RAND EUROPE

# Modelling changes to UKRI's Full Economic Costing policy

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# Preface

The Department for Science, Technology and Innovation (DSIT) commissioned a consortium led by RAND Europe to perform research exploring the implications that a change in the proportion of research projects' Full Economic Costing (FEC) that UK Research and Innovation (UKRI) provides for grant-holders would have on the UK research and development (R&D) system. The initial project was completed in spring 2025, with an internal report provided for DSIT.

This project was commissioned through the UK Metascience Unit – of which DSIT is a joint lead organisation – via a technical support framework contract with a consortium of RAND Europe, CRAC Vitae, King's College London, the University of Sussex and independent experts.

# Summary

This is a short, public report summarising the key findings from a study conducted by RAND Europe for the UK's Metascience Unit under UKRI and DSIT in the spring of 2025. Since 2002, UKRI has employed a policy of funding 80 per cent of the Full Economic Costing (FEC) of research it supports through grants. In the current climate of increasing challenges to the financial sustainability of higher education institutions (HEIs), there are calls from some in the higher education sector to reduce cost burdens on research-performing HEIs by increasing UKRI's FEC rate. Existing evidence on the impacts of such a policy change is limited. This study aims to investigate the potential impacts of adjustments to the FEC rate on the health and sustainability of the UK research and development (R&D) funding system.

**Approach.** Using insights from a rapid evidence review of relevant literature as well as consultation with key stakeholders from DSIT, UKRI and HEIs, this study aimed to develop a plausible model of the direct and knock-on impacts that adjusting UKRI's FEC rate would have on HEIs, researchers and other actors in the UK R&D system. We used the findings to develop a theoretical economic model to show how HEIs' demand for UKRI grants would change with increased or decreased FEC rates. We also produced a systems map to visualise how changes in UKRI's FEC rate would affect behaviour across all parts of the UK R&D and higher education (HE) system. The model and systems map were subject to critical review and revision as part of an online workshop with a small group of DSIT and UKRI colleagues.

**Findings.** The investigation into the potential impacts of changing UKRI's FEC rate – assuming a fixed overall budget – revealed a complex interplay of factors affecting the UK R&D funding system. Responses to FEC policy changes are likely to vary significantly among institutions due to differing business models and strategic priorities, making the overall effects difficult to predict. Changing the FEC rate is likely to affect the scale and types of institution which apply for and win UKRI funding. While increasing the rate may lead to increased competition and therefore greater concentration of funding to fewer institutions, reducing it shifts more of the cost burden onto institutions and so may also disincentivise smaller or less research-intensive institutions from applying. In both cases, the capability of the UK R&D system is jeopardised. For the most research-intensive institutions, demand for research grants is reasonably inelastic due to the high value of non-monetary benefits that winning UKRI research funding provides. Therefore, we would expect to see relatively little effect on grant application behaviour among the leading research institutions, compared to less research-intensive institutions, for whom financial stability and the cost of participating in research have greater influence over their behaviour.

**Limitations.** As this was a short-running study, the findings present only a plausible model for how UKRI's FEC rate influences behaviour and outcomes in the system. Second-order or knock-on effects of a rate change are especially hard to estimate given the complexity of the system and a lack of suitable empirical

data on the impact of such a change. For a robust impact assessment of an FEC rate policy change, more systematic and resource-intensive evidence collection would be needed to capture the variation in responses across the sector and to account for potential biases in information sources.

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# Abbreviations

| | |
|---|---|
| FEC | Full Economic Costing |
| DSIT | Department of Science, Innovation and Technology |
| HEI | Higher Education Institution |
| HESA | Higher Education Statistics Agency |
| R&D | Research and Development |
| TRAC | Transparent Approach to Costing |
| UKRI | UK Research and Innovation |
| ECR | Early Career Researcher |

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# 1. Introduction and approach

## 1.1. Policy context

The Full Economic Costing (FEC) system has been in place in UK higher education institutions (HEIs) since 2002, providing a standardised method for funders to determine and communicate the portion of research activity costs they will cover (University of Reading 2025). The proportion of the FEC covered varies by funder type, with industry and public funders typically covering more, while charities cover less (DSIT 2023a). Before FEC policies were enacted, HEIs research activities were not sustainable due to insufficient costing approaches adopted by HEIs (Daley 2010).

UK Research and Innovation (UKRI)'s policy aims to fund 80 per cent of research project costs. The remaining 20 per cent of unfunded costs must be covered by the university from other sources, and this institutional contribution is intended to ensure that research-performing organisations, including HEIs, will only perform research that is strategically important (Coe 2023). Consequently, the system is expected to be more efficient, with funds used only for the highest quality research (Zacharewicz et al. 2023)

To cover the FEC shortfall, institutions often rely on their own funds, frequently sourced from international student fees (OfS 2024b). Therefore, any indications of reduced attractiveness of UK higher education for overseas students raise concerns about the future of HEIs and, by extension, the national research system (HESA 2024). The remaining costs can also be covered by quality-related (QR) block grants for research allocated by the four UK higher education funding bodies. However, these funds are intended for HEIs to make long-term strategic investments in their research capabilities (UKRI 2023a).

At the time of writing a funding application, institutions provide a budget indicating their expected costs for delivering a piece of research – the Full Economic Costing. UKRI then – if the project is funded – provides 80 per cent of those costs. However, when the work is completed often its costs have risen, and hence the amount of funding committed by UKRI in practice covers a lower proportion of the final amount. This ex-post assessment is called cost recovery, and on average the actual proportion of a project's final costs that are funded is only around 69 per cent. This amount varies across HEIs and is typically higher for more research-intensive institutions (OfS 2024b). The suggested reasons for this gap between FEC commitment and cost recovery vary and include issues with costing calculations and researchers and HEIs being incentivised to understate the actual cost in their grant applications to increase their chances of success (UKRI 2022). The employment of no cost extensions for UKRI-funded projects may also mean the total project cost is greater than the original budgeted. Increases in research council budgets and award numbers, alongside reductions in application success rates, have led to questions being raised on how efficient the

system can be, as increasing time will be spent by researchers, institutional support staff, and funders on unsuccessful grant applications (Grove 2023).

Nationally there has been a push for measures to improve cost recovery in service of greater system financial sustainability, although the mechanisms to achieve this are undecided (DSIT 2023a; UUK 2025). A common suggestion within the sector is to increase QR (Russell Group 2021) to reduce the burden on institutions to cover unmet grant costs for research from other (non-research) sources, such as surplus international student income, which are subject to external risks. Some more radical options include paying a higher rate of FEC, potentially up to 100 per cent, which – assuming a fixed research budget – would lead to fewer projects being supported. The implications of these types of interventions have not been explored systematically, particularly within the UK context.

For at least a decade, UK HEIs have managed high levels of deficit from their research activity whilst continuing to aim to invest in their research strategies. However, in recent years challenges to the financial sustainability of HEIs have become increasingly an urgent priority across the sector (DSIT 2023a; Morgan 2023; OfS 2024a). While funders are recommending rationalisation of research activity to focus on areas that have better cost recovery and investment leverage opportunities (SFC 2024), HEIs' willingness and capacity to respond, even in financially unstable times, remains unknown.

This project, therefore, aimed to investigate how changes to UKRI's FEC rate policy could affect different parts of the research funding system, under the assumption of a fixed overall budget. Given the complexity of the UK's research and development (R&D) system, we explore not only the direct impacts of the policy on researchers' and HEIs' behaviours, but also the knock-on effects on the non-research HEI and non-HEI research activity. Our approach seeks to understand potential variation in responses across research institutions with different characteristics in recognition of the diversity of resources, business models and strategic priorities that exist across the sector.

## 1.2. Methodology

We began the study by building evidence via a rapid evidence review of relevant academic and grey literature and consulting with key stakeholders across the Department of Science, Innovation and Technology (DSIT), UKRI and HEIs. We synthesised the evidence gathered from these data sources to develop models in the form of a system map to explore complex and diverse impacts across the UKRI R&D system, and an economic model of how UKRI's FEC rate could influence supply and demand of UKRI grants. For the systems map, we extracted and collated evidence and insights on each stage of the causal pathways to inform how changes in FEC policy may affect behaviour and outcomes across HEIs and the wider system. The theoretical supply-demand model and the systems map were subject to evidence testing in the form of a validation workshop with experts from DSIT and UKRI, before being presented in the final report.

### 1.2.1. Rapid evidence review

The rapid evidence review was designed to identify and synthesise existing academic and grey literature to understand the impact of FEC in UK HEIs, highlight international models for comparison and provide insights into how FEC rates may affect behaviour and outcomes in research funding and performance.

To develop the method needed to identify relevant literature, we developed three search strings applied to Google Scholar and Scopus databases, resulting in 439 documents. Screening the title and abstract for relevance narrowed down the list to 37 academic papers and 9 grey literature papers. Following further assessment of relevance to the policy issue and UK context, 12 documents were identified for full review (with other resources retained for wider reference). Extraction and analysis was focused around insights the documents provided on the influence of FEC funding rates on HEIs', researchers' or funders' behaviour and choices around R&D performance and funding as well as how FEC influences the wider national R&D ecosystem.

### 1.2.2. Stakeholder interviews

To inform understanding of how decisions around research funding are made within institutions and how funders' FEC policies – specifically the amount of a research projects' cost that UKRI is willing to cover – affect researchers' and research organisations' choices and behaviours, we held six interviews with individuals or groups from four higher education institutions, plus DSIT and UKRI. The interviews were semi-structured and lasted 45–60 minutes. Analysis involved identifying emerging and cross-cutting themes, with a particular focus on identifying common and diverging views.

## 1.3. Study limitations

This study had several limitations, which should be acknowledged as they may affect the interpretation of the findings.

**Firstly, we consulted a limited number and variety of stakeholders**. The number of consultation sessions held was small relative to the complexity of the topic and the diversity of the HE sector. We decided to focus our interviews primarily on HEIs who currently received substantial amounts of UKRI funding, though a few interviews involved HEIs that perform less research or receive relatively more research funding from other sources. Additionally, no researchers and no one from non-UKRI funders were consulted due to time limitations. This lack of insight from the broader HEIs community, plus the paucity of relevant evidence from the literature, means that the findings from this study should be taken as a plausible model of how FEC rate influences the system, rather than as a definitive assessment of the impact of a future UKRI FEC policy change.

**Secondly, there was potential for bias in the evidence**. HEIs may have a vested interest in the outcome of FEC rate discussions. Institutions that rely heavily on research funding might provide responses that align with their financial needs or strategic goals, potentially exaggerating the negative impacts of a rate change. Similarly, discussion of FEC rates in the grey literature can be skewed by advocates of increasing the FEC rate for personal benefit. It is not clear if the lack of evidence in the literature in favour of keeping the rate the same or reducing it stems from there being weaker evidence or just that there are fewer vocal authors on that side of the argument.

**Thirdly, any knock-on systems effects may not have been fully captured.** The systems map development and validations exercise aims to present how changes to even one part of the system may have diverse and complex effects. However, the evidence collected from stakeholder consultation primarily provided insights on the initial effects on their behaviour or funding outcomes. Secondary effects of a policy change, i.e. how

actors would respond to changes the policy caused across other actors and other parts of the system over time, would need additional evidence collection and validation with stakeholders.

**Finally, there has been some delay between completing the work and publication**. This means that some of the data used for analyses are not the latest available data, and this should be taken into account when considering the findings and their implications for future policy and decision making.

# 2. Evidence review and consultation findings

This section consolidates key findings from the rapid evidence review and stakeholder consultations, broken down into themes.

## 2.1. Influence of an FEC policy change on UKRI's portfolio

Firstly, we look at the implications of UKRI changing its FEC funding policy on its own portfolio and the size and nature of research it would be able and willing to fund.

**Increasing UKRI's FEC rate would likely result in the government procuring a smaller amount of research. However, views on its effect on size of grant vary.** In its response to the independent review of the UK's research, development and innovation landscapes, DSIT noted that reducing the amount of research supported may happen through reducing the number of grants or the size of grants offered. This same compromise would need to be made if UKRI were to increase the FEC rate under a fixed budget. However, the UK government's research ambitions mean larger grants over longer periods of time are preferred. This was reflected in the 2023 Nurse independent review (DSIT 2023a) and similarly echoed in a funding agency interview.

Several arguments have been made in relation to the impact of increasing research grant size on improving efficiencies and quality and reducing inequality. However, the rationale for these arguments is not made explicit. Empirical evidence indicates that economies of scale are present but deliver diminishing returns – at least in terms of publication and citation measures – and that smaller grants play an important role for early career researchers in leading research projects (Bloch et al. 2022).

Additionally, the **profile of the grants funded by UKRI may be changed.** In one non-institution interview, it was suggested that, based on scenario planning for potential budget restrictions in a past spending review, responsive mode, curiosity-driven, talent pipeline-focused grants would likely be prioritised, whereas more managed, strategic programmes would be cut. Changes since that time in the profile of funding programmes and grants available may affect the relevance of this outcome to potential future scenarios. Overall, the profile of funding available elsewhere in the system may influence what gaps in the market would emerge from changes in UKRI's offering.

Through increasing FEC rates and increasing competition, reducing success rates for grants may incentivise the **introduction of more demand management mechanisms**, such as a policy limiting the number of applications per funding opportunity each institution can put forward. Whether the processes to manage the increased demand would occur at funder or institution level, these mechanisms would have cost implications for the R&D system.

## 2.2. HEI decision-making practices for R&D funding

As there has been no change to UKRI's FEC policy in the UK and no suitably equivalent system in other nations that would allow for an appropriate comparator, there is minimal direct empirical evidence for how a change in policy would affect the R&D system. Therefore, we focused some of the analysis on understanding how relevant R&D decision-making mechanisms in HEIs and funders currently work so that any potential outcomes of an FEC rate change may be – tentatively – inferred.

### 2.2.1. Background and HEIs' financial context

Cost recovery data from the Office for Students' Transparent Approach to Costing (TRAC) indicates that HEIs are understating the real cost of research in their proposals (DSIT 2023a). The reasoning for this behaviour is unclear, but drivers such as financial pressures and competition for high-value income grants may incentivise HEIs to 'lowball' the value of research with the aim of increasing their odds of grant success. Additionally, unexpected costs such as inflation and broader challenges in accurately estimating research costs may be contributing factors (IRC 2025). The actual cost recovery rate for UKRI-funded research is 69 per cent on average across the sector, which is likely an underestimate as this figure includes UKRI grants funded above 80 per cent such as capital grants (OfS 2024b). Loss-making research is pursued as part of the wider institutional strategy and is justified financially: the research performance and reputation of HEIs affects the recruitment of international students (e.g. via league table success), drives other income, and strengthens staff recruitment and business relationships (SFC 2024).

The sector performs research at a consistent and substantial deficit and one line of concern around the impact of changes to the FEC rate is around the overall sustainability of the sector. Demand is still high for research grants even in context of a £5bn annual deficit, with the implication that HEIs are willing to take on more deficit to access research funding from public funders. Despite challenges meeting the costs of research, most institutions in the study planned to increase their level of research due to the importance of research to their strategy and reputation, and for public benefits (FSSG 2019). The deficit has increased in recent years (UKRI 2023b), but the volume of research produced and competition for research funds also continue to increase.

The implication is that UKRI-funded research generates benefits for HEIs that outweigh the additional costs to the institution, at least at the current FEC and cost recovery rate. The question remains at what point would the FEC rate need to be set for the costs to outweigh the benefits, and how might this vary across the sector.

**The HE sector has also undergone changes to non-UKRI sources of research funding in recent years.** Decreases in cost recovery and the real-terms value of both QR and domestic student fees have increased UK HEIs' reliance on international students, the teaching of whom generates surpluses (DSIT 2023a; UKRI 2023b). The outcome has been for HEIs to double down on planning to grow international student numbers (FSSG 2019), despite increasing competition in this space and early indications that the market is slowing down (HoCL 2024). A report by the sector's Financial Sustainability Strategy Group highlighted an example from one institution of rationing research work and recalibrating the academic base in response to reduction or slow growth in EU and international students (FSSG 2019). Less research-intensive HEIs depend more on QR to fund research activities whereas research-intensive HEIs rely on and receive a greater

proportion of their income through UKRI grants. HEIs in the Transparent Approach to Costing (TRAC) groups A, B and F have more surplus for cross-subsidising research, as compared to institutions in groups C, D and E (UKRI 2023b). Research-intensive HEIs therefore may be more resilient to reductions in the FEC rate.

The HE sector has called for the government to respond to declining cost recovery by increasing the proportion of costs covered for publicly funded research grants. The primary mechanisms suggested are reversing the real-terms decline in the value of quality-related research funding and devolved equivalents by increasing QR funding, rather than calls for UKRI's FEC rate policy to change (Russell Group 2024; UUK 2024).

### 2.2.2. Decision-making mechanisms across HEIs

**Views on the role HEIs play in practice in deciding what research funding opportunities should be pursued vary.** Two interviewees that sit outside HEIs' central research and innovation offices reported that academics are the real drivers behind which funding proposals they put forward, with HEIs only making decisions on major projects. Conversely, others provided examples of HEIs taking an increasingly strong role in making decisions on what funding should be sought, with one institution reporting that they recently introduced a pre-approval process before proposals are fully developed. All HEIs consulted had some form of central sign off which involved looking at the viability of a project's finances and input on costings.

**Budget management and decision-making are sometimes devolved within an institution.** Two institutions reported that the majority of budget management and decision-making responsibility related to research funding was held at the sub-institutional (e.g. faculty) level. For one institution, there were clear expectations that faculties are expected to be self-sufficient and cross-subsidisation between faculties is rare. There will likely be variation across the sector, but in some cases we can see faculties functioning more as independent entities within the institution. Expectations for addressing any changes in funding policy may fall equally – or more – on the shoulders of the faculty than the central institution. This more devolved approach also has potential implications for cross-disciplinary research, as different faculty budgets and strategies may be incompatible.

### 2.2.3. The role of cost in HEI R&D decision-making processes

When making decisions about the types of funding to pursue, the cost to the institution plays various roles though this appears to vary within and across institutions and also changes over time.

The majority of those interviewed agreed that **the amount of cost recovered by the funder plays a role in decision making**. In most cases, there are no hard and fast rules for what is permitted. One interviewee reported evidence of HEIs restricting applications to some charity funders due to their covering relatively low proportions of the cost of the research. Another noted the existence of guidance that outlined funders' terms including the favourability of cost recovery terms as well as other funder requirements; this guidance was used by the HEI's central office to inform internal decision making on what research funding applications to support. There might be a strong preference for funding opportunities with overhead costs covered externally, for example.

**Institutional wealth – driven by teaching income – affects willingness to cover costs at the institutional and faculty level.** Several interviews alluded to the influence that wider income has on willingness to provide more leverage for funding applications. This drives differences at the institutional and sub-institutional level. Strong teaching institutions will have more money from student fees which they can use to cover the unfunded costs of research. At one institution, different faculties are more willing to pursue funders with lower levels of cost recovery due to having relatively greater surplus. In that example, the science and engineering faculty is relatively stronger financially, partly due to international student fees, which enables it to subsidise most research costs. Conversely, the arts, humanities and social science departments need to be more conversative with what they will cover.

**The size of the grant affects the cost to the institution and potentially therefore their willingness or ability to cover it.** One non-HEI interviewee highlighted that larger grants have relatively small overheads so HEIs prefer fewer large grants over many small ones.

**Overall, however, the role of cost to the HEI has changed over time.** Two interviews highlighted that there had been raised expectations within HEIs for departments needing to prove that they are successful and economically viable. Competition in the landscape means that HEIs are expected to contribute a higher amount of leverage, for example through providing match funding as well as topping up the unfunded cost of the research project.

Changes to one funder's FEC rate may encourage HEIs to look for funding opportunities elsewhere. However, **cost recovery rates alone are not the only factor, as the nature of support varies by funding organisation**. The Scottish Funding Council, for example, has argued that HEIs' ability to be selective over funders on the basis of the FEC rate offered is limited by the variety of projects that are supported by other, non-public funders, and the need for continuous income flows including for multi-year projects (SFC 2024).

## 2.3. Impact of cost recovery on HEI finances

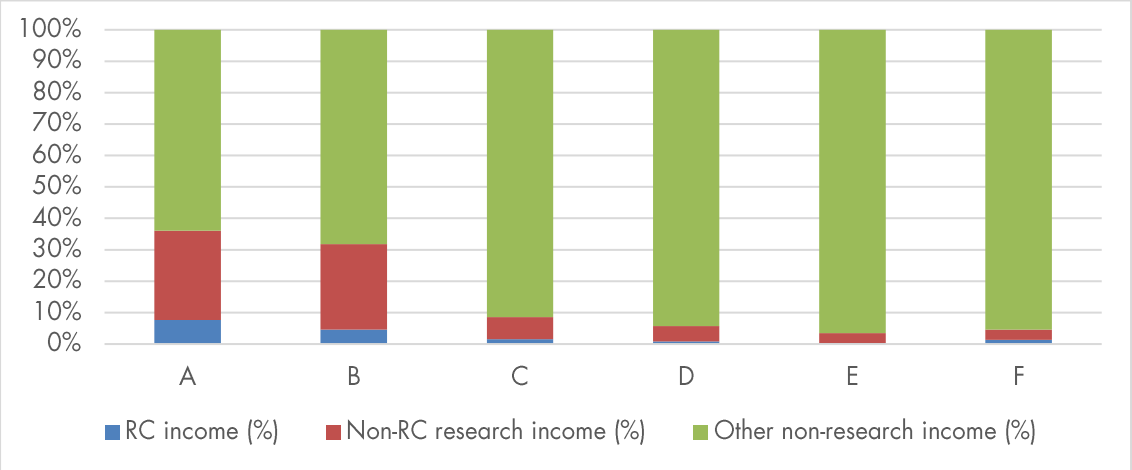
To further understand the implications of the FEC rate on university behaviours directly, it is also worth considering the role that UKRI funding (specifically, Research Council [RC] funding) plays in university finances. Our analysis is based on work conducted by UKRI on 2021/22 academic year (AY) Higher Education Statistics Agency (HESA) and TRAC data. As such there are some caveats as we are aware that there have been some subsequent changes. The decrease in income from foreign students in particular is notable (HESA 2025).

In this analysis we consider the following questions:

- What role does RC funding play in university finances by TRAC group?
- What does current cost recovery look like for RC funding (relative to the 80 per cent of FEC that theoretically can be recovered)?
- What impact do the costs covered by universities in relation to RC work have on overall financial sustainability?

Overall, RC funding does not make up a significant proportion of university funding, as shown in Figure 1, though there is some variation by TRAC Peer Group.[1] For TRAC group A, it makes up 7.7 per cent of all income, and for TRAC group B it makes up 4.6 per cent of all income. For all other TRAC groups, RC funding makes up less than 2 per cent of income from all sources and less than 8 per cent of research income.

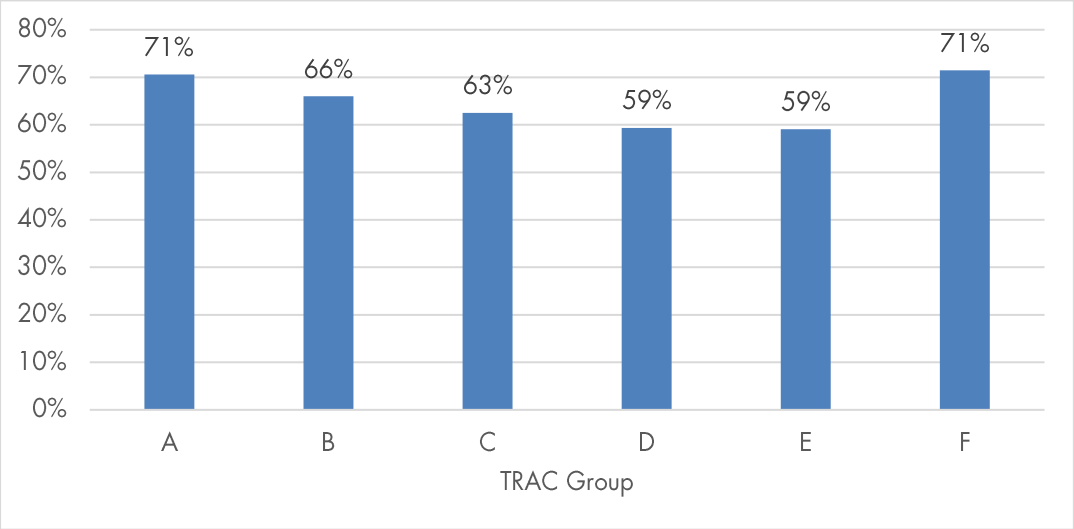
**Figure 1. Proportion of HEI income from different sources, AY21/22**




Cost recovery from RC funding in AY21/22 was on average 69 per cent, and this was relatively consistent in the two years prior. This is higher than charity and postgraduate research funding, but lower than for industry and work funded by other government departments. We see some differences in the rate of cost recovery by TRAC group, ranging from 71 per cent for TRAC groups A and F to 59 per cent for groups D and E (Figure 2). Across all TRAC groups, cost recovery for RC funding is below the 80 per cent level. As outlined in Section 1.1, the causes of variation between the FEC rate and cost recovery are not always clear cut and likely vary across institutions.

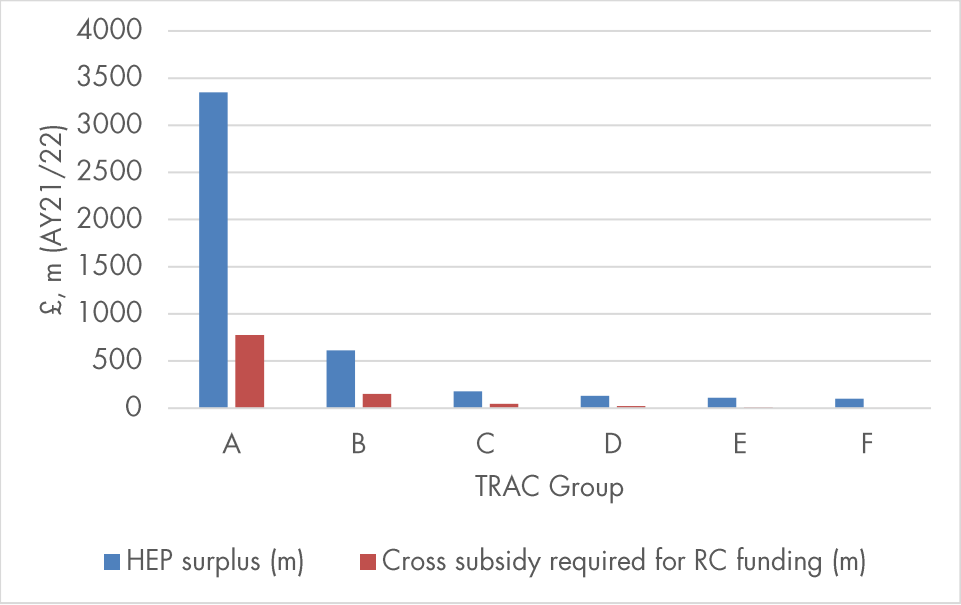
[1] Peer group A: Institutions with a medical school and research income of 20 per cent or more of total income. Peer group B: All other institutions with research income of 15 per cent or more of total income. Peer group C: Institutions with a research income of between 5 and 15 per cent of total income. Peer group D: Institutions with a research income less than 5 per cent of total income and total income greater than £150M. Peer group E: Institutions with a research income less than 5 per cent of total income and total income less than or equal to £150M. Peer group F: Specialist music/arts teaching institutions.

Figure 2. Cost recovery on RC funding (AY21/22)




The cross subsidy required for RC funding (i.e. the gap between funding provided by the RC and the costs of doing the research) can have an impact on overall university sustainability but this varies by institution type. Figure 3 compares the current cross-subsidy required for RC funding to the HEI surplus (i.e. the surplus income from non-research activities at HEIs, where the cost of delivering the activity is less than the income received), by TRAC group.

Figure 3. Level of cross-subsidy of RC funding relative to HEP surplus




For TRAC groups A–C, the RC funding cross-subsidy is around a quarter of the HEP surplus, for TRAC group D it is around 18 per cent, for TRAC group E it is 8 per cent, and for TRAC group F it is 4 per cent. As set out in Section 2.2.1, acquiring RC funding is considered by HEIs to be an important driver of this income stream, with the reputation generated enabling institutions to, for example, increase their income

from overseas students. It is logical, therefore, that a proportion of this revenue is invested to support RC-funded research.

However, RC funding is not the only driver of these wider income streams. Therefore, it is not clear what proportion of HEP surplus is appropriate to be allocated to RC-funded research. At present, for the most research active institutions, the proportion appears to be about 25 per cent. So, although cross-subsidy may be significant relative to the sustainability gap for TRAC groups A and B, it is worth noting that existing surpluses from non-research streams do also exceed this cross-subsidy significantly.

# 3. UKRI FEC rate economic model and analysis

We developed an economic model to describe how UKRI's FEC rate affects system-level supply and demand for UKRI grants and therefore the volume of publicly funded research the system can maintain.

The economic model is driven by the market forces of supply and demand, specifically the availability of research funding compared to universities' need for UKRI research grants. In economic terms, the equilibrium point is where supply and demand meet, which is typically the ideal scenario. However, in the case of FEC, this equilibrium is not ideal, as it eliminates the element of market competition. If we were to achieve this equilibrium, there would be no competition in the market, meaning every research grant application would receive funding. This is not the desired outcome, as we aim to fund only high-quality research projects.

The FEC model is a static model meaning that it is looking at a specific moment, without considering changes over time. The supply of research grants is determined by UKRI and is a budget constraint.

The demand function reflects the data gathered and analysed in this study. It shows the universities' willingness to apply for grants, which is determined by the FEC rate, institutional funding, and their revenue generation needs.

- QD = Demand for research grants (number of applications submitted).
- FEC = The percentage of the Full Economic Costing covered by UKRI (influences the financial incentives for universities to apply for grants).
- RGR = Revenue generated by research (includes percentage of research costs that universities can recover from grants and includes the prestige-effect).
- U = Unhypothecated institutional funding (QR funding or other sources available to universities, which can offset the need for external grant funding).
- C = The average cost of applying for and administering a grant.

We can model the demand function at a market level as:

$$QD = \alpha \cdot (FEC) - \beta \cdot (RGR) - \gamma \cdot (C) + \delta \cdot (U)$$

In this formula,

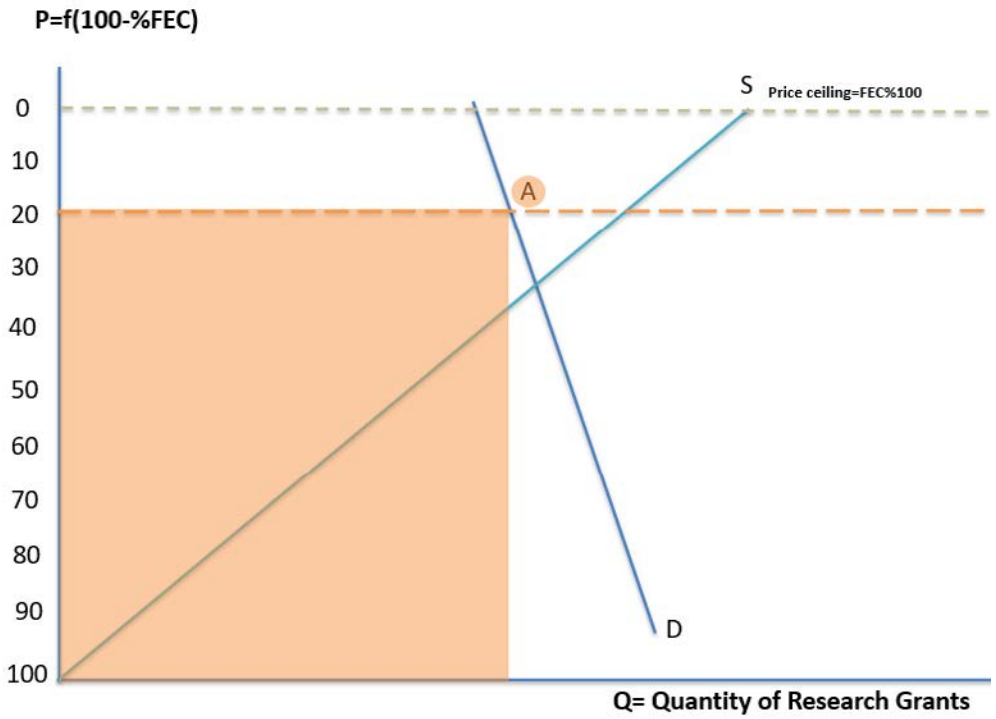
- $\alpha, \beta, \gamma, \delta$ are constants representing the sensitivity of demand to each factor.
- $\alpha$ reflects the impact of FEC rate on demand, with a positive relationship (a higher FEC rate increases demand).

- β reflects the effect of cost recovery on demand (will universities be more likely to apply when they can recover more costs?).
- γ reflects the administrative costs or burden of applying for grants – which could reduce demand.
- δ reflects the effect of institutional funding (QR) (where more institutional funding could reduce the need for external grants, lowering demand).

## 3.1. FEC model: baseline

The y-axis for this model (Figure 4) is displayed in Price (P) as a function of the inverse of the FEC rate. This is presented in this manner due to FEC being a barrier to universities and therefore resulting in a downward sloping demand curve. Additionally, the x-axis is the quantity of research grants. Point A is representative of the current FEC rate where universities cover 20 per cent of the costs. Universities do not always act in a 'rational' manner, meaning they are not solely motivated by financial considerations. In economic terms, when demand is inelastic, it means a change in the FEC rate has a relatively smaller effect on quantity demanded.

**Figure 4. Model depicting the relationship between the FEC rate and research grant quantity effect at UKRI's current policy (A)**

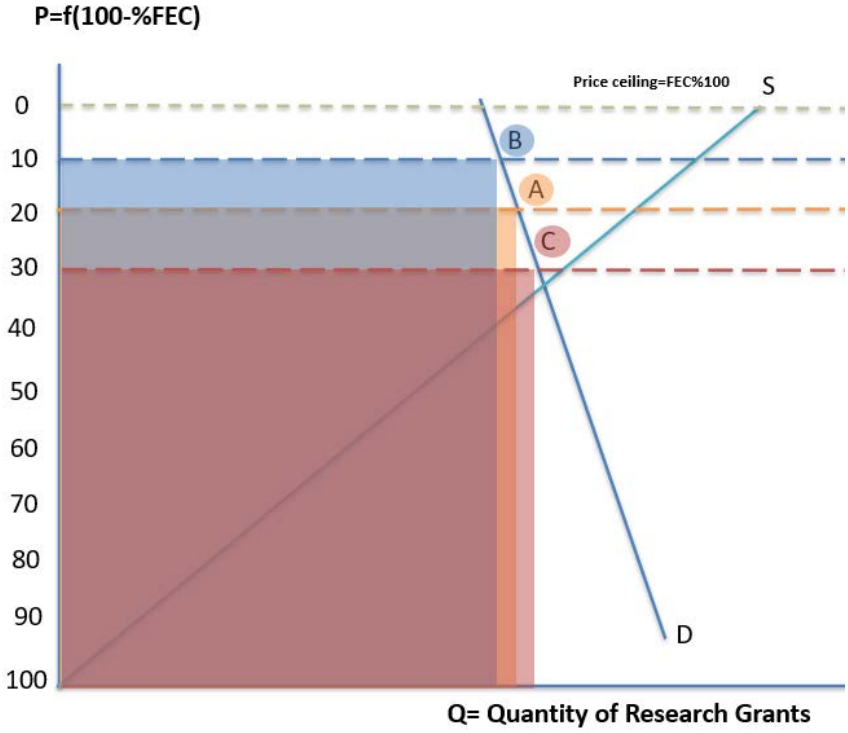



At an 80 per cent FEC rate (Point A), universities already bear an administrative burden, which contributes to reducing the advantages of increasing the FEC rate further along with other factors such as unhypothecated funding and revenue generated by research. As a result, raising the FEC rate beyond this point may not significantly boost the amount of research supplied.

## 3.2. FEC model: rate increase

The next model simulates a change in the current FEC rate. The current FEC rate at 80 per cent is shown at Point A.

**Figure 5. Model depicting the effect of increasing (B) or decreasing (C) UKRI's FEC rate on research grant quantity**




An increase in the FEC rate to 90 per cent is shown at Point B. Such an increase could have several significant effects. Some key points to consider include:

- **Fewer grants:** If the total available funding for research grants does not increase, an increase in the FEC rate would likely lead to fewer grants being awarded. UKRI's fixed budget would mean that a higher FEC rate would reduce the number of applications it can fund.
- **Impact on other funders:** With an increase in the FEC rate, universities might seek other funding sources like charities or industry due to the higher cost recovery freeing up resources. If universities' cost recovery is higher, they may be more likely to apply for grants and attract more external funding.
- **Higher cost recovery:** As cost recovery improves, universities will likely be more inclined to apply for research grants.
- **Demand management:** A higher number of applicants would lead to lower success rates, which could potentially prompt increased requirements for demand management by UKRI. This may result in increased internal competition within institutions, particularly in fields such as social sciences, where demand is often high.

- **Distributional impacts:** An increase in competition at a higher FEC rate could disproportionately affect smaller or less well-established universities, and it is likely that more funding would be allocated to more prominent research areas and institutions. Smaller universities, especially those in regions outside of the major academic centres (e.g. London, Oxford and Cambridge), may find it more difficult to compete for fewer, larger grants. The increased FEC rate could exacerbate regional disparities, with universities in less research-intensive areas potentially receiving a smaller share of funding.

The causal arguments on the effects of an increase in UKRI's FEC rate, including potential conflicting or varying factors, are discussed in more detail in Section 1.

## 3.3. FEC model: rate decrease

Next we simulated a change in the current FEC rate to 70 per cent, modelled at Point C in Figure 5. Such a decrease could also have several significant effects, including:

- **More grants:** A reduction in the FEC rate would mean that the total cost per grant to UKRI would be lower, which could allow them to fund more applications. This could lead to an increase in the number of grants awarded as the same fixed budget could now cover a larger volume of projects.
- **Impact on other funders:** Universities may be more likely to seek alternative funding sources such as charities or industry, as they can recover a smaller proportion of the full cost through UKRI. The reduced cost recovery could make other funding streams attractive. Equally, however, increased competition for UKRI funding under a higher FEC rate might also drive increased interest in wider funding sources.
- **Lower cost recovery:** With less cost recovery from UKRI grants, universities might be less incentivised to apply for them, as their ability to fully recover research costs would be limited. This could lead to fewer applications from universities and potentially less overall research activity. However, the reduction in competition and higher grant success rates may conversely increase attractiveness.

The causal arguments relating to the effects of a decrease in UKRI's FEC rate, including potential conflicting or varying factors, are discussed in more detail in Section 1.

## 3.4. FEC model: rate change variation across HEIs

Based on insights from evidence collected from literature and stakeholder consultations, we explored a scenario used to model the potential differences between research intensive (Figure 6) and non-research intensive (Figure 7) institutions at a market level in terms of the way they would respond to a change in the FEC rate.

Figure 6. Model depicting the current FEC rate (A) and the effect of increasing (B) or decreasing (C) UKRI's FEC rate on research grant quantity for research intensive HEIs

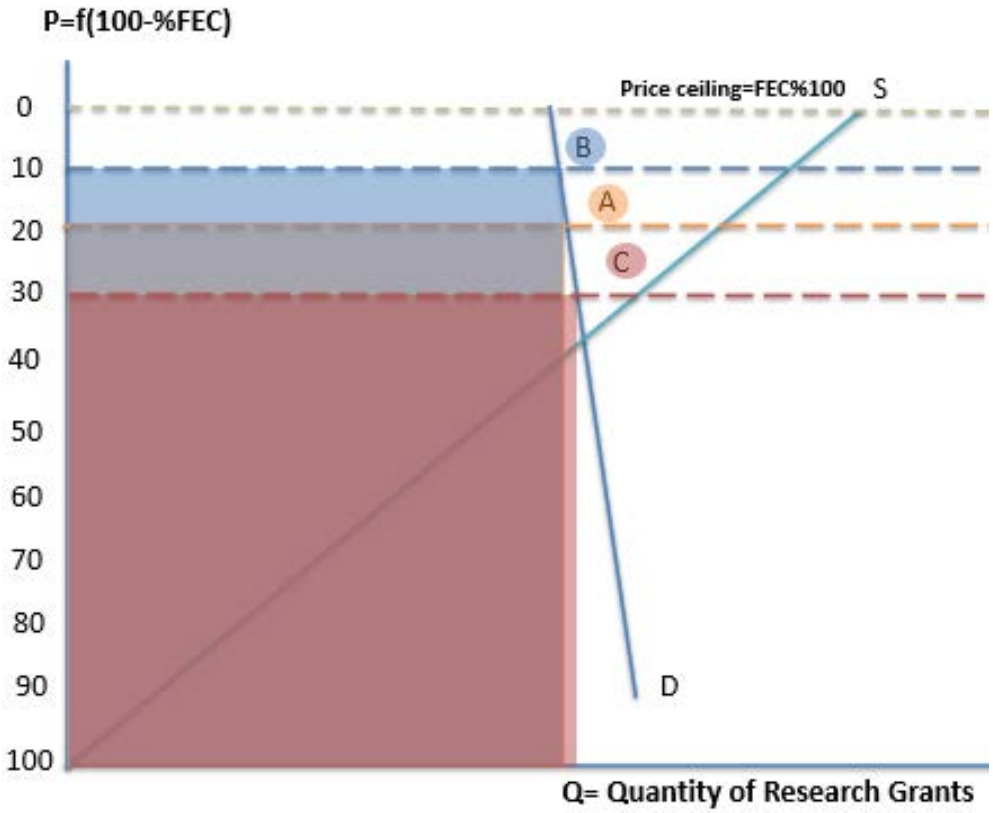
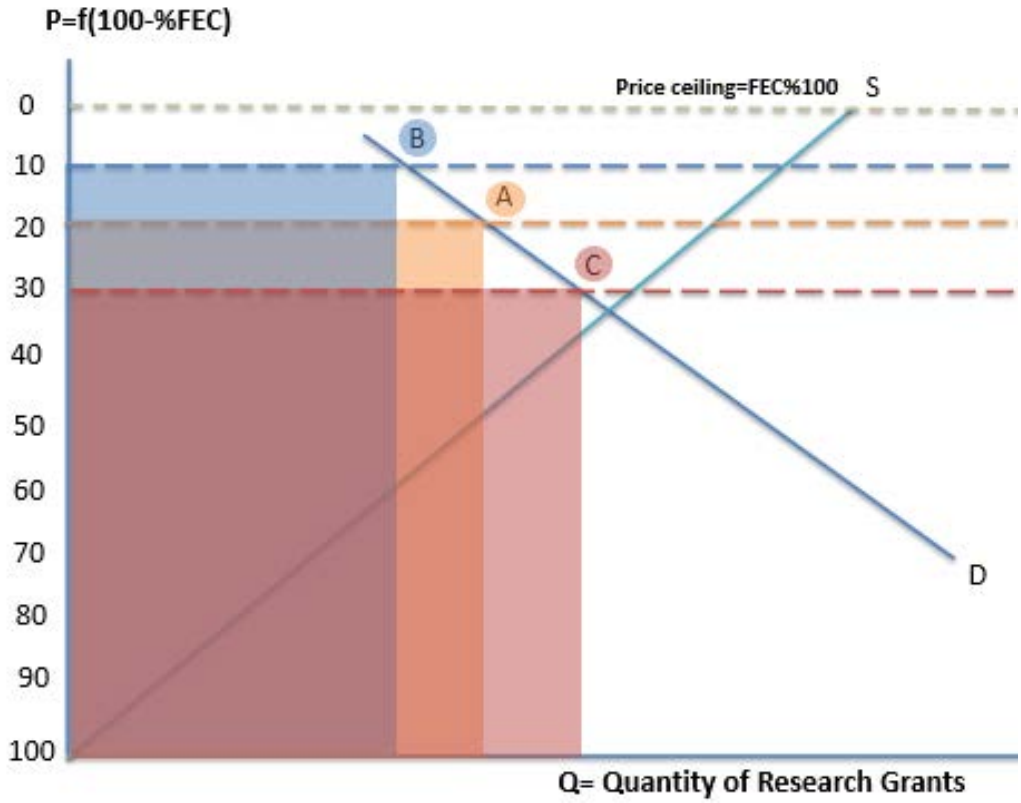


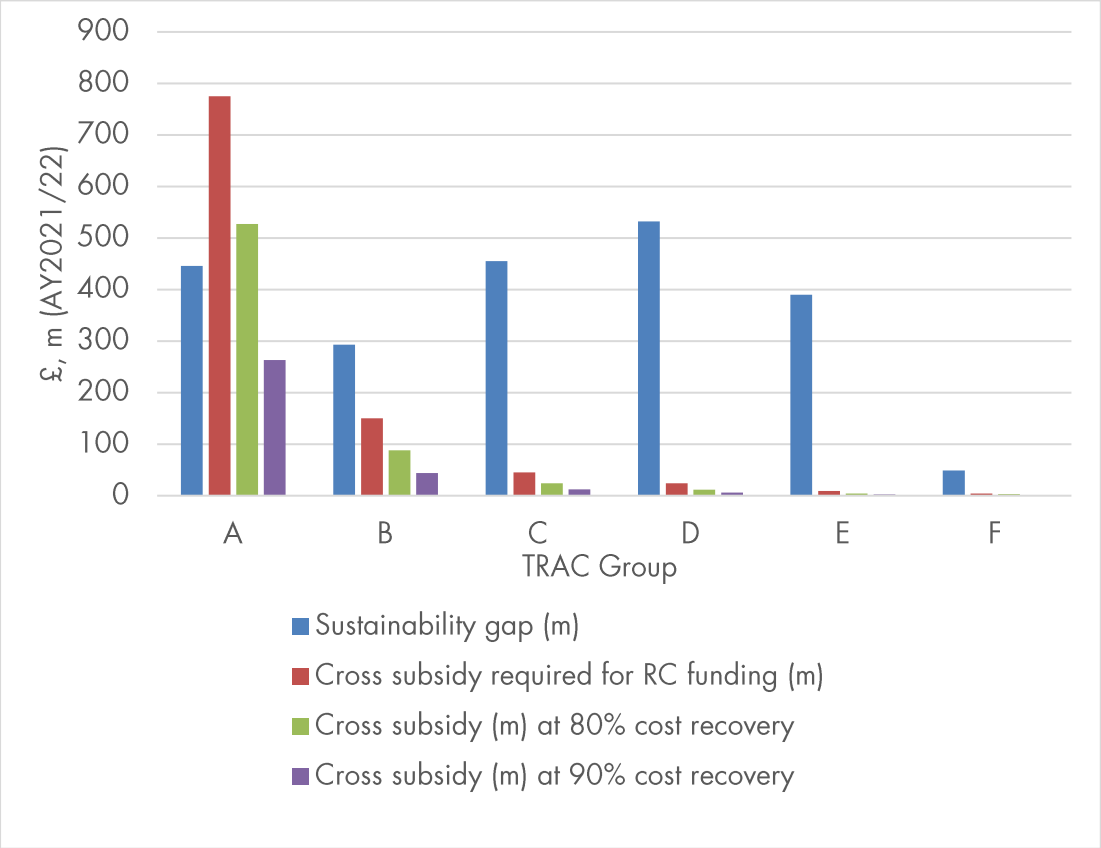
Figure 7. Model depicting the current FEC rate (A) and the effect of increasing (B) or decreasing (C) UKRI's FEC rate on research grant quantity for non-research intensive HEIs




The reaction of universities to a change in FEC rate is shaped by their strategies, which often weigh financial considerations alongside reputation and prestige goals. For some institutions, enhancing their reputation (e.g. through better Research Excellence Framework [REF] scores and rankings) may take precedence over the financial sustainability of research. This behaviour indicates that universities are not always purely economically rational when it comes to research funding. Some may continue research, even if financially unsustainable, because they prioritise prestige or rankings. This would apply to research-intensive institutions, where the demand curve in the model is inelastic, meaning they are less sensitive to changes in the FEC rate. These universities view research as a tool for boosting their reputation and meeting strategic goals, even at a financial loss due to having access to other funding sources (i.e. international student tuition). In contrast, non-research-intensive institutions would likely react differently, being more sensitive to changes in the FEC rate as their focus is more on financial sustainability.

We also can look to current cost recovery rates to model how, in purely monetary terms, a change in cost recovery can affect institutions' ability to cover sustainability gaps – overall and for RC funding alone – and how this varies by institution type. Figure 8 compares the current cross-subsidy required for RC funding to the sustainability gap (i.e. the gap between overall university income and costs across all activities), by TRAC group. It also provides an indication of what that cross-subsidy for RC funding would look like if cost recovery was at 80 and 90 per cent, assuming no other changes. Note that even achieving a cost recovery at 80 per cent (in line with the FEC rate) would be an increase in cost recovery rates across all groups.

Figure 8. Level of cross subsidy of RC funding relative to sustainability gap




Note: Real actual cost recovery on RC funding by TRAC group (on average) for AY2021/22 was Group A – 71 per cent; Group B – 66 per cent; Group C – 63 per cent; Group D 59 per cent; Group E – 59 per cent; Group F – 71 per cent. This illustrates that no TRAC group is on average achieving 80 per cent cost recovery on RC funding based on this data.

The cross-subsidy required for RC funding at TRAC group A (i.e. more research intensive) institutions currently exceeds the overall sustainability gap for those institutions, meaning the institutions are already subsidising RC funding extensively through other sources, leveraging the RC investment. Increases in cost recovery would have the biggest impact for these institutions, but they also have the largest scope to cross-subsidise from other income streams, with a current surplus from non-research income streams more than four times the current cross-subsidy for RC funding. TRAC group B is also impacted, with RC cross-subsidisation at 51 per cent of the sustainability gap. This would reduce to 30 per cent at 80 per cent cost recovery. Cross-subsidisation of RC funding has a negligible impact on financial sustainability for all other TRAC groups.

From this analysis, it appears that, in monetary terms, the positive effects of an increase in RC cost recovery on financial sustainability are greater for larger, more research-intensive HEIs, affected more than their less research-intensive peers. If we assume that FEC rate and cost recovery are positively and at least moderately correlated, it follows that this result would also occur for an increase in the proportion of FEC UKRI funds. The implication of this analysis is therefore that research-intensive HEIs would benefit most financially from changes in the UKRI FEC policy. However, models from Figure 6 and Figure 7 indicate these are the institutions which may be least sensitive to FEC and cost recovery rates in terms of their funding application behaviours. It is worth noting that it is not possible to determine how the different factors (e.g. reputational

vs immediate cash surplus) influencing different groups would affect overall behaviour around seeking UKRI grants. In addition, financial systems vary across TRAC peer groups beyond the sustainability gap indicators, and so the effect of cost recovery or FEC rate on sustainability and the overall responses of HEIs to changes in FEC rate are unlikely to be homogenous, even within TRAC groups.

# 4. Systems map of UKRI FEC rate change

Based on the evidence review and stakeholder consultation, we developed a systems map of the elements of the UK R&D funding system that interact with UKRI's FEC policy. A systems map is a visual representation that illustrates the relationships, interactions and dynamics among various components within a complex system, helping to identify how changes in one part can affect the whole.

## 4.1. Purpose and approach

The systems map aims to show how UKRI's FEC rate policy relates to different parts of the UK R&I funding and performance system. It can show how change in one part of the system, such as UKRI's FEC policy, can have numerous direct and indirect effects. By presenting the complexity of the effects of changing UKRI's FEC rate across actors in the system, the systems map complements the economic model in Section 1, which focuses on a single dimension of supply and demand across the sector. Exploring the systems map can help us see how the different mechanisms and actors in the system may affect the nature, volume and diversity of outcomes across the system.

The causal relationships proposed in the systems map have been developed through analysis of the rapid evidence review, stakeholder consultation sessions, and reflections from a validation workshop attended by DSIT and UKRI colleagues. Where evidence provided mixed views on the directionality or nature of the causal relationship, this is indicated visually (see the key in Section 4.1.2) and discussed in our presentation of the material below.

### 4.1.1. Model assumptions

This systems map has been designed to present change in the system as a whole. The diagram, therefore, primarily depicts the net effect of a change on the system and so some variation has been 'averaged' out. We have aimed to capture important variation in outcomes across the sector in two ways. Firstly, variation in outcomes that affect the distribution of research activity and funding, such as overall concentration of funding in the system, is presented in the diagram. Secondly, where evidence suggests that there will be a net positive or negative change in the sector but that the direction of the change varies between individual institutions. This is depicted through use of arrows with dashed lines. The systems map does not capture interactions between variables, as current evidence levels prevent that level of granularity. However, we highlight some areas where such relationships seem to vary based on evidence gathered.

The key change of interest within the systems map is an increase or decrease in the proportion of a research projects FEC that UKRI will fund through its grants. This mapping is conducted on the assumption that the overall funding envelope and all other factors remain equal, i.e.:

A. The total budget for grants offered through UKRI will not change
B. The total QR budget will not change
C. UKRI will not introduce any change in policy around the number of grants or size of grants it offers. Therefore, any effect that changing UKRI's FEC funding policy has on the number and/or size of grants offered would occur as a result of changes in researcher proposal behaviour.

### 4.1.2. Systems map access and key

In the following section we present portions of the systems map, the rationale and implications of which are explained by broad theme. An interactive version of the full map can be accessed at the following link: https://embed.kumu.io/d78d6f6d4a53838815b4d663b85bdb98 (as of 3 November 2026).

The nature of the changes and the causal connections are visualised using the notation described in the key in Figure 9:

- Circles represent outcomes/changes. Different colours represent different types of actor in the system as listed in Figure 9.
- Green arrow: There is a positive causal connection between the change at the start of the arrows (A) and the change at the end (B). The input has a supporting influence on the outcome, e.g. an increase in A leads to an increase in B, and a decrease in B leads to a decrease in B.
- Red arrow: There is a negative causal connection between the change at the start of the arrows (A) and the change at the end (B). The input has an opposing influence influences the outcome, e.g. an increase in A leads to a decrease in B, and vice versa.
- Yellow arrow: The effect of the input at the start of the arrow (A) on the outcome of the arrow (B) varies based on what has been observed in the evidence gathered, and it is unclear what the overall effect is on the sector.
- Thin arrow: Confidence in the causal connection is particularly low, due to lack of convincing evidence or contradictions.
- Dotted line arrow: While the net, system-level effect may show either a positive or negative causal connection, the nature of the change at institutional level varies.

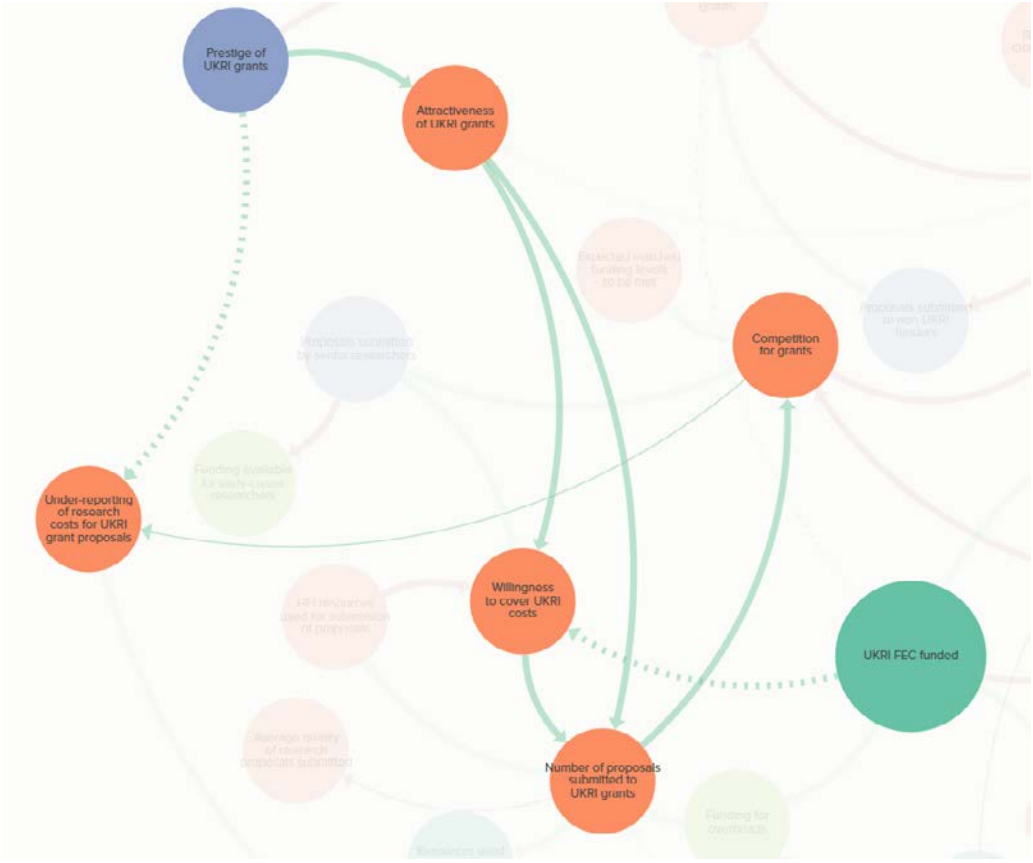
Figure 9. Systems map legend




## 4.2. Thematic analysis

Various themes on the effects of changing UKRI's FEC rate emerge from the systems map. These are presented below through visualisations of sub-sections of the map along with a narrative that elaborates on the underlying evidence. We have indicated in parentheses where stakeholder consultation (in the format INT_XX) and references from the literature as evidence for the causal connections are relevant. Where no references are listed, the connections were discussed and validated in the workshop, though no external empirical evidence was cited.

### 4.2.1. Application behaviour

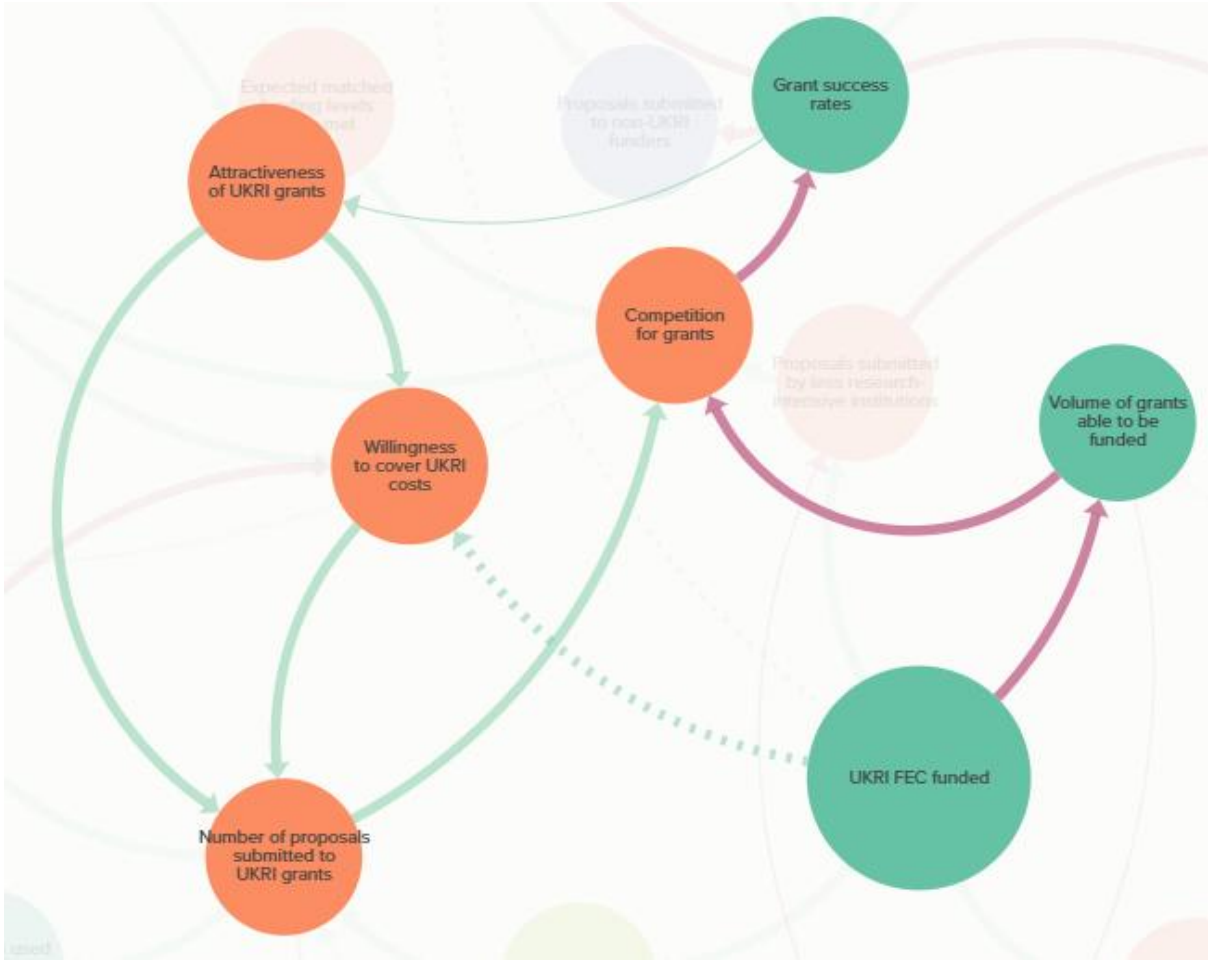



**Willingness to cover UKRI costs.** Increasing UKRI's FEC rate is likely to make UKRI grants more attractive and therefore increase willingness of the average institution in the sector to cover the remaining research costs (INT_03), leading to more proposals competing for UKRI grants. However, the evidence on how individual institutions would respond is mixed, especially when looking at a scenario in which UKRI reduces the proportion of FEC it covers. Prestige plays an important role in researchers' preferences for UKRI grants, which evidence showed can drive institutions' willingness to cover the higher remaining costs above simple financial considerations. The costs associated with preparing applications in terms of researcher time might also drive the willingness (and feasibility) of institutions to prepare more applications.

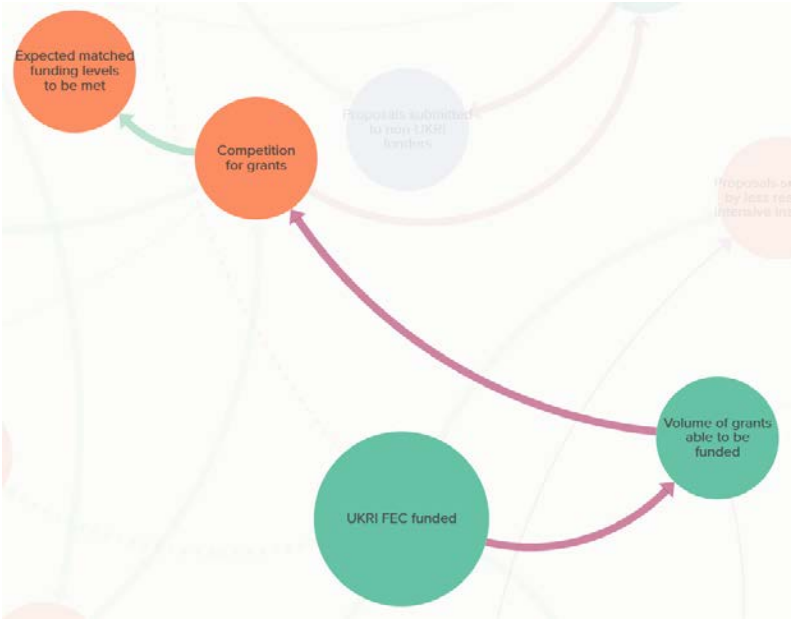
**Underreporting costs of research in proposals.** Increasing the amount of project FEC UKRI funds could lead to institutions' (further) underreporting the costs of research in proposals (INT_01; DSIT 2023a). Stakeholder consultation showed that there are more high-quality proposals received by UKRI than can be funded (INT_05). Therefore, one possible implication of even greater competition is that the HEIs would need to increase the attractiveness of a proposal through means other than improving its quality. Therefore, HEIs may need to – or perceive the need to – increase their monetary commitment and lower the recorded cost of a project to increase their chances of winning a grant. Perceived prestige of winning grants from both researchers and the institution further incentivise this behaviour (workshop).




**Grant success rates.** Changing the proportion of FEC UKRI funds could affect grant success rate through three mechanisms. Firstly, increasing the rate would reduce the amount needed to be covered by the institutions, increasing institutions' willingness to support researchers to apply for UKRI funding (workshop). Secondly, reducing the amount for institutions to cover would lower the barrier to entry for less-research intensive institutions and increase the competition for grants (INT_05). Thirdly, the supply of grants would decrease as a fixed UKRI budget would mean that the number of grants available for funding decreases with an increase in the proportion of FEC covered, leading to greater competition (INT_02; INT_04; UKRI 2023b; DSIT 2023b).



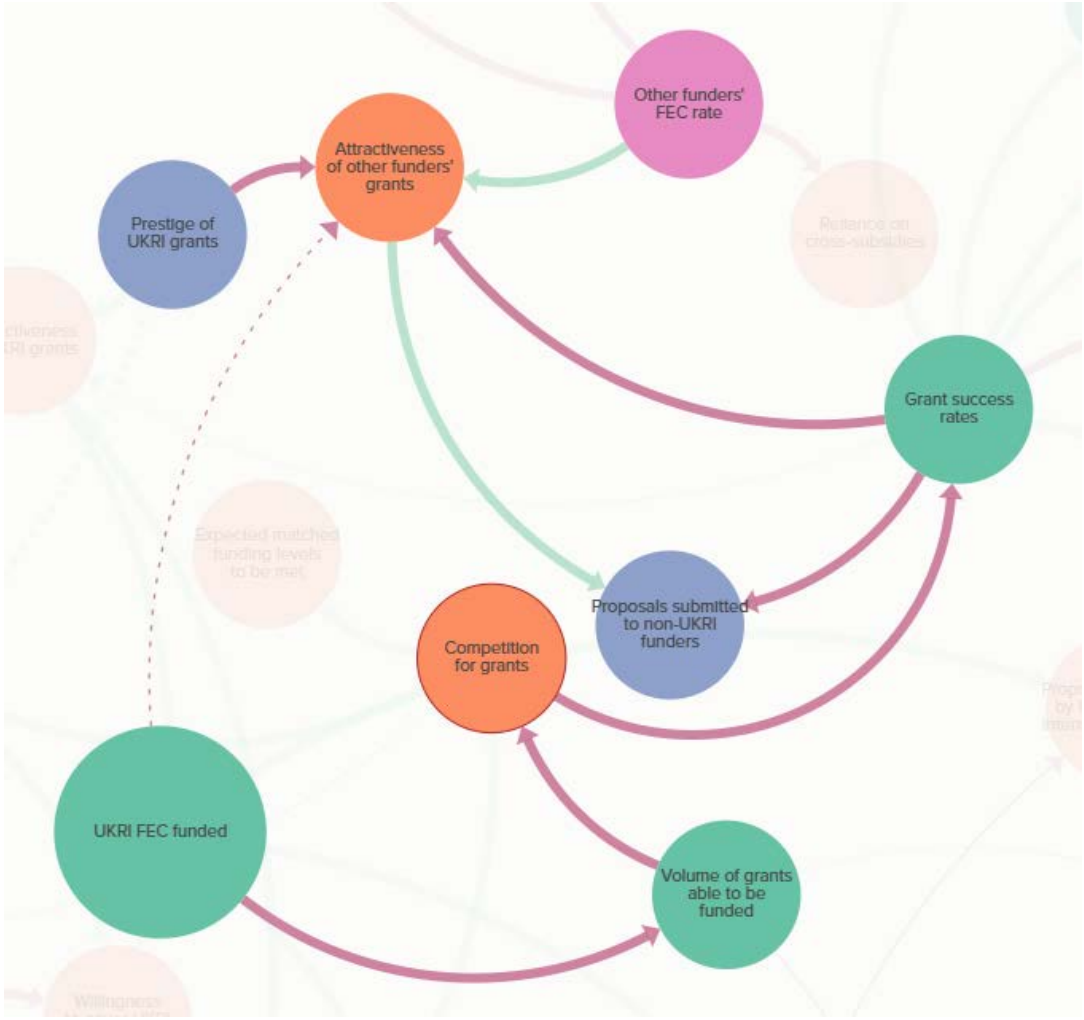

**Attractiveness of UKRI grants.** Changing UKRI's FEC rate is likely to have an impact on the attractiveness of and therefore number of applications for UKRI grants, but the long-term change is harder to predict due to secondary effects across the system. If FEC rates increase and grant success rates drop (as described above), UKRI grants will become less attractive to HEIs, leading to reduced numbers of applications which would then increase the grant success rate (workshop). This type of dynamic loop would likely lead towards some form of equilibrium but one whose position is difficult to ascertain using current evidence. Even if grant success rates bounce back to their original levels, there may be detrimental effects from the initial spike in competition that are hard to reverse, such as losses in talent and infrastructure among smaller HEIs who struggle to secure funding in a more competitive environment (INT_04), leading to a long-term depletion in national R&D capability.




**Expected matched funding levels to be met.** With changes in competition for funding the expectations from UKRI may increase. We heard through stakeholder consultation that HEIs are increasingly expected to provide matched funding for UKRI grants (INT_03), and this may increase further as demand for UKRI grants increases and there is an opportunity – or need – to leverage additional funds from the institutions. However, recent UKRI policies suggest this would not be universal, with matched funding not expected as a default.[2]

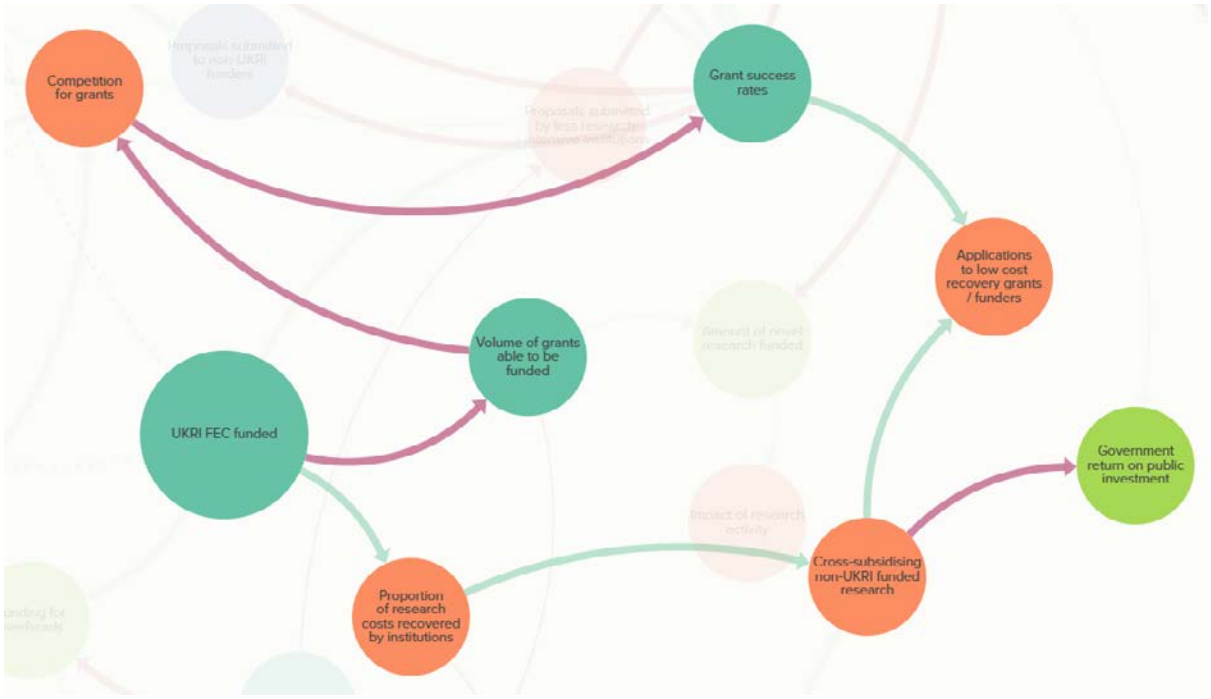
[2] UKRI. 'UKRI updates funding policies to improve research sustainability.' 21 March. As of 3 November 2026: https://www.ukri.org/news/ukri-updates-funding-policies-to-improve-research-sustainability/

### 4.2.2. Flow of funds

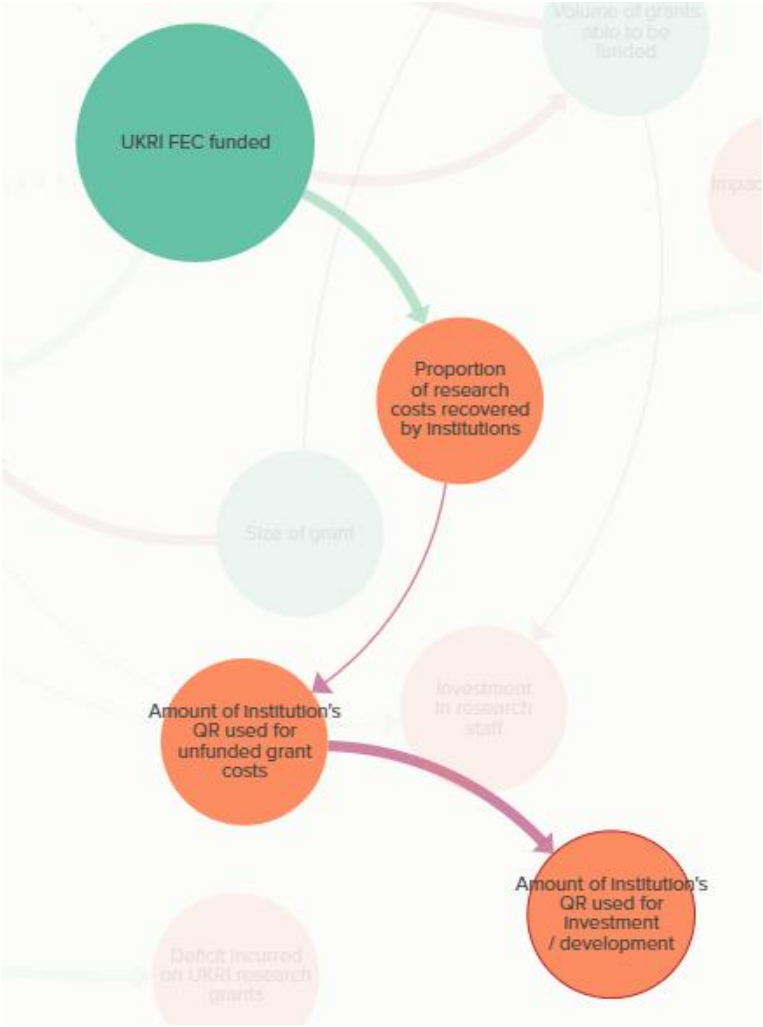



**Attractiveness of other funders' grants.** UKRI's FEC rate may affect the attractiveness of and therefore applications to other funders in two opposing ways. Most directly, by increasing the amount of costs covered by UKRI, other funders' terms are less attractive in comparison (INT_05). However, by altering the competition and success rate for UKRI grants, researchers and institutions may find other funders' grants more attractive due to relatively greater odds of success (INT_01). The evidence for these mechanisms has been mixed, likely due to differing institutional contexts affecting views of the value of UKRI grants and wider benefits offered, and differing value placed on other funders' grants within an institution's or department's strategy and capacity.

**Other funders' FEC rates.** While there is a likelihood that other funders would adjust their own FEC policies in response to a policy change by UKRI, we do not have clear evidence of the nature of this change as we did not engage with non-UKRI funders directly.

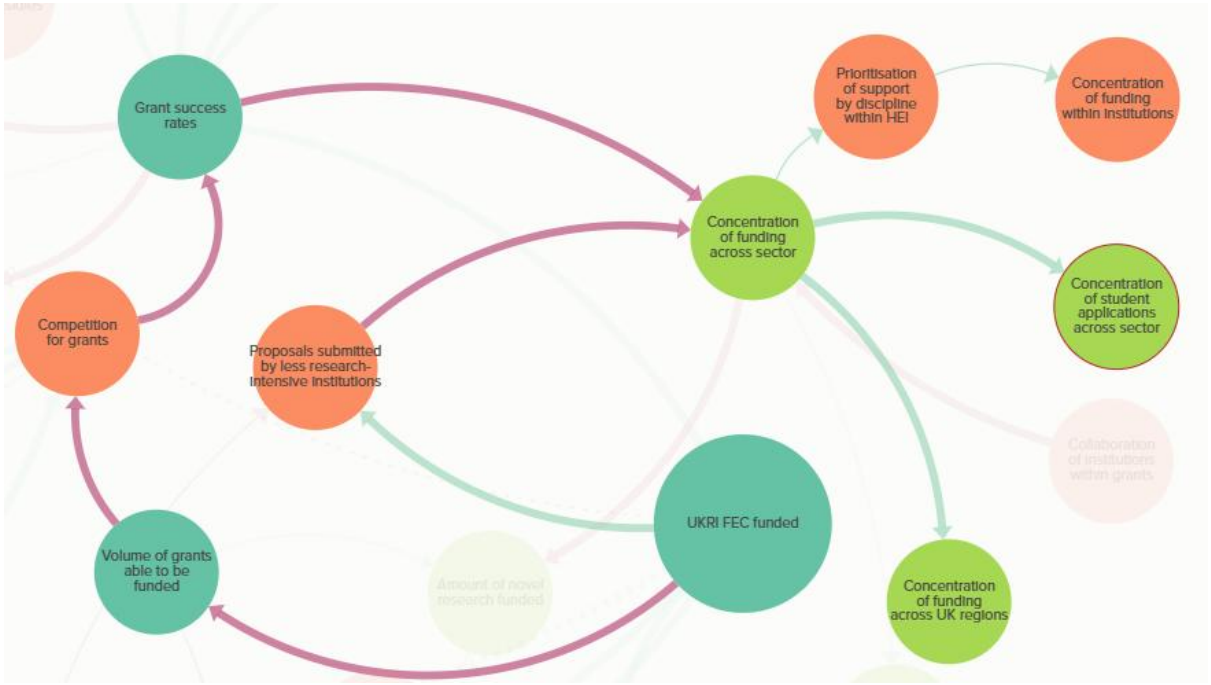



**Cross-subsidising non-UKRI-funded research.** By increasing the amount of funding offered by UKRI relative to other funders, there is a possibility that institutions would use any 'extra' money which is no longer needed to subsidise UKRI research to cover costs associated with non-publicly funded research (in addition to or instead of other sources such as surplus from international student fees) (workshop). This type of response was not reflected in consultation sessions with HEIs, though it may be that HEIs would not want to express this potential outcome even if it is something they may consider in practice.




**Amount of QR used for unfunded grant costs vs for investment/development.** Increasing the UKRI FEC rate may alter how QR funding is spent by reducing the need for its use to cover unmet grant costs, therefore freeing up more money for investment in strategic initiatives (such as talent or partnerships programmes) (Kneller et al. 2014). This effect could have positive implications on the longer-term capabilities of HEIs to drive and deliver impactful research.

### 4.2.3. Concentration of funding




**Concentration of funding across the sector.** Changing the UKRI FEC rate could influence the level of concentration of funding across institutions in the sector through two mechanisms with opposing effects. On one side, increasing the FEC rate may increase concentration. By reducing UKRI grant success rate (as outlined in Section 4.2.1), those with the highest capacity in track record, facilities, talent, etc, will likely be more successful in the more competitive system (INT_03; INT_04). On the other side, reducing the amount of a funded project's cost that an institution needs to pay lowers the 'cost of entry', meaning that institutions that are less research-active and have fewer resources are, in theory, more able to participate, though increased competition for funding may mean that in practice they are unsuccessful in their applications (INT_05). Collectively, therefore, the evidence suggests that increasing the FEC rate will most likely lead to a net increase in concentration of funding within the sector.

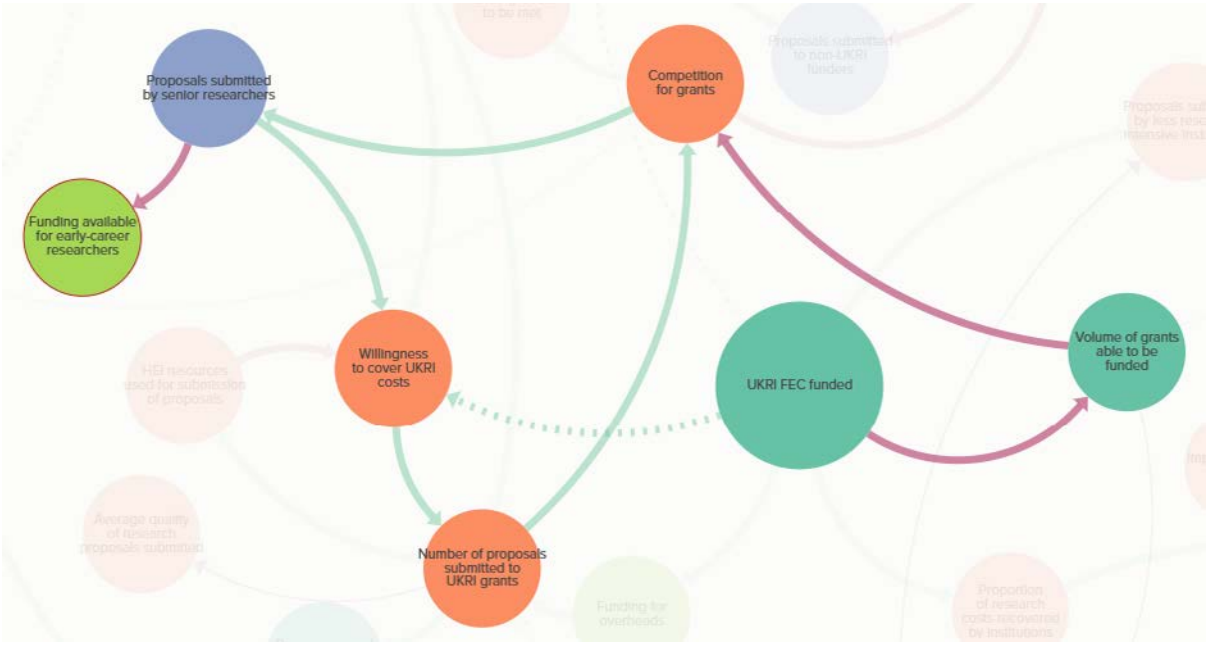
**Concentration of funding across UK regions.** As a result of concentrating funding for the most wealthy and research-intensive institutions, UK research funding and activity would likely become even more concentrated within London and the Southeast of England (INT_02; INT_03).

**Concentration of funding within institutions and across disciplines.** Additionally, with more concentration of research funding across the sector, institutions will need to prioritise what research they support and perform, leading to more concentration of research activity within institutions (INT_01). This change may have an impact on which disciplines are supported as some departments will have greater reliance on UKRI funding, for example. The impact on specific disciplines is harder to discern with current evidence and will likely vary substantially by institution, though disciplines with greater reliance on UKRI funding vs other sources would likely be disrupted the most.

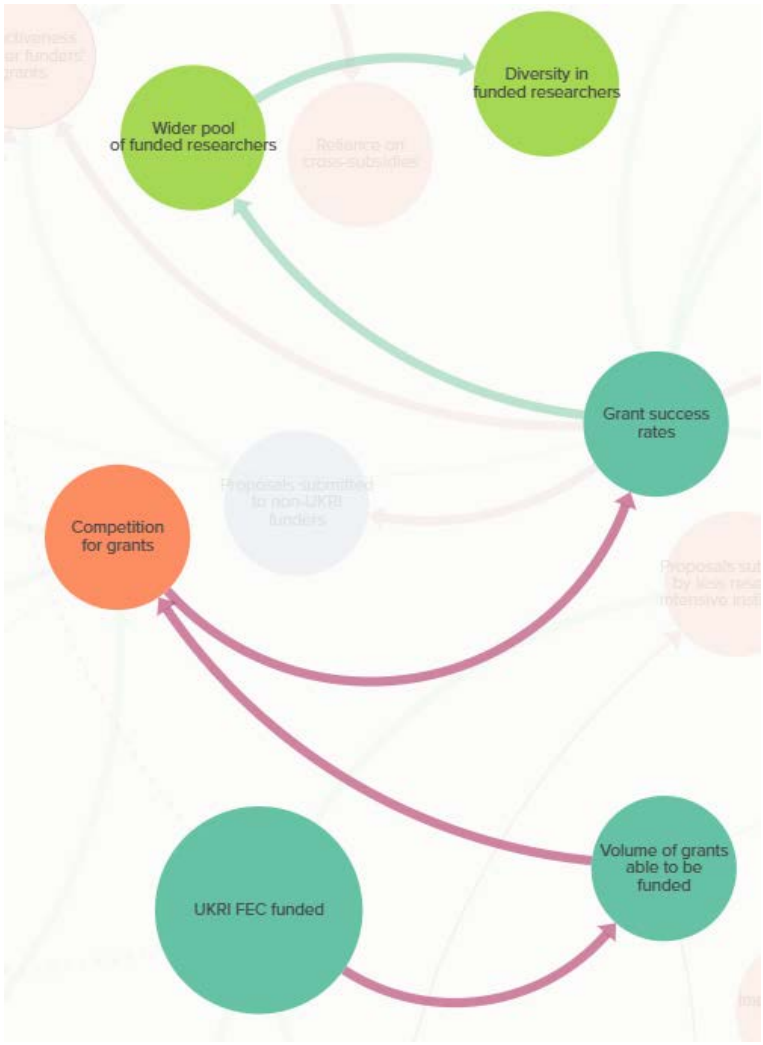
**International teaching and QR allocation**. The FEC rate may have a local impact on income from QR funding and international students but not a national impact. Changing UKRI's FEC rate may influence the income from QR funding allocation at an institutional level through changes to the concentration of

grant funding and research activity affecting REF performance (INT_05). However, there would be a net zero system-level change, as the overall pool of QR funding would not change. Similarly, the research performance of an institution affects how attractive it is for international students (directly or through league table performance). While changing the UKRI FEC rate may affect the distribution of UKRI grant funding across UK institutions, the overall effect of this on the attractiveness of the UK as a destination for international students is unlikely to change. Therefore, we would not anticipate a substantial change to national income from international students.

### 4.2.4. Research careers

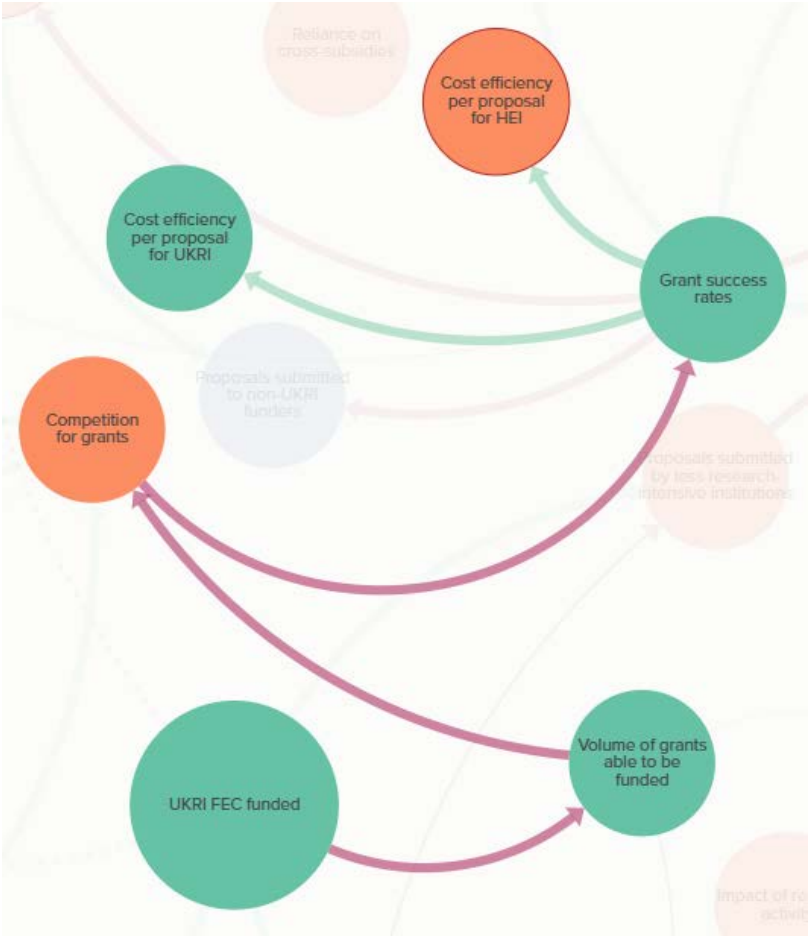



**Funding for early career researchers.** Since increasing the FEC rate drives up competition for grants, opportunities for funding for early career researchers (ECRs) may be reduced. Stakeholder consultation suggested that senior researchers with greater track record may be prioritised, resulting in reduced opportunities for ECRs and negative implications for overall national R&D talent and capability (INT_01).



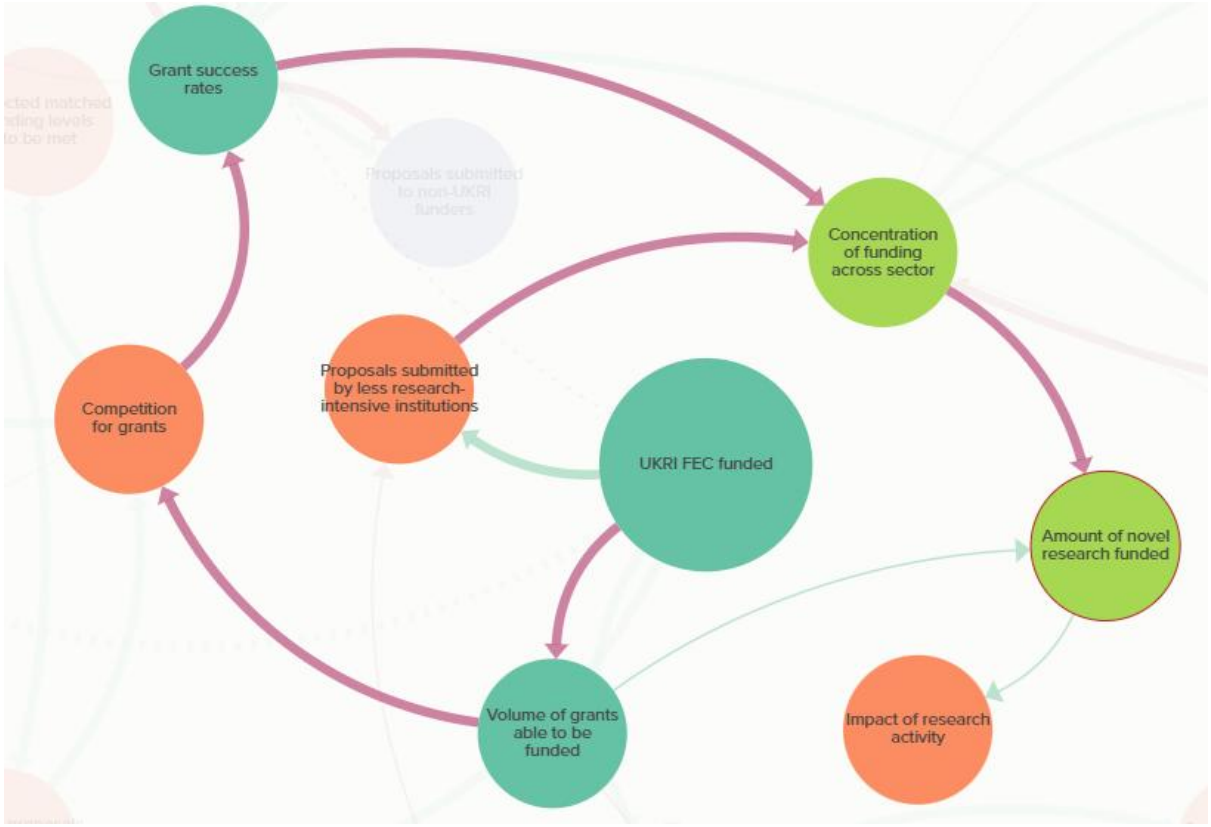

**Diversity of funded researchers.** Increased competition and the availability of fewer grants from increasing the FEC rate would reduce the overall number of researchers and research teams receiving funding, which could in turn have a negative impact on the diversity of national research talent (INT_04). A more homogenous talent pool can stifle innovation and increase the risk of bias in R&D activity (Asmal, Lamp & Tan 2022).

### 4.2.5. Cost efficiency

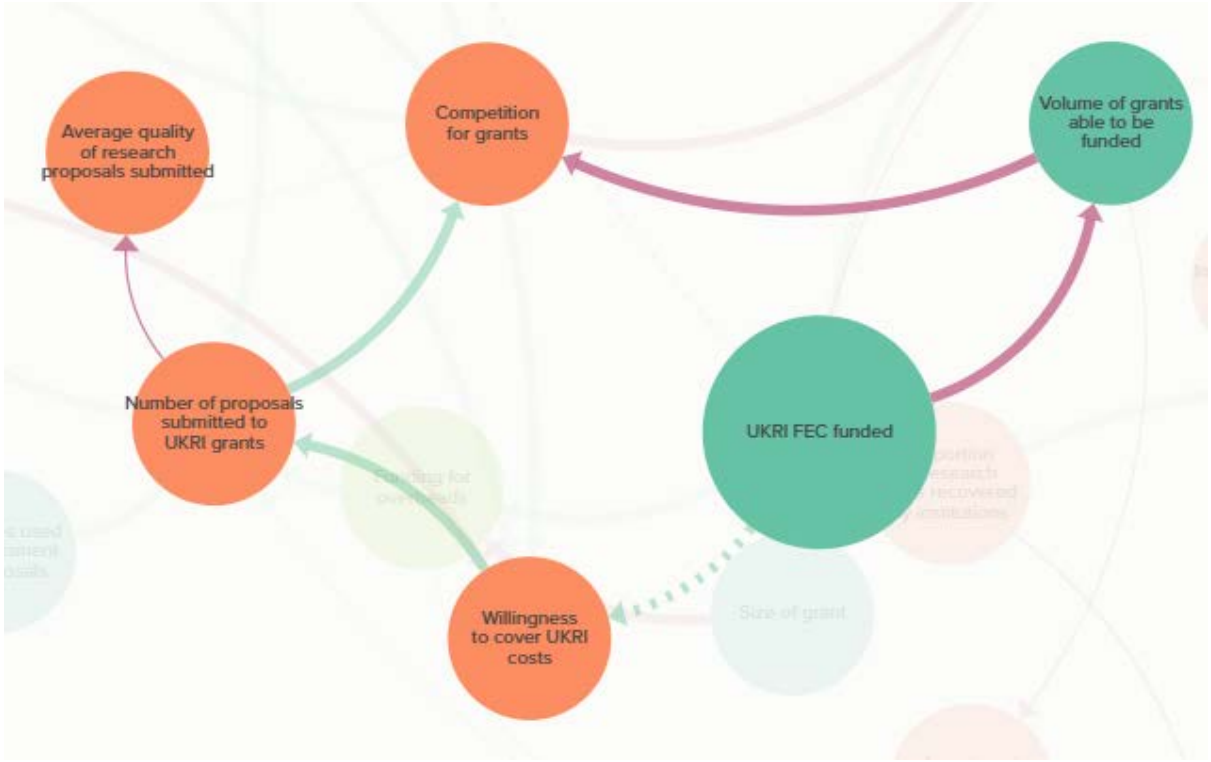



**Cost efficiency.** Increasing the FEC rate could have negative implications on cost efficiency for both institutions and UKRI. As grant success rates decrease and the volume of funding applications grow with a raised FEC rate, the average cost of administration per proposal developed for research-performing institutions would likely increase (INT_03; INT_04). The cost of proposal assessment and funding management per grant would also increase for UKRI, with the potential for additional demand management expectations being placed on institutions. Success rates for UKRI awards are already low and present significant challenges for the research system in terms of both adequate selection processes at these levels and – particularly – the burden on researchers who can spend a significant amount of time on grant applications rather than research. Therefore, this could be a significant issue further exacerbated by an increased FEC rate.

### 4.2.6. Nature of research funded




**Novelty and impact of research funded.** Increasing the UKRI FEC rate, which leads to a greater concentration of funding, may have implications for the novelty of research by diminishing the diversity of ideas and perspectives (INT_03; INT_04). Consequently, this could adversely affect the overall impact of research conducted in the UK. The FEC rate may also have an effect on research novelty through its effect on the attractiveness of UKRI funding and the volume – and potentially diversity – of proposals received. However, as outlined in Section 4.2.1, the long-term effect of any change to the FEC rate on the attractiveness of UKRI funding is hard to predict using currently available evidence.




**Average quality of research proposals submitted.** It is unclear whether altering the UKRI FEC rate would have a substantial effect on the quality of research produced. Stakeholders interviewed offered mixed views on how changing the FEC rate would affect the quality of submitted research proposals. While an increase in the total number of submissions could potentially lower the average quality across all proposals (DSIT 2023a), the quality of those that are ultimately funded may remain consistent. This is particularly relevant given that UKRI already receives more high-quality (i.e. fundable) research proposals than it has the capacity to support (INT_05). Another line of argument is that competition itself may drive quality through greater effort and ambition from researchers and HEIs, but relevant evidence is limited.

# 5. Conclusions

The purpose of this study was to investigate how changes to UKRI's FEC rate could affect different aspects of UKRI's R&D funding and performance system. Based on the analysis conducted, we can identify some overarching conclusions:

- **The outcomes from changing UKRI FEC rate policy on the UK R&D system are not clear cut.** Variability in business models and strategic priorities among institutions and the devolved nature of institutional decision making mean that responses to the FEC policy changes would differ. Our systems map illustrates the complexity of the landscape and some of the implications this has in terms of our understanding of the policy change's impact on the system. Firstly, there may be multiple, sometimes opposing, mechanisms underlying how changing the FEC rate may affect different parts of the system, making the overall direction of change hard to predict. Even where we have reasonable confidence about the initial effects, subsequent and longer-term impacts remain difficult to predict. Additionally, the evidence gathered during this short project presents only a plausible, theoretical, set of outcomes. Engagement with a wider set of stakeholders and employing methodologies that can capture additional nuance in the actors' responses would be needed to achieve a more accurate forecast.
- **The relationship between the FEC rate and cost recovery for the sector is non-linear, meaning that the impact of an FEC policy change on research deficit in the HE sector is not straightforward.** The correlation between a funder's FEC rate and the amount that universities would leverage to secure research grants from that funder is not necessarily linear. To enhance the appeal of research proposals, HEIs may underreport research costs or increase their commitment to additional leverage. Consequently, implementing a policy that raises the proportion of research project costs covered by the funder may not proportionately decrease the financial contributions HEIs make to those projects. We can see this in current behaviour where cost recovery does not meet 80 per cent of FEC.
- **For at least parts of the system, a change in the FEC rate is unlikely to substantially affect HEIs behaviour around UKRI funding but may affect their application outcomes.** For some institutions, we would expect an increase in the FEC rate to increase their willingness to support applications to UKRI funding due to lower cost requirements for them. However, this may result in a reduction in the amount of funding they would receive, as there would be fewer grants available (due to a fixed UKRI budget) with greater competition. However, other institutions may demonstrate inelasticity in their behaviour following a change in FEC rate, and therefore would continue to fund UKRI research even if the FEC rate was reduced. These HEIs would be those

that have the money to do so and for whom performing UKRI research provides them with benefits – such as attracting international students and industry investment – that outweigh the additional cost.

- **Changing UKRI's FEC rate is likely to affect the concentration of research activity across the HE sector, which would have implications for the financial sustainability and performance of the UK R&D system**. Increasing the FEC rate is likely to reduce the success rate of grants as there will be fewer grants available and more proposals submitted. Lower success rates would likely to lead to reduced diversity in the institutions that win the majority of the grants. Increasing the concentration of research funding and activity could lead to less diverse types of research being funded. In the longer term, it could also result in weakened national R&D capabilities, such as through the talent pipeline, fewer opportunities for R&D benefits across the regions, and overall reduced resilience as UK R&D would be reliant on fewer actors.
- **Reducing UKRI's FEC rate may increase cost efficiency from a UK government perspective, but could have financial implications for the sector**. Reducing the FEC rate could be efficient from a UK government perspective as indications suggest that many research-intensive institutions would continue to seek grants, and it would allow a larger number of projects to be funded, enabling UKRI to better leverage its investment. This would also potentially increase success rates, in theory enabling a wider range of institutions to win RC funding. In practice, however, smaller HEIs may be deterred from applying for grants with lower FEC rates as they would need to cover a higher proportion of research costs, which they cannot afford without compromising financial stability. Therefore, there would likely be a 'cut off' point for some institutions below which the proportion of FEC they need to cover may become unaffordable – but this is dependent on the extent to which changing FEC impacts on actual costs recovered, which is unclear. There is also a potential risk to quality, since a higher proportion of grants would be funded – but currently there are a significant number of fundable proposals that cannot be funded due to budget constraints, so it is unlikely this would occur without significant increases in the numbers of awards made.

Overall, our analysis has shown that the relationship between UKRI's FEC rate and HEI behaviours and outcomes is complex and non-linear. Even if we assume cost recovery is related to the FEC rate – which in itself is not clear – changing the rate could have wide-ranging implications that reflect complex behaviours and incentives across the HE sector. It is clear that increasing UKRI's FEC rate would not be a silver bullet for improving university financial sustainability and could have negative as well as positive implications. The evidence base is also limited, and our understanding of likely behaviours is not complete. Further work is needed to explore in detail the range and nature of potential institutional responses to changes in UKRI policy and how they vary by institution type. For example, this could include choice modelling studies to explore how institutions would respond to different financial and policy scenarios.

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