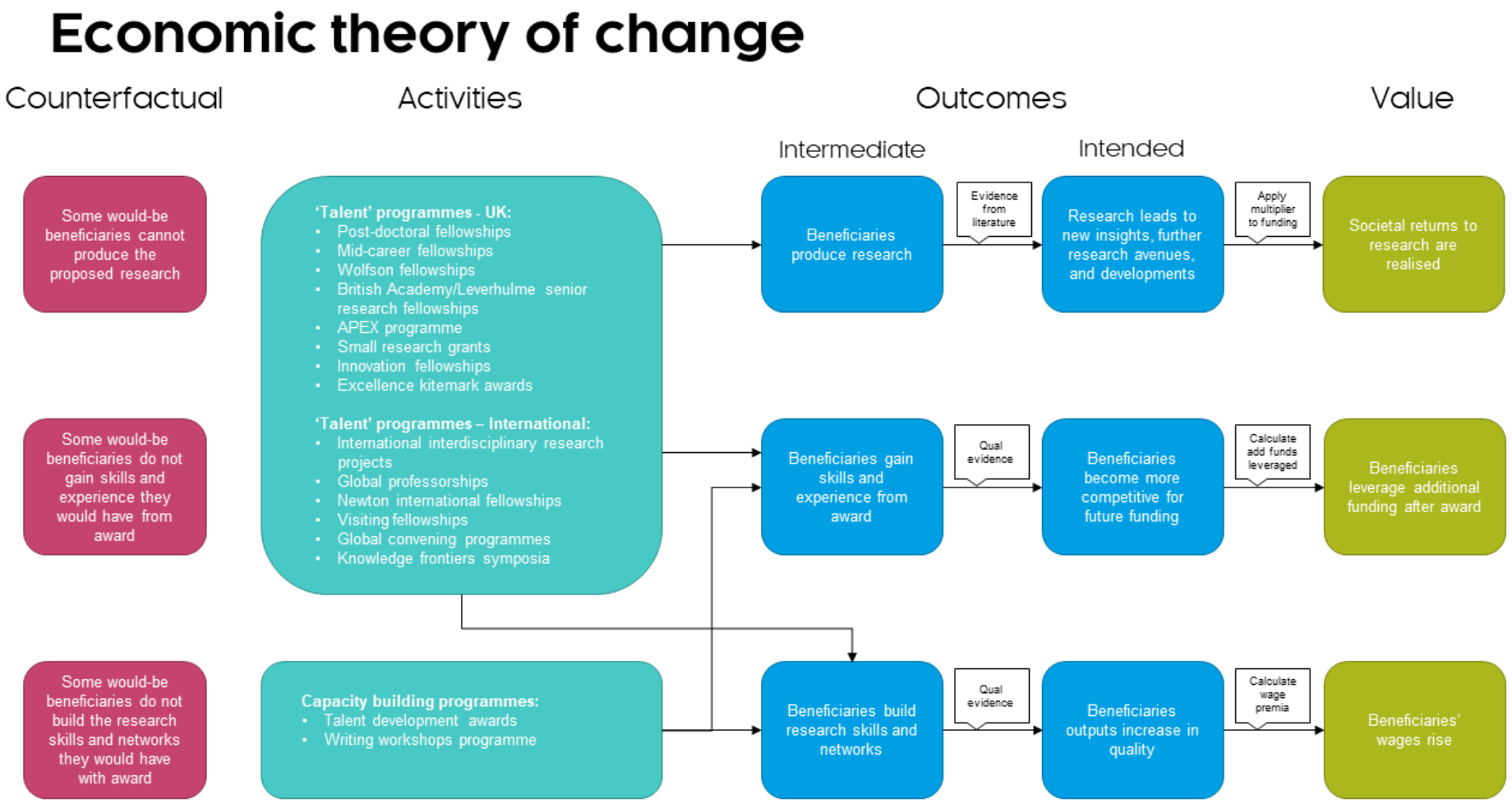
	Combined ten-year Benefit-Cost Ratios			
	Cohort: 2022/23	Cohort: 2023/24	Cohort: 2024/25	Cohort: 2025/26
Costs, £m present value (1)	12.2	13.5	14.3	14.1
Benefits, £m present value (2)	15.6	17.1	14.1	14.1
Benefits, £m net present value (2 -1)	3.4	3.6	-0.2	0.0
Benefit-cost ratio (2 / 1)	1.3	1.3	0.99	1.00

Note(s): The benefits shown here are the sums of the central cases for the leveraged funding and wage premia benefits by cohort year. The central case employs an additionality assumption of 75% for leveraged funds and 90% for wage premia. The central salary assumptions for the wage premia benefits are that PDFs earn the mid-band estimate salary and that the counterfactual candidates earn the Median SHAPE PhD salary,

Source(s): British Academy.

Appendices

Appendix A - Economic Theory of Change



Appendix B - Cost-benefit Calculation

The benefit-cost ratio (BCR) is given by:

$$BCR = \frac{benefits_{NPV}}{costs_{NPV}}$$

That is, the BCR is the ratio of benefits to costs once *converted to a common unit* (most typically money) and *expressed in net present value* (NPV) terms.[21]

The BCR gives an indication as to whether an action (which carries a cost):

- generates a net cost, because the benefits are less than the costs (BCR < 1)
- breaks even, with the benefits equalling the costs (BCR = 1)
- generates a net benefit, because the benefits exceed the costs (BCR > 1)

The analytical challenge is that, while costs (past or planned British Academy expenditure) are usually known, benefits and, in turn, the BCR, must be estimated, and in NPV terms.

The approach is to estimate the BCR from the available historical data and then apply it to future costs to project the benefits of future expenditure. This rests on the assumption of a stable BCR i.e. that the historical BCR is a reasonable estimate of the future BCR. Given a(n estimated) BCR, the expected benefits of an action can be calculated from the costs as a rearranged version of the above:

$$benefits_{NPV} = costs_{NPV} \cdot BCR$$

And the net benefits can be calculated as:

$$net\ benefits_{NPV} = benefits_{NPV} - costs_{NPV}$$

Note, however, that it is challenging to fit all impacts of the British Academy's research funding into such a quantitative framework. Not everything is straightforward to quantify, let alone monetise, and estimates are subject to uncertainty. The impacts set out in this report are thus relatively narrow and concern the value of additional research funding leveraged, and additional wages earned by PDFs, as a result of British Academy activities.

[21] Net present value captures the idea that impacts further into the future are worth less than if they had occurred today. By the application of a discount rate, an impact in 2026 (say) can be expressed in equivalent 2023 terms.

Appendix C - Academic Pay Scales

The nationally agreed higher education pay spine for the 2023/24 year is presented below.[22]

Appendix Table C.1: Pay Scales for the Analysis, 2023/24

SINGLE PAY SPINE FOR HE ACADEMIC AND SUPPORT STAFF 2023/24

Increase of between 5 and 8% dependent on spine point from August 2023* with an interim pay award of £1000 or 2% whichever the greater from February 2023 (See notes below).

Deletion of spine points 3 and 4 before end of 2023-24 academic year.

Based on full and final offer made during ACAS conciliation talks in February 2023.

Spine point	Salary from 1 August 2022 (£)	Salary from 1 February 2023 (£)	Salary from 1 August 2023 (£)
3	18,898	19,898	20,410
4	19,092	20,092	20,619
5	19,333	20,333	20,880
6	19,578	20,578	20,948
7	19,863	20,863	21,254
8	20,134	21,134	21,543
9	20,400	21,400	21,828
10	20,761	21,761	22,214
11	21,197	22,197	22,681
12	21,630	22,630	23,144
13	22,149	23,149	23,700
14	22,662	23,662	24,248
15	23,144	24,144	24,533
16	23,715	24,715	25,138
17	24,285	25,285	25,742
18	24,948	25,948	26,444
19	25,642	26,642	27,181
20	26,396	27,396	27,979
21	27,131	28,131	28,759
22	27,929	28,929	29,605
23	28,762	29,762	30,487
24	29,619	30,619	31,396
25	30,502	31,502	32,332
26	31,411	32,411	32,982
27	32,348	33,348	33,966
28	33,314	34,314	34,980
29	34,308	35,308	36,024
30	35,333	36,333	37,099
31	36,386	37,386	38,205
32	37,474	38,474	39,347
33	38,592	39,592	40,521
34	39,745	40,745	41,732
35	40,931	41,931	42,978
36	42,155	43,155	44,263
37	43,414	44,414	45,585
38	44,737	45,737	46,974
39	46,047	47,047	48,350
40	47,423	48,423	49,794
41	48,841	49,841	51,283
42	50,300	51,306	52,815
43	51,805	52,841	54,395
44	53,353	54,421	56,021
45	54,949	56,048	57,696
46	56,592	57,723	59,421
47	58,284	59,450	61,198
48	60,027	61,228	63,029
49	61,823	63,059	64,914
50	63,673	64,946	66,857
51	65,578	66,890	68,857

Notes:

*8% for SP3-5, 7% for SP6-14, 6% for SP15-25, 5% for SP26-51

Spine point values have been rounded. Where a percentage increase is applied they are calculated on an unrounded basis from year-to-year to reduce rounding error.

[22] See jnches-single-pay-spine-2023-24.pdf (unitetheunion.org)

Appendix Table C.2: University Pay Scales

University of York – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	-	8R	-	71,377	73,576
(R) Reader	-	8R	-	71,377	73,576
(S) Senior Lecturer	Senior Lecturer; Senior Research Fellow	8	44 - 51	56,021	58,857
(L) Lecturer	Lecturer; Research Fellow	7	36 - 45	44,296	57,696
(O) Other Academic	Research trainee; Tutor; Associate Lecturer; Research Associate	5 & 6	23 - 38	30,487	46,974

Note(s): *Most universities extend the national scale beyond the maximum spine point 51.*
Source(s): *https://www.york.ac.uk/admin/hr/browse/pay-and-grading/pay-scales/*

Queen Mary University of London – January 2024					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Senior Lecturer; Senior Research Fellow	7	-	61,896.00	77,240.00
(R) Reader	Senior Lecturer; Senior Research Fellow	7	-	61,896.00	77,240.00
(S) Senior Lecturer	Senior Lecturer; Senior Research Fellow	6	-	52,549.00	63,622.00
(L) Lecturer	Academic Research and Teaching: Lecturer	5	-	49,785.00	53,994.00
(O) Other Academic	Academic Research and Teaching: Research	4	-	40,223.00	48,463.00

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Same band used for both Readers and Professors. Included in the London Universities salary estimate.*
Source(s): *https://hr.qmul.ac.uk/workqm/paygradingrewards/pay/scales/index.html*

Imperial College – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor	-	-	89,139	89,139
(R) Reader	Reader	-	-	77,866	77,866
(S) Senior Lecturer	Senior Lecturer	-	-	72,071	75,184
(L) Lecturer	Lecturer	-	-	66,221	69,086
(O) Other Academic	Research Fellow; Advanced Research Fellow	-	-	51,417	66,221

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Included in the London Universities and Top 5 Universities salary estimates.*
Source(s): *https://www.imperial.ac.uk/human-resources/pay-and-pensions/salaries/academic/*

UCL – December 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Senior Lecturer; Senior Research Fellow	10	-	73,357	164,115
(R) Reader	Associate Professor	9	-	65,698	81,976
(S) Senior Lecturer	Lecturer	8	-	51,474	65,698
(L) Lecturer	Associate Lecturer	7	-	45,521	54,794
(O) Other Academic	Researcher with relevant PhD	7	-	42,099	50,585

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Included in the London Universities and Top 5 Universities salary estimates.*
Source(s): *https://www.ucl.ac.uk/human-resources/sites/human_resources/files/2023_-_24_ucl_non-clinical_grade_structure_with_spinal_points_december_2023_update_1.4.pdf*

LSE – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor; Professorial Research Fellow	10	-	115,662	175,107
(R) Reader	Reader; Principal Research Fellow	9	-	70,113	89,969
(S) Senior Lecturer	Senior Lecturer; Senior Research Fellow	8	-	59,670	75,562
(L) Lecturer	Lecturer; Research Fellow	7	-	50,606	65,157
(O) Other Academic	Research Officer	6	-	40,229	52,095

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Included in the London Universities salary estimates.*
Source(s): *https://info.lse.ac.uk/staff/divisions/Human-Resources/Assets/Documents/Salary-Scales/New-salary-scales-updated-August-2023-latest-NAC-Extended.pdf*

University of Cambridge – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor	12	-	79,792	205,186
(R) Reader	Professor	11	-	66,857	77,476
(S) Senior Lecturer	Associate Professor	10	-	61,198	70,917
(L) Lecturer	Assistant Professor; Senior Research Associate	9	-	45,585	64,914
(O) Other Academic	Research Assistant; Research Associate	6 & 7	-	32,332	49,794

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Included in the Top 5 Universities salary estimates.*
Source(s): *https://www.hr.admin.cam.ac.uk/files/single_salary_spine_as_at_1_november_23.pdf*

University of Oxford – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor	10	-	61,198	91,670
(R) Reader	Associate professor	10a	42 - 52	52,815	70,918
(S) Senior Lecturer	Academic-related staff	9	42 - 50	52,815	66,857
(L) Lecturer	Academic-related staff	8	37 - 46	45,585	59,421
(O) Other Academic	Academic-related staff	7	29 - 39	36,024	48,350

Note(s): *Most universities extend the national scale beyond the maximum spine point 51. Included in the Top 5 Universities salary estimates.*
Source(s): *https://finance.admin.ox.ac.uk/salary-scales*

University of Edinburgh – November 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Senior Lecturer; Senior Research Fellow	10	50 - 51	66,587	112,161
(R) Reader	-	9	45 - 51	57,696	68,575
(S) Senior Lecturer	-	8	37 - 47	45,585	61,198
(L) Lecturer	-	7	36 - 39	44,263	48,350
(O) Other Academic	-	7	30 - 36	37,099	44,263

Note(s): Most universities extend the national scale beyond the maximum spine point 51. Included in the Top 5 Universities salary estimates.
Source(s): https://www.ed.ac.uk/human-resources/pay-reward/pay/pay-scales

University of Birmingham – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor	-	-	73,225	123,162
(R) Reader	Associate Professor	9	-	56,021	84,644
(S) Senior Lecturer	Assistant Professor	8	-	45,585	61,198
(L) Lecturer	Research Fellow	7	-	44,263	46,974
(O) Other Academic	Research Fellow	7	-	36,024	44,263

Note(s): Most universities extend the national scale beyond the maximum spine point 51.
Source(s): https://www.birmingham.ac.uk/jobs/staff-benefits/salary-scales

University of Bristol – August 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	Professor	M	-	71,995	131,935
(R) Reader	Senior Lecturer; Associate Professor	L	45 - 51	57,696	70,919
(S) Senior Lecturer	Lecturer	K	39 - 43	48,350	56,021
(L) Lecturer	Lecturer	J	34 - 38	41,732	46,974
(O) Other Academic	Research Associate	I	30 - 34	37,099	41,732

Note(s): Most universities extend the national scale beyond the maximum spine point 51.
Source(s): https://www.bristol.ac.uk/hr/salaries/

University of Warwick – January 2024					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	-	9	-	71,000	175,000
(R) Reader	-	8	44 - 51	56,021	68,857
(S) Senior Lecturer	-	7	37 - 43	45,585	54,395
(L) Lecturer	-	6	27 - 36	33,966	44,263
(O) Other Academic	-	6	27 - 36	33,966	44,263

Note(s): Most universities extend the national scale beyond the maximum spine point 51.
Source(s): https://warwick.ac.uk/services/humanresources/internal/payroll/salscalescurrent/current/

University of Glasgow – November 2023					
Positions (British Academy categorisations)	Titles (University designations)	Grade (University designation)	Spine Points	Lower bound (£)	Upper bound (£)
(P) Professor	-	9	-	73,057	90,087
(R) Reader	-	8	39 - 47	61,019	77,567
(S) Senior Lecturer	-	7	32 - 39	49,423	61,019
(L) Lecturer	-	6	29 - 32	45,143	49,423
(O) Other Academic	-	6	25 - 29	40,388	45,143

Note(s): Most universities extend the national scale beyond the maximum spine point 51.
Source(s): https://www.gla.ac.uk/myglasgow/humanresources/all/pay/paygrading/salaryscales/

Appendix D - Wage Premia BCRs for Different Salary Assumptions

Table 3.10, referred to as the Central Case, presents this report's main results. In Table 3.10 the mid-band estimate is used for PDF salaries and the median SHAPE PhD earnings are chosen for the counterfactual. The BCRs for the 2022/23-2025/26 cohorts, assuming 90% additionality, are in the range 0.18-0.23. The wage premia benefit serves as a useful proxy for skills development and research quality. However, it does not capture the value of the research produced by programme alumni. These BCRs should thus be understood as capturing a sub-set of the PDF programme benefits primarily related to the development of academic skills and talent in the UK.

Appendix Table D.1: Estimated Benefit-Cost Ratios by PDF cohort: Central Case

Salary Estimates	Additionality	Benefit-Cost Ratios			
		Cohort: 2022/23	Cohort: 2023/24	Cohort: 2024/25	Cohort 2025/26
Central Case: **PDF Cohort:** Mid-band salary estimate **Counterfactual Cohort:** Median SHAPE PhD salary (mid-band)	100%	0.26	0.26	0.20	0.20
	90%	0.23	0.23	0.18	0.18
	80%	0.21	0.21	0.16	0.16
	70%	0.18	0.18	0.14	0.14

Note(s): Wage premia values discounted using the standard Green Book rate (3.5%).
The salary estimates used in calculating these BCRs are the main options for this report.
Source(s): British Academy.

Tables D.2 and D.3 show the BCRs for more optimistic scenarios in which PDF cohorts are assumed to be earning the higher salaries associated with London and Top 5 universities respectively while the counterfactual cohort continues to receive the median SHAPE PhD salary. The BCRs assuming London university salaries are the highest, in the range 0.24-0.32 with 90% additionality. In this scenario each PDF cohort realises additional earnings over the ten years following their awards equivalent to 24-32% of the costs of the programme.

Appendix Table D.2: Estimated Benefit-Cost Ratios by PDF cohort: London Universities Case

Salary Estimates	Additionality	Benefit-Cost Ratios			
		Cohort: 2022/23	Cohort: 2023/24	Cohort: 2024/25	Cohort: 2025/26
London Universities Case: **PDF Cohort:** London Universities salary estimate **Counterfactual Cohort:** Median SHAPE PhD salary (mid-band)	100%	0.35	0.35	0.27	0.28
	90%	0.32	0.32	0.24	0.25
	80%	0.28	0.28	0.22	0.22
	70%	0.25	0.25	0.19	0.19

Note(s): Wage premia values discounted using the standard Green Book rate (3.5%).
Source(s): British Academy.

Appendix Table D.3: Estimated Benefit-Cost Ratios by PDF cohort: Top 5 Universities Case

Salary Estimates	Additionality	Benefit-Cost Ratios			
		Cohort: 2022/23	Cohort: 2023/24	Cohort: 2024/25	Cohort: 2025/26
Top 5 Universities Case: **PDF Cohort:** Top 5 universities salary estimate **Counterfactual Cohort:** Median SHAPE PhD salary (mid-band)	100%	0.30	0.30	0.23	0.23
	90%	0.27	0.27	0.21	0.21
	80%	0.24	0.24	0.18	0.19
	70%	0.21	0.21	0.16	0.16

Note(s): Wage premia values discounted using the standard Green Book rate (3.5%).
Source(s): British Academy.

Table D.4 shows a more conservative estimate of the wage premia benefits. PDF cohorts are assumed to receive the mid-band salary estimate while the counterfactual candidates earn the upper quartile SHAPE PhD salary in the UK. Even in this pessimistic case PDFs earn non-zero wage premia at all levels of additionality.

Appendix Table D.4: Estimated Benefit-Cost Ratios by PDF cohort: Conservative Case

Salary Estimates	Additionality	Benefit-Cost Ratios			
		Cohort: 2022/23	Cohort: 2023/24	Cohort: 2024/25	Cohort: 2025/26
Conservative Case: **PDF Cohort:** Mid-band salary estimate **Counterfactual Cohort:** Upper Quartile SHAPE PhD salary (mid-band)	100%	0.10	0.10	0.07	0.08
	90%	0.09	0.09	0.07	0.07
	80%	0.08	0.08	0.06	0.06
	70%	0.07	0.07	0.05	0.05

Note(s): Wage premia values discounted using the standard Green Book rate (3.5%).
Source(s): British Academy.