Institute for Fiscal Studies

Will universities need a bailout to survive the COVID-19 crisis?

IFS Briefing Note BN300

Elaine Drayton
Ben Waltmann

Nuffield Foundation

Will universities need a bailout to survive the COVID-19 crisis?

Elaine Drayton
Ben Waltmann

Copy-edited by Judith Payne

Published by

The Institute for Fiscal Studies, July 2020

ISBN 978-1-912805-92-1

The authors are grateful to Carl Emmerson, Paul Johnson, Imran Rasul, Luke Sibieta and Laura van der Erve for helpful comments and suggestions. This research was funded by the Nuffield Foundation (grant reference EDO/43355). All calculations are based on publicly available data on university finances published by the Higher Education Statistics Agency (HESA).

Executive summary

The ongoing COVID-19 crisis poses a significant financial risk to the UK higher education sector. Universities are facing big losses across a range of income sources and investments. These losses could cause serious financial problems, including – in the extreme – insolvency. Most institutions will be left with reduced net assets, which could increase financing costs and will leave them less well placed to cope with future adverse shocks.

This briefing note examines the resilience of university finances to the likely consequences of the COVID-19 outbreak and the public health response to it. For UK higher education institutions, we estimate the likely financial losses associated with the crisis under three different scenarios, reflecting different crisis trajectories in the coming months. We assess the chances of insolvency and estimate the cost of potential bailouts to the taxpayer.

Our main findings are:

- The total size of the university sector's losses is highly uncertain: we estimate that long-run losses could come in anywhere between £3 billion and £19 billion, or between 7.5% and nearly half of the sector's overall income in one year. Our central estimate of total long-run losses is £11 billion or more than a quarter of income in one year.
- The biggest losses will likely stem from falls in international student enrolments (between £1.4 billion and £4.3 billion, with a central estimate of £2.8 billion) and increases in the deficits of university-sponsored pension schemes, which universities will eventually need to cover (up to £7.6 billion, with a central estimate of £3.8 billion). In addition, the sector faces lockdown-related losses of income from student accommodation and conference and catering operations, as well as financial losses on long-term investments.
- Large sector-level losses mask substantial differences between institutions. In general, institutions with a large share of international students and those with substantial pension obligations are most affected. These tend to be higher-ranking institutions as well as postgraduate and music & arts institutions. Some of the least selective universities, which rely largely on domestic fee income, will also be badly hit if higher-ranked universities admit more UK students to make up for the shortfall in their international enrolments. While recently introduced student number caps will constrain some of this behaviour, there are still likely to be falls in student numbers at the least selective institutions.
- Universities are unlikely to be able to claw back a large portion of these losses through cost savings unless they make significant numbers of staff redundant. In our central scenario, we estimate that cost savings could reduce the overall bill by only £600 million or around 6% without redundancies. The potential for cost savings varies across universities: institutions with a larger proportion of temporary staff will likely be able to make larger savings, but this may impact teaching quality.

- For the university sector as a whole, net losses in our central scenario are only slightly larger than five years of surplus at the pre-crisis level. Assuming that the underlying profitability of universities remains unchanged, the total financial reserves of the higher education sector could still be roughly the same in 2024 as they were in 2019, even without a government bailout.
- Whether COVID-related losses put a given institution at risk of insolvency largely depends on its profitability and its balance sheet position before the crisis, rather than on its predicted losses from COVID-19. The institutions with the highest predicted losses all have large financial buffers and are therefore at little risk of insolvency. The institutions at the greatest risk tend to have smaller predicted losses, but had already entered the crisis in poor financial shape.
- In our central scenario, 13 universities educating around 5% of students would end up with negative reserves and thus may not be viable in the long run without a government bailout or debt restructuring. A very tightly targeted bailout aimed at keeping these institutions afloat could cost around £140 million. In comparison, a one-off increase in teaching grants of £1,000 per UK/EU student would cost £1.8 billion but in our central scenario would only push three institutions above the line of zero reserves.
- There is considerable uncertainty over actual risks to institutions and a trade-off between highly targeted and more general support. And additional support might not be aimed purely at preventing insolvencies. But there is a big gap in cost between a very targeted bailout costing perhaps less than £200 million and the more generalised bailout proposed by Universities UK, which would cost £3.2 billion and at the same time provide very little support to most universities that appear to be most at risk of insolvency; according to our modelling, only two institutions would be pushed above the line of zero reserves by this proposed policy. Government will need to be very clear about the purpose of any bailout package and design it accordingly.
- Lightly regulated Alternative Providers educate around 3% of all students in the higher education sector. Many of these providers have low reserves and rely almost exclusively on tuition fees for their income. Alternative Providers with a large share of international students are at a significant risk of insolvency, potentially leaving students unable to complete their degrees.

1. Introduction

The total income of the UK university sector is around £40 billion per year, or around 1.8% of national income. Tuition fees make up around half of this amount, or £20 billion, of which EU and overseas students pay around £7 billion. The other half comes from research grants and contracts (£7 billion), direct public funding (£5 billion), rent from letting student accommodation (£2 billion) and various smaller sources of income, including conferences and catering operations (£0.4 billion).

Much of this income is now at risk due to the COVID-19 outbreak. Most significantly, due to health concerns and restrictions on international travel, far fewer international students can be expected to start courses at UK universities in the coming academic year.[1] The least selective universities are also likely to lose a significant share of their domestic students, as more selective universities lower admission standards to make up for fewer international students (though the recently announced cap on domestic student numbers[2] will limit this to some extent). In addition, rental income from accommodation and income from conferences and catering are likely to be almost entirely lost for the rest of the academic year.

Exposure to these losses varies widely across institutions. A crucial factor is the share of international students, which tends to be higher at higher-ranked institutions; for example, international students make up nearly 70% of students at the London School of Economics, but less than 5% at the University of Wolverhampton. Similarly, the share of income derived from accommodation and conferences varies hugely across institutions.

On top of these operating losses, the higher education sector is financially exposed to the wider economic downturn – most significantly through defined benefit pension schemes such as the Universities Superannuation Scheme (USS). Defined benefit pension schemes, which tend to be heavily invested in shares and property, are likely to record substantial losses on their investments due to the crisis, leading to pension scheme deficits.[3] Universities are required to make provisions for covering these deficits in their balance sheets, reducing their net assets or reserves. While the accounting details vary, these pension provisions generally represent real liabilities that institutions will have to meet in the coming years.[4]

Again, financial losses will affect some universities more than others. Newer universities tend to have fewer pension obligations, as their academic staff either are not offered defined benefit pensions or are eligible for teachers' pensions, which are underwritten by

[1] J. Britton, E. Drayton and L. van der Erve, 'Drop in international students would imperil university finances', Institute for Fiscal Studies (IFS), Briefing Note BN283, 2020, https://www.ifs.org.uk/publications/14805.

[2] See https://www.gov.uk/government/publications/student-number-controls.

[3] Lower interest rates may exacerbate these losses. While pension schemes will gain as bonds rise in value, lower interest rates will also lead to lower discount rates, which will increase the present value of future payouts and thus scheme liabilities.

[4] In the case of USS, the largest defined benefit scheme for the university sector, pension provisions will cover the cost of so-called deficit recovery contributions, the latest round of which will fall due annually until 2028.

the taxpayer. As many of these universities also have no substantial long-term investments, their other financial losses will be limited as well.

In this briefing note, we examine the impact of losses arising from the COVID-19 pandemic – and the public health response to it – on universities' net assets or reserves.[5] Institutions with large reserves have lower financing costs and can better cope with external shocks. The level of net assets or reserves is also directly relevant in insolvency law: companies with negative net assets are unlikely to be able to repay their debts in the long run and are therefore generally deemed insolvent.[6]

In the university context, insolvency could lead to debt restructuring — allowing otherwise financially viable institutions to remain in business — or consolidation in the form of takeovers and mergers. Alternatively, it could lead to liquidation. While there is no precedent for the liquidation of a publicly funded university in the UK, it is explicit government policy that universities can fail;[7] all universities have to submit 'Student Protection Plans' that cover various scenarios up to a complete closure of the institution.

Insolvency of a university could cause significant disruption to students' education, potentially leaving them unable to complete their degrees. It might also have spillover effects on other institutions in the sector that are not facing immediate financial distress. To the extent that those lending to UK universities do so on the basis that insolvency risk is negligible, the financing costs of other universities could rise if one university became insolvent.

In Section 2, we calculate the amount we expect universities to lose in three different scenarios for the trajectory of the COVID-19 crisis. Section 3 and 4 respectively document the profitability and the balance sheet position of universities going into the crisis. Section 5 examines resilience to expected losses: we show which types of institutions appear likely to end up with negative net assets absent a government bailout. In Section 6, we look at different ways in which a government bailout of the higher education sector could be structured; we show that different options vary widely in their cost to the taxpayer. Section 7 examines the impact of the crisis on lightly regulated Alternative Providers, and Section 8 concludes.

[5] This briefing note does not look at the liquidity position of universities – that is, the amount of cash available to meet upcoming obligations – as the UK government has committed to supporting universities' liquidity needs (https://www.gov.uk/government/news/government-support-package-for-universities-and-students). We also do not explicitly model the effects of the small amount of additional research funding (£200 million) that the government has recently announced (https://www.gov.uk/government/news/government-to-protect-uk-research-jobs-with-major-support-package), as no precise information is yet available about its allocation.

[6] See Section 123(2) of the Insolvency Act 1986. However, note that the assets and liabilities relevant for this 'balance sheet test' of insolvency can differ from the assets and liabilities in a company's annual accounts.

[7] https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/we-will-not-bail-out-universities-in-financial-difficulty-regulator-chair-says/.

2. The cost of COVID-19 for UK universities

The current COVID crisis is characterised by extreme uncertainty. It is uncertain whether universities will be able to resume campus teaching in the autumn, or how many students from the UK and elsewhere will take up their offers — this year or in the future. Similarly, the additional financial losses to universities, primarily due to their sponsorship of workplace pension schemes, are impossible to quantify with precision. As a result, the cost of the pandemic for universities is difficult to pin down at this stage.

In order to capture this uncertainty, we present estimated losses under three scenarios, which reflect different assumptions about how the coming months and years play out for universities. A *pessimistic scenario* represents what might happen if things go badly: lockdown continues for months and many fewer students take up their places next year. A *central scenario* represents an estimate of the impact of COVID-19, given what we know at this point. An *optimistic scenario* explores what might happen if normality returns sooner than expected.

Although our analysis is conducted at the institution level, we do not name individual institutions, as their circumstances may be influenced by particular factors we do not observe. Instead, we report results for seven different types of universities, differentiated primarily by their selectivity. Our results should be read as being informative about the consequences of the COVID-19 crisis for these different types of universities, rather than for individual institutions.

We characterise the type of institution using the following seven groups: first quartile (Q1), second quartile (Q2), third quartile (Q3), fourth quartile (Q4), postgraduate, music & arts and other. The quartiles relate to institutions' position in the 2020 Complete University Guide (CUG) league table, with the highest-ranked institutions grouped in the first quartile.[8] Each quartile contains 32 or 33 institutions. The postgraduate group contains four postgraduate-only institutions that are not ranked by the CUG, while the music & arts group contains 16 specialist music & arts institutions. The remaining 12 institutions that do not appear in the CUG (mainly specialist institutions focusing on vocational subjects) are grouped into a separate 'other' category.[9]

For our central scenario, we make the following assumptions:[10]

[8] We group universities for this briefing note using a ranking (rather than a more traditional classification into Russell Group, pre-1992 and post-1992 universities), mainly because a university's place in the rankings is likely to crucially affect how many students it will be able to attract in the coming year. We report results using the traditional categories in Appendix C. We use the Complete University Guide ranking, because it is freely available and covers nearly all institutions.

[9] A list of institutions in each group can be found in Appendix D.

[10] We assume throughout that the overall level of research funding will be unaffected by the crisis and that the underlying profitability of the university sector remains unchanged (abstracting from COVID-related losses).

- In line with recent survey evidence,[11] only half of **EU and international students** start their courses in the autumn of 2020. There is a 10% reduction in **UK-domiciled undergraduate student** enrolments, as more young people than usual delay university entry.[12] **Total teaching grants** to the sector remain constant – implying a rise in teaching grant per student – but are reallocated within the sector according to changes in student numbers.

- **Accommodation, catering and conference income** is completely lost for the rest of the current academic year, after which income is reduced in proportion to the decline in student numbers.

- Universities are required to increase their **pension provisions** by 25% (from £15.4 billion to £19.3 billion) to cover pension scheme deficits.

- Universities' **long-term investments** lose 10% of their value, relative to what their value would have been without the crisis.

In our pessimistic and optimistic scenarios, we vary all of these assumptions to reflect more or less severe crisis trajectories.[13] For all scenarios, we model the redistribution of UK and EU undergraduate students under the student number caps recently announced by the Department for Education.[14] We assume that a quarter of this student population would move to a higher-ranking university if possible, and that universities can increase their intake of UK and EU undergraduate students in the coming academic year by up to 6.5% from the numbers in the current academic year.[15]

In our central scenario, the COVID-19 crisis would cost the UK university sector around £11 billion in the long run, or slightly more than a quarter of one year's income. Of this total, £9.2 billion would fall on English universities, £1.1 billion on Scottish institutions, £500 million on Welsh universities and £100 million on Northern Irish institutions.[16] However, there is considerable uncertainty around this central estimate. Losses could easily turn out as high as £19 billion or as low as £3 billion.

---

[11] See https://www.qs.com/portfolio-items/the-impact-of-the-coronavirus-on-global-higher-education/ and https://www.britishcouncil.org/contact/press/higher-education-chinese-students-covid-report.

[12] Lower enrolment in 2020 affects student numbers in all future years when these students would have been at university. To keep calculations tractable, we assume the numbers of students already at university and of those entering from Autumn 2021 are unaffected.

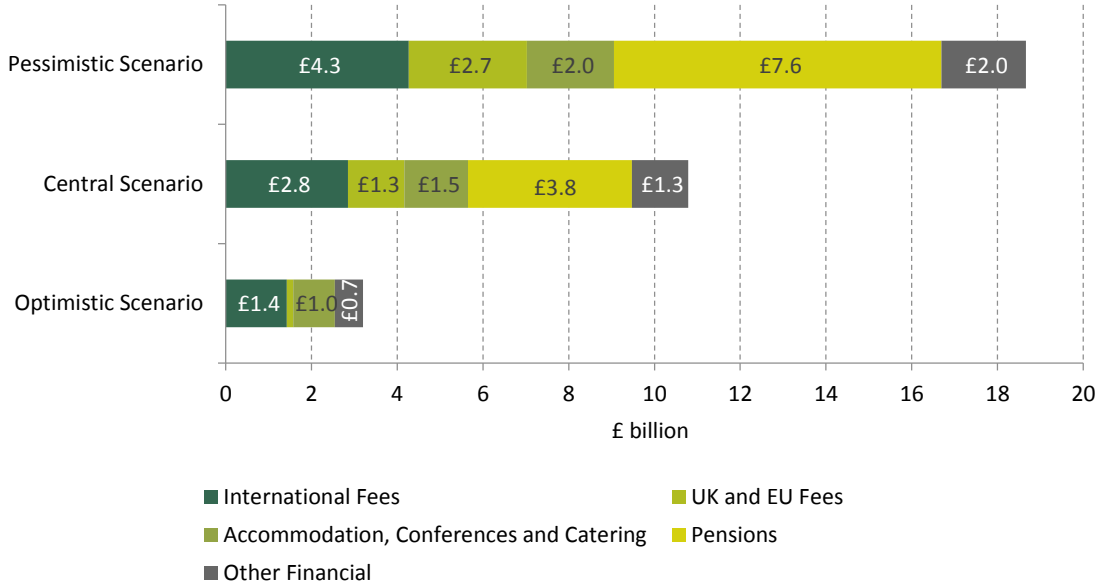
[13] Our assumptions for the optimistic and pessimistic scenarios and the rationale for our assumptions are given in Appendix A.

[14] https://www.gov.uk/government/news/government-support-package-for-universities-and-students.

[15] This is a simplification of actual policy on student number caps. In fact, English universities will be able to increase the number of UK and EU students by 5% plus their (unpublished) forecast for student number growth before the COVID-19 crisis. Scottish universities will be able to increase the number of Scottish and EU students up to separate caps set by the Scottish government. In Wales, overall UK and EU student numbers will be capped by the Welsh government using the same methodology as used in England. In Northern Ireland, the number of Northern Irish and EU students is capped by the Northern Irish Department for the Economy. In addition, the number of English students will be capped at the previous year's level plus 6.5% in all devolved nations. We approximate these policies using a uniform cap of 6.5% above the 2019–20 level, keeping constant the proportion of students paying reduced fees in the devolved nations.

[16] For a comparison of the effect of the COVID-19 crisis on university finances in the different home nations, see Appendix B.

Figure 1. Projected losses of the higher education sector by source



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

Figure 1 shows the components of projected losses. In our central scenario, £5.7 billion or slightly more than half of the losses are **operational losses**, with the bulk of the losses stemming from enrolments of fewer students (£4.1 billion). Losses on accommodation, conferences and catering are relatively small in comparison (£1.5 billion).

The rest of the total loss is made up of **financial losses**. The dominant component is pension provisions (£3.8 billion); losses on long-term investments play a minor role at £1.3 billion. The impact on pension provisions is by far the largest source of uncertainty in these estimates: depending on the outcome of the next round of pension scheme valuations, universities may have to set aside an extra £7.6 billion, or may not have to increase provisions at all.

Strikingly, these losses are distributed very unevenly across universities. Figure 2 shows losses per student for the 10 universities with the highest and lowest estimated losses.[17] We estimate losses ranging from nearly £35,000 per student at one extreme to less than £1,000 per student at the other.

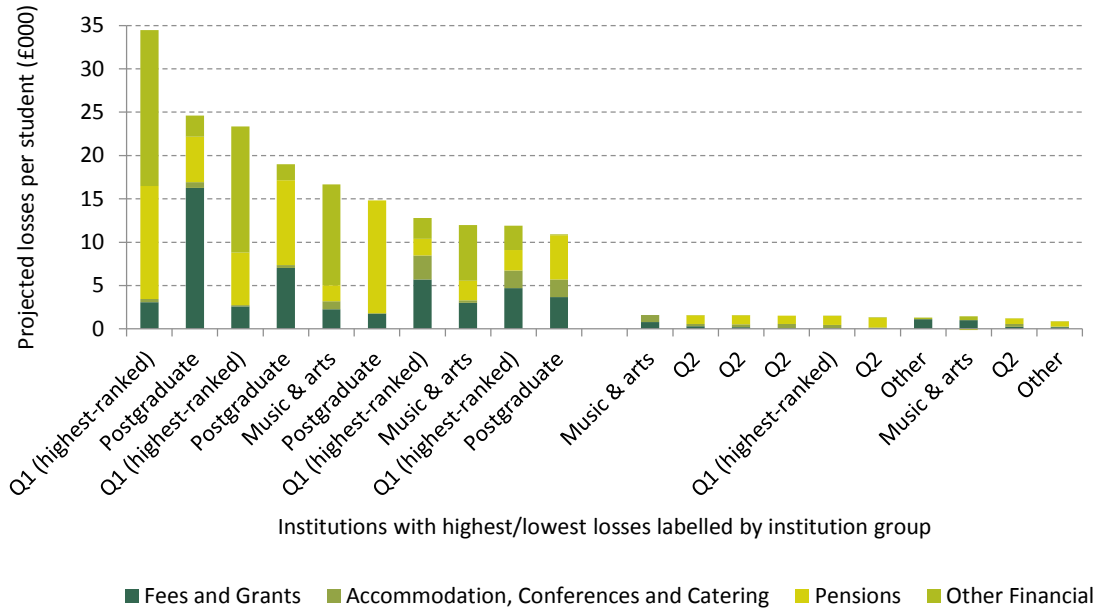
These stark differences are explained by the very different starting positions of different universities. Universities with the greatest losses tend to admit high numbers of international students (who pay higher fees), whereas the universities with the lowest losses tend to take on very few. Differences in pension obligations and financial investments are also key drivers of differences: universities with the highest losses tend to have significant pension obligations and substantial long-term financial investments compared with universities with the smallest losses, many of which enrol their academic

[17] All results exclude SOAS University of London, as it did not submit its annual accounts for the 2018–19 financial year on time. SOAS is known to be in severe financial difficulty (see https://www.theguardian.com/education/2020/may/29/soas-to-slash-budgets-and-staff-as-debt-crisis-worsens-in-pandemic).

staff in teachers' pension schemes (which are sponsored by the taxpayer) and do not have any substantial long-term financial investments.

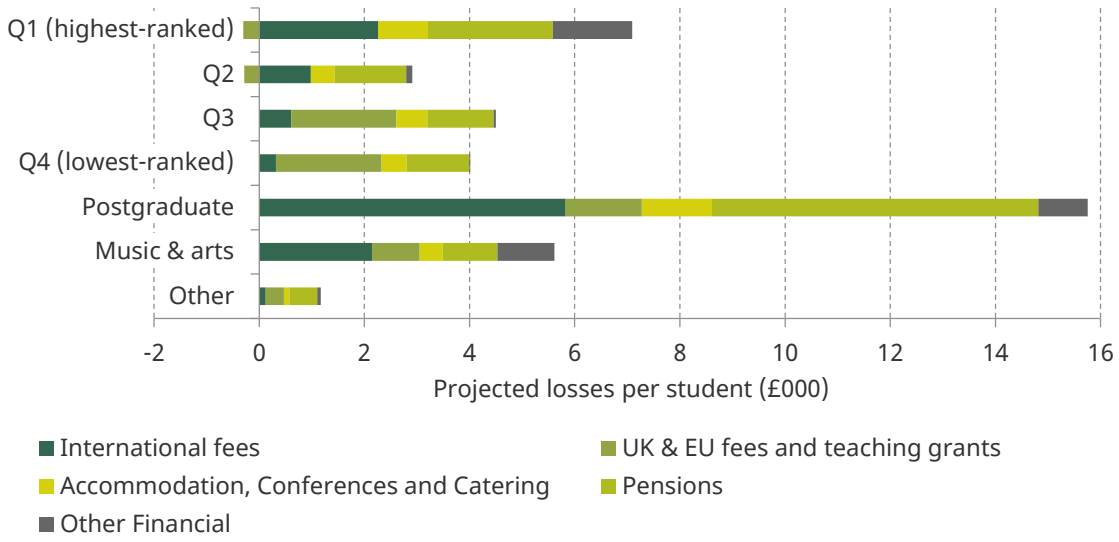
Figure 2 also demonstrates how the burden of losses arising from the COVID-19 crisis is expected to fall on some types of institutions more than others: the 10 universities with the highest losses per student are all either in the top quartile of the CUG ranking, or are specialist postgraduate or music & arts institutions. Differences between institution types are explored further in Figure 3, which shows losses per student for the different types of institutions and how the composition of losses varies between institution groups.

Figure 2. Projected losses per student of institutions with the biggest and smallest losses



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

Figure 3. Projected losses per student by institution type



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

Among the ranked universities, the highest-ranked institutions (Q1) are set to lose the most per student. These losses are driven by high numbers of international students and significant pension obligations. Many institutions in this group also have substantial endowment investments and are therefore projected to lose large amounts on their financial investments. Notably, universities in the top quartile are predicted a small *gain* in UK and EU fees and teaching grants, as these institutions will be able to increase their domestic intake to make up for the loss of international students.

In the second quartile, losses are lower than in the other quartiles: losses from fewer international students, accommodation and catering losses, pension losses and losses on other financial investments are all lower on average than for institutions in the top quartile. This reflects a less international student body, higher student/staff ratios and lower endowment wealth, among other factors. In the bottom half of the university distribution (the third and fourth quartiles), projected losses are higher, driven entirely by losses from UK and EU fees and teaching grants, owing mostly to the substantial movement of students to universities in the top two quartiles that we expect even within the recently announced student number caps.

Postgraduate-only institutions stand out as particularly exposed to losses on a per-student basis, likely due to high numbers of staff per student leading to high pension losses per student, as well as large numbers of international students paying high fees. Substantial losses are also projected for music & arts institutions. However, music & arts institutions are a diverse group: as shown in Figure 2, they are represented among both the institutions with the highest losses and those with the lowest losses. The most prestigious music & arts institutions in particular face large losses due to high shares of international students and substantial endowment investments.

Before turning to the impact of these losses on university balance sheets, an important consideration is the extent to which universities are able to offset losses by making **cost savings**. In the areas of accommodation, conferences and catering, universities have been able to make use of the government's furloughing scheme. In addition, many universities may not renew contracts for some temporary staff. We do not account for redundancies, which may generate further staff savings.[18]

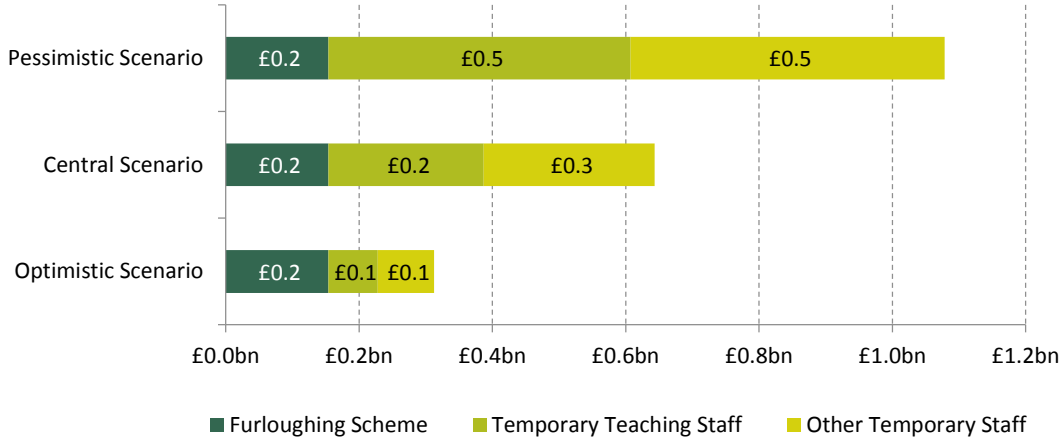
Figure 4 shows how much universities as a whole are likely to be able to save through the government furlough scheme and by reducing numbers of temporary staff. In our central scenario, we expect that universities would be able to reduce their losses by around £0.6 billion through cost-saving measures. This would amount to around 11% of operational losses and 6% of total losses.

Around £200 million of these savings would come from the government's furloughing scheme, which we assume would pay 80% of the wages of accommodation and catering staff from mid March to mid September.[19] A further £200 million in savings would come from cuts in the number of teaching staff on fixed-term contracts and another

[18] However, redundancies are expensive, procedurally difficult for many universities, and could be associated with reputational costs, especially if academic staff were made redundant.

[19] It is assumed that the other 20% is paid by universities, which appears to reflect many universities' actual practice.

Figure 4. Projected cost savings of the higher education sector by source



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

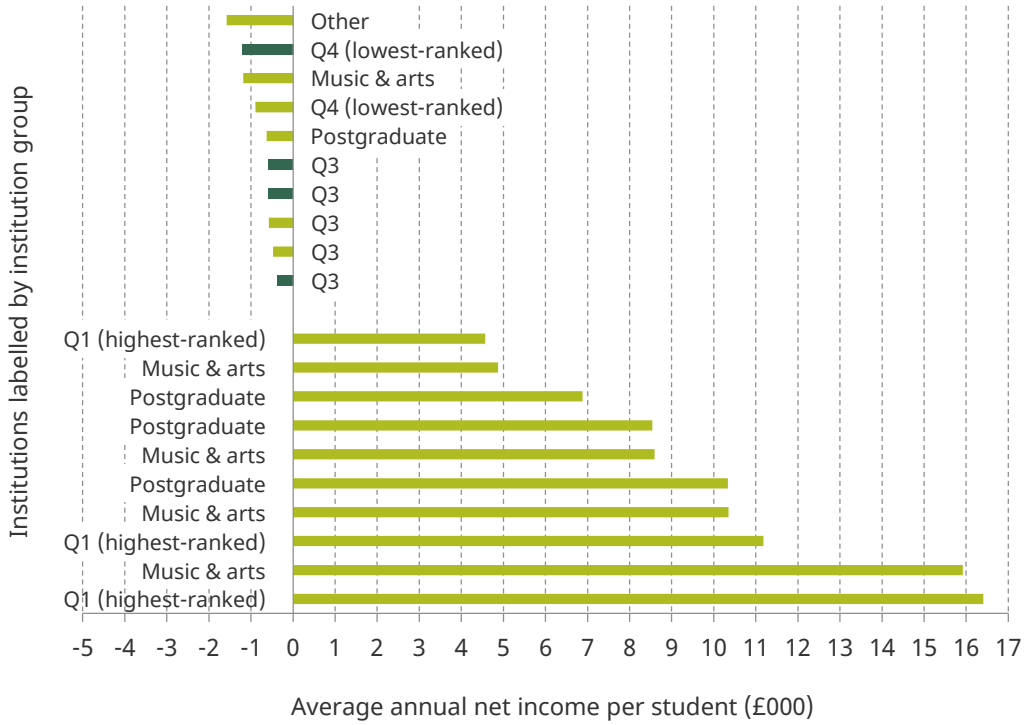
£300 million from cutting temporary staff in other areas. This assumes that the number of temporary staff involved with teaching and non-academic functions declines in proportion to the number of students lost, which is likely to be roughly in line with teaching needs. More staff could be cut in the more pessimistic scenario, as there would be fewer students to be taught. Although predicted savings vary across universities, we estimate that only five universities would be able to claw back more than a third of their operational losses in the central scenario.

3. The profitability of universities before the crisis

A crucial determinant of the long-term viability of universities after the current crisis is whether they can regularly generate positive **net income**. For the most profitable universities, net income they would have earned in the absence of the crisis will exceed losses from the crisis, leaving them in a stronger financial position after the crisis than before. Other institutions will end up with low or even negative reserves, but may recover if they can generate sustained surpluses. Conversely, even if a university retains substantial reserves after the crisis, it may not be sustainable for long if it keeps making losses.

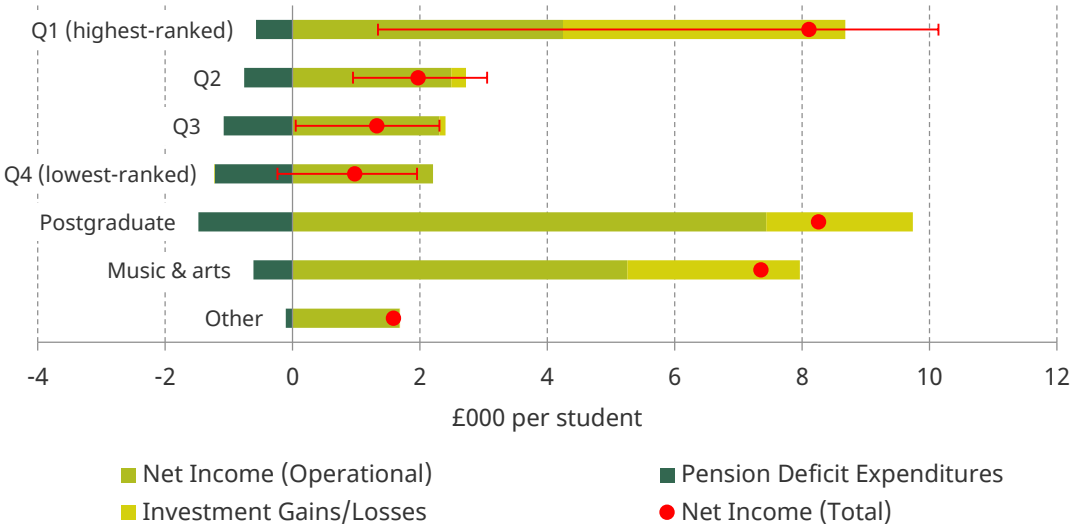
Figure 5 shows average net income per student over the last four years for the highest- and lowest-earning institutions (excluding exceptional expenditure on pension provisions in 2018–19). Universities without positive income in any of the years are marked in dark green. Most universities have been able to generate positive net income over the last few years, with some posting net income of several thousand pounds per student every year

Figure 5. Average annual net income per student (2015–16 to 2018–19) for institutions with the lowest and highest net income per student



Note: Authors' calculations based on HESA finance records. Net income includes taxes as well as gains and losses on investments, but excludes gains and losses from the sale of fixed assets, as well as unrealised gains and losses (including actuarial gains and losses). For pension adjustment costs, the average is taken over 2015–16 to 2017–18 to exclude large one-off costs stemming from the 2017 actuarial revaluation of the USS, which for technical reasons is accounted for as part of the 2018–19 income statement. For institutions without comparable data across all four years, the average is taken over the available years (minimum two). Data for one university are adjusted for an apparent clerical error. Universities marked in dark green had negative net income in all of the last four academic years (2015–16 to 2018–19).

Figure 6. Predicted cumulative net income per student over five years (2019–20 to 2023–24) before COVID losses, by institution type



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A. Red dots represent expected cumulative net income in absence of the crisis. Whiskers indicate net income of institutions at the 10th and 90th percentiles (weighting by the number of students). No whiskers are shown for the postgraduate, music & arts and other groups due to small sample sizes.

(largely driven by gains on financial investments). At the other end of the scale, however, a few universities have generated net losses on average, with some universities posting losses every year. Notably, the universities with the lowest net income in the past few years are mostly in the bottom half of the CUG ranking. In contrast, those with the highest average net incomes are in the top quartile, are music & arts institutions or are postgraduate-only institutions.

In order to capture the effect of net income on the finances of universities in the next few years, we have predicted what net incomes for all institutions would have been in the absence of the crisis up to July 2024, based on data from 2015 to 2019. For each year, predicted net income excluding expenditures to cover pension deficits is, roughly, a weighted average of the same figure in the previous three years.[20] That figure is then adjusted for pension deficit expenditures using the average pension adjustment cost between 2015 and 2018, and for investment gains using the average investment gain/loss between 2015 and 2019.[21]

Figure 6 shows the results of that exercise for each university group. The expected total net income in the absence of the crisis is shown by the red dots. The whiskers indicate expected net income per student of institutions at the 10th and 90th percentiles (weighting

[20] More precisely, net income is predicted using a third-order autoregressive model estimated on data from 2015 to 2019. For details, see Appendix A.

[21] Pension adjustment costs are modelled separately so that data from 2019 can be excluded; that year is unusual due to large one-off costs stemming from the 2017 actuarial revaluation of the USS. Investment gains/losses are modelled separately as they appear to follow very different patterns for different universities. For universities with fewer years of available data, the model includes fewer lags. Data for two universities were adjusted for apparent clerical errors.

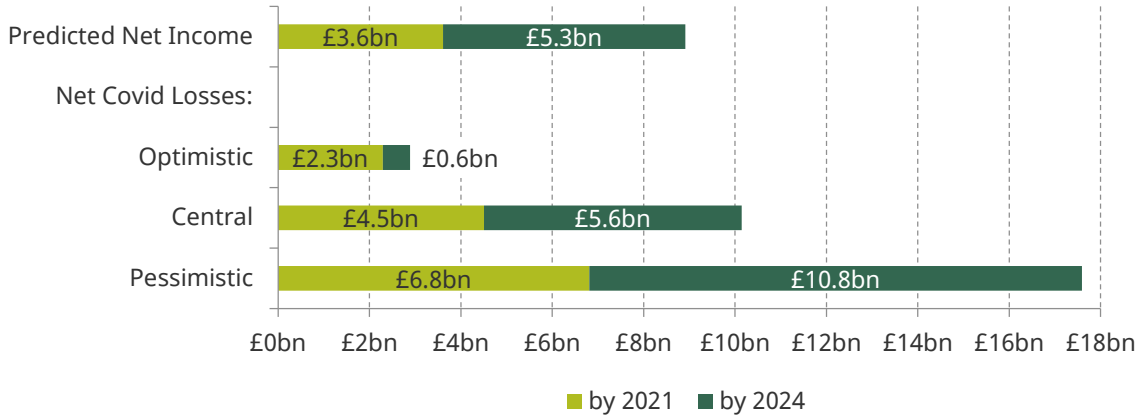
by the number of students). No whiskers are shown for the postgraduate, music & arts and other groups because of the small number of institutions in these groups.

While each set of universities is expected to earn positive income in aggregate, a number of individual institutions – mostly in the least selective quartiles (Q3 and Q4) – would have lost money over this period even without the COVID-19 crisis. At the other end of the scale, we would have expected the profits of a number of universities, particularly top-quartile, postgraduate and music & arts institutions, to add up to many thousands of pounds per student over this period.

Notably, the top quartile (Q1), postgraduate-only and music & arts institutions are also the groups with the largest predicted losses (see Figure 3). In fact, the list of the most profitable universities is nearly identical to the list of universities with the largest predicted losses (not shown). As a result, we do not expect many of the institutions with the highest losses per student to experience an overall deterioration in their financial position over the next few years.

The different components of the prediction are captured by the bars in Figure 6. Net income before investment gains/losses and pension deficit expenditures is displayed in light green. Dark green bars show pension deficit expenditures, which are more than half as large as unadjusted net income for institutions in the bottom quartile (Q4).[22] Yellow bars indicate investment gains and losses, which are negligible for the lowest-ranked universities but are on average of a comparable magnitude to other net income for institutions in the top quartile.

Figure 7. Overall predicted sector net income in the absence of the crisis compared with net COVID losses



Note: Authors' calculations based on HESA finance records. Losses on long-term investments are assumed to be reflected in universities' balance sheets by 2021, whereas losses due to additional pension provisions are assumed to come in after 2021.

[22] The lower average predicted pension deficit expenditure per student for higher-ranked universities might be an artefact of our exclusion of the year 2019, when USS pension provisions were adjusted to reflect the 2017 revaluation. In particular, it is possible that the revaluation of USS not only reflected gains and losses from the actuarial revaluation of existing entitlements (which we would like to exclude), but also a regular excess cost of new entitlements over current contributions (which we would like to include as a recurrent cost). For 'non-transparent' multi-employer defined benefit schemes (USS and SAUL), these two factors are impossible to tell apart on the basis of university balance sheet data alone.

Figure 7 shows how overall expected losses from the COVID-19 crisis (subtracting potential cost savings) stack up against the overall predicted net income of the higher education sector. We predict that total net income between 2019 and 2024 in the absence of the crisis would have been around £9 billion. This is more than total COVID losses in the optimistic scenario, but slightly less than losses in the central scenario and much less than losses in the pessimistic scenario. Our central prediction is therefore that the financial position of the higher education sector as a whole will be only slightly worse in 2024 compared with what it was in 2019, even without a government bailout (assuming that the underlying profitability of universities remains unchanged). However, the uncertainty around that central prediction is large.

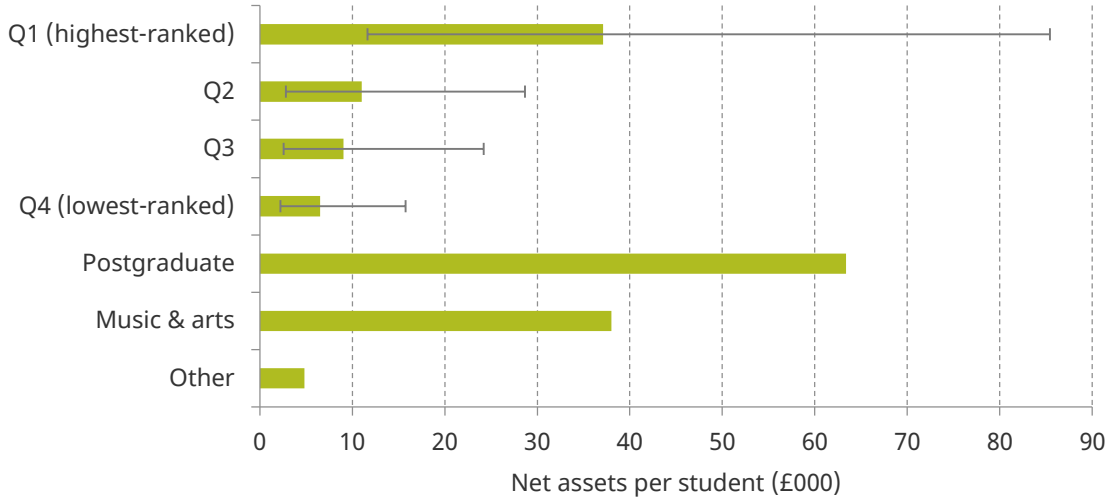
4. University balance sheets before the crisis

In this section, we give an overview of the pre-crisis financial position of the universities as reflected in their annual accounts from July 2019. Most importantly, we examine the total net assets or reserves of different universities. This captures the value of what universities own, such as buildings, cash reserves and financial investments, relative to what they owe. We also look at the extent of university indebtedness as measured by the leverage ratio. As throughout this briefing note, we do not consider measures of university *liquidity*, i.e. of how much money universities have readily available. The latest data on liquidity from July 2019 are likely to be already out of date, and in any case, the government – sensibly – seems determined to support universities' liquidity positions by all means necessary.

In July 2019, the total **net assets or reserves** of the university system stood at around £45 billion, which even under our pessimistic scenario would comfortably cover the expected losses from the COVID-19 pandemic. However, these reserves were very unevenly distributed across institutions, as shown in Figure 8. The bars indicate net assets per student in 2019, before the crisis, for the different institution types and the whiskers show the 10th and 90th percentiles within those groups (weighting each institution by the number of students). While a number of institutions had net assets per student in the tens of thousands of pounds, several had nearly none. Two universities (both other/unranked) even had slightly negative net assets (owing to recent pension scheme revaluations), indicating a precarious financial position on the edge of insolvency.

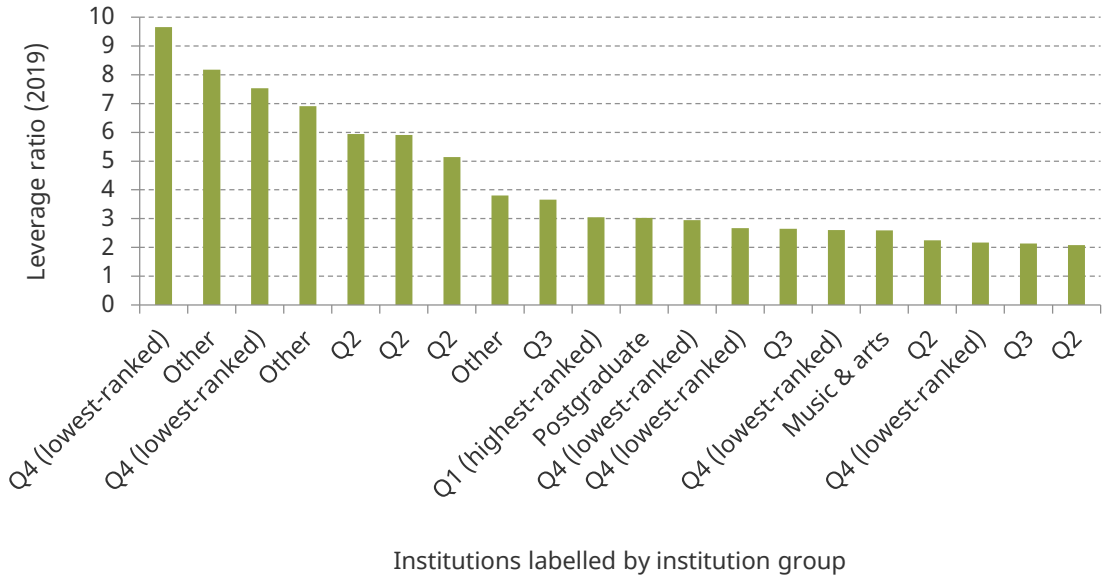
Notably, the institution groups with the largest projected losses on average – Q1, postgraduate-only, and music & arts institutions – also have the highest net assets per student (as well as the highest predicted net income per student, as shown in the previous section). Even within those groups, the institutions hit especially hard by the COVID-19

Figure 8. Total net assets per student by institution type



Note: Authors' calculations based on HESA university finance records. Whiskers indicate the 10th and 90th percentiles (weighting each institution by the number of students). No whiskers are shown for the postgraduate, music & arts and other groups due to small sample sizes.

Figure 9. Leverage ratio for universities with the highest leverage



Note: Authors' calculations based on HESA university finance records.

crisis typically have large reserves, while many of the institutions with the lowest reserves are projected to lose relatively little from the crisis (not shown). The only source of losses that disproportionately affects institutions with low pre-crisis wealth are losses from domestic tuition fees; the reason is that these institutions are often ranked low in the league tables, and therefore vulnerable to prospective UK and EU students taking advantage of the fall in the total number of students to 'trade up'.

A separate concern with university balance sheets relates to **over-indebtedness**. One measure of this is the leverage ratio, which shows the ratio of total liabilities to net assets or reserves. Figure 9 plots the leverage ratios of the 20 most indebted universities in July 2019 (excluding the two universities with negative net assets).

Overall, the indebtedness of the university system was moderate before the COVID-19 crisis. Most universities had leverage ratios below 2, indicating that total liabilities were less than two-thirds of total assets.[23] Four universities had leverage ratios above 6, indicating high indebtedness; all were ranked in the bottom quartile by the Complete University Guide or not ranked at all. High indebtedness can increase the risk of insolvency and can restrict future borrowing for affected institutions.

[23] However, even universities with a relatively low leverage ratio might find it difficult to raise funds if a large proportion of their assets are illiquid or difficult to value.

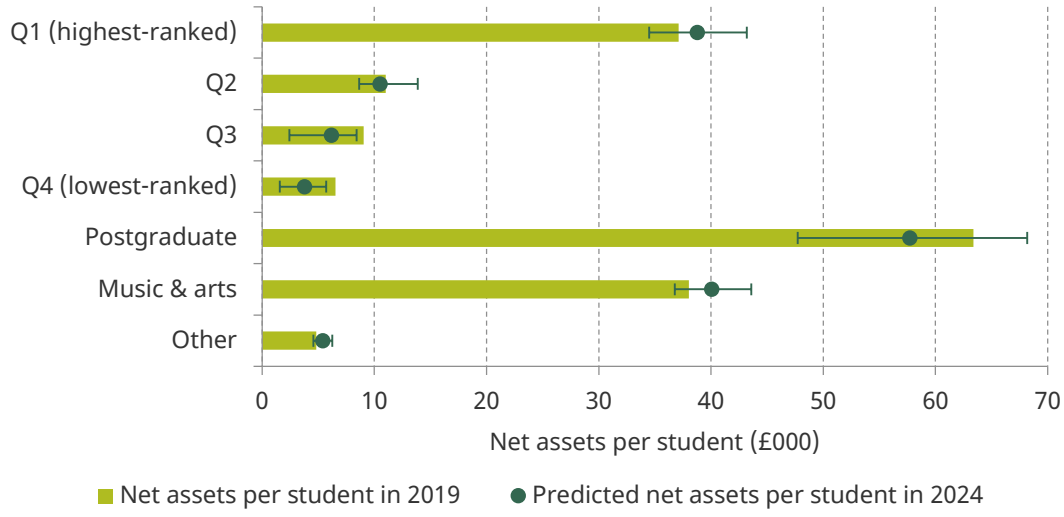
5. The impact of losses on university balance sheets

This section looks at the impact of COVID-19-related losses on the long-term health of universities' finances. In particular, we estimate what each institution's net asset position will be in 2024, when the cohort starting university this autumn will have left.[24] For this purpose, we subtract the losses arising from the crisis estimated in Section 2 from net assets in 2019 as presented in Section 4, adjusting for likely cost savings as well as net income that would have been earned in the absence of the crisis, as predicted in Section 3.

Figure 10 shows net assets per student for each university group, both in 2019 and in our projections for 2024 (dots indicate the central scenario, whiskers the pessimistic and optimistic scenarios). In general, the distribution of assets across institution groups is mostly unaffected. For the Q1, music & arts and other groups, net assets per student are expected to rise, driven by a small number of highly profitable institutions whose income over this period is expected to exceed losses.

Figure 11 decomposes these changes in the net asset position into gains and losses for each university group. The patterns identified previously are evident: university groups with the greatest losses (top quartile universities as well as postgraduate and music & arts institutions) are also the most profitable and therefore best placed to absorb losses. For all types of universities, pension losses comprise a significant proportion of total losses. Losses on international fees and long-term investments are concentrated in Q1, postgraduate and music & arts institutions. All types are expected to lose out on domestic fees, with the exception of the higher-ranking universities (Q1 and Q2).

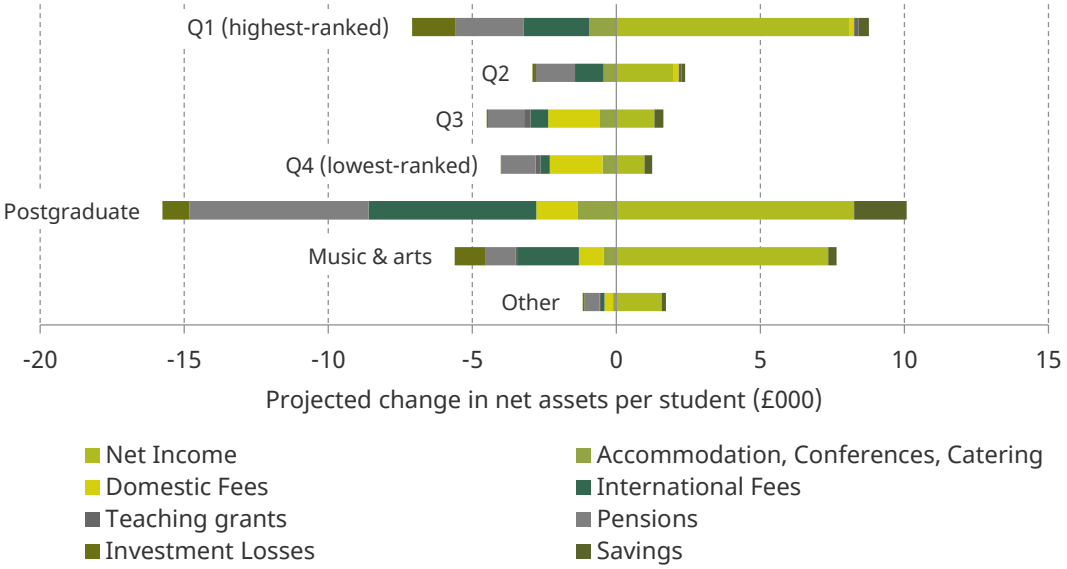
Figure 10. Projected net assets per student by institution type



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A. Whiskers indicate average predicted 2024 net assets in our pessimistic and optimistic scenarios.

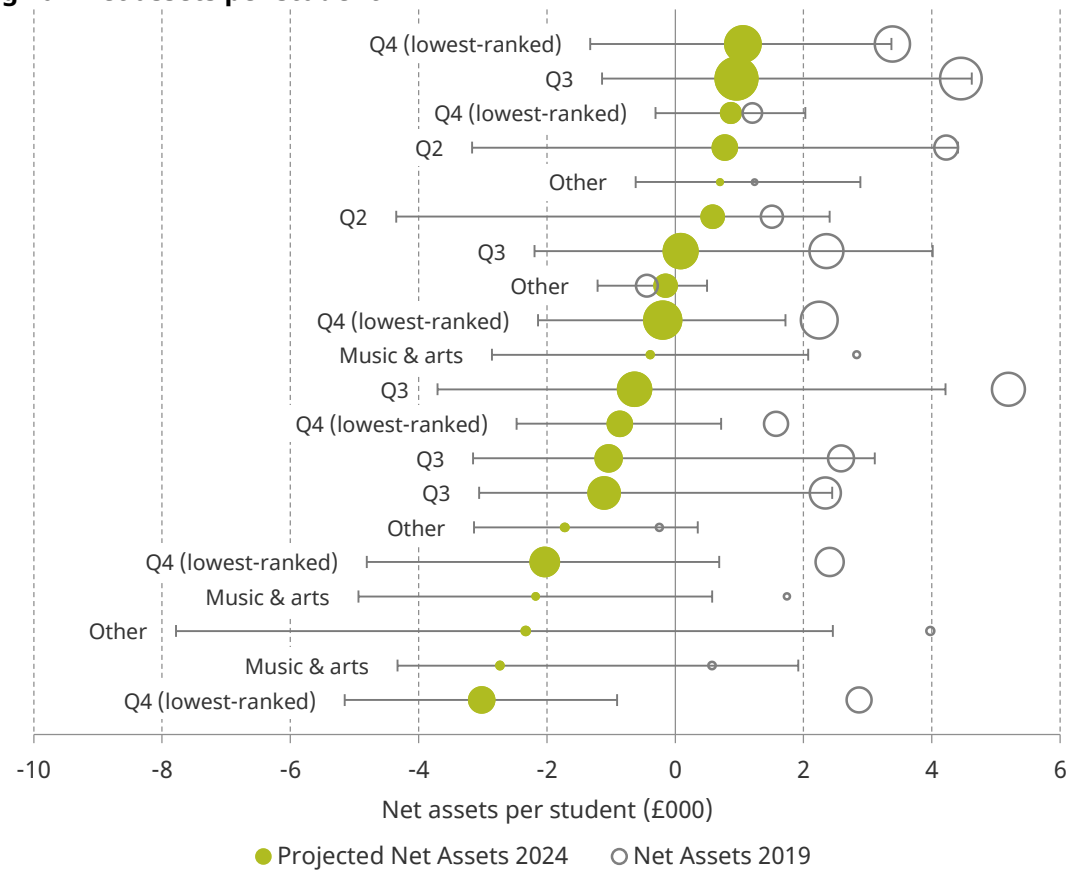
[24] Strictly speaking, some students on PhD programmes may stay longer than four years, and some students may suspend their studies and therefore take longer. However, it seems reasonable to assume that the vast bulk of losses relating to the 2020 entry cohort will come through before 2024.

Figure 11. Decomposition of expected losses and gains by institution type



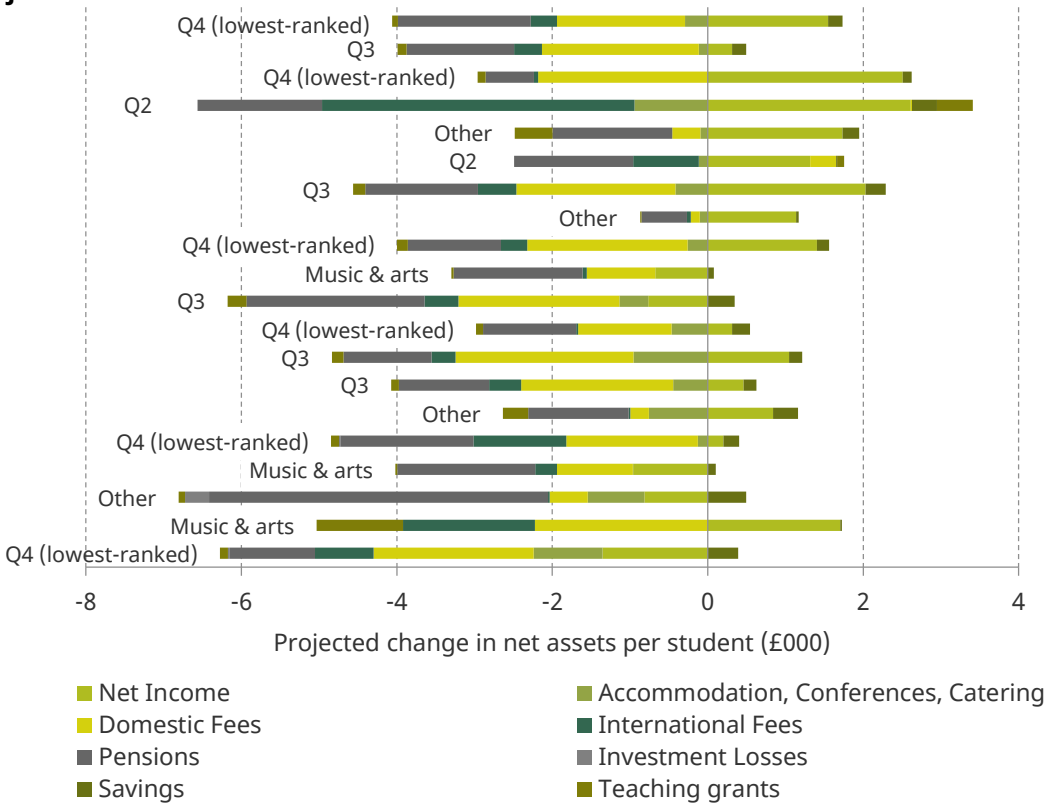
Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

Figure 12. Projected long-run net assets per student for universities with the lowest long-run net assets per student



Note: Authors' calculations based on HESA university finance records. For details on assumptions, see Appendix A. Hollow grey dots indicate net assets per student in 2019. Green dots indicate predicted net assets per student in 2024 in our central scenario. The area of each dot is proportional to the size of the student body. Whiskers indicate predicted 2024 net assets in our pessimistic and optimistic scenarios.

Figure 13. Decomposition of losses and gains for universities with the lowest projected net assets



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

Focusing on the most at-risk institutions, Figure 12 looks at the 20 universities with the lowest long-run net assets per student in our central scenario. In this scenario, 13 universities would end up with negative net assets in 2024 as a result of the crisis, up from two in 2019. For five of these institutions, net assets would be less than –£2,000 per student. None of the 13 institutions with negative predicted reserves in 2024 is among the universities with the greatest expected losses; rather they are mostly institutions with low pre-crisis reserves combined with moderate expected losses arising from covid-19. However, Figure 12 also shows that there is very large uncertainty around this central prediction, indicated by the whiskers: in our pessimistic scenario, *all* of the universities shown would end up with negative net assets, whereas in our optimistic scenario, only one would.

All of the 13 institutions with negative predicted reserves in 2024 are in the bottom half of the CUG ranking, not ranked at all, or music or arts institutions. While some of the worst-placed institutions are small establishments with fewer than 2,000 students, the largest of these institutions had around 24,000 students in 2019 (compared with a sector average of around 15,000 students).

Figure 13 shows the predicted composition of losses (and gains) for the same 20 universities.[25] No single factor is dominant, and each university is affected differently. Some were loss-making before the crisis. Some will suffer large losses from lower international fees. Most are predicted to lose income from UK fees, reflecting the fact that

[25] Actual losses for individual institutions may vary as a result of idiosyncratic factors.

student number caps are too ‘loose’ to protect the incomes of the lowest-ranked universities. With the exception of one small institution in the music & arts group, all institutions are also predicted to experience substantial pension losses. Other investment losses and accommodation, conferences and catering play a minor role for most institutions.

6. Possible government responses

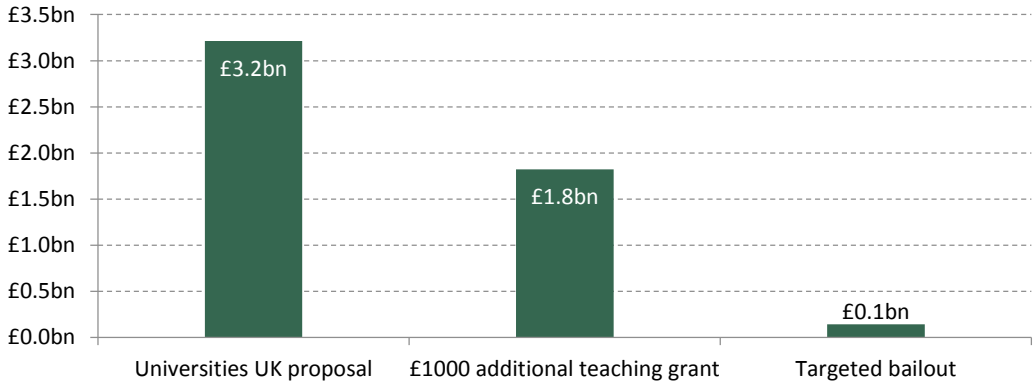
The fate of these institutions will largely be determined by the government's next steps in response to the crisis. To date, government support has focused on providing *liquidity* by bringing forward funding and underwriting loans, especially for research-active universities. However, such measures cannot address fundamental *solvency* problems, where the liabilities of a university exceed its assets.

One option for the government is to set a precedent by letting institutions go insolvent. This could then enable a debt restructuring for otherwise viable institutions, or lead to a takeover or wind-down. Alternatively, the government could intervene to avert this outcome with **a bailout**, i.e. a transfer of real resources in addition to the liquidity measures announced so far.[26]

The most prominent suggestion for a bailout to date has been a proposal by Universities UK,[27] a university advocacy group. Under this plan, the government would double institution-based research funding and increase research-council funding and direct grants to cover the full economic cost of research.[28] We compare this plan with a one-off £1,000 increase in teaching grants per UK/EU student, as well as targeted grants to the weakest institutions that would raise their net assets to zero.

Figure 14 shows the cost of each of these interventions. The proposal by Universities UK is the most expensive at £3.2 billion. A one-off increase in teaching grants by £1,000 per student would cost substantially less, at £1.8 billion. Both of these bailouts are vastly more expensive than a targeted rescue package for the worst-placed institutions, which would only come to around £140 million, or around 1.3% of the total higher education sector's losses, in our central scenario.

Figure 14. Overall cost of possible government bailouts



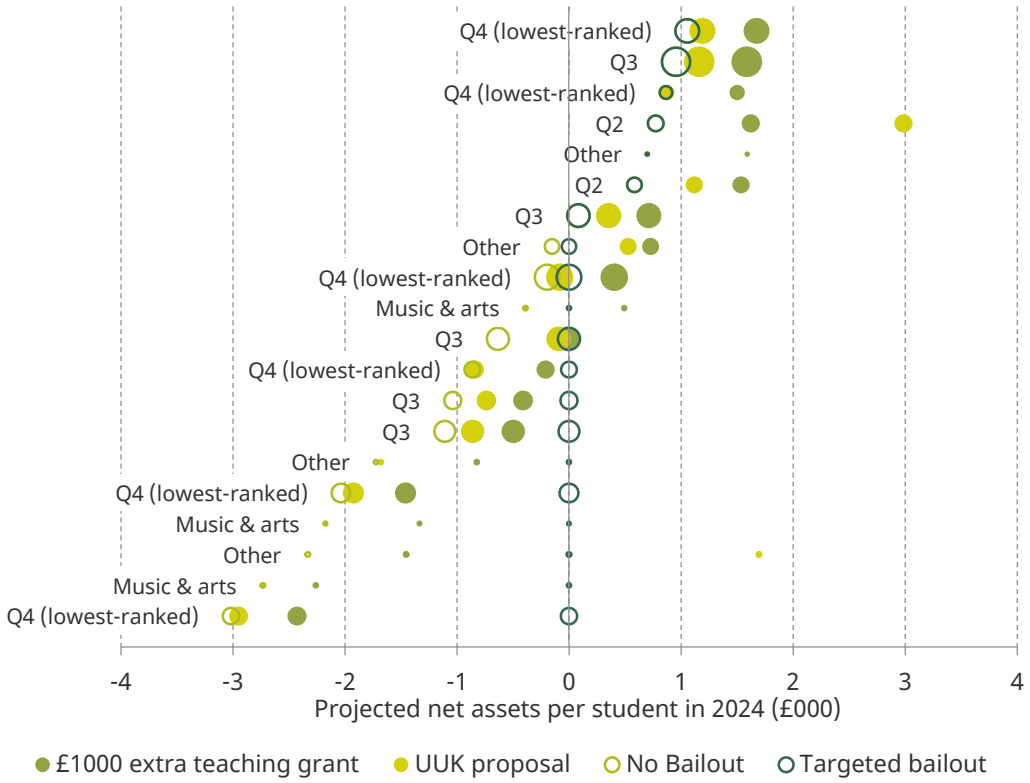
Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A.

[26] The government has already announced a small transfer of real resources in the form of £200 million of additional research funding (https://www.gov.uk/government/news/government-to-protect-uk-research-jobs-with-major-support-package). However, that sum is small compared with likely losses from the crisis and will mostly benefit research-active universities, most of which are at little risk of insolvency.

[27] https://universitiesuk.ac.uk/news/Documents/uuk_achieving-stability-higher-education-april-2020.pdf.

[28] The proposal by Universities UK also includes a number of smaller measures, which we do not include in our calculations here.

Figure 15. Effect of different government bailouts on long-run net assets of the institutions with the lowest projected net assets



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A. Note that some 'UUK proposal' markers for small institutions are fully covered by the 'no bailout' markers, because these institutions do not receive any relevant research funding. The area of each dot is proportional to the size of the student body.

Figure 15 illustrates the effect of these different rescue proposals on the net assets of the 20 universities with the lowest predicted net assets per student. All institutions except two would benefit less from the Universities UK proposal than from the extra teaching grant, even though the Universities UK proposal is considerably more expensive overall. The reason is that many of the worst-placed institutions are not particularly research-active; increases in research funding would largely benefit the most research-active institutions, which are for the most part already well placed to weather the crisis.

However, a policy along the lines outlined by Universities UK may have other positive effects. Bolstering the finances of the most research-active institutions would help them preserve their endowment wealth, continue to attract talented academic staff and keep supporting world-leading research. But it will offer little help to students and staff at the institutions that are most at risk from the crisis. If this is the government's choice, it should be clear about the consequences.

Focusing support on teaching instead of research would ensure that a larger share of the money ended up supporting the weakest institutions. However, unless substantially more than £1,000 per UK/EU student were paid, several institutions would still face a gap; the additional grant would only push three institutions over the line of zero reserves in our central scenario. Furthermore, such a policy would effectively reward institutions that admitted the most students, when in fact student number caps were brought in to prevent universities from admitting excessive numbers of students this year.

A targeted rescue would eliminate negative reserves at a fraction of the cost to the taxpayer. However, a direct rescue may weaken universities' incentives for prudent financial management, as it would reward the institutions with the least resilient finances and might raise the expectation that the government would continue to bail out universities in the future. Merely eliminating negative reserves would also result in a number of institutions being dangerously close to insolvency, leaving these universities vulnerable to future adverse shocks.

The next shock may not be far away: Brexit presents a significant financial risk for higher education institutions. The UK may become a less attractive place to study for EU students, and EU research funding may not be replaced one-for-one. Furthermore, the government has recently announced that EU fees will be allowed to rise from the 2021–22 academic year as a result of Brexit, and government-sponsored loans will no longer be available from the UK for EU students. As a result, the number of EU undergraduates is likely to fall, reducing the overall number of undergraduates in the system. Again, this is likely to hit the least selective universities hardest, as higher-ranked universities will likely lower entry standards to make up for the shortfall.

Instead of bailing out the worst-placed institutions, the government could focus on protecting students as some of these institutions go into administration. Notably, none of the institutions with negative predicted net assets has recorded persistent losses in the past four years. While we would have predicted small losses for some of these institutions in the coming years even in the absence of the COVID-19 crisis, many might be viable in the long term if their debt load were reduced.[29] In principle, debt restructuring could be achieved with no impact on current students, though it may come with job losses and changes in future course provision, not least as these universities' future financing costs might rise as a result.

Most ambitiously, the government could help struggling institutions by pushing through general reforms. One potential reform would change the current student finance model to encourage enrolment in higher education courses below degree level, including by those who already have a higher education qualification. A blueprint for this kind of reform already forms part of the Augar Review, a report on the funding of post-18 education by a government-appointed panel of experts, which was published last year.[30]

The Augar Review suggests the introduction of a lifelong learning loan allowance for tuition fees, which would be set at the amount covering a four-year full-time undergraduate degree. This loan allowance, combined with matching maintenance support, would enable individuals to study for degrees and individual modules in any order; the current rule that only full degrees at higher qualification levels can be funded would be scrapped. Besides helping the typically less selective universities that offer courses below degree level, this reform could enable workers laid off as a result of the COVID-19 crisis to reskill.

[29] One institution reported losses in both of the past two years since it (re)gained the status of a higher education institution.

[30] Department for Education, 'Post-18 review of education and funding: independent panel report', 2019, https://www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report.

7. Alternative Providers

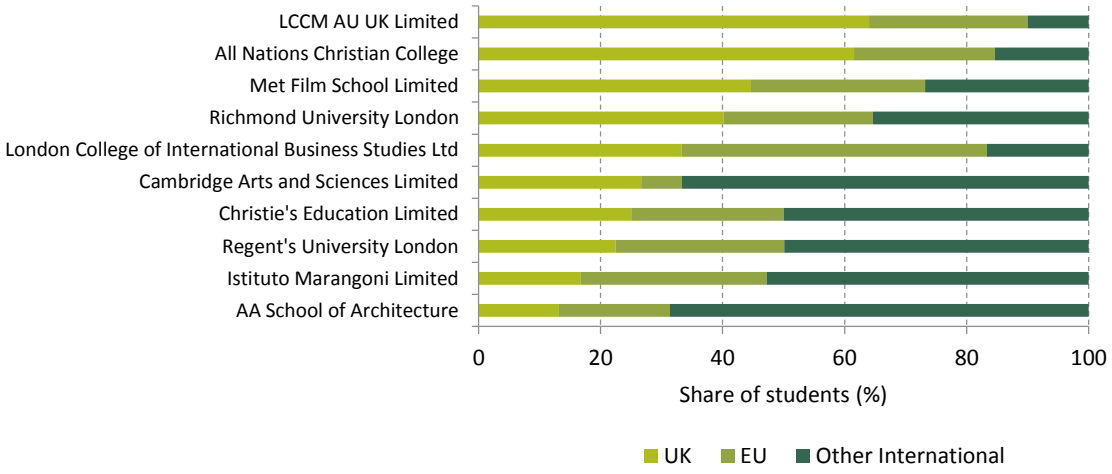
Our analysis above relates to higher education institutions (HEIs): particularly regulated charities that provide the bulk of higher education in the UK. However, two other types of institutions also offer higher education courses: further education colleges and so-called Alternative Providers. For further education colleges, higher education typically only makes up a small part of their total revenues, so we do not discuss these institutions here.

Alternative Providers are a varied class of institutions. Some resemble HEIs in aims and legal structure, such as the University of Buckingham and Regent's University London. Others are for-profit providers that offer more vocational training, such as BPP University or the University of Law. Most are very small providers that specialise in particular areas. For some, such as the Chickenshed Theatre Company or the Tottenham Hotspur Foundation, higher education is only a secondary activity. Overall, around 70,000 higher education students are enrolled at Alternative Providers, or around 3% of the total.

These providers were excluded from the above analysis because comparable financial information is available only for a small subset of them. However, some tentative conclusions can be drawn from the financial data that are available, combined with data on student numbers by domicile. First, financial losses are likely to be minor, as few of these institutions have substantial long-run investments or offer defined benefit pension schemes.[31] Second, operational losses are likely to be large for institutions that have a large share of international students.

Figure 16 shows the share of EU and international students for the Alternative Providers with the most international student bodies. These institutions are likely to be hard-hit by the crisis if international arrivals fall substantially. In comparison with HEIs with similarly

Figure 16. Share of EU and other international students at Alternative Providers with the most international student bodies



Note: Authors' calculations based on HESA university finance records.

[31] An exception is the University of Buckingham, which takes part in the Universities Superannuation Scheme (USS).

high shares of international students, these providers are likely to experience more acute financial difficulty, as they have lower reserves and less non-fee income and will struggle to make up for a fall in international arrivals by attracting more domestic students.

These losses may well lead to the insolvency of some institutions. This would not be without precedent: GSM London, a large for-profit provider specialising in business education, went into administration and abruptly stopped operating as recently as last year. Insolvency need not entail disruption for students if the business is fundamentally profitable, but clearly the risks are substantial.

Even if the government decided to bail out universities with taxpayer money, Alternative Providers might not benefit. For instance, the bailout proposed by Universities UK would not benefit Alternative Providers, as they are not eligible for public research funding. This, together with less diversified sources of income, puts students at Alternative Providers at a much greater risk of disruption to their education as a result of provider insolvency.

8. Conclusion

The COVID-19 crisis will lead to substantial losses for the higher education sector. Even if the government decides to bail out individual institutions or provide extra funding for the sector as a whole, university finances are likely to be hit: even the £3.2 billion bailout proposed by Universities UK, an organisation representing universities, would cover only a fraction of the losses in our central scenario. Just how much this crisis will cost universities will likely not be clear for years, but we estimate that after accounting for cost savings, anything between £3 billion and £18 billion is realistic, with a central estimate of £10 billion.

The university system as a whole is well placed to shoulder these losses. In the absence of the COVID-19 crisis, we would have expected universities to earn an overall surplus of £9 billion between 2019 and 2024, nearly covering these losses in our central scenario. Furthermore, with around £45 billion in reserves, the university system as a whole is likely to remain solvent even if the effects of the crisis turn out worse than expected.

However, the burden of losses does not fall evenly across institutions, and some institutions went into the crisis with much stronger finances than others. Our analysis shows that it is not the universities with the greatest losses, but the institutions in the weakest financial positions before the crisis, that are at the greatest risk of insolvency. For around a dozen universities, insolvency is likely to become a very real prospect without a government bailout. Some Alternative Providers are also at risk of insolvency.

The government response will be critical in determining the future of these institutions. It could set a precedent by letting institutions become insolvent, enabling debt restructuring, mergers with other institutions or wind-downs. Alternatively, it could try to avert this outcome with a bailout, either through a general increase in research or teaching grants or via targeted help for struggling institutions. Most ambitiously, it could help struggling institutions by pushing through general reforms – for instance, by increasing funding for courses below degree level as recommended by the Augar Review. Whichever response the government chooses, the COVID-19 pandemic is likely to have a lasting impact on the higher education landscape.

Appendix A. Scenario descriptions and rationale

Time horizon

Since at least mid March, the higher education sector has been losing income as a result of the COVID-19 crisis. Further losses are likely for many months, far beyond the easing of lockdown. For instance, fewer student enrolments not only impact the upcoming year's tuition fee income but also filter through to affect future years as fees are lost in each year the missing students would have attended university. To capture both immediate and longer-term costs, we estimate the impact of COVID-19 up to 2024, the point at which the majority of the cohort starting university in Autumn 2020 will have left.

Central scenario

This scenario represents a prediction of how the coming months and years will unfold, given what we know at this point.

Regarding student numbers, we assume that only half of the usual number of international and EU students will start university in the UK in the new academic year due to travel restrictions and disruption to administrative services (such as visa offices and language testing centres) as well as health concerns. This is in line with recent survey estimates.[32] We do not expect such a significant drop in domestic enrolments, as UK students face fewer barriers to attendance and previous experience suggests that university attendance rises during an economic downturn.[33] However, some students may choose not to attend what is likely to be a significantly different university experience or may stay away for health concerns. Consequently, we assume a smaller (10%) reduction in UK undergraduate enrolments and no change for UK postgraduates. To keep our calculations tractable, we assume attendance in all other years is unaffected.

Changes to student numbers not only impact tuition fee income, but also income from teaching grants, which are allocated according to numbers of 'home' – the university's constituent UK country – and EU undergraduate students. This source of funding is more important for Scottish universities as Scottish and EU-domiciled undergraduate students typically pay no tuition fees in Scotland. We assume that teaching grant income for each university changes in proportion to changes in numbers of UK and EU undergraduate students, though the aggregate level of government teaching grant remains constant within each home nation.

Accommodation, catering and conference income will be almost entirely lost during the period of lockdown and the remainder of the summer term as economic and social activity continues to be significantly restricted. Therefore, we assume universities make zero income from these activities for 6 months. Looking to the new academic year, we assume that campuses are able to reopen in some form and therefore accommodation, catering

[32] See, for example, https://www.britishcouncil.org/contact/press/survey-international-students-pakistan-and-india and https://www.qs.com/how-universities-can-clearly-communicate-to-prospective-students-during-the-coronavirus-outbreak/.

[33] P. Rice, 'The impact of local labour markets on investment in further education: Evidence from the England and Wales youth cohort studies', *Journal of Population Economics*, 1999, 12, 287–312, https://doi.org/10.1007/s001480050100.

and conference income for the next academic year and beyond declines in proportion to the student body lost.

The downturn in financial markets is expected to lead to large losses for defined benefit pension schemes, requiring universities to contribute additional funds to make up the deficit, and to recognise the net present value of these future contributions as a balance sheet provision. We assume universities are required to increase pension provisions on their balance sheets by 25%. This reflects emerging data from the Universities Superannuation Scheme (USS), the largest university pension scheme. While the USS deficit calculated in the March 2017 valuation that fed into the 2019 accounts was £7.5 billion, this number was above £11 billion in the second half of March this year, an increase of around 50%.[34] While market conditions have improved since, and universities are already in negotiations with USS to change its rules in order to allow for less conservative assumptions in the calculation of this deficit, substantial increases in pension provisions may well be necessary. Over the same period, we assume a 10% reduction in the value of universities' long-term investments, roughly reflecting global stock market losses to date.

Pessimistic scenario

This scenario represents what a significantly worse situation might look like for universities. We assume that there is a 75% drop in new international and EU student enrolments next academic year and that domestic undergraduate and postgraduate starters fall by 20% and 10%, respectively. Teaching grant income changes accordingly.

Accommodation, catering and conference income stands at zero for a total of 7½ months before declining from pre-COVID levels in proportion to the number of students lost. In a more severe market downturn, pension provisions rise by 50% and long-term investments lose 15% in value.

Optimistic scenario

This scenario illustrates what a more favourable sequence of events would look like for universities. There is no change in domestic student enrolments and EU and international student enrolments fall by a quarter.

Accommodation, catering and conference income is completely lost for a shorter time (4½ months), after which it declines in proportion to the number of students lost. No additional pension provisions are required and the value of long-term investments declines by just 5%.

Student redistribution

In all of the scenarios, we model the redistribution of UK and EU undergraduate students under a 5% student numbers cap (plus an additional 1.5% growth rate) introduced by the Department for Education.[35] Here we assume that a quarter of this student population would move to a higher-ranking university (as defined by the Complete University Guide rankings) if possible and that universities can increase their usual intake of UK and EU undergraduate students by up to 6.5% (or by the number of lost undergraduate students,

[34] See https://www.uss.co.uk/~/media/document-libraries/uss/how-uss-is-run/2020-valuation/hoi-note-3032020.pdf.

[35] https://www.gov.uk/government/news/government-support-package-for-universities-and-students.

whichever is lower). Universities not listed in the CUG rankings are not subject to this redistribution. International and postgraduate students also do not redistribute.

Predicted net income in absence of COVID-19

To predict what the net income of universities would have been if not for COVID-19, we predict net income (excluding expenditures to cover pension deficits) in each year up to 2024. We employ a third-order autoregressive model estimated on net income data between 2015 and 2019. Using the coefficients from this model, we predict net income in each year as a linear combination of net income in the previous three years. By extrapolating from past profitability, we are implicitly assuming that there are no significant other shocks to universities' business model (this may not be true if, for example, tuition fees do not rise in line with teaching costs).

Pension deficit expenditure in each year is estimated separately by averaging pension adjustment costs between 2015 and 2018. This allows us to exclude pension adjustment costs in 2019, which were exceptional due to a one-off revaluation of the Universities Superannuation Scheme (USS).[36] Counterfactual investment gains/losses are also estimated separately by taking an average of the sum of investment gains/losses, operating surplus/deficit in joint ventures and associates, and tax between 2015 and 2019. For the final figure, estimated pension cost adjustments and investment gains/losses are added to the net income predictions from the autoregressive model.

Universities UK bailout

We model the two central planks of the Universities UK proposal: first, doubling of core research funding; and second, funding of all research through the research councils or directly by the government at full economic cost. On the first count, we double 'Research England research grants' for English institutions, 'QR and PGR funding' for Welsh institutions, 'general fund research and knowledge exchange' for Scottish institutions and 'recurrent (research)' for Northern Irish institutions. On the second count, we increase research council and direct government research funding up to full economic cost in line with Office for Students 2017–18 TRAC data.[37]

[36] Note that 'pension adjustment cost' also excludes 'actuarial gain/loss in respect of pension schemes', which is separately disclosed for 'transparent' pension schemes (i.e. all funded defined benefit schemes in the university sector except USS and SAUL).

[37] https://www.officeforstudents.org.uk/data-and-analysis/trac-data/published-data-2017-18/.

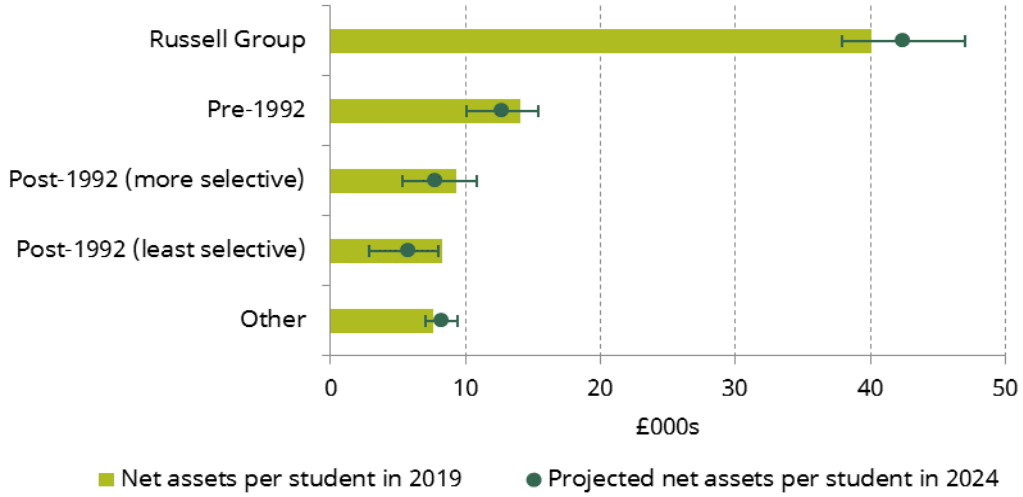
Appendix B. Differential expected effect of the COVID-19 crisis on the higher education sector in different home nations

	England	Scotland	Wales	Northern Ireland
Total predicted losses	£9.2 billion	£1.1 billion	£500 million	£100 million
Share of losses	85%	10%	4%	1%
Share of students	83%	10%	5%	2%
Predicted loss per student	£4,700	£4,500	£3,800	£2,000
Predicted cumulative net income per student (2019 to 2024)	£4,000	£3,100	£1,300	£2,300
Average net assets per student in 2019	£18,900	£20,100	£11,000	£15,300
Number of institutions with predicted negative net assets in 2024	10	2	0	1

Note: Authors' calculations based on HESA finance records. All predictions reflect the central scenario. Cumulative net income is the same measure as presented in Figures 5 and 6 of the briefing note.

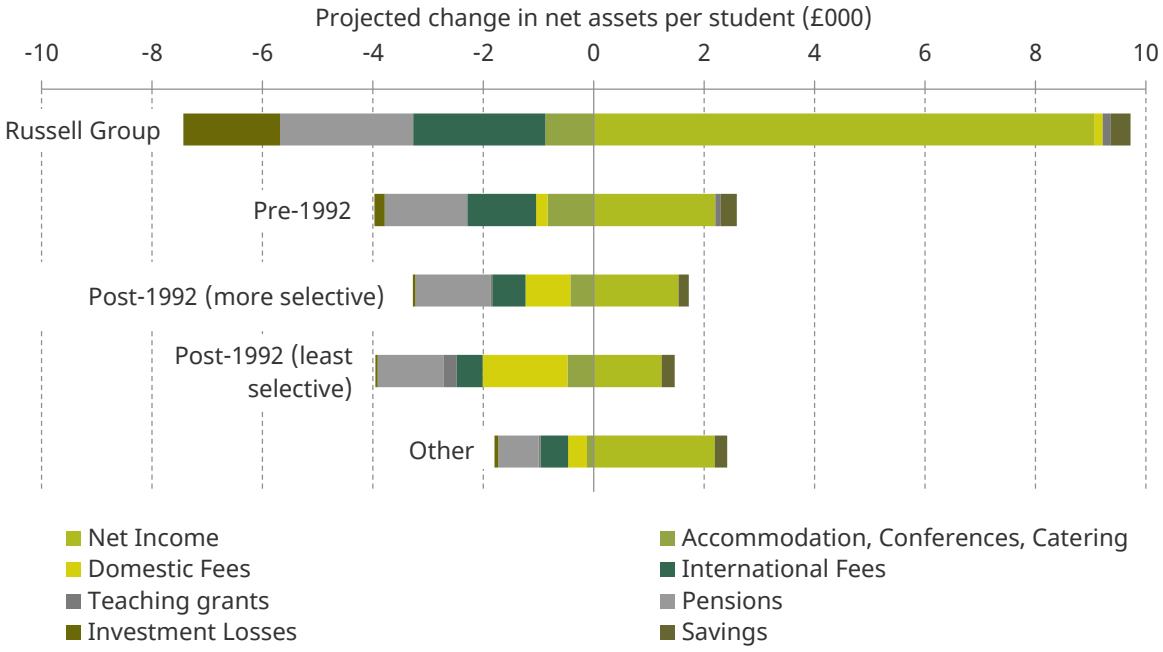
Appendix C. Impact of COVID-19 on university finances using traditional university classifications

Figure C.1. Projected net assets per student by traditional university group



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A. Whiskers indicate average predicted 2024 net assets in our pessimistic and optimistic scenarios. The grouping of universities is based on J. Britton, L. Dearden, L. van der Erve and B. Waltmann, *The Impact of Undergraduate Degrees on Lifetime Earnings*, Institute for Fiscal Studies, 2020, https://www.ifs.org.uk/publications/14729.

Figure C.2. Decomposition of expected losses and gains by traditional university group



Note: Authors' calculations based on HESA finance records. For details on assumptions, see Appendix A. The grouping of universities is based on J. Britton, L. Dearden, L. van der Erve and B. Waltmann, *The Impact of Undergraduate Degrees on Lifetime Earnings*, Institute for Fiscal Studies, 2020, https://www.ifs.org.uk/publications/14729.

Appendix D. University groupings

University	Group	Traditional classification
AECC University College	Other	Other
Abertay University	Q4 (lowest-ranked)	Post-1992 (least selective)
Aberystwyth University	Q3	Pre-1992
Anglia Ruskin University	Q4 (lowest-ranked)	Post-1992 (least selective)
Aston University	Q2	Pre-1992
Bangor University	Q3	Pre-1992
Bath Spa University	Q3	Post-1992 (more selective)
Birkbeck, University of London	Other	Pre-1992
Birmingham City University	Q3	Post-1992 (more selective)
Bishop Grosseteste University	Q4 (lowest-ranked)	Post-1992 (more selective)
Bournemouth University	Q3	Post-1992 (more selective)
Brunel University London	Q3	Pre-1992
Buckinghamshire New University	Q4 (lowest-ranked)	Post-1992 (least selective)
Canterbury Christ Church University	Q4 (lowest-ranked)	Post-1992 (least selective)
Cardiff Metropolitan University	Q3	Post-1992 (more selective)
Cardiff University	Q1 (highest-ranked)	Russell Group
City, University of London	Q2	Pre-1992
Conservatoire for Dance and Drama	Music & arts	Post-1992 (more selective)
Courtauld Institute of Art	Music & arts	Post-1992 (more selective)
Coventry University	Q2	Post-1992 (more selective)
Cranfield University	Postgraduate	Other
De Montfort University	Q3	Post-1992 (least selective)
Edge Hill University	Q2	Post-1992 (least selective)
Edinburgh Napier University	Q3	Post-1992 (least selective)
Falmouth University	Q3	Post-1992 (more selective)
Glasgow Caledonian University	Q3	Post-1992 (least selective)
Glasgow School of Art	Music & arts	Post-1992 (more selective)
Glyndwr University	Q4 (lowest-ranked)	Post-1992 (least selective)
Goldsmiths, University of London	Q3	Pre-1992
Guildhall School of Music and Drama	Music & arts	Post-1992 (more selective)
Harper Adams University	Q1 (highest-ranked)	Post-1992 (more selective)
Hartpury University	Other	Other
Heriot-Watt University	Q2	Pre-1992
Imperial College London	Q1 (highest-ranked)	Russell Group

University	Group	Traditional classification
Keele University	Q2	Pre-1992
King's College London	Q1 (highest-ranked)	Russell Group
Kingston University	Q3	Post-1992 (least selective)
Leeds Arts University	Q3	Post-1992 (more selective)
Leeds Beckett University	Q4 (lowest-ranked)	Post-1992 (more selective)
Leeds College of Music	Music & arts	Other
Leeds Trinity University	Q4 (lowest-ranked)	Post-1992 (least selective)
Liverpool Hope University	Q2	Post-1992 (least selective)
Liverpool John Moores University	Q2	Post-1992 (more selective)
Liverpool School of Tropical Medicine	Postgraduate	Other
London Business School	Postgraduate	Other
London Metropolitan University	Q4 (lowest-ranked)	Post-1992 (least selective)
London School of Economics and Political Science	Q1 (highest-ranked)	Russell Group
London School of Hygiene and Tropical Medicine	Postgraduate	Other
London South Bank University	Q3	Post-1992 (least selective)
Loughborough University	Q1 (highest-ranked)	Pre-1992
Middlesex University	Q3	Post-1992 (least selective)
Newcastle University	Q1 (highest-ranked)	Russell Group
Newman University	Q4 (lowest-ranked)	Post-1992 (least selective)
Norwich University of the Arts	Q3	Post-1992 (more selective)
Oxford Brookes University	Q2	Post-1992 (more selective)
Plymouth College of Art	Music & arts	Post-1992 (more selective)
Queen Margaret University, Edinburgh	Q3	Post-1992 (more selective)
Queen Mary University of London	Q2	Russell Group
Queen's University Belfast	Q2	Russell Group
Ravensbourne University London	Q4 (lowest-ranked)	Post-1992 (more selective)
Roehampton University	Q3	Post-1992 (least selective)
Rose Bruford College of Theatre and Performance	Music & arts	Post-1992 (more selective)
Royal Academy of Music	Music & arts	Post-1992 (more selective)
Royal Agricultural University	Q4 (lowest-ranked)	Post-1992 (more selective)
Royal College of Art	Music & arts	Other
Royal College of Music	Music & arts	Post-1992 (more selective)
Royal Conservatoire of Scotland	Music & arts	Post-1992 (more selective)

University	Group	Traditional classification
Royal Holloway and Bedford New College	Q1 (highest-ranked)	Pre-1992
Royal Northern College of Music	Music & arts	Post-1992 (more selective)
SRUC	Other	Post-1992 (more selective)
Sheffield Hallam University	Q3	Post-1992 (more selective)
Solent University	Q4 (lowest-ranked)	Post-1992 (least selective)
St George's, University of London	Q2	Pre-1992
St Mary's University College	Other	Other
St Mary's University, Twickenham	Q3	Post-1992 (least selective)
Staffordshire University	Q2	Post-1992 (least selective)
Stranmillis University College	Other	Post-1992 (more selective)
Swansea University	Q2	Pre-1992
Teesside University	Q4 (lowest-ranked)	Post-1992 (least selective)
The Arts University Bournemouth	Q2	Post-1992 (more selective)
The Liverpool Institute for Performing Arts	Music & arts	Post-1992 (more selective)
The Manchester Metropolitan University	Q2	Post-1992 (more selective)
The National Film and Television School	Music & arts	Other
The Nottingham Trent University	Q2	Post-1992 (more selective)
The Open University	Other	Other
The Robert Gordon University	Q3	Post-1992 (least selective)
The Royal Central School of Speech and Drama	Music & arts	Post-1992 (more selective)
The Royal Veterinary College	Other	Pre-1992
The University College of Osteopathy	Other	Other
The University of Aberdeen	Q1 (highest-ranked)	Pre-1992
The University of Bath	Q1 (highest-ranked)	Pre-1992
The University of Birmingham	Q1 (highest-ranked)	Russell Group
The University of Bolton	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of Bradford	Q2	Pre-1992
The University of Brighton	Q4 (lowest-ranked)	Post-1992 (more selective)
The University of Bristol	Q1 (highest-ranked)	Russell Group
The University of Cambridge	Q1 (highest-ranked)	Russell Group
The University of Central Lancashire	Q3	Post-1992 (least selective)
The University of Chichester	Q3	Post-1992 (more selective)
The University of Dundee	Q1 (highest-ranked)	Pre-1992

University	Group	Traditional classification
The University of East Anglia	Q1 (highest-ranked)	Pre-1992
The University of East London	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of Edinburgh	Q1 (highest-ranked)	Russell Group
The University of Essex	Q2	Pre-1992
The University of Exeter	Q1 (highest-ranked)	Russell Group
The University of Glasgow	Q1 (highest-ranked)	Russell Group
The University of Greenwich	Q3	Post-1992 (least selective)
The University of Huddersfield	Q2	Post-1992 (more selective)
The University of Hull	Q3	Pre-1992
The University of Kent	Q2	Pre-1992
The University of Lancaster	Q1 (highest-ranked)	Pre-1992
The University of Leeds	Q1 (highest-ranked)	Russell Group
The University of Leicester	Q2	Pre-1992
The University of Lincoln	Q2	Post-1992 (more selective)
The University of Liverpool	Q1 (highest-ranked)	Russell Group
The University of Manchester	Q1 (highest-ranked)	Russell Group
The University of Northampton	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of Oxford	Q1 (highest-ranked)	Russell Group
The University of Portsmouth	Q2	Post-1992 (more selective)
The University of Reading	Q2	Pre-1992
The University of Salford	Q3	Pre-1992
The University of Sheffield	Q1 (highest-ranked)	Russell Group
The University of Southampton	Q1 (highest-ranked)	Russell Group
The University of St Andrews	Q1 (highest-ranked)	Pre-1992
The University of Stirling	Q2	Pre-1992
The University of Strathclyde	Q2	Pre-1992
The University of Sunderland	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of Surrey	Q1 (highest-ranked)	Pre-1992
The University of Sussex	Q1 (highest-ranked)	Pre-1992
The University of the West of Scotland	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of Warwick	Q1 (highest-ranked)	Russell Group
The University of West London	Q3	Post-1992 (least selective)
The University of Westminster	Q3	Post-1992 (least selective)
The University of Winchester	Q4 (lowest-ranked)	Post-1992 (more selective)
The University of Wolverhampton	Q4 (lowest-ranked)	Post-1992 (least selective)
The University of York	Q1 (highest-ranked)	Russell Group

University	Group	Traditional classification
Trinity Laban Conservatoire of Music and Dance	Music & arts	Post-1992 (more selective)
Ulster University	Q2	Pre-1992
University College Birmingham	Other	Post-1992 (least selective)
University College London	Q1 (highest-ranked)	Russell Group
University for the Creative Arts	Q2	Post-1992 (least selective)
University of Bedfordshire	Q4 (lowest-ranked)	Post-1992 (least selective)
University of Chester	Q4 (lowest-ranked)	Post-1992 (more selective)
University of Cumbria	Q4 (lowest-ranked)	Post-1992 (more selective)
University of Derby	Q3	Post-1992 (least selective)
University of Durham	Q1 (highest-ranked)	Russell Group
University of Gloucestershire	Q4 (lowest-ranked)	Post-1992 (more selective)
University of Hertfordshire	Q3	Post-1992 (least selective)
University of Northumbria at Newcastle	Q2	Post-1992 (more selective)
University of Nottingham	Q1 (highest-ranked)	Russell Group
University of Plymouth	Q3	Post-1992 (more selective)
University of South Wales	Q4 (lowest-ranked)	Post-1992 (more selective)
University of St Mark and St John	Q4 (lowest-ranked)	Post-1992 (least selective)
University of Suffolk	Q4 (lowest-ranked)	Post-1992 (least selective)
University of the Arts, London	Q2	Post-1992 (more selective)
University of the Highlands and Islands	Other	Post-1992 (more selective)
University of the West of England, Bristol	Q2	Post-1992 (more selective)
University of Wales Trinity Saint David	Q4 (lowest-ranked)	Post-1992 (least selective)
University of Worcester	Q4 (lowest-ranked)	Post-1992 (more selective)
Writtle University College	Other	Post-1992 (more selective)
York St John University	Q4 (lowest-ranked)	Post-1992 (more selective)