
FSSG

Financial Sustainability
Strategy Group

Understanding the impact of income cross-flows on financial sustainability in the UK higher education sector

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Foreword

Higher education (HE) in the UK is world leading. It has a much admired reputation for delivering outstanding teaching and research. Nonetheless, following the introduction of the higher tuition fees in 2012 the sector has, quite rightly, experienced increased scrutiny. When focussed on the right issues, scrutiny can be a catalyst for innovation, reform and continuous improvement and, as such, is to be welcomed. However, much of the recent attention on 'value for money' for students has shown a lack of understanding of how and why universities fund the wide range of activities they undertake. The issue of income cross-flows is central to this debate.

Universities are highly complex and diverse, each with distinctive characteristics and strategic missions. The HE sector has been asked over the years to deliver on a range of governmental initiatives and priorities that have not always come with the full resources required to deliver them. Universities have responded to the aspiration to deliver their own missions and governmental priorities by using their income to optimise the outcomes, though this has frequently meant that income received for one activity is partly used for another: this is what we refer to as 'income cross-flows'.

The Financial Sustainability Strategy Group (FSSG) was prompted to undertake this study after the Higher Education and Research Act (2017) was passed. The Act resulted in the separation of oversight for universities' teaching and research between two government departments and new organisations beneath these with the Office for Students and UK Research and Innovation. The FSSG also recognised that the HE sector had not clearly communicated the benefits of income cross-flows between teaching and research, and this needed to be better understood.

This study analyses the nature of income cross-flows that exist in higher education in the UK. Some findings confirm what we already know, for example that the higher education sector as a whole does not recover the full economic cost of its activities, and the sector as a whole is therefore not sustainable. Some findings provide much-needed detail of how cross-flows can operate for the benefit of all. They show, for example, how astute investment in research leads to stronger reputations and higher rankings in global league tables, which in turn results in an increase in international students who, by paying higher fees, strengthen the financial sustainability of these universities.

Alongside the data (aggregated at sector level), some evidence is presented for the first time to show the range of results across institutions (in an anonymous way), which highlights the diversity of the sector. This is the single most important contribution of this study. It also warns implicitly that demands to limit cross-flows will have distinct consequences for individual universities. Many of which are unpredictable and some of which might damage the global standing of UK universities.

I hope this report provides valuable insights for the sector's funders and regulators and helpful pointers for those who have responsibility for maintaining the financial sustainability of their own institution.

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Vice-Chancellor

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1 Executive summary

1.1 Background

The Financial Sustainability Strategy Group (FSSG) has undertaken a study to assess and understand income cross-flows within the UK higher education (HE) sector. The project aimed to:

- improve understanding of these cross-flows;
- why they exist;
- the impact they have on financial sustainability; and
- the benefits or issues that they create.

Income cross-flows are created by pooling and allocating resources to the strategic priorities of the institution, rather than only using the resources on the activities that generated them.

The study involved desk-based research, a review of the Transparent Approach to Costing (TRAC) data and other financial data. It also included visits to six institutions to identify current and future practices around income cross-flows and management of sustainability more generally. To the extent that data or analysis is available, the study covers HE providers in receipt of grant funding from the UK HE funding bodies, but excludes further education colleges and other HE providers.

Institutions are complex, multidisciplinary organisations that deliver a combination of teaching, research, knowledge transfer and commercial activities. They vary in size and mission, and all have multiple income streams. Institutions have evolved over time in relation to the policy environment and the income generating opportunities that exist. Universities UK estimated that UK universities and their students generated significant economic benefit in the UK, equal to £95 billion gross output in 2014-15¹. It is clear that universities are a significant national asset and it is therefore important to sustain the UK's world class sector.

Institutions face a number of uncertainties, including: changes to funding policy in Wales, the outcome of the Post-18 Education and Finance review in England, the impact of leaving the EU, the reliability of the international student market and changes to pension obligations. Ensuring the sustainability of institutions is therefore becoming more

¹ www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2017/the-economic-impact-of-universities-summary.pdf

challenging. Understanding the financial performance of the activities within an institution is crucial in developing and delivering institution and financial strategies.

1.2 Key messages

- 1 Individual universities are structured to deliver their pedagogic and strategic objectives using income from a variety of sources. Institutions reported that this is efficient and beneficial for the delivery of teaching and research. If restrictions were introduced to limit the pooling of income this could have distinct consequences, some of which are unpredictable for individual universities, and some might damage the global standing of UK universities.
- 2 Institutions plan for the medium term to sustain important academic disciplines and the pooling of resources provides the flexibility to enable this. However, this is more challenging to achieve in light of future risks and uncertainties.
- 3 If we aggregate teaching fees, a proportion of which are funded by the Student Loans Company, and government grants for research and teaching, government funding represents a significant proportion of the income into the sector. This make the sector highly sensitive to changes in government policy for funding higher education.
- 4 TRAC data has shown over many years that the UK HE sector as a whole does not recover the full economic cost of its Teaching, Research and Other activities when taken together, and shows that the sector is therefore not sustainable in the long term. *(See Chapter 3)*
- 5 A significant majority of universities (79%) recovered less than 100% of their full economic cost in 2014-15, and these institutions may not be sustainable in the long term unless action is taken to address the gaps. *(See Chapter 3)*
- 6 Income cross-flows exist within and between activities, for example in Teaching between subjects and Research between different funders, as well as between different activities, for example funding Research from Non-Publicly Funded Teaching income. *(See Chapter 3)*
- 7 Publicly-Funded Teaching activity has consistently recovered around 100% of the full economic cost up to 2014-15, but some subjects do not recover the full costs and are supported by income generated from other activities or subjects. *(See Chapter 3)*
- 8 Research activity has consistently recovered less than 100% of the full economic cost, and there is a cross-flow of income from Non-Publicly Funded Teaching and Other activities to Research to enable its sustainability. Research is, however, a growth priority for many institutions and is in support of the government's target to raise

investment in research and development to 2.4% of Gross Domestic Product (GDP) by 2027. (See Chapters 3 and 4)

- 9 Supporting the government target for growing research and development activity to 2.4% of GDP by 2027 can only be delivered by permitting cross-flows from NPFT and Other activity, or increasing funding for research to enable the recovery to be close to 100% of the full economic cost. (See Chapter 3)

The key messages above are underpinned by a number of key findings. The key findings are explained in the following sub-sections.

1.3 Key findings – Understanding the sustainability of the HE sector and where income cross-flows exist (Chapter 3)

Data reported by institutions in TRAC has been used to assess income cross-flows and the sustainability of the different activities undertaken.

Key findings in understanding the income cross-flows and sustainability of the sector are:

- Non-Publicly Funded Teaching recovers more than 100% of the Full Economic Cost (fEC) in most institutions, but only represents 14.3% of the total activity of the sector (£4,617m). The surplus it generates is insufficient to meet the shortfall on activities that recover less than 100% of the fEC.
- Recovery of fEC by individual institutions varies widely, and cross-flows exist within as well as between activities.
- With no inflationary increase to the regulated tuition fee in England since 2012, the cost recovery for PFT stayed relatively static until 2015-16. Notwithstanding the slight decline in PFT recovery in 2016-17, this suggests an increased level of efficiency in delivering teaching. If this had not been the case, increased costs without a corresponding increase in income would have reduced the recovery of PFT earlier than 2016-17. The extent of increased efficiency cannot be identified from the TRAC data, but it is an important demonstration of how the sector has proactively managed its finances.
- Institutions have continued to deliver Science, Technology, Engineering and Mathematics (STEM) based subjects in support of government priorities, even though the government's targeted funding in these areas is not sufficient to cover the full costs.
- Unless a decision is taken to close a high-cost course, the equipment have to be maintained. This is the case even if there are insufficient student numbers and/or income to meet these costs. Therefore, cross-flows are required to sustain such subjects in the medium term.

- Research active staff use the knowledge gathered from their research work to provide materials and in-put for the delivery of teaching, but the cost of acquiring this knowledge is excluded from the Teaching costs.
- There is variation in the funding policies for research by different funders (research sponsors). Some institutions commented that the different rates of fEC recovery could lead institutions to become more selective about the research funders they choose to work with to ensure a better recovery of fEC.
- In delivering their mission and strategic aims, institutions develop a portfolio of activities and then pool the resources that these generate, rather than ring fencing income to the activity that generated it.
- The TRAC system which underpins the TRAC data analysed in this report, has formal sector-wide requirements. Compliance by institutions is overseen by a committee of the governing body. Any (potential) reservations about the accuracy of the TRAC data are expected to be within accepted levels of materiality, and thus highly unlikely to change the findings and conclusions from this study.

We considered whether there were any predominant factors that supported the financial sustainability of institutions. This found that although the financial sustainability of institutions showed some sensitivity to a small number of factors (when measured by the recovery of fEC) it was difficult to isolate specific factors. This is because institutions deliver a wide range of activities. For example, the more research intensive institutions commonly have a greater level of income from international students, and this appears to enable a return that supports their research agendas.

1.4 Benefits of income cross-flows (Chapter 4)

The visits to six institutions provided an understanding of how institutions approach and manage their finances. All confirmed that they plan financially to achieve the strategic aims of the institution. As a result resources are pooled (creating income cross-flows) to enable this, rather than being used solely for the activity that generates the income. This practice is long-standing, and institutions are used to managing cross-flows.

This provides many benefits, including:

- Enables the delivery of programmes that do not attract sufficient funding in their own right (e.g. STEM courses). This benefits the country and society more generally.
- Enables institutions to sustain the delivery of higher education through more challenging times e.g. taking a medium term view to preserve the delivery of key subjects where recruitment for a particular period may have declined in the short term.

- Enables continued investment and improvement over time e.g. investment in IT, student facilities, library investment, student accommodation and international developments.
- Informs criteria used to assess business investments e.g. developing a new business school or medical school. It also informs decisions taken over the types and volumes of contracts and funding to pursue, and whether certain activities should be scaled back or stopped.
- Understanding the cross-flows that are generated by different activities informs the resource allocation models and contribution targets that are set for academic areas. This influences academic departments when balancing their portfolio of activities to deliver the financial and operational outcomes required to support attainment of the broader institution strategy.
- Enables delivery of the institution's broader role aside from the direct delivery of teaching and research. Resources can be made available for re-investment at an institutional level to deliver wider public good, e.g. in supporting local communities and the place-based agenda.
- Enables widening participation more generally through funding bursary schemes and outreach activities.

1.5 Key findings – The impact of income cross-flows in supporting financial sustainability of institutions (Chapter 4)

Key findings arising from considering the impact of income cross-flows are as follows:

- Growth in numbers of international students is planned by most institutions that we visited, and continued growth is forecast at an aggregate sector level across the English HE sector. As outlined in section 1.5, there is a risk to financial sustainability of those institutions if the growth is not achieved.
- Most institutions visited for this study are planning to increase their level of research due to the importance of research to their strategy and reputation in addition to the public benefit it delivers. This is despite the knowledge that income earned is insufficient to meet the costs incurred.
- Institutions are investing in their estates, facilities and staff in response to student expectations and to sustain the growth achieved in student numbers.
- Understanding where income cross-flows exist informs decision-making over both the portfolio of courses and the size and shape of the institution's research effort.
- Institutions are pursuing opportunities for growing their income, to provide financial stability and to enable continued investment.

- Institutions have reflected the financial contributions of different activities in the resource allocation model. This has made the financial recovery of different activities more visible, which has incentivised academic departments to balance their portfolios. Understanding and positively supporting income cross-flows is therefore important and resources may not be used optimally where these cross-flows are not understood.
- Institutions generate cash year-on-year to fund their investments. Whilst some have accelerated investment through borrowing, there is a limit on what levels of borrowing are appropriate and permissible.
- Institutions have an important role in supporting local communities, businesses and other organisations. Typically these activities do not provide an income to the institution, but they may utilise funds from other sources to make them possible and enable a public benefit to be provided locally.
- Institutions consistently reported that they structure themselves according to the academic disciplines or areas of expertise of those disciplines, rather than adopting structures that reflect the different funding streams.
- Communicating and increasing the understanding of how different academic areas and their activities (e.g. taught programmes, research projects) perform financially is important in ensuring an effective use of resources and in enabling the financial sustainability of the institution.
- This study supports the importance of transparency, as set out previously by the Higher Education Funding Council for England (HEFCE) and its guidance for the sector on providing institutional financial information for students². It may be a challenge for institutions to build understanding and engagement on this issue, but staff and students should feel able to engage in constructive and mature discussions about income cross-flows.

Institutions noted that they have a relatively high fixed cost base, and that this cannot be changed significantly in the short term. Many institutions have large asset bases, but the ability to realise a receipt from the sale of these assets depends on their location and suitability for alternative use. Institutions also outlined that commitments to students and research funders are for a number of years, and therefore restructuring the cost base and course portfolio can take years to realise a financial saving, because institutions have to ‘teach out’ existing students on the course and/or complete existing research projects.

² Case studies and this guidance from HEFCE are available at <https://webarchive.nationalarchives.gov.uk/20180405121754/http://www.hefce.ac.uk/it/financetransparency>

1.6 Future risks and their impact on the sustainability of institutions (Chapter 5)

A range of risks and challenges exist when assessing sustainability, including areas such as demographic changes, pension obligations, and international recruitment.

In considering future risks facing the sector and how they could affect the sustainability of institutions, the following was identified:

- Institutions need to plan for the medium term to preserve important academic disciplines through more challenging times.
- Institutions have a varying reliance on international student recruitment. Failure to realise projected growth in numbers will present financial risks for many institutions.
- HEFCE identified, based on 2015-16, that the financial performance of English institutions, although collectively healthy, deteriorated from the previous year. On the 2015-16 and 2016-17 financial results HEFCE noted that the performance between institutions was more varied.
- The importance of effective scenario planning has increased and is an essential tool for supporting the financial sustainability of the institution.
- Institutions have to fulfil their obligations to all pension schemes, irrespective of the funding environment.
- Obligations to re-pay borrowings have to be fulfilled, irrespective of the funding arrangements in the sector. Furthermore, if significant changes to government funding of the sector destabilise and weaken the sector's financial performance this could impact on the availability and cost of new borrowings.

1.7 Summary

This study found that income cross-flows are a necessity, are common in institutions, and provide public benefit. Cross-flows are a result of institutions pursuing a range of activities and opportunities in pursuit of their strategic ambition, including the development of new teaching programmes, within the constraints that exist over different funding streams. In some cases the strategic imperative takes priority over the financial return (e.g. targeting increased research activity in the knowledge that it will not generate sufficient income to meet the full economic cost).

Public benefits (financial and non-financial) arise from cross-flows, because a plethora of activities are pursued that deliver benefit to local communities and wider society. This includes widening participation, sustaining important subjects that are suffering a downturn in recruitment, and pursuing research activities that do not attract sufficient funding.

Making cross-flows transparent internally helps institutions to balance portfolios, enables scenarios to be modelled and helps identify where efficiencies may be made. A key gap, however, is that cross-flows are often not transparent: institutions need to more actively explain cross-flows and the benefits they provide to a broader cross section of staff and students.

Reductions by government to the current funding model and the flexibilities allowed within it would need changes to the level of funding for research, especially in light of the government's target for increasing investment in research and development to 2.4% by 2027. Institutions may also have to curtail a number of outreach and community activities if funding is reduced and flexibilities in how funding can be used becomes more restricted.

2 Introduction

2.1 Background

The Financial Sustainability Strategy Group (FSSG) undertook a study to understand how income is used to support different activities within the UK higher education (HE) sector. The study aimed to improve understanding of these cross-flows, why they exist, the impact they have on the financial sustainability of the institution as a whole (or parts of its portfolio) and explore the benefits generated, in addition to the issues and tensions that exist in managing HE portfolios with different levels of cost recovery.

2.2 Aims and objectives of this review

The aim was to provide an objective analysis of how income cross-flows contribute towards the financial sustainability of institutions, how this could be impacted by changes in government policy for HE funding and interaction with other external factors.

The study builds on the most recent study on the sustainability of learning and teaching³ to provide an updated view of how the sector generates income to fund the portfolio of activities it undertakes. It considers how the risks and opportunities that are emerging from the new environment could affect the future sustainability of the activities delivered by institutions.

The review provides insight principally for the government, UK HE funding councils, UK Research and Innovation and the Office for Students, given their responsibilities for HE policy, monitoring financial sustainability and value for money, but also for governing bodies and senior managers within institutions.

The terms of reference for the study are provided in Appendix 1.

2.3 Approach to the review

The approach to the study included: desk-based research; analysis of sector financial data and data produced through the Transparent Approach to Costing (TRAC); and visits to six institutions to develop a more detailed understanding of the current and future practices around income cross-flows and the management of sustainability more generally. To the extent that data or analysis is available the study covers HE providers in receipt of grant

³http://webarchive.nationalarchives.gov.uk/20180319130312/http://www.hefce.ac.uk/funding/finsustain/publications/Sustainability_of_Learning_and_Teaching_2015/

funding from the UK HE funding bodies in the UK, but excludes further education colleges and other HE providers.

A number of institutions from England, Northern Ireland, Scotland and Wales were approached to participate in the study. Six institutions from England and Northern Ireland agreed to support the study with an agreement to maintain anonymity of the participants and the insights provided.

A steering group was established to support FSSG in guiding and overseeing the study, chaired by Professor Robert Van de Noort (Vice-Chancellor of the University of Reading). Details of the group's membership is in Appendix 2.

The analysis used in the study was based on TRAC data for the 2014-15 academic year and has been adjusted for income received through the Research Development Expenditure Credit (RDEC) scheme⁴. Where an institution was not been required to complete a TRAC return in 2014-15, they have been excluded from the analysis.

The primary reason for selecting 2014-15 for the study was that it was the most recent year of data available before Financial Reporting Standard 102 (FRS102) was introduced: it therefore enables direct comparison with earlier years and for trends to be identified. Although the analysis has been based on a single year, the financial performance of the sector overall, as reported in TRAC, has been consistent for many years. Therefore the relevance of the findings in this report is strengthened. For England it also provided three years' impact of the increased level of tuition fees that were introduced in 2012.

2.4 What activities does a higher education provider undertake?

The role and broader purpose of universities is the subject of much debate. UK institutions are independent, self-governing bodies and are typically involved in a range of activities including teaching, research, knowledge transfer, commercial activity and scholarship. Some, however, perceive that universities just deliver face-to-face teaching of a particular course.

⁴ The RDEC scheme was established by government in 2013 to offer tax incentives to large companies to encourage greater investment in research and development. The scheme has now been amended so that universities and charities are unable to claim RDEC in respect of expenditure incurred on or after 1 August 2015. However, a number of institutions made claims to HMRC for eligible expenditure incurred in the period 2012-13 to 2014-15 and have therefore included RDEC in their financial accounts. RDEC income is considered as a large one-off financial benefit to the sector, and for the purposes of this study, the figures exclude RDEC income.

In pursuing their core missions of knowledge and learning, institutions also acquire civic and global reputations. Their economic value to the UK has been the subject of much recent media attention. Universities UK estimates that UK universities and their students generate significant economic activity in the UK, equal to £95 billion gross output in 2014-15⁵. Overall Universities UK estimated that the sector:

- makes a contribution of £52.9 billion gross value added (GVA) to the UK's GDP;
- supports almost 944,000 jobs of all skill levels in the UK economy;
- generates £14.1 billion worth of tax receipts for the government, equivalent to 2.7% of all tax receipts in 2014-15; and
- 76% of research at HE institutions was considered 'world-leading' or 'internationally excellent' for its overall quality in 2014, as defined by UK Research Excellence Framework⁶.

The reputations of institutions have been founded on the quality of teaching and research that they undertake. Students attending universities typically do so for a rounded experience that extends beyond their course. Significant investments have been made by institutions in facilities and services to support students, including increased investment in pastoral support and services supporting students' mental health. In March 2018, the Higher Education Funding Council for England (HEFCE) stated that English institutions had invested almost £28bn on improving physical infrastructure over the last 10 years⁷. It was noted that beyond natural renewal of facilities, this level of investment has increased in response to rising student expectations.

A Universities UK summary outlined that institutions typically focus on three main activities: education, research and innovation. There is also a diversity of institutions in terms of size (ranging in turnover from £6.6m to over £2 billion), mission and history. Some institutions deliver only teaching in specialist disciplines, whereas others deliver teaching and research activities across a range of subjects.

This study groups the activities found across the sector into five categories:

- **Research** – including innovation and new knowledge acquisition.

⁵ www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2017/the-economic-impact-of-universities.pdf

⁶ www.universitiesuk.ac.uk/facts-and-stats/data-and-analysis/Pages/research-facts-and-figures.aspx

⁷ HFECE Financial health of the higher education sector: 2016-17 financial results - <https://webarchive.nationalarchives.gov.uk/20180405115810/http://www.hefce.ac.uk/pubs/year/2018/201804/>

- **Student experience** – for example to inspire and to include an outstanding learning experience.
- **Civic/Place** – recognising partly the economic role that institutions play in local economies and the provisions of skilled graduates and knowledge to employers.
- **Learning** – often closely aligned to the student experience but also aiming to achieve the highest possible academic standards and supporting teaching excellence.
- **Global** – focussed on global recognition and includes international student recruitment.

To undertake these activities, every institution has an organisation and management approach designed to support good governance. At the highest level a governing body is in place, supported by a number of sub-committees, which should operate in line with the Committee of University Chair's Code of Governance. It is the governing body's responsibility to oversee and guide the activities of each institution, holding management and the head of institution to account as required.

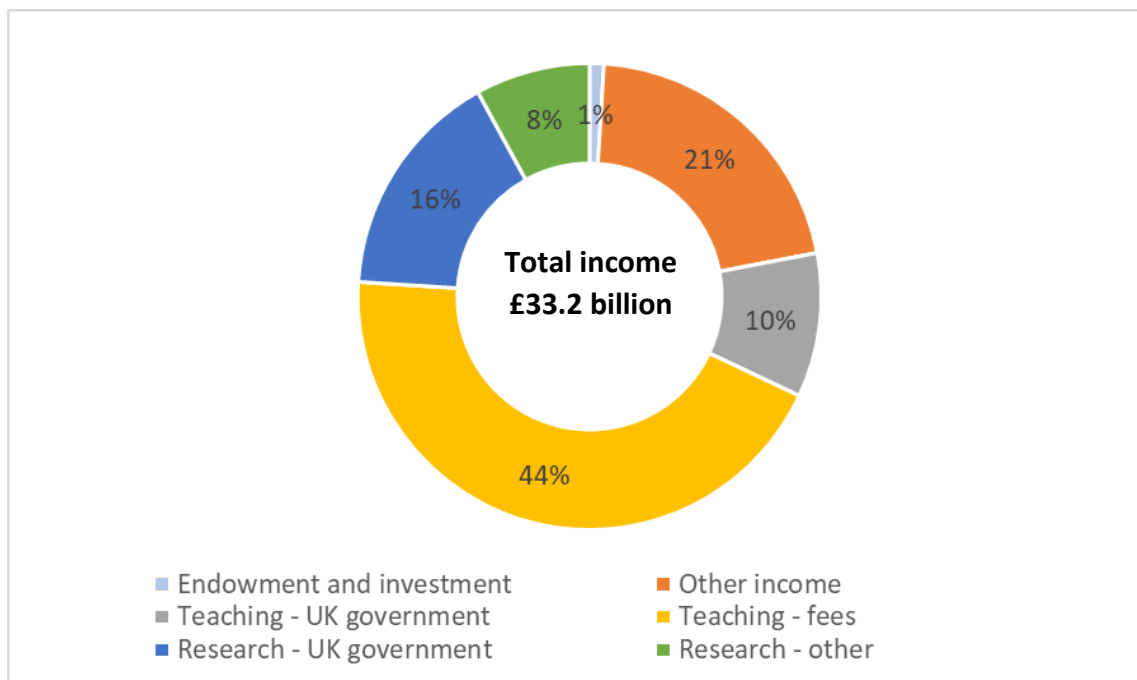
2.5 The current HE environment

A key issue for institutions in achieving financial sustainability is the reliability and certainty of the income sources. The Financial Sustainability Strategy Group (FSSG) defines financial sustainability as:

'A sustainable financial position requires institutions to generate the necessary level of cash to finance their operations and strategic needs over the medium-to-long term, including its investment in human and physical resources.' Achieving a sustainable financial position is, therefore, complex. It requires medium-to-long term decision-making, backed up by a strong and clear financial strategy.'

Universities UK has provided a summary of the broad income sources within the sector for 2014-15. This is shown in Chart 1.

Chart 1: Income sources in 2014-15



Source: UUK Higher Education in Facts and Figures 2016

Institutions received 56% of income from sources other than from teaching fees. Taken at face value, just under a quarter of income was from direct UK government sources, but a proportion of the teaching fees will be supported by the Student Loans Company, which is a further source of government funding.

Key finding: When aggregating teaching fees, a proportion of which are supported by the Student Loans Company, with government-backed grants for research and teaching, government funding represents a significant proportion of the income into the sector. This makes the sector highly sensitive to changes in government policy for funding higher education.

The HE sector differs across the four jurisdictions of the UK, most notably in funding undergraduate teaching where a mixed system and range of tuition fees and government grants operates. Table 1 shows the maximum tuition fees for each country in the UK applicable to their respective home student. In Appendix 5 we set out further characteristics of each country's HE provision.

Table 1: Maximum regulated tuition fees to home students

Country	2012-13 £	2013-14 £	2014-15 £	2015-16 £	2016-17 £	2017-18 £	2018-19 £
England	9,000	9,000	9,000	9,000	9,000	9,250	9,250
Scotland (for Scottish & EU Students)	0	0	0	0	0	0	0
Scotland (for English, Welsh & Northern Ireland students)	9,000	9,000	9,000	9,000	9,000	9,250	9,250
Wales	9,000	9,000	9,000	9,000	9,000	9,250	9,250
Northern Ireland	3,465	3,575	3,685	3,805	3,925	4,030	4,160

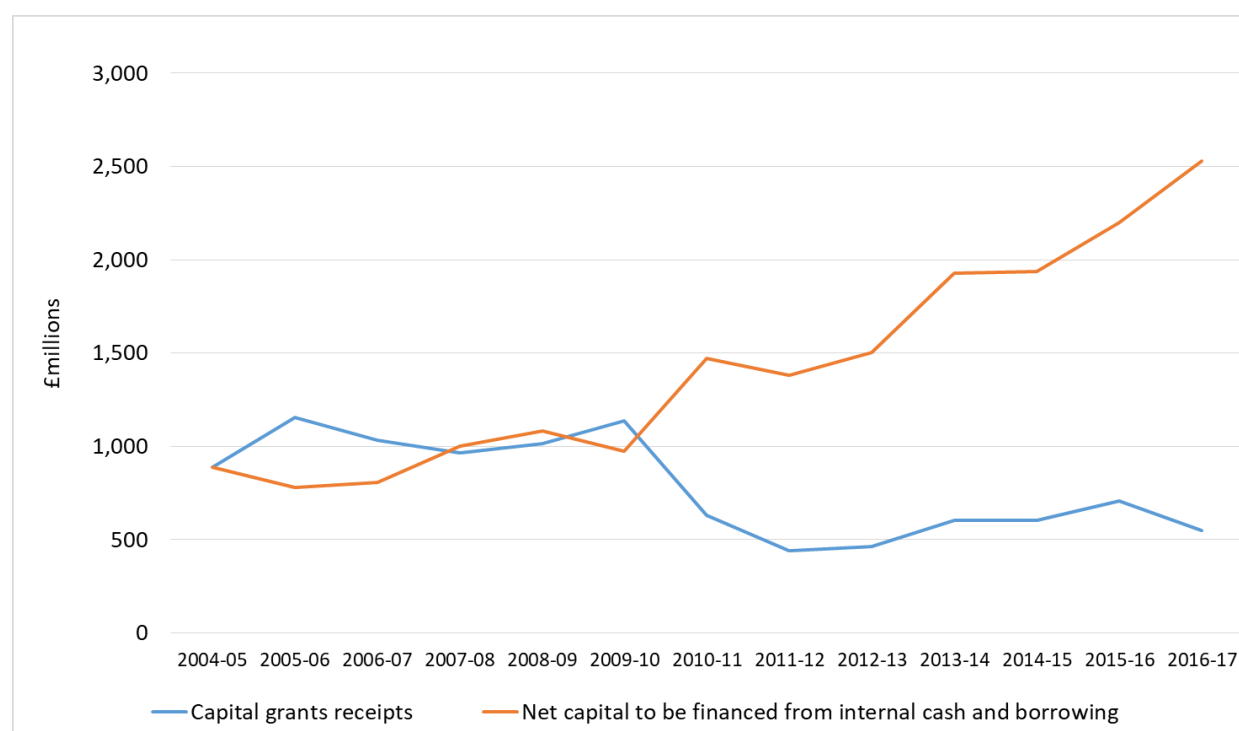
Table 1 shows that Scottish students studying in Scotland do not pay tuition fees, but students domiciled outside Scotland studying at a Scottish institution do pay fees. Students in Northern Ireland incur lower tuition fees albeit increasing each year with approved inflationary increases.

Institutions in most jurisdictions of the UK are facing further changes to their funding arrangements. In England the Department for Education (DfE) launched a review of Post-18 Education and Funding and is set to report early in 2019; in Wales the Diamond review was undertaken to appraise the funding of HE in the Welsh sector. This has resulted in a consultation regarding proposed changes to the system⁸.

In the English sector, changes in 2012 have led institutions to be more market focussed and competitive. As shown in Chart 1, the government provides significant levels of funding to the sector as a whole. Therefore, changes to funding policy could create risk to the financial sustainability of institutions. This is further exacerbated by the fact that many institutions have been investing heavily in their building and facilities to improve the service and experience provided to students. To illustrate this risk, Chart 2 shows the level of capital investment in English institutions and how this is being funded.

⁸www.hefcw.ac.uk/documents/publications/circulars/circulars_2018/W18%2024HE%20Consultation%20on%20changes%20to%20funding%20methods%20for%202019_20%20and%20future%20developments.pdf

Chart 2 – Real terms capital expenditure funding in England (from base year 2004-05 – 2016-17)



Source: 'Financial health of the higher education sector: 2016-17 financial results' HEFCE, March 2018.

Chart 2 shows that the level of capital grant receipts, mainly from government, has declined, but the need for capital investment has increased.

Some institutions have pursued strategies for increasing the level of cash that is generated to fund these investments, but many have increased borrowing and used cash reserves to fund the required investment in estates and other infrastructure. However, there are limits on how much borrowing any organisation can or may want to take, as informed by each institution's financial strategy. Therefore, the strategy of borrowing that is currently being pursued to by some institutions to fund investment may not be sustainable in the medium term as borrowing capacities will at some point be reached, at which point the institution's capacity for further investment will be curtailed unless sufficient cash is generated.

Key finding: There could be increased risk to institutions with borrowings if there are significant reductions to funding. It also shows the importance of institutions operating and being funded on a sustainable basis, given significantly more investment is now self-funded.

2.6 What is an income 'cross-flow'?

Higher education institutions deliver a wide and complex range of activities – referred to as a portfolio of activities in this report. Therefore, income sources are pooled and allocated to strategic priorities, which means that:

- 1) Income does not necessarily get spent wholly on the activity that generated it
- 2) Some activities cost less to deliver than the income they generate
- 3) Not all activities generate sufficient income to cover the costs of that activity.

The resulting cross-flows of income therefore enable an institution to sustain a broad range of activities in support of their strategic missions.

When calculating what level of cross-flow is optimal and sustainable it is necessary for an institution to consider the full economic cost of delivery of all activities, which includes a margin for sustainability and investment. Use of the TRAC methodology and the recovery of the full economic cost provides a reliable and consistent basis for assessing the impact of cross-flows on the sustainability of the sector.

Cross-flows exist at different levels within and across the sector. This study focuses on three levels at which cross-flows occur:

1) Sector level

Across the HE sector as a whole, income and costs are categorised into Teaching, Research and Other activities using the TRAC methodology. This provides a consistent basis on which to assess which activities fully recover the costs and which have costs that are not fully recovered from the income they generate.

2) Institution level

At this level, each institution can calculate the different levels of cost recovery across the categories of Teaching, Research and Other headings, again using the TRAC methodology to account for income and expenditure. Where costs are not fully recovered, they require additional resources (cross flows).

3) Discipline or subject level

At this level, two types of cross-flow assessment emerge which can be aggregated for the sector or an institution:

- i) **Teaching subject cross-flows.** Different subjects incur different levels of cost. This is to some extent reflected in the funding methodologies. It is also a consideration in institutions' resource allocation models.
- ii) **Cross-flows by research sponsor type.** The cost and income data collected through TRAC can determine the differing level of cost recovery by each type of research funder (sponsor category), for example from the EU, postgraduate research or charity.

2.7 Acknowledgements

A key part of the review was to engage effectively with key stakeholders. This was achieved through a combination of one-to-one meetings, phone call and email support, and group meetings. We detail below the groups that we would like to thank for their contribution, co-operation and assistance with this study. Particular thanks go to:

- all the participating institutions for their time and willingness to share experiences and insights; and
- the membership of the steering group for analysing the data, sharing their own experiences and offering their guidance throughout the review.

2.8 Structure of this report

This report contains the following sections:

- Understanding the sustainability of the HE sector and where cross-flows exist
- The role of income cross-flows in an institutional context
- Future risks and their impact on the sustainability of institutions
- Abbreviations
- Appendices.

3 Understanding the sustainability of the HE sector and where income cross-flows exist

This chapter analyses the financial sustainability of the sector and draws out the key messages and assesses the existence of income cross-flows.

Key messages from this chapter:

1. The TRAC data has shown over many years that the UK HE sector as a whole does not recover the full economic cost of its Teaching, Research and Other activities when taken together and shows that the sector is therefore not sustainable in the long term.
2. A significant majority of universities (79%) recovered less than 100% of their full economic cost in 2014-15 and these institutions may not be sustainable in the long term unless action is taken to address the gaps.
3. Income cross-flows exist within and between activities, for example in Teaching between subjects and Research between different funders, as well as between different activities, for example funding Research from Non-Publicly Funded Teaching income.
4. Publicly-funded Teaching activity has consistently recovered around 100% of the full economic cost up to 2014-15, but some subjects do not recover the full costs and are supported by income generated from other activities or subjects.
5. Research activity has consistently recovered less than 100% of the full economic cost, and there is a cross-flow of income from Non-Publicly Funded Teaching and Other activities to Research to enable its sustainability. Research is, however, a growth priority for many institutions and is in support of the government's target to raise investment in research and development to 2.4% of GDP by 2027.
6. Supporting the government target for growing research and development activity to 2.4% of GDP by 2027 can only be delivered by permitting cross-flows from Non-Publicly Funded Teaching and Other activity, or by increasing funding for research to enable the recovery to be close to 100% of the full economic cost.

3.1 Understanding institutions' income and costs from sector wide data

3.1.1 The Transparent Approach to Costing (TRAC)

All UK higher education institutions submit cost data using TRAC, an activity-based costing system, adapted for an academic culture in a way that also meets the needs of the main public funders of HE.

It was introduced across the UK HE sector in 1999 as a government accountability requirement and to support institutional management through better understanding of costs within individual institutions.

TRAC is, 'a process of taking institutional expenditure information from consolidated financial statements, adding a margin for sustainability and investment to represent the full 'sustainable' cost of delivery, and then applying cost drivers (such as academic staff time allocation and space usage) to allocate these costs to academic departments and to specific activities.' This measure of cost, with a margin for sustainability and investment, is also referred to as the full economic cost (fEC) as it reflects the costs of replacing income-generating assets, investment in human capital, IT and innovation over the longer term. Expressing the fEC as a proportion of income shows the percentage recovery for each activity at institutional level. 100% means the sector is in balance, and if consistent over a period of time would suggest it is sustainable. Some institutions analyse their data further to determine the fEC position of individual academic departments.

The main activities to which TRAC allocates costs are:

- Teaching – analysed between publicly and non-publicly funded activity (PFT and NPFT);
- Research – analysed between the main sponsor types, for example research councils, government departments, charities and European Commission bodies;
- Other – the other primary income-generating activities such as commercial activities, residences and conferences; and
- Support activities – such as preparation, proposal-writing and administration, which are costed separately but are attributed, as appropriate, to the three core activities – Teaching, Research and Other.

Table 2 sets out the TRAC results for 2014-15.

Table 2: TRAC income and full economic costs by activity 2014-15 for UK HEIs

Financial performance indicator	Teaching		Research	Research (excl. RDEC)	Other	Total (excl. RDEC)
	Publicly funded	Non-publicly funded				
Income (£m)	13,291	4,617	9,208	8,802	5,688	32,398
TRAC full economic costs (£m)	13,063	3,321	12,067	12,067	5,037	33,488
Recovery of fEC %	101.7%	139.0%	76.3%	72.9%	112.9%	96.7%

Source: HEFCE Analysis of 2014-15 TRAC returns

Table 2 shows that for 2014-15, although the HE sector reported a surplus in the aggregated financial statements, TRAC submissions showed that the sector as a whole needed to generate a larger surplus of £1,091m to cover the full economic costs of all its activities.

TRAC data for 2014-15 shows that the surpluses on Non-Publicly Funded Teaching (£1,296m) and other activities (£651m) were insufficient to support the shortfall in the recovery of the full economic costs of research activity. The research (excl. RDEC) shortfall was £3,265m.

3.1.2 Why is TRAC a reliable data set?

TRAC is the only sector wide dataset that provides a consistent allocation of income and costs between the key activities of Teaching, Research and Other. It is a process that is well embedded in institutions and has been operating for 20 years. Key features of TRAC are:

- It costs **all** activities, which reduces the risk of costs being misstated;
- It reconciles to the audited financial statements;
- It includes a margin for sustainable operations that is institution specific and reflects the financial strategy and investment needs of the institution;
- The data set is used for multiple purposes, (i.e. to inform research and teaching funding), which encourages the correct attribution of costs;
- A committee of the institution's governing body has to approve the TRAC return each year, certifying that the institution has complied with the TRAC Guidance; and

- There is detailed guidance that institutions follow in preparing the return which ensures consistency across institutions.

Costing, by its nature, requires judgements to be made and therefore there will always be an element of subjectivity within it. Indeed, the TRAC methodology utilises a materiality threshold of 10% to reflect this and avoid spurious accuracy. There are some important points to note from the results in Table 2, as follows:

- No matter how the costs are allocated between Teaching, Research and Other, the sector position will be un-changed and additional funding, or reductions in cost, equivalent to £1,091m are required to cover 100% of full economic costs;
- Even if it was assumed that institutions had allocated 10% of the costs to Research in error and this was corrected, Research would still not recover 100% of full economic costs;
- For Research to recover 100% of the costs, costs would have to be overstated by 24%, which is unlikely; and
- Any movement of costs from one category would have to be allocated to another category, which would affect the extent to which that activity is sustainable, but not the overall position.

Key finding: The TRAC system, which underpins the TRAC data analysed in this report, has formal sector-wide requirements. Compliance by institutions is overseen by a committee of the governing body. Any (potential) reservations about the accuracy of the TRAC data are expected to be within accepted levels of materiality, and thus highly unlikely to change the findings and conclusions from this study.

Within this study we have analysed the TRAC results and the recovery of fEC at sector, sub-sector and institutional level across the key activities of Teaching and Research and Other.

3.1.3 What does the TRAC tell us about the financial sustainability of the sector?

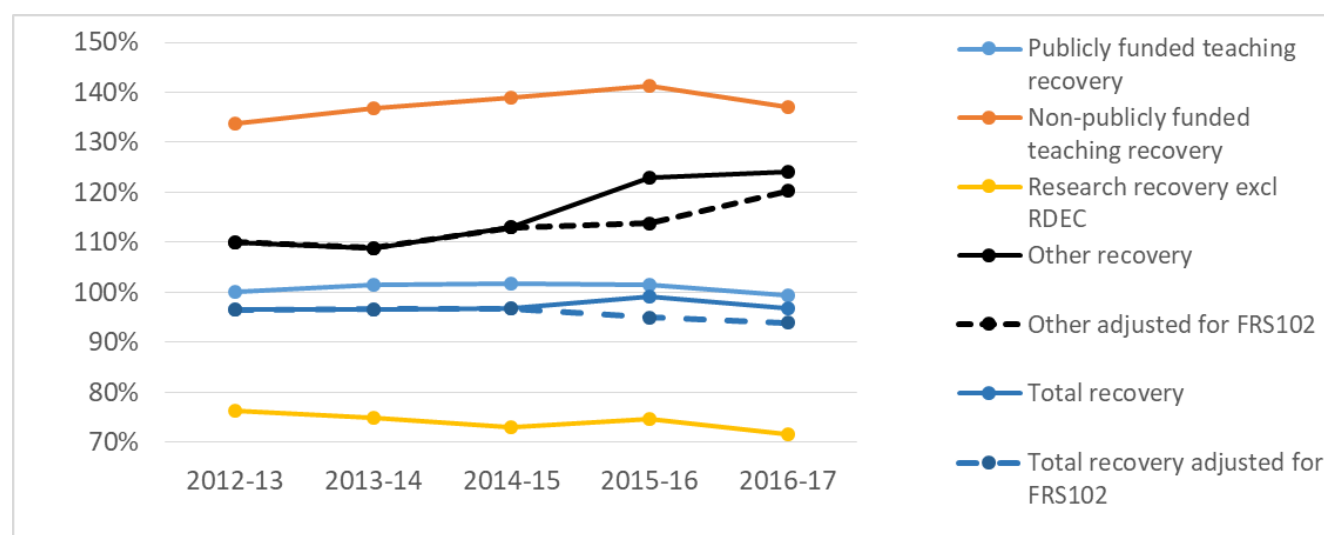
Key findings:

- Different recoveries are made by different activities in institutions.
- 79% of institutions recovered less than 100% of full economic costs across the portfolio of activities in 2014-15.
- Research is not currently sustainable and has consistently recovered less than 100% of Full Economic Cost.
- Non-Publicly Funded Teaching recovers more than 100% of the Full Economic Cost (fEC) in most institutions, but only represents 14.3% of the total activity of the sector (£4,617m). The surplus it generates is insufficient to meet the shortfall on the activities that recover less than 100%.

- The study has identified that there is a wide variation in the recovery of fEC by individual institutions and that cross-flows exist within activities (e.g. Teaching) as well as between different activities (e.g. between Non-Publicly Funded Teaching, Research and Other).

Using TRAC data over the period 2012-13 to 2016-17, recovery of fEC in the UK HE sector has remained relatively stable over this five year period, as can be seen from Chart 3.

Chart 3: Trend analysis of full economic cost recoveries



The TRAC data has consistently shown that the sector as a whole does not recover the full economic cost (fEC) of activities (96.5% was recovered in 2012-13 rising to 99.1% in 2015-16 before adjusting for FRS102) with a slight year-on-year decline in recovery in 2016-17 for PFT, NPFT and Research. Recovering the full economic cost would ensure that an institution can be self-sustaining and is generating sufficient resource to invest in its infrastructure.

The position in the sector is that:

- 79% of institutions had a recovery of less than 100% fEC in 2014-15;
- The recovery of fEC on Research has been consistently less than 100% (72.9% in 2014-15);
- Only one institution recovered in excess of 100% on their research activity in 2014-15;
- The recovery of Publicly Funded Teaching (PFT) has been at, or around, 100% recovery of fEC;
- Non-Publicly Funded Teaching and other activities have achieved a recovery that is in excess of their FECs respectively; and

- At a sector level, contributions generated by Other, Non-Publicly Funded Teaching and in some cases Publicly Funded Teaching is being used to support research activity.

The recovery on other activity appeared to improve in 2015-16. However, this was due to the introduction of FRS102 and the change in accounting treatment for endowments, donations and capital grants. The 'other' line, when adjusted for FRS102 shows, that the recovery of fEC for 'Other' was consistent with prior years. FRS102 had an impact on all TRAC categories and the overall total recovery line has been adjusted to show the impact of FRS102 overall.

Key finding: With no inflationary increase to the regulated tuition fee in England since 2012, the cost recovery for PFT stayed relatively static until 2015-16. Notwithstanding the slight decline in PFT recovery in 2016-17, this suggests an increased level of efficiency in delivering teaching. If this had not been the case, increased costs without a corresponding increase in income would have reduced the recovery of PFT earlier than 2016-17. The extent of increased efficiency cannot be identified from the TRAC data, but it is an important demonstration of how the sector has proactively managed its finances.

3.1.4 Overall institution TRAC results

The TRAC results are analysed below in absolute and relative terms for each of the following activity categories:

- 1) Overall institution TRAC results – This is the total income and full economic cost of all activities undertaken by each institution.
- 2) Research – This is the total income and full economic cost of activity defined as Research. Research includes research and experimental development activities.
- 3) Teaching – Teaching activity includes all activities that provide or support the teaching of undergraduate and postgraduate taught students. Teaching is further analysed into the following categories:
 - Publicly Funded Teaching (PFT) – This is the Teaching activity that is generally considered as a whole to be fundable, at least in part, from public funds.
 - Non-Publicly Funded Teaching (NPFT) – This is the Teaching activity that is generally considered to be funded wholly from non-public funds e.g. Non-EU student fee income.
- 4) Other – This category includes activities that generate income or could potentially generate income e.g. consultancy, trading company activity, residences and catering activities.

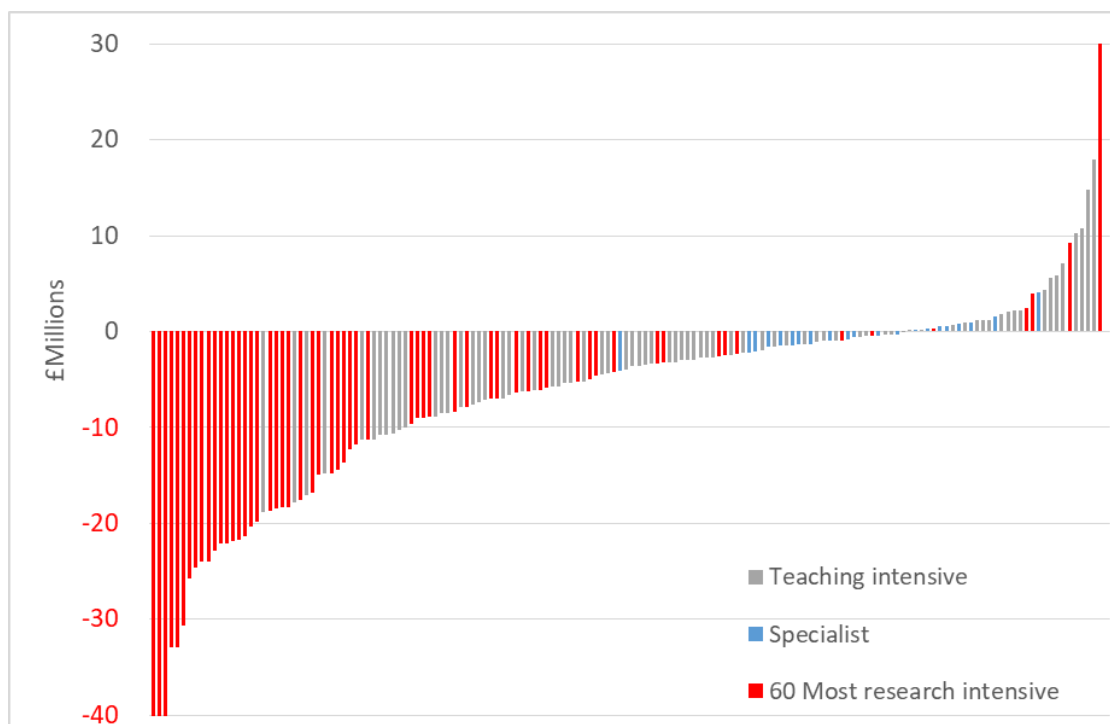
Further detail on the definition of the activities above can be found in section 1.3 of the TRAC Guidance⁹.

Individual institutions' recovery of fEC as reported in the TRAC returns are shown in Chart 4. Three categories of institution are shown in all the analysis to visualise whether the type of institution is a factor in the TRAC recoveries achieved. The groupings used are as follows:

- teaching intensive institutions – institutions that have significant levels of teaching activity, but which are not specialist institutions or those classed in the 60 most research intensive institutional grouping;
- specialist institutions – institutions with a predominant focus on the arts. These institutions commonly deliver a narrower range of disciplines to the teaching intensive and research intensive institutions; and
- 60 most research-intensive institutions – the 60 institutions with the highest amount of research income generated, as per the Higher Education Statistics Agency (HESA) finance record in 2014-15.

⁹ www.trac.ac.uk/tracguidance/

Chart 4: fEC cost recovery by value for UK institutions 2014-15



Data values in Chart 4 have been limited to the range shown on the y-axis to protect the anonymity of some institutions.

For the same 2014-15 period, the distribution of the overall percentage fEC recovery is shown in Chart 5.

Chart 5: Overall percentage fEC recovery for UK institutions 2014-15

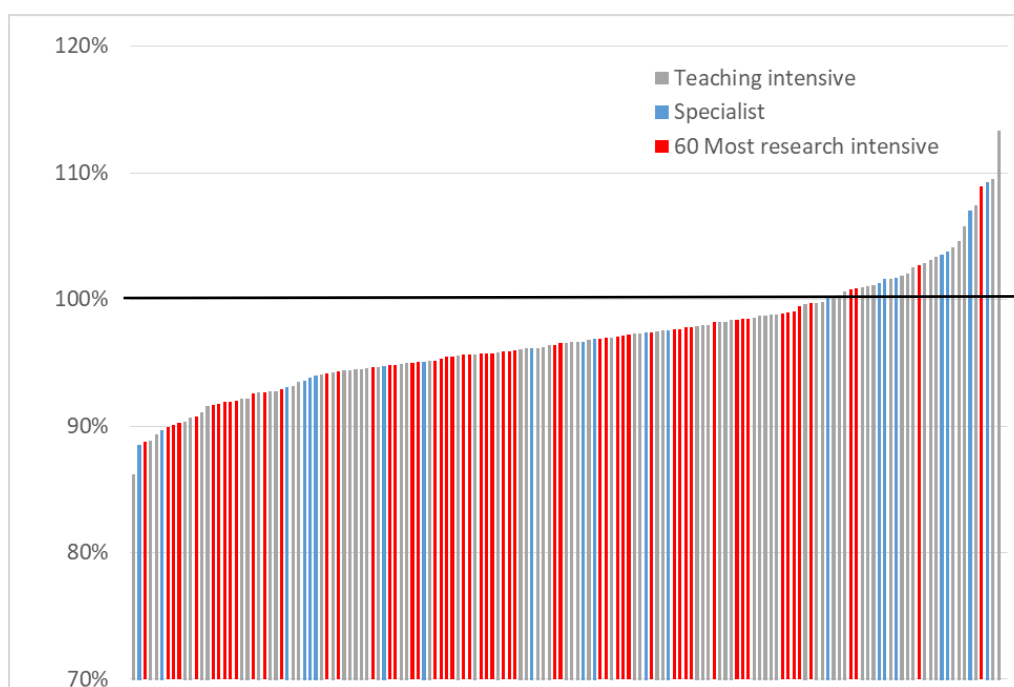


Chart 4 and Chart 5 highlight that the overall distribution of institutions is very mixed across all three categories of institution when assessing the percentage fEC recovery and cost recovery by value.

There is wide variation in fEC recoveries, which demonstrates the diversity across the sector. HEFCE noted this in their financial commentaries on the sector in recent years and more recently stated that the gap between the highest and lowest performing institutions, when measured in the audited financial statements, had widened.

In assessing the characteristics of the institutions at the extremes in both charts we note there was no strong correlation between the type of institution and the TRAC results. We did, however, observe that:

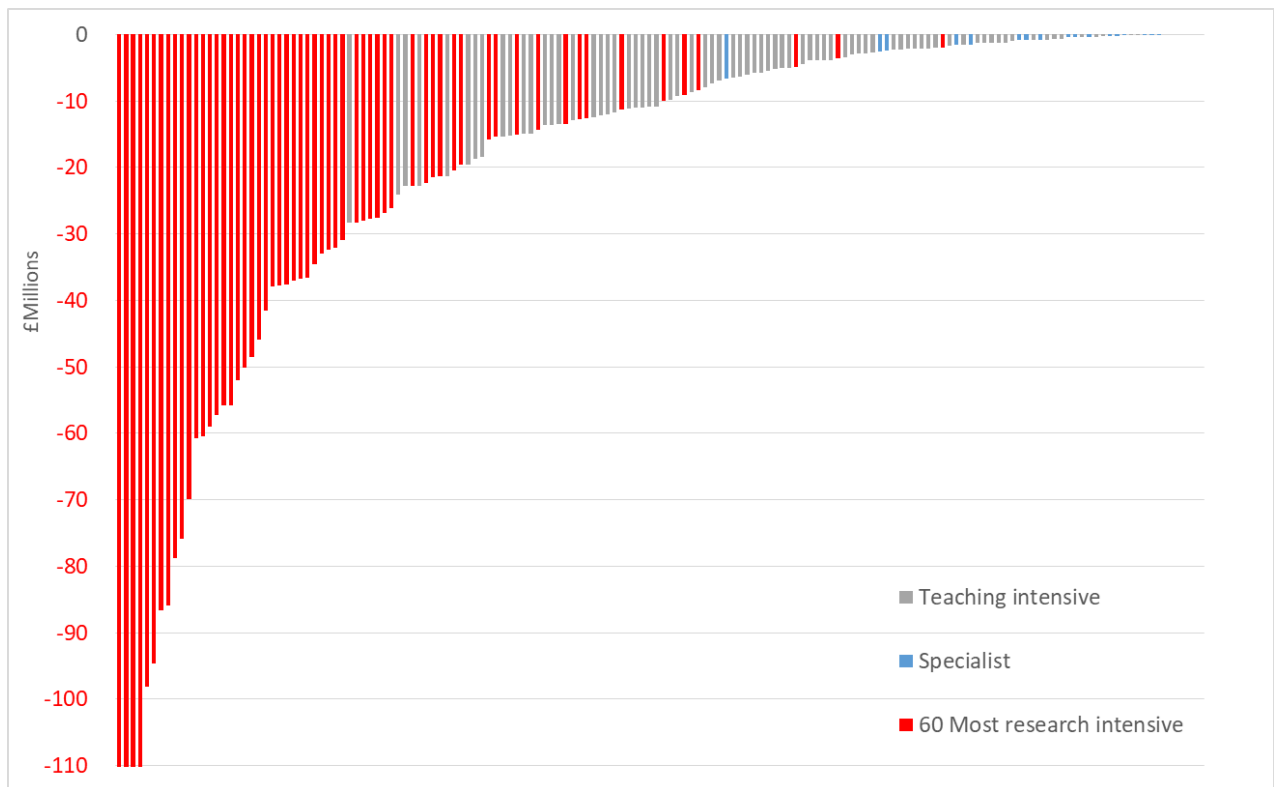
- Of the 10 institutions with the highest level of fEC recovery by value, there are two research intensive institutions and eight teaching intensive institutions.
- Six out of 10 institutions with the highest overall percentage recovery of fEC are teaching intensive institutions with three specialist institutions and one research intensive.
- Institutions with the lowest levels of overall percentage recovery of fEC are split across all three types of institutions. On closer review we noted that four are located in Inner London and six outside London.
- Institutions with the greatest TRAC deficit are a mix of institution types (60 most research intensive, specialist and teaching intensive); and

- The 10 institutions with the greatest TRAC percentage deficits are all moderate in size between £100m–£260m in terms of level of income with two exceptions.

3.1.5 Research

The recovery of fEC reported in TRAC for Research are show in Chart 6:

Chart 6: fEC research cost recovery shortfall by value for UK institutions 2014-15¹⁰

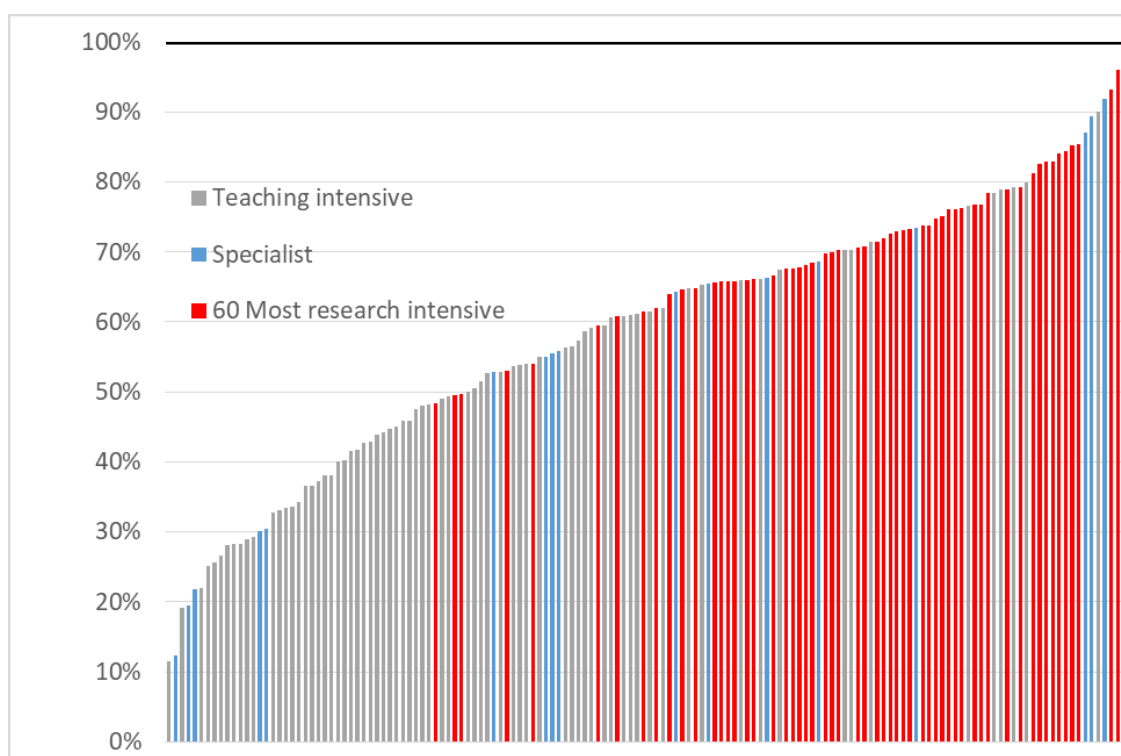


Data values in Chart 6 have been limited to the lowest value shown on the y-axis to protect the anonymity of some institutions.

For the same 2014-15 period, the distribution in percentage fEC recovery for Research is shown in Chart 7.

¹⁰ Note: six institutions have not been included in this chart due to having minimal research activity.

Chart 7: Research percentage fEC recovery for UK institutions 2014-15¹¹



Some key points identified from Charts 6 and 7 are:

- There is a wide variation in the recovery of fEC on Research in both value and percentage terms, which, in part, shows the diversity of individual institutions.
- All institutions did not recover the full cost of their research activity with the majority incurring a significant shortfall. Therefore, taken in isolation, Research is not sustainable and requires either more direct funding or the ability to utilise income from other sources to support its delivery.
- Those institutions with the largest shortfalls in terms of value have the greatest amount of research income.
- Nine out of the 10 institutions with the largest research shortfalls are among the 15 institutions in the sector with the highest levels of recruitment of international students. This indicates some of the strategic decisions supporting sustainability and the need to balance large deficits in research with strong international student recruitment.
- The larger deficits on Research in terms of value are incurred by the more research intensive institutions.

¹¹ Note: six institutions have not been included in the charts due to having minimal research activity.

- The 10 institutions with the highest percentage recovery rate for Research, these are mainly institutions in the 60 most research intensive category of institutions, with three specialist and one teaching intensive institution; and
- Those with the lowest research recovery are split between teaching intensive and specialist institutions.

Charts 6 and 7 include the income and costs relating to Research, which includes Quality Related (QR) income and associated costs. QR research income is awarded to institutions based on their performance in the most recent Research Excellence Framework. It takes into account the quality of research, the subject weightings and the volume of research undertaken. Institutions have discretion in how they prioritise the use of QR income and therefore there is no single model for this. It forms part of the dual support system of research funding and aims to provide a contribution to publicly funded research in addition to an institution's 'own-funded' research agenda. QR and institution own-funded research enables institutions to pursue blue sky research for the public good. For 2014-15, HEFCE allocated £1,558m of QR support to English institutions.

The case study visits further identified that Research and Teaching are not separate and distinct from each other.

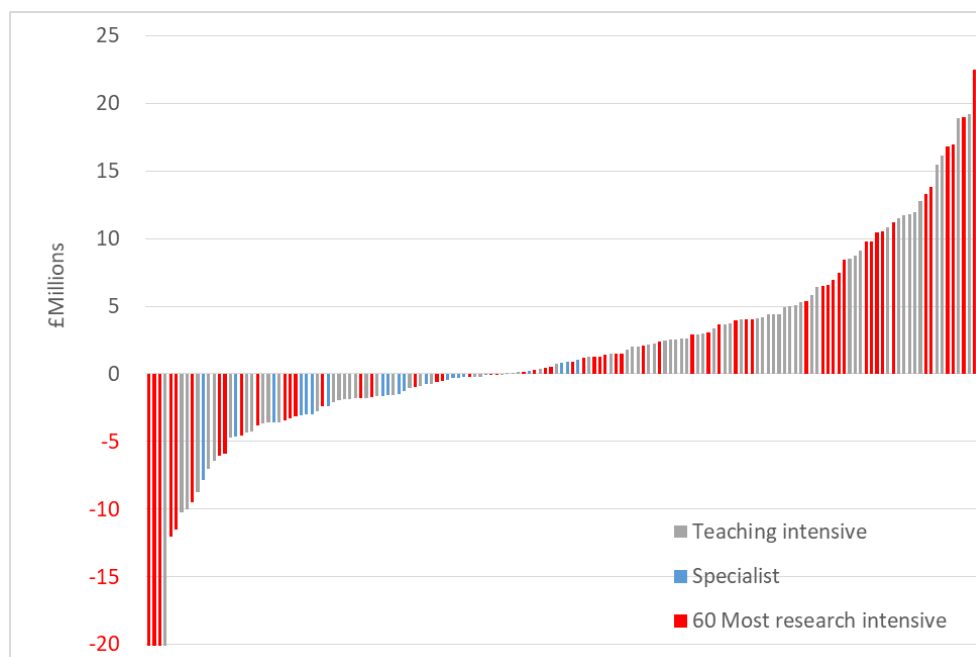
Key finding:

Research active staff use the knowledge gathered from their research work to provide materials and in-put for the delivery of Teaching, but the cost of acquiring this knowledge is excluded from the Teaching costs.

3.1.6 Publicly Funded Teaching (PFT)

Chart 8 shows the range of surpluses and deficits reported by institutions in respect of Publicly Funded Teaching activity:

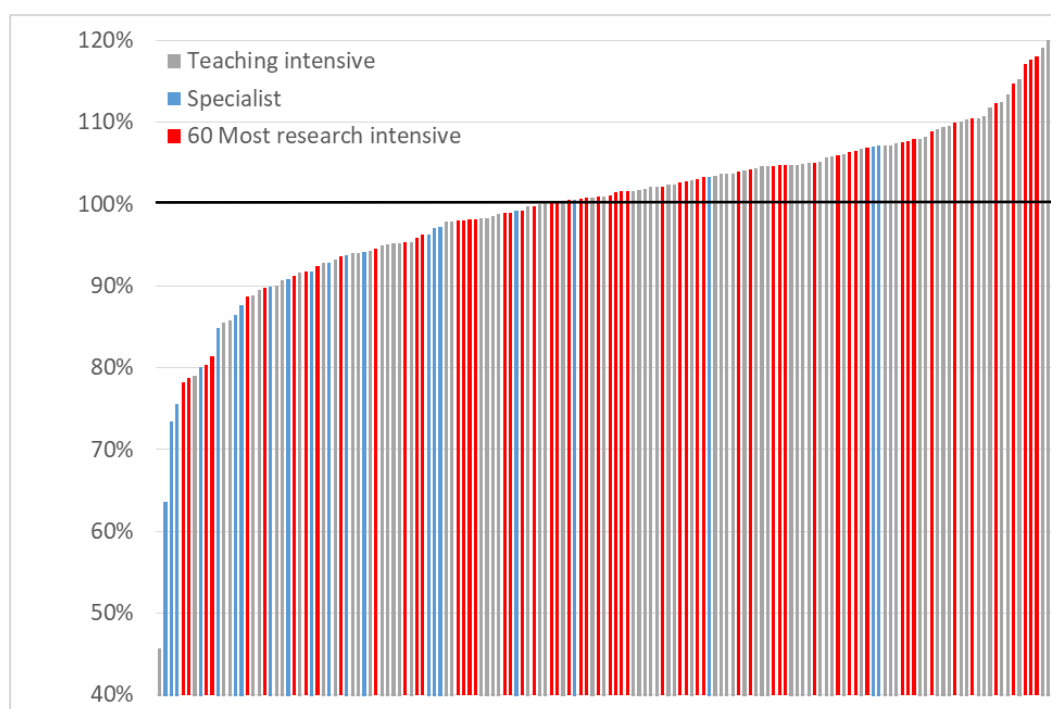
Chart 8: Publicly funded teaching fEC recovery by value for UK institutions 2014-15



Data values in Chart 8 have been limited to the lowest value shown on the y-axis to protect the anonymity of some institutions.

For the same 2014-15 period, the distribution of PFT percentage fEC recovery is shown in Chart 9.

Chart 9: Publicly funded teaching percentage fEC recovery for UK institutions 2014-15



Data values in Chart 9 have been limited to the highest value shown on the y-axis to protect the anonymity of some institutions.

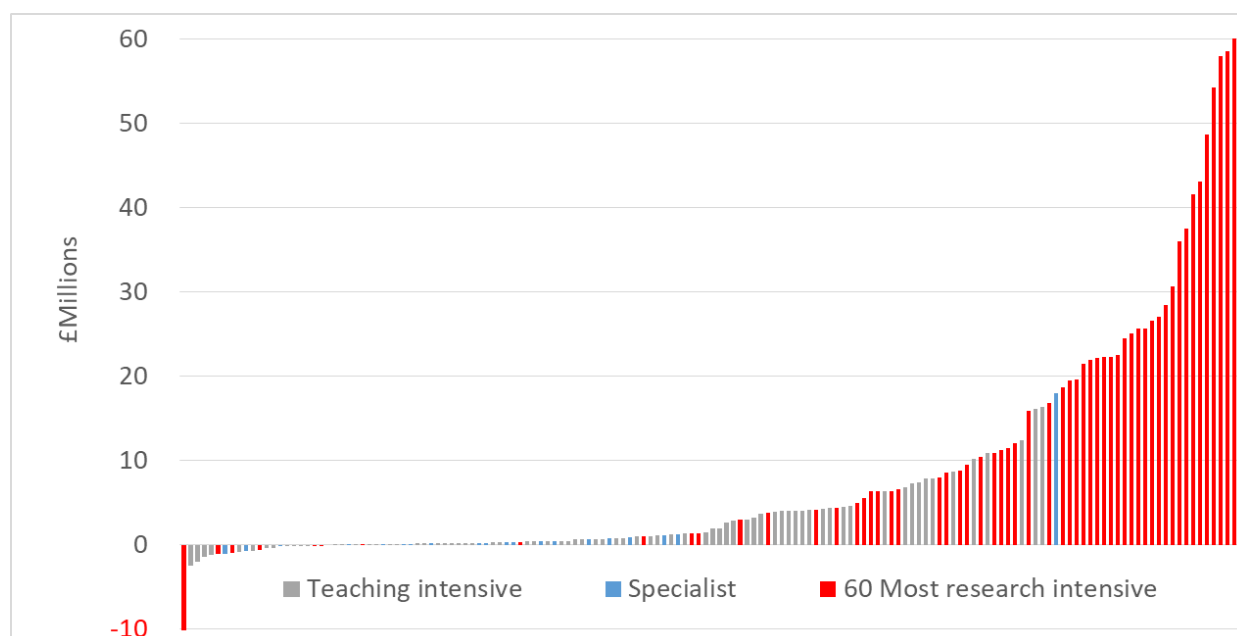
The key points identified from Charts 8 and 9 are as follows:

- There is a wide range of recoveries on PFT when assessed in absolute financial terms. A number of institutions recover the fEC, but a number also generate a shortfall in the recovery of fEC.
- A common characteristic cannot be identified for institutions with the highest and lowest level of fEC recovery for PFT. However, specialist institutions were less prominent in reporting high levels of PFT recovery. Other points noted in assessing institutions with their recoveries of PFT were:
 - Of the 10 institutions with the largest recovery by value of PFT they are all outside of London.
 - Seven out of 10 institutions with the highest percentage recovery on PFT are outside of London.

3.1.7 Non-Publicly Funded Teaching (NPFT)

Chart 10 shows the range of cost recoveries by value for Non-Publicly Funded Teaching:

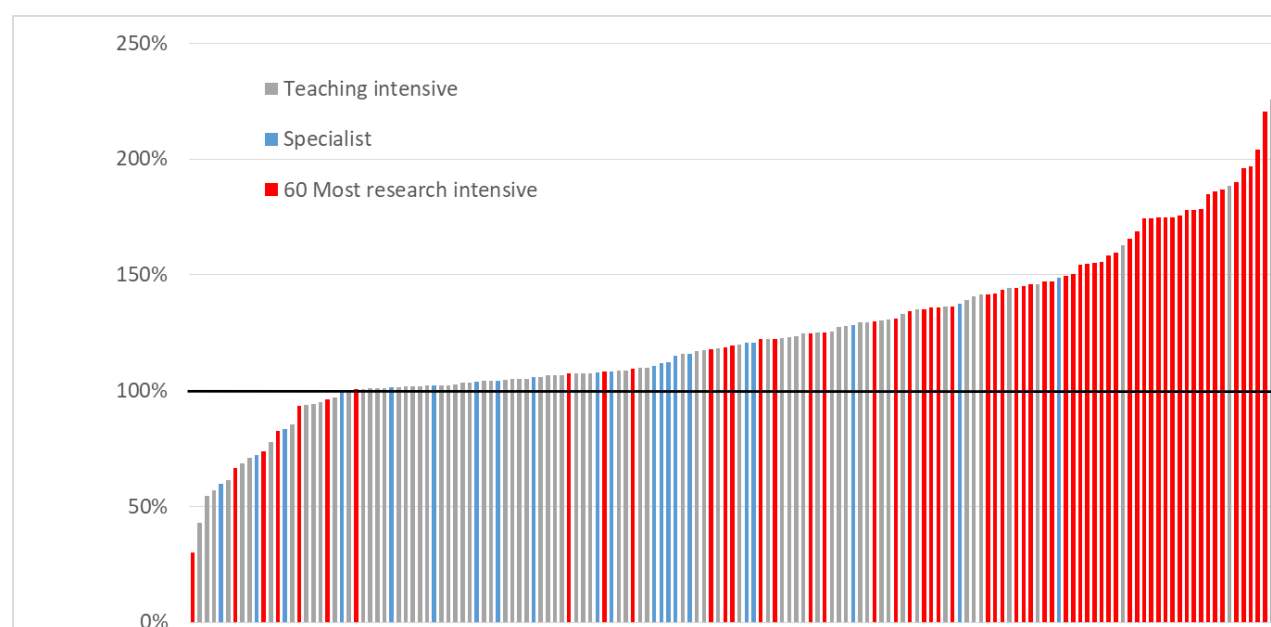
Chart 10: Recovery of fEC by value for Non-Publicly Funded Teaching in UK institutions 2014-15



Data values in Chart 10 have been limited to the range shown on the y-axis to protect the anonymity of some institutions.

For the same 2014-15 period, the distribution of NPFT percentage fEC recovery is shown in Chart 11.

Chart 11: Non-Publicly Funded Teaching percentage fEC recovery for UK institutions 2014-15¹²



Data values in Chart 11 have been limited to the highest value shown on the y-axis to protect the anonymity of some institutions.

Key observations from the analysis of Non-Publicly Funded Teaching are:

- Non-Publicly Funded Teaching recovers 139% of fEC, which on face value appears a significant benefit. However, this activity only accounts for 25.8% of the teaching income of the sector (14.3% of the overall income to the sector) and is largely reliant on international student recruitment, which can be volatile and uncertain due to competition. In particular, the impact of changes to visa regulations could be significant to the sustainability of institutions, based on their current portfolios and ambitions.
- The majority of institutions recover more than the fEC on NPFT. Five out of 10 institutions with the lowest cost recovery by value for NPFT are categorised as teaching intensive.
- Those institutions with the highest recoveries of fEC in percentage and value terms are mainly in the 60 most research intensive category.

¹² Note: one institution has not been included in the chart due to being an outlier.

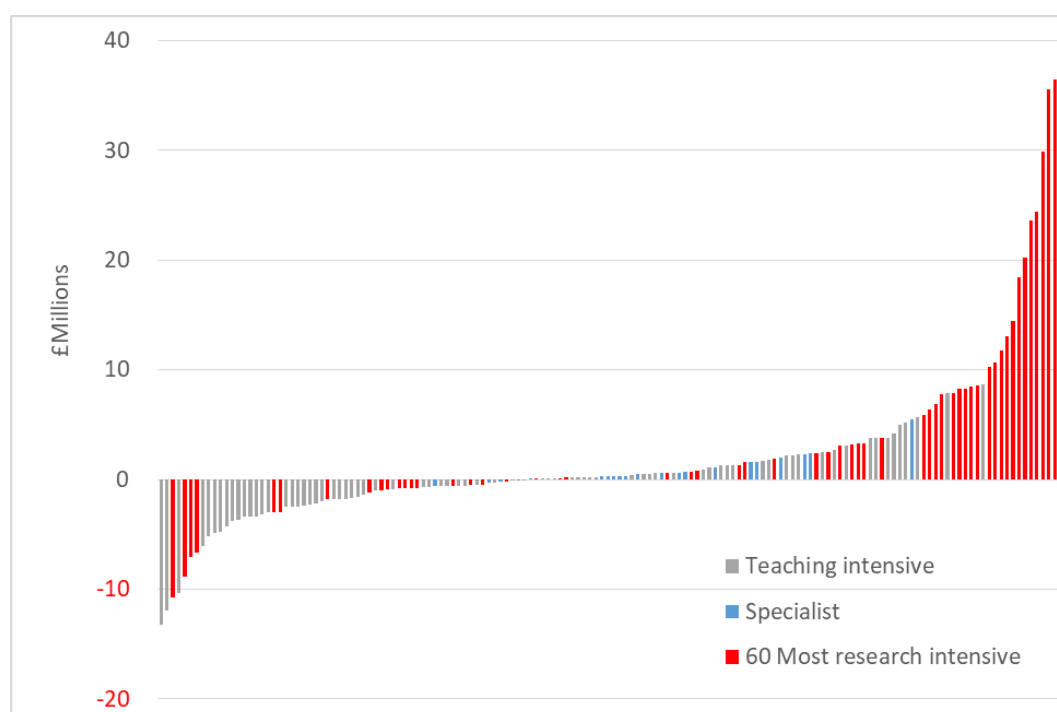
- In assessing institutions with the lowest percentage fEC recovery for NPFT it was not possible to identify a defining characteristic for these institutions.

3.1.8 Other activities

The 'Other' category in TRAC analyses the income and fEC of income generating activities that are not teaching or research. These typically include residences, catering, activities from subsidiary companies and some endowment income.

Chart 12 shows the range of surplus and deficits reported by institutions in respect of Other activity:

Chart 12: Recovery of fEC by value for Other activity in UK institutions in 2014-15¹³

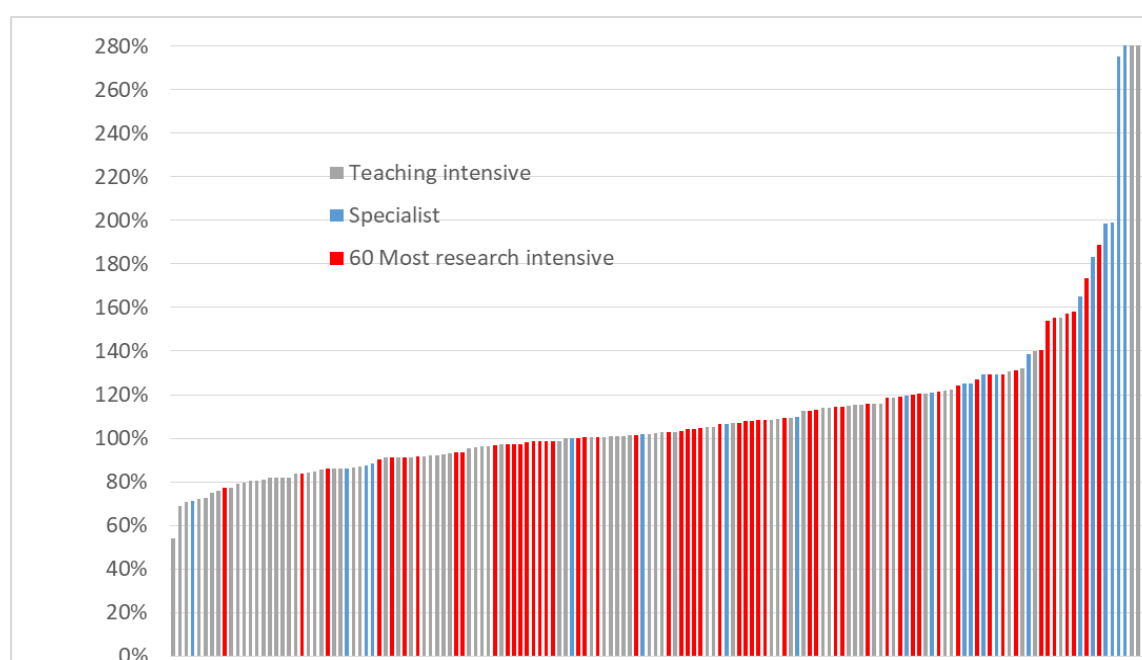


Data values in Chart 12 have been limited to the highest value shown on the y-axis to protect the anonymity of some institutions.

Chart 13 shows the range of fEC recoveries reported by institutions in respect of other activity:

¹³ Note: one institution has not been included in the chart due to being an outlier.

Chart 13: Distribution of other percentage fEC Recovery in UK institutions 2014-15¹⁴



Data values in Chart 13 have been limited to the highest value shown on the y-axis to protect the anonymity of some institutions.

Key observations from Charts 12 and 13 above are as follows:

- The highest TRAC cost recovery by value from other activities is generated by the most research intensive institutions. This is likely to be due, in part, to the endowment portfolios of these institutions. It is also the case that opportunities for generating income from endowments and donations are not available to all institutions;
- The majority of specialist institutions generate a surplus on other activities, albeit a number of these are only marginal;
- The remaining institutions generate a mixed performance on Other, with some generating surpluses and some deficits;
- There is a greater proportion of teaching intensive institutions that do not recover 100% of fEC costs on Other.

¹⁴Note: two institutions have not been included in the chart due to being an outliers.

3.2 The nature of cross-flows variation in fEC

From the detailed analyses undertaken, the study identified a range of factors to understand institutions' fEC recoveries in further depth. The study looked into the following factors:

- 1) Institutions with the 10 highest and lowest recoveries of fEC by value;
- 2) Country and TRAC cost category;
- 3) Activity or discipline level; and
- 4) Relative size of institution.

Although this analysis reached some broad conclusions on the factors that influenced sustainability, it did not identify many significant dominant factors.

3.2.1 Institutions with the 10 largest and smallest recoveries of overall fEC by value

To further understand possible reasons for the institutions reporting comparably high and low fEC recoveries, the characteristics of institutions with the 10 largest overall fEC recoveries by value have been assessed. This found:

- They were Pre-92 institutions located in inner London, Wales or Scotland; and
- They are in the 60 most research intensive category of institutions.

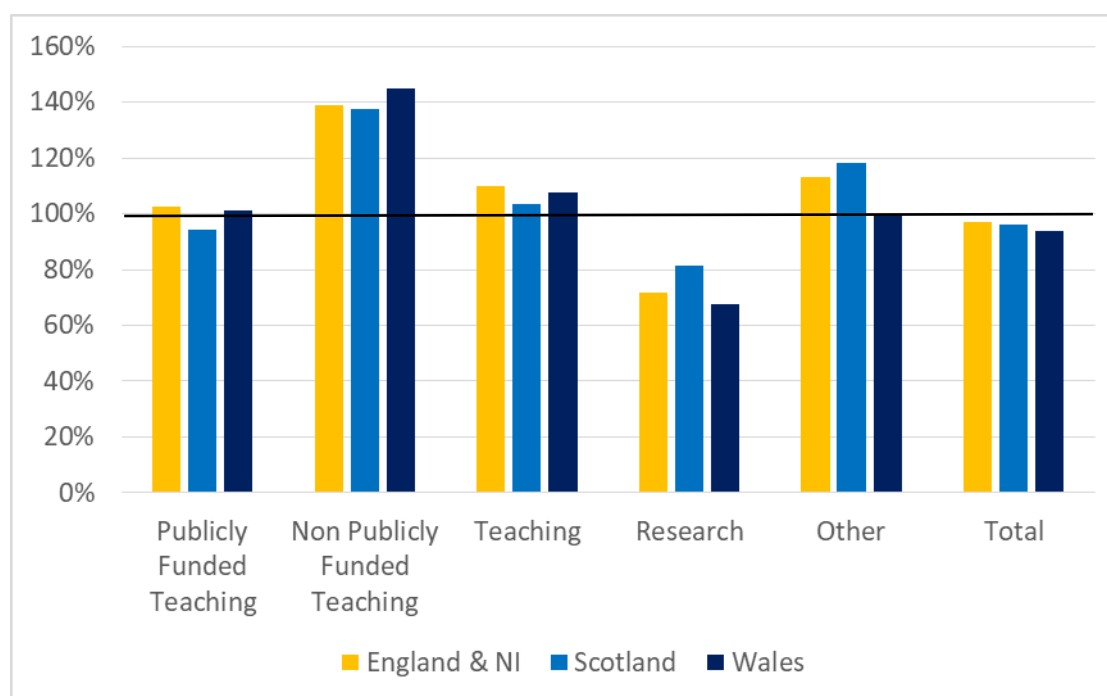
It was further noted that:

- For five institutions with the lowest overall fEC recoveries by value, the three most common subject areas were clinical medicine; earth, marine and environmental sciences; and electrical, electronic and computer engineering;
- For institutions with the 10 lowest percentage recovery of fEC a common characteristic could not be identified.

3.2.2 TRAC cost category analysis by country

Chart 14 provides a breakdown of the fEC percentage recovery by TRAC activity and by country:

Chart 14: fEC recovery by country and TRAC cost category 2014-15



The total fEC recoveries across countries are broadly similar. The recovery of PFT is slightly higher in England, which also supports the overall recovery on Teaching being higher than Scotland and Wales. Scotland, however, recovers a greater proportion of fEC on its Research activity than England and Wales. It has not been possible to prove the reason for this, but there is a greater concentration of research intensive institutions in Scotland (8 of the 19 institutions are in the top 60), so given the earlier observation that in percentage terms, more research intensive institutions recover more of their research costs, this may be the reason. On further review, the research recovery in Wales is less than the UK average across all research funders except for other government departments. Appendix 5 provides further details of the key differences in funding policy across the UK.

3.2.3 Understanding financial sustainability at discipline level

Teaching:

For Teaching in England, the teaching funding methodology uses five price groups and in Scotland six price groups are used. This is to reflect that there are differences in the costs incurred in delivering different subjects. From the visits undertaken institutions confirmed that there are different costs incurred. They further reported that some subjects do not attract enough income to meet the full economic cost of teaching the subject and conversely for some subjects the income received is in excess of the full economic cost.

Institutions described the fact that their decision to offer the portfolio of courses is not solely informed by the financial return they generate. A number of subjects are strategically significant (e.g. STEM subjects) and will be offered irrespective of the level of fEC recovery that they achieve. The resource allocation models and contribution targets that are set for academic departments enable resources to be pooled and the financial position managed accordingly.

Key finding: Institutions have continued to deliver STEM based subjects in support of government priorities, even though the funding is not sufficient in these areas to cover the full costs.

Institutions further commented that there could be fluctuations in student numbers from year to year and there is a high proportion of fixed costs which cannot be quickly adjusted up or down in line with demand.

Key finding: Unless a decision is taken to close a high cost course the kit and equipment have to be maintained. This is the case even if there are insufficient student numbers and/or income to meet these costs. Therefore, cross-flows are required to sustain the subject in the medium term.

Research:

For Research, the TRAC data can be presented by sponsor (funder) type¹⁵. Chart 15 shows the variation in levels of fEC recovered by research sponsor.

¹⁵ Research sponsor types are defined in section 1.3.2.3 – 1.3.2.6 of the TRAC guidance – www.trac.ac.uk

Chart 15: Analysis of fEC recoveries by research sponsor type

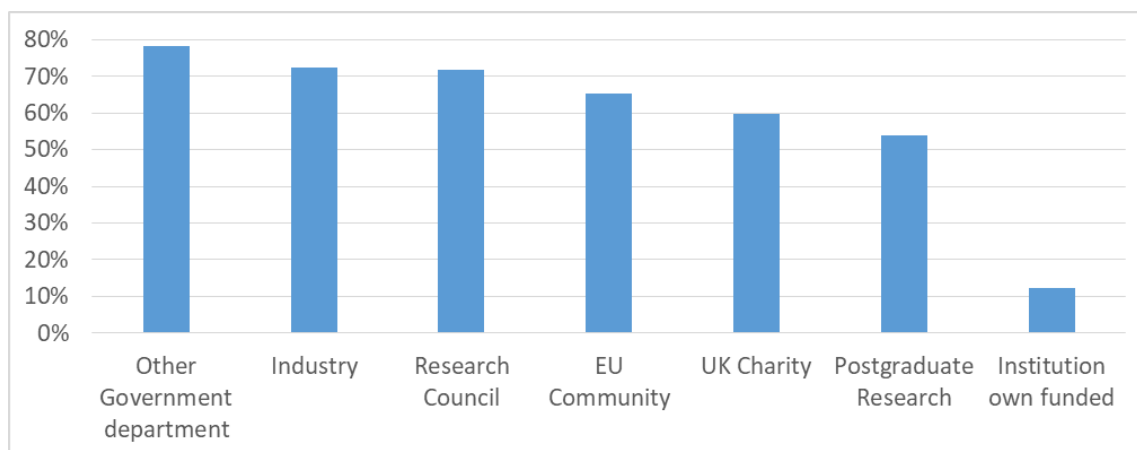
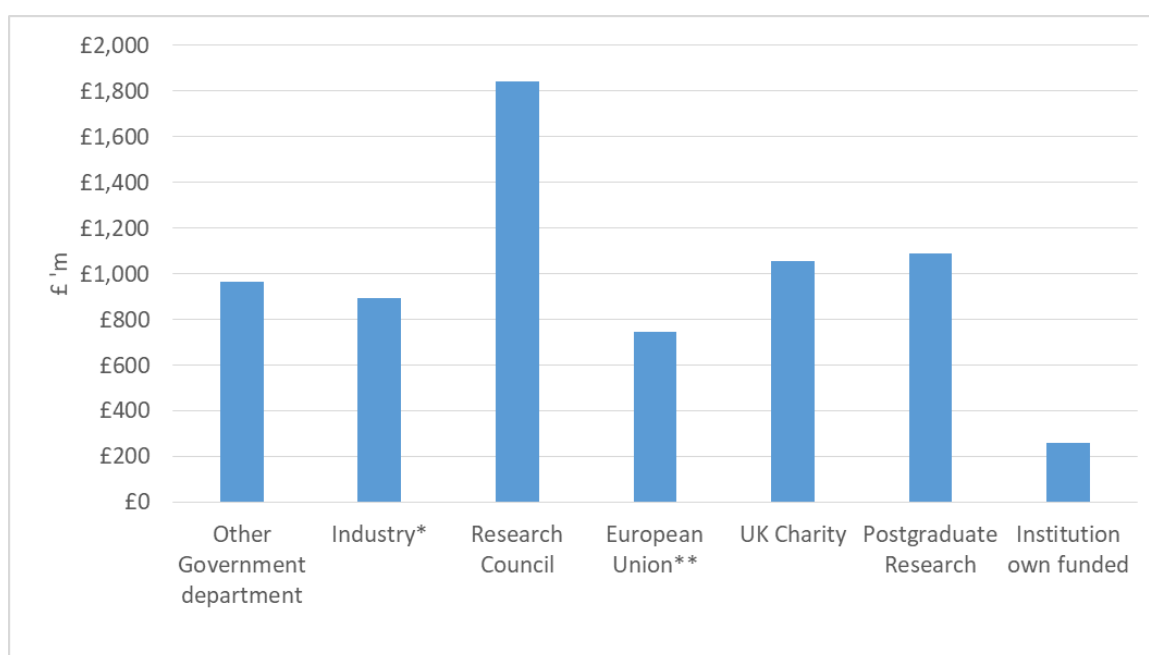


Chart 16: Analysis of fEC funding by research sponsor type (£'m)



Charts 15 and 16 show that the extent of cross-flows varies according to who is funding the research. In some cases, the funding policies of sponsors do not fund indirect costs, or require an element of matched funding from the institution. The Quality Related (QR) Research grant from the UK funding councils and Research England provides a contribution to some of these costs, but as Research only recovers 72.9% of its costs across the sector, research as a whole requires support from other activities undertaken by institutions.

*Industry includes all other organisations such as UK industry, commerce and public corporations, EU non-governmental organisations (i.e. EU-based charities, EU industry and EU other), Overseas charities, Overseas industry and Other sources.

**European Union covers EU government bodies including the Commission.

Key finding: There is variation in the funding policies for Research by different funders (research sponsors). Some institutions commented that the differential rates of fEC recovery could lead institutions to become more selective about the research funders they choose to work with in terms of financial recovery.

3.2.4 Relative size of institution

The study assessed the impact of the relative size of institutions across a range of fEC recoveries. This is shown in Chart 17:

Chart 17: fEC recovery for UK institutions by size of institution based on income in 2014-15

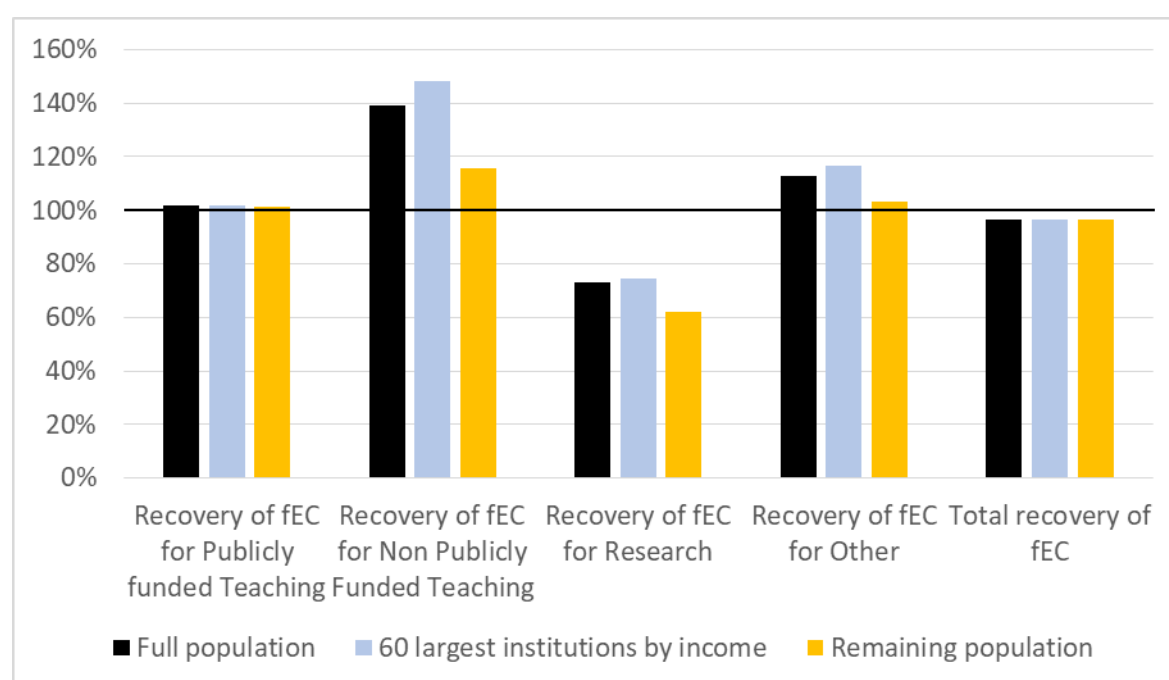


Chart 17 shows that the 60 largest institutions (by income) have a similar overall recovery of fEC. The PFT recovery is only marginally different across all institutions. The 60 largest institutions by income have a higher percentage recovery of fEC for Non-Publicly Funded Teaching and Other. This reflects their ability to attract more international students and likely levels of endowment.

Chart 18: fEC recovery by type of institution

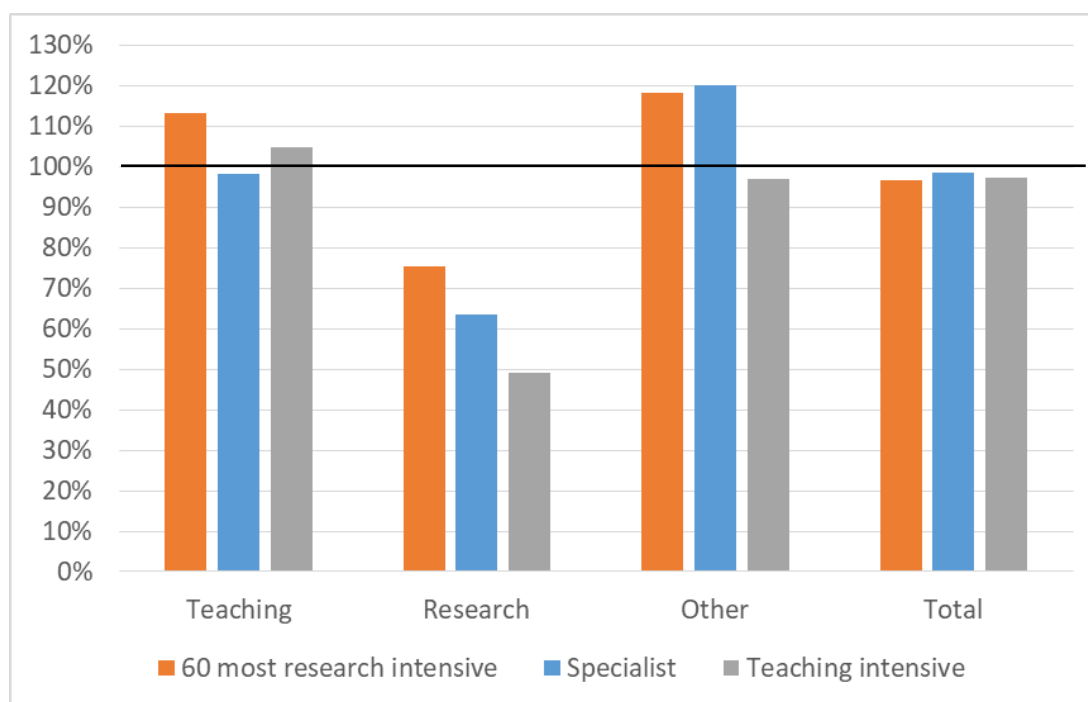
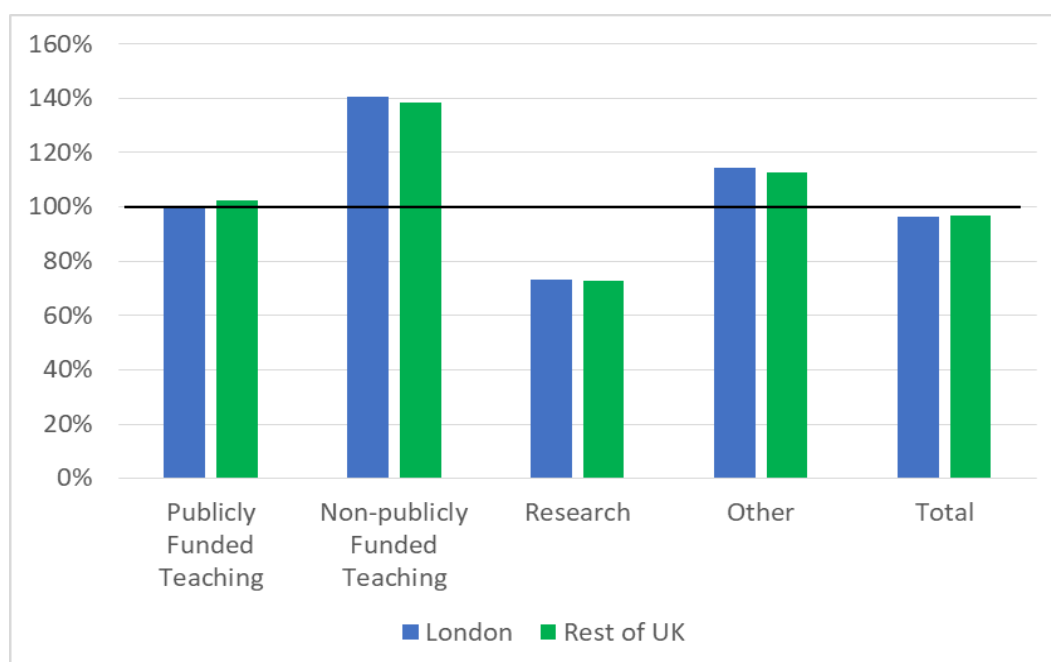


Chart 18 shows that the most research intensive institutions generate a greater percentage recovery of fEC for research, albeit only 75.3% is recovered. These institutions also recover a greater proportion of fEC for teaching activity, but this is influenced by the volumes of international students.

The fEC recovery has been analysed for London institutions compared with the rest of the UK. This is shown in Chart 19:

Chart 19: fEC percentage recovery for London institutions compared to the rest of the UK



The analysis between the fEC recoveries of institutions in London compared with the rest of the UK shows some modest differences, as follows:

- A slightly lower level of total fEC is recovered by institutions based in London compared with the rest of the UK;
- A higher recovery is made on Non-Publicly Funded Teaching by institutions based in London. This is likely to be due to the concentration of research intensive institutions and the number of international students studying in London; and
- Research recoveries are marginally higher for institutions in London. Based on earlier analysis that identified more research intensive institutions generate higher recovery of fEC, it is assumed that the concentration of research intensive institutions in London is contributing to the better performance.

3.3 The factors that influence sustainability and cross-flows

The study explored whether certain factors could be identified as having a positive or negative impact on the level of fEC recovered and, thus, the sustainability of institutions and/or activities. Key observations from this analysis are as follows:

- Although a number of factors show some sensitivity to the level of sustainability achieved in the sector (when measured by the recovery of fEC) it is difficult to isolate specific issues that singularly make an institution more or less sustainable;
- From the six visits undertaken, institutions identified that financial plans are structured to support the achievement of the institution's strategic plan. All their strategic plans encompass teaching, research, knowledge transfer, commercial and other activities as these are all seen as key activities that contribute to the institution, its values, vision and strategic goals. It is not therefore the case that income is ring-fenced for the activity that generated it. It is accepted that, for instance, research underpins and supports teaching and that high quality teaching can support the institution's reputation and research.

The study identified and assessed a number of factors for the impact that they may, or may not, have on sustainability. These are outlined below as a set of questions:

- **Does having an institution located in London influence the extent to which institutions recover fEC?** – Institutions based in inner London have slightly lower levels of overall fEC recovery than institutions in outer London or the rest of the UK.

A study commissioned by HEFCE reported in December 2017¹⁶ that academic and non-academic staff costs were higher by around 14% in inner London than the rest of England. Estates-related costs were also found to be greater in inner London when compared with the national average.

- **Does the volume of international (non-EU) students affect the recovery of fEC?** - The analysis above confirms that international students do make a positive contribution to enabling financial sustainability of activity across the institution. However, as institutions deliver a portfolio of activities across both Teaching and Research, and across the different subjects within these activities the financial return will not be at a consistent level across all institutions.
- **Does net operating cashflow and liquidity influence the recovery of fEC?** - These were measures used by HEFCE to assess financial health. As would be expected, there is close correlation between these financial metrics and recovery of full economic cost. Higher recovery of fEC tends to point to higher cash flows, in line with surplus, as would be expected
- **Does the level of borrowing influence the recovery of fEC?** - There was no correlation between the level of external borrowings reported in the financial statements and the recovery of fEC. To some extent this is to be expected as borrowings are typically medium-to long-term commitments, only one year's worth of interest and, in some cases, repayment of the principal flows through to expenditure in the statement of comprehensive income.
- **How does the number of UK campuses impact on the recovery of fEC?** – Universities' campuses are diverse. Even when a university is based only on one campus, this could be a collection of buildings across a city, or a self-contained site. It is therefore difficult to identify a strong correlations between the recovery of fEC and the number of campuses occupied by an institution. The analysis shows that the variation in the recovery of fEC means that some institutions that are based on a single campus do not recover 100% of their TRAC based costs. However, as the number of campuses increases, there are fewer institutions reporting a recovery of 100% or more of their TRAC based costs.
- **Do institutions of a certain size recover a higher level of fEC?** - The complexity of activities delivered by institutions means that it is not possible to conclude on whether size alone improves an institution's ability to be financially sustainable. The earlier analysis suggests that the recovery of fEC on Research is greater for the most research intensive institutions. Similarly, institutions with the greatest numbers of international students are often the more research intensive institutions.

¹⁶ HEFCE, 'Regional variation in costs and benefits for higher education providers in England', December 2017, <http://www.hefce.ac.uk/pubs/rereports/year/2017/regional/>

Key finding:

A common finding from this study is that institutions develop a portfolio of activities and pool resources that these generate to deliver their mission and strategic aims.

3.4 Summary

This chapter has identified the following key findings:

- 79% of institutions have a recovery of fEC less than 100% in 2014-15.
- Different recoveries are made by different activities in institutions.
- Research is not currently sustainable and has consistently recovered less than 100% of full economic cost.
- Non-Publicly Funded Teaching recovers more than 100% of fEC in most institutions, but only represents 14.3% of the total activity of the sector (£4,617m). The surplus it generates is insufficient to meet the shortfall on the activities that recover less than 100%.
- There is a wide variation in the recovery of fEC by individual institutions and that cross-flows exist within activities (e.g. Teaching) as well as between different activities (e.g. between Non-Publicly Funded Teaching, Other and Research).
- With no inflationary increase to the regulated tuition fee in England since 2012, the cost recovery for PFT stayed relatively static until 2015-16. Notwithstanding the slight decline in PFT recovery in 2016-17, this suggests an increased level of efficiency in delivering teaching. If this had not been the case, increased costs without a corresponding increase in income would have reduced the recovery of PFT earlier than 2016-17. The extent of increased efficiency cannot be identified from the TRAC data, but it is an important demonstration of how the sector has proactively managed its finances.
- Institutions have continued to pursue the STEM based subjects in support of government priorities, even though the funding is not sufficient in these areas to cover the full costs.
- Research active staff use the knowledge gathered from their research work to provide materials and input for the delivery of teaching, but the cost of acquiring this knowledge is excluded from the Teaching costs.
- Unless a decision is taken to close a high cost course the equipment has to be maintained, even if there are insufficient student numbers and/or income to meet these costs. Therefore, cross-flows are required to sustain the subject in the medium term, even if there is unfilled capacity to service additional students.
- There is variation in the funding policies of different funders (research sponsors). Some institutions commented that the differential rates of fEC recovery could lead

institutions to become more selective about the research funders they choose to work with in terms of financial recovery.

- A common finding was that institutions develop a portfolio of activities and pool resources that these generate to deliver their mission and strategic aims.
- The TRAC system which underpins the TRAC data analysed in this report, has formal sector-wide requirements. Compliance by institutions is overseen by a committee of the governing body. Any (potential) reservations about the accuracy of the TRAC data are expected to be within accepted levels of materiality, and thus highly unlikely to change the findings and conclusions from this study.

4 Understanding income cross-flows in an institutional context

This chapter provides details of the case study visits that were undertaken to understand how institutions approach financial planning and the assumptions made around income earned relative to the activities it supports. It also sets out features of the strategies from each of the case studies to:

- illustrate the areas of financial focus underpinning these strategies; and
- show the range of strategies adopted which often reflect market position, type of institution, history and location.

Key messages from this chapter:

- Individual universities are structured to deliver their pedagogic and strategic objectives using income from a variety of sources. Institutions reported that this is efficient and beneficial for the delivery of teaching and research. If restrictions were introduced to limit the pooling of income this could have distinct consequences, some of which are unpredictable for individual universities, and few of which would benefit the global standing of UK universities.
- Institutions have responded to the requirement for institutions to be market and customer focussed. This has led to significant investment in estates, facilities and staff.
- Most of the institutions visited are planning to increase the level of research they undertake due to the importance of research to their strategy and reputation in addition to the public benefit it delivers. This is despite the knowledge that income earned is insufficient to meet the costs incurred.

4.1 An overview of the institutions that participated in the case studies

Visits were undertaken to six institutions as part of the study. The purpose of the visits was to understand:

- the operation of the institutions in more detail and in particular explore the approach to financial planning;
- the extent to which income flows were applied to different activities; and
- the benefits that income cross-flows provided together with the extent to which cross-flows were communicated in the institution.

The visits identified a range of strategies operating across the institutions visited. Whilst they all exhibited a broad range of characteristics, their current strategic issues and responses shared a small number of common factors. These included:

- **Major capital investments** – Most institutions had major estates investments that were at different points of development from ‘about to begin a major scheme’ to ‘midway through’ to ‘incremental estate refreshing’. Some rationalisation was underway to reduce the number of sites or streamline activities that were undertaken. These were focussed on enhancing the student experience, reducing cost (through site rationalisation), and income generation (either through student accommodation or greater capacity for student recruitment).
- **International student recruitment** – International student recruitment is an important part of all institutions’ plans. Some institutions currently had low or relatively low volumes, but with plans to grow. Others already had higher volumes of international students and were planning on maintaining this.
- **Research is a priority** – Almost all institutions visited for this study are investing or plan to invest, in research. This is viewed as important to sustain teaching and to enhance their reputation.

Appendix 4 summarises the headline strategies drawn from each of the case study institution’s published strategy documents.

4.2 Profiles of the case study institutions

To illustrate how the factors detailed previously can affect individual institutions differently, we describe here the case study participants’ circumstances. This illustrates how a common set of external factors, coupled with local circumstances, can lead to a variety of strategies and challenges in achieving financial sustainability.

Institution A

This is a large teaching and research institution with some pioneering and world recognised areas of excellence. It has over 30,000 undergraduate and postgraduate students. It is situated in a major conurbation across several sites. It has several multi-million pound capital schemes underway to help rationalise and modernise its estate, some of which will take more than 12 months to complete.

In total, research is funded to around 70p in every £1 (i.e. 70% recovery of fEC). There is wide variation across research funders aggregating to this rate. Research does not recover its fEC and therefore is supported financially by NPFT and other activities. Over 50% of its cost base is staff related. The institution also supports a number of civic projects which

are reputational assets to its brand and the wider economic community, but known to incur costs that are not fully recovered.

It expects a reduction in EU students and slowed growth from international students. Its current finance strategy is seeking to implement some rationing of research work and recalibrate its academic base. The institution maintains a modest level of gearing and is conscious of the requirement to seek approval for higher levels of borrowing.

If the institution was to face a financial crisis it stated that it would, in all likelihood, sell some of its major assets in the first instance, as a first step towards downsizing. Unexplored alternatives may also include closer working with other universities and eliminating postgraduate research.

Key features of the institution:

- The institution is investing in its estate to rationalise its footprint whilst also modernising the facilities it provides to students.
- Only 70p of every £1 spent on research is recovered. Income is therefore utilised from other sources to fund part of the research activity.
- Over half of the cost base relates to staff.
- In the event of a financial crisis the institution would consider its size and shape and may limit its research effort.

Institution B

This is a city based post-92 institution and has other institutions in the region. It is a teaching intensive institution with over 10,000 students and a reputation for widening participation and local community impact. It provides a broad range of subjects, currently weighted towards home undergraduate teaching. This includes a significant proportion of teaching provision in the health profession. It has accrued healthy cash balances as a result of having a target for cash generation of 10% of turnover over the last three years. This has supported its strategy to increase investment in the student experience, to use these surpluses to restructure and improve student-staff ratios and also to plan a multi-million pound capital project. Borrowing has been secured to fund the forthcoming capital project, which is designed to create a more joined up, student-centric campus.

The institution is seeking to develop and grow its research activity by over 50% as part of strategic diversification of income and to provide a differentiation in its offer and reputation for prospective students. This is seen as being of high importance, despite only recovering 50p-60p for every £1 spent on research. Current research activity covers all of its schools and all areas make a financial deficit on research, with science achieving the lowest recovery of fEC by value.

Student numbers have grown significantly over recent years despite some local competition from further education colleges. The institution has invested to develop the student experience, course diversity and research activity. This also helps them differentiate themselves from the FE colleges.

Growth in international student numbers is a second key focus. The institution has made some significant investments in overseas recruitment, particularly in the Far East and within its own faculties, to help attract the planned numbers and achieve improved economies of scale in the delivery of teaching and related services. However, changes in policy by overseas governments has resulted in fewer student applications. The institution's resourcing model is designed to incentivise growth in student numbers.

Key features of the institution:

- The institution delivers a wide range of subjects.
- Only 50-60p in every £1 spent on research is recovered. Income is therefore utilised from other sources to support a proportion of the research activity.
- Significant investment is being made in the estate and staff to improve the student experience.
- International student recruitment is a key strategic aim, but recruitment has been more challenging.

Institution C

This is a city-based institution with several campuses in the UK and overseas. It has a broad base of courses, a strong civic presence and over 20,000 students. It underwent a significant staff restructuring exercise a few years ago resulting in fewer courses and a reduction in student numbers. Whilst student satisfaction rates are above the (then) HEFCE benchmark of 85%, the institution recognises that it needs to increase and maintain its staff to student ratio over the period of its strategic plan.

Research is an increasingly important area of activity and currently represents around 20% of its operating income. The institution is also seeking to grow its international and postgraduate student numbers, both by around 70% over three years. This is despite only earning 65p-75p for every £1 spent on research.

As part of its estates strategy, it is consolidating its courses across its sites and as part of this is undertaking a number of capital development projects, the largest costing over £150m over a three year period. To help fund these and future schemes, the institution is also investing in future fundraising activities.

Key features of the institution:

- The institution is an important part of the civic community.
- Management has 'right sized' the institution by aligning staffing levels with student recruitment.
- Growth of research is an important aim, but only 65p-75p for every pound spent on research is received in income.
- The estate is being redeveloped and rationalised and fundraising is being pursued to raise funds for these investments.

Institution D

This is a specialist institution with a long history and global reputation in its fields of expertise. Its turnover is relatively small, but it aims to increase this by around 70% in four years. To do this, it aims to increase space by 65% and staff numbers by 45%. Part of this increase includes raising the proportion of overseas students from around 30% to 50% by 2021-22.

It plans a major campus expansion, costing over £100m and partly funded by a government grant. It also has a revolving credit facility with a term of up to ten years, of which a significant proportion will be used to help finance its campus extension.

Part of its current savings plan involves better use of technology in the areas of student records, research and customer relationship management. A number of donations and endowments have been consistently received to date and whilst not guaranteed for the future, the institution has predicted similar amounts over its current planning period.

The institution's own cross-subsidy analysis indicates significant variations in cost across its courses. Less than 100% of its FEC is recovered in income from Publicly Funded Teaching, and significant international student recruitment is a key part of the financial strategy. Across its portfolio, the most expensive courses are almost twice the cost of the lowest cost course.

Key features of the institution:

- The institution has significant plans for growth in home and international students
- Significant project to expand the campus.
- Pursuing fundraising from donations and endowments.
- International student recruitment is an important part of its financial strategy.
- There is variability in the cost of the courses delivered.

Institution E

This is a research-led teaching institution with an international reputation. It has a very large number of students – both postgraduates and undergraduates. Income from teaching is of a similar level to its research income. However, the institution's own cross-subsidy analysis indicates that it only recovers 66p of every £1 spent on research. Many of its income sources are also restricted, meaning that it can only use the income received to pay for goods and services relating to the purpose for which the income was intended.

It is situated in a major city and across several sites. The institution already has a large number of international students (around 20-30% of its student population). It plans further growth in international students, by over 35% by 2021-22. Its estate provision is influenced by its city centre location and a large proportion of its estate was gifted historically, which entails high maintenance costs. Its options to expand are constrained by high property costs and the legacy of association to a particular area, building or location in the city. Some capital investment is underway in new facilities.

The institution considers that it has reached its maximum borrowing threshold and it plans for sustainability on the basis that overall its faculties will generate sufficient income and cash to be self-sustaining.

Key features of the institution:

- The institution has a large number of international students and plans to grow this further.
- The location of the institution makes expansion challenging and costly.
- Further borrowing is not planned; instead targets have been set for cash generation to enable sustainability.
- Research attracts substantially less income (66p for every £1 spent) than it costs to deliver.

Institution F

This is a teaching and research institution with around 30,000 undergraduate and postgraduate students. It enjoys high student satisfaction rates and performs well in various league tables. It provides teaching, research and accommodation across a number of campuses.

The institution is a civic university with a strong connection to its community and history. It organises itself across six academic departments, each with a target of making a

contribution to overheads of between 35% and 50%. Its contribution model is focussed on generating cash for capital investment and to support several areas of research. It recently changed its contribution model to help its cash focus and to reward academic areas making a positive financial contribution. It has several multi-million pound capital schemes underway to help modernise and expand its estate.

Its own benchmarking research indicates that it spends more on teaching staff per student full-time equivalent (FTE) and by the same proportion attracts less in research income for each staff member than its peer group. Its future growth is predicated on increasing fee income, particularly from postgraduate and overseas students, and also increased research income.

Key features of the institution:

- The institution has a large number of students and operates across multiple campuses.
- Growth in fee income is a key part of its financial strategy.
- It is investing significant sums in its campuses and facilities.

Key finding:

The examples above describe a range of institutions, but illustrate how all have common features in their plans.

There is a consistent focus on improving their performance for the benefit of students and the wider community. Most of the institutions visited plan to grow the level of research activity that is undertaken. There a common aim of relying on growth in international students. The risks around international students are explored in the next chapter, as this is a potential area of vulnerability for the sector.

4.3 How do institutions measure cross-flows and financial sustainability?

We discussed with institutions their financial strategies. A point was commonly made regarding the relatively high level of fixed costs. This is largely due to the extent of the estates that they operate and the number of staff in both teaching and research. Commitments are given to teach courses and deliver projects for multiple years and therefore costs cannot be quickly reduced without having a negative impact on students and research funders.

None of the institutions contributing to this study specifically structured or managed themselves according to the different income streams and activities. The institutions were structured according to the disciplines, or individual professional areas of expertise into schools, faculties or departments. This pools expertise and delivers a range of activities across teaching, research, consultancy and knowledge transfer from their sphere of knowledge. Even if radically different approaches to funding Research and Teaching are developed, institutions stated that they would probably not consider structuring themselves differently.

Key finding:

Institutions consistently reported that they structure themselves according to the academic disciplines or areas of expertise of those disciplines, rather than adopting structures that reflect the different funding streams.

Each finance function routinely produces information that analysed the contributions generated by each area, which when analysed across the institutions illustrates the different cross-flows that exist.

The main focus of each finance function was to forecast the impact of different scenarios on their key performance measures, depending on a range of business decisions and factors. They indicated that the short term, generally being the next two to three years, is fairly well understood and after that greater uncertainty is expected and the scenario models' value was deemed to diminish over time accordingly. As a result, factors with a significant impact on future sustainability were the focus for the financial modelling, for example student numbers, proportion of international students and research income.

We also found a more detailed subset of measures designed to reflect some specific short-to medium-term goals, for example on achieving international student numbers or academic workload measures.

4.4 The use of income cross-flows by the case study institutions

The visits provided an understanding of how institutions approach and manage different income streams. All institutions confirmed that they have financial plans to help them deliver the strategic aims of the institution. Resources are pooled, resulting in cross-flows, rather than income only being allocated to the activity from which it is generated. Institutions cited that cross-flows were an important mechanism to support the attainment of the strategic priorities.

Institutions are used to managing resources across a portfolio. Pooling of resources has been long-standing across the UK sector and pre-dates the increase in tuition fees in England in 2012. The ability to pool income supports the broader higher education ethos

and purpose. Many institutions explained that they continue to deliver certain courses or undertake 'loss-making' activities because 'it is important to preserve certain subjects and activities'. It was often cited that much of the research activity would not be undertaken if they needed to recover 100% of their costs, due to resources not being available from other activities.

The visits undertaken sought to identify the benefits that income cross-flows have on the sustainability of institutions. The results are described below.

Understanding income cross-flows helps identify areas of priority

To understand the performance of teaching different subjects, institutions cited that they calculate the cost per student of specific courses or groups of courses. This provides visibility of how different subjects perform financially and can help inform decisions over which portfolio of courses to deliver. Other institutions described how research portfolios had also been reviewed in terms of the costs versus the income and strategic benefit that they have generated.

In many cases the range of contributions from teaching, research and other activities (which can be determined under any funding model) becomes the start of the discussion and leads to further analysis rather than becoming an end point in itself or, worse, a target to be achieved. Many institutions expressed the concern that a more prominent grading of subject level funding would trigger actions to bring expenditure levels to those funded. This, in turn, would lead to less variety of subjects across institutions, and ultimately to less choice for the student.

Institutions gave examples where analysing the recovery of fEC had helped to determine the scale and volume of research activity. One institution commented that they intend to use the cross-flows information (sometimes referred to as contribution analysis) in prioritising their research activities.

Key finding:

Understanding where income cross-flows exist informs decision-making over the portfolio of courses and the size and shape of the institutions research effort.

Pooled income supports activities and other strategically important activities

Institutions stated that the flexibility in the financial planning model enables them to sustain the delivery of higher education through more challenging times. They cited a number of courses where they were able to take a medium-term view to preserve the delivery of key subjects (for example where recruitment in a particular period was experiencing decline in the short term, but where it would be inappropriate to remove the provision). Institutions

noted that often certain subjects may experience dips in demand, but then recover in future years. To remove these programmes would in their view create additional costs as and when they are re-introduced, if indeed it was even possible in the future. It also supports the initiation and development of new courses (for example in developing distance learning courses).

Institutions described having many large-scale investments in IT, student facilities, library facilities and student accommodation. Many of these investments were supported by grants and external financing, but institutions had local autonomy to create the business cases and set the conditions for investment. Having clarity over the contributions made by different activities was a consideration in the decision-making for such projects.

Institutions outlined that designing their resource allocation models with the knowledge of the extent of income cross-flows enabled them to influence academic departments towards balancing their portfolio of activities, to deliver the financial and operational outcomes to support attainment of the institution strategy. Institutions argued that this lever would be removed if a cost-equals-income funding model existed.

Having a financial planning model that pools funds from different sources to support the strategic plan also enables the institution to deliver their broader role and community responsibilities, which do not typically generate income.

Institutions also described the outreach activities that are facilitated by income cross-flows. De-coupling the funding of these schemes from the course delivery cost and the source of funding made these decisions easier to enact and fairer to the student. Given the lead time for outreach activities (i.e. these can be targeted at secondary schools, where students can be five years away from attending university), flexibility is needed in the financial model as these are investments for the future of the institution.

Key finding:

Institutions have reflected the financial contributions of different activities in the resource allocation model. This has incentivised academic departments to balance their portfolios. This demonstrates that it is important to understand where income cross-flows exist and then positively agree and support them. Resources may not be used optimally where these cross-flows are not understood or permitted.

Supports risk-taking and investment

Understanding income cross-flows and the cost-recovery rates provides a quantifiable metric to help assess business investments, for example, developing a new business or medical school. This enables the institution to balance financial necessity with its strategic

aims. As one institution described, *‘Managing resources on a portfolio basis means that we allocate capital on a sound financial basis and not just on whose turn it is’*.

Pooling resources was also cited as enabling support for local economic activity and the delivery of local services for the public good. For example, institutions cited their involvement in the provision of business incubator units, the development of apprenticeships to serve local employers, the development and commercialisation of intellectual property and other civic activities in the provision of public libraries and museums.

Conversely, the study also found some evidence that cross-flows perhaps undermine or mask some historic and unsustainable activities that should not necessarily continue. One institution cited that most of its own less sustainable activities were known, but speculated that others may not be if a cross-flows analysis was not undertaken at the right level.

Key finding:

Institutions have an important role in supporting their local communities, businesses and other organisations. These activities do not typically provide an income to the institution, but utilising funds from other sources make them possible and enables a public benefit to be provided locally.

4.5 Communication of income cross-flows within the institution

In considering the extent to which income cross-flows information was discussed across the case study institutions, all outlined that they shared information on cost-recovery with their academic leads and governing bodies. Raising awareness of cross-flows was seen as an important part of understanding the financial health of the institution and often how it compared with the sector.

For the institution as a whole, the analysis of cross-flows informed certain strategies, notably increasing international students as part of a diversification of income sources and exploring better estate utilisation. Equally, some institutions were following strategies where the cross-flows information identified that a subsidy would be needed, notably in the expansion of research work. One finance director noted, *‘If the current system comprises fixed fees and no student numbers cap, then student growth is the only way to maintain financial sustainability and this is not likely to be sustainable for everyone in the long run’*. Given the outcome of the Post-18 Education and Finance review in England is currently unknown, this could create a risk to the English HE sector.

Key finding:

Institutions are seeking to pursue the opportunities that exist for growing income to provide financial stability and to enable continued investment.

Some institutions produced financial metrics and shared information with faculty leaders that were designed to expose the level of cross-flows that exist in the institution. It is typical that contribution rates are set for academic areas. Contribution rates represent the level of income that needs to be generated in excess of the direct cost of delivery to meet the cost of central and professional services. The level of contribution rate set is aligned to the financial return possible from each area.

From the institutions visited the following insights were provided from their experience of reporting cross-flows:

- Information on the extent of income cross-flows was communicated as part of an overall financial picture of the organisation. It did not seem part of a deliberate strategy to rebase expenditure to match income where outliers were identified. Finance colleagues frequently described the contribution rates as useful points of engagement with faculties. It was positioned as a way to highlight and inform the institution's leadership of the relative financial significance of certain activities. It also supported a simple message that, 'if you are not generating the required contribution you are not enabling sustainability'.
- Some institutions also described how understanding the extent of income cross-flows helps academic colleagues to reconsider the provision of some courses or to prioritise investment decisions. However, the impact of income cross-flows was also positioned as incidental to the ultimate decision on course closure or investment. Institutions were quick to note that these decisions matched broader strategic reasons or were part of a wider assessment of financial and non-financial factors. One institution invested in a new business school because it provided much needed additional capacity and also it supported the attraction of international students. However, its business students would also make a greater contribution to indirect costs than other academic disciplines which was a driver in prioritising this investment.
- For some, sharing cross-flow information was with faculty leads only, or was at least left to their discretion as to whether to share more widely. For these institutions, the focus for finance colleagues was on ensuring that the outcomes of cross-flow calculations were understood at the senior leadership level.

Key findings:

- Communicating and increasing the understanding of how different academic areas and their activities (e.g. taught programmes, research projects) perform financially is important in ensuring an effective use of resources and in enabling the financial sustainability of the institution.
- This study echoes the importance of transparency set out previously by HEFCE and its published guidance to the sector on providing institutional financial information for students¹⁷. It may be a challenge for institutions to build understanding and engagement on this issue across the institution, but it is important that staff and students feel able to replicate the constructive, mature discussions about cross-flows that should occur at governing body level.

4.6 Summary

This chapter has identified the following key findings:

- Growth in international students is planned by most of the institutions visited with the fee income making a significant contribution to the institution's ability to support other activities, such as research.
- Most of the institutions visited for this study are planning to increase the level of research they undertake due to the importance of research to their strategy and reputation in addition to the public benefit it delivers. This is despite the knowledge that income earned is insufficient to meet the costs incurred.
- Institutions are investing in their estates, facilities and staff in response to student expectations and the growth achieved.
- Understanding where income cross-flows exist informs decision-making over the portfolio of courses and the size and shape of the institutions research effort.
- Institutions have reflected the financial contributions of different activities in the resource allocation model. This has incentivised academic departments to balance their portfolios. This demonstrates that it is important to understand where income cross-

¹⁷ Case studies and this guidance from HEFCE are available at:
<https://webarchive.nationalarchives.gov.uk/20180319121946/http://www.hefce.ac.uk/it/financetransparency/>

flows exist and then positively agree and support them. Resources may not be used optimally where these cross-flows are not understood.

- Institutions generate cash year-on-year to fund their investments. Whilst some institutions have accelerated investment through borrowing, there is a limit on the levels of borrowing that are appropriate and permissible.
- Institutions have an important role in supporting their local communities, businesses and other organisations. These activities do not typically provide an income to the institution, but utilising funds from other sources make them possible and enables a public benefit to be provided locally.
- Institutions consistently reported that they structure themselves according to the academic disciplines or areas of expertise of those disciplines, rather than adopting structures that reflect the different funding streams.
- Institutions are seeking to pursue the opportunities that exist for growing income to provide financial stability and to enable continued investment.
- Communicating and increasing the understanding of how different academic areas and their activities perform financially is important in ensuring an effective use of resources and in enabling the financial sustainability of the institution.
- This study supports the importance of transparency set out previously by HEFCE and its published guidance to the sector on providing institutional financial information for students¹⁸. It may be a challenge for institutions to engage fully across the organisation, but it is important that staff and students feel able to replicate the constructive, mature discussions about cross-flows that should occur at governing body level.

¹⁸ Case studies and this guidance from HEFCE are available at <https://webarchive.nationalarchives.gov.uk/20180319121946/http://www.hefce.ac.uk/lt/financetransparency/>

5 Future risks and their impact on the sustainability of institutions

This chapter draws on the findings from the case study visits together with reports published by HEFCE and the Scottish Funding Council to outline the future risks to the sector, and the implications for the portfolio of activities they offer and the sustainability of institutions.

Key message from this chapter:

Institutions plan for the medium term to sustain important academic disciplines. However, this is more challenging to achieve in light of future risks and uncertainties.

5.1 Risks facing the higher education sector

5.1.1 Risks identified from the case study visits

The study has identified in Chapters 3 and 4 a number of issues that could represent risks to the financial sustainability of the sector. Among them are:

- Research is not financially sustainable without income cross-flows from other activities;
- Institutions are planning further growth in international student recruitment, but this may not be achieved due to competition from 'in-country' institutions, other overseas institutions, the immigration policy and any effects from the UK leaving the EU; and
- Significant investments are being made in the sector, often supported by increased borrowing.

In a stable economic and political environment, these factors may be of less significance, but there are concerns that several events and changes could converge to have a destabilising effect on institutions.

The case study institutions described the nature of the risks they faced and shared insights into their plans to address them. Whilst clearly aware of the broader external risks, institutions quoted risks from their own risk registers. These tended to be a mix of strategic issues and significant or immediate issues of concern. The main risks were the failure to:

- Deliver a major capital development in line with strategic objectives (including cost, timetable and quality);
- Achieve the fundraising strategy;

- Maintain and enhance a high quality student experience;
- Plan for the impact of Brexit and put mitigating actions in place;
- Develop the digital and physical infrastructure needed to support the strategy;
- Meet match funding requirements for research funding opportunities;
- Achieve income levels to meet the pay awards and other increasing costs;
- Achieve good outcomes from the Teaching Excellence and Student Outcomes Framework (TEF) and the National Student Survey (NSS) which could affect the institution's reputation and impact on their ability to recruit students; and
- Maintain tuition fees at current and increased levels.

5.1.2 Risks identified by HEFCE and the Scottish Funding Council

There is broad consistency between the risks recognised by institutions and those identified by the Funders and Regulators. Table 3 reflects the external risks to the sector's sustainability that HEFCE noted in its 2018 'Financial health of the higher education sector', and the risks recognised by the Scottish Funding Council in its 'Summary financial position of the university sector: Analysis of the 2016-17 financial statements'.

Table 3: Risks to the financial sustainability of institutions identified by HE funding councils

Risks	Previously identified by HEFCE*	Identified by the Scottish Funding Council
The UK's withdrawal from the European Union	✓	✓
The tightening of UK immigration policy	✓	
Increasing global and domestic market competition	✓	✓
A downturn in the UK and global economy	✓	
The changing policy agenda (arising from the review of post-18 education and funding) / unanticipated public spending cuts in research and/or teaching / impact of changes to UK Research funding in the HE and Research Act 2017	✓	✓
Upward pressure on costs	✓	✓
The outcome of the USS pension reform proposals	✓	✓

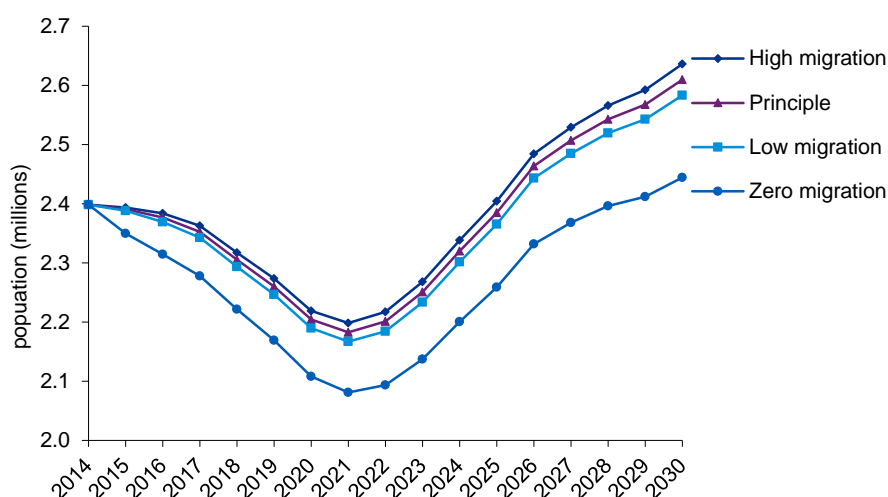
Risks	Previously identified by HEFCE*	Identified by the Scottish Funding Council
Changes in the largest overseas student market to the UK, China	✓	
Failure to achieve international student recruitment targets		✓
UK visa and immigration regulations and requirements		✓
Failure to effectively manage major capital investment programmes and their financial impacts		✓
* A number of the risks identified by HEFCE are drawn from the financial commentaries provide by institutions.		

5.1.3 Understanding some underlying causes of the risks to student recruitment

The impact of demographic changes on the availability of potential students

Institutions across the UK have faced and will continue to face, increased challenges in recruiting students due to a demographic downturn in the numbers of 18-20 year olds in the population. Chart 20 illustrates the projected demographic changes:

Chart 20: National population projections for 18–20-year-old UK citizens, 2014 to 2030



Source: ONS

Chart 20 shows that the demographic decline is predicted to cease in 2021. From 2021, however, there is then growth that will provide a larger pool of individuals that could choose to pursue HE. The rate of growth will vary by region, but from 2025 to 2030 this increase could range from 8.2% to 9.7% depending on migration levels.

Key finding:

Institutions need to plan for the medium term to preserve important academic disciplines through more challenging times.

International recruitment

The study has referenced the financial contribution that international students make to institutions and how this supports other aspects of an institution's operations. However, delivering this growth is dependent on a variety of factors including a country's policy towards exporting HE needs and their demographics in addition to the UK's immigration rules and requirements.

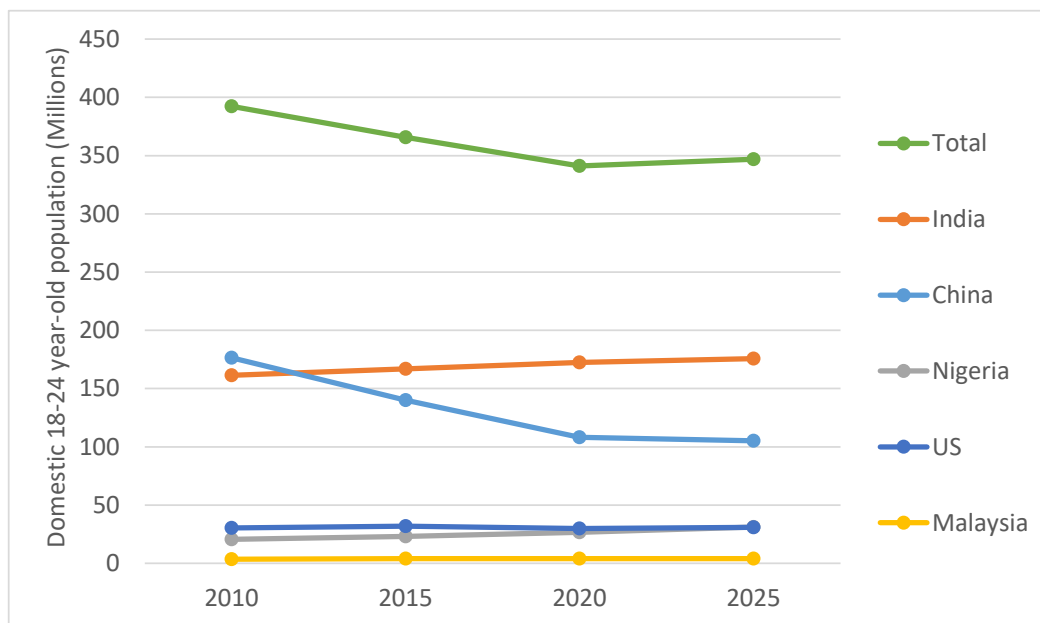
One institution described how they are considering internally having a limit on the number of students that can be recruited from certain countries. This is their response to being too successful in recruiting from one country and being exposed to the risk of being too reliant on a few countries for their international students. Other case study institutions reported the need to maintain a mix and diversity in its student cohorts to ensure it maintained a balance of representation from different countries to enhance its student experience.

More than half of all non-EU students who studied at UK higher education institutions in 2015–16 were from the following five countries:

- China – accounts for more than one in three non-EU students (107,960 students including Hong Kong or 34.8% of all non-EU students);
- Malaysia (17,405 students);
- United States (17,115 students);
- India (16,745 students); and
- Nigeria (16,100 students or 5.2% of all non-EU students).

The World Bank projects that in total these populations will reduce in the 18 to 24 year-old category to 2020 and then experience a marginal increase by 2025.

Chart 21: Projection of domestic 18–24-year-old population for selected countries



Source: The World Bank

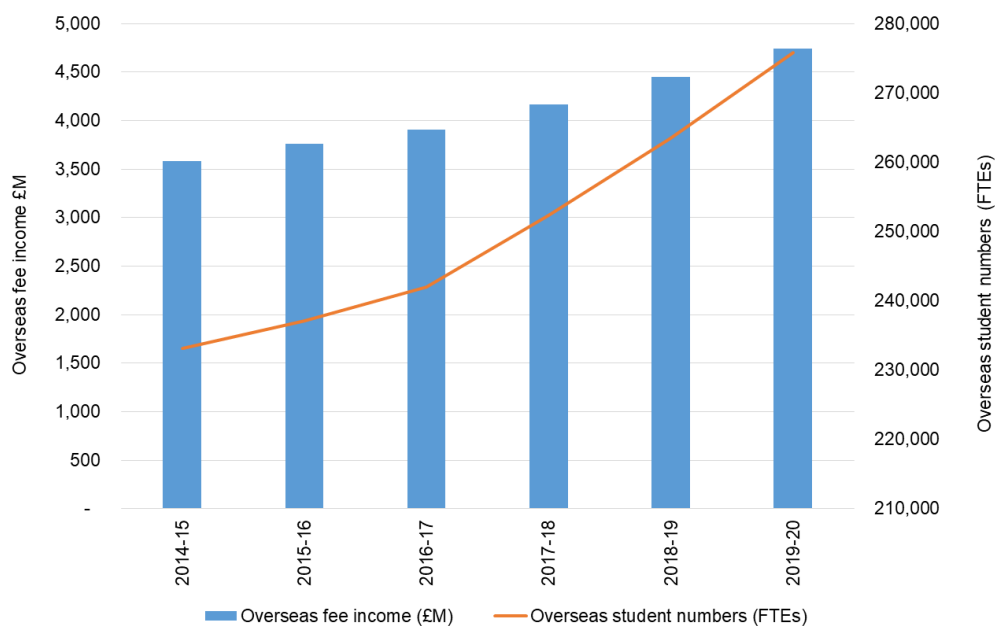
Chart 21 provides further details and highlights the challenge and variability that institutions may face in recruiting international students from a broader pool of countries.

A further illustration of the ambition for growth in international student recruitment in the English sector is provided in Chart 22, drawn from HEFCE's 'Financial health of the higher education sector'¹⁹, October 2017:

¹⁹

<https://webarchive.nationalarchives.gov.uk/20180405115034/http://www.hefce.ac.uk/pubs/year/2017/201728/>

Chart 22: Change in overseas fee income (real terms) and overseas student numbers (FTEs) 2014-15 to 2019-20



Source: 'Financial health of the higher education sector: 2016-17 -2019-20 financial forecasts' HEFCE, October 2017.

Key finding:

Institutions have a varying reliance on international student recruitment. Failure to realise projected growth will present risks for many institutions.

5.2 Current and future financial health

The impact of the risks identified in section 5.1 depends on the resilience of individual institutions. The analysis in Chapter 3 demonstrated that there is significant variability in the performance of individual institutions and there are a number of financial challenges that are already being managed. There will, therefore, be a variation in the how institutions can manage risks according to the speed with which they emerge.

Some key points are drawn from HEFCE's final report on the financial results of the English sector for 2016-17 to provide an overview of the financial health of the funded higher education sector in England²⁰: They are as follows:

- Whilst the financial results for the sector are sound overall, and better than previously expected, there continues to be a wide variation in the financial performance and position of individual institutions.
- The sector reported a rise in income of 2.9% to £29.9 billion in 2016-17. However, a greater rise in expenditure caused surpluses to fall from £1.5 billion (5.2% of total income) in 2015-16 to £1.1 billion (3.6% of total income) in 2016-17.
- In total, 24 institutions reported deficits in 2016-17 compared with 11 institutions in 2015-16.
- In contrast, 15 institutions reported surpluses of over 10% in 2016-17 compared with 17 in 2015-16. The high surpluses reported by some institutions have been boosted by large one-off income receipts from donations and endowments, while others are due to strong operating performance.
- HEFCE also concluded that investors are likely to focus on the financial strength of individual HEIs, with any fall in confidence levels likely to either restrict the availability of finance or a rise in the cost of borrowing for those able to secure such funding.

Since the publication of HEFCE's report, the Teachers Pension Scheme has announced an increase in employer pension contributions of circa 7% from September 2019. This is an obligation that institutions have no choice but to fulfil, but is a good example of a significant decision which can create a destabilising impact on the sector.

Key finding:

HEFCE previously identified that the financial performance of English institutions, although collectively healthy, has deteriorated from the previous year and performance between institutions was more varied.

²⁰ This does not include further education or sixth form colleges, or alternative providers of higher education.

5.3 Approaches to ensuring future sustainability outlined by the case study institutions

Institutions are cognisant of the risks they face and reported a range of actions that have been or are being developed to mitigate the risks identified. These range from the 'opportunity to streamline' to 'fundamental change' options. There is variation in the extent of scenario and contingency planning that is being undertaken. There is also variation in the length of planning periods that institutions are working to. Those with recent borrowings did, however, have financial forecasts that stretched 15-20 years into the future.

The financial models that institutions developed from their risk assessment varied. More than one institution commented that work was ongoing to develop and refine its model and discuss with its governing body the likely financial risks faced and possible areas of mitigation. Another described a detailed funding and cost model that considered a range of broader factors, both individually and then as part of a combination of factors.

Key finding:

The importance of effective scenario planning has increased and is an essential tool for supporting the financial sustainability of the institution.

Short-term tactical financial decisions

Short-term tactical decisions taken as part of a recent update of operating plans have included:

- Opening/closing courses to maintain 'competitive edge', improve the productivity of teaching staff and balance income levels with profitability;
- Recurrent efficiency targets (budget reductions);
- Implementing more efficient operating models for the organisation;
- Broadening the number of courses across a discipline to enhance the institution's market position and to be more attractive to students;
- A range of 'back-office' type efficiencies such as procurement and tendering of services.

Medium-term financial decisions

Medium-term decisions tended to be part of the planned saving schemes over more than one year. For example, one institution was experimenting with shortening its postgraduate course length and having more targeted engagement with industry. A common action cited

by several institutions was that they had invested in fundraising and development over recent years. Where institutions had a history of this practice it tended to be significant, but was sporadic in nature and was often tied to a particular investment or activity. Fundraising has historically been concentrated on the older institutions.

Diversifying income sources also tended to fit into this category. For example, some institutions were pursuing fees from executive education and other income streams, including summer schools or refresher courses. These also tended to require some investment and acceptance of a level of risk.

One institution referred to its links with a number of start-up companies. They had put in place seed funding arrangements to support these, as well as to provide financial and legal advice. They planned that through their incubation, the institution would benefit financially in the future as a shareholder and also through reputation with the companies' future success. This institution had used private and treasury funds to attract and help support a broader range of students' start-ups.

Longer-term financial decisions

Longer-term decisions are aligned with the institution's strategic objectives and capital-based investment in estate or IT.

'Fundamental change' options were described as ones that would impinge directly on the ethos or USP of an institution's profile. These tended to be un-costed and viewed as a last resort. For example, one institution had valued its flagship building to better understand its options of realising a capital receipt, if required. Another was reviewing the possibility of larger class sizes, or cheaper course types with lower academic contact time.

In respect of research strategy, many institutions are keen to undertake more research, but are conscious that funding does not meet the full economic cost. Some institutions are beginning to assess whether their financial return is sufficient for certain types of research activity or funding, for example, from commercial organisations where charges appear to be more market based. Institutions foresee that this could lead to selective research bidding. Equally, some are conscious that they cannot afford in the long term to be too reliant on a narrow sphere of research. This would be seen to weaken the overall brand and reputation of the institution. Most institutions wanted to achieve a broad base of research activity to underpin their reputation and teaching disciplines.

5.4 Long-term obligations of the HE sector

Since 2012 the HE sector has seen a greater divergence in funding policy across the UK, particularly in respect of Teaching. The pace of change in government policy affecting the

English and Welsh HE sectors has been greater than any period in recent times. Institutions have responded to these requirements, but there are a number of obligations that exist irrespective of the funding environment. The most significant long-term commitments that are difficult to influence are pensions and borrowings. Both of these issues could be sensitive to changes in how institutions are funded, and ultimately affect the sustainability of certain institutions.

Pensions

Pension provision within the HE sector is not uniform, but is often rigid. Pensions provided are primarily 'defined benefit' where the pension received on retirement is pre-defined by a formula, rather than being a function of underlying investment returns. This means that institutions are exposed to potentially significant risks in order to meet the promised obligations, particular if investments fail to deliver what is expected of them.

The HE sector should be aware of pensions as part of its future financial planning and sustainability. Some key points are summarised below:

- **Lack of local control:** Those exposed to funded multi-employer pension schemes (Universities Superannuation Scheme (USS); Superannuation Arrangements for the University of London (SAUL); Local Government Pension Scheme (LGPS); Teachers Pension Scheme (TPS) generally have little control or flexibility around how risk is managed on their behalf. This means that the pension funds could make decisions that do not take account of an institution's financial capacity. This could mean that institutions become overstretched financially.
- **Inflexibility of provision:** Many universities may want to offer alternative arrangements to better match needs of employees or better manage risk. This is often frustrated as universities are generally tied to the major schemes (USS; LGPS; TPS) through statutory rules or the USS's 'exclusivity' clause.
- **Cross subsidy:** There are cross subsidies within multi-employer pension schemes. Under the USS the cross subsidy is generally between strong and weak employers; for the LGPS it is between the Local Authority and other LGPS employers and for TPS risks are fully subsidised by the state. It should be considered whether a university is exposed to additional risks beyond their own obligations, and conversely whether a university or the university sector is exposing other stakeholders to significant risks.

Key finding:

Institutions have to fulfil their obligations to all pension schemes, irrespective of the funding environment.

Borrowing and other long-term financial commitments

Chart 2 in Chapter 2 outlined how capital grants have reduced and how these have been replaced by using cash reserves and through taking out borrowing. In addition to grants and public money, the sector uses borrowing and other long term finance to support capital projects.

The impact on the sector's attractiveness to lenders has been considered and two observations are that:

- Lenders are relatively cautious financial investors and substantive change to the funding regime may impact the sector's attractiveness to them. In simple terms, lenders want to be satisfied that a borrower can meet its interest and capital repayments as they fall due. Confidence and clarity as to the drivers of and potential risks to a university's financial performance are, therefore, key to the lending decisions and an important aspect of this is clarity around the regulatory/policy/funding environment for universities.
- Changes which impact the financial performance or financial risk profile of universities could, in turn, compromise universities' ability to satisfy covenants, meet loan obligations and/or have adverse financial consequences

Ongoing structural change in the HE sector has created an uncertain and, at times, volatile backdrop for universities seeking to borrow and lenders are, therefore, scrutinising business plans at a more granular level. Substantive changes to the funding regime may impact the sector's (or individual universities') attractiveness to lenders, where lenders consider that those changes could have the effect of worsening (or create risk or uncertainty around the drivers of) financial performance.

Key finding:

Borrowing obligations have to be fulfilled, irrespective of the funding arrangements for HE. If significant changes to government funding of the sector destabilise and weaken the sector's financial performance, this could impact on the availability and cost of borrowing.

5.5 Summary

A summary of the key findings regarding the risks that could affect the financial sustainability of the sector is provided below:

- Institutions need to plan for the medium term and have an ability to trade-out of the more challenging times. Details were provided in the last section of how some institutions sustain the delivery of courses through more difficult times. This is an example of how institutions plan to maintain sustainability in the provision of higher education and research.
- All institutions have a varying reliance on international student recruitment. Failure to realise this growth will present risks for many institutions.
- HEFCE previously identified that the financial performance of English institutions, although collectively healthy, has deteriorated from the previous year and performance between institutions has become more varied. All institutions have a varying reliance on international student recruitment. Failure to realise the projected growth will present financial risks for many institutions.
- The importance of effective scenario planning has increased and is an essential tool for supporting the financial sustainability of the institution.
- Institutions have to fulfil their obligations to all pension schemes, irrespective of the funding environment.
- Borrowing obligations have to be fulfilled, irrespective of the funding arrangements. If significant changes to government funding of the sector destabilise and weaken the sector's financial performance, this could impact on the availability and cost of borrowing.

6 Abbreviations

The following table contains a list of abbreviations and acronyms used in this report.

DELNI	Department for Employment and Learning
fEC	Full economic costing
FSSG	Financial Sustainability Strategy Group
FTE	Full-time equivalent or equivalence
GDP	Gross Domestic Product
GVA	Gross Value Added
HE	Higher education
HEFCE	Higher Education Funding Council for England
HEFCW	Higher Education Funding Council for Wales
HEI	Higher education institution
HESA	Higher Education Statistics Agency
HEPI	Higher Education Policy Institute
LGPS	Local Government Pension Scheme
NPFT	Non-Publicly Funded Teaching
NSS	National Student Survey
PFT	Publicly Funded Teaching
QR	Quality Related
RDEC	Research and Development Expenditure Credit
SAUL	Superannuation Arrangements for the University of London
SFC	Scottish Further and Higher Education Funding Council
STEM	Science, Technology, Engineering and Mathematics
TEF	Teaching Excellence and Student Outcomes Framework
TPS	Teachers' Pension Scheme
TRAC	Transparent Approach to Costing
USS	Universities Superannuation Scheme

Appendix 1 - Terms of reference for the review

This was a collaborative study with the sector (i.e. HE providers in receipt of grant funding from HE funding bodies in the UK, excluding further education colleges and other HE providers). FSSG appointed consultants to work with an oversight group, consisting of FSSG members. There was widespread consultation with the oversight group and with institutions.

The study objectives encompassed the following:

- An objective analysis to identify what makes UK higher education institutions (HEIs) sustainable and how this could be impacted by changes in government policy.
- An analysis of the past financial performance of HEIs across the key activities of Teaching and Research, principally based on TRAC data.
- A better understanding of the issues that could be risks and enablers of financial sustainability.
- An understanding and confirmation of the make-up of activities and strategic missions for the selected case study institutions.
- An examination of what it is about the institution's strategies or profile of activities that supports the financial performance achieved.
- An understanding of how the financial performance of the institutions is impacted by changes to the chosen areas of sensitivity.
- An insight into the impacts that future policy changes could have on the sector.

Appendix 2 - Membership of the Steering Group

Members:

- Professor Robert Van de Noort (Chair), Vice-Chancellor, University of Reading
- Gill Ball, former Director of Finance, University of Birmingham
- Bob Rabone, former Chief Finance Officer, University of Sheffield
- Andrew McConnell, Director of Finance, University of Huddersfield
- Chris Cobb, Pro Vice-Chancellor & Chief Operating Officer, University of London
- Ian Creagh , Strategy Consultant, Ian Creagh & Associates Ltd
- Julie Tam, Deputy Director of Policy, Universities UK
- Heather Williams, Finance Consultant, Office for Students

Consultants:

- Andrew Bush, Director, Support Unit, KPMG
- Gerard Campbell, Senior Manager, Support Unit, KPMG
- David Sharif, Senior Manager, Support Unit, KPMG

Appendix 3 – Research articles informing the review

This review was informed by recent research from a variety of sources. The table below provides a synopsis of the key items informing this work. It also provides other sources of reference for institutions to explore.

Item	Source	Date of publication	Synopsis
Regional variation in costs and benefits for higher education providers in England	HEFCE (by Deloitte LLP), https://web.archive.nationalarchives.gov.uk/20180319114203/http://www.hefce.ac.uk/publications/rereports/year/2017/regional/ (available on the National Archives website)	December 2017	<p>The results of the analysis suggested that:</p> <ul style="list-style-type: none"> • Average academic staff costs in institutions vary significantly across English regions, in particular between inner London and the rest of the country. • Institutions' non-academic staff costs were also found to vary significantly across England. Using data from the Office for National Statistics' Annual Survey of Hours and Earnings, it was found that the regional variation of institutions' non-academic staff costs exhibit a pattern similar to the regional variation in academic staff costs. • Land and building costs vary significantly across England. Land and building costs in inner London are more than three times the national average. Outer London and the South East also have land and building costs that are above the average. • After controlling for perceived reputation and quality, it was found that the number of international and postgraduate students enrolled varies considerably across the country. Student enrolments for international and postgraduate students were found to be significantly higher than average in inner London, and considerably lower in the North and Midlands.

Item	Source	Date of publication	Synopsis
Predicting financial strength in a competitive higher education marketplace	University of Huddersfield, https://aefpweb.org/sites/default/files/webform/42/AEFP%202017%20final.pdf	2017	<p>The paper explored what is meant by financial strength and financial sustainability and their distinctions in the context of UK HE.</p> <p>It concludes that in its current form the calculated security index may well present a misleading picture of financial strength in the UK HE sector. It also found that if points were plotted based on firstly surplus, general funds and liquidity by another metric based on borrowings, the resulting x/y plot revealed highly-performing HEIs (those doing well on both dimensions) and the poorly-performing HEIs (those performing badly on both dimensions). It also concluded that for HEIs which perform well on one but not the other, it can easily be seen where the shortcomings lie, and this is potentially very useful information.</p>
The costs and benefits of international students by parliamentary constituency	A report for the Higher Education Policy Institute (HEPI) and Kaplan International Pathways, http://www.hepi.ac.uk/wp-content/uploads/2018/01/Economic-benefits-of-international-students-by-constituency-Final-11-01-2018.pdf	January 2018	<p>The study found that international students bring ‘enormous financial benefits’ in addition to the social, educational and soft power benefits. It details the net benefits of international students at the level of parliamentary constituencies including the costs associated with educating and hosting people from other countries. It acknowledges that, in a few cases, it fails to provide a completely accurate picture.</p>

Item	Source	Date of publication	Synopsis
Running a tight ship: can universities plot a course through rough seas?	A report developed by Helene Moran and Jane Powell, for The Guardian, supported by HSBC and in partnership with UUK	2018	<p>As well as noting a more pessimistic view of future finances, the report concluded that a more strategic approach was seen as key to success in the sector and institutions spoke of moving towards a more data-driven, evidence-based approach with strategic planners taking an increasingly active role. Among its key findings from its eSurvey and analysis were that:</p> <ul style="list-style-type: none"> • Institutions are trapped between rising staff costs and the fees freeze; • Research, TEF and NSS are key priorities; • Increasing international student numbers is considered vital; • Estates spending dominated areas of large financial investment; • The funding of these investments was mainly through loans and surpluses – and credit didn't seem to be hard to acquire at this point for most, but some felt that this might be based on a false premise of government support; • Size of current surplus was highly varied; • A reduction in student fees would be very serious – with many feeling this sent out a dangerous message about the value of HE.
Higher education in England 2015 – key facts	HEFCE, https://webarchive.nationalarchives.gov.uk/20160702184002/http://www.hefce.ac.uk/analysis/HEinEngland/HEENG/	July 2015	<p>Its key conclusions were that:</p> <ul style="list-style-type: none"> • The financial health of HEFCE-funded higher education institutions in England is stable, but forecasts signal a declining trajectory that is not sustainable in the long term; • Education exports remain a key component of institutions' finances; as reliance on overseas fee income

Item	Source	Date of publication	Synopsis
			<p>grows, so does the sector's exposure to financial risk;</p> <ul style="list-style-type: none"> • A slowdown in the growth of international students is likely to result in a significant adverse impact on the sector's income levels and its ability to generate surpluses; • The number of full-time entrants at undergraduate level continues to recover, but there are indications that this growth may be slowing. The overall HE population in 2015-16 increased as a result of inbuilt growth in the system caused by the departure of the smaller 2012-13 student cohort; • Demographics may present future challenges to undergraduate recruitment due to a declining 18-year-old population in England and European Union (EU) member states over the next five years; • The world-leading quality of research and knowledge exchange within UK universities continues to be maintained.
Financial health of the higher education sector – 2016-17 financial results	HEFCE, https://webarchive.nationalarchives.gov.uk/20180319115141/http://www.hefce.ac.uk/analysis/HEinEngland/finhealth/	June 2017	<p>The key findings for the period were that:</p> <ul style="list-style-type: none"> • The sector had an operating surplus of £1.5 billion in 2016; • There was an average surplus of 5.2% of income in 2016; • 10 institutions had deficits in 2016.

Item	Source	Date of publication	Synopsis
HEPI report (100), How much is too much? Cross-subsidies from teaching to research in British universities	HEPI, http://www.hepi.ac.uk/wp-content/uploads/2017/11/HEPI-How-much-is-too-much-Report-100-FINAL.pdf	November 2017	<p>From 2014-15 figures, the report finds:</p> <ul style="list-style-type: none"> • The cross-subsidy from tuition fees to research is probably not sustainable at current levels; • Funders of university research do not cover the full costs and a research deficit exists of £3.3 billion – 37% of research income; • The government wants a near doubling in research and development spending as a share of GDP, yet recent funding injections are only enough to stand still. The Conservatives' target of spending 3% of GDP on research and development needs £24.8 billion more. <p>It also found:</p> <ul style="list-style-type: none"> • A surplus from fees of £1.3 billion (28% of non-publicly-funded teaching income); • A surplus from teaching funds – 13% of UK university research (around £1 in £7); • Each international student contributes (on average) £8,000 to British research; • Unless research funding increases, the UK's regional capacity will suffer badly.
A comparison of higher education funding in England and Australia: what can we learn?	HEPI, https://www.hepi.ac.uk/2014/04/24/comparison-student-loans-england-australia/	April 2014	Both governments offer the student an upfront loan to cover the cost of a 'fee' or 'contribution' and, in the case of England, an additional loan to help with living costs, which the graduate then starts to repay as a percentage of their salary once they cross a specified earnings threshold. In both countries, this repayment is automatically deducted from the graduate's salary through the central system for income tax payments.

Item	Source	Date of publication	Synopsis
			<p>The one type of fee loan in England carries a significant subsidy and therefore has to be rationed.</p> <p>The Australian system operates a much lower level of non-repayment of student loans: 25% in Australia compared to the UK's 45%.</p>
Higher Education Research in facts and figures	Universities UK, https://www.universitiesuk.ac.uk/research-facts-and-figures	February 2018	<p>Its highlights include:</p> <ul style="list-style-type: none"> • 76% of research at higher education institutions was considered as 'world-leading' or 'internationally excellent' for its overall quality in 2014; • UK higher education institutions received £4.2 billion from knowledge exchange activities in 2015–16; • More than half of UK research is produced through international collaborations; • UK government spending on research and development is below the OECD average as a proportion of GDP; • 43% of postgraduate research students and 29% of academic staff were from overseas; • Research performed by UK universities in 2014–15 equates to an increase of £28.9 billion in gross value added.
Patterns and Trends in UK Higher Education 2017	Universities UK, https://www.universitiesuk.ac.uk/facts-and-stats/data-and-analysis/Pages/patterns-	July 2017	<p>A key point in the report relevant to this study related to the demand for courses. It found that entrants to full-time, first-degree, postgraduate taught and postgraduate research courses have increased considerably since 2006-07 (by 31.2%, 30.5% and 25.7% respectively), and the proportion of 18-year-olds applying to and entering HE were at record levels in 2016. However, demand for part-time courses has</p>

Item	Source	Date of publication	Synopsis
	and-trends-2017.aspx		continued to decline, with entrants to part-time first degree courses falling by 28.6% and entrants to other part-time undergraduate courses by 63.1% since 2006-07.
Patterns of higher education institutions in the UK	Universities UK, https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2010/patterns-and-trends-uk-higher-education-10.pdf	September 2010	This provided some background data across: <ul style="list-style-type: none"> • Trends in UK higher education; • Patterns of institutional diversity; and • Higher education in the countries and regions of the UK.
The sustainability of learning and teaching in English higher education	A report prepared for the FSSG by JM Consulting, https://web.archive.nationalarchives.gov.uk/20180319130615/http://www.hcfce.ac.uk/funding/finsustainability/pubs/Sustainability,of,Learning,and,Teaching,2008/	December 2008	The three main conclusions in its assessment of the sustainability of learning and teaching by 2014 are: <ul style="list-style-type: none"> • The sector has responded positively and relatively successfully to the challenges it has faced since 2008, and the student learning experience has been protected and improved. However, the impact of the 2012 changes may not yet be fully apparent; • Universities have effective management and governance and are financially healthy in the short term. They are adapting to the demands of a more commercial and competitive environment, but are experiencing new pressures in doing so. It is too early to know all the implications; • The challenges facing universities are different from those in 2008. Some new risks are arising, and the

Item	Source	Date of publication	Synopsis
			familiar risks are more acute in the new environment. For the future, a continuation of 'more of the same' may not be enough to ensure sustainability.
The Economic Impact of Universities in 2014-15	Universities UK, Oxford Economics https://www.universitiesuk.ac.uk/economic-impact	October 2017	<p>This report explores the economic contribution that universities make annually to the UK economy through generating GDP, jobs and taxes, and their longer-term impact on the UK. It found that:</p> <ul style="list-style-type: none"> • in total, the economic activity of universities, the international students they attract and their visitors, supported more than 940,000 jobs in the UK in 2014-15; • UK universities, together with their international students and visitors, generated £95 billion of gross output in the economy in 2014-15.
Value for money: the student perspective	Research commissioned by the Office for Students, https://www.officeforstudents.org.uk/news-blog-and-events/news-and-blog/new-research-shines-spotlight-on-student-perceptions-of-value-for-money/	March 2018	<p>Key findings of the report show that:</p> <ul style="list-style-type: none"> • 38% of students believe their course offers good value for money while 54% said their overall investment in HE was good value for money; • Quality of teaching, fair assessment and helpful feedback and learning resources are the factors which most demonstrate value for money for students; • Students want to see more transparency about how their tuition fee is spent and what additional costs they will incur, including on accommodation costs and other course-related costs.

Appendix 4 - Case study strategies

This appendix brings together the published strategies from each of the case study visited. It highlights the features common across the areas of research, student experience and learning, civic and global ambitions.

Figure 1: Summary of institutional strategies from the institutional visits



In addition to these ‘headline’ strategies, some institutions also outlined a number of enabling strategies. These are summarised below:

- A reputation for excellence
- An international institution
- Campus identities and meaningful networks
- Diverse university community
- Employment and widening access
- Estates
- Finance
- Financial sustainability
- Global challenge, local impact
- Global citizenship
- Institutional positioning
- International networks
- People
- People and culture
- Quality people
- Quality services

- Reputation
- Research with impact
- Researcher development
- Social and economic development
- Student experience
- Teaching excellence
- To create a sustainable environment which enables the university to meet its strategic objectives
- To ensure all schools and services maintain financial and operational viability
- To establish an effective leadership and management culture which secures continuous improvement
- To generate sufficient cash to meet strategic investment plans and economic contingency
- To identify and develop the human talent of the University to secure continuous improvement and clear succession planning
- To improve core processes and performance
- To increase academic time for research and innovation
- To maintain financial strength
- To provide a fair, transparent and motivational reward structure
- World-class estate
- World-class infrastructure

Appendix 5 - Key characteristics of each nation's HE provision

This appendix highlights some of the key characteristics across each nation's HE provision.

Table 4: Higher Education sector characteristics across the UK

Nation / Characteristic	England	Scotland	Wales	Northern Ireland
Regulatory body	Office for Students (formerly HEFCE) and DfE for funding	Scottish Further and Higher Education Funding Council (SFC)	Higher Education Funding Council for Wales (HEFCW)	Department for Employment and Learning (DELNI)
Institutions	130 universities funded through tuition fees (private or publicly funded)	18 universities, including the Scottish Rural College funded by the Scottish Executive's Environment and Rural Affairs Department	9 universities	2 universities
Total £ income, excluding RDEC, 2015-16	£29,648,350,569	£3,598,046,647	£1,522,863,000	£506,208,887
Teaching Excellence and Student Outcomes Framework assessment	Compulsory	Optional	Optional	Optional

Nation / Characteristic	England	Scotland	Wales	Northern Ireland
Quality assessment	Quality Assurance Agency (QAA) on behalf of HEFCE and the OfS	Quality Assurance Agency on behalf of SFC	Quality Assurance Agency on behalf of HEFCW	Quality Assurance Agency on behalf of the Department for the Economy in Northern Ireland (DfENI)
Years to typically complete a bachelor's degree 'with honours'	Three years	Four years	Three years	Three years
Indicative tuition fees for students 2017/18				
From Northern Ireland	Up to £9,250	Up to £9,250	Up to £9,000	£4,030
From England or Wales	Up to £9,250	Up to £9,250	Up to £9,000	Up to £9,250
From Scotland	Up to £9,250	No fee (inc EU students)	Up to £9,000	Up to £9,250
International and postgraduate student fees	Determined by individual institutions			
Student numbers	Uncapped	Capped	Uncapped	Capped

Nation / Characteristic	England	Scotland	Wales	Northern Ireland
Research funding arrangements	Research England – Quality Related research grants	Funding Council – Quality Related research grants	Funding Council – Quality Related research grants	Funding Council – Quality Related research grants
	UKRI/Research Councils grant funding and funding awards through cost-based research bids			

Appendix 6 – Institution approaches to assessing financial sustainability

This appendix details a summary of findings from the case study visits on how institutions assess financial sustainability.

The study found that institutions' finance functions used a variety of measures to monitor, manage and report sustainability and describe their financial performance. These measures were typically used in monthly finance reports, longer-term financial analyses and during the annual budget setting process. In line with a view established in past FSSG studies, financial sustainability cannot be expressed in a single measure alone, as it depends on how other indicators have performed, relative to financial metrics

As part of their routine reporting, they also described a pyramid approach to their reporting whereby those measures reported to the governing body each month tended to be cascaded at each management level of the organisation. This is a typical approach found in other public sector bodies and industry.

The table below highlights the financial measures used by institutions to help them understand their financial sustainability and to aid decision-making. These are in addition to the typical management accounts information detailed in expenditure and income across local categories, for example in academic staff, administrative support, equipment,

Table 5: Financial terms used by institutions to measure sustainability and cross-flows

#	Term	Meaning and application
1	Full economic cost or contribution rates	<p>The full economic cost was a common term found across the cases studies. It often formed part of an opening summary to describe the challenge for the institution's financial strategy and importance of maintaining or achieving a rate higher than 100%.</p> <p>Contribution rates were commonly termed as a teaching, research or other recoverability percentage (based on the TRAC categories).</p> <p>They described a percentage of income against expenditure determined for both gross and net positions. A gross contribution was based on the surplus a faculty may generate after deducting its direct costs (pay and non-pay) from the income its students and research generates. A net</p>

#	Term	Meaning and application
		<p>contribution includes the application of the institution's central charges to the faculty.</p> <p>In making some allocation assumptions, some institutions also used this metric to determine teaching and research contributions at the faculty level.</p>
2	Cash reserves (as a fixed amount) or operating cash surplus (as a percentage of expenditure) or liquidity (expressed as days against operating expenditure or as a ratio of short assets over short-term debts)	<p>The cash available sometimes appeared as an absolute metric to compare the impact of different scenarios.</p> <p>From our discussions the study found that institutions had varying levels of cash balances deemed necessary to maintain liquidity. Aside from periods of heavier capital expenditure, finance described the desire to hold balances that met demand from four to eight weeks of normal expenditure.</p>
3	Income per academic FTE	<p>Though not a direct financial measure for sustainability, we found this metric in use to help institutions understand the contribution and variability of contribution being made by its academic staff. This was expressed in total terms, teaching plus research, as well as separately.</p>
4	Measures per student	<p>Using TRAC data, institutions often compiled charts showing each programme's costs, sometimes detailed by cost category, for example, by direct overheads, depreciation costs</p> <p>They also expressed metrics in terms of teaching income or surplus for each student taught. This enables the portfolio mix to be monitored and kept under review.</p>
5	Balance sheet ratios	<p>In addition to liquidity measures, these were typically around gearing (debt to operating income and debt to fixed assets).</p>

One institution also referred to using the HESA Security Index as an annual benchmarking tool for measuring their financial strength based on their position among the population. This metric is the sum of the following factors:

- **historical surplus** - the rank of the average of the last two years' percentage ratios of historical surplus/deficit after tax to total income;
- **general funds** - the rank of the day's ratio of general funds to total expenditure;
- **liquidity** - the rank of the day's ratio of net liquid assets to total expenditure; and
- **borrowings** - the rank of the percentage ratio of total long-term borrowings to total income.

A number of institutions described the importance of making these measures readily accessible and understood to the non-finance member of staff. To help achieve this, institutions provided glossaries to their stakeholders and devoted narrative in their internal reports to explaining key terms and their relevance. Finance also spoke about the wider training that finance undertook with academic staff to broaden the institution's financial awareness and grip.

The reporting of finances, performance and cross-flows in institutions clearly formed part of an overall package of financial and non-financial performance measures. We also noted a high degree of focus on external benchmarking measures and forward-looking indicators to help institutions assess the present and gauge the future.